

Current and Future Skills and Training Needs of the Forest and Timber Industry in the Murray Region Forestry Hub Area

This report was commissioned by the Murray Region Forestry Hub with funding from the Australian Government, Department of Agriculture, Fisheries and Forestry

PUBLISHED BY

ForestWorks ABN 58 006 212 693

PO Box 612, Carlton VIC, 3051

<https://forestworks.com.au/>

First published February 2023

For more information contact Tim Cleary tcleary@forestworks.com.au

ACKNOWLEDGEMENTS

ForestWorks acknowledges the custodians of the lands on which the Murray Region Forestry Hub operates, which include the Jaitmatang, Ngunawal, Taungurong, Waveroo and Wiradjuri peoples. We acknowledge their Elders past and present, and their connection to Country.

We also acknowledge the custodians of the lands on which this report was prepared: the Woiworong and Kuring-gai people.

This report was prepared for the Murray Region Forestry Hub. ForestWorks would like to thank the Hub Committee for their feedback and contribution to the report.

We would also like to particularly thank the contributions of all the participants in interviews, and surveys. Without them there would be no report.

CONTENTS

Introduction	5
Executive summary	7
1 Industry profile	12
2 Workforce profile.....	13
2.1 Employment	13
2.2 Workforce diversity	16
2.3 Current job roles.....	18
3 Workforce demand	22
3.1 Labour shortage	22
3.2 Future demand for labour	23
3.3 Future labour gaps due to retirements	24
4 Skills and training needs.....	26
4.1 Skill development needs	26
4.2 Support needed for workforce training and development.....	29
5 Workforce training.....	31
5.1 Training of existing workers	31
5.2 Training of new workers.....	33
5.3 Demand for formal training.....	34
5.4 Barriers to formal training.....	34
6 Ability to attract, recruit and retain workers	36
6.1 Recruitment of new workers.....	36
6.2 Personal attributes required of new workers	37
6.3 Minimum entry level qualifications required of new workers.....	38
6.4 Challenges in finding and recruiting workers.....	39
6.5 Retention and attrition of employees	42
7 Conclusions and recommendations	43
7.1 Introduction.....	43
7.2 Limitations and considerations	43
7.3 Findings of workforce needs	44
7.4 Findings of skills and training needs.....	45
7.5 Employer training and recruitment challenges.....	47
7.6 Implications of Workforce, skills and training challenges	47
7.7 Addressing the workforce, skills and training challenges	48
7.8 Recommendations	48
Reference List.....	53
Attachment 1: Profile of industry businesses surveyed for this study	55
Attachment 2: Survey questions.....	57

Attachment 3: External challenges with negative effect on businesses 63
Attachment 4: Qualifications to address labour shortage in critical job roles 64
Attachment 5: Directory of registered training organisations 68
Attachment 6: Accessing accredited training in New South Wales 70
Attachment 7: Apprenticeships and traineeships in the Murray REGION FORESTRY HUB AREA 76
Attachment 8: Income distribution of full-time workers in the Murray region FORESTRY HUB AREA by industry 78
Attachment 9: Income distribution of full-time workers in the Murray region FORESTRY HUB AREA by occupation..... 79

LIST OF TABLES

Table 1: Employment level in the Murray region and New South Wales by industry sector, 2021 15
 Table 2: Women workforce participation in the Murray region by industry sector, 2021 18
 Table 3: Aboriginal workforce participation by industry sector, 2021, the Murray region 18
 Table 4: Main occupations in the Murray region by industry sector, 2021 20
 Table 5: Labour shortage (occupations difficult to fill) in the Murray region by industry sector, 2022 23
 Table 6: Labour demand (occupations for which additional recruitment is expected) over the next five years in the Murray region by industry sector, 2022 24
 Table 7: Future skills and training needs for existing employees in the Murray region by industry sector, 2021 27
 Table 8: Difficulty level of recruiting workers in the Murray region by industry sector, 2022 (Scored 0 - 100, 0 = least difficult, 100 = most difficult) 41

LIST OF FIGURES

Figure 1: Employment level and distribution in the industry in the Murray region by local government area, 2021, (no, % of total in the Murray region) 14
 Figure 2: Employment in the Murray region by local government area and industry sector, 2021..... 15
 Figure 3: Employment in the Murray region by industry sector, 2021 16
 Figure 4: Workforce age distribution in the Murray region by industry sector, 2021 17
 Figure 5: Distribution of occupation groups in the industry in the Murray region, 2021 19
 Figure 6: Industry occupations in the Murray region by age group, 2021 25
 Figure 7: Support needed for workforce training and development in the Murray region by industry sector, 2022 (% of surveyed businesses) 30
 Figure 8: Employer’s strategies for filling skills gaps in the Murray region by industry sector, 2022 (% of surveyed businesses) 32
 Figure 9: Employer’s reasons for investing in workforce training in the Murray region by industry sector, 2022 (% of surveyed businesses) 32
 Figure 10: Type of training provided to workers in the Murray region by industry sector, 2022 (% of surveyed businesses) 33
 Figure 11: Barriers to training for employers in the Murray region by industry sector, 2022 (% of surveyed businesses) 35

Figure 12: Employer’s reasons for recruiting a new worker in the Murray region by industry sector, 2022 (% of surveyed businesses) 37

Figure 13: Personal attributes sought by employers when recruiting workers in the Murray region by industry sector, 2021 (% of surveyed businesses) 38

Figure 14: Education level sought by employers in the industry when recruiting workers for different occupations in the Murray region, 2021 39

Figure 15: Recruitment challenges in the Murray region by industry sector, 2021 (% of surveyed businesses) 41

Figure 16: Employment duration in the Murray region by industry sector, compared with the New South Wales’s workforce, 2021..... 42

INTRODUCTION

The forest and timber industry in the Murray Region Forestry Hub area continues to play a major role in the rural and regional economy despite the impact of the disastrous 2019-20 fires. Prior to this fire event, the industry provided around \$1.3 billion annually in direct economic output, and directly employed nearly 2,500 people. In addition, around 4,500 people held indirect jobs that were dependent on the industry in the South West Slopes Forestry Hub region¹. As of 2021, the industry employed slightly over 2,100 people², including around 200 pulp and paper workers who were made redundant due to the closure of the Norske Skog Albury mill³. The economic consequences of the fires are still being assessed, but the industry remains a vital component of the socio-economic fabric of communities in the Hub region.

The industry is facing a number of challenges that affect its ability to grow, including future prevention and management of bushfires, infrastructure damage, shortages of log supplies and skilled workers and training costs. Other relevant operational issues such as environmental factors, and seasonality of timber supply are also relevant. Moreover, rapid changes like technological advances, more environmentally aware customers, responsible economic growth for a sustainable future, and the growth of the bioeconomy are creating new types of work and jobs. In order to remain competitive, businesses must plan for and manage the demand of their workforce and also develop the new skill sets needed. It is important to ensure the workforce of tomorrow has an appropriate and diverse set of skills (i.e.: employability, technical, enterprise, entrepreneurship, etc.) with which to stay competitive and thrive in the industry.

Government, industry, and educational institutions must collaborate to identify the skills and training that are necessary to meet industry needs and support the participation of workforce in relevant training programs.

Project aim

The Murray Region Forestry Hub engaged ForestWorks to conduct a regional study to assess the current and future workforce skills and training requirements of the forestry and wood products industry within the Hub region. Specifically, this study identifies workforce gaps, skill needs and training opportunities required by the industry, as well as challenges in attracting, recruiting and retaining workers. This information is intended to assist in critically considering the industry's skills and training needs in light of its current and future goals and support the growth of a trained and safe workforce through the implementation of appropriate strategies and partnerships with educational and training organisations and governments.

Methodology

The data analysed for this report is drawn from:

¹ Schirmer J., Mylek M., Magnusson A., and Morison J., 2020, Socio-economic impacts of the softwood plantation industry South West Slopes Forestry Hub Region, NSW and Vic.

² Australian Bureau of Statistics. (2021). 2021 Census of Population and Housing. Accessed via TableBuilder in December 2022.

³ Aldridge, A. & Moon, S. (2019, Oct 4). Almost 200 jobs cut as Norske Skog sells its Albury site to Australian paper giant Visy. *ABC News*. <https://www.abc.net.au/news/2019-10-04/norske-skog-visy-sale-albury-paper-mill-to-close-183-jobs-lost/11574476>

- a) interviews and surveys with industry businesses and training organisations
- b) desktop research involving sources such as the Australian Bureau of Statistics (ABS) and other recent industry reports on industry workforce, skills and training.

- a) **Interviews and surveys with industry and training organisations** were conducted between May and August 2022 to identify the current and future workforce and skill demand, training requirements and challenges; difficulties in attracting and recruiting employees, and any assistance required to implement workforce development practices.

As a result, 25 industry businesses employing approximately 1,570 people in the region participated and contributed to the study with information about their current and future workforce and skills needs. This accounts for 85% of the total employees reported in the 2021 ABS Census of Population and Housing data for the forest and timber industry in the Murray region. Attachment 1 provides a profile of the businesses that participated in this study. Attachment 2 outlines the questions asked in the survey and interviews.

- b) **Desktop research** was conducted to provide an overview of the forest and wood products industry in the Murray Region Forestry Hub area and its workforce profile.

The primary source of data used for compiling this information were ABS datasets, including the 2021 Census of Population and Housing. Other additional data or information sources that were used are referenced throughout the report.

Note: The ABS Census of Population and Housing datasets do not distinguish between the softwood and hardwood sectors of the industry. Therefore, the Census data used in this report covers both sectors when describing the industry workforce in the Murray Region Forestry Hub area. However, the interviews and surveys conducted as part of this study, presented in Sections 4, 5, and 6, only focused on businesses operating in the softwood sector.

The study and workforce data presented in this report covers the forest and timber products industry of the Murray Region Forestry Hub area, located within the following Local Government Areas:

New South Wales

- Albury
- Cootamundra-Gundagai
- Greater Hume
- Snowy Valleys

Victoria

- Alpine
- Benalla
- Indigo
- Mansfield
- Murrindindi
- Towong
- Wangaratta
- Wodonga

EXECUTIVE SUMMARY

OVERVIEW OF THE INDUSTRY IN THE MURRAY REGION FORESTRY HUB AREA

Economic Value & Activity

The Murray Region Forestry Hub area - has a long history of forestry and other industries such as agriculture, food and beverage processing, manufacturing and tourism. This large region covers the local government areas (LGAs) from Cootamundra-Gundagai in the north to Snowy Valleys in the south, including Towong Albury, Wodonga, Benalla, Wangaratta, Alpine, Murrindindi, and Mansfield in the central and southern parts. The region is known for its well-established forest growing and wood processing industry, primarily based on softwood plantations. This industry makes a significant contribution to the local economy, with an annual gross value of output of around \$1.3 billion as of 2019. The activity of the industry involves the growing, management, harvesting and haulage of forest products, and the processing of timber into a variety of products such as sawn timber, pulp and paper, packaging, and engineered wood products. Relatively small volumes of native forest hardwoods are also harvested and processed sustainably within the region. The major wood processing facilities are in the regional towns of Tumut, Tumbarumba, Wangaratta, Myrtleford and Benalla.

Employment

As of 2021, the industry directly employs over 2,100 people in the Murray Region Forestry Hub area. Snowy Valleys LGA is the largest employing region, with 44% of the workforce, followed by Wodonga (14%), Alpine (11%) and Wangaratta (11%). The pulp and paper mills and the sawmills employed together over half of the industry's workforce (note: one of the two paper mills in the region was closed permanently after the data collection in 2021, resulting in 200 job losses in Albury/Wodonga). Forestry and harvesting operations (excluding haulage) employs nearly a fifth of the workforce, while over a third of the workforce is engaged in the manufacturing of wood products (including engineered wood products and wooden structural fittings and framing components for building construction such as frames and trusses, doors and joinery), as well as forestry support services.

Workforce Diversity

Age distribution	The industry's workforce in the Murray Region Forestry Hub area is mostly made up of middle-aged workers and people close to retirement age (48% 40-60, 14% over 60). People aged under 19 are underrepresented (2%) likely due to the options available to stay in school until Year 12, take a gap year or try convenient jobs, lack of a driver's licence or transport options, and employers' reluctance to hire them. Forestry has the highest proportion of workers over 60 years (21%), while harvesting operations (excluding haulage) have a higher proportion aged between 20-30 years old (21%), and pulp and paper manufacturing has the highest proportion in the 30-40 year old age range (28%).
Women participation	Women's participation in Australia's forest and wood products industry has grown slightly from 11% to 18% from 2016 to 2021. In the Murray Region Forestry Hub area, women represent 12% of the workforce. They are more represented in forestry and forestry support services, representing 20% and 28% respectively. Women make up only 8% of the employment in the manufacturing of wood products and pulp and paper.

Aboriginal participation Approximately 41 Aboriginal people (2%) work in the industry in the Murray Region Forestry Hub area. Log sawmilling and pulp and paper manufacturing have the highest number of Aboriginal employees (15 each).

Job Roles

The main occupations in the industry in the Murray Region Forestry Hub area are machinery operators and drivers (40%), labourers (19%), technicians and trade workers (18%), and managers (10%). Foresters, forestry workers and harvesting plant operators make up the majority (56%) of the forestry workforce, while truck drivers, log plant operators and fitters dominate harvesting operations (69%). In sawmilling and timber dressing, machinery operators and forklift drivers make up 34%, while timber yard and sawmill/wood products manufacturing workers make up 25%. In pulp and paper manufacturing, paper products machine operators, forklift drivers, and truck drivers account for 39%, followed by professional engineers (10%) and trade workers (8%).

Source: ABS Census of Population and Housing, 2021, TableBuilder

IDENTIFIED PRESENT AND FUTURE LABOUR DEMANDS & SKILLS AND TRAINING NEEDS IN THE INDUSTRY IN THE MURRAY REGION FORESTRY HUB AREA

Labour Demand (Present and Future)

Labour shortage The industry is facing an ongoing challenge in filling essential roles, such as foresters, harvester operators, diesel mechanics, mechanical fitters, electricians, truck drivers, boiler operators, engineers, and DCS/automation engineers. Labour competition, lack of younger workers and the COVID pandemic have all contributed to this labour shortage. Businesses may need to recruit from outside the region or invest in training for existing employees to meet their skills and labour needs.

Future labour demand due to replanting softwood plantations Over the next five years, millions of pine seedlings will need to be planted in order to replant the softwood plantations in the Tumut and Tumberumba area which were damaged by bushfires. This will create more jobs in the nursery, tree planting, silviculture/maintenance, and forestry sectors. Additionally, the paper mill is looking to employ specialist machine operators, recovery digester operators, and technicians. The demand for harvesting jobs is unlikely to increase in the next five years.

Future labour gaps due to retirement Approximately 14% (300 workers) of the industry's total workforce is aged 60 or above and likely to retire within the next five years. This poses a challenge for managing future workforce needs, as those departing will take with them valuable skills, knowledge, experience and relationships. There is also a regional ageing workforce in job roles that are essential to the forestry and timber industries, such as truck drivers, forklift operators and production managers.

Skills and Training Needs (Present and Future)

Businesses in the forestry and timber industry are committed to ongoing employee development and providing training and qualifications to upgrade, recognise, and assess current employees. Over the next five years, they will need to provide training to fill the workforce demand and provide workers with the necessary skills and knowledge for effective and efficient operations. This includes technology and digital skills for forest management and operations, such as GIS and remote sensing, as well as leadership skills for managers and quality control skills for sawmill

technicians. Regular training is also necessary for those who use high-risk machinery and for those involved in firefighting, chemical application, and First Aid.

It is important to note that the data obtained from surveys and statistical research primarily reflects short-term requirements rather than long-term projections. To address this limitation, it is recommended that businesses receive ongoing support in understanding their long-term skill needs and training priorities, aligning them with their business and industry goals. In broad terms, key technologies such as AI, robotics, autonomous vehicles, and electric machinery and vehicles are expected to play a crucial role in the forestry and wood products industry, offering significant benefits in terms of productivity, efficiency, and sustainability. There does remain a need to conduct a dedicated study to comprehensively assess the future skill needs associated with new and emerging technologies in the forestry and wood products industry.

Industry sector	Skills/training needed	Targeted job roles
Forest Growing & Management	Use of information technology (GIS, remote sensing, forest inventory software, forest growth and yield modelling and simulation software, etc.) Leadership	Foresters; Forestry technicians
	Firefighting Chemical application First Aid Chainsaw 4WD	Forest workers
Harvesting & Haulage	Use of digital technology (mobile or handheld devices used in managing forestry field data, digital maps and forest operations plans, on-board technology and software) First Aid Workplace health and safety	Harvesting operators
Sawmilling & Processing (incl. Engineered Timber Products)	Leadership	Frontline and technically proficient production personnel
	Quality control Digital skills (data analysis)	Quality control/Optimisation technicians
	General sawmilling knowledge (how sawmilling works) Machinery such as forklift or log loaders	Production operators

Source: Murray Region Forestry Hub Survey data, 2022; and ABS Census of Population and Housing, 2021, TableBuilder

IDENTIFIED CHALLENGES IN WORKFORCE TRAINING & RECRUITMENT IN THE INDUSTRY IN THE MURRAY REGION FORESTRY HUB AREA

Workforce Training

The most common reasons in the industry for training are legislative, regulatory or licencing requirements; career development of individuals; skills development for improving quality of products/services; and creating a flexible and responsive workforce. The least common reason for training is to formalise skills into qualifications.

New recruits in the industry typically receive on-the-job training from an internal trainer, covering company inductions, manual handling and other health and safety requirements. External trainers are used for non-accredited training, with harvesting and haulage employers placing less emphasis on accredited training.

Training challenges

Employers face a variety of barriers to providing formal training, including time commitment, lack of qualified trainers and courses available locally, and training centres that are too far away. Other challenges include changes in training needs, insufficient number of learners to run a training course, lack of awareness of available options, and formal training not meeting their needs. They also noted poor record keeping and difficulty in tracking and confirming competencies as deficiencies in supporting their training efforts.

Ability to attract, recruit and retain workers

Recruiting strategies used by employers

The most common reason for employing new workers is to replace those who have left voluntarily, followed by replacing retirees and recruiting for company growth. Forestry businesses often recruit high school graduates or workers from other industries, while in the pulp and paper industry, the best option to fill skill gaps is to recruit experienced workers from overseas. Word of mouth is also used in harvesting and haulage due to the industry's small size.

Skills and attributes required for entry level positions

Employers seek candidates with the ability to work in a team and without supervision, a willingness to learn, and a 'cultural fit' when recruiting for entry-level positions. Young age is desirable, but work ethic, safety attitude, mechanical aptitude and cognitive ability are also important. Literacy and numeracy skills are the least sought-after attributes, but still important. Employers also place emphasis on mental health, a police check, a full medical drug test and random drug testing.

Recruitment challenges

Employers in the region are facing a significant challenge when it comes to attracting and recruiting workers, with a shortage of qualified applicants being the main issue. Public perception of the industry was also identified as a barrier. A different, independent study shows that half of the surveyed students have a somewhat or very positive sentiment towards the forest industry, yet a significant portion still lack knowledge about job roles. Wages were also indicated to be a challenge to recruitment in the industry, however, they were not found to be a relevant barrier as compared to other sectors in the region. Other recruitment challenges included access to housing, good schools, suitable

employment for family members, difficulty recruiting seasonal staff and mechanics, and a lengthy pathway from school to becoming a skilled harvesting operator. Medical fitness-for-work assessments were also reported to add complexity to the recruitment process.

Benefits and challenges of high retention rates

The industry records a high retention rate of mature workers. Nearly half of the workforce in the sawmilling and processing industry, as well as engineered wood product manufacturing, have been with their current employer for over 10 years – this is significantly higher than the quarter of all employees in New South Wales. This high rate of mature worker retention has a number of benefits for employers, such as a reliable and skilled workforce, and a reduced need for training new entrants. On the other hand, it can limit the opportunities for young people to join the industry, and lead to a lack of internal induction and training processes, as well as support for local training providers.

Source: *Murray Region Forestry Hub Survey data, 2022*

1 INDUSTRY PROFILE

The Murray Region Forestry Hub area has a long history of forestry, being also home to a range of other industries including agriculture, food and beverage processing, manufacturing, and tourism.

The region has a well-established wood products industry based on softwood plantations, primarily radiata pine. It covers around 178,800 ha of plantation estate, representing about 18% of Australia's softwood plantations. Annually, this area of plantation produces over 2.5 million m³ of logs, of which 90% is processed locally.⁴ The industry makes a significant contributor to the local economy, with a direct value of output of \$1.3 billion annually as of 2019.⁵ Many of the Mills in the Hub region also acquire log supplies from other regions.

The activity of the softwood plantation timber industry in the region is centred around the growing, management and harvesting of timber from these plantations, and the subsequent processing of timber into a variety of products including sawn timber for the construction industry, pulp and paper, packaging and value-added products such as cross-laminated timber and engineered wood products. Other softwood timber products include landscape sleepers and rounds, fence products, building poles and decking.

The region is home to several wood processing facilities comprising three large sawmills, several smaller sawmills, a globally competitive pulp and paper mill (note: one of two paper mills in the region was permanently closed in 2019), one particleboard plant, one medium density fibreboard plant, two structural plywood plants, one cross laminated timber plant, and several preservation plants. The preservation plants integrated with sawmills treat both sawn and round timber. The major wood processing facilities are located in the regional towns of Tumut, Tumbarumba, Wangaratta, Myrtleford and Benalla.

In addition, the region has a small but valuable presence of native forest hardwoods, with several companies involved in the sustainable harvesting and processing of native forest products for use in a variety of applications such as furniture making.

⁴ NSW Department of State and Regional Development, NA, Profile of the value of the timber industry in the south west slopes region of New South Wales. Retrieved from: http://forestindustrycouncil.com.au/factsheets/SWS_final_summary.pdf

⁵ Schirmer J., Mylek M., Magnusson A., and Morison J., 2020, Socio-economic impacts of the softwood plantation industry South West Slopes Forestry Hub Region, NSW and Vic.

2 WORKFORCE PROFILE

2.1 EMPLOYMENT

According to the 2021 ABS Census of Population and Housing, the forestry and wood products sectors in the Murray Region Forestry Hub area directly employs over 2,100 people. The regional and sector distribution of the industry's workforce is illustrated in Figures 1, 2 and 3 and Table 1.

Note: Caution is advised when using the Census data from Section 2, as it includes information on 200 jobs that are no longer available in the industry. This is due to the permanent closure of one of the two paper mills in the region, which occurred after the Census data collection in 2021 and resulted in 200 job losses⁶ in Albury/Wodonga.

Snowy Valley LGA is the largest employing region, with 44% (931) of the workforce, followed by Wodonga (14%, 288), Alpine (11%, 243) and Wangaratta (11%, 241).

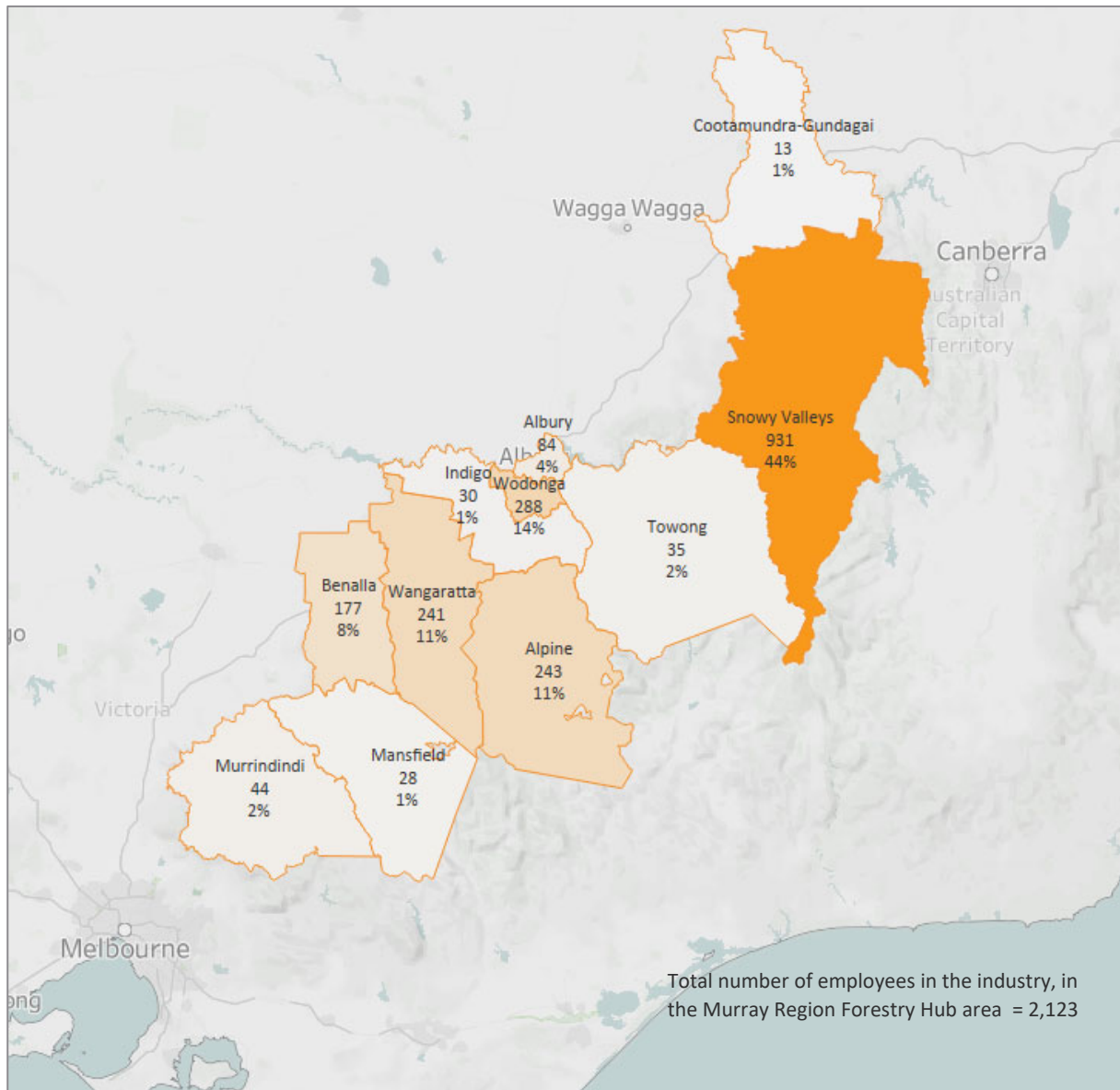
The pulp and paper mills and sawmilling in Snowy Valleys and Wodonga, as well as Wangaratta, Benalla and Alpine, employ over half (56%) of the industry's workforce. Forestry and harvesting operations employ 11% (234) and 8% (178) respectively, mainly in Snowy Valleys.

The remaining 34% (616) is engaged in the manufacturing of wood products, including engineered wood products, wooden structural fittings and framing components for building construction (such as roof trusses, doors, wood-framed doors, wall and window frames, shop fronts and joinery including kitchen fittings for buildings) and forestry support services, primarily in Wangaratta, Alpine, Benalla, Snowy valleys, Albury and Wodonga.

To be noted that all the data sourced from the 2021 Census of Population and Housing refers to logging as harvesting operations. Log haulage is not included. The ANZSIC classification specifies that logging only encompasses harvesting activities. The transportation of logs is classified under Road Freight Transport along with other services involved in road-based freight transportation.

⁶ Aldridge, A. & Moon, S. (2019, Oct 4). Almost 200 jobs cut as Norske Skog sells its Albury site to Australian paper giant Visy. *ABC News*. <https://www.abc.net.au/news/2019-10-04/norske-skog-visy-sale-albury-paper-mill-to-close-183-jobs-lost/11574476>

Figure 1: Employment level and distribution in the industry in the Murray Region Forestry Hub area by local government area (LGA), 2021, (no, % of total in the region)



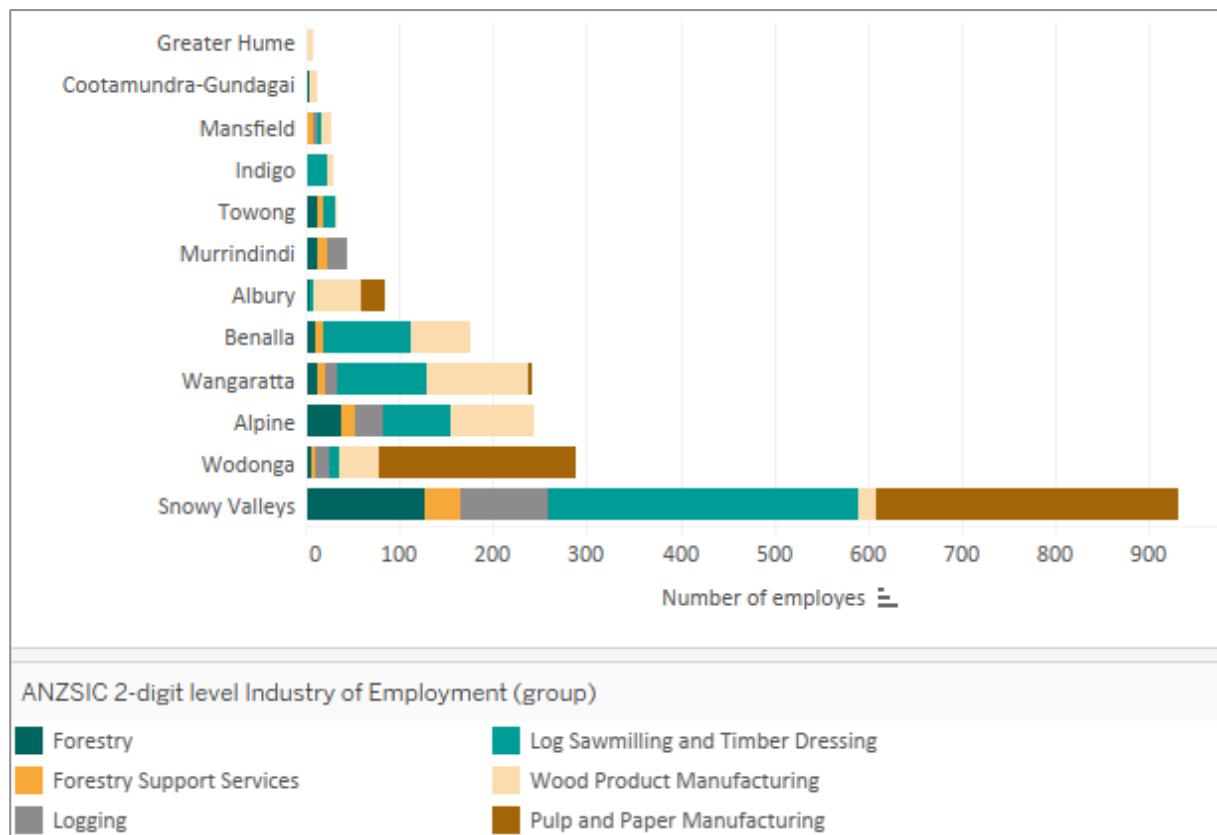
Source: ABS Census of Population and Housing, 2021, TableBuilder

Table 1: Employment level in the Murray Region Forestry Hub area versus New South Wales by industry sector, 2021

ANZSIC 2-digit level Industry of Employment	Number of employees		% of NSW
	NSW	Murray Region Forestry Hub area	
Forestry and Logging	1,701	412	24%
Forestry Support Services	1,174	97	8%
Log Sawmilling and Timber Dressing	1,977	643	33%
Wood Product Manufacturing	7,082	410	6%
Pulp and Paper Manufacturing	3,775	561	15%
Total	15,709	2,123	14%

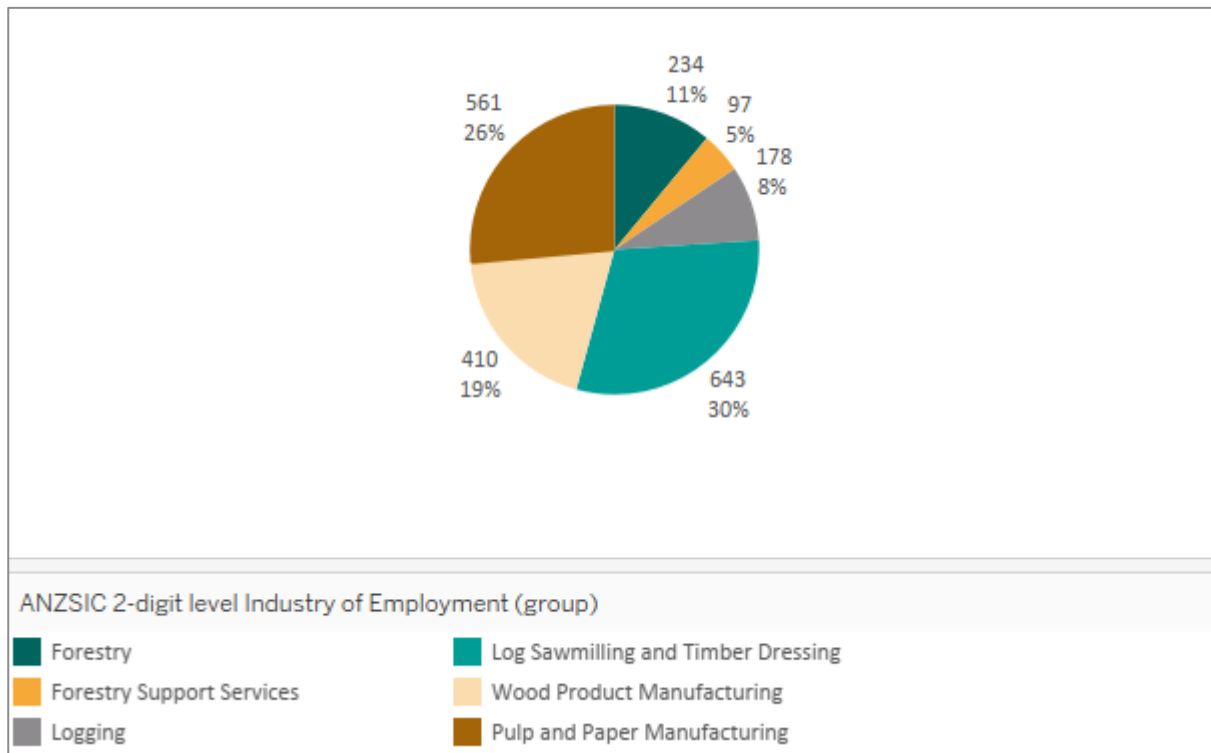
Source: ABS Census of Population and Housing, 2021, TableBuilder

Figure 2: Employment in the Murray Region Forestry Hub area by local government area (LGA) and industry sector, 2021



Source: ABS Census of Population and Housing, 2021, TableBuilder

Figure 3: Employment in the Murray Region Forestry Hub area by industry sector, 2021



Source: ABS Census of Population and Housing, 2021, TableBuilder

2.2 WORKFORCE DIVERSITY

Workforce diversity is essential to ensure that the industry can draw on and benefit from the skills, perspectives, and experiences of a diverse range of people while also providing better representation of the broader population. Additionally, diversity can create a more inclusive workplace.

The data below shows that the forest and wood products industry in the Murray Region Forestry Hub area has a workforce that is largely middle-aged and close to retirement age, with a small fraction of younger workers. Women make up only 12% of the workforce, and Aboriginal people have a very low representation with only 2%.

2.2.1 Age distribution

The industry in the Murray Region Forestry Hub area employs a large proportion of middle-aged and people close to retirement age. Roughly half (48%) of its workforce is in the 40 and 60 age range and 14% is over 60 and close to retirement. The remaining 38% of the workforce is under 40, with only 2% aged 19 and younger.

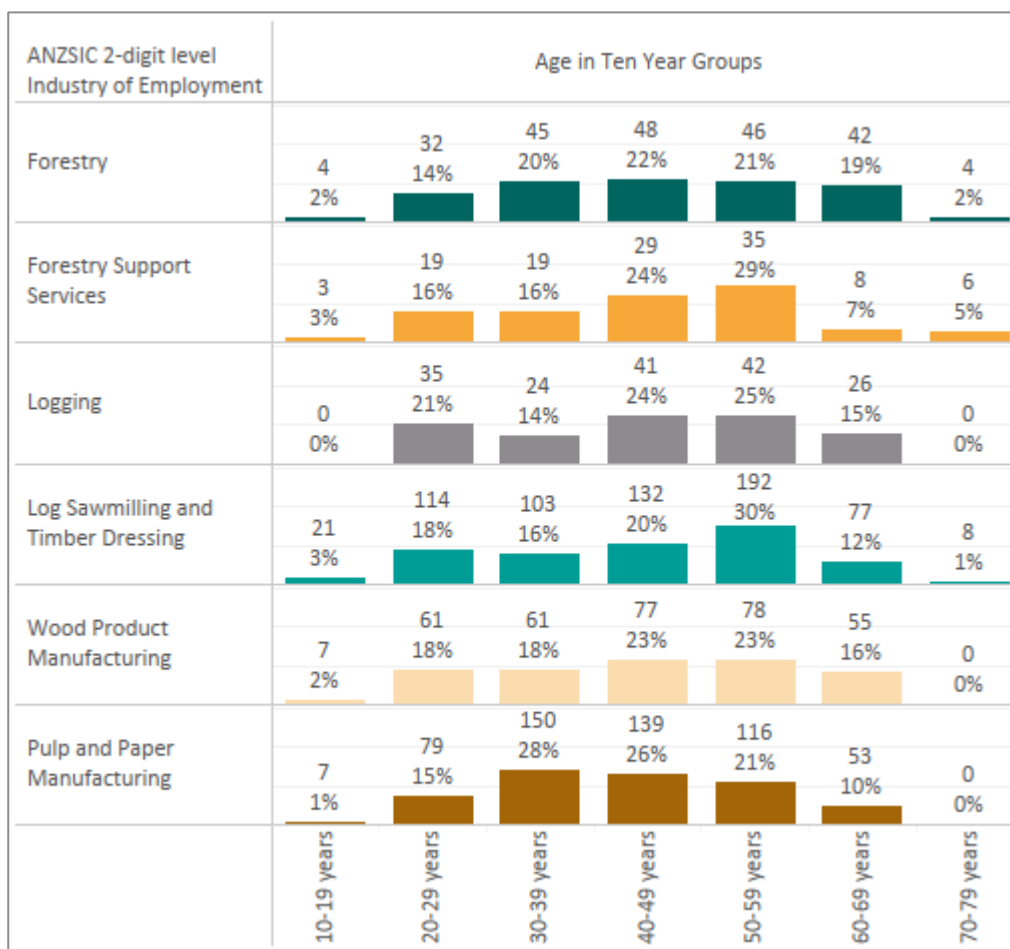
Figure 4 shows the age distribution of the workforce in each industry sector. Forestry has the highest proportion of workers over 60 (21%), while harvesting (excluding haulage) has a higher proportion in the 20 to 30 age range (21%), and pulp and paper manufacturing has a higher proportion in the 30 to 40 age range (28%).

Possible explanations for why people aged under 19 have very low participation rates could be:

- 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.

Figure 4: Workforce age distribution in the Murray Region Forestry Hub area by industry sector, 2021



Source: ABS Census of Population and Housing, 2021, TableBuilder

2.2.2 Gender

Women have been significantly underrepresented in Australia's forest and wood products industry. From 2016 to 2021, their participation grew only slightly, from 11% to 18%.⁷

In the Murray Region Forestry Hub area, the proportion of women in the industry's workforce is 12%, below the national average. However, they represent 20% and 28% of the workforce in forestry and

⁷ Australian Bureau of Statistics. (2021). 2021 Census of Population and Housing. Accessed via TableBuilder in January 2023.

forestry support services, respectively. Women make up only 8% of the workforce in the manufacturing of wood products and pulp and paper (Table 2).

Table 2: Women workforce participation in the Murray Region Forestry Hub area by industry sector, 2021

ANZSIC 2-digit level Industry of Employment	Gender			
	Female		Male	
	Employees (No)	Proportion (%)	Employees (No)	Proportion (%)
Forestry	45	20%	182	80%
Forestry Support Services	32	28%	83	72%
Logging	28	17%	139	83%
Log Sawmilling and Timber Dressing	72	11%	564	89%
Wood Product Manufacturing	32	8%	352	92%
Pulp and Paper Manufacturing	43	8%	517	92%
Total	252	12%	1,837	88%

Source: ABS Census of Population and Housing, 2021, TableBuilder

2.2.3 Aboriginal and Torres Strait Islander participation

Aboriginal people make up 2% (41 people) of the workforce in the forest and wood products sectors in the Murray Region Forestry Hub area. Log sawmilling and pulp and paper manufacturing have the highest number of workers of Aboriginal descent with approximately 15 people each. However, this represents a very low proportion of the total number of employees in these sectors (Table 3).

There are no records of Torres Strait Islanders working in the forest and wood products industry in the region.

Table 3: Aboriginal workforce participation in the Murray Region Forestry Hub area by industry sector, 2021

ANZSIC 2-digit level Industry of Employment	Indigenous Status			
	Aboriginal		Non-Indigenous	
	Employees (No)	Proportion (%)	Employees (No)	Proportion (%)
Forestry	4	2%	224	98%
Forestry Support Services	3	3%	93	97%
Logging	5	3%	170	97%
Log Sawmilling and Timber Dressing	15	2%	634	98%
Wood Product Manufacturing	0	0%	395	100%
Pulp and Paper Manufacturing	14	3%	531	97%
Total	41	2%	2,046	98%

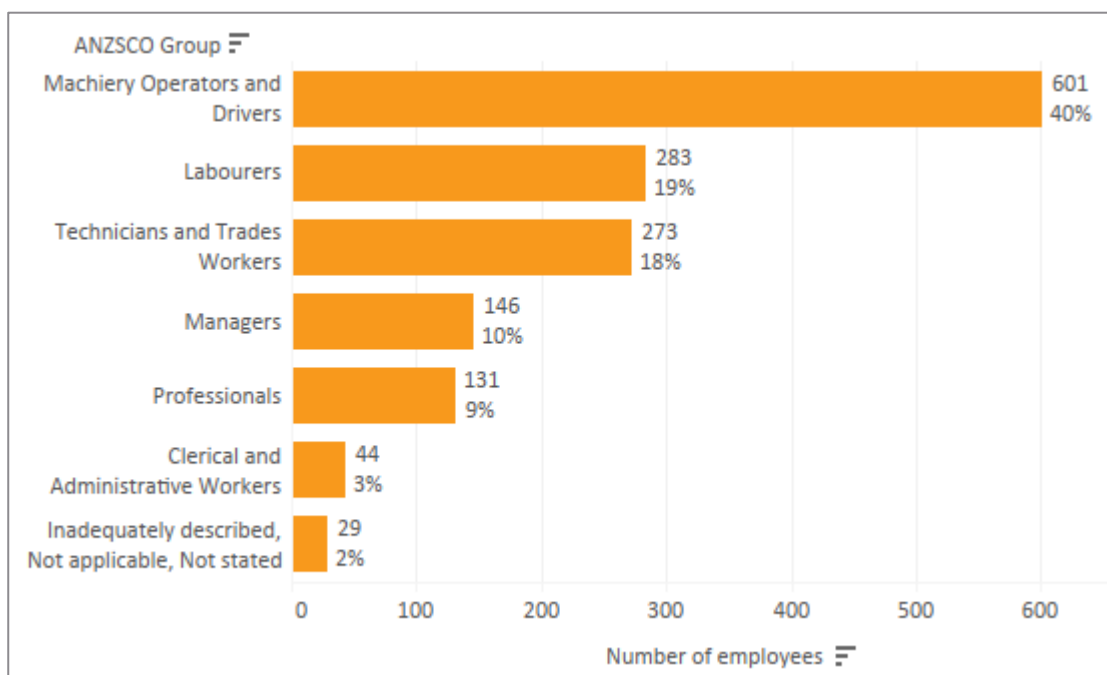
Source: ABS Census of Population and Housing, 2021, TableBuilder

2.3 CURRENT JOB ROLES

The largest occupation group in the forest and wood products industry in the Murray Region Forestry Hub area is machinery operators and drivers accounting for 40%, followed by labourers (19%), technicians and trade workers (18%) and managers (10%) (

Figure 5). This data is consistent with the Murray Region Forestry Hub survey, which also reports that skilled workers such as operators of specialised machinery or equipment and truck drivers make up a combined 47% of the workforce (46% and 1%, respectively). However, it is worth noting that this figure may include some production support employees (laborers) reported by certain survey respondents. Labourers account for 15%, while technicians and trades workers (including fitters, mechanics, electricians, wood machinists, and saw technicians) make up 12% of the workforce. Management, sales, and administrative responsibilities are shared by 25% of the workforce.

Figure 5: Distribution of occupation groups in the industry in the Murray Region Forestry Hub area, 2021



Source: ABS Census of Population and Housing, 2021, TableBuilder

Table 4 presents a breakdown of the main occupations in terms of employment size and industry sector.

Over half (56%) of the forestry workforce is made up of professional foresters, forestry workers and harvesting plant operators (23%, 18% and 15%, respectively).

In harvesting, the workforce is dominated by truck drivers, log plant operators, fitters, and motor mechanics, who together make up two-thirds (69%) of the workforce.

Log sawmilling and timber dressing employ 34% machinery operators and forklift drivers, while 25% of the workforce consists of timber yard and sawmill/wood products manufacturing workers. Trade workers and technicians, such as electricians, wood machinists, fitters, and saw doctors make up 12% of this sector’s workforce.

In pulp and paper manufacturing, paper products machine operators, forklift drivers, and truck drivers account for 39% of the workforce, followed by professional engineers with 10% and trade workers such as electricians, fitters, and other technicians with 8%.

Table 4: Main occupations in the Murray Region Forestry Hub area by industry sector, 2021

Industry sector	ANZSCO Group	ANZSCO 6-digit level Occupation	Employees (No)	Proportion (%)
Forestry	Machinery Operators and Drivers	Logging Plant Operator	20	15%
		Labourers	25	18%
	Managers	Finance Manager	5	7%
		Production Manager (Forestry)	5	
	Professionals	Forester	31	23%
	Other*		50	37%
	Sub-total		136	100%
Forestry Support Services	Labourers	Forestry Worker	13	26%
	Managers	Production Manager (Forestry)	6	12%
	Professionals	Forester	8	16%
	Clerical and Administrative Workers	General Clerk	5	10%
	Other*		18	36%
		Sub-total		50
Logging	Machinery Operators and Drivers	Logging Plant Operator	39	56%
		Truck Driver (General)	24	
	Labourers	Tree Faller	6	5%
	Technicians and Trades Workers	Fitter (General)	7	13%
		Motor Mechanic (General)	8	
	Professionals	Forester	10	9%
Other*		19	17%	
	Sub-total		113	100%
Log Sawmilling and Timber Dressing	Machinery Operators and Drivers	Forklift Driver	48	34%
		Other Wood Processing Machine Operator	40	
		Sawmilling Operator	61	
		Machine Operators nec	11	
		Stationary Plant Operators nec	11	
	Labourers	Sawmill or Timber Yard Worker	98	25%
		Wood and Wood Products Factory Worker	17	
		Product Assembler	8	
		Electrician (General)	15	
		Wood Machinist	9	
	Technicians and Trades Workers	Saw Doctor	7	12%
		Architectural, Building and Surveying Technicians nec	7	
		Fitter (General)	6	
		Carpenter	5	
		Fitter and Turner	5	
	Managers	Fitter-Welder	5	4%
		Production Manager (Manufacturing)	17	
		Managers nfd	5	
	Clerical and Administrative Workers	Despatching and Receiving Clerk	7	2%
		Office Manager	5	
Other*		109	22%	
	Sub-total		496	100%

Industry sector	ANZSCO Group	ANZSCO 6-digit level Occupation	Employees (No)	Proportion (%)
Wood Product Manufacturing	Machinery Operators and Drivers	Forklift Driver	12	28%
		Other Wood Processing Machine Operator	29	
		Machine Operators nfd	8	
		Crane, Hoist or Lift Operator	7	
		Boiler or Engine Operator	5	
		Sawmilling Operator	5	
	Labourers	Sawmill or Timber Yard Worker	8	6%
		Packers nfd	6	
	Technicians and Trades Workers	Cabinetmaker	55	34%
		Electrician (General)	14	
		Fitter (General)	8	
	Managers	Joiner	5	8%
		Production Manager (Manufacturing)	13	
	Other*	Manufacturer	5	25%
		Sub-total	240	
Pulp and Paper Manufacturing	Machinery Operators and Drivers	Paper and Pulp Mill Operator	73	39%
		Paper Products Machine Operator	57	
		Forklift Driver	28	
		Truck Driver (General)	21	
		Machine Operators nfd	5	
	Labourers	Paper and Pulp Mill Worker	14	8%
		Factory Process Workers nfd	9	
		Commercial Cleaner	8	
		Product Tester	7	
	Technicians and Trades Workers	Electrician (General)	15	9%
		Fitter (General)	14	
		Metallurgical or Materials Technician	8	
		Maintenance Planner	6	
	Managers	Production Manager (Manufacturing)	25	7%
		Sales and Marketing Manager	5	
		Supply and Distribution Manager	5	
	Professionals	Production or Plant Engineer	29	10%
		Mechanical Engineer	9	
		Engineering Professionals nfd	5	
		Industrial Engineer	5	
Other*		88	19%	
Sub-total		472	100%	
Sub-total		1,507	71%	
Not stated or able to be classified		616	29%	
Total		2,123	100%	

* Other include occupations in which the industry employs 4 or less people in the Murray Region Forestry Hub area according to the 2021 ABS Census of Population and Housing.

Source: ABS Census of Population and Housing, 2021, TableBuilder

3 WORKFORCE DEMAND

This section provides an analysis of the labour gaps within the forest and wood products industry in the Murray Region Forestry Hub area. The evaluation looks at the current and future labour shortage, predicted labour demand, and upcoming retirements. Data collected from the industry survey reveals that the labour shortage, the competition for labour from other sectors, the effects of the COVID-19 pandemic, the bushfires, the replanting program for fire-affected plantations and the forthcoming retirements are all contributing factors to the current and upcoming labour gaps in the industry.

3.1 LABOUR SHORTAGE

Results from the industry survey indicate that filling essential roles in forestry, wood and paper products manufacturing is an ongoing challenge. These positions include foresters, harvester operators, diesel mechanics, mechanical fitters, electricians and truck drivers, all of which require highly skilled professionals. Many of these roles are transferable across industries. Additionally, the survey revealed a shortage of boiler operators, engineers (electrical, mechanical, installation), DCS/automation engineers, and truck drivers in pulp and paper manufacturing (Table 5). The largest mill in the region reported that it has been struggling to reach full employment since 2018, as many of its younger members of the workforce have left to pursue higher education.

Over half of the survey respondents reported difficulty when it comes to these positions, while more than 70% anticipate that the labour shortage will remain unchanged over the next five years.

Labour competition from other industries, a lack of younger workers within the regional labour market to train, and the COVID pandemic have all contributed to the labour shortage. This means that businesses may need to recruit from outside the region, or invest in training for existing employees, in order to meet their labour needs. This skill shortage affects the business's ability to grow or access new markets, in addition to other external challenges that have a negative effect on businesses (Attachment 3).

An analysis of the available qualifications for upskilling existing and new workers to address the labour shortage for these critical job roles in the industry has been conducted. This information is provided in Attachment 4 and includes the ANZSIC occupation code and name, the skill level, and the availability of the qualification to be delivered as an apprenticeship or traineeship. Additional roles were selected based on their prevalence in each sector and estimates of numbers exiting the industry. The contact details of the significant registered training providers offering this training as a qualification are also provided in Attachment 5. Notably, no registered training providers can currently deliver formal accredited training in pulp and paper manufacturing qualifications. However, Timber Training Creswick is in the process of obtaining registration for these qualifications.

Table 5: Labour shortage (occupations difficult to fill) in the Murray Region Forestry Hub area by industry sector, 2022

Industry sector	Occupation
Forest Growing & Management	Forester
	Plant operator
Harvesting & Haulage	Log truck driver
	Machine operator, particularly for harvester and forwarder
	Mechanic (Diesel)
	Office staff
Sawmilling & Processing (incl. Engineered Timber Products)	Workshop trade worker (fitters/machinists/mechanics)
	Specialist sawmilling machine operator
	Electrician
Pulp, Paper & Paperboard Manufacturing	Boiler operator
	Engineer (electrical, mechanical, installation)
	DCS/automation engineer
	Truck driver (long haul)

Source: Murray Region Forestry Hub Survey data, 2022

3.2 FUTURE DEMAND FOR LABOUR

The bushfires caused extensive damage to the plantations around Tumut and Tumbarumba, leading to a significant decline in harvesting and local timber supply over the next ten years until the fire-affected plantations regrow. This has resulted in a reduction in the number of harvesting jobs available in the region. The processing production capacity and jobs are expected to remain unaffected while the local timber supply is able to be supplemented with timber from other regions (i.e. Bombala, Central West and Northern NSW).⁸ However, survey reports highlighted the need to hire mill supervisors and general mill labour in the future to cover the gaps left by retirements (Table 6).

In the past two growing seasons, millions of pine seedlings have been cultivated and planted to replant softwood plantations destroyed by fire. This replanting program is projected to be completed by 2026⁹, and will require additional nursery workers, tree planters, silviculture/maintenance personnel, and foresters.

Additionally, the survey results showed that the paper mill is looking to hire more specialist machine operators, recovery digester operators, and technicians over the next five years to meet production targets.

⁸ https://www.forestrycorporation.com.au/data/assets/pdf_file/0008/1436390/forestry-corporation-annual-report_FY22.pdf

⁹ Ibid.

Table 6: Labour demand (occupations for which additional recruitment is expected) over the next five years in the Murray Region Forestry Hub area by industry sector, 2022

Industry sector	Occupations
Forest Growing & Management	Foresters/forest scientists
	General field workers (e.g., nursery, fire, silviculture, maintenance)
Harvesting & Haulage	Nil
Sawmilling & Processing (incl. Engineered Timber Products)	Mill supervisors
	General mill labourers
Pulp, Paper & Paperboard Manufacturing	Senior management in pulp mill
	Specialist machine operators
	Recovery digester operators and technicians

Source: Murray Region Forestry Hub Survey data, 2022

3.3 FUTURE LABOUR GAPS DUE TO RETIREMENTS

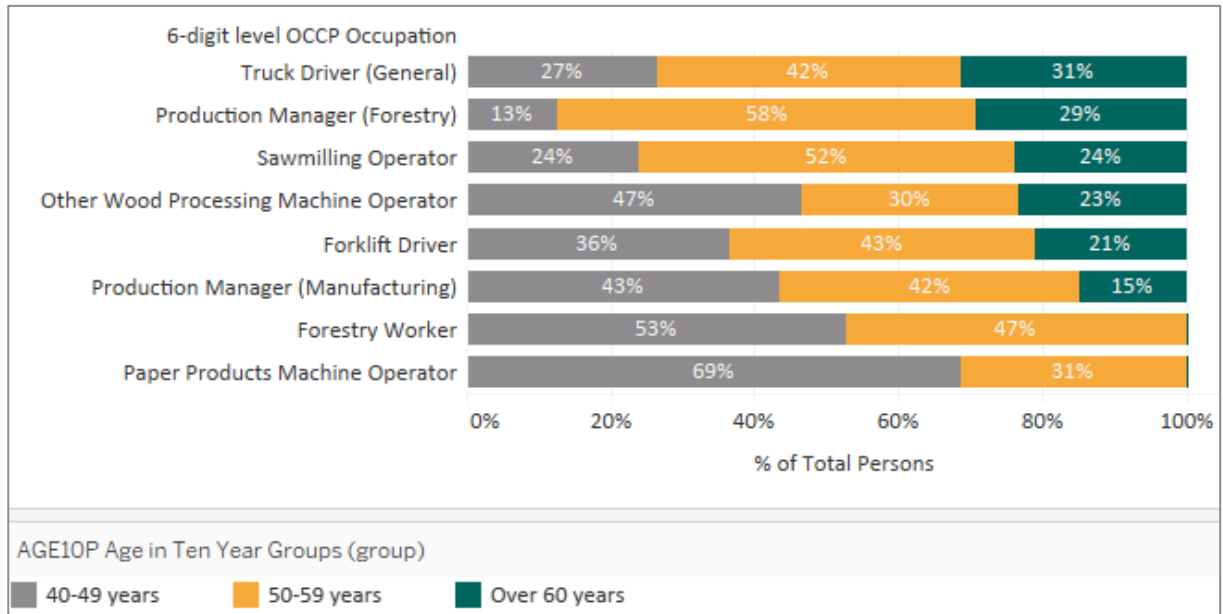
Data for the region shows that 14% of the industry's total workforce, or approximately 300 skilled workers, are aged 60 or above and expected to retire in the next five years (Section 3.2.1). This poses a challenge for managing future workforce needs, as those departing will take with them valuable skills, knowledge, experience and relationships. This leaves a considerable gap in the workforce that must be addressed.

Survey respondents identified the ageing workforce as having the second-most negative impact on their business, behind the difficulty in attracting new employees. Only three employers reported a slightly lower impact of the ageing workforce on their business.

Most respondents in the forestry sector reported concerns regarding the ageing of the workforce and a limited capacity to attract and retain new workers. In harvesting and haulage, 20% of respondents indicated that the ageing workforce has a detrimental effect on their operations, although it is not yet a challenge. Half of sawmilling and processing respondents (including engineered wood products) also reported that the workforce is ageing and it is difficult to retain employees. The age of the workforce was also reported as a major concern in pulp and paper manufacturing, particularly in the highly specialised and highly regulated field of recovery boiler.

Additionally, the 2021 ABS Census of Population and Housing data was analysed to identify the cohorts in the Murray Region Forestry Hub area that are in high-employing occupations in the industry and likely to retire in the next decade. The scope of this analysis was expanded to include all industries in the region that employ some of these occupations, such as construction, manufacturing and transport and logistics, to understand their mobility between industries and employers. The results, presented in Figure 6, indicate a regional ageing workforce in job roles essential to the forestry and timber industries including truck drivers (not just log truck drivers), forklift operators, and production managers (in manufacturing roles).

Figure 6: Industry occupations in the Murray Region Forestry Hub area by age group, 2021



Source: ABS Census of Population and Housing, 2021, TableBuilder

4 SKILLS AND TRAINING NEEDS

This section identifies the current and future skills and training needs in the forestry and timber processing industry in the Murray Region Forestry Hub area in the years ahead and explore the type of support services required by businesses to help in the development of their workforce.

Survey results show that businesses in the forestry industry are committed to ongoing employee development. They require training to fill current and future workforce demands, meet licencing requirements and safety obligations, and provide workers with the necessary skills and knowledge for the effective use of new technology. This includes expertise in GIS, remote sensing, satellite imagery, LiDAR, forest inventory, forest growth and yield modelling, sensors, drones, project management, financial controls, and supply chain management software. Additionally, there is an increasing demand for harvesting operators with digital mapping and handheld device skills, and softwood sawmills are looking to create roles in data analysis, optimisation, and lean manufacturing. Forestry and timber processing operators will need leadership and compliance skills, as well as regular training to obtain permits and uphold safety regulations. Survey results indicate businesses seek support services such as government training subsidies, quality training programs, coordination of training, online training, and career pathway information.

4.1 SKILL DEVELOPMENT NEEDS

Businesses in the industry are committed to ongoing employee development. Many businesses use internal resources and expert staff to provide on-the-job instruction for the majority of skill areas. Additionally, they use external training providers for specialised apprenticeships and traineeships such as mechanics, wood machinists, saw technicians, harvesting machine operations, and other mobile plant operations requiring a permit. Formal training and qualifications are sometimes also used to upgrade, recognise, and assess the skills of current employees for promotion or to enable them to develop their careers by taking on a new position within the organisation.

Looking ahead, businesses will need training to fill the current and future workforce demand or gaps identified in the previous section. Additionally, they will need training to provide workers with the necessary skills and knowledge for effective and efficient operations, either due to licencing requirements and safety obligations or to fill skill gaps in relation to operations and the effective use of new technology. Table 7 outlines the skill and training areas businesses are focusing on now and in the future, which are further detailed below.

Technology and digital skills

In the years to come, managing plantations will be heavily reliant on a skill set in both technology and digital data. This includes a wide range of software and technologies, such as GIS, remote sensing, satellite imagery, LiDAR, forest inventory, forest growth and yield modelling, sensors, drones, project management, financial controls, and supply chain management software.

To use these technologies effectively, forestry technicians and managers need knowledge of GIS software, geospatial data formats, coordinate systems and projections, spatial analysis, and cartography and map design. They should also be familiar with remote sensing data types, pre-processing, interpretation and integration of remote sensing data with GIS data. Additionally, they need to understand forest inventory methods, forest growth and yield modelling, and sensor technologies such as drones, sensor- and computer-equipped harvesters, and automated machinery. Moreover, they should understand data processing and analysis methods, be able to interpret and

visualise data using software, and have knowledge of project management, financial controls, and supply chain management software.

With these skills and technology, forestry technicians and managers will be able to efficiently map and analyse forestry data, collect, and analyse forest inventory data, optimise harvesting operations, maximise value recovery, improve wood flow logistics, detect changes in forest health and monitor forest fires and wildlife.

The demand for harvesting operators with the ability to read and comprehend digital maps and forest operation plans is also growing, as is the need to be able to use handheld devices (like smartphones, PDAs, portable media players, electronic organisers, and data loggers) to access, store, and share forest data. It is also increasingly important to have the skills to use on-board computers and software on harvesters and forwarders to attain maximum yield during harvesting and haulage.

Softwood sawmills reported a greater emphasis on quality control through the use of scanning and drying technologies, process automation and other measures. This will result in the creation of new job roles and training opportunities with a focus on data analysis, optimisation, and lean manufacturing, such as technicians who will be responsible for quality control and continuous improvement taking the place of manual timber graders. Additionally, sawmills are planning to improve the skills of their process operators by providing them with a general knowledge of sawmill operations and the ability to interpret data generated by technology.

Leadership skills

It is recognised that foresters in managerial roles, whether at the district level or in smaller forests, require stronger leadership skills to effectively manage interpersonal relationships with contractors. A large portion of their time is dedicated to organising, scheduling, supervising, and monitoring the performance of contractors, as well as managing their attitudes and behaviours.

Leadership skills are also needed in timber processing organisations to help frontline and technically proficient production personnel become future leaders.

Compliance skills

Survey results suggest that training will be necessary for the coming years not only for forestry but also for timber processing operators that are involved in using high-risk machinery to obtain a permit for forklift driving, chainsaw use, or operating other hazardous equipment. Additionally, regular training is essential for those involved in firefighting, chemical application, and First Aid in order to ensure a safe work environment and uphold safety regulations.

Table 7: Future skills and training needs for existing employees in the Murray Region Forestry Hub area by industry sector, 2021

Industry sector	Required skills/training	Targeted job roles
Forest Growing & Management	Use of information technology (GIS, remote sensing, forest inventory software, forest growth and yield modelling and simulation software, etc.)	Foresters; Forestry technicians
	Leadership	
	Firefighting	Forest workers
	Chemical application	
	First Aid	

Industry sector	Required skills/training	Targeted job roles
	Chainsaw 4WD	
Harvesting & Haulage	Use of digital technology used in forestry and harvesting operations (mobile or handheld devices used in managing forestry field data, digital maps and forest operations plans, on-board technology and software) First Aid Workplace health and safety	Harvesting operators
Sawmilling & Processing (incl. Engineered Timber Products)	Leadership	Frontline and technically proficient production personnel
	Quality control	Quality control/Optimisation technicians
	Digital skills (data analysis)	
	General sawmilling knowledge (how sawmilling works) Licence to drive a forklift, Caterpillar & other machinery	Production operators
Pulp, Paper & Paperboard Manufacturing	Senior management in pulp mill Specialist machine operators Recovery digester operators and technicians	

Source: Murray Region Forestry Hub Survey data, 2022

Skills and jobs of the future

The Australian Skills Classification identifies ten core competencies that are common to all jobs: numeracy, digital engagement, teamwork, writing, reading, learning, problem solving, oral communication, planning and organizing, and initiative and innovation.

The jobs that require a person to have highly skilled or advanced core skills, in particular the oral and written communication skills, are less likely to be automated. The National Skills Commission¹⁰ determined that the skills clusters that are expected to be least affected by automation include:

- Teaching and education;
- Environmental management; and
- Human resources.

The skills clusters most likely to be automated are:

- Materials transport (including truck driving);
- Agriculture and animals (which will include the growing of trees);
- Work activities preparation; and

¹⁰ National Skills Commissioner 2021 Insights series: *Automation and the future*.

- Production processes and machinery.

In general, the more post-secondary education that is required of an occupation, the less likely it is to be subject to automation.

Although automation may replace some occupations that require lower skills levels, it will in turn create opportunities and growth in other areas. The National Skills Commissioner¹¹ identified that the ‘big picture’ trends in the labour market for the next decade revolve around ‘The Four Cs’, being:

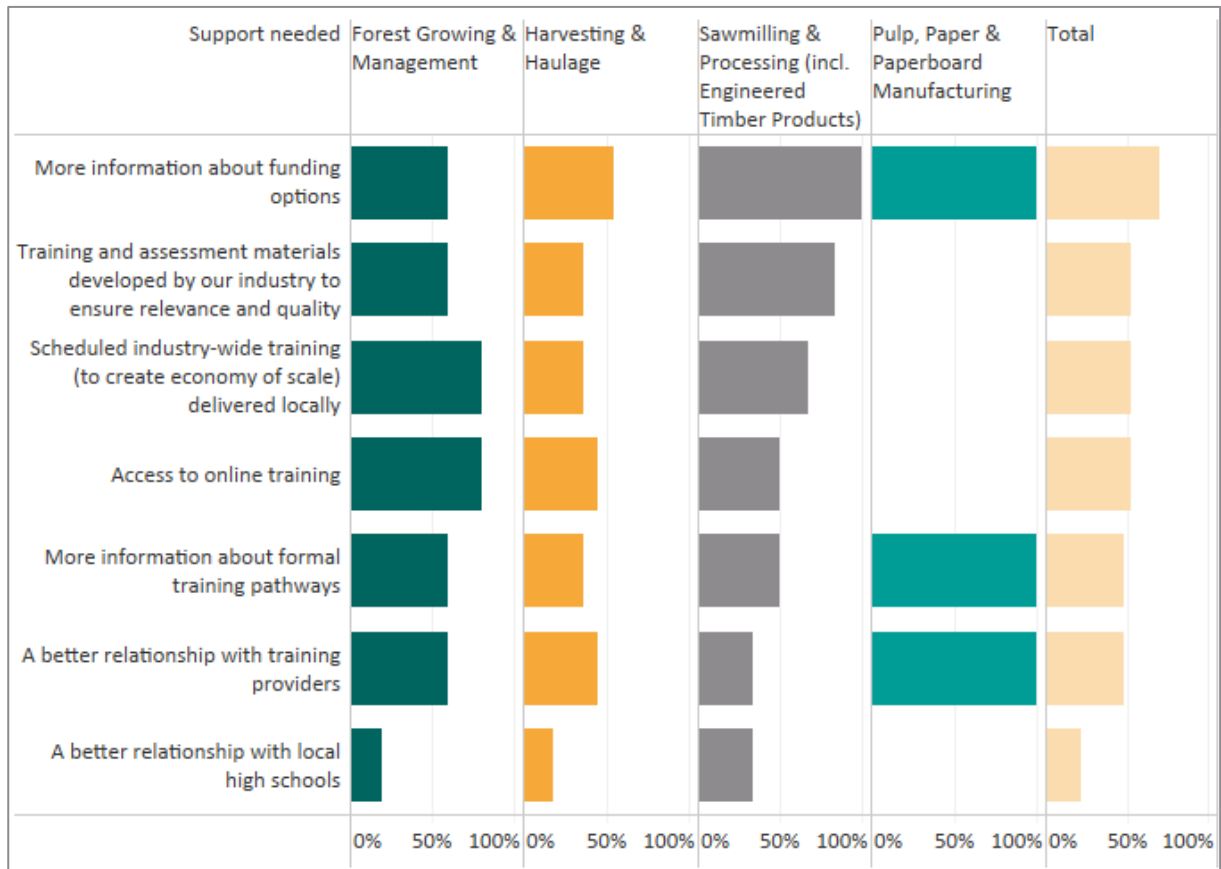
- Care for an ageing population. This is not likely to affect the forest and timber industry directly, unless workplaces need to make allowances for an ageing workforce to retain the labour supply;
- Computing, including digital skills, which are one of the key emerging skills groups identified;
- Cognitive ability, which refers to non-routine jobs that require high-order thinking skills; and
- Communication.

4.2 SUPPORT NEEDED FOR WORKFORCE TRAINING AND DEVELOPMENT

Survey results show that businesses seek a variety of support services when it comes to workforce development. These services include information about government training subsidies, quality training programs relevant to their skill needs, coordination of training, online training, and information about career pathways in the industry. By accessing such services, businesses can make informed decisions about their workforce.

¹¹ National Skills Commissioner 2021 Insights series: *Skills and jobs of the future – the Four Cs*.

Figure 7: Support needed for workforce training and development in the Murray Region Forestry Hub area by industry sector, 2022 (% of surveyed businesses)



Source: Murray Region Forestry Hub Survey data, 2022

5 WORKFORCE TRAINING

This section explores how employers in the industry address skills gaps in their workforce, reasons for investing in training as well as barriers to training.

The findings are based on the Murray Region Forestry Hub Survey, which found that the most common methods of addressing skills gaps were providing accredited and non-accredited training to existing workers, recruiting experienced workers and/or outsourcing skills. Reasons for undertaking training included compliance, career development, and improving quality of products and services. Survey results revealed that the majority of new recruits receive on-the-job training from an internal trainer, with external trainers being used for non-accredited training in some cases. There is some demand for apprenticeships and traineeships in the industry in the region. In the last year, some employers employed apprentices or trainees and plan to do so again in the next two years. Barriers to building skills through formal training, such as time commitment, lack of suitable trainers and training centres that are too far away, were also identified. The study also demonstrates that employers prioritise skills that meet their organisational needs rather than seeking formal qualifications. The full survey results are presented in detail below.

5.1 TRAINING OF EXISTING WORKERS

Survey results suggest that skills gaps are addressed mostly through providing accredited (formal) and non-accredited (informal) training to their existing workforce, as well as by recruiting experienced workers and/or outsourcing skills (Figure 8).

The majority of employers are investing in training existing workers mostly through non-accredited training in order to fill gaps in skills and knowledge, with the expectation of a return on investment in terms of improved productivity and commercial outcomes.

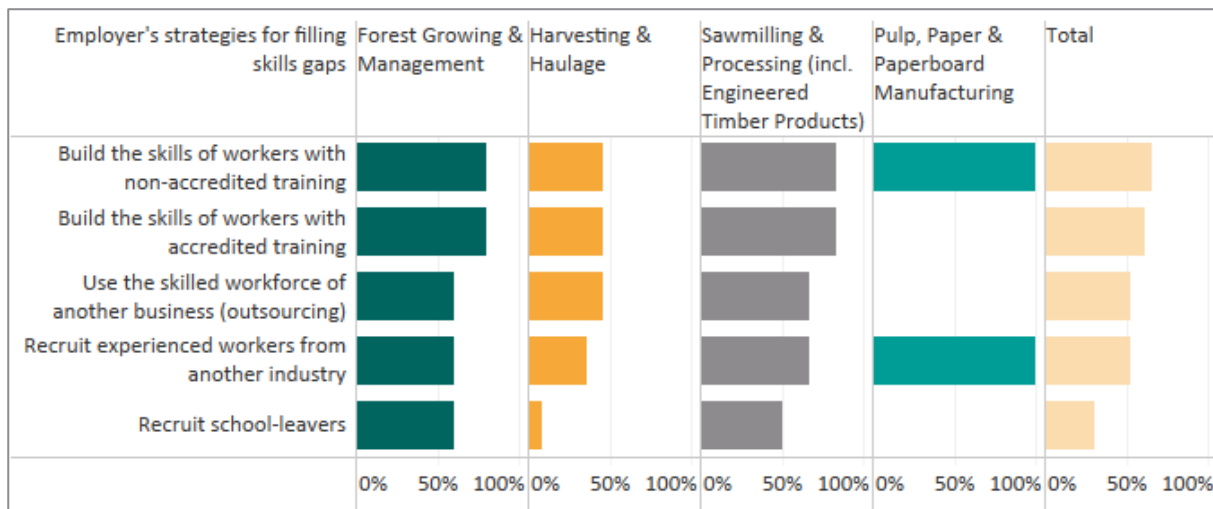
Operators in timber mills typically receive non-accredited, in-house training. However, accredited training is provided for compliance-related tasks such as operating a forklift or a chainsaw and working at heights. Additionally, some businesses use accredited training to train trade workers, noting that trade jobs such as fitters and electricians are generally outsourced. Notably, one participant stated that, 5-6 years ago, their operators took the Certificate III in Competitive Practices, and the managers took the Certificate IV in Competitive Practices.

An issue noted by a respondent in the forestry sector was that they had difficulty arranging training for existing workers. Another respondent noted a training system that existed in Albury a decade ago (having a section of plantation designated for the training of harvesting operations, without the emphasis on meeting production quotas) served the region effectively in helping to fill skill gaps.

The most frequently cited reasons for training were legislative, regulatory or licencing requirements; career development of individuals; improving quality of products/services; and creating a flexible and responsive workforce (Figure 9). One of the respondents to the survey noted that training is given to ensure employees are safe, productive, and aware of how to address any problems that may arise. It was also noted that having the necessary skills leads to increased employee engagement and retention.

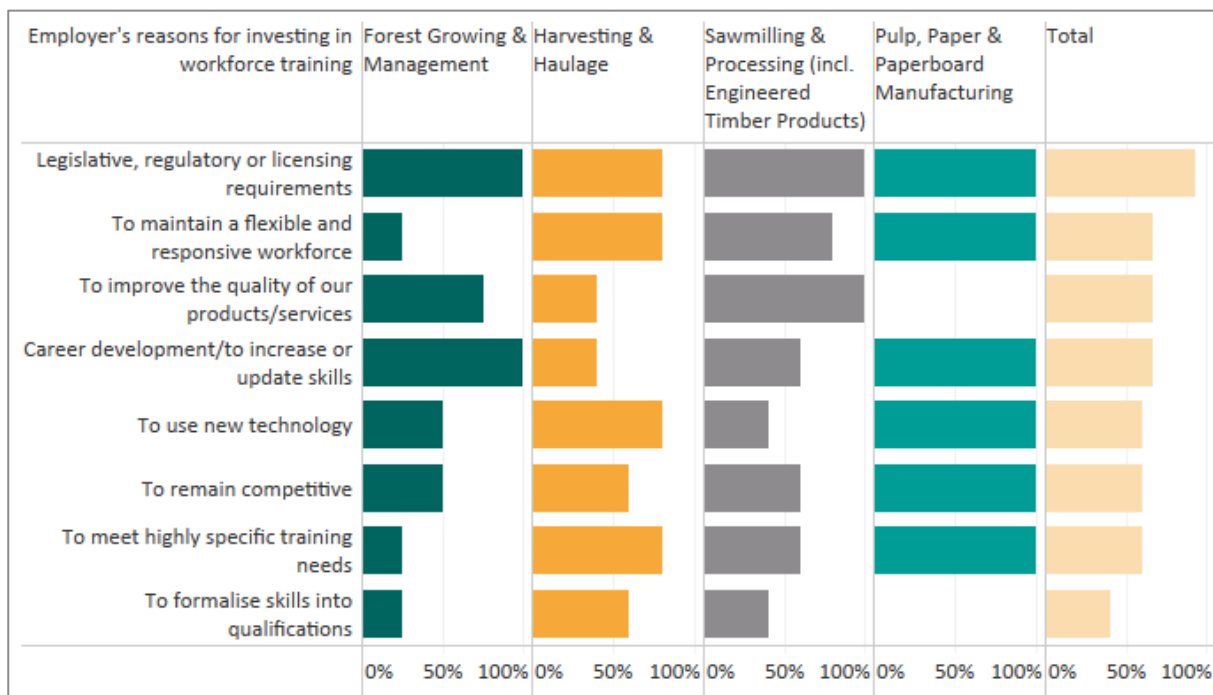
The least common reason for training was to formalise skills into qualifications, which indicates that employers prioritise skills that address their business outcomes and the personal needs of the learners, rather than seeking formal qualifications.

Figure 8: Employer’s strategies for filling skills gaps in the Murray Region Forestry Hub area by industry sector, 2022 (% of surveyed businesses)



Source: Murray Region Forestry Hub Survey data, 2022

Figure 9: Employer’s reasons for investing in workforce training in the Murray Region Forestry Hub area by industry sector, 2022 (% of surveyed businesses)



Source: Murray Region Forestry Hub Survey data, 2022

5.2 TRAINING OF NEW WORKERS

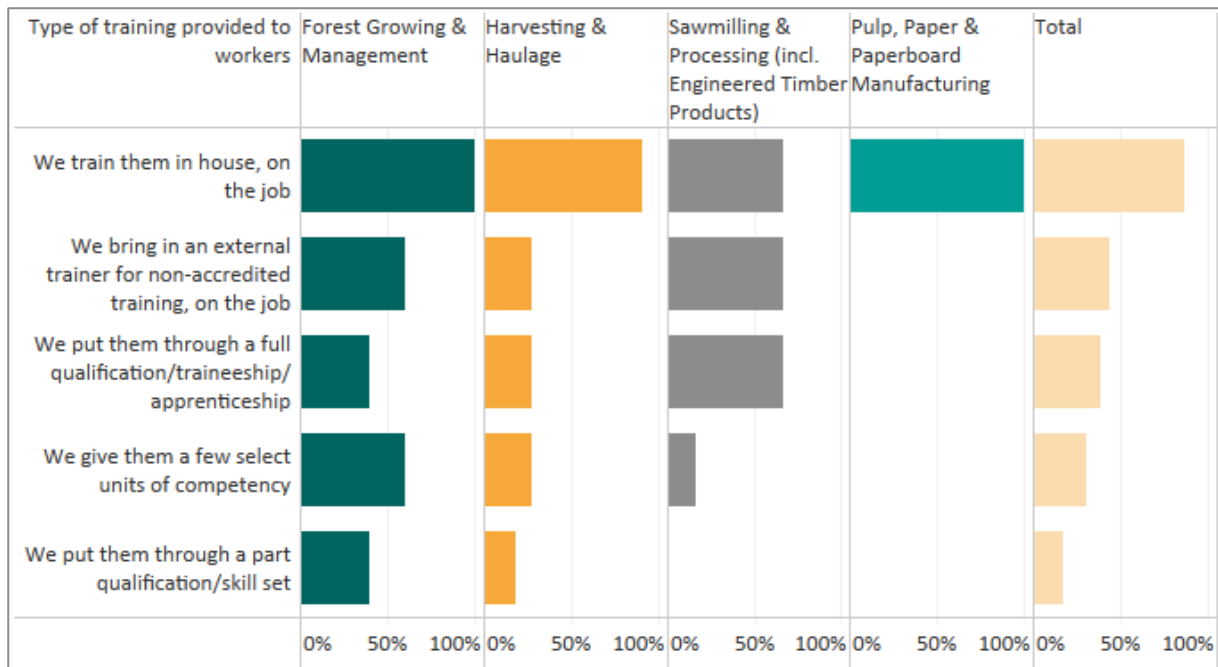
The survey results suggest that the majority of new recruits in the industry receive on-the-job training from an internal trainer, which typically covers company inductions, manual handling, company values, and other routine and health and safety requirements. External trainers are also used for non-accredited training in forestry and timber processing businesses, particularly for compliance and occasionally for other training needs.

Harvesting and haulage employers place a lower emphasis on accredited training for new entrants compared to the rest of the industry; however, there are employers with an interest in a few select units of competency, part qualifications or skill sets, as well as full qualifications. According to one respondent, compliance units come first. Another added that their new operators need to do the Certificate III in Harvest and Haulage, while existing operators would need to update existing qualifications. The state-based forest management organisation indicated that they have a thorough onboarding process for new starters that includes internal and external training units.

From a pulp and paper employer perspective, new recruits would be put through full qualifications when the sector's qualifications are accessible through training providers. For the time being, selected units of competency are provided for licencing.

These survey results are also illustrated in Figure 10.

Figure 10: Type of training provided to workers in the Murray Region Forestry Hub area by industry sector, 2022 (% of surveyed businesses)



Source: Murray Region Forestry Hub Survey data, 2022

5.3 DEMAND FOR FORMAL TRAINING

The demand for apprenticeships and traineeships in the industry in the region is not significant but it is present.

Over the last year, 10 out of 25 survey respondents employed apprentices or trainees. These included saw doctors, wood machinists, mechanics, fitters, electricians, a trainee forester, and other traineeship positions for harvesting machine operators. In the next two years, these same respondents plan to offer similar apprentice and traineeship positions, while three additional respondents intend to train new people.

Of those who did not place any apprentices or trainees in the last year, only 3 intend to train people in the next two years: one is looking for a school-based forestry trainee, another for sawblade, forklift and office administration training, and the third for the Forestry Corporation Graduate Program 2022-23.

It is also worth noting that apprenticeships and traineeships are not limited to new entrants; they may also be extended to existing workers.

Attachment 6 provides further details on options available to employers considering skills development of their employees. Additionally, Attachment 6 provides data on apprenticeships and traineeships in the Murray Region Forestry Hub area, across all industries, and in the forest and wood products industry.

5.4 BARRIERS TO FORMAL TRAINING

The employers were asked to identify barriers to building skills through training that apply to their businesses. The results are presented in Figure 11. The most cited barrier to formal training is time commitment, followed by a lack of suitable trainers and training centre that is too far away.

These barriers are related to each other. The financial cost of training is related to the time commitment of training, the shortage of suitable trainers and the subsequent need to send learners to another town where the training centre is located. 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.

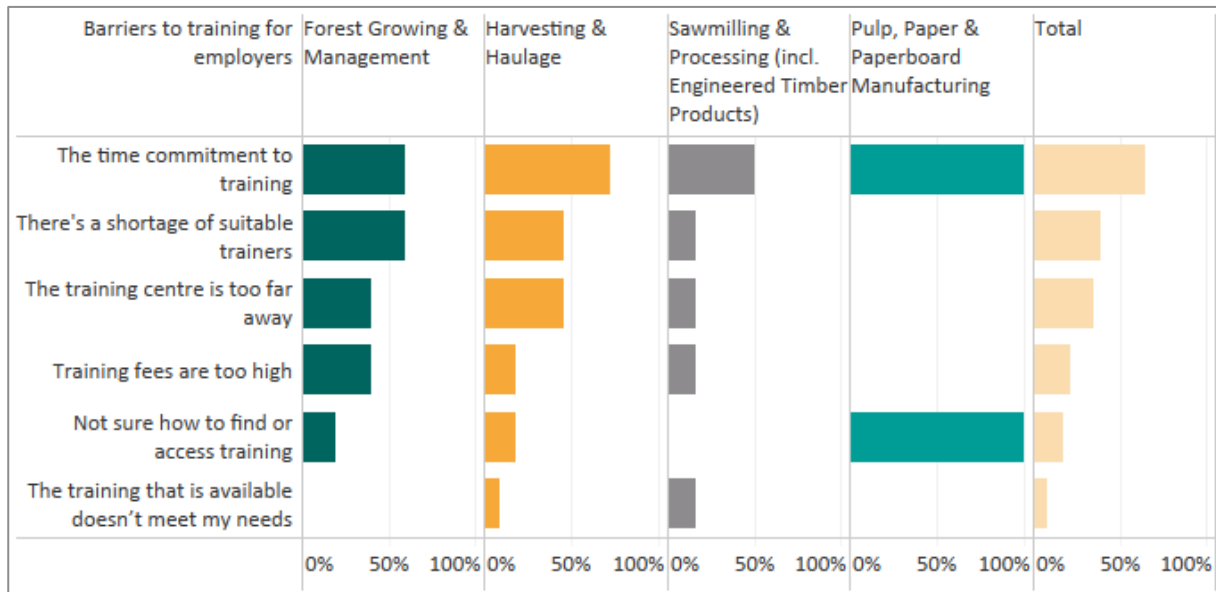
Respondents from forestry and harvesting sector also reported changes in training needs, a lack of courses and qualified trainers in the local area, and an insufficient number of learners to run a training course as barriers to training. They also noted poor record-keeping of training units and difficulty tracking and confirming competencies as deficiencies in supporting their training efforts.

A representative of the timber processing sector noted that determining what workers can tap into, such as something that motivates/encourages them to improve themselves, as opposed to simply preparing them to perform job roles, is a challenge.

Pulp and paper employers cited the absence of training providers, developing own training materials, time commitment (e.g., cadets must spend one year in the classroom), and lack of awareness of what is available as barriers to building skills through training.

A small proportion of employers also reported that the formal training that is available does not meet their needs.

Figure 11: Barriers to training for employers in the Murray Region Forestry Hub area by industry sector, 2022 (% of surveyed businesses)



Source: Murray Region Forestry Hub Survey data, 2022

6 ABILITY TO ATTRACT, RECRUIT AND RETAIN WORKERS

Workforce attraction and recruitment is a critical issue for the industry in the Murray Region Forestry Hub area. To understand the recruitment needs in the industry, this section examines the personal attributes and minimum qualifications required of new workers, and the challenges faced by employers in finding and recruiting workers. It also looks at the employment duration of workers in the industry.

The findings are based on the Murray Region Forestry Hub Survey, which found that the most common reason for employing a new worker is to replace one who has left or retired, followed by company growth and bringing new skills to the business. Additionally, employers typically look for entry-level candidates with the ability to work in a team, a willingness to learn, and a good "cultural fit". Qualifications requirements of new workers vary depending on the job, from a university degree to a high school diploma. Challenges in recruiting include a lack of suitable applicants, access to housing and family members' employment, and difficulty recruiting seasonal staff. The sawmilling and processing workforce has a high rate of long-term employment, which means a high level of commitment to the industry but fewer opportunities to recruit young people.

The survey results are presented in further detail below to offer insight into the challenges employers face when attempting to recruit and retain suitable workers.

6.1 RECRUITMENT OF NEW WORKERS

The survey participants cited that the most common reason for employing a new worker is to replace a worker who has left voluntarily. This is followed by employing a new worker as a replacement for a worker who has retired, company growth and bringing new skills into the business (Figure 12).

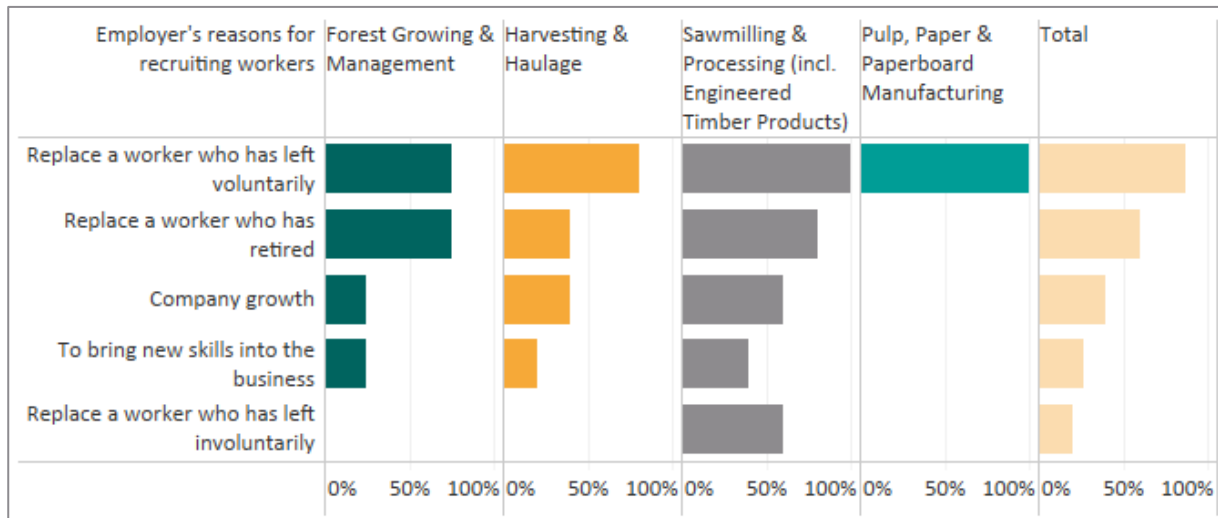
The pulp and paper participant in the survey further noted that younger members of the workforce often leave voluntarily to pursue higher education and that the mill is facing an increasing number of retirements. Additionally, the mill has had difficulty reaching full employment since 2018, with a current 25 vacancies across the mill, experiencing a shortage of workers, especially in the paper division. It was also highlighted that many of the mill's operators have been in service for many years, as only 38 of the 180 operators are around the age of 20. This suggests that long service leave, along with other factors such as Skills Visas, which are not conducive to the needs of the regional businesses, are playing a part in creating skill deficiencies.

Survey results also revealed that forestry businesses often recruit high school graduates or workers from other industries or employ casual employees during the summer to assist with fire preparedness and control. This was identified as a useful entry point for high school leavers to enter the industry.

One participant also highlighted the effectiveness of "word of mouth" for recruiting in harvesting and haulage due to the industry's small size and the ability to target individuals.

Survey participants suggested that the most viable option for pulp and paper businesses to address workforce gaps is to recruit experienced workers from overseas since there is no industry in the region with similar skills levels such as mining or refineries, from which to recruit.

Figure 12: Employer’s reasons for recruiting a new worker in the Murray Region Forestry Hub area by industry sector, 2022 (% of surveyed businesses)



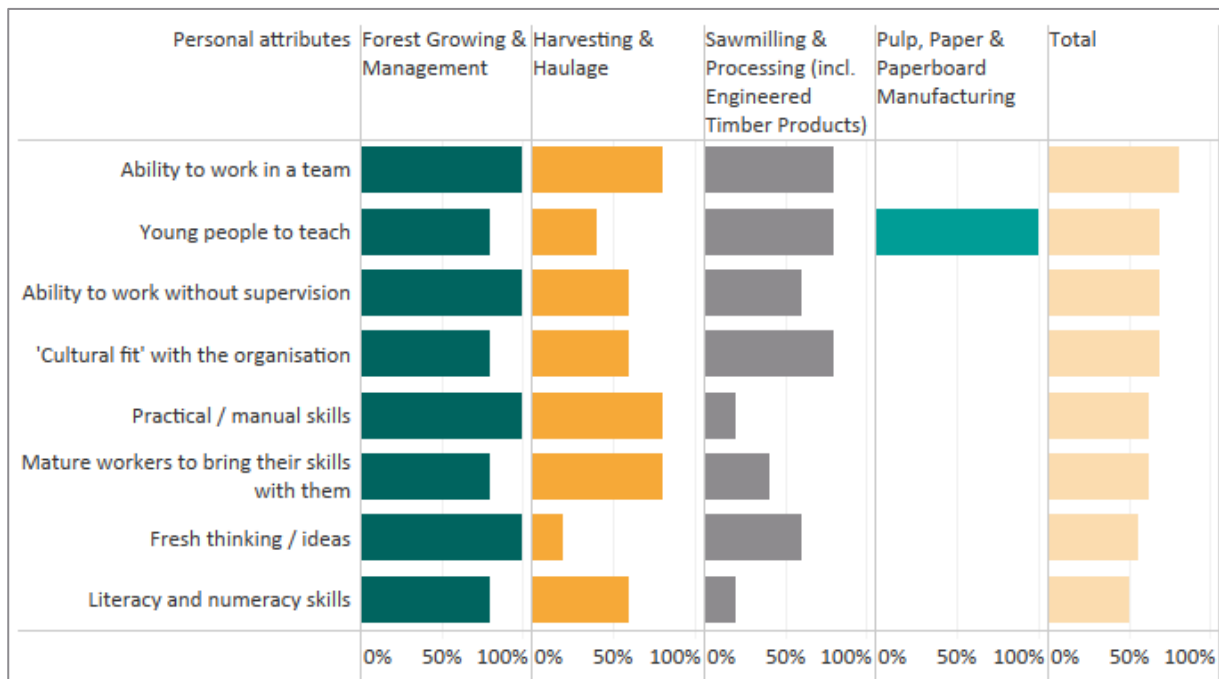
Source: Murray Region Forestry Hub Survey data, 2022

6.2 PERSONAL ATTRIBUTES REQUIRED OF NEW WORKERS

The survey results indicate that when recruiting for entry-level positions, most employers seek candidates with the ability to work in a team and without supervision, as well as a willingness to learn and having a 'cultural fit' with the organisation. Young age is desirable, but most employers also place emphasis on work ethic, safety attitude, mechanical aptitude and cognitive ability.

Additionally, it was noted that literacy and numeracy skills are the least sought-after attributes, though still important. Nearly 40% of survey respondents reported having employees with literacy or numeracy difficulties. One employer stated that they are now willing to employ practically anyone with a good attitude rather than skills. Other employers highlighted the importance of mental health, a police check, a full medical drug test and random drug test, which are more prevalent in the pulp and paper mills. Figure 13 outlines these and other skills and attributes required by each industry sector.

Figure 13: Personal attributes sought by employers when recruiting workers in the Murray Region Forestry Hub area by industry sector, 2021 (% of surveyed businesses)



Source: Murray Region Forestry Hub Survey data 2021

6.3 MINIMUM ENTRY LEVEL QUALIFICATIONS REQUIRED OF NEW WORKERS

The results of the survey revealed that employers have differing requirements for minimum entry level qualifications for new employees by occupation grouping (Figure 14).

The majority of employers prefer managers and supervisors to have a university degree or VET qualification. However, some employers are open to employing managers without vocational training or post-secondary education.

In the case of technicians and trade workers, about two-thirds of employers prefer that they have a certificate qualification or higher education, while only a small proportion would accept high school completion or no post-school qualification. Employers indicated that there is a high demand and short supply of technicians and trade workers, and as a result, they are open to employing an unskilled worker, having them work in the job role under supervision, and then considering enrolling them into a Certificate III qualification – provided that they can access a local training provider to support the learner.

Machinery operators were split, with forty per cent of employers preferring a certificate qualification and a similar proportion accepting high school completion and no post-school qualification.

Clerical and administrative workers are expected to have a VET qualification by some employers, while a third accepted high school completion or no post-school qualification.

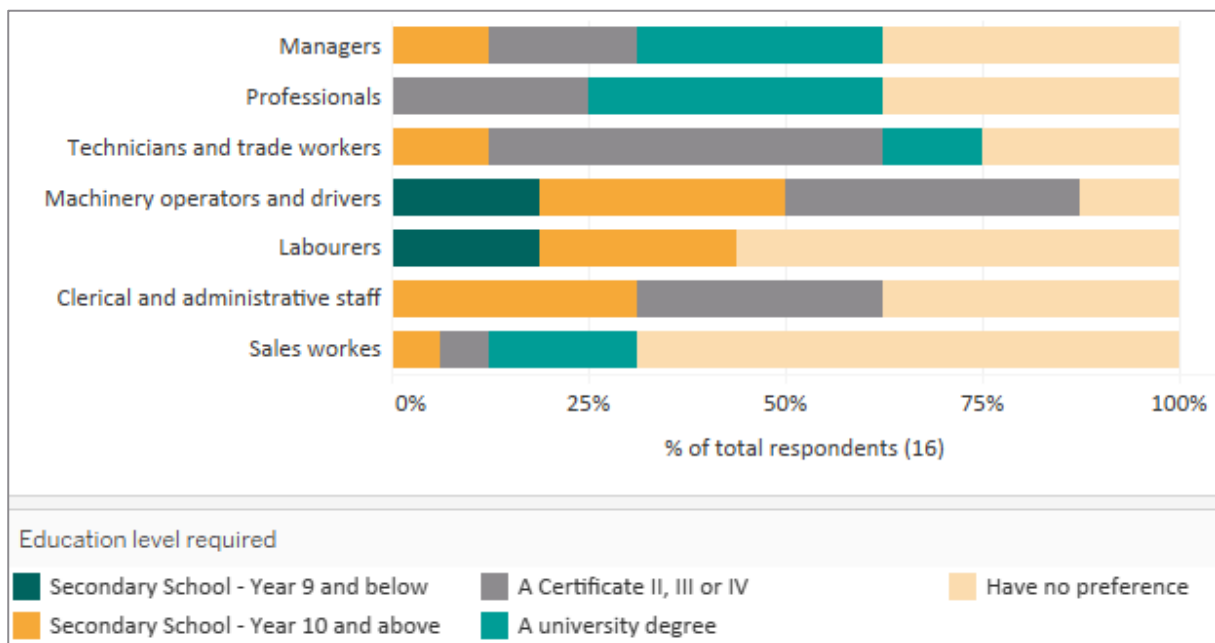
For sales workers, a university degree, VET qualification, or Bachelor's degree is required, depending on the job responsibilities.

Finally, labourers are expected to have completed high school, with no post-school qualification required.

Notably, two respondents representing timber processing employers stated that education level does not matter and should not be used to rate people, instead suggesting that attitude and positivity can bring new perspectives and skills to a business.

These survey results highlighted the following trends in terms of the education level required for successful recruitment and career progression in the industry: university degrees are essential for preparing individuals to take on managerial and professional roles; individuals with secondary school qualifications are well-suited to taking on clerical and administrative worker, sales worker, machinery operator and driver, and labourer roles; Vocational Education and Training (VET) qualifications are an important pathway for individuals with secondary education to access technical and trade positions, machinery operator and driver roles, and pursue managerial and professional occupations.

Figure 14: Education level sought by employers in the industry when recruiting workers for different occupations in the Murray Region Forestry Hub area, 2021



Source: Murray Region Hub Survey data, 2022

6.4 CHALLENGES IN FINDING AND RECRUITING WORKERS

Employers across all industry sectors are facing a significant challenge when it comes to attracting and recruiting workers, as evidenced by the survey results outlined in Table 8.

The survey results indicate that employers in the region are facing a significant shortage of applicants with the necessary skills and experience when they attempt to recruit for vacant positions. This confirms the prior findings (section above) that employers prefer young and skilled candidates for jobs. This is the greatest challenge for recruitment, with respondents stating that "few applicants have the skills needed" (Figure 15). This lack of suitable applicants is further evidenced by one survey respondent, who stated that they had called every recruitment agency in Northern Victoria in search of resumes with the required skills but with no success.

Respondents identified a range of other recruitment challenges in the region, including access to housing, good schools, and suitable employment for family members (affecting the ability to attract individuals with strong skill sets into the region), difficulty in recruiting seasonal staff for forestry jobs, difficulty in finding mechanics to support harvesting operations locally, and a lengthy pathway from school to becoming, for example, a skilled and knowledgeable harvesting operator (i.e., able to harvest 200 tonnes of logs per day). Moreover, medical fitness-for-work assessments were reported to complicate the recruitment process, as they required individuals to travel to Albury and/or Wagga Wagga for medical checks.

Some respondents identified the perception that the forest industry offers low wages as a potential recruitment challenge. However, an analysis of the role that income might play in the recruitment and retention of employees shows that the current rates of pay are not a relevant barrier to attracting and retaining workers in most industry sectors, with pulp, paper and paperboard manufacturing being the sector least exposed to this factor (Attachments 8 and 9). When compared with other sectors of the economy in the Murray Region Forestry Hub area, the data indicates that the pulp, paper and paperboard manufacturing sector has a high proportion of workers earning more than \$78,000 per year, exceeding that of any other industry in the region. Sawmilling and processing sector has a similar earnings profile to that of public administration and safety or education and training, and workers earn more in sawmilling and processing than in construction, which attracts the second-largest number of apprentices and trainees in New South Wales. The forest growing and management sector has the highest proportion of low-income earners (less than \$41,599 per annum) and the lowest proportion of those earning above \$77,999, yet it still compares favourably to 16 out of the 19 other industries in the region.

Three participants thought that recruitment difficulties may also be due to a negative perception of our industry from the public. The findings from the Primary Industries Education Foundation Australia's survey of over 1,100 students¹² suggest that there may not be a significant negative perception of the forest industry. Results showed that 43% of students considered Australian forestry to be renewable, and 65% thought it could be managed to produce wood while protecting the environment. When asked about forestry, 53% of students had a somewhat or very positive sentiment, while only 22% had knowledge of the job role 'forester'. School teachers seem to have the greatest influence on student sentiment, indicating that closer engagement with them may present the greatest gains in student sentiment towards the industry.

¹² Primary Industries Education Foundation Australia, 2020, *Food, Fibre and Our Future 2020*.

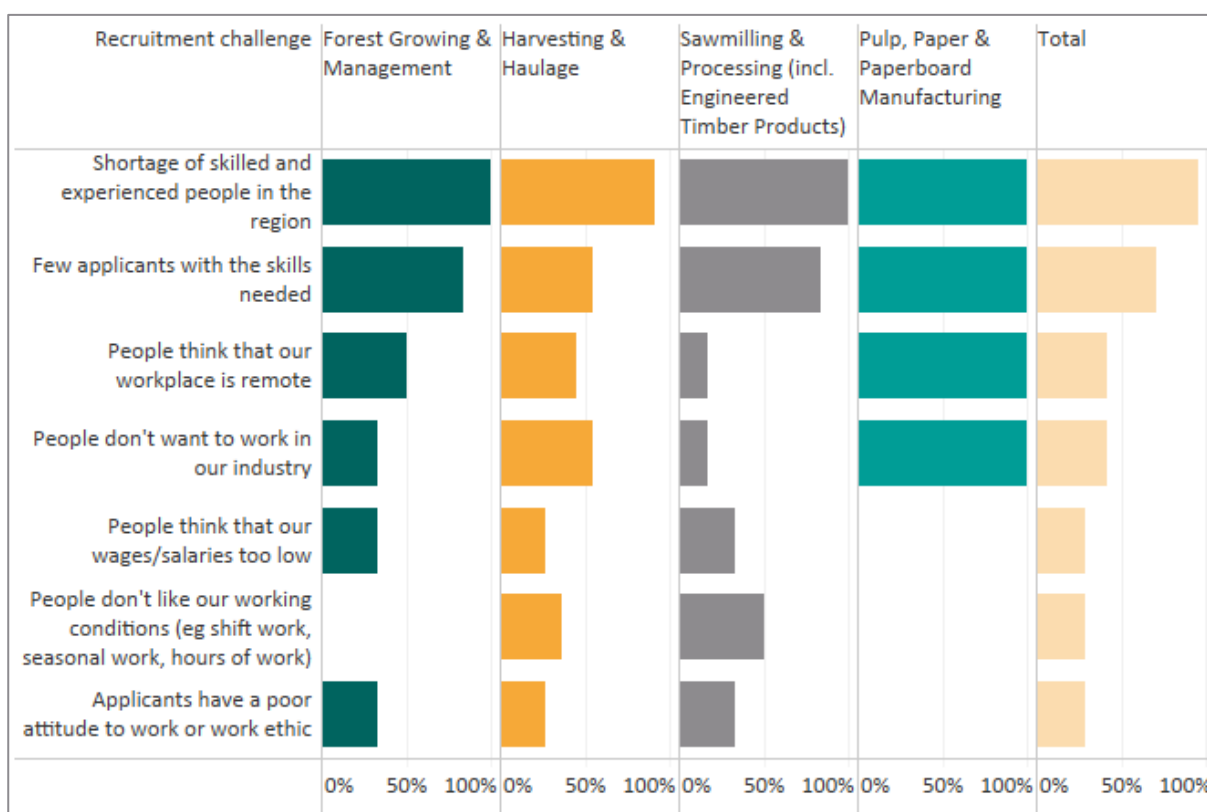
Table 8: Difficulty level of recruiting workers in the Murray Region Forestry Hub area by industry sector, 2022 (Scored 0 -100, 0 = least difficult, 100 = most difficult)

Industry sector	Average score
Forest Growing & Management	71
Harvesting & Haulage	72
Sawmilling & Processing	73
Engineered Timber Products	89
Industry average	74

Note: Data was not obtained for the Pulp, Paper and Paperboard Manufacturing sector.

Source: Murray Region Forestry Hub Survey data 2022

Figure 15: Recruitment challenges in the Murray Region Forestry Hub area by industry sector, 2021 (% of surveyed businesses)



Source: Murray Region Forestry Hub Survey data, 2022

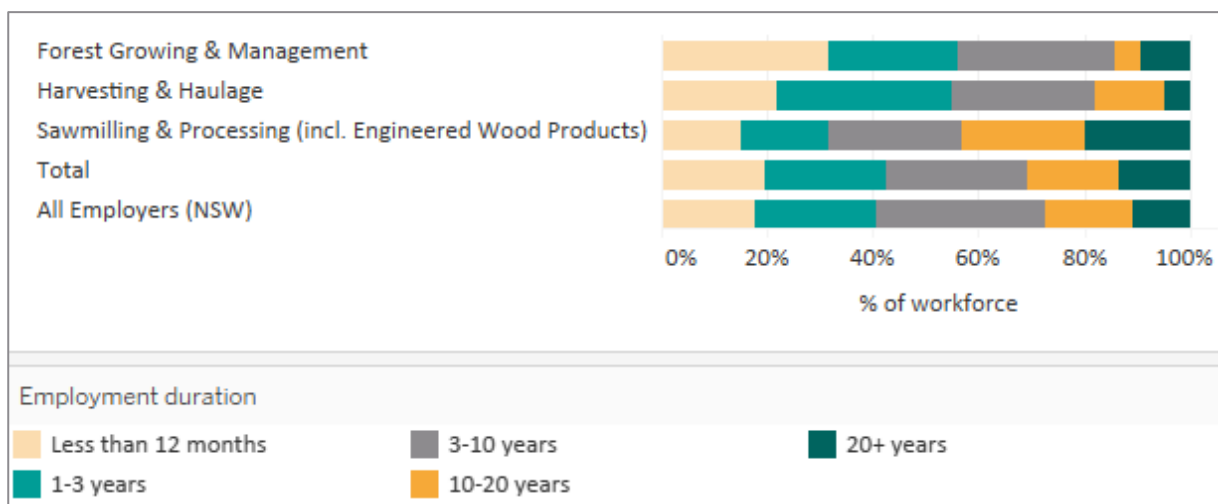
6.5 RETENTION AND ATTRITION OF EMPLOYEES

The survey results indicated that the sawmilling and processing workforce, including engineered wood product manufacturing, has an above-average rate of long-term employment. Nearly half of the workforce has been with their current employer for more than 10 years, compared to just over a quarter of workers across all New South Wales employers, according to ABS statistics (Figure 16). This indicates that the sawmilling and processing workforce is highly committed to their current roles and may benefit from additional skills and training.

The majority of harvesting and haulage participants believe that the ability to retain staff positively impacts their business. They reported doing all that is necessary to provide valued employees with job flexibility, such as allowing for illness and family commitments. Job rotation is also used to facilitate a flexible workforce in pulp and paper mills, allowing employees to switch between two or more positions when mills operate 24/7 for 356 days a year.

While good retention of mature workers provides the advantage of a reliable, skilled workforce, it does have some notable disadvantages. There are fewer opportunities to recruit young people and foster their skills development, reducing the need for employers to prepare and cater for the training of new entrants, resulting in their internal induction and training processes becoming neglected (particularly for small businesses). Furthermore, the whole-of-industry does not generate a sufficiently large, regular stream of learners to support a local training provider based in the region.

Figure 16: Employment duration in the Murray Region Forestry Hub area by industry sector, compared with the New South Wales's workforce, 2021



Note: Data was not obtained for the Pulp, Paper and Paperboard Manufacturing sector. However, survey responses indicated a 16% rate of worker attrition in pulp and paper manufacturing. It currently takes six months to fill a vacated position, and this is further complicated by the current immigration laws.

Source: ABS 6291.0.55.001 EQ02 February 2020; Murray Region Forestry Hub interview data, 2022

7 CONCLUSIONS AND RECOMMENDATIONS

7.1 INTRODUCTION

The findings presented in this report provide insights into the workforce and skill gaps, as well as training and recruitment challenges faced by the forest and timber industry in the Murray Region Forestry Hub area. Data was collected through surveys and interviews and combined with ForestWorks understanding of emerging trends in the national industry. Noting the limitations on data collection and the inherent difficulties in predicting technologies, the findings are highlighted in the following sections:

- Findings of workforce needs
- Findings of skills and training needs
- Employer training and recruitment challenges.

7.2 LIMITATIONS AND CONSIDERATIONS

Short-term vs long-term focus

It is important to note that the data primarily reflects short-term requirements rather than long-term projections. Businesses have tended to focus on immediate skill shortages and may not have fully considered their skill needs beyond the current contract cycle. Additionally, the study did not provide a comprehensive assessment of the size of the workforce and skill gaps in the region, which is crucial information for informing training program initiatives and ensuring an adequate supply of students for these programs. It is worth acknowledging that the Snowy Valleys Skills Development Service (SVSDS) funded by both State and Federal Governments through the Bushfire Local Economic Recovery Fund has already conducted significant training in the region, leading to skills development of the current workforce.

To address these limitations, it is recommended that businesses receive ongoing support in understanding their long-term skill needs and training priorities, aligning them with their business and industry goals. This can be achieved through further engagement activities and the implementation of strategies and programs that promote skill development, as outlined in the recommendations section below.

Skill requirements over the next 10 years

No studies are known to ForestWorks that specifically analyse the implications of technological changes on skill needs within the forestry and wood products industry, or across the broader context of the Australian economy, over a 10-year timeframe. The rapid evolution of technology makes it challenging to accurately predict skill and training requirements far into the future. However, it is recognised that organisations such as Jobs and Skills Australia and Jobs and Skills Councils are committed to undertaking such studies.

In broad terms, key technologies such as AI, robotics, autonomous vehicles, and electric machinery and vehicles are expected to play a crucial role in the forestry and wood products industry, offering significant benefits in terms of productivity, efficiency, and sustainability. AI implementation could require proficient skills in data analysis to analyse large amounts of data, such as satellite imagery,

weather patterns, and tree growth data, for efficiently managing forests. Autonomous and electric vehicles also present unique opportunities in log transportation, needing workers with vehicle management and logistics optimization knowledge. For the implementation of electric machinery and vehicles, specialists must be familiar with electric vehicle maintenance, charging infrastructure management, and energy optimisation. The introduction of robotics in timber products manufacturing requires workers knowledgeable in robot operation (control systems), maintenance, and diagnosing/solving robot-related issues (analysing error codes and software malfunction). In addition, the success of these technologies requires the workforce to stay adaptable, keeping up with developments in their field and taking advantage of upskilling and reskilling opportunities. Lastly, individuals should be ready to embrace new processes and workflows in an ever-changing environment.

While these insights provide initial understanding, conducting a dedicated study remains crucial to comprehensively assess the future skill needs associated with the emerging technologies in the forestry and wood products industry.

7.3 FINDINGS OF WORKFORCE NEEDS

Labour shortage

The results of the industry survey highlight the ongoing challenge of filling essential roles in the forestry, wood, and paper products manufacturing sectors. Positions such as foresters, harvester operators, diesel mechanics, mechanical fitters, electricians, and truck drivers require highly skilled professionals, and there is a shortage of these skilled workers in the region. The shortage extends to roles such as boiler operators, engineers (electrical, mechanical, installation), DCS/automation engineers, and truck drivers in pulp and paper manufacturing.

Over half of the survey respondents indicated difficulty in finding suitable candidates for these positions, and more than 70% anticipate that the labour shortage will persist over the next five years. Factors contributing to the shortage include labour competition from other industries, a lack of younger workers in the regional labour market for training, and the impact of the COVID pandemic.

Future labour demand

The survey respondents identified a future need to hire mill supervisors and general mill labour to cover gaps left by retirements, indicating ongoing workforce demand in processing operations. Moreover, the replanting program to replant softwood plantations destroyed by fire has been underway, with millions of pine seedlings cultivated and planted. This replanting effort is projected to be completed by 2026, requiring additional nursery workers, tree planters, silviculture/maintenance personnel, and foresters.

Furthermore, the survey results revealed that the paper mill is planning to hire more specialist machine operators, recovery digester operators, and technicians over the next five years to meet production targets, indicating a need for skilled workers in specific roles.

Future labour gaps due to retirements

The data and survey responses highlight the significant challenge posed by an ageing workforce in the forestry and timber industries in the region. Approximately 14% of the industry's total workforce, or around 300 skilled workers, are expected to retire within the next five years. This retirement wave

creates an additional gap in the workforce and presents challenges in managing future workforce needs, with survey respondents expressing concerns about attracting and retaining new employees.

Furthermore, an analysis of the 2021 ABS Census data revealed a regional ageing workforce in job roles essential not only to the forestry industry but also related sectors such as construction, manufacturing, and transport and logistics, which employ individuals in these critical occupations. These roles encompass truck drivers (beyond just log truck drivers), forklift operators, and production managers in manufacturing roles.

7.4 FINDINGS OF SKILLS AND TRAINING NEEDS

In addition to training to fill the existing labour shortage, the industry survey identified the following most pressing training requirements:

Leadership skills

Strong leadership skills are recognised as crucial for foresters in managerial roles to effectively manage interpersonal relationships with contractors and oversee their performance. Training in leadership skills is also essential for frontline production personnel in timber processing organisations to prepare them as future leaders.

Technology and digital skills

The integration of technology and digital skills is crucial for managing plantations and optimizing forestry operations. This includes proficiency in GIS software, remote sensing, forest inventory methods, data processing, and analysis, as well as knowledge of project management and supply chain management software. Forestry technicians and managers need to be well-versed in these technologies to efficiently map and analyse forestry data, enhance harvesting operations, maximise value recovery, and monitor forest health and fire risks.

The demand for harvesting operators with digital literacy is growing, as they need to comprehend digital maps and operation plans and effectively use handheld devices and on-board computers. The ability to access, store, and share forest data using these devices is becoming increasingly important in ensuring optimal harvesting and haulage operations.

Process operators in timber mills are expected to have a general knowledge of sawmill operations and the ability to interpret data generated by technology.

Skills and jobs of the future

The forest and wood products industry over the next decade can expect to see greater levels of automation in every sector, including truck driving. However, this does not translate into job losses but rather a change in the nature of work. Given the ageing workforce, and the need for the machinery to be operated and serviced, the industry can still expect a shortage of workers but the demand for core skills will be higher.

Automation and increased use of digital technology are inevitable however we are unable to reliably predict the form that the technology will take over the next decade. Occupations within Skill Levels 4 and 5 are highly likely to be replaced by automation. At the same time, new occupations will be created by the use of technology for Skill Levels 3 or higher.

People that will enter the workforce in 10 years' time are currently (2023) in primary school. A reasonable assumption is that a decade after they have entered the workforce and become skilled in an as-yet undeveloped technology, that very same technology will itself become superseded. The forest and wood products industry in the region has an interest in ensuring that these school students have the flexibility to adapt to whatever form the technology takes over the duration of their careers by developing the core skills:

- Digital engagement
- Initiative and innovation
- Learning
- Numeracy
- Oral communication
- Planning and organizing
- Problem solving
- Reading
- Teamwork
- Writing.

For people that are already in the workforce, they would benefit from training in these same core skills to allow them to adapt to technology, unless they are in an occupation that is served by a current vocational qualification such as the Certificate III in Forest Operations or the Certificate III in Timber and Wood Products Operations.

Quality control skills

Softwood sawmills are placing greater emphasis on quality control through the use of scanning and drying technologies, process automation, and data analysis. Moving forward, this trend may create new job roles and training opportunities, with a focus on data analysis, optimisation, and lean manufacturing.

Compliance skills

Training is necessary for operators involved in high-risk machinery, such as forklift driving and chainsaw use, as well as for those engaged in firefighting, chemical application, and First Aid. Regular training is vital to uphold safety regulations and maintain a safe work environment.

Soft skills for new entrants

The survey results provided insights on the recruitment preferences and priorities of employers in the industry, particularly for entry-level positions. While young age is desirable, employers primarily seek candidates who possess 'work readiness' or employability skills, loosely defined as teamwork skills, the ability to work independently, a willingness to learn, and a cultural fit with the organisation. Employers place significant emphasis on a persons' character, work ethic, safety attitude, mechanical aptitude, and cognitive ability when evaluating potential candidates. Some employers mentioned that they are now more willing to hire candidates with a positive attitude,

even if they lack specific skills. This highlights the increasing recognition of the importance of soft skills and attitudes in the hiring process.

7.5 EMPLOYER TRAINING AND RECRUITMENT CHALLENGES

This study highlights the following training and recruitment challenges faced by the industry employers in the Murray Region Forestry Hub area. Recognising these challenges is essential for developing effective workforce, skills and training solutions and supporting employers in their efforts.

Training challenges:

- Time commitment
- Lack of qualified trainers and assessors and courses available locally
- Training centres too far away
- Changes in training needs
- Insufficient number of learners to run a training course
- Lack of awareness of available training options
- Formal training not meeting their needs
- Poor record keeping and difficulty in tracking and confirming competencies

Recruitment challenges:

- Shortage of qualified applicants
- Labour competition
- Lack of younger workforce within the regional labour market
- Public perception of the industry
- Lack of knowledge about job roles among communities
- Difficulty recruiting seasonal staff and mechanics
- Access to housing, good schools, and suitable employment for family members

7.6 IMPLICATIONS OF WORKFORCE, SKILLS AND TRAINING CHALLENGES

The forest and timber industry in the region faces significant workforce, skills, and training gaps and challenges. Failure to address them can have long-term consequences for businesses, such as an inability to innovate, adopt new technologies, or remain competitive in the market. This can hinder their growth opportunities.

The limited availability of qualified trainers and assessors in the region creates barriers to accessing training programs, hindering the development of necessary skills and requiring learners to travel long distances or rely on online training. The associated costs and time constraints may discourage businesses and individuals from pursuing training opportunities, exacerbating the skills gap.

In addition, a limited pool of learners causes difficulties in running a training course cost-effectively. This can lead to reduced course availability or increased costs per learner.

Businesses also struggle to attract and retain talent as a result of the shortage of qualified applicants and negative industry perceptions. This can lead to increased recruitment costs, longer vacancy periods, and high employee turnover.

Moreover, inadequate training opportunities and lack of awareness of job roles and career paths can discourage individuals from pursuing long-term careers in the industry, limiting the availability of skilled professionals for essential positions in the future.

7.7 ADDRESSING THE WORKFORCE, SKILLS AND TRAINING CHALLENGES

To address the workforce, skills and training needs and challenges, the industry should prioritise workforce planning and implement effective recruitment strategies. It is essential to implement strategies to attract and retain new workers, particularly younger generations, and facilitate ongoing training beyond the conclusion of the Snowy Valleys Skills Development Service in June 2023. Fostering a positive work culture is also crucial for long-term success in the forestry and timber industries. Proposed actions and strategies for addressing the workforce and skill gaps sustainably are provided in the next section.

7.8 RECOMMENDATIONS

Focus Area 1: Skills and Training Delivery – Strategies for Improvement

- 1. Collaborative Training Initiatives:** Coordinate employers in the industry to collaborate and combine learners to increase their numbers, making it feasible for training organisations to conduct training courses.
Survey respondents reported a skills shortage of machinery operators in forest harvesting roles. Harvesting contractors, such as the smaller family-owned enterprises, prefer to employ experienced operators rather than build skills of workers with the potential to perform the role, Production pressures, and the risk to equipment and standing trees, act as a disincentive to slowly building skills of harvesting operators. However, forest managers and wood processors have an interest in ensuring that the contractor workforce has succession plans in place for harvesting machine operators. The harvesting sector would benefit from having a section of plantation made specifically available for the purposes of training harvesting operators without an emphasis on commercial production.
- 2. Information Sharing:** Establish centralised platforms or resources that provide comprehensive information on available training programs, qualifications, providers and financial grants and incentives for businesses investing in staff development such as apprenticeships, traineeships, internships, and other on and off-the-job training initiatives.
- 3. Partnerships for Developing Workplace Trainers and Assessors:** Encourage businesses to form partnerships to develop and maintain a future generation of workplace trainers and assessors in the region for ongoing training activities. Key recommendations include:
 - a. Capacity Assessment:** Evaluate the current capacity of the existing workforce to transition into training and assessing roles by identifying individuals with relevant industry experience, expertise, and potential to become trainers and assessors. Assess their readiness to undertake the necessary training and certification.
 - b. Research and Select Partners:** Conduct research to identify training organisations that have a proven track record in delivering quality training programs for workplace trainers and assessors

to small businesses. Consider factors such as their expertise, reputation, and alignment with industry needs.

c. **Funding Incentives:** Seek funding incentives from government agencies or industry bodies to incentivise businesses to invest in the Certificate IV in Training and Assessment for their employees.

d. **Continued Commitment from Businesses:** Encourage businesses to demonstrate a full and continued commitment to the development and maintenance of workplace trainers and assessors. This involves providing time and resources for trainers and assessors to engage in ongoing professional development, mentoring programs, and opportunities to practice their training and assessment skills.

4. **Region and/or Industry-Wide Mentorship Programs:** Establish mentorship programs that facilitate knowledge transfer from experienced professionals to emerging professionals or those in need of training. Recommendations include:

a. **Identifying Mentors:** Encourage businesses to participate by nominating mentors or encouraging retired professionals to join mentorship programs.

b. **Structured Mentorship Frameworks:** Establish guidelines and expectations for mentors and mentees by creating a structured mentorship framework.

c. **Collaboration and Networking:** Organise events, workshops, and forums to facilitate networking and collaboration among mentors, mentees, and industry professionals. These events should provide an opportunity for participants to connect, share experiences, and promote professional growth.

d. **Mentoring of school students to foster employability skills.** During the interviews, some respondents made passing comments to imply that the young people leaving the local schools and seeking employment were lacking in the work-readiness or employability skills. These skills are traditionally taught by role-modelling of family and community members but may be lacking in disadvantaged areas. In the absence of this role-modelling, school leavers who wish to remain in the areas would otherwise be well suited to enter the forest and timber industry.

e. **Support local primary and secondary school teachers to develop class content that builds on the core skills listed in Section 7.4.**

5. **Flexible training options:** Partner with businesses and training providers to create flexible training options. These could involve delivering online and blended learning, allowing learners to access training materials remotely, learn at their own pace, and engage in interactive virtual sessions. Design modular training programs that break complex courses down into smaller, more manageable modules or micro-credentials, enabling learners to acquire new skills incrementally without extended time away from work.

6. **Continuous Improvement of Training Resources and Programs:** Advocate for the continuous improvement of training resources and programs to ensure they meet the changing demands of the industry. Recommendations include:

a. **Industry Feedback Mechanisms:** Establish feedback mechanisms to collect feedback on the effectiveness and relevance of existing training programs and/or materials. Use this feedback to identify areas for improvement and enhance the programs and/or materials accordingly.

b. **Collaboration with Training Providers:** Encourage ongoing communication and collaboration between businesses and training providers to ensure that training programs are regularly reviewed, updated, and aligned with industry needs.

7. **Leverage Government and Industry Resources for Training:** Monitor government and industry programs that offer subsidised or free training courses to make training more accessible and affordable. Promote these opportunities to businesses and individuals to maximise their potential benefits.
8. **Funding Support in Thin Markets:** Advocate state governments and the Australian Government for allocating special funding to address the high cost of training per learner in thin (small, regional, and remote) markets. Funding support is necessary to serve multiple purposes:
 - a. **Reduce Financial Risks for RTOs:** Alleviate the financial risks faced by training providers when delivering training to the industry, thus encouraging more RTOs to offer relevant courses and programs.
 - b. **Assist Employers:** Ensure that employers can compensate the costs associated with training, motivating them to upskill and train their employees.
 - c. **Support Learners:** Provide financial support to learners for travel and accommodation expenses when they need to travel to an appropriate RTO or learning event, such as interstate training programs or conferences.

Focus Area 2: Securing the Future Workforce – Strategies for Workforce Planning

9. **Workforce development and succession plans:** Provide businesses with access to expertise, resources and workshops to help with creating workforce development and succession plans. These plans will help to inform targeted training needs and ensure a smooth transition of key technical and management positions within their organisation.
10. **National System for Skills Verification:** Raise awareness of the national system for skills verification and emphasise its importance. Encourage businesses to register, record and update employee skills to monitor skills and keep track of compliance.

Focus Area 3: Securing the Future Workforce – Strategies for Attraction

11. **Industry Engagement Programs:** Coordinate visits to industry operations for representatives from schools, universities, training organisations, career counselling services, job placement services, and communities to learn about the career paths and skills required in the industry.
12. **Information Sessions and Workshops:** Organise information sessions, workshops, and produce videos and infographics to raise awareness about the industry within local communities. Explain the different job roles and skills needed and emphasise the advantages and rewards of working in the industry. Showcase the technology and future growth prospects of the industry.
13. **Showcase Success Stories:** Share success stories of individuals who have found success in the industry. Showcase their achievements, career progression, and the positive impact the industry has had on their lives. This will help create a positive perception of the industry and inspire potential employees.
14. **Promote Career Opportunities:** Promote job opportunities, entry requirements, training programs, and career development options available in the industry. Develop various promotional materials and use social media platforms to reach out to students, teachers, and parents. Make the industry easily accessible and provide passive exploration opportunities for interested individuals.
15. **Collaborate with Workforce Development Organisations:** Seek assistance from trade unions and workforce development organisations, such as Group Training Organisations, to identify, locate,

source, and train qualified workers for the industry. Collaborate with these organisations to facilitate recruitment and training initiatives.

16. **Internship Programs:** Encourage internship programs that offer students exposure to different industry sectors, roles, and locations. These programs provide students with valuable hands-on experience and insights into the industry. This helps them make informed decisions about their career paths while contributing to the workforce needs of the industry.
17. **Long-Term Partnerships with Schools:** Establish and maintain long-term partnerships with local schools through Training Services NSW, Skills Brokers, and Regional Industry Education Partnerships (RIEP) Program to provide specialised timber knowledge and insights into various career pathways. Engage with teachers, students, and parents through activities that incorporate forestry aspects into the curriculum (e.g., STEM, Geography). Additionally, support school-based apprenticeships, traineeships, and industry tours for senior students and facilitate student-based projects related to the industry and its topics and issues.
18. **Forest Education in Schools:** Promote ForestLearning's resources in local schools to further incorporate forestry education into the state school curriculum. Encourage VET qualifications such as Certificate II in Forest Operations or Certificate II in Wood Products Operations for students in Years 10-11-12, by facilitating work placements. Emphasise transferable skills and potential pathways into allied industries to increase training uptake.

Focus Area 4: Securing the Future Workforce – Strategies for Recruitment and Retention

19. **Regional Recruitment Plan:** Develop and implement a regional recruitment plan in collaboration with industry initiatives that work towards a national approach, taking into account the unique regional dynamics. The plan could include job descriptions that are clear, unbiased and inclusive; the use of online and offline platforms for job postings, such as popular job boards, industry-specific websites, community networks, and local publications to increase visibility; entry requirements that attract a diverse pool of candidates; potential recruitment sources within the region that can connect businesses with diverse talent pools; and social media and online presence to advertise job openings and engage with potential candidates.
20. **Collaborate with Industry Bodies and Government Agencies:** Encourage and facilitate collaboration between industry bodies, businesses, and the skills and training advisory services of the New South Wales and Victoria governments. This collaboration should provide the state governments with timely advice on labour and skill shortages within the industry. One way this data can be used is to inform the Priority Skills Lists and Skilled Occupation Lists (SOL), which guide the allocation of training funding, employer incentives for apprentices and trainees, and skilled visas to address critical skill shortages across the state.
21. **Professional Growth and Retention:** Encourage businesses to adopt a progressive approach that places importance on creating a people-centred culture. This entails approaches that prioritise the well-being and development of their employees. The following initiatives can be implemented:
 - a. **Professional Support:** Offer businesses professional support to foster a positive work environment. This can involve providing resources, training, and consultation services on topics such as employee engagement, diversity and inclusion, and work-life balance.
 - b. **Educational Opportunities:** Promote educational opportunities for both entry-level workers and existing employees. Facilitate programs that focus on enhancing soft skills including work ethic, self-management, and teamwork. This may include partnering with community training

services and local educational institutions, offering on-the-job training, or organising workshops and seminars.

c. Professional Development: Encourage businesses to invest in the professional development of their employees to learn new skills and/or transition into different roles by implementing and taking advantage of initiatives suggested in this section.

REFERENCE LIST

- Aldridge, A. & Moon, S. (2019, Oct 4). Almost 200 jobs cut as Norske Skog sells its Albury site to Australian paper giant Visy. *ABC News*. <https://www.abc.net.au/news/2019-10-04/norske-skog-visy-sale-albury-paper-mill-to-close-183-jobs-lost/11574476>
- Australian Bureau of Statistics. (2021). 2021 Census of Population and Housing. Accessed via TableBuilder in December 2022.
- Australian Government Department of Education, Skills and Employment. (2022). Available at <https://www.dewr.gov.au/local-jobs>
- Australian Government Department of Education, Skills and Employment. (2023). Central West Local Jobs Plan. Available at <https://www.dese.gov.au/local-jobs-program/resources/central-west-local-jobs-plan>
- Australian Government National Skills Commission. (2022). Australia's current, emerging and future workforce skills needs 2022.
- Forestry Corporation of NSW. (2022). Annual Report 2021-22. Retrieved from https://www.forestrycorporation.com.au/data/assets/pdf_file/0008/1436390/forestry-corporation-annual-report_FY22.pdf
- Forest Learning. (2023). Find a Resource. Available at <https://forestlearning.edu.au/>
- NSW Department of State and Regional Development, NA, Profile of the value of the timber industry in the south west slopes region of New South Wales. Retrieved from: http://forestindustrycouncil.com.au/factsheets/SWS_final_summary.pdf
- NSW Department of Education Training Services NSW. (2013). School Based Apprenticeships and Traineeships. Retrieved from https://www.training.nsw.gov.au/apprenticeships_traineeships/policy/policy_procedures/school_based_app_tr.html
- NSW Department of Education Training Services. (NA). School-based Apprenticeship and Traineeship. Available at <https://education.nsw.gov.au/public-schools/career-and-study-pathways/school-based-apprenticeships-and-traineeships>
- NSW Government. (2023). Regional Economic Development Strategies. Available at <https://www.nsw.gov.au/regional-nsw/regional-economic-development-strategies>
- NSW Government. (2022). Bert Evens Apprentice Scholarships. Available at https://www.training.nsw.gov.au/apprenticeships_traineeships/students/bert_evans_scholarships.html
- Primary Industries Education Foundation Australia. (2020). Food, Fibre and Our Future 2020. Retrieved from https://www.piefa.edu.au/uploads/9/8/9/8/98986708/piefa_summary_student_survey_report_food_fibre_and_our_future_2020.pdf

Schirmer J., Mylek M., Magnusson A., and Morison J. (2020). Socio-economic impacts of the softwood plantation industry South West Slopes Forestry Hub Region, NSW and Vic.

ATTACHMENT 1: PROFILE OF INDUSTRY BUSINESSES SURVEYED FOR THIS STUDY

Survey participants

Twenty-five (25) industry businesses from the Murray Region Forestry Hub area participated in a survey for this study in 2022.

Sector representation of the survey participants

Representation across the various sectors in the survey sample included:

Sector	No of surveyed organisations
Forestry and forestry support services	6
Harvesting and haulage	12
Sawmilling and processing	4
Engineered/wood products manufacturing	2
Pulp and paper manufacturing	1
Total	25

Business size of the survey participants

Approximately half of the businesses that participated in the survey were small, with 1-20 employees. One-quarter of the businesses had 20-99 employees, including seasonal, winter, and planting personnel. The remaining one-fifth of the survey sample was made up of three large organisations with multi-site operations across Australia and over 200 employees.

Employment in the survey participant businesses

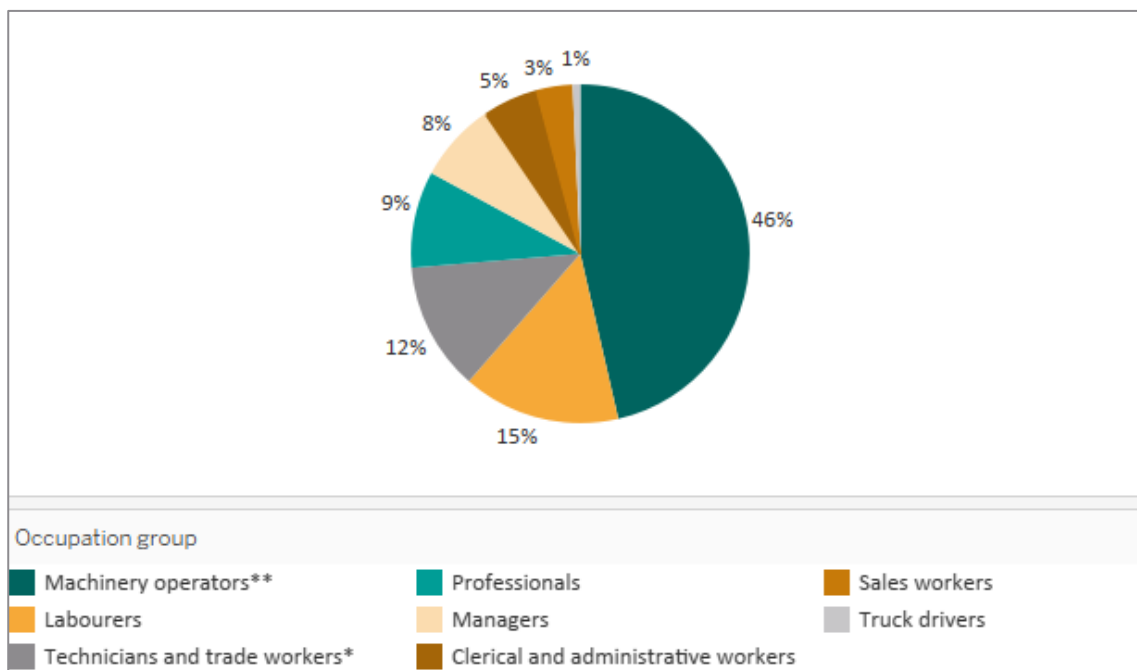
The survey participants collectively employed approximately 1,570 individuals. This accounts for 85% of the total employees (2,100) reported in the 2021 ABS Census of Population and Housing data for the forest and timber industry in the Murray Region Forestry Hub area. The distribution of these employees across the twenty-five participant businesses was as follows:

Sector	No of surveyed organisations	Employment (% of total)
Forestry and forestry support services	6	179 (11%)
Harvesting and haulage	10	357 (23%)
Sawmilling and processing	4	419 (27%)
Engineered/wood products manufacturing	2	365 (23%)
Pulp and paper manufacturing	1	257 (16%)
Total	25	1,570 (100%)

Workforce profile in the survey participant businesses

Age	The 26 to 44 age group was the dominant age group in the pulp and paper mill (67%) and forest and forest support services (46%) businesses. The 46 to 60 age group was the most prevalent in the harvesting and haulage businesses (53%) and sawmilling and processing businesses (39%). Notably, the harvesting and haulage businesses had the highest proportion of workers over 60 years of age (18%), while the lowest proportion was found in the forestry and forestry support organisations (10%).
Gender	17% of the workforce in the participant businesses was comprised of women, with the highest proportion reported in the forestry and forestry support services businesses (19%). The pulp and paper business had the lowest proportion of women at 10%.
Aboriginal participation	Nine of fifteen respondents reported that they had no Aboriginal or Torres Strait Islander employees, four estimated up to three, and one reported more than ten. One of the participants was unable to provide a definitive figure. Overall, at least 4% of the workforce in the participant businesses had Aboriginal descent.
People with disabilities	One quarter of employers (6 out of 24 respondents to the survey) reported that they have employees with a disability, impairment or long-term condition, but the survey did not quantify the number of employees affected.

Distribution of occupational groups in the survey participant businesses (% of workforce)



Note: * includes contractors; ** includes labourers

Source: Murray Region Forestry Hub interview data, 2022

ATTACHMENT 2: SURVEY QUESTIONS

Question	Options for answer
What is your Business Name?	
Who is filling in this form?	<input type="checkbox"/> Name <input type="checkbox"/> Email <input type="checkbox"/> Phone Number
What is your company size?	<input type="checkbox"/> 0-19 employees <input type="checkbox"/> 20-99 <input type="checkbox"/> 200+
How many of your workers are in the following occupation groups?	<input type="checkbox"/> Managers <input type="checkbox"/> Professionals <input type="checkbox"/> Technicians and trade workers <input type="checkbox"/> Clerical and administrative workers <input type="checkbox"/> Sales workers <input type="checkbox"/> Machinery operators and drivers <input type="checkbox"/> Labourers
How many of your workers are:	<input type="checkbox"/> Male <input type="checkbox"/> Female
How many of your employees are in the following age groups?	<input type="checkbox"/> 19 and under <input type="checkbox"/> 20 – 25 <input type="checkbox"/> 26 – 45 <input type="checkbox"/> 46 - 60 <input type="checkbox"/> Over 60
How many of your employees are Aboriginal or Torres Strait Islander?	<input type="checkbox"/> None <input type="checkbox"/> 1-3 <input type="checkbox"/> 4-10 <input type="checkbox"/> Don't know
Do you have any employees that could work better with some literacy or numeracy training or support?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Do any employees have a disability, impairment or long-term condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No
How much effect do the following external factors affect your business?	<input type="checkbox"/> Competitors <input type="checkbox"/> The economy (including housing starts, investment in infrastructure) <input type="checkbox"/> Access to a skilled workforce <input type="checkbox"/> Access to an unskilled workforce <input type="checkbox"/> Availability of younger workers (aged under 35 years) <input type="checkbox"/> Government policy, legislation or regulations <input type="checkbox"/> Community attitudes to forestry <input type="checkbox"/> Stewardship requirements (e.g. Responsible Wood, FSC) <input type="checkbox"/> Climate change <input type="checkbox"/> Other <input type="checkbox"/> (please specify)
How much do the following factors inside your organisation affect your business?	<input type="checkbox"/> Changes in processes or innovative ways of working <input type="checkbox"/> Changes in technology or equipment <input type="checkbox"/> Knowledge sharing between peer-level workers <input type="checkbox"/> Knowledge sharing between management and other workers <input type="checkbox"/> Workforce skills <input type="checkbox"/> Ability to attract new employees <input type="checkbox"/> Ability to retain employees <input type="checkbox"/> A workforce that is getting older

Question	Options for answer
	<input type="checkbox"/> Workplace flexibility <input type="checkbox"/> Other
<p>In the next 2 years: Are you planning to introduce any new or improved...</p>	<input type="checkbox"/> Technology and processes (either for producing products or supplying services) <input type="checkbox"/> Sales and marketing methods <input type="checkbox"/> New work practices <input type="checkbox"/> Products and services <input type="checkbox"/> No changes planned
<p>Which industry sector best describes the work that you do?</p>	<input type="checkbox"/> Forest growing and management <input type="checkbox"/> Harvesting <input type="checkbox"/> Haulage <input type="checkbox"/> Sawmilling and processing <input type="checkbox"/> Engineered Timber Products <input type="checkbox"/> Pulp & paper processing
<p>Which Forest Growing and Management job roles are you likely to need to fill or create in the next 5 years?</p>	<input type="checkbox"/> Foresters/Forest Scientist <input type="checkbox"/> General Field Worker (eg. nursery, fire, silviculture, maintenance) <input type="checkbox"/> Machine/Truck Operator <input type="checkbox"/> Workshop & Field Trades (Fitter/Machinist/Mechanic) <input type="checkbox"/> Office staff (Clerks, HR, Scheduling, WHS, General Administration) <input type="checkbox"/> Other (please specify)
<p>Can you describe how difficult it is to fill these jobs?</p>	<p>Available options are:</p> <ol style="list-style-type: none"> 1. Very difficult 2. Somewhat difficult 3. Neutral 4. Somewhat easy 5. Very easy 6. Not relevant <p>Assigned to each of the following job roles:</p> <input type="checkbox"/> Foresters/Forest Scientist <input type="checkbox"/> General Field Worker (eg. nursery, fire, silviculture, maintenance) <input type="checkbox"/> Machine/Truck Operator <input type="checkbox"/> Workshop & Field Trades (Fitter/Machinist/Mechanic) <input type="checkbox"/> Office staff (Clerks, HR, Scheduling, WHS, General Administration) <input type="checkbox"/> Other (please specify)
<p>Which Harvest & Haulage job roles are you likely to need to fill or create in the next 5 years?</p>	<input type="checkbox"/> Logging machine operator (including harvester, forwarder, skidder, loader etc.) <input type="checkbox"/> Float or general truck driver <input type="checkbox"/> General labourers <input type="checkbox"/> Workshop & Field Trades (Fitter/Machinist/Mechanic) <input type="checkbox"/> Office staff (Senior Manager, Administrators, Clerks, HR, Scheduling, WHS, General Administration) <input type="checkbox"/> Other (please specify)
<p>Which job roles have been the most difficult to fill?</p>	<p>Available options are:</p> <ol style="list-style-type: none"> 1. Very difficult 2. Somewhat difficult 3. Neutral 4. Somewhat easy 5. Very easy 6. Not relevant <p>Assigned to each of the following job roles:</p> <input type="checkbox"/> Logging machine operator (including harvester, forwarder, skidder, loader etc.) <input type="checkbox"/> Float or general truck driver <input type="checkbox"/> General labourers <input type="checkbox"/> Workshop & Field Trades (Fitter/Machinist/Mechanic) <input type="checkbox"/> Office staff (Senior Manager, Administrators, Clerks, HR, Scheduling, WHS, General Administration) <input type="checkbox"/> Other (please specify)

Question	Options for answer
Which Haulage job roles are you likely to need to fill or create in the next 5 years?	<input type="checkbox"/> Log truck driver <input type="checkbox"/> Workshop & Field Trades (Fitter/Machinist/Mechanic) <input type="checkbox"/> Office staff (Senior Managers, Administrators, Clerks, HR, Scheduling, WHS, General Administration) <input type="checkbox"/> General labourers <input type="checkbox"/> Other (please specify)
Which job roles have been the most difficult to fill?	<p>Available options are:</p> <ol style="list-style-type: none"> 1. Very difficult 2. Somewhat difficult 3. Neutral 4. Somewhat easy 5. Very easy 6. Not relevant <p>Assigned to each of the following job roles:</p> <input type="checkbox"/> Log truck driver <input type="checkbox"/> Workshop & Field Trades (Fitter/Machinist/Mechanic) <input type="checkbox"/> Office staff (Senior Managers, Administrators, Clerks, HR, Scheduling, WHS, General Administration) <input type="checkbox"/> General labourers <input type="checkbox"/> Other (please specify)
Which Sawmilling and Processing job roles are you likely to need to fill or create in the next 5 years?	<input type="checkbox"/> Office staff (Senior Managers, Administrators, Clerks HR, Scheduling, WHS, General Administration) <input type="checkbox"/> Mill supervisors <input type="checkbox"/> Specialist sawmilling machine operators <input type="checkbox"/> Sawmilling labourer <input type="checkbox"/> Forklift driver <input type="checkbox"/> Saw doctors/technicians <input type="checkbox"/> Workshop Trades (Fitter/Machinist/Mechanic) <input type="checkbox"/> Qualified trades (eg. electrician, E&I etc.) <input type="checkbox"/> Other (please specify)
Which job roles have been the most difficult to fill?	<p>Available options are:</p> <ol style="list-style-type: none"> 1. Very difficult 2. Somewhat difficult 3. Neutral 4. Somewhat easy 5. Very easy 6. Not relevant <p>Assigned to each of the following job roles:</p> <input type="checkbox"/> Office staff (Senior Managers, Administrators, Clerks HR, Scheduling, WHS, General Administration) <input type="checkbox"/> Mill supervisors <input type="checkbox"/> Specialist sawmilling machine operators <input type="checkbox"/> Sawmilling labourer <input type="checkbox"/> Forklift driver <input type="checkbox"/> Saw doctors/technicians <input type="checkbox"/> Workshop Trades (Fitter/Machinist/Mechanic) <input type="checkbox"/> Qualified trades (eg. electrician, E&I etc.) <input type="checkbox"/> Other (please specify)
Which Engineered Timber Products job roles are you likely to need to fill or create in the next 5 years?	<input type="checkbox"/> Office staff (Senior Managers, Administrators, Clerks HR, Scheduling, WHS, General Administration) <input type="checkbox"/> Mill supervisors <input type="checkbox"/> Specialist machine operators <input type="checkbox"/> General mill labourers <input type="checkbox"/> Forklift and small plant operators <input type="checkbox"/> Technicians <input type="checkbox"/> Workshop trades (Fitters/Machinists) <input type="checkbox"/> Qualified trades (eg. Electrical, E&I etc)

Question	Options for answer
<p>Which job roles have been the most difficult to fill?</p>	<p><input type="checkbox"/> Other (please specify)</p> <hr/> <p>Available options are:</p> <ol style="list-style-type: none"> 1. Very difficult 2. Somewhat difficult 3. Neutral 4. Somewhat easy 5. Very easy 6. Not relevant <p>Assigned to each of the following job roles:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Office staff (Senior Managers, Administrators, Clerks HR, Scheduling, WHS, General Administration) <input type="checkbox"/> Mill supervisors <input type="checkbox"/> Specialist machine operators <input type="checkbox"/> General mill labourers <input type="checkbox"/> Forklift and small plant operators <input type="checkbox"/> Technicians <input type="checkbox"/> Workshop trades (Fitters/Machinists) <input type="checkbox"/> Qualified trades (eg. Electrical, E&I)Other (please specify)
<p>Which Pulp & Paper Processing job roles are you likely to need to fill or create in the next 5 years?</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Office staff (Senior Managers, Administrators, Clerks HR, Scheduling, WHS, General Administration) <input type="checkbox"/> Mill supervisors <input type="checkbox"/> Specialist machine operators <input type="checkbox"/> General labourer <input type="checkbox"/> Forklift and small plant operators <input type="checkbox"/> Mill technicians <input type="checkbox"/> Workshop trades (Fitters/Machinists) <input type="checkbox"/> Qualified trades (eg. Electrical, E&I)
<p>Which Pulp & Paper Processing job roles have been the most difficult to fill?</p>	<p>Available options are:</p> <ol style="list-style-type: none"> 1. Very difficult 2. Somewhat difficult 3. Neutral 4. Somewhat easy 5. Very easy 6. Not relevant <p>Assigned to each of the following job roles:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Office staff (Senior Managers, Administrators, Clerks HR, Scheduling, WHS, General Administration) <input type="checkbox"/> Mill supervisors <input type="checkbox"/> Specialist machine operators <input type="checkbox"/> General labourer <input type="checkbox"/> Forklift and small plant operators <input type="checkbox"/> Mill technicians <input type="checkbox"/> Workshop trades (Fitters/Machinists) <input type="checkbox"/> Qualified trades (eg. Electrical, E&I)
<p>How many of your workers have been with the company for the following periods of time:</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Less than 12 months <input type="checkbox"/> 1-3 years <input type="checkbox"/> 3-10 years <input type="checkbox"/> 10-20 years <input type="checkbox"/> 20+ years
<p>What are the most common reasons that you employ a new worker?</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Replace a worker who has left voluntarily <input type="checkbox"/> Replace a worker who has retired <input type="checkbox"/> Replace a worker who has left involuntarily <input type="checkbox"/> Company growth <input type="checkbox"/> To bring new skills into the business <input type="checkbox"/> Other (please specify)

Question	Options for answer
How much difficulty do you have in recruiting staff?	<input type="checkbox"/> Open-Ended Response (0 to 100)
What challenges do you face when recruiting workers? Select as many as you want from the list below, or add other items that are not on the list.	<input type="checkbox"/> Shortage of skilled and experienced people in the industry <input type="checkbox"/> Few applicants with the skills needed <input type="checkbox"/> People think that our workplace is remote <input type="checkbox"/> Applicants have a poor attitude to work or work ethic <input type="checkbox"/> People don't want to work in our industry <input type="checkbox"/> People think that our wages/salaries too low <input type="checkbox"/> People don't like our working conditions (e.g. shift work, seasonal work, hours of work) <input type="checkbox"/> Other (please specify)
What personal attributes are you looking for, when recruiting workers? Select as many as you want from the list below, or add other items that are not on the list.	<input type="checkbox"/> Ability to work in a team <input type="checkbox"/> Ability to work without supervision <input type="checkbox"/> 'Cultural fit' with the organisation <input type="checkbox"/> Fresh thinking / ideas <input type="checkbox"/> Literacy and numeracy skills <input type="checkbox"/> Practical / manual skills <input type="checkbox"/> Young people to teach <input type="checkbox"/> Mature workers to bring their skills with them <input type="checkbox"/> Other (please specify)
What level of education do you require when recruiting workers?	Available options are: 1. Secondary school – Year 10 and above 2. A Certificate II, III or IV 3. A university degree Assigned to each of the following job roles: <input type="checkbox"/> Managers <input type="checkbox"/> Professionals <input type="checkbox"/> Technicians and trade workers <input type="checkbox"/> Clerical and administrative workers <input type="checkbox"/> Sales workers <input type="checkbox"/> Machinery operators and drivers <input type="checkbox"/> Labourers
Have you put on any apprentices or trainees in the last 2 years? If so, in what areas?	<input type="checkbox"/> Open-Ended Response
Do you intend to put on any apprentices or trainees in the next 2 years? If so, in what areas?	<input type="checkbox"/> Open-Ended Response
Do you think that your organisation has a skills shortage?	<input type="checkbox"/> Yes <input type="checkbox"/> No
In what areas do you have a skills shortage?	<input type="checkbox"/> Open-Ended Response
How do you normally fill skills gaps in your organisation?	<input type="checkbox"/> Recruit school-leavers <input type="checkbox"/> Recruit experienced workers from another industry <input type="checkbox"/> Build the skills of workers with accredited training <input type="checkbox"/> Build the skills of workers with non-accredited training <input type="checkbox"/> Use the skilled workforce of another business (outsourcing) <input type="checkbox"/> Other (please specify)
Why do you train workers?	<input type="checkbox"/> To meet highly specific training needs <input type="checkbox"/> Legislative, regulatory or licensing requirements <input type="checkbox"/> Career development/to increase or update skills <input type="checkbox"/> To improve the quality of our products/services

Question	Options for answer
	<input type="checkbox"/> To formalise skills into qualifications <input type="checkbox"/> To maintain a flexible and responsive workforce <input type="checkbox"/> To use new technology <input type="checkbox"/> To remain competitive <input type="checkbox"/> Other (please specify)
<p>What training do you provide to new workers?</p>	<input type="checkbox"/> We put them through a full qualification/traineeship/apprenticeship <input type="checkbox"/> We put them through a part qualification/skill set <input type="checkbox"/> We give them a few select units of competency <input type="checkbox"/> We train them in house, on the job <input type="checkbox"/> We bring in an external trainer for non-accredited training, on the job <input type="checkbox"/> Other (please specify)
<p>What barriers are there to training?</p>	<input type="checkbox"/> Training fees are too high <input type="checkbox"/> The time commitment to training <input type="checkbox"/> The training centre is too far away <input type="checkbox"/> There's a shortage of suitable trainers <input type="checkbox"/> The training that is available doesn't meet my needs <input type="checkbox"/> Not sure how to find or access training <input type="checkbox"/> Other (please specify)
<p>What would remove or reduce these barriers to training, skills or education?</p>	<input type="checkbox"/> More information about formal training pathways <input type="checkbox"/> More information about funding options <input type="checkbox"/> A better relationship with training providers <input type="checkbox"/> A better relationship with local high schools <input type="checkbox"/> Scheduled industry-wide training (to create economy of scale) delivered locally <input type="checkbox"/> Training and assessment materials developed by our industry to ensure relevance and quality <input type="checkbox"/> Access to online training <input type="checkbox"/> Other (please specify)

ATTACHMENT 3: EXTERNAL CHALLENGES WITH NEGATIVE EFFECT ON BUSINESSES

Survey participants were asked to identify the external factors that affect their ability to access markets or grow. Half of the respondents reported the lack of younger workers and a shortage of a skilled workforce in the region as the primary factors with a negative influence on business. These issues are further discussed in the following section, but respondents also identified additional external challenges that have a negative effect on businesses. These are outlined in the following table.

Industry sector	External challenges
All sectors	<ul style="list-style-type: none"> Lack of younger workers A shortage of a skilled workforce in the region
Forest Growing & Management	<ul style="list-style-type: none"> Fires, rain, infrastructure damage Availability of grants for retraining (training costs) Demands on a business tend to increase but the benefits diminish
Harvesting & Haulage	<ul style="list-style-type: none"> Competition is present when tendering for jobs and when competing with other industries for workers Machine availability and parts due to the recent disruptions to supplier logistics Seasonality noting that winter wood is becoming unavailable
Sawmilling & Processing	<ul style="list-style-type: none"> Environmental licence for chemicals used in timber treatment Delivery of logs from suppliers Seasonality is noted as having an impact on the wood flow because it becomes less likely to get timber in winter months. When wood is stored, blue stain forms that impacts on log grading and drying timber variability
Pulp, Paper & Paperboard Manufacturing	<ul style="list-style-type: none"> The infrastructure including road, rail and effects of floods Distribution costs and general prices for electricity that go up Environmental licence.

Source: Murray Region Forestry Hub Survey data, 2022

ATTACHMENT 4: QUALIFICATIONS TO ADDRESS LABOUR SHORTAGE IN CRITICAL JOB ROLES

Skill Level	Occupation & Specialisations	Qualification	Apprenticeship/Traineeship	Training Providers
Skill Level 1	133511 Production Manager (Forestry) <ul style="list-style-type: none"> Forestry Manager 	FWP40121 Certificate IV in Forest Operations	Traineeship	Timber Training Creswick
	133512 Production Manager (Manufacturing) <ul style="list-style-type: none"> Production Manager (Timber) Timber Manufacturing Manager 	FWP40216 Certificate IV in Timber Processing	Traineeship	TABMA Training Timber Training Creswick
		PPM40121 Certificate IV in Pulp and Paper Operations	Traineeship	None
Skill Level 3	321211 Motor Mechanic (General)	AUR30420 Certificate III in Agricultural Mechanical Technology	Apprenticeship	17 RTOs nationally, including: Gippsland Institute of Technical and Further Education Goulburn Ovens Institute of TAFE TAFE NSW Motor Traders Association of NSW
		AUR30620 Certificate III in Light Vehicle Mechanical Technology	Apprenticeship	160 RTOs nationally, including: Gippsland Institute of Technical and Further Education Goulburn Ovens Institute of TAFE Motor Traders Association of NSW TAFE NSW Wodonga Institute of TAFE
		AUR31120 Certificate III in Heavy Commercial Vehicle Mechanical Technology	Apprenticeship	46 RTOs nationally, including: Gippsland Institute of Technical and Further Education Goulburn Ovens Institute of TAFE Motor Traders Association of NSW TasTAFE TAFE NSW

Skill Level	Occupation & Specialisations	Qualification	Apprenticeship/Traineeship	Training Providers
		AUR31220 Certificate III in Mobile Plant Technology	Apprenticeship	34 RTOs nationally, including: Gippsland Institute of Technical and Further Education Goulburn Ovens Institute of TAFE Motor Traders Association of NSW TasTAFE TAFE NSW
	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 	MEM30219 Certificate III in Engineering - Mechanical Trade MEM30319 Certificate III in Engineering - Fabrication Trade	Apprenticeship	
	323211 Fitter (General)	MEM31419 Certificate III in Engineering - Fixed and Mobile Plant Mechanic	Apprenticeship	12 RTOs nationally, including:
	323315 Saw Maker and Repairer <ul style="list-style-type: none"> Saw Technician 	FWP31021 Certificate III in Saw Technology	Apprenticeship	TAFE NSW Timber Training Creswick
	394213 Wood Machinist	FWP31121 Certificate III in Wood Machining	Apprenticeship	Timber Training Creswick
Skill Level 4	712916 Paper and Pulp Mill Operator	PPM30121 Certificate III in Pulp and Paper Operations	Traineeship	{Under review}
	721311 Forklift Driver	FWP30621 Certificate III in Timber Building Products Supply	Traineeship	TABMA Training
	711311 Paper Products Machine Operator	PPM20121 Certificate II in Pulp and Paper Operations	Traineeship	{Under review}
	711312 Wood Processing Machine Operator 711313 Sawmilling Operator	FWP20322 Certificate II in Timber and Wood Products Operations*	Traineeship	TAFE NSW Timber Training Creswick
	711314 Other Wood Processing Machine Operator	FWP30322 Certificate III in Timber and Wood Products Operations*	Traineeship	Gippsland Institute of Technical and Further Education TABMA Training Timber Training Creswick

Skill Level	Occupation & Specialisations	Qualification	Apprenticeship/Traineeship	Training Providers
	721112 Logging Plant 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 	FWP30121 Certificate III in Forest Operations	Traineeship	Intrain National Training Academy Pty Ltd Prosaw Australia TABMA Training TasTAFE THS Training Timber Training Creswick
	733111 Truck Driver (General)	TLI31222 Certificate III in Driving Operations	Traineeship	55 RTOs nationally, including: Intrain National Training Academy Pty Ltd Ironbark Training Pty Ltd Wodonga Institute of TAFE
		FWP30121 Certificate III in Forest Operations	Traineeship	TABMA Training Intrain National Training Academy Pty Ltd TasTAFE Timber Training Creswick THS Training
	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 Firefighter 	FWP20121 Certificate II in Forest Operations	Traineeship	TABMA Training Intrain National Training Academy Pty Ltd Timber Training Creswick THS Training

Skill Level	Occupation & Specialisations	Qualification	Apprenticeship/Traineeship	Training Providers
Skill Level 4	841312 Logging Assistant 841313 Tree Faller	FWP30121 Certificate III in Forest Operations	Traineeship	TABMA Training Intrain National Training Academy Pty Ltd TasTAFE Timber Training Creswick THS Training
Skill Level 5	8394 Timber and Wood Process Workers (L)	FWP20322 Certificate II in Timber and Wood Products Operations	Traineeship	TAFE NSW Timber Training Creswick
	839412 Sawmill or Timber Yard Worker (L) <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 	FWP30322 Certificate III in Timber and Wood Products Operations	Traineeship	Gippsland Institute of Technical and Further Education TABMA Training TAFE NSW Timber Training Creswick
	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 			

ATTACHMENT 5: DIRECTORY OF REGISTERED TRAINING ORGANISATIONS

RTO Name	Location	Contact Details	Relevant Qualifications
Timber Training Creswick	Moore St. Creswick, Victoria	Mr Rob Rule (03) 5345 2018 rob@timbertrainingcreswick.com.au	FWP40121 Certificate IV in Forest Operations FWP40216 Certificate IV in Timber Processing FWP31021 Certificate III in Saw Technology FWP31121 - Certificate III in Wood Machining FWP20322 Certificate II in Timber and Wood Products Operations* FWP30322 Certificate III in Timber and Wood Products Operations* FWP30121 Certificate III in Forest Operations FWP20121 Certificate II in Forest Operations
TABMA Training	-	Mr David Little 0447 813 786 David.l@tabma.com.au	FWP40216 Certificate IV in Timber Processing FWP30621 Certificate III in Timber Building Products Supply FWP30322 Certificate III in Timber and Wood Products Operations* FWP30121 Certificate III in Forest Operations FWP20121 Certificate II in Forest Operations
TAFE NSW	Capper St. Tumut, NSW	Mr Adam Farquharson (02) 6981 4807 Adam.farquharson3@tafensw.edu.au	FWP31021 Certificate III in Saw Technology FWP20322 Certificate II in Timber and Wood Products Operations* AUR30420 Certificate III in Agricultural Mechanical Technology AUR30620 Certificate III in Light Vehicle Mechanical Technology AUR31120 Certificate III in Heavy Commercial Vehicle Mechanical Technology AUR31220 Certificate III in Mobile Plant Technology
Gippsland Institute of Technical and Further Education	Morwell, Vic	Mr Brad Beach 0419 309 432 bbeach@tafegippsland.edu.au	FWP30322 Certificate III in Timber and Wood Products Operations* AUR30420 Certificate III in Agricultural Mechanical Technology AUR30620 Certificate III in Light Vehicle Mechanical Technology AUR31120 Certificate III in Heavy Commercial Vehicle Mechanical Technology AUR31220 Certificate III in Mobile Plant Technology

RTO Name	Location	Contact Details	Relevant Qualifications
Intrain National Training Academy Pty Ltd	Wodonga, VIC	Mrs Sonya Osten 0433 433 365 compliance@licenceme.com.au	FWP30121 Certificate III in Forest Operations FWP20121 Certificate II in Forest Operations TLI31222 Certificate III in Driving Operations
TasTAFE	Hobart, Tas	Mr Scott Adams (03) 6270 5453 scott.adams@tastafe.tas.edu.au	FWP30121 Certificate III in Forest Operations AUR31120 Certificate III in Heavy Commercial Vehicle Mechanical Technology AUR31220 Certificate III in Mobile Plant Technology
THS Training	Sydney, NSW	Ms Brooke Thomas (02) 9966 9070 brooke@ths.com.au	FWP30121 Certificate III in Forest Operations FWP20121 Certificate II in Forest Operations
Goulburn Ovens Institute of TAFE	Shepparton, Vic	Ms Celia Turnbull 0400 510 942 cturnbull@gotafe.vic.edu.au	AUR30420 Certificate III in Agricultural Mechanical Technology AUR30620 Certificate III in Light Vehicle Mechanical Technology AUR31120 Certificate III in Heavy Commercial Vehicle Mechanical Technology AUR31220 Certificate III in Mobile Plant Technology
Motor Traders Association of NSW	Burwood, NSW	Mr Phillip Cue (02) 9016 9000 Phillip.cue@mtansw.com.au	AUR30420 Certificate III in Agricultural Mechanical Technology AUR30620 Certificate III in Light Vehicle Mechanical Technology AUR31120 Certificate III in Heavy Commercial Vehicle Mechanical Technology AUR31220 Certificate III in Mobile Plant Technology
Wodonga Institute of TAFE	Wodonga, Vic	Mr Chris Logue (02) 6055 6523 ceo@wodongatafe.edu.au	AUR30620 Certificate III in Light Vehicle Mechanical Technology TLI31222 Certificate III in Driving Operations
Ironbark Training Pty Ltd	Wagga Wagga, NSW	Mr David Joyce 0456 219 347 dave@ironbarktraining.com.au	TLI31222 Certificate III in Driving Operations

ATTACHMENT 6: ACCESSING ACCREDITED TRAINING IN NEW SOUTH WALES

An employer considering skills development of their employees has several options available to them. These are enrolling learners into a part qualification (or skill set), a full qualification or an apprenticeship or traineeship. The training can be subsidised or fee-for-service.

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 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.

Part qualification or skill set training is an alternative to training as apprenticeships and traineeships, and full qualifications. These training programs are based on a set of nationally accredited Units of Competency that are much smaller and flexible compared to full qualifications. Funding for part qualifications may be available under Smart and Skilled, but 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 Plantation Forest Operator Skill Set*, which is made up of just 4 units of competency;
- Pre-apprenticeships, to gain basic skills for a worker prior to commencing a full apprenticeship.

Enrolling learners into a full qualification

This option applies to learners enrolled in a full qualification in a nationally recognised training package. It is conducted without being formally linked to employment. If it is linked to employment, then it can be delivered as an apprenticeship or traineeship.

There are 13 nationally recognised qualifications specifically developed for the industry in the Forest and Wood Products (FWP) Training Package. According to training.gov.au, there are several registered training organisations (RTOs) that carry either at least one FWP qualification or one or more FWP units of competency on their scope of registration. Not all these RTOs are active in New South Wales. Attachment 5 provides a list of qualifications and RTOs broken down by industry sector.

The scheme to provide subsidies for vocational education and training as apprenticeships and traineeships in New South Wales 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 5.

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.

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.

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.

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.

School Based Apprenticeships and Traineeships

There are several 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 with a full-time apprenticeship or traineeship that builds on the training that they have just completed.

School-based apprenticeships and traineeships (SBATs) allow school students to commence an apprenticeship or complete a traineeship while still at school¹³. They are a combination of paid employment, schoolwork and vocational education and training that leads towards an industry

¹³ NSW Department of Education Training Services NSW,
https://www.training.nsw.gov.au/apprenticeships_traineeships/policy/policy_procedures/school_based_app_tr.html,
accessed 26 November 2021.

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.

As of February 2023, the following FWP qualifications are listed as being suitable for school-based delivery:

- FWP20121 Certificate II in Forest Operations
- FWP20516 Certificate II in Timber Manufactured Products

Data¹⁴ indicates that since January 2022, there have been no school-based apprenticeships in FWP qualifications in New South Wales. The Hub region has not seen any delivery of school-based training in FWP qualifications either. An administrative, regulatory, and funding framework exists to offer school-based traineeships in NSW, yet it remains largely unused.

The Australian Forest Education Alliance (AFEA)

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 (www.forestlearning.edu.au) to provide school teachers, school students and the 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 forest industry in the Green Triangle 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.

¹⁴ NSW Department of Education Training Services NSW, *NSW Apprenticeship and Traineeship Approvals – School Based*, accessed 2 November 2021.

Pathway to a career in the forest and timber industry by Forest Learning, The Ultimate Renewable Pathway Program

Year 8

- Students learn about the Forest Industry locally through contextualised curriculum and specific units of work that are linked to the Australian Curriculum.
- Students participate in an Industry Immersion experience which is designed to showcase pathways within the industry.
- Students participate in field work experiences.

Year 9

- Students learn build on their knowledge of the Forest Industry and participate in a PBL/Inquiry unit of work.
- Students participate in an Industry Immersion experience This will be co-designed by local subject matter experts and supported with expertise and content knowledge for the PBL/Inquiry unit of work.
- Students participate in VR Forest Learning Experiences.

Year 10

- Students participate in an Industry Exploration program learning about the different aspects of the industry from seed to end product. Students undertake core modules from Nationally Recognised Industry courses as well as a range of industry led development opportunities. In year 10 students will learn about wood science, genetic selections & cell structures, what makes a good tree, statistics and carbon footprint.
- **Units of competency:**
 - * Work effectively in the forest and forest products industry (FWPCOR2201)
 - * Communicate and interact effectively in the workplace (FWPCOR2202)
 - * Contribute to team effectiveness (BSBFLM312)
 - * Apply First Aid (HLTAID003)

Year 11

- Students continue learning about the industry through multiple field based learning opportunities as well as completing the core modules from the Forest Industry Training packages. Students learn more about automation & technology, optimisation, renewable resource & programming.
- **Units of competency:**
 - * Evaluate fire potential and prevention (FWPCOR3203)
 - * Grade and mark logs (FWPCOT3270)
 - * Conduct quality and product care procedures (FWPCOR3203)
 - * Navigate in Forest Areas (FWPCOT2233)
 - * Implement safety, health and environment policies and procedures (FWPCOR3201)

Year 12

- Students select a specialist focus are based on their future pathway aspirations. This includes a trade or tertiary pathway. Students participate in block learning modules and complete selected units from Industry endorsed training packages in their selected pathway areas.
- Students have the option of undertaking an Industry Investigation project which will be assessed as their SACE Stage 2 Research Project. Investigation topics will be provided by Industry.
- Students will explore options for future career pathways including Apprenticeships / Traineeships, Tertiary qualifications (vocational & university)
- Flexible Apprenticeships/Traineeships will be an option for students participating in the specialist program.

Forest Growing & Management Focus:

- Plant Trees by hand (FWPFGM2203)
- Measure Trees (FWPFGM2215)
- Select Trees for tending operations (FWPCOT2220)
- Maintain Cultural Places (AHCILM201)
- Operate a 4wd on unsealed roads (FWPCOT3259)

Harvesting & Haulage Focus:

- Measure trees (FWPFGM2215)
- Select trees for tending operations (FWPCOT2220)
- Maintain cultural places (ACHILM201)
- Segregate and sort log (FWPCOT2242)
- Operate a 4wd on unsealed roads (FWPCOT3259)

Sawmilling & Processing Focus:

- Grade softwood sawn and milled products (FWPCOT2213)
- Use handheld tools (FWPCOT2219)
- Apply wood and timber product knowledge (FWPCOT2241)
- Shut down and isolate machines/equipment (MEM18011)

Government support for training

The three tiers of government in Australia offer support for training and skills development as follows:

- 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”¹⁵. The Murray Region Local Jobs Program is the relevant program for the study region provides an Employment Facilitator, Local Jobs and Skills Taskforce, and Local Jobs plan for the region.¹⁶
- 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; and 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 several 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 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”¹⁷.

Smart and Skilled (NSW) – Smart and Skilled provides eligible students with an entitlement to government-subsidised training up to and including Certificate III; and 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

¹⁵ Department of Education, Skills and Employment, Australian Government, <https://www.dese.gov.au/local-jobs-program>, accessed 22 July 2021.

¹⁶ Department of Education, Skills and Employment, Australian Government, <https://www.dese.gov.au/local-jobs-program/resources/central-west-local-jobs-plan>, accessed 4 February 2022.

¹⁷ NSW Government, Regional Economic Development Strategies <https://www.nsw.gov.au/regional-nsw/regional-economic-development-strategies>, accessed 22 July 2021.

where their units can be 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.

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 several programs. These programs include the following, and they 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**¹⁸. These 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.

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.

¹⁸ https://www.training.nsw.gov.au/apprenticeships_traineeships/students/bert_evans_scholarships.html

ATTACHMENT 7: APPRENTICESHIPS AND TRAINEESHIPS IN THE MURRAY REGION FORESTRY HUB AREA

Industry	2017 - 2021	
	Total Apprenticeships and Traineeships	Average Commencement Age
Manufacturing Engineering	2,450	21.9
Building and Construction	2,181	20.6
Automotive	1,630	21.4
Food Industry	1,428	28.0
Finance, Insurance and Business Services	1,380	23.8
Community Services and Health	1,191	25.8
Utilities and Electrotechnology	1,032	21.6
Tourism	803	22.8
Primary Industry	765	23.9
Retail and Wholesale	761	21.2
Transport and Distribution	438	32.8
Property Services	372	31.1
Furnishing, Light Manufacturing, Textile	285	20.9
Public Sector Industry	187	32.2
Information Technology	137	24.4
Sport and Recreation	63	19.5
Process Manufacturing	35	27.6
Forest Industry	35	31.3
Racing	30	19.8
Communications	27	25.1
Mining	23	31.4
Arts and Entertainment	7	18.0
Total	15,260	23.5

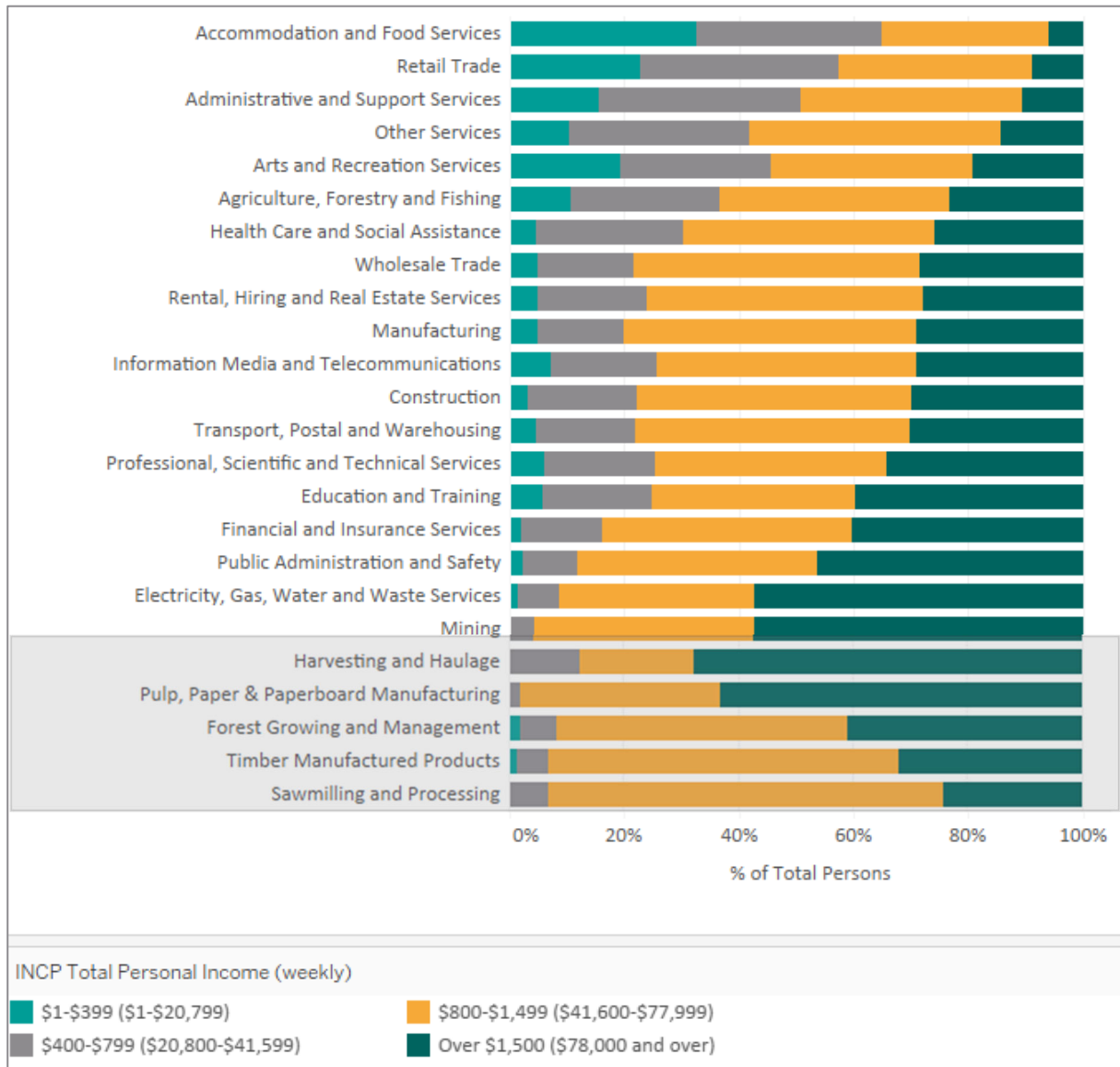
Source: Training Services NSW Tableau data, 2021

Qualifications commenced in the forest and wood products industry in the Murray Region Forestry Hub area	2017-2021	
	Total of Apprenticeships and Traineeships	Average Commencement Age
Certificate II in Sawmilling and Processing	16	32
Certificate III in Timber Merchandising	7	34
Certificate III in Sawdoctoring	5	29
Certificate III in Timber Truss and Frame Design and Manufacture	3	22
Certificate III in Woodmachining	2	41
Certificate III in Harvesting and Haulage	2	27
Total	35	31

Note: Data reported to Training Services NSW indicates that school-leavers are not being recruited into apprenticeships or traineeships in forestry and timber-specific qualifications. However, they are being recruited into other trades such as electricians and mechanics.

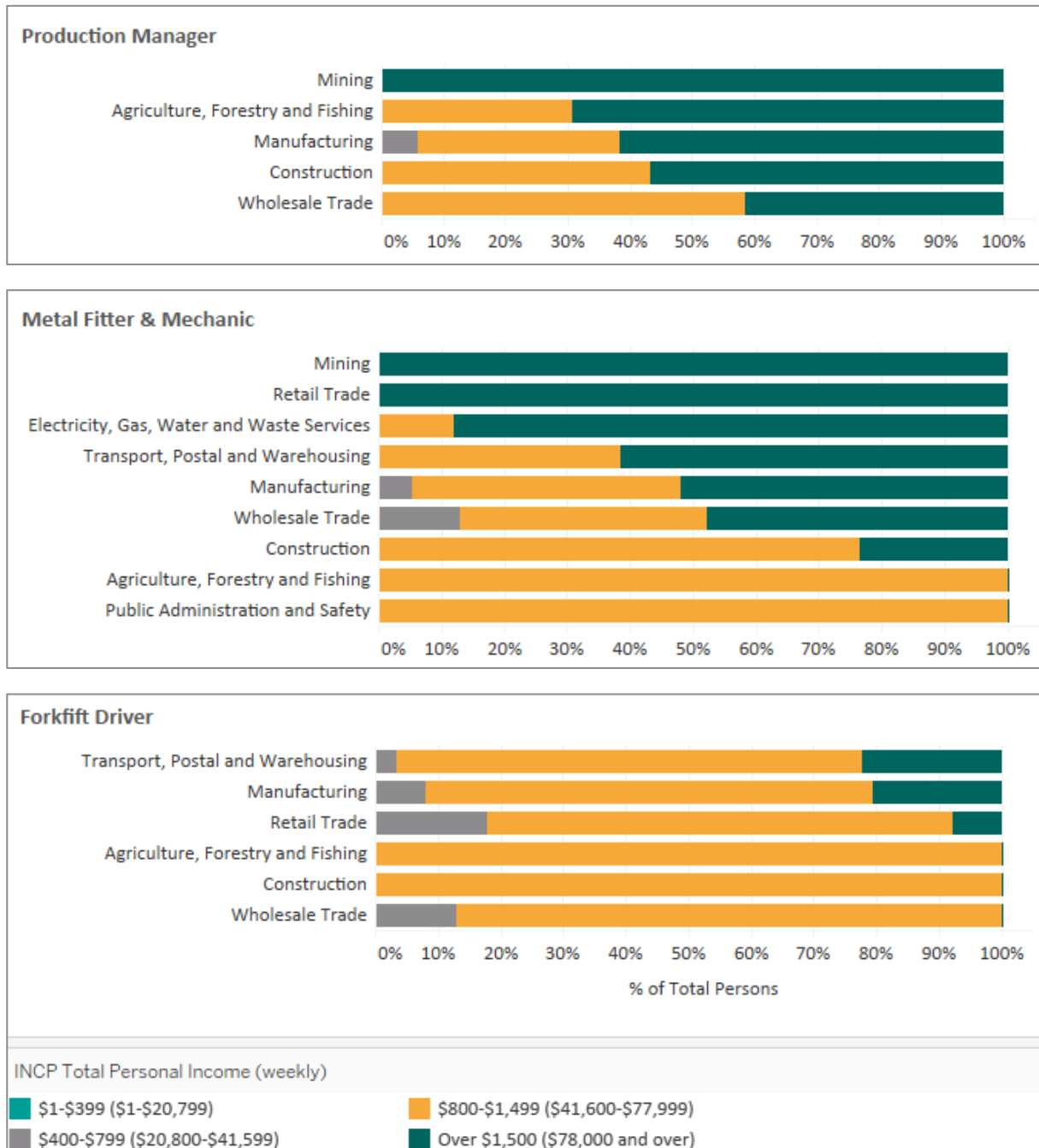
Source: Training Services NSW Tableau data, 2021

ATTACHMENT 8: INCOME DISTRIBUTION OF FULL-TIME WORKERS IN THE MURRAY REGION FORESTRY HUB AREA BY INDUSTRY



Source: ABS Census of Population and Housing, 2021

ATTACHMENT 9: INCOME DISTRIBUTION OF FULL-TIME WORKERS IN THE MURRAY REGION FORESTRY HUB AREA BY OCCUPATION



Source: ABS Census of Population and Housing, 2021