



Forest Machine Operator Training

Damien Petfield
Gottstein Fellowship Final Report
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The Trust is the living legacy to honour Bill (Joseph William) Gottstein - who died in a tragic field accident in 1971 while visiting PNG. He was an exceptional, innovative man and was internationally respected. He was a scientist and a leader in the CSIRO forest products division.

The Gottstein Trust invests in capacity building which directly contributes to the success and evolution of Australia's wood products and forestry industry.

Governed by several Trustees - all with close industry links – every year the Trust calls for applications from interested candidates for Fellowships, Scholarships and Skill Development grant awards. These grants are awarded to individuals through a competitive selection process. The funding provided enables recipients to pursue projects, further their studies or undertake specific skill development. Regular short courses and industry field trips are also run each year, with a focus on understanding both forest science and wood science.

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About the author

Damien Petfield is a value recovery specialist, with 15 years' experience at Forestry Corporation of NSW (FCNSW) Softwood Plantation Division (SPD). Currently the Operations Improvement Coordinator responsible for the implementation of strategies to monitor and improve value recovery across SPD, including:

- The management of SPD's in-forest harvesting optimisation program and associated technologies for 40+ cut-to-length harvesting systems across all five NSW softwood regions.
- Coordination, development and delivery of value recovery, log making and thinning training for contract harvest operators and FCNSW staff across NSW.
- Project management of short and long-term operational improvements across all facets of the plantation forestry business...with a practical focus on making day-to-day work easier, more efficient and better aligned to a safer, compliant and higher-value day-to-day future.



An **EXTRA 1%** sawlog today builds
an extra house tomorrow
[forestrycorporation.com.au](https://www.forestrycorporation.com.au)

Gottstein fellowship trip presentation: <https://www.youtube.com/watch?v=uzG2E2TzwPo>

This Gottstein Fellowship was awarded in 2025.

Acknowledgement

I am extremely thankful to the Gottstein Trust for making this Fellowship possible. The opportunity to step away from day-to-day operations, travel to Sweden and Finland, and learn directly from people and organisations at the leading edge of forest machine operator training has been both professionally valuable and personally memorable. I am grateful to the Trustees for backing a practical industry project that matters to growers, contractors, operators and the future capability of Australian forestry.

Forest Machine Operator Training – the future

Gottstein fellowship:

Identifying opportunities to enhance the training and improvement of computer optimising cut to length harvesting and forwarder operators, aiming to achieve Standards and Qualifications outlined in the 'Safe and Skilled' charter.

Damien Petfield



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Trust**

Fostering opportunity
& knowledge



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1. Executive summary

The safe and efficient mechanical tree harvesting (whilst maximising value recovery) of 30+ year old trees at clearfell depends on the ability of operators to do a lot of things well. These operators hold aloft an industry that contributes \$24 billion to the national economy and supports around 180,000 jobs (AFPA, n.d.). This report calls for a coordinated, industry-wide commitment to lift the capability, consistency, and recognised training of our harvesting workforce to secure this value into the future.

Lars Svensson, CEO of Nordic Forestry Automation stated “Forest thinning [and I say Clearfell also] is a craft that requires 100 per cent focus and takes several years to master. The total cognitive load is comparable to that of a fighter pilot (Svensson, 2023).” Would any Air Force let pilots fly fighter jets with no formal training and qualifications? Due to a lack of clear and affordable training pathways forestry does. My fellowship was to identify ways to improve Australian forest harvest operator training, with a particular focus on high value softwood log recovery (cut to length), that would suit Australian conditions and our industry. Current challenges to an improved training future include:

- No clear, nationally consistent training pathway – even though the safe and skilled charter outlines requirements it is not consistently embedded, understood, or applied across the industry.
- Low industry confidence and limited access to high-quality, fit-for-purpose RTO training and assessment.
- A ‘skinny’ training market – insufficient learner numbers to sustain viable, high-quality training programs.
- Training cost and effort largely sit with contractors, with ongoing production pressures driving less-than-ideal training outcomes, at a time where industry is required to yield more value from the existing estate, at a lower cost. High-quality well-trained operators are a must.
- Lack of a clear pathway limits attraction of high-quality new entrants into the industry.

What are the key benefits to engaging well-trained operators:

Headline	What it means
Training reduces operational risk	Operator capability is a frontline control for safety, environmental soil/water conservation and compliance – ensuring our social license to operate. If operators are not properly trained, instructed and supervised, industry carries the risk - operationally, legally and reputationally.
Training protects margin	Every poor operating decision costs volume, value and time. Well-trained operators recover more out of every tree, make better log-making decisions and keep production moving. In a tight supply environment, quality operators are essential to commercial success.
Training lifts production	The difference between an average operator and a top operator is material. There can be a 40% difference in output, and operator work practices can drive wide productivity variation. That is too big a gap to ignore.
Training improves return on capital	Harvesters and forwarders are expensive assets. Good operators get more productive hours, less abuse and better use out of the same machine. Poor operators burn money through lower output, rougher operation and avoidable wear.
Training cuts time wasted	Better-trained operators need less handholding, make fewer avoidable mistakes and reduce the drag on managers, supervisors and contractor businesses. That frees capable people to focus on higher-value work instead of managing unnecessary problems.
Training strengthens the estate, not just the shift	Operator quality affects thinning quality, environmental outcomes and how well the forest is left behind for the next rotation. Poor training does not just hurt today's load docket - it damages long-term forest value.
Training is how you keep capability in the industry	Without a credible pathway, the industry struggles to attract, develop and retain the next generation. A clear, high-quality training system is not just about skills - it is how you secure future workforce capability.
If we want more value from the same estate, we need better operators	The pressure to recover more value at lower cost is not easing. That makes operator capability a genuine business lever, not a side issue. If industry wants better safety, stronger value recovery and higher productivity, operator training must shift from a conversation to execution. ABARES (2025) reports the average yearly softwood plantation sawlog volume since 2011 is 9.42mill/m ³ - even a 1% improvement from better-trained operators would equate to 94,000m³ of additional sawlog, worth roughly \$9 million to the country. Australian forest and wood products statistics - DAFF

The training of harvester and forwarder operators is a shared responsibility – all stakeholders must commit more effort, funding, resources, and sustained support to enable the above.

Key recommendations to improve harvest operator training in Australia:

1. Introduce a **compulsory national forestry harvesting operator ticket** by 2028, formalising the Safe and Skilled units of competency.
 - Operators must complete the ticket within 2 years of starting, in the interim supervision of any new operator must be demonstrated & adequate.
 - Consider an annual continuous professional development (CPD) program to ensure high standards and continuous improvement. This could enable sustained investment in improved high-quality training and assessment.
2. **Establish an Australian Forest Grower Training Group (AFGTG)** to lead the coordination and delivery of a high-quality, cost-effective national training pathways that attracts top talent to the forest industry and supports the introduction of a national operator ticket.
 - This group must commit to consultation with contractors, operators and sub-contractors...here and abroad to capture best practice.
3. **Leverage the Forest Grower partnership** to:
 - Ensure standardised, high quality, effective delivery of safe and skilled units of competency.
 - Rapidly develop and deploy training modules aligning safe and skilled units of competency with the operator ticket using the Mitti platform by December 2028, supporting new and emerging operators.
 - Support the University of Adelaide Forestry Centre of Excellence (<https://www.forestrycoe.com.au/>) to expand virtual reality-based training capability for operating, felling, thinning and clearfell operations.
4. **Partner with forest machinery manufacturers to enhance simulator-based training programs** to Australian forest conditions. Plus, rapidly build operator skills and good habits using repeatable scenarios, immediate performance feedback (danger, reaction time, errors, efficiency, behaviours), and gamified modules designed to engage younger learners. Including focus areas of:
 - Structured beginner pathways for clearfell and thinning operations.
 - Advanced modules for experienced operators focused on productivity, value recovery and continuous improvement (CPD).
5. **Investigate the viability of one nationally recognised, best-practice harvest operator training school**, integrating multi-brand simulators and (very importantly) real machines under a no-production pressure contract with a forest grower - enabling experienced, high-quality trainers to work year-round (harvesting when not teaching)

and deliver operator training. Location is critical, the site needs to be optimally located with cost effective easy access, accommodation and close to an operational forest.

- OR perhaps a more realistic/affordable hybrid pathway utilising centres in the major state plantation regions - combining simulators and field operations with the above online theory modules, recording a diary of hours (like a driver's licence) with minimal production pressure and utilising remote recognition of competence.

2. Overview

Highly trained and professional harvesting and forwarder operators are essential, but after 6 years with a major forest grower in a role that specialises in value recovery and harvest optimisation, I cannot outline a clear existing pathway to become a professional harvesting operator. Most skill development is done on the job within each harvest contracting business. This represents a significant gap and risk, because we need the best possible volume and value recovered, safely from every tree harvested after ~30 years invested in its establishment and growth. Glen Murphy (2003) reported that, across 39 mechanized value recovery studies from Sweden, Finland, the USA, Australia and New Zealand, value loss ranged from 1% to 68%, with an average of 20%. This would have come down in recent years with a 1 to 8.5% loss often quoted...even a 1% sawlog loss per day matters, in NSW alone that equates to a loss of timber that would build 1.3 average family houses per day, 312 homes less per year!

Sweden and Finland are widely regarded as global leaders in cut-to-length harvesting, automation and operator development. There is value in learning from what they do well - and adapting the most transferable elements to Australia's operating conditions, market structure and training system.

My Gottstein fellowship entailed two major components:

1. Visiting Sweden and Finland – Scandinavians are the world leaders in cut-to-length harvesting and training, no other countries match their scale and maturity, as such I believe we may learn from them and adapt to suit our Australian requirements.
2. Collaborate with key stakeholders to take these learnings and recommendations into a report and onto a cost effective, repeatable, efficient training pathway that gives operators the skills and experience contractors and growers need to succeed. This involved a review of the Australian forestry training landscape, including stakeholder mapping and an industry survey to inform a well-considered position on the current state and future direction of operator training. The survey includes responses from a range of respondents including Forest Growers, Registered Training Organisations (RTOs) and the target response group - Harvest Contractors.

3. Australian Forestry Training Landscape

Competent, safe forest harvesting operators are not optional...they are critical. Forest growers, contractors, processors, training providers, industry bodies and unions all ultimately depend on the industry generating income, or on creating a case for government to assist with funding. Operators are the ones harvesting trees into logs of the highest possible value and forwarding them roadside, while working safely, legally and productively. They keep the wheels turning. Take them out of the system and ask the question: who in Figure 1 continues to function without harvesting operators?

SafeWork Australia

Develops national policy and the states regulate and enforce Forestry operations guidance material

Does not mention operators needing to have a formal license; however, section 19(3)(f) of the Work Health and Safety Act 2011: employers (PCBUs) must provide information, training, instruction and supervision so far as is reasonably practicable to protect workers from risks arising from work. This duty requires that workers are trained and supervised to a level that allows them to perform their tasks safely and competently.

[Work Health and Safety Act 2011 - Federal Register of Legislation](#)

SafeWork NSW

https://www.safework.nsw.gov.au/_data/assets/pdf_file/0010/1394704/safety-in-forest-harvesting-COP.pdf

Also does not mention operators need to have a formal licence.

FWPA (Forest & Wood Products Australia)

FWPA is an industry-owned, not-for-profit Rural Research and Development Corporation (RDC) for the forest and wood products industry.

Partnering with stakeholders to improve the productivity, competitiveness, and sustainability of the forest industry.

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

RTO's

Registered Training Organisations are authorised to deliver and assess nationally recognised training and issue qualifications, vital to meet Safe and skilled standards.

ForestFit

Contractor professional development, business competency, operational compliance and risk management.

<https://www.forestfit.com.au/>

AFPA (Australian Forest Products Association)

AFPA is the peak national industry body representing all elements of the value chain from the sustainable harvesting of plantations

AFPA's membership falls under four chambers - Growers, Hardwood Processing, Softwood Manufacturing, and Pulp, Paper and Bioproducts.

[Homepage - Australian Forest Products Association \(ausfpa.com.au\)](#)

Parties needing well-trained, safe harvesting operators:

Processors/Mills - all
Forest Growers - all
Contractors - all
Manufacturers - all
Operators - new or hopeful

ForestWorks

ForestWorks is an industry-owned not-for-profit organisation offering skills development services for the forest, wood, paper, timber, furnishing, textiles, clothing and footwear industries.

[What We Do - Forestworks](#)

Regional Forestry Hubs (11 Australia wide)

Hubs work with industry, state and local governments, and other key stakeholders to prepare and provide the Government with strategic planning, technical assessments and analyses that aim to support growth in the forest industries in their region. In addition to continuing this work the role of the Hubs is being expanded to include extension services.

Growing trees, growing timber, growing communities!

[Regional Forestry Hubs - DAFF \(agriculture.gov.au\)](#)

Unions

- Construction, Forestry and Maritime Employees Union (CFMEU) → forestry transitioned to The Timber, Furnishing and Textiles Union (TFTU) <https://www.tftu.org.au/>
- The Australian Workers' Union (AWU)

Unions represent and support forestry workers exerting strong influence on training through representation on Government Panels, Industry reference committees and leverage funding for training that ensures safer skilled workers.

University of the Sunshine Coast (UniSC) - Forest Research Institute

The Forest Industries Research Centre (FIRC) is focused on the forestry value chain and the economic and environmental sustainability of forest industries. Forestry education and research at a university level has mostly collapsed and UniSC is still standing on the research front.

[Forest Industries Research Centre | UniSC | University of the Sunshine Coast, Queensland, Australia \(usc.edu.au\)](#)

Forestry Centre of Excellence (FCoE)

FCoE delivers global leading research, development and education to enhance the competitiveness, diversification and prosperity of the Green Triangle regional economy and communities, while building overall resilience in the Australian forest industry.

<https://www.unisa.edu.au/research/forest-research-mount-gambier/>



AFCA (Australian Forest Contractors Association)

AFCA fosters strong partnerships with members, industry sectors, and all levels of government...with a primary goal to provide a value-add advantage for members through meaningful collaboration and advocacy. AFCA has been serving the industry and members for more than 20 years.

<https://www.afca.asn.au/>

Australian Forest and Wood Innovations (AFWI)

is a collaboration between the Australian Government and the University of Tasmania, dedicated to delivering positive environmental, social, and economic outcomes for Australia's forest and wood products industries.

<https://www.afwi.au/about/about-afwi/>

Figure 1: Key stakeholders in the forestry training landscape

Most of these stakeholders are drawing from the same limited pool of industry and government funding. Everyone benefits from operators who are safe and skilled - through fewer safety incidents, better productivity, reduced compliance risk and a more stable

workforce. But this is not always the current state of play. The problem is real, it is already impacting operations, and it cannot be fixed by any single organisation acting in isolation.

To quote one of the survey respondents, ***"There needs to be a greater investment in the training and recruitment of forestry equipment operators across all states. The current system is not working and is too fractured. Currently there are too many Quazi industry groups achieving nothing meaningful for the next generation of Forestry equipment operators. The training has been left up to the contractors, with no support or direction from industry or growers. We as an industry need to do more to promote the industry and therefore make it an industry that school leavers/next generation want to make a career in"***.

The opportunities identified in this report must therefore deliver practical outcomes that work. Training pathways need to be accessible for learners, workable/beneficial/timely for contractors, and match the needs of forest growers, with qualifications and evidence that clearly support WHS duty-holder obligations. Solutions must operate within the existing stakeholder ecosystem shown above, but with greater accountability for dollars spent and outcomes.

Each stakeholder has a key role to play and a responsibility to act - not just to support better training in principle, but to actively contribute to its design, delivery and uptake. If we are serious about lifting safety, productivity and workforce capability, this is where accountability sits: turning shared dependency into shared action - to attract, train and retain safe and skilled operators who are the backbone of the forest industry.

4. Industry Harvesting Operator training survey results

4.1 Survey overview

In April 2025 "Industry Harvesting Operator training survey" was developed by myself and the CEO of Australian Forestry Contractors Association (AFCA) to understand the broader industry position on the state and future direction of harvest operator training in Australia. It was distributed in April/May 2025 to:

- All AFCA members
- All the regional Forestry Hubs (managers and members) Australia wide
- All Forest Industry Council (FIC) members - growers, processors and contractors for both softwood plantations and native forests in the Southwest Slopes of southern NSW.
- All FCNSW softwood harvesting contractors
- All forestry related RTOs Australia wide

- All major softwoods growers in Australia plus some in New Zealand, with a request to distribute to their harvesting contractors
- All harvest machinery manufacturers
 - Appeared in the Forest Industry Engineering Association (FIEA) subscriber's newsletter and website HarvestTECH News [HarvestTECH News - May 2025 - Industry Update](#)
- Appeared in the Friday Offcuts newsletter covering Australia and New Zealand

Using these best endeavours, enthusiasm and multiple reminders we received a response count of 32. Well known survey experts 'Survey Monkey' indicate a response rate of 10 to 30% is "good" and with approximately 250 harvest contractors Australia wide a 12.8% response is still good, but a ways from the excellent I was hoping for (Graglia, no date). We will look at these results as good, but with a caveat of caution based on the number of respondents. I do believe the survey results mirror, from my experience, the general state of harvest operator training in the Australian forest industry. The response count by grouping is displayed in table 1.

Table 1: Survey response grouping

Response grouping	Count of Responses	%
Contractor	19	59%
Grower	6	19%
Machine Manufacturers	2	6%
Mill	2	6%
RTO	3	9%
Total	32	

Respondents came from the below locations:

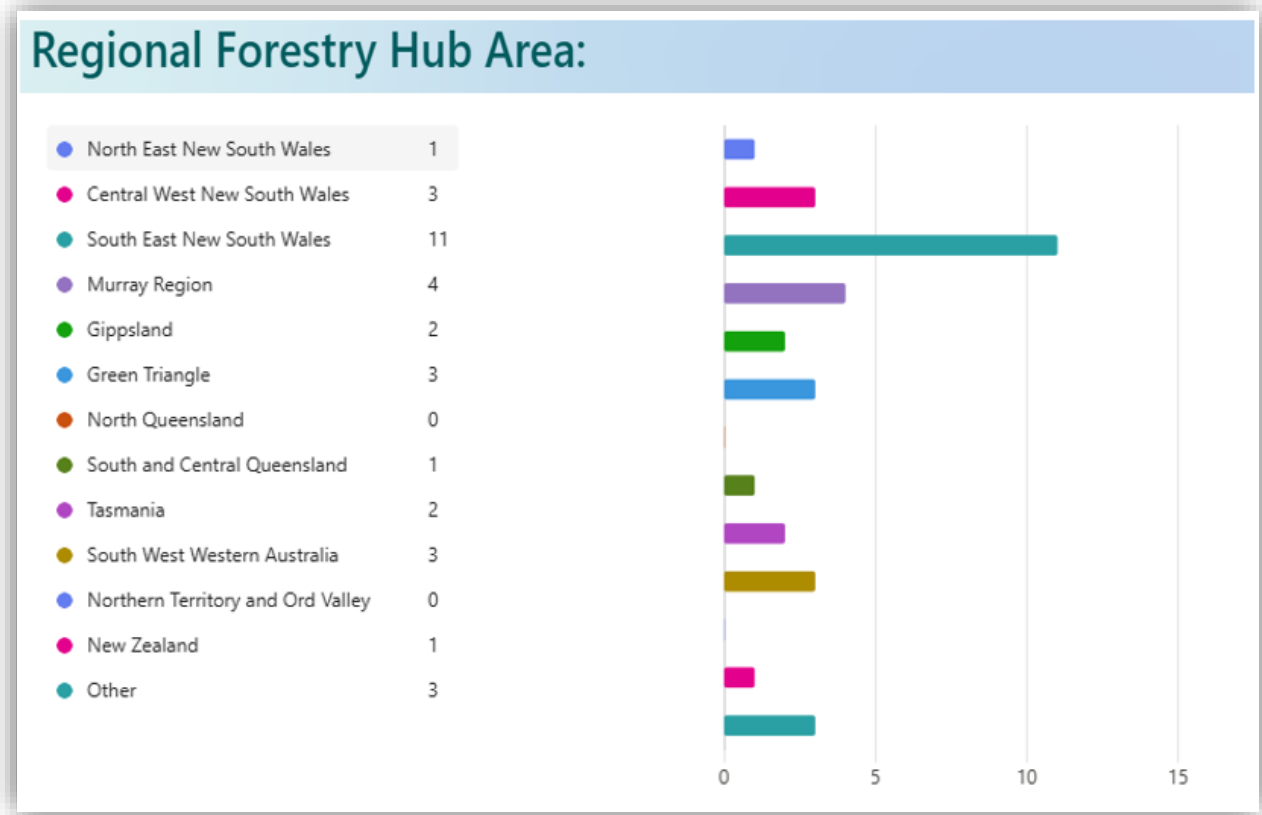


Figure 2: Respondent Hub locations

Ideally, more contractors would have responded, but on the flip side there is a diverse range of interested parties as seen in figure 2 from across most of Australia and New Zealand!

The body of this report is based on questions addressed in the survey as it encapsulated core themes when looking to understand and improve operator training future (full survey results are in appendix 1).

4.2 Safe and skilled - Operator and training needs

Despite the high-risk nature of the work, particularly if forest machinery is operated with a lack of training and assessment, there is currently no specific licence or nationally mandated training requirement to operate a harvester or forwarder in Australia. Safe Work Australia states that harvest machinery should be operated by workers who have been “trained and assessed in the machinery they are operating” (Safe Work Australia 2014). However, as illustrated in Figure 3, this requirement is framed only as a risk-reduction measure and does not constitute a formal, consistent, clearly defined training or competency standard.

Hazards and activities	Forestry operations risk profile		
	Higher risk		Lower risk
Operating machinery	workers operate machinery without training or assessment	- workers have some training or training which is not current or relevant to the machinery they are operating. - has only been assessed informally	workers have been trained and assessed in the machinery they are operating

Figure 3: P3 Forestry-Operations-General-Guide [Forestry operations guidance material | Safe Work Australia](#) (Safe Work Australia 2014).

State and Territory Work Health and Safety legislation, based on the nationally harmonised Work Health and Safety Act 2011, places a primary duty of care on persons conducting a business or undertaking. Section 19(3)(f) requires *"the provision of any information, training, instruction or supervision that is necessary to protect all persons from risks to their health and safety arising from work carried out as part of the conduct of the business or undertaking"*

Safe Work Australia (n.d.) does not use the word "competent" directly but clarifies a 'low risk'- or capable operator in relation to "training, instruction and supervision" in practice means:

- Training must be appropriate to the task and risk.
- Instruction must be clear and understandable.
- Supervision must be adequate until competence is demonstrated.

Regulators and courts consistently interpret 19(3)(f) above as 'competent'; therefore, anything we do now or in the future must be toward this end.

83% of survey respondents indicated that Safe and Skilled competency was important to their business, Safe and Skilled is a nationally recognised, industry-led commitment by the Australian forest sector to put worker safety, capability and professionalism first – it was formalised in 2021. This is led by the Australian Forest Products Association (AFPA) in partnership with AFCA and ForestWorks and it demonstrates a clear intent to ensure every forestry worker is equipped with the right skills, the right training and the right recognition to work safely and confidently (AFPA 2021).

Unfortunately, 36% of survey respondents were unaware of the charter. One or both of these national bodies must have someone responsible for the carriage and communications around

national forest safety to ensure 100% of the industry is across requirements. When asked why safe and skilled competency is important to their business the general themes included:

Positives

- Keeping operators safe “helps me sleep” whilst meeting WHS and contractual requirements.
- Provides clear minimum competency standards ensuring operators are assessed, qualified, and industry ready.
- A solid investment in people and training that supports operator confidence, credibility, and future employability at a consistent professional standard industry wide.

Negatives

- Lack of quality trainers and assessors when needed and who understand new machinery.
- Cost and time, particularly if travel and accommodation is required.
- Often viewed as a “tick-the-box” or minimum compliance exercise.
- Could be and is ignored by some businesses if it’s not compulsory.
- It is not well understood or visible to all contractors and operators.

It needs to be 100% important to ensure peoples safety and industry reputation. “The Forest Grower members of AFPA and Contractor members of AFCA are committed to ensuring that all workers in the forests we manage or work in hold a statement of attainment of approved nationally recognised units of competency. We endorse the agreed Safe and Skilled units of competence and commit to ensuring the list is reviewed annually to ensure its ongoing relevance” (AFPA & AFCA, 2021).

https://cdn.ausfpa.com.au/wp-content/uploads/2021/09/Safe_and_Skilled_Charter_final_screen.pdf

How should operators be assessed to the approved nationally recognized Safe and Skilled units of competencies? Respondent themes:

- Primarily on-the-job, in-field assessment on active sites, supported by practical demonstrations using real machine operating conditions.
- Qualified, industry-experienced assessors (including RTOs, trainers, peers, or manufacturers) who understand the equipment and add real practical value.
- Light-touch theory combined with practical validation, including recognised prior learning (RPL) and verification of existing skills, to reduce red tape and time burden.
- More flexible, relevant, and accessible systems, including more assessors, nationally consistent standards, and units tailored/delivered when needed in a timely fashion.

Safe and Skilled is widely regarded as essential for meeting compliance obligations, demonstrating safety assurance, and maintaining consistent industry standards. The negatives can be overcome; it must be phased into all harvesting contracts making it compulsory, Australia wide, to have a forest machine operator ticket by 2028 formalizing the nationally recognized Safe and Skilled units of competencies. It is necessary to have a common, defensible standard of competence that underpins legal compliance, workforce credibility and professionalism in the industry.

4.3 Operator age range

The survey respondents employed Forest machine operators of all types numbering 350+ with ages lower than expected with 13% in the 60+ bracket (below figure 4).

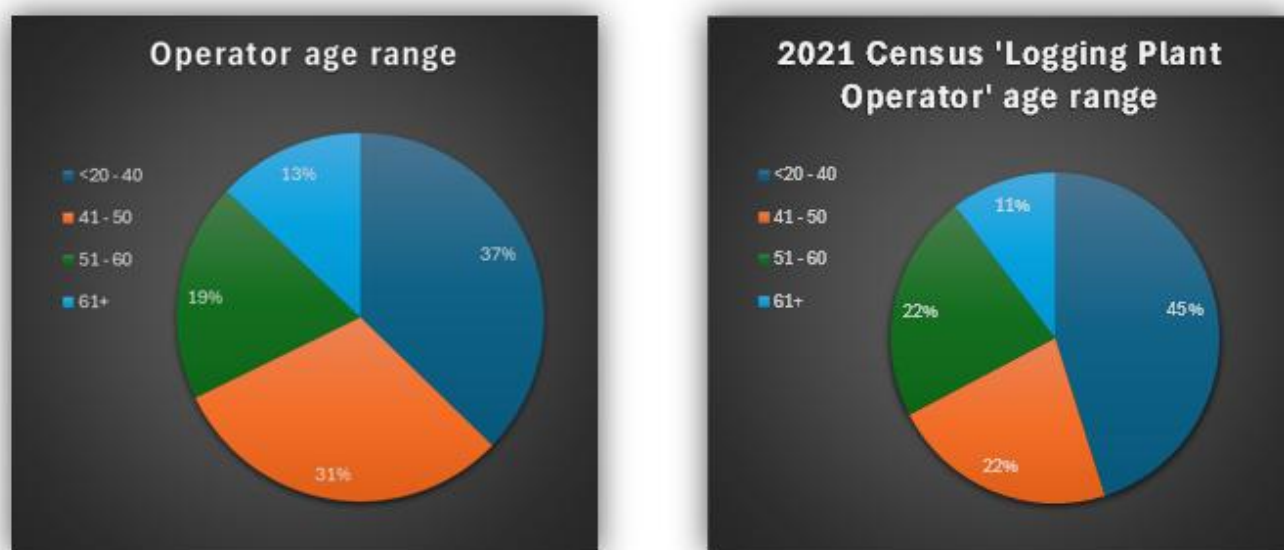


Figure 4: Operator age range survey + Australian Bureau of Statistics (ABS) (2021) census

Prior to the survey, common thinking was that greater numbers of older experienced operators were nearing retirement, heading the industry toward a more imminent workforce crisis of experience. To see 68% of operators under 50 was heartening – this is mirrored in the ABS (2021) census data with 67.3% of the 1,157 logging plant operators recorded also in this age bracket. Although, it is not necessarily retirement that causes people to leave, age is not the only marker for needing new well trained productive operators. The harvest contractors surveyed indicated they need to train between 0 and 9 new starters per year. If we add up the new operators required from those surveyed on an average per year it is 37 Australia wide. Given the survey sample size, the actual number would be more but still indicative of a skinny training market for RTOs or companies to be able to make a sustainable business out of training with permanent high-quality trainers.

If we compared this to another operator group, forklift operators, who do need a formal license to operate – 71,300 operators currently work in Australia, if they turnover at the average sector rate of 35% that is close to 25,000 newly trained operators needed...companies can make a business out of training that many new starters, also breeding competition so training providers keep the training quality high and price competitive. Unfortunately, forestry has no such numbers, and this is one of the key reasons for a demise in training pathways.

However, this is no excuse – our challenge as an industry is to come up with practical training means. This is possible and should be a priority. The current funding environment includes approximately \$9.5 million allocated through ForestWorks to support industry training and capability development...but will not directly train one operator. Harvest machinery operation remains a high-risk area - the clear and ongoing training gap requires coordinated, industry-led action to practically address.

4.4 Operator Diversity

The survey showed that of the 350+ operators 16 are female (4.5%) which is close to the trend of 4% in Sweden (figure 5) (Vennesland et al., 2020). But less than a better to 21.4% in the Western Australian mining sector (CMEWA, 2024). An increase above 4.5% would capture the benefits female operators bring to not only operations but a business/industry:

- Improving workplace safety and culture, as inclusive and respectful environments correlate with better safety outcomes.
- Reduced machine wear and tear: Women are statistically more careful, take fewer unnecessary risks, and follow procedures closely, which can lead to lower mechanical stress on equipment.
- More consistent operating patterns: Efficient, steady machine operation - an area where women have been shown to excel - helps reduce component strain, fuel usage variation, and unplanned breakdowns.
- Higher productivity and better financial results.
- An overall lift in workforce engagement and effectiveness...making it a better place to work - people will stay and good people will want to come!
- Enhanced innovation and problem-solving, as diverse teams bring a wider range of perspectives and technical approaches.
- Sustainable and compliant practices that would enhance not only safety and production but also environmental, thinning quality and value recovery outcomes.
- Better multitasking during operation: Women's strong multitasking abilities support effective monitoring of gauges, alarms, and machine behaviour while operating, improving early detection of issues before they escalate to mechanical failures.

- Smoother operating with more care and attention to detail - improved adherence to maintenance protocols: Higher attention to detail and stronger compliance with safety processes often translate into better pre-start checks, defect reporting, and consistent adherence to maintenance guidelines.

MSHA Safety Services, 2025 & Digicore, 2026

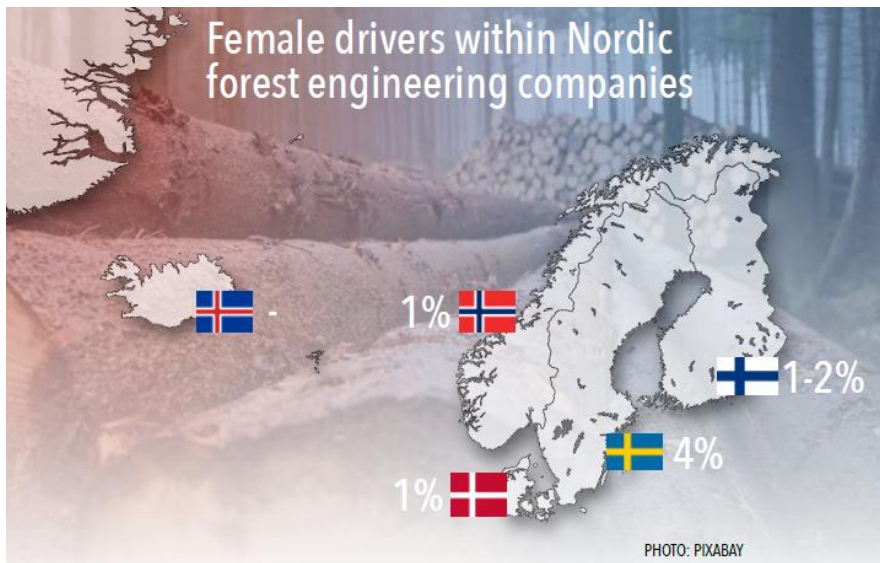


Figure 5 Female operators in Nordic forestry (Vennesland et al., 2020)

Given low numbers of female operators here, there must be limiting factors or challenges. Looking at the mining sector, women operating heavy machinery face a range of gender-specific challenges stemming from equipment design, work environments, and physiological factors that would correlate with forestry:

- Poor fit of machinery, tools, and PPE – machinery, cab dimensions, controls, tools and clothing/PPE are often designed to suit the 'average male' body, these ergonomic mismatches make operation more uncomfortable, fatiguing and risky given women's stature and anthropometry (Mokwena et al. 2025).
- Tools and equipment are designed assuming greater male upper body strength, creating a biomechanical overload for many women (Ariscu Team 2025). Tasks involving vibrations, awkward postures, and forceful exertions, common in heavy machine operation, can disproportionately affect women, due to physiological differences, elevating the risk of musculoskeletal disorders in mechanized mining settings (Mokwena et al. 2025).
- Pregnancy increases fatigue, joint laxity, toxin inhalation rates, and susceptibility to injury (Gendron 2024). Operating heavy machinery exposes pregnant women to vibration, toxins, and physical strain, all of which have more serious implications during pregnancy (Gendron 2024).

- Poor toilet access exposes women to elevated infection risks; studies have reported multiple cases of urinary tract infections linked to poor/inadequate or no facilities (Mokwena et al. 2025). Forestry in general, lacks gender appropriate amenities.
- Psychosocial and cultural barriers continue to affect women in heavy-machinery roles, where they remain a minority and may face bias, exclusion, or harassment. Research shows that in some mining environments, issues such as discrimination and undervaluing of women persist (GGDF 2025). Broader safety - culture and workplace stressors - including gender-based violence - can disproportionately affect women (Perks and Ford, 2024). These factors can reduce access to mentorship, increase scrutiny of performance, and limit support when women raise operational safety concerns.

Overall, these factors collectively highlight the need for gender-responsive design, infrastructure improvements, inclusive safety protocols and a shift beyond legacy attitudes (thinking and culture) would help support women operating heavy machinery. They can and should be overcome.

4.5 What has been the most effective way you have seen to train operators?

Skills deemed most important for a harvester operator to succeed, in order of significance, from one to ten are ranked in Figure 6. How are operators being trained in these key facets needs to be reviewed.

Survey responses re the 'most effective' and the present form of operator training aligned, not surprising given the lack of formal options. In the field hands on from day one, paired with an experienced operator was the most common style of response. No one doubts the traps/cost of this method...you often have one of your best operators producing less whilst training a new starter. If production pressure is high, the new starter will often be put on their own sooner than ideal – they will be producing at a sub optimal rate, likely developing poor habits and putting themselves and million-dollar machines at risk.

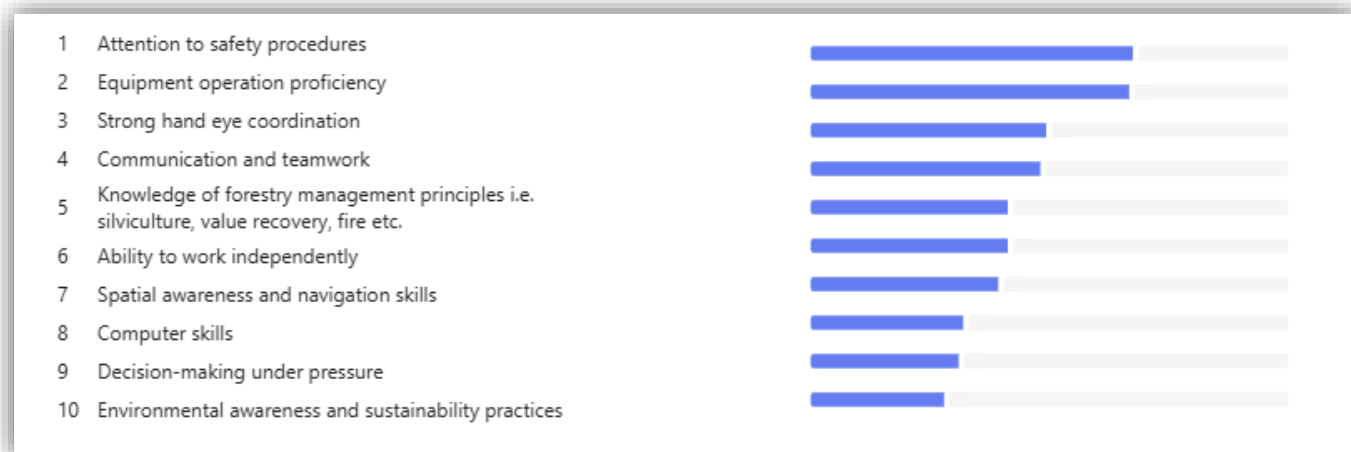


Figure 6: Ranked skill for operator success

Confidence in RTO-delivered training was notably low (Figure 7). When asked, “How much confidence do you have in the ability and capacity of existing RTOs to deliver fit-for-purpose operator training (1 = poor < 10 = great)?” respondents returned an average score of just 3.82, with **24% reporting no confidence** at all. This reflects a widespread perception that current RTO arrangements are falling well short of industry expectations. While RTOs are indispensable to the accreditation process, these results make it clear that business-as-usual is not sufficient. Restoring confidence will require a coordinated, industry-wide approach to reform how operator training is delivered, assessed, and assured.



Figure 7 Confidence in RTOs to deliver fit for purpose operator training.

There were mixed results when asked ‘How would you like operator training to be delivered?’ examples:

- In-field, on machines with experienced trainers.

- RTO basic training in harvester and forwarder operations.
- Combining simulators and field operations with online theory modules and recording a diary of hours (like a learner's driver's licence) without production pressure.

4.6 Simulator-based training

55% of survey respondents believed simulator-based operator training would be an effective means to upskill and train operators, 39% were a 'maybe' and a couple of no's. What are the pros and cons of simulator training:

Pros:

- Safe - learners can practice high-risk tasks and learn from errors without danger, injury or damage (figure 8) (Salas et al. 2009).
- Ability to train rare or emergency scenarios, simulators make it possible to perform emergency procedures or avoid, them which cannot be safely replicated in real life (Goode 2003). I have not seen this option in a forestry simulator, but given machines can and have tipped over it would be a useful module.
- Reduction in training costs by cutting fuel use, maintenance, and wear on actual machines (Roth et al. 2002).
- Standardised repeatable training so every student is taught best practice under identical, controlled conditions which is difficult to achieve in real machines (Hays et al. 1992).
- Speeding up good habits and skill development through repeatable scenarios with immediate feedback by tracking reaction times, errors, efficiency, and behaviours (de Winter et al. 2012 and Lu et al. 2013). I would suggest gamifying modules and feedback to suit a younger generation would also be advantageous.
- Minimizes down time for good contractor/operator/mentor and equipment down/slow time by enabling training even when real machines are unavailable.
- Cuts environmental impact by lowering emissions and resource use of actual machines during training (Hahn 2010).
- Provides an entry point and pathway for potential operators with no prior forestry experience, we miss tapping into a large talent pool due to this!
- Help screen for machine operator aptitude objectively to ensure suitable candidates make it into real machines (CM Labs 2025).



Figure 8 Komatsu simulator safely bolted to the floor – used for testing at Umeå factory Sweden.

Limitations:

- Reduced stress and risk exposure – it is a good thing for beginners to be safe, but simulators will not necessarily prepare learners for real machines where mistakes have consequences. This can affect decision-making and safety behaviours (Sarkar et al. 2017).
- Even high-end simulators cannot perfectly replicate the complexity, unpredictability, vibration, noise, varying light levels and risk profiles of real machines (Reeves & Hedberg 2003). Therefore, they may not best prepare learners spatial and machine handling judgement particularly when operating in said noisy environments with low light, snow, rain, mud, rocky, steep uneven terrain (Stanton et al. 2013)
- Cannot replicate the day-to-day 10hrs in-field, largely on your own changing chains and hoses in all weather conditions.
- Depth perception is difficult on a screen, grabbing a tree is easier in real life.
- They are expensive to purchase and still need updating (often falling behind real-world machine developments). They also need maintenance by specialised technical staff (Salas et al. 2009).
- Some trainee's experience simulator sickness (particularly with 3D headsets), eye strain, or cognitive overload, which may reduce training effectiveness (Stanney et al. 2020).
- Students may become overly comfortable with simulator training cues that do not exist in real machinery, resulting in skill gaps when transitioning to actual equipment (Chittaro & Buttussi 2015).

The positives of simulators are compelling and must be part of the solution, whilst planning for and negating any negatives. Clearly simulators aren't the full training answer but can certainly play a strong role as a starting point whilst appropriately folding in real world machine practice.

To this end, we need to work with machinery companies to enhance simulator training programs to be more suited to Australian forestry/trees in two areas:

- a) Beginners' pathway for operating in Clearfall and Thinning, with aptitude screening.
- b) Pathway to offer experienced operators skills to increase production and value recovery.

Sweden and Finland are spoilt with a plethora of training schools but didn't offer a lot of directly transferable training models – there are 14 Forestry schools in Finland alone. The one I visited, 'Valtimo Forestry College' takes in ≈250 students a year, with 40 staff members, 30 forestry machines, 4 excavators, 4 self-loading log trucks and 25 simulators (Riveria 2026). The funding to replicate this would be prohibitive but not impossible. In the short term there must be a middle ground between a Valtimo style college and the very little that currently happens in Australia. With harvesting machines costing \$900,000–\$1.3 million (AUD), operator performance is a key risk and value driver. It underpins safe harvesting and quality outcomes for forest owners, and ultimately determines the safety, efficiency, and profitability of the contracting business.

Training needs to be high quality, cost effective, sustainable and offer a pathway for anyone who wants to be an operator. There was one particularly strong survey response regarding current operator training delivery:

"We currently provide all new employees with a Certificate 3 in Forest Operations along with supplementary modules in topics such as safety, communications, leadership, mental health, fitness, financial literacy and driver education – these fully supported learning outcomes set the trainees up for success. Our training program has been developed to future-proof us and is serving us extremely well."

All contractors big and small need to be future proofed with professional well-trained operators!

The Certificate 3 as currently provided by the above respondent could be a blueprint, particularly if it checked off the Safe and Skilled units of competencies, combining theory, simulation and practical real-world experience on forest machines with no production pressure, this would be great if delivered by experienced competent trainers to a nationally recognised standard.

4.7 Forest machine safe and skilled harvest operator ticket

A compulsory national forestry operator ticket, phased in by 2028 would formally embed the Safe and Skilled units of competency. This would largely mirror many existing forest grower contractual requirements. Under this model, the forest grower partnership, in close collaboration with harvest contract leaders, would drive the development, enforcement, and the who/how of administration – the ticket would look similar to below:

Harvester operator ticket (FWPSS00050 Plantation Forest Operator Skill Set + requirements):

FWPCOR2210 Follow workplace health and safety policies and procedures in forest and wood products operations

FWPCOT3314 Comply with soil and water protection

FWPCOR2209 Follow environmental protection procedures in forest and wood products operations

FWPCOT3324 Apply cultural heritage protection requirements in forest operations

FWPHAR3229 Operate single grip harvester

FWPHAR3223 Use on-board computer systems for single grip harvester

Forwarder operator ticket (skill set + requirements):

FWPCOR2210 Follow workplace health and safety policies and procedures in forest and wood products operations

FWPCOT3314 Comply with soil and water protection

FWPCOR2209 Follow environmental protection procedures in forest and wood products operations

FWPCOT3324 Apply cultural heritage protection requirements in forest operations

FWPHAR3227 Operate forwarder

Note: To hold both tickets, you just have to complete the same units once + machine specific units.

Until the compulsory forest operator ticket is embedded all unqualified, partially trained, or new entrants must operate under supervision when operating. All workers must hold the relevant statements of attainments twelve months after commencing work. For existing workers, pre-existing training against a national competency may be verified by a statement of attainment, or through previously recognised State based industry standards. From 2028 all operators will be required to do yearly continuous professional development (CPD). Minimum of one day per year. Yearly CPD will not only maintain and improve operator competence but increase the volume of RTO training and assessment required, enabling investment in improved trainers and training.

There is no need for a specialised training record system such as the Forest Operator Licencing System (FOLS), as training would be assessed by a Registered Training Organisation (RTO) and recorded through the Unique Student Identifier (USI), providing a national, lifelong record of accredited qualifications and associated skills.

Given Safe and Skilled commitment has been in place since 2021, and there is still no clear path to gain certification, we must quickly fill the learning gaps, with a Forest Grower partnership in conjunction with contractors supporting the rapid development of modules based on needed learnings for the operator ticket, in a platform easily accessed anywhere by anyone that speeds up the learning for new or potential operators whilst supporting RTOs with consistent industry driven content that matches units of competency.

One such suitable training platform is Mitta (previously SC Training/EdApp) <https://mitti.com/training>. Mitta is a mobile-first solution that delivers bite-sized microlearning that can be completed on mobile devices, increasing training accessibility, engagement, and completion rates for learners (Gartner, 2025). Mitta is available on Android, iOS, web access and is scalable (1 or 1000 students it doesn't matter). It is a practical and compliance-ready training solution that supports safer work practices, faster onboarding, consistent standards - particularly in environments like forestry where frontline performance is critical to safety, quality, and productivity (Gartner, 2025).

When asked what the greatest barriers are to effectively training and developing forest harvest operators in order of impact, 1 being the most significant barrier and 7 being the least significant, responses were:

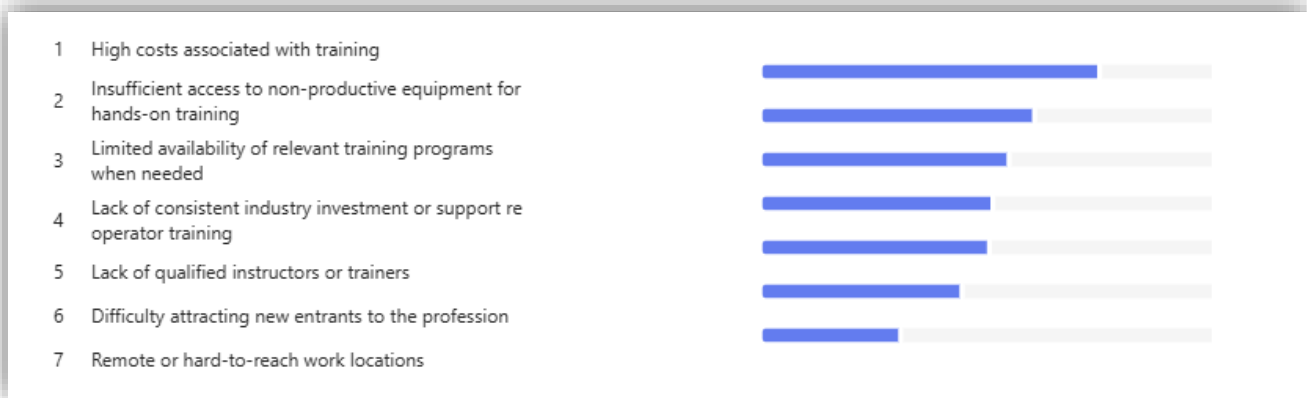


Figure 9: Greatest barriers to effective training

The Mitta Training platform <https://mitti.com/apps/microlearning-platform> (or something equal to it), would aid in the improved training content delivery at a minimal cost and address most of

the key barriers to effective training (Figure 9). I believe we can go a good ways in covering not only the content requirements of Safe and Skilled but most of the contractor needs for a new starter such as start-up, maintenance requirements, onboard computer basics, tree felling, terrain/work patterns, log making, value recovery etc. **This needs to be progressed immediately - not deferred for years of debate that dissipates momentum and consumes funding without delivering outcomes!**

Below is an example of a potential short forestry operator training module, thanks to James Broadley of Forestmods (*Forestmods is an initiative founded by James to develop forestry technologies. James is a forester trained and educated in New Zealand (NZ Certificate in Forestry) and Finland (BSc), who has spent the past 30 years training operational foresters through the NZ Diploma in Forest Management. He is passionate about training forest machine operators and about the technologies that enhance operator training and learning, with interests in value recovery, StanForD, and optimisation. James now teaches the revised block course delivery of the NZ Diploma in Forest Management in Rotorua, New Zealand* forestmods@mail.com). James and I outline an example using Mitta (ex SafetyCulture):

https://www.dropbox.com/scl/fi/l5yi95ctxplmt8hn1o8b6/SafetyCultureDemo_Final.mp4?rlkey=qw8frag73cjp80gt71cboxbh6&st=49sikvcn&dl=0

Or take the course yourself using the public link:

<https://app.au.safetyculture.com/training/course-preview/p/rx4iQkSBHucINisUWXn09Kel>

Cost of Mitta as of March 2026 is \$60 per user per year which is very cost effective!

4.8 Forest industry's ability to attract, develop and retain harvest operators in the future

As an industry we must become a more diverse, family and life friendly workplace, to attract and retain the next generation of workers. 12-hour workdays, often far from town/home, excludes a great number of potentially excellent operators.

One of the models witnessed at Sveaskog, Sweden's largest forest grower, that manages 250 machine sets (31 of which they own), is to split shift machines – 6am to 2pm & 2pm to 10pm (30min maintenance handover together) with a 2hr early finish every Friday. They switch shifts week about. This has the machines and operators running at optimal concentration and production levels. These hours could be tweaked to suit individuals' life needs.

This model has real potential for:

- Improved work life balance

- Higher production
- Improved machine utilisation
- Have more operators to cover leave and sickness
- More operators needed = the enabling/forcing of improved training pathways

This will not be the only or best answer, but we must be flexible in how we structure work hours and contracts to attract, train and keep the best people no matter who they are. We cannot bend the will of the next generation into historic work practices; we need to pivot and work with them. Although the ability to attract, develop and retain harvest operators only averaged 4.21 (figure 10) - if we had a clear training path the passion and enthusiasm forestry exudes would bring people in, as demonstrated by The Canopy hub in Queensland's great example of attracting people to the industry <https://www.canopyhub.com.au/school-leavers-1>



Figure 10: Confidence to attract, develop and train harvest operators of the future (1 = poor <> 10 = great)?

5. Who pays for training

Australian Forest Products Association (AFPA, n.d.) reports that the forestry sector contributes approximately \$24 billion annually to the Australian economy and supports around 180,000 jobs directly and indirectly. You could argue that this all starts with planting a tree, but very little if any income is generated without someone harvesting a tree into logs and forwarding to roadside!

When asked, do you believe that there is sufficient access to funding mechanisms to support businesses to train their operators (including impacts on productivity)? There was a very strong response making it clear with 24 no's several in all capitals and only 1 yes.

Several of those surveyed indicated it takes between \$40,000 and \$60,000 dollars to train an entry level harvest operator and if a new operator doesn't reach a quality standard the loss in production and quality/value recovery will continue or be repeated.

There was one positive funding model out of Tasmania which was deemed to have excellent government funding and support from Arbre Forest Industries Training and Careers Hub ([*Forestry Support and Training Programs — Arbre Forest Industries | Training & Careers Hub*](#)) which is providing excellent in-school promotion of forestry careers, and for the past 3 years have been running a school-based apprenticeship offering a Certificate 2 in Forest Operations and work-experience opportunities for many schools throughout Tasmania. I believe this style of training needs to be nationally standardised and replicated, or everyone is sent to Tasmania to train. I was accepted to attend a 5-day ARBRE 'Forestry Operator Pre-Employment Program' but could not raise the \$4,000 required to attend. This is one of Australia's forestry training dilemmas – cost and the tyranny of distance, even travelling from Tumut NSW to Launceston was cost prohibitive. Can industry have a centralised training school with the best supportive instructors, easy to get to, free accommodation and catered?

Tumut to Launceston training budget ≈:

\$950 course

\$800 flights

\$1000 accommodation (6 nights)

\$500 hire car (training centre is out of town)

\$600 meals

\$150 miscellaneous

Total = \$4,000

One harvest training centre would be great, but it needs a location that has easy access, accommodation, nearby forest to harvest and a forest pedigree to build on an ABRE style operator training. A training school in multiple locations in every state would be cost prohibitive and near impossible to source enough quality/qualified trainers that could be kept employed fulltime given the low students per year.

Under the current training regime where contractors generally train their own operators costing **\$40,000+** those responding to the survey deemed the contractual arrangements (figure 11) unequivocally unsupportive with an average of 2.55 with 17 rating a very serious poor.

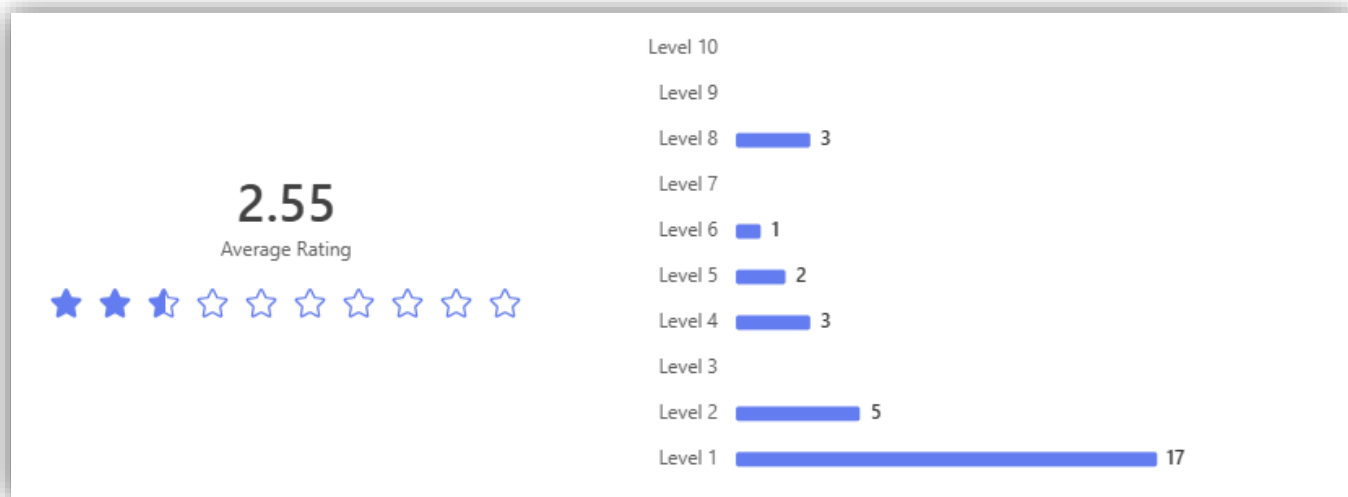


Figure 11: How well do contractual arrangements support the training and development of new operators (1 = poor <> 10 = great)

As I discovered, even trying to fund a one-week training trip does not come cheap. Everyone in the timber industry value chain benefits from quality operators. At present all the sunk costs and burden of on-the-job training is borne by the harvest contractor. Who and how the forest industry pays to train operators needs to be fair and reasonable for all and led by industry. Government funding may not be a reliable long-term strategy with forestry being in and out of public favour.

Although government funding does work in Finland - the forestry operator training school visited in Valtimo Finland 'Riveria', is a publicly owned vocational education provider...they are finding it harder to raise the needed funds each year. All Finnish vocational education and training (VET) and Riveria's forestry programmes are predominately funded by the Finnish Ministry of Education and Culture.

Finland's vocational education funding model is structured as:

- 50% core funding based on the annual number of enrolled students.
- 35% performance-based funding linked to completed study credits.
- 15% effectiveness-based funding linked to employment or progression to further study.

This structure looks to keep positive outcomes at the forefront. Funding flows to the institution, not directly to students, enabling Riveria to provide tuition-free education, modern machinery, simulators, teachers, and on-the-job training placements at Valtimo (Anttonen, 2025; Riveria, 2026). Although, Tommi from Riveria Valtimo indicated the \$40,000 EUR per year per student is getting harder to raise.

Currently in Australia there is a compulsory Forest Growers Levy on log production for commercial purposes and a forest product import charge (DAFF, 2026b). Paid to the Department of Agriculture, Fisheries and Forestry (DAFF) (DAFF, 2026a). Current levy rates:

- Plantation logs: 18.5 cents per cubic metre
- All other logs: 13.5 cents per cubic metre

Note: “The levy does not apply to logs owned by a state or territory government body.” (DAFF 2024). Governments don’t levy themselves but contribute directly to projects avoiding the cost and administration of shifting monies around.

The levy increased in 2024 with 90 per cent support from Australia’s forest growers (FWPA 2022), to enable:

“The additional funds generated through the increase will be managed by FWPA and used to boost industry investment in research, development and extension (RD&E) by approximately \$1.7 million in 2022–23, \$3 million in 2023–24, and \$4.2 million from 2024–25, based on current log production.

Craig Taylor, FWPA Chair, said the aim of the grower levy increase is to improve the industry’s capacity to invest in vital forestry research and development, and drive industry innovation for a successful future. The levy underpins industry-wide ‘Research Development & Extension’ and biosecurity investment, largely channelled through Forest & Wood Products Australia (FWPA) and Plant Health Australia (PHA) (DAFF, 2026a).

“Investment in forestry research and development is increasingly important as we look for ways to increase **forest productivity and value**, reduce risk and create new carbon friendly products using wood and biomass,” said Taylor” (FWPA 2022). Harvest skills and operator performance is key to productivity and maximising the value of every tree felled.

How is the levy distributed by FWPA:

[FWPA Annual Report 2024/25 - Forest & Wood Products Australia](#)

Table 2: Forest & Wood Products Australia (2025) - 24/25 Annual Report funding overview

Project	Status	Project Count	Total project costs (\$)	External investment (\$)	FWPA investment (\$)	Matched Expenditure (\$)
Voluntary Matching Projects	Active	28	27,503,037			
	Completed	10	3,376,042			
Levy Funded Projects	Active	33	25,840,746		10,131,130	
	Completed	10	4,181,463		2,146,281	
FWPA Administered Contracts	Active	2	10,489,445	379,497		
	Completed	8	1,527,090	1,527,090		
Matched Levy Funded Projects	Active	18	1,063,500			1,063,500
	Completed	6	273,518			273,518
Grand Total		115	74,254,841	1,906,587	12,277,411	1,337,018

The reported total project costs (table 2) across 115 active and completed projects (note: projects are across a spread of years) amounts to \$75+ million, if you add this to all the funded dollars needed by stakeholders in figure 1 there is an enormous amount of levy/funding dollars spent.

Australia's 11 Regional Forestry Hubs are also funded by the Australian Government (through the Department of Agriculture, Fisheries and Forestry—DAFF) with a budget commitment of \$8.6 million over three years (DAFF, 2025). Several hubs state priorities of 'people, skills, training and workforce development', 'developing a fit for purpose workforce', 'examining how to better attract and retain staff' (DAFF, 2025) – improved operator training certainly falls within the scope and interest of the Hubs.

Australian Forest Products Association (AFPA) represents and is funded by members, 'AFPA fights for the interests of those involved in forest industries' (AFPA, 2025). [AFPA Annual Report 2024-2025 - Australian Forest Products Association](#)

AFPA income for 2025 was \$5million with expenditure of \$4.5million (AFPA, 2025). In relation to Skills and Training, the Growers chamber of AFPA (2025) stated, they delivered tangible results from the \$9.5 million Federal Forestry Workforce Training Program, with 18 of 22 projects directly requested by AFPA members. Interestingly not one of the 22 projects directly addressed harvest operator training. However, several would definitely support a better operator training future (ForestWorks, 2024):

- Theme A:
 - 1 - Mapping Standard Operating Procedure (SOP) Skills to Accredited Qualifications for Industry Workers
 - 5 - Recognition of Prior Learning (RPL), Recognition of Current Competency (RCC), and Hybrid Pathways: Flexible and Cost-Effective Training and Assessment Models
- Theme E:
 - 19 - Developing Training Materials for Industry Micro-Credentials and Traineeships
 - 20 - Integrating Training Materials into Online Learning Systems

Although the Forestry Workforce Training Program did not directly target an individual theme to address the lack of harvest operator training...all stakeholders including AFPA, ForestWorks and Growers must work together and address this now!

The training of harvester and forwarder operators needs to be a shared responsibility - stakeholders must direct funding to where it is most needed with sustained support.

6. Conclusion

Australia's forest harvesting sector depends on highly skilled operators performing one of the most cognitively demanding and safety-critical roles in the industry - yet, unlike comparable high-risk professions - there remains no clear, nationally recognised up-front training with an easily accessible pathway. This inconsistency represents a material risk to safety, productivity, value recovery and workforce sustainability. As international leaders such as Sweden and Finland have demonstrated, world-class harvesting outcomes are not accidental; they are the product of deliberate, coordinated investment in training systems that treat operator competence as a strategic asset.

This report has identified a clear opportunity to fundamentally reset Australia's approach to operator training. Introducing a compulsory national forestry operator ticket by 2028 - underpinned by formalised Safe and Skilled units of competency and mandatory annual CPD - would establish a consistent national capability baseline, lift professional standards, and catalyse sustained investment in high-quality training and assessment. Critically, this must be supported by a coordinated Forest Grower partnership to collectively shape, influence and implement a clear, cost-effective and credible national training pathway that attracts skilled entrants with continuous learning support throughout their careers.

By leveraging this partnership, Australia can rapidly deploy modern, scalable training solutions - combining digitally delivered learning, virtual reality capability and simulator-based programs adapted to Australian conditions in collaboration with machinery manufacturers. This could culminate in the development of a nationally recognised best-practice operator training school, where operators can train on multiple simulator platforms and real machines under no-production-pressure arrangements, guided by highly experienced trainers.

The findings of this report, informed by international best practice, domestic stakeholder engagement and industry survey evidence, present a practical and achievable pathway forward. With coordinated leadership and shared commitment from growers, contractors, training providers, manufacturers and government, Australia can professionalise operator training, reduce risk, improve productivity whilst maximising value recovery, to build a workforce fit for the future of the forest and wood products industry.

The pathway forward is clear, achievable and within reach—but it will only succeed through collective action. Forest growers, contractors, training providers, equipment manufacturers and government must now move beyond acknowledgement and commit to coordinated implementation. This includes:

- Endorsing a compulsory national operator ticket and CPD framework,
- Actively participating in a Forest Grower partnership, investing in high quality, cost effective modern training delivery (digital, VR, simulator and machine-based), and
- Supporting the establishment of a national best-practice operator training school.

The cost of inaction is continued fragmentation, elevated safety and productivity risk, increased costs and a workforce ill-prepared for the future. The opportunity before us is to further professionalise the role of forest harvesting operator, align Australia with global best practice, and secure a safer, more productive and sustainable industry for decades to come.



7. My study tour and learnings from Sweden and Finland

Thanks to the Gottstein Trust fund I spent two weeks in the forestry mecca of Sweden and Finland, travelling 2,500km by car (surviving first time on the opposite side of the road) and ferry - meeting some wonderful forestry people and their companies (figure 13)!

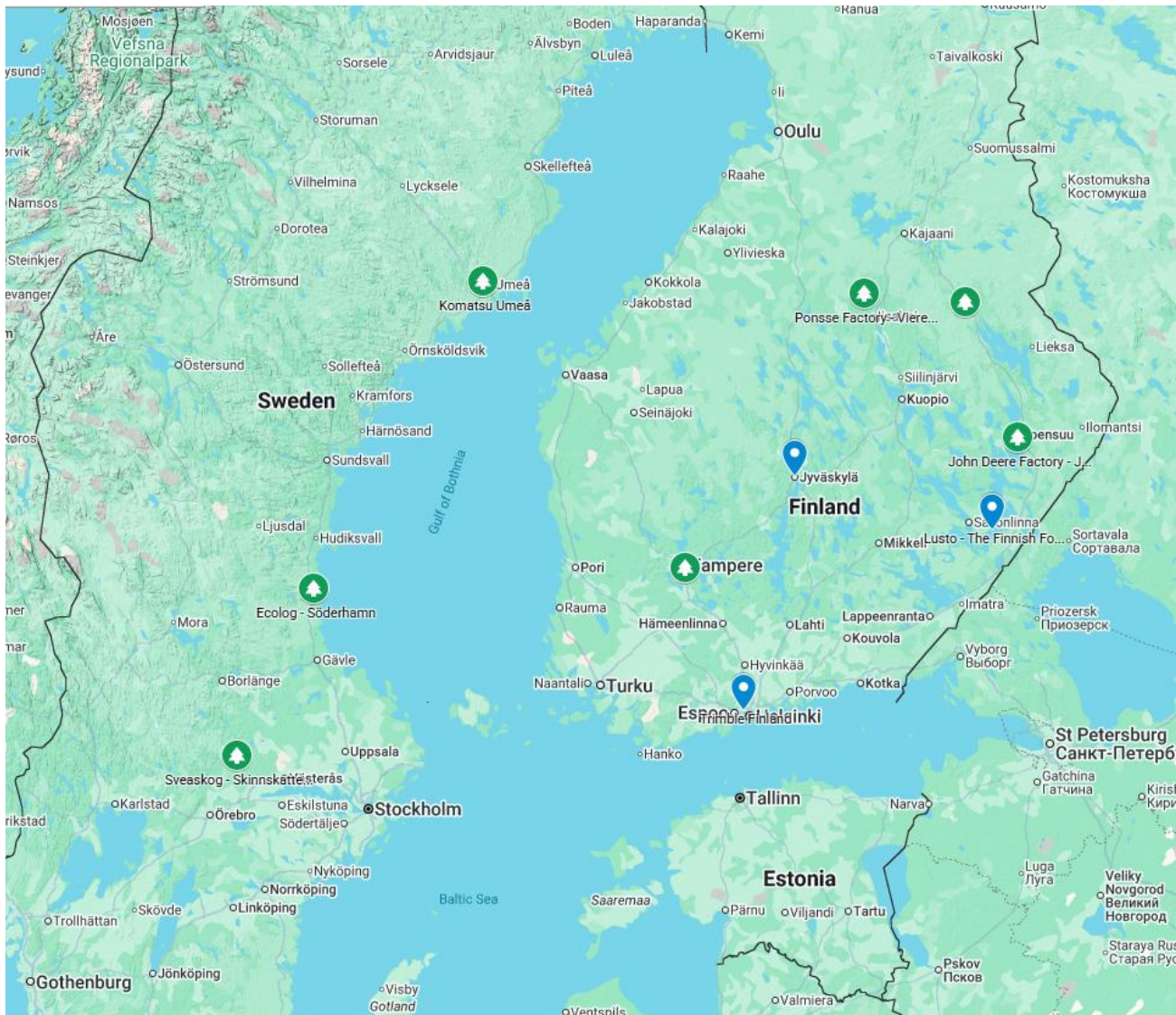


Figure 13: Geographical locations of places visited

Key reflections from the study tour

- Sweden and Finland are internationally recognised leaders in forestry practice and provide high-value benchmarking opportunities for forest and wood products professionals, worth a visit for any forest enthusiast.
- Maintaining curiosity is essential for continuous improvement; assuming your current practice is 'best' can limit learning and innovation – I witness this in both Australia and abroad, a lack of curiosity limits innovation and improvement.

- Australia is performing strongly in the use of harvesting data to monitor performance and improve value recovery, and in several areas is approaching the capability demonstrated by our Nordic peers.
- In Sweden and Finland, meaningful improvements in machine performance are often pursued through marginal gains (#1% matters), with operational efficiency adopted even if it saves a second per tree.
- A personal development priority is to strengthen hosting and stakeholder engagement (for both internal teams and external visitors), recognising that strong relationships are central to influencing outcomes without formal authority.
- LiDAR-based thinning assistance has a role; however, greater value would be realised through a future with advanced optimisation approaches (for example, improved detection and decision support relating to sweep, forks and defect characteristics using LiDAR and/or camera-based systems).
- To sustain momentum, post this tour, establish an annual virtual engagement (e.g., via Microsoft Teams) with key Nordic contacts to share progress, exchange ideas, and identify collaboration opportunities. Trimble and Ponsse hosts have already visited Tumut in person, strengthening relationships and opening doors to opportunities.
- The use of harvesting data via ForestPHD STICKS in Australia is world class and represents a benchmark for operational decision support and continuous improvement – I did not witness anything better.
- The itinerary was intensive, with limited time at most sites; future tours should allocate additional time at each location to alleviate stress, deepen learning and allow for follow-up discussions.
- In hindsight (a wonderful thing), I should have visited additional forest growers, harvest contractors/operators and a Swedish training school – this would have strengthened the breadth of perspectives and insights gained.

Highlights from each Person and company visited:

7.1 Sveaskog - Skinnskatteberg Sweden

Government owned Sveaskog, is Sweden's largest forest owner and sells sawlogs, pulpwood and biofuel. With a worthy strategy to be a world leader in sustainable value creation in the forest. Overview:

- They manage 4.1 million ha, of which 3 million ha are productive forest.
- Harvest 8.2 million m³, including about 4.8 million m³ from their own forest.
- Average number of employees 850

- 250 machine sets (31 they owned & managed internally)

<https://www.sveaskog.se/en/>

I was warmly hosted by Jonas Gustafsson, Figure 14.

Key observations

- Internet connectivity was reliably available across the whole country including all operational areas, enabling real-time use of digital systems (including StanForD 2010 data capture and transfer).
- Ground moisture and trafficability mapping is derived using meteorological data, soil type information, and LiDAR, supporting machine planning and site access decisions.
- Planting is predominantly undertaken by manual planters. There is ongoing difficulty in attracting and retaining planters, with a reliance on overseas labour and associated language barriers—similar to challenges experienced in Australia.
- Jonas described the organisation as an “IT company”, supported by internally developed high-quality systems and processes such as:
 - STINA (harvest machine mapping system)
 - Kingpin (AI-based forest simulation)
 - RASK (woodflow tracking)

Their business scale enables the organisation to develop, maintain, and continuously improve these systems in-house.

- Machines commonly operate split shifts (approximately 06:00–14:00 and 14:00–22:00 with an earlier finish each Friday), with shift rotations each week. This structure supports high machine utilisation and operators working with a higher cognitive performance, i.e. better production and value recovery.
- Machine hours are actively managed and linked to end-of-month incentive arrangements. Operators record and report downtime events exceeding 15 minutes – isolated solo work with good internet can lend itself to operators looking at their phones too much, this is one way to manage time wasted.
- A third-party organisation (Biometria) supports several critical functions, including mill specifications management, log-making training, and harvest head data checking/auditing. Biometria measures, collects, and verifies data for every tree harvested, including its volume and final destination connecting forest owners, sawmills, and transportation companies,

creating a digital framework for the entire timber supply chain. With hindsight I would have visited them. <https://www.biometria.se/english/>

- Hunting was identified as a significant source of revenue, raising the question of whether comparable models could be adapted to suitable Australian tenures and operating environments.
- The observed harvest supervisor role observed covered a broad span of control (Jacob had 15 crews) and combined elements of the Australian supervisor and controller functions. This is a lot in Australian standards (often 4 – 5 crews) – further investigation required to what makes this possible or is it even sustainable.
- APT bucking files included an assortment described as a “value-increasing cut”. FCNSW has implemented a similar concept rebadging waste as ‘Value_cut’ to reinforce the requirement to optimise the value of every stem. We aren’t wasting; we are looking for opportunities to add value to each stem. Having an assortment such as Value_cut reflects international best practice, and our goal, to not only match that standard but to surpass the best in the world!
- “Precision Hunt” was referenced as a structured competition to improve control measures and calibration outcomes. Could be a way to encourage improved control measures.
- Safety controls appeared materially different to typical Australian settings, with less visible reliance on items such as hard hats, signage, road closures, and formalised induction arrangements (noting this as an observation rather than a judgement and recognising regulatory and operational contexts differ).
- A process developed by Skogforsk was referenced that can rapidly simulate mill requests (length/diameter/order specifications), quantify volume and value impacts, and support price negotiation based on the modelled outcomes. E.g., mill requests no 3.7s this month – forest is simulated and x value is lost but this will then be compensated for in dollars!
- Sawlog specifications observed included 3.1 - 5.5m lengths in 300mm increments, down to approximately 140mm small-end diameter, with limited segregation - an approach that maximises sawlog, value and operational efficiency...a value recovery nirvana.
- Pulp specifications observed included 2.5 - 6.0m variable lengths down to approximately 50mm small-end diameter, again reflecting a simplified and operationally efficient high volume/value specification.



Figure 14: Jonas and author in the Kings Forest reserve Skinnskatteberg

7.2 EcoLog - Söderhamn Sweden

EcoLog produces highly efficient sustainable forest machines that adapt to the terrain allowing operators to be in full control regardless of ground conditions. Through exceptional ground-clearance, reliability, serviceability and a powerful harvester-crane you optimise whole of life productivity and profitability. <https://ecologforestry.com/en/about-ecolog/>

Graciously hosted by EcoLog product specialist Anders Hansson (Figure 15).

Key observations

- Manufacturers such as Eco Log can concentrate on niche strengths and are well positioned to adapt machine design quickly in response to operator feedback and specific forest conditions, rather than designing for a global, mass-market compromise.
- Photography was not permitted in the factories visited. It was also notable that most manufacturers had competitor machines present in their yards.
- All manufacturers observed were operating at the leading edge trying to secure a competitive advantage. Coming from a large, government-owned corporation, this provided a useful contrast in mindset and reinforced the importance of maintaining an innovation focus.
- Although Eco Log remains a relatively smaller player in the Australian market, its presence contributes to a competitive tension and a push for continuous improvement across all suppliers. Eco Log has a stronger market position in Europe.
- The hosting and engagement provided by Eco Log (Figure 16) and other hosts throughout the tour was of a very high standard. This highlighted an opportunity to further strengthen how we host and engage both internal and external visitors to build relationships, support and influence.



Figure 15: Hosted by Anders Hansson (product specialist) EcoLog in Söderhamn



Figure 16: Söderhamn lunch view...thanks Anders!

7.3 Komatsu – Umeå Sweden

Graciously hosted by Jörgen Nilsson, Product Manager of Smart Forestry and Joacim Henningsson, Komatsu Forest test driver and trainer (Figure 17). Komatsu Forest, one of the world's biggest manufacturers of forest machines, indicated that quality is key and their philosophy is to build quality products by developing employees' skills to ensure a uniformly high level of quality around the globe. <https://www.komatsuforest.com/about-us>

Key observations

- Komatsu opened a new 30,000 m² factory in Umeå Sweden in 2021, with a production capacity of up to 18 machines per day.

- They employ approximately 1,700 staff, including around 130 personnel in the research and development (R&D) function.
- The Smart Forestry and MaxiVision mapping capabilities are highly advanced and demonstrated strong potential to support planning and operational decision-making.
- Spare parts logistics is a major capability, with approximately 35,000 spare parts managed; the scale and organisation of the spare parts area was extraordinary.
- On-site amenities (including the personal favourite...cafeteria) were of a high standard and appeared to support workforce wellbeing and productivity.
- The CLM technical documentation tool includes an Artificial Intelligence (AI)-based chatbot function that allows users to ask questions directly from manuals and receive guided responses, improving accessibility of technical information - great idea!
- The ProAct proactive maintenance program is designed to maintain equipment condition throughout the contract term, supporting reliability and predictable performance/production.
- A key recommendation from discussions was to include access to all machine data and mapping outputs as contractual requirements, recognising the operational and commercial worth of these datasets.
- The Aptan bucking simulator was recommended as a tool to assess and optimise bucking strategies. Developed by Skogforsk (the Swedish Forestry Research Institute), Aptan uses detailed historical harvesting data and airborne laser scanning to simulate alternative cutting strategies and predict product recovery outcomes and optimal wood flow.
- Contractor business capability – they need a clear understanding of good business + “what is good for forest growers” was emphasised as important (noted as an insightful discussion point).
- Komatsu simulators are managed by Oryx: <https://www.oryx.se/>



Figure 17: Joacim Henningsson, Komatsu Forest test driver and trainer - measures worthy improvements in seconds!

7.4 John Deere – Tampere (head office) & Joensuu (factory) Finland

Hosted with thanks by Mika Laakso (Technical training manager worldwide), Simo Tujula (digital solutions and operator training, Figure 18), and Elina Suuriniemi (Communication specialist) at Tampere head office. And Mikko Turunen (Figure 19) at the John Deere factory in Joensuu.

John Deere Forestry offers a broad portfolio of forest machines and attachments across cut-to-length harvesting systems, supported by an impressive integrated digital ecosystem. Its “Precision Forestry” stack combines TimberMatic Maps (in-cab, real-time mapping and production visibility, between machines and base), TimberManager (web-based remote monitoring, reporting and documentation), data exchange including StanForD files and operational reporting. John Deere positions forestry innovation alongside sustainability commitments and provides simulator-based operator development pathways such as the Forestry Simulator TimberSkills learning environment.

<https://www.deere.com.au/en/forestry/>

Key observations

- John Deere (JD) employs approximately 80,000 people globally, with more than 2,000 involved in forestry-related roles.
- The factory visited at Joensuu can output eight machines per day.
- The 1270H was identified as the most popular machine in the current range.
- TimberManager provides precise, near real-time information and reporting capability, and is notably strong in terms of usability and decision support.
- The JD TimberSkills simulator training pathway has been about for 20 years, reflecting significant investment in training design, content, and delivery.
- It was stated that approximately 10 days on the TimberSkills simulator can enable a trainee to reach Level 3 operator capability (on a five-level scale).
- TimberOffice is another JD tool used to analyse APT bucking outcomes and value changes. In practical use it performed well; however, limitations were experienced in exporting results to enable scenario comparison.
- JD’s machine and operator analytics capability are highly developed. The level of visibility available to contractors supports benchmarking across machines and operators, identifying specific improvement opportunities, and targeted training interventions. A reported productivity range of approximately 40-50% between the highest- and lowest-performing operators highlights the potential value of this capability.

- An opportunity identified is for the grower group to collaborate with Simo and JD to further utilise TimberSkills as a structured development pathway for both new and existing operators.



Figure 18 Simo putting the author through Timber Skills.



Figure 19: Mikko with a 1270H ready for delivery.

7.5 Ponsse – Vieremä Finland

Ponsse is a Finnish, family-owned forest machine manufacturer based in the small town of Vieremä, where it all began and where their machines are still built today. Their ethos is simple: respect the forest, support the operator, and design practical, reliable machines that help forestry stay productive and sustainable for the long term.

Hosted with genuine top shelf hospitality by Jussi & Karita Hentunen & David Waldren (Figures 19 and 20). <https://www.ponsse.com/company/about-ponsse>

Key observations

- The Ponsse factory undertakes a high proportion of in-house fabrication, providing tighter control over quality and enabling faster design changes and continuous improvement. Machine build is three units per day.
- Operator training is supported through the Workseed application (similar in concept to Mitta), integrated with simulator-based learning, instructor feedback, and performance reporting. A comprehensive operator handbook is also available.

- Forwarder tip-scale accuracy was touted to be within +/-2%. While this was initially queried, the stated performance appears credible given that some markets (e.g., Germany) base payment on weighed volumes, which require reliable scale accuracy.
- A range of promising operator-assist technologies are under development, including functions such as sequence control (enabling multiple coordinated movements via a single command) plus felling assistance to support key stages of the felling process.
- GPS positioning accuracy was stated to be sub-50cm; improved accuracy is expected to further enhance mapping, planning, proximity warnings and operator support functions.
- Forwarder-mounted firefighting units designed for rapid fit/removal appear very promising, particularly for fast first-response capability and operational flexibility.
- The standard of hosting/hospitality, staff engagement, and care demonstrated by Ponsse was notably strong and provided a benchmark for visitor experience and organisational culture.



Figure 19: David Waldren & Jussi Jurvanen - training simulator. Figure 20: Jussi Hentunen & the Ponsse Scorpion.

7.6 Valtimo Vocational Forestry College – Valtimo Finland

Visit to Riveria's Valtimo Forest Operator Training College in North Karelia, Finland, was facilitated by Tommi Anttonen. Valtimo is often seen as the gold standard for forestry training, with around 250 students a year learning on 25 simulators, 30 forestry machines, 4 excavators and 4 self-loading log trucks. Their aim is practical - start safe, learn properly, build skills step by step, and turn out confident, professional operators who respect the forest, the machine, and the job they do every day. This happens over 2-3 years:

Year 1: Foundations, safety, theory + heavy simulator training, then supervised and controlled yard machine work (figure 21) – progression onto real harvesters on campus yard and low-risk environments, focusing on correct technique, measurements and machine care (not speed).

Year 2: Supervised real forest operations on school machines, building thinning and clear-fell capability with close instructor support.

Year 2–3: Industry-based learning – transition into on-the-job training with contractors, working in real crews on commercial machines as competence grows, followed by formal competency assessment against national vocational standards.

Valtimo doesn't rush operators - time is deliberately built in to move from simulator → school forest → commercial harvesting so graduates leave job-ready, not green.

<https://riveria.fi/koulutusala/metsaala/>

Key observations

- Establishing a “gold standard” training school would be a great industry objective, providing a clear pathway to outturn safe, capable and productive operators.
- The Valtimo is structured as, three years for school-age students and one to two years for mature-age students. As school-age students transition after Year 10, the program still includes general education subjects (e.g., Mathematics and English). While this approach is comprehensive, even a two-year duration may be difficult to fund or scale in an Australian context, and there may be scope to achieve equivalent outcomes in a shorter, more targeted timeframe.
- They put a strong emphasis on the development of effective working methods (how you harvest and forward). This reinforces that operator competence is not only “what to do”, but also understanding the “which way, why, and how” behind operating.
- Instructor capability is critical. The quality of training outcomes is heavily influenced by teachers' ability to teach, coach, and provide structured feedback - not only their technical experience.



Figure 21: Riveria's Valtimo Forest Operator practice site

7.7 Trimble – Espoo Finland

Trimble Forestry is a well-established provider of digital forestry solutions, focused on connecting the entire forest supply chain through data, automation and real-time visibility to support smarter, more efficient decision-making from forest to mill. Their philosophy centres on precision, transparency and sustainability - using technology to improve efficiency and productivity while helping forest managers and contractors operate responsibly, compliantly and with long-term environmental stewardship in mind. I was looked after well by Perttu Aunola (Senior Director, Global Revenue Forestry).

<https://forestry.trimble.com/>

Key observations

- Trimble operates a highly mature and professional forestry technology business, with strong capability and a clear customer focus.
- The visit included an overview of CF harvesting (Figure 22). The system appeared to combine functions comparable to FCNSW's operational scheduling, harvest planning, spatial tools (e.g., MapApp), STICKS-style data capture, and integrated reporting.
- Trimble's technology draws on ideas and improvements from across its global customer base, rather than relying solely on internal development. This "customer-led innovation" model is a notable strength and prompts consideration of how Australian forest growers can more systematically adopt, adapt, and embed external best practice to lift performance.



Figure: 22 CF harvesting

7.8 The Finnish Forest Museum - Punkaharju Finland

The Finnish Forest Museum wasn't a formal part of the Gottstein tour, but it was a worthwhile visit as it provided a range of forest-focused experiences and a great perspective into Finland's forest culture. The museum is located in Punkaharju in eastern Finland, surrounded by beautiful ridges and lakes. [The Finnish Forest Museum Lusto - Sense of the Forest](#)

Highlight was the Timberjack Plusjack (Figure 23), a walking harvester prototype on display at Lusto. Developed by Plustech (Timberjack's R&D unit, now John Deere), the concept demonstrated wheelless operation - designed for steep/uneven terrain and the ability to move in any direction with minimal ground impact - however it never progressed to production.



Figure 23: Timberjack Plusjack

8. Appendix

1. Industry Harvesting Operator training survey

Forest Harvesting Operator Training Survey

Ensuring industry has access to skilled and competent operators is an ongoing challenge. This survey aims to generate some baseline information about approaches and challenges relating to training and assessment of forestry operators in Australia.

Given significant cross-over the survey will support two aligned projects:

- AFCA CEO led *Project 8: Optimising RTO Training and Assessment Methods for Harvesting Operators* contracted through ForestWorks with funding from the Australian Government through the Forest Worker Training Program. This project is working with training organisations to design and implement training and assessment approaches that address industry needs.
- Gottstein Fellowship *'Identify opportunities to enhance the training and improvement of computer optimising cut to length harvesting and forwarder operators, aiming to achieve Standards and Qualifications outlined in the 'Safe and Skilled' charter'*.

If you would like to know more about either project, please get in touch.

The survey has been designed for and is focused on forest services businesses. However, we know that other parts of the supply chain have relevant perspectives and can provide useful insights. We welcome your contributions. If you find a section is not relevant or you are unable to answer, please just move onto the next question.

Results from the survey will be anonymised and aggregated. The data gathered will only be used for the purposes of these two projects.

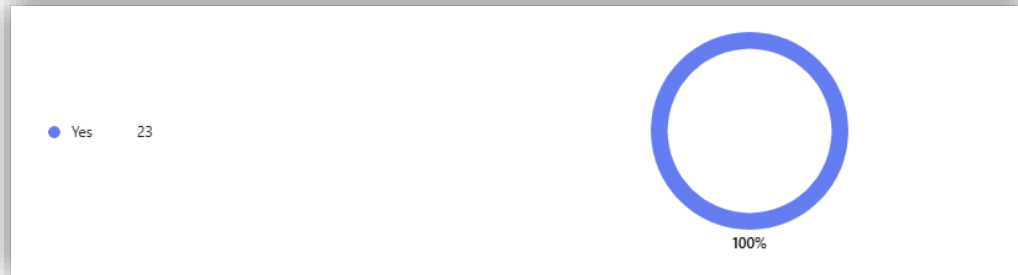
Your input is invaluable. Thanks in advance for your time.

Here is the link and a QR code for the survey: <https://forms.office.com/r/eJgerBwNUF>



How will the survey information be used:

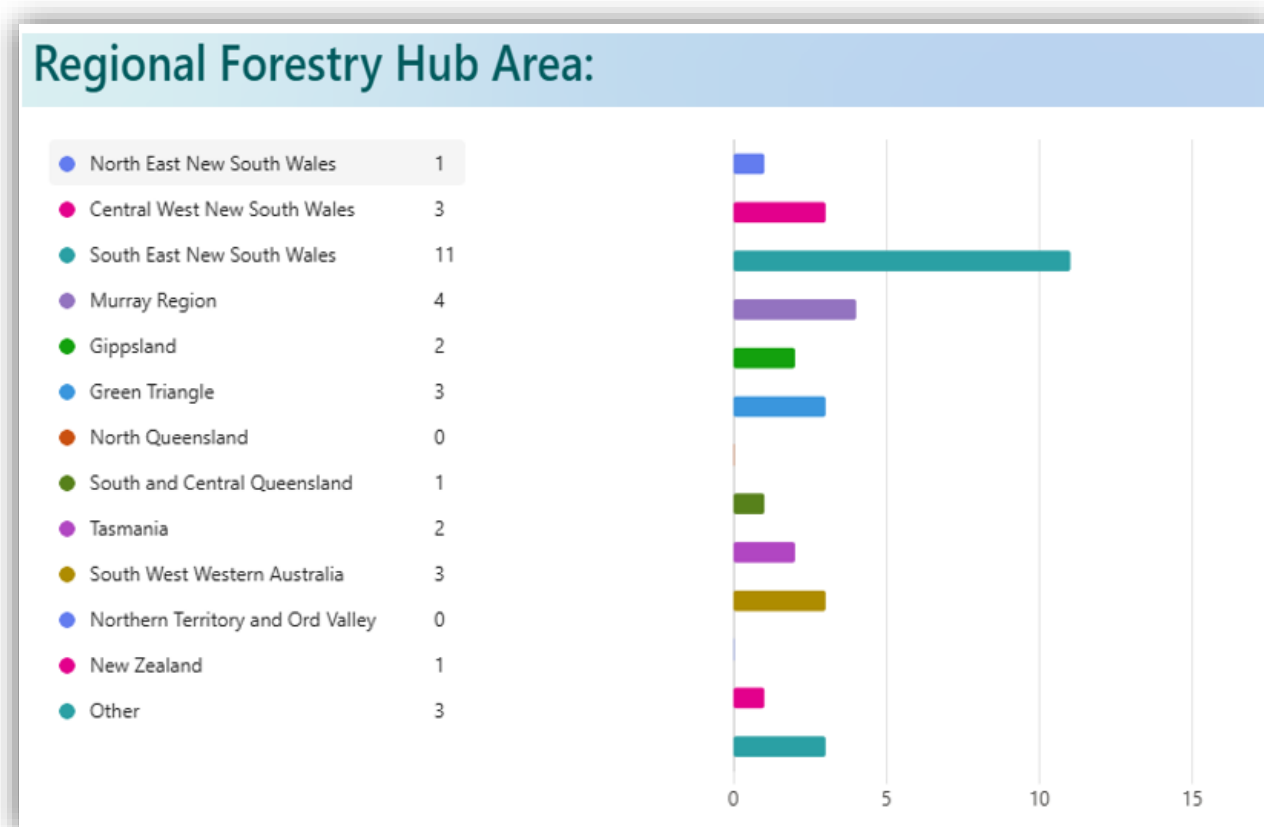
1. Survey data will only be used in aggregate and not linked to any individual business.
2. Survey data is collected for the purposes of guiding ForestWorks 'Forestry Workforce Training Program' and in the Gottstein report and recommendations. Are you comfortable with this?



q1 to 5. Confidential company and contact details. Response overview:

Response grouping	Count of Responses	%
Contractor	19	59%
Grower	6	19%
Manufacturer	2	6%
Mill	2	6%
RTO	3	9%
Total	32	100%

q6. Count of Regional Forestry Hub respondents:



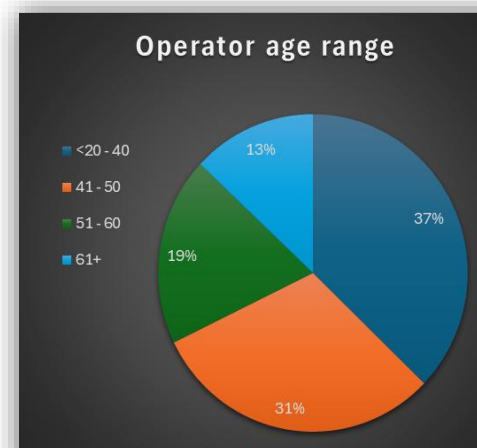
q7. Count of machine operators:

Response group	Harvester	Forwarder	Feller Buncher	Skidder	Excavator Loader	Other
Contractor	3	3		4	2	2
Contractor	4	4	3	1	3	3
Contractor	1	1				
Contractor	6	2			2	2
Contractor	7+	7+	4	3	7+	7+
Contractor	2	3				
Contractor	3	3				
Contractor	7+	7+	2	4	1	
Contractor	7+	4	1		3	
Contractor	1		1	1	1	1
Contractor	6	4	4	7+	7+	7+
Contractor	1	2				
Contractor	3	3			2	
Contractor	1	2				

Contractor	7+	7+	1	1		
Contractor	6	7+				
Contractor	7+	7+				
Contractor	3	3		1		
Grower	7+	7+			7+	
Grower	7+		7+	7+	7+	7+
Mill	3	2	1	1		
Mill	7+	7+	2	2		
RTO	2	1	1	2	2	
RTO	7+	6				
RTO	3	3	3	3	3	
Total:	111+	95+	30+	37+	47+	29+

q8. Count of machine operators in below age brackets:

Response Grouping	<20 - 40	41 - 50	51 - 60	61+
Contractor	3	3		
Contractor	7+	6		
Contractor		1		
Mill	3	2		
Contractor	1	3	2	
RTO	1	2	2	
Contractor	7+	7+	7+	7+
Contractor	1		2	2
Contractor	1	3		2
Contractor	6	4	3	2
RTO	2	4		2
Contractor	3	2		
Contractor	7+			
Contractor	2	1		
Mill	4	7+	7+	5
Contractor	4	5		
Contractor	1		2	
Contractor	7+	5	6	
Contractor	5	3		
Contractor	6	3	3	
Grower	7+	7+	7+	6
Contractor	4	2		
Contractor	7+	3	3	4
RTO			2	1
Grand Total	89+	73+	46+	31+



q9. How many 'new operators', on average, do you train to operate a forestry machine per year?

Response Grouping	How many 'new operators', on average, do you train to operate a forestry machine per year?
Contractor	2
Contractor	1
Contractor	0
Contractor	None currently. Revenue based contracts constrain contractors and only allow a fine band to operate in. Revenue based programs do not promote growth in our industry (my opinion)
Contractor	5
Contractor	None, since the fires of 2019/2020 when we were forced to retrench Operators.
Contractor	1
Contractor	6
Contractor	1
Contractor	3
Contractor	1-2
Contractor	zero
Contractor	1-3 per year it just depends on the new machines coming through and how many operators leave
Contractor	At this stage none. The time pressure for production, makes it hard to employ non-skilled workers.
Contractor	2 to 3 per year dependent on economics/climate
Contractor	1
Contractor	impossible to average - years where none and then might train 4 and this makes 1 operator....
Contractor	1
Contractor	3
Grower	6 - 8
Grower	na
Mill	0.5
Mill	3-4 trainee operators would cycle through the crews each year. The T1 crews are used as the trainee location for some contractors.
RTO	9
RTO	3
RTO	Training 9. Straight assessments 40. Trained and assessed 55 hand fallers.

q10. How many female harvest operators do you employ?

Response Grouping	How many female harvest operators do you employ?
Contractor	2
Contractor	1
Contractor	0
Contractor	0
Contractor	6
Contractor	0
Contractor	0
Contractor	2
Contractor	0
Contractor	2
Contractor	None yet
Contractor	ATM nil but previously trained 1
Contractor	0
Contractor	0
Contractor	0
Contractor	0
Contractor	currently none
Contractor	0
Contractor	2
Grower	1
Mill	0
Mill	0
RTO	0
RTO	0
RTO	0

q11. In your view, what has been the most effective way you have seen to train operators?

Response Grouping	In your view, what has been the most effective way you have seen to train operators?
Contractor	Tafe, our selves.
Contractor	The Scandinavian forestry school model, with intensive mixed practical & classroom theory in a controlled environment, before working with local contractors to apply "forest" skills. At least they come to the forest contractor with their "learner training" completed.
Contractor	Have a spare machine available for them to operate under supervision and close by to other competent and willing operators.

Contractor	Starting on the workshop floor to gain basic mechanical understanding of equipment mixed with environmental aspects of forestry then gradually into equipment. Particularly in CTL learn forwarder first before moving on to harvesting.
Contractor	Simulator. Then in field with trainer.
Contractor	First step, establish a pathway via providing work experience whilst at school and possible apprenticeship. While undertaking their apprenticeship they are simultaneously trained in machine operation. Upon completion of their apprenticeship, they may be offered a full-time role on a machine. It is time consuming, however establishes the right skill sets.
Contractor	Experience in the bush, with other qualified operators.
Contractor	HANDS ON.
Contractor	Starting on simulators then moving to actual machines.
Contractor	Show and reinforce, time in the seat.
Contractor	One on one in the field training.
Contractor	On the job.
Contractor	Hands-on training is by far the best way to train operators; this includes having an experienced person close by or with the person whilst they are training.
Contractor	I haven't had experience in training operators.
Contractor	Pair them with experienced operators.
Contractor	Introduce them to a lower skilled position, complete plant familiarisation training and review Safe Work Instructions, have them spend a few days with competent operators before giving them opportunity to operate, continue to pair them with experienced operators to answer questions and refine skill set. Complete Verification of Competency when trainer is satisfied in operators' performance.
Contractor	Operators are best trained hands on from, day 1. Exposure to a few different operators is also beneficial, can see how others do it, refine technique over time.
Contractor	Start them off in a forwarder to learn good log quality and how to go about cutting a block with slope and drainage lines.
Contractor	In-house supported training and coaching on the forestry equipment, complemented by working with an RTO to provide further training and assessments. We have invested in training by allocating four (4) training machines, which are older equipment that we have kept for this purpose (traditionally we would have traded out this equipment), enabling us to start our beginners on a machine for explicit and direct operational training. This is part of our in-house training program developed by us to support better learning outcomes for the younger persons joining our industry.
Grower	A mix of operating the machine, simulators with training modules and then some discussion/theory.
Grower	# Develop & supply customised Harvester controller training manuals for TimberRite & H16 Waratah controllers. # One on one training with new harvester operators. # Feedback to operators, when conducting sawlog stack checks on their own cut logs. where added value can be gained. # Develop our own Harvester Certification assessment process. # The use of harvester controller simulators on my work laptop, visit crews and do training on site - where needed.
Manufacturer	Field training.
Manufacturer	Simulator in combination with the real thing.

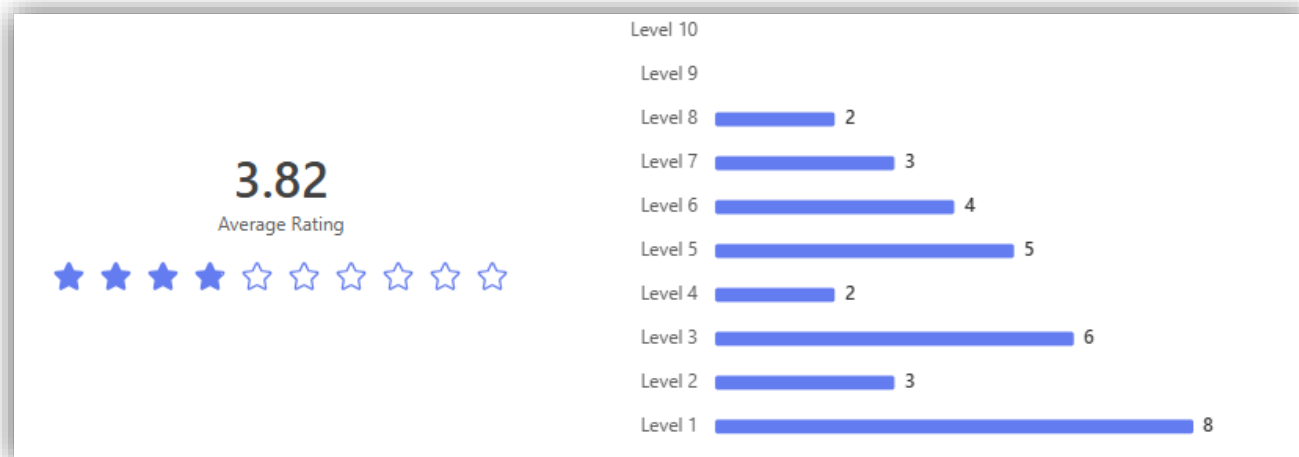
Mill	The most effective method I have found to date is 1 on 1 coaching sessions that teach and assess as the operator is developing their skills and techniques creating reports at regular intervals to track performance.
Mill	On the job in the machine is the best environment, however if available and used correctly simulators may help with basic functions. Harvesting and processing takes longer so breaking down the steps is important.
RTO	Start on simulator and then into forest/plantation.
RTO	Learn on the job then get assessed.
RTO	On the job training, RTO to assess onsite.

q12. How do you currently train operators?

Response Grouping	How do you currently train operators?
Contractor	One on one training & use an independent trainer.
Contractor	Close (100% contact) Mentor style training - 2 weeks (roughly), then 50% contact mentoring for a further week or so until demonstrated ability to be left for longer periods to develop autonomy. Six months later we engage an RTO to assess them for competence.
Contractor	As above
Contractor	As above. Once a trainee moves to equipment it starts daylight only and supervised. This allows reduced hrs which we believe is a better environment to gain and retain essential skills before learning to manage fatigue as well.
Contractor	Simulator then in field. We have our own in house trainer.
Contractor	As above.
Contractor	Put them in a spare machine.
Contractor	HANDS ON ALONG SIDE EXPERIENCED OPERATORS.
Contractor	On the job training slowly. Showing basic operations techniques then building that every day.
Contractor	Show and reinforce, time in the seat.
Contractor	On the job.
Contractor	On the job.
Contractor	On the job is our preferred method, however new forestry requirements all operators need to be trained in the unit of competency (UOC) prior to using the machine in the bush so on the job training is difficult.
Contractor	We have only employed experienced operators.
Contractor	Through internal processes/policies and procedures in-depth training plans, achievements/goals.
Contractor	As above. (Internal training programme) trainer/assessor has completed internal trainer/assessor training.

Contractor	Operators are put into a machine with an experienced operator to observe and then given the opportunity to operate under the guidance of the experienced operator. Once the experienced operator is satisfied of their skill level they are able to operate alone. Of course, there are others on site and all within radio contact. This training is done whilst discussing standard operating procedures, harvest plans, safety and environmental issues. All happens at the same time to be able to comprehend the requirements and implement them.
Contractor	In-field.
Contractor	We currently provide all new employees with a Certificate 3 in Forest Operations along with supplementary modules in topics such as communications, leadership, mental health, fitness, financial literacy, driver education - to full support the learning outcomes and set the trainees up for success. Our training program has been developed to future-proof us and is serving us extremely well.
Grower	# One on one training on site, positive feedback # I develop training manuals, mainly on the harvester controller, that covers all aspects of how to calibrate length and diameter, adjust the cutting file (Apt) and adjust harvester head settings like soft-clamping on the delimb and drive arms. # The Operator Certification process I have developed has 25 tasks an operator must perform and pass, mainly with working on normal day to day tasks that an experience operator should be able to perform in the harvester computer, also safety around the harvester and also 25 practical visual tasks/observations on operator processing technique, skill level and their value recovery during their decision making when cutting logs.
Manufacturer	Mainly field training.
Mill	I currently perform all training in house. # I am a qualified trainer and assessor for TAFE NSW and currently work part time for the Tumut Campus, I have separately also developed coaching courses for forest machine operators currently for harvesters and forwarders that have proved very successful. # I currently can take learners new to the forest industry to competent in the space of a few weeks and skilled in under 6 months. # Our fleet is entirely based in StanForD 2010 and harvesters and forwarders linked by Maxifleet or Timber manager. All operators once trained are capable of using weigh links with truck loading software, onboard planning and mapping software (Maxi vision / Timbermatic maps) and are able to achieve a calibration under 5% deviation if on a harvester. Operators also help develop our PIN files if their feedback helps to achieve a better outcome in forest yield and product optimization. # We are using the latest in forest technology to empower our operators and maintain the best outcomes in our harvesting activities.
Mill	As above mostly. A lot have pre trade quals such as mechanic, boiler maker etc. Production pressures are also large so it is good if available to have a "spare" or part time machine the foreman can operator to support the learner.
RTO	As above for our school-based learners. Often our trainers are doing assessment only for other harvesting contractors.
RTO	On the job with experienced operator/mentor.
RTO	TAFE Gippsland had a Vic Forests coupe as a training venue. We used to harvest around 70 hectares a year, training machine operators. Twin cab feller buncher, twin cab 624 processor, excavator with cut off saw, Dozer, skidder. Coupe closed. Currently No machine training. Still training hand falling on roadside hazard tree removal.

q13. How much confidence do you have in the ability and capacity of existing registered training organisations (RTOs) to deliver fit for purpose operator training (1 = poor < > 10 = great)?



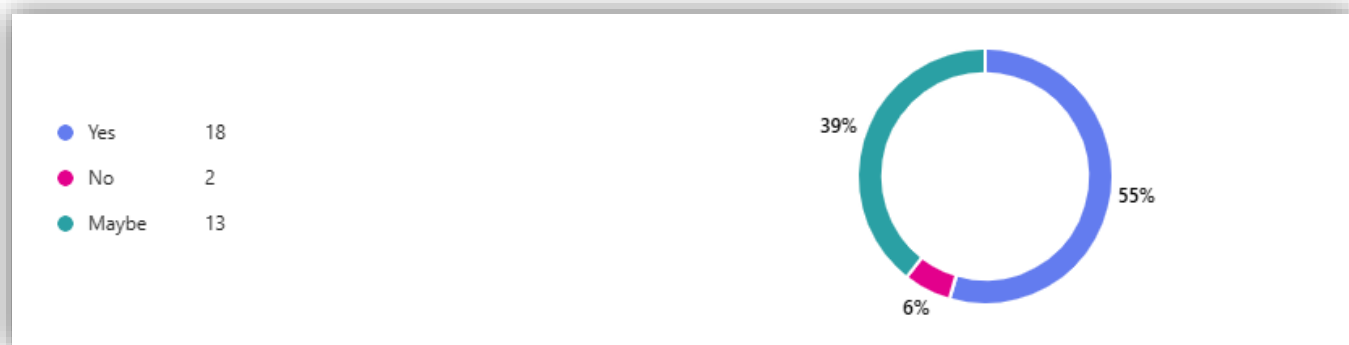
q14. How would you like operator training to be delivered?

Response Grouping	How would you like operator training to be delivered?
Contractor	Forwarder Harvester with Tafe basic training.
Contractor	Similar to car licences with a "Diary of hours" on various tasks. This would be supplemented throughout with appropriate theory modules delivered online whilst working.
Contractor	In field hands on in machines.
Contractor	I'm not sure what this means. There was a time when our industry had more time for everything including nurturing skills now it seems to be out of time with massive capital costs and extremely fine margins there seems to be no tolerance for any extra including training people.
Contractor	Yes.
Contractor	TAFE NSW.
Contractor	Ideally in a real working environment with experienced instructors. It would be helpful if it combined in-person demonstrations with time on the machine, followed by feedback sessions. Some online modules or videos for theory and safety basics could also be useful before or alongside the practical work.
Contractor	Would be good to have somewhere for people to train and then we get them, but I think that would be difficult to do.
Contractor	Onsite
Contractor	Onsite
Contractor	on the job.
Contractor	Currently our operators UOC is assessed in the workplace which is by far the best way to train them, a classroom environment does not expose them to the risks in a workplace

Contractor	My opinion would be to start them off in a classroom learning on theory, then ideally training on simulators, before going out to the Forest, in a buddy type system. Due to production pressures, loading times, it would be quite difficult to have a non-experienced operator in a machine, without doing training on a simulator prior.
Contractor	In person, on site.
Contractor	In house works well and is price effective if this is acceptable with the customer. Third party with simulator could be effective for training operators with experience, there is still the need for company SWI to be understood and adhered to.
Contractor	The operators must be trained by experienced operators in the field. Courses in theory are required and should be delivered subsequent to initial operator machine training to consolidate concepts and requirements. Theory without experience can be overwhelming or irrelevant. It must be available as required, currently we can wait for months or years for courses to be run. Experience has shown we have sometimes employed operators who have moved on before the training became available, in spite of it being a contractual requirement.
Contractor	Efficiently and cost efficiently.
Contractor	Availability of RTO's is a concern, we need more qualified RTO's who can provide more 'hands-on' training - accessibility of RTO's has always been a challenging, remembering that our training room / classroom is in the forest, always remote and not quick to access. Further to question no. 15 below - on occasions we use simulators for training in the early days, and for upskilling existing workers onto new equipment. It has a role to play in developing hand eye co-ordination, familiarity with machine settings, and assisting in building skills vocabulary for new workers.
Grower	I would like to see a delivery of simulator-based modules that students could work through at their own pace without the added pressure of making production or costs of fuel and repairs to machines. These simulator modules would be built in conjunction with forest growers and not just operating the machine. There would then be "in forest" modules that would take students through machine safety, operation requirements and environmental requirements.
Grower	In lieu of a fully set up operator training school like Scandinavia has, probably a mixture of simulator training and short modules (Forestmods EdApp training, plus Timberskills simulator training with feedback), then moving onto apprenticing for a contractor and operating in the forest to complete final training before being signed off as fully competent.
Grower	A mixture of both classroom and practical training. An apprenticeship type training scheme. Were hours under supervision count for different training modules.
Grower	My background was an operator trainer for Waratah Forestry Attachments in Australia for 5 years # I then moved back to NZ and started a business for approx. 13 years where I visited hundreds of crews around Australia and N.Z and did operator training (mainly on calibration in the controller and then performed an audit on the harvester on how fit for purpose it was, and did a report for the forest company on each harvester's condition and the operators knowledge of the harvester. # This did work very well to upskill operators, especially in the era around 2010-2020, as Optimisation controllers were really coming into the market. (But I get I was in a unique role - to do this type of training) I think companies like Waratah, Woodsman, Southstar - now do a much better job doing operator training than in the past.

Grower	Not sure yet what would be best - but needs to be high quality, cost effective, sustainable and offer a pathway for anyone who wants to be an operator.
Manufacturer	In-field, hands-on training.
Manufacturer	Simulator in combination with the real thing.
Mill	Face to face in the workplace.
Mill	If there was a subsidy of sorts to help pay for mentoring and cover production loss it would help. Learners do basic simulator skills and then are mentored in the forest.
RTO	Structured simulator time, then supervised infield practice with trainer followed by a log experiential learning and finally summative assessment.
RTO	On contractors' site.
RTO	TAFE Gippsland used to do it right. We had a Vic Forest Coupe for training operators. Victorian native forest harvesting coupes have been shut down. The best training is on the job training and assessment through RTO.

q15. Do you believe that simulator-based operator training is an effective means to upskill and train harvesting operators?

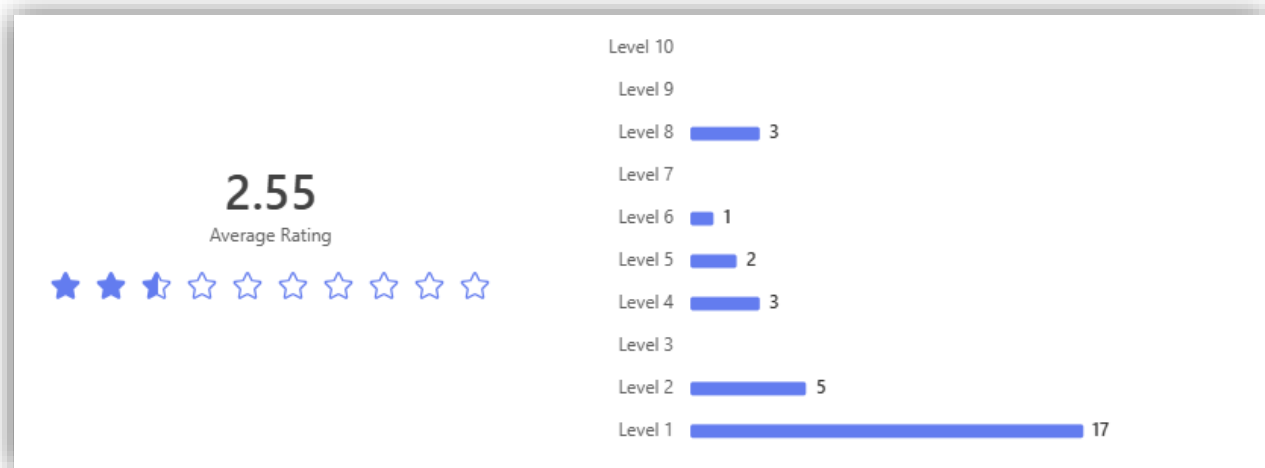


q16. Do you believe that there is sufficient access to funding mechanisms to support businesses train their operators (including impacts on productivity)?

Response Grouping	Do you believe that there is sufficient access to funding mechanisms to support businesses train their operators (including impacts on productivity)?
Contractor	No
Contractor	No. We estimate training costs of a "new operator" are in the vicinity of \$40,000 over 6 months, which includes productivity impacts.
Contractor	No.
Contractor	No. Not even close.
Contractor	No.
Contractor	No there isn't, but this should not be the driver.
Contractor	Probably not.

Contractor	NO.
Contractor	No.
Contractor	No.
Contractor	No! Comes at a huge cost and they still may not get to the standard required in a very competitive industry.
Contractor	No, the cost of training operators is borne entirely by the business including loss of productivity, TAFE fees & travel so the business only takes on a new person if there is not another way.
Contractor	No, the isn't the cost to have all of our staff trained in the required UOC for the forestry requirements is exorbitant especially when they do not use half of the UOC to undertake their job roles.
Contractor	No.
Contractor	No.
Contractor	Unsure.
Contractor	If there are, we are unaware of them. The costs of training are significant and can only be done if productivity can be covered by others in the organisation and written down machinery is still on hand to be able to use. This is not the case for many small businesses.
Contractor	No.
Contractor	Yes, in Tasmania, we are fully supported with access to excellent government funding, which means businesses are not out of pocket. Currently, there is also funding able to be accessed by the trainee. In terms of question 19 below, in Tasmania the ARBRE Forest Industries Training and Careers Hub is providing excellent in-school promotion of forestry careers, and for the past 3 years has been running a School-based apprenticeship - Cert 2 in Forest Operations, and work-experience opportunities for many Schools throughout Tasmania. An excellent model and service provider.
Grower	No, I believe there is certainly a lot more that can be done to support businesses willing to train operators.
Grower	Not sure about this, I know contractors usually get training when they purchase a new piece of equipment, mainly on the computer in the machine, and generally a lot of contractors will use their own experienced operators to help train new guys on the practical side of operating a machine, The machines computer especially in a harvester is more complex and generally I think most contractors need more help to upskill operators on how to adjust settings and perform daily tasks a harvester operator must do, like saving and emailing in the daily production file.
Grower	No.
Manufacturer	No.
Manufacturer	Not at present.
Mill	No.
Mill	No see 14.
RTO	No.
RTO	Definitely NO.
RTO	No, it would cost contractors 50 to 60,000 to train a harvester operator from scratch.

q17. How well do contractual arrangements support the training and development of new operators?



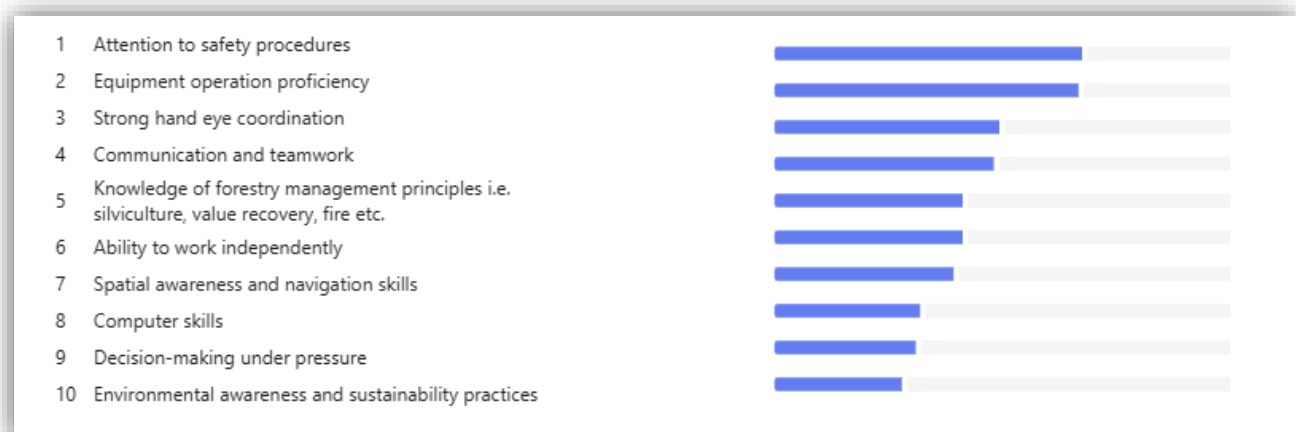
q18. How confident are you with your company and the forest industry's ability to attract, develop and retain harvest operators in the future (1 = poor < > 10 = great)?



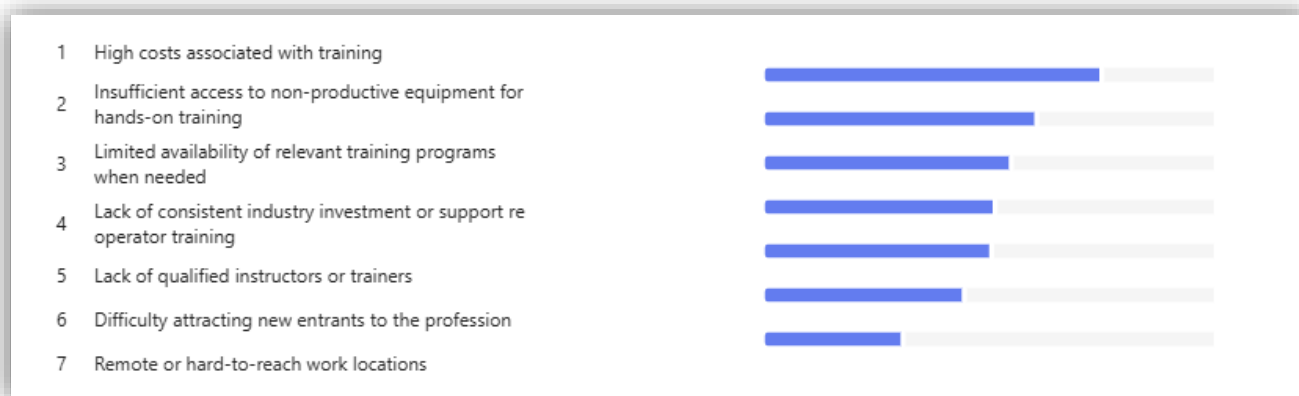
q19. Is there sufficient effort/support to attract school leavers into the forest industry (1 = poor < > 10 = great)?



q20. Please rank the skills you believe are most important for a harvester operator to succeed, in order of significance < rank by moving your most significant to the top and the least to the bottom:



q21. From your perspective, what are the greatest barriers to effectively training and developing forest harvest operators? Please rank the following factors in order of impact, with 1 being the most significant barrier (move to the top) and 7 being the least significant (move to the bottom).

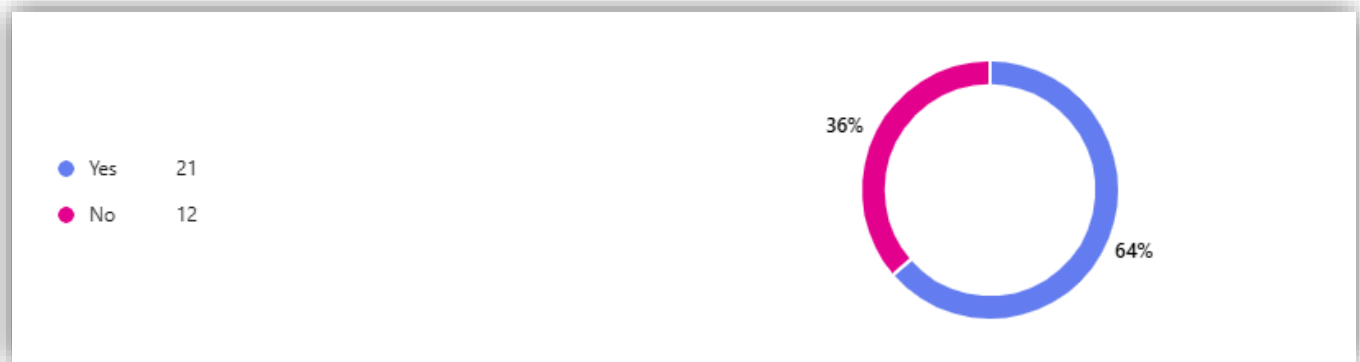


q22. Are there any other barriers to effectively training and developing forest harvest operators?

Response Grouping	Are there any other barriers to effectively training and developing forest harvest operators?
Contractor	Time. Productive.
Contractor	A perception of no career path to offer young people.
Contractor	Lack of interest from young people wanting to work at all.
Contractor	The ability to quantify this cost in competitive tenders without excluding yourself with price.
Contractor	Finding the right people.
Contractor	The skill set is very unique and not understood by forest owners. There is a general assumption that it will look after itself.
Contractor	No.
Contractor	TAFE.
Contractor	Machine designed for 1 person only. Contracts don't allow for the cost of training.
Contractor	Hours of work.
Contractor	Changing the system without recognition of prior experience. E.g., when Safe & Skilled was introduced two of our very experienced operators had to repeat courses where they learned NOTHING!
Contractor	There is a lack of interest in the sector now and most businesses will not train a young person to operate such an expensive machine. Leaving the industry short on operators.
Contractor	Production pressures.
Contractor	Costs to compete with other areas/regions and industries like the mines. We are the same distance from a central location as the mines.

Contractor	Production demands - equipment required to run at 100% limiting opportunity to train those that are less productive. Limited training providers in areas where the timber industry is on a small scale.
Contractor	The main issue is the high costs - loss of productivity, taking experienced operators out of machines to assist in training, taking highly expensive machines out of being productive and the potential costs of damage to them by inexperienced operators. The main pressure is not being able to factor in training as a cost in the tender process and remain cost competitive.
Contractor	Having to be ticked before they can do any practical work on site.
Contractor	Long-term contract security for businesses to invest in solution based -inhouse training programs. Our contract security has provided this opportunity for us to develop an in-house training package designed to match the desired outcomes for our business and enabling us to future-proof our workforce.
Grower	I'm not sure if "Remote or hard-to-reach work locations" takes into account the logistics and costs of students travelling for training.
Grower	School based introduction into forestry.
Grower	Competition with other industries, better pay and conditions.
Grower	I think in NZ, the harvester operator is generally under the most pressure, and not as many loggers want that pressure, they would rather operate a shovel digger or felling machine, I think most contractors will give opportunities to younger upcoming harvester operators if they have the right attitude and look after the equipment.
Grower	Time - all the barriers in question 21 add up to a lot of time and effort...if even one potential operator gets started and it doesn't work out the time, effort and energy wasted is substantial and takes a toll on all involved.
Mill	1. Average wage associated with new operators. 2. Working conditions associated with Forest machine operators. I think we are kidding ourselves if we think the gender balance will change without improved conditions.
Mill	Forest owners pass on any costs from contractors to the mills. Therefore, it's always the mills having to pay for any inefficiency in the supply chain. Forest owners need to absorb some costs. Contractors in repeated tenders need to keep competitive rates and they don't tender on reduced production via learners. Contract extensions have a high bias to production performance, so contractors again don't want learners. Our company has very long-term contracts and work with contractors around learners and production as much as possible.
RTO	The certificate III qualification structure usually has insufficient units in it to meet mechanical harvesting contractor needs. - Contractors have difficulty finding suitable people to become operators - RTO's and learning programs are not funded/structured properly to allow a well-structured learning program (most contractors need their operators with more technical units than a current certificate III program allows). As a result much of what happens is an assessment only process to issue employees with tickets. - Such a learning program would mean lots of time without trainee operators for the contractors and often they can't afford this. - The regional nature of the industry makes it difficult for RTO's to get economic class sizes together to afford such a structured program.
RTO	Finding young people with a good work ethic.

q23. Are you aware of, and understand the 'Safe & Skilled' charter?



q24. What challenges have you faced with having your operators certified to the Safe and Skilled units of competencies, (cost, time, availability, navigating the VET system, quality of workplace trainers and assessors, record keeping, flexibility, other)?

Response Grouping	What challenges have you faced with having your operators certified to the Safe and Skilled units of competencies, (cost, time, availability, navigating the VET system, quality of workplace trainers and assessors, record keeping, flexibility, other)?
Contractor	All the above
Contractor	Availability of an assessor to deliver the necessary accreditations within time limit was our biggest challenge in the beginning. There was just no one in close proximity who held the Forestry accreditations on scope. Then we found one in the last 3 years & have caught everyone up. But how long until he gives it away?
Contractor	Just not available at all
Contractor	That is AFCA and they don't want to help in Western Australia
Contractor	None, we have been extremely fortunate in this regard.
Contractor	none
Contractor	RTOs availability and finding them.
Contractor	Housing, demands on productivity and quality
Contractor	Lack of available Assessors
Contractor	To have the operators trained in the Smart and Skilled is time consuming and expensive for businesses, with minimal benefit.
Contractor	We weren't able to have our operators assessed/retrained in their certificates, until FIC came together and provided subsidisation for the course. To down tools for a few days is a huge financial cost.
Contractor	Costly for very little learning, operators understood current machinery better than trainer/assessor

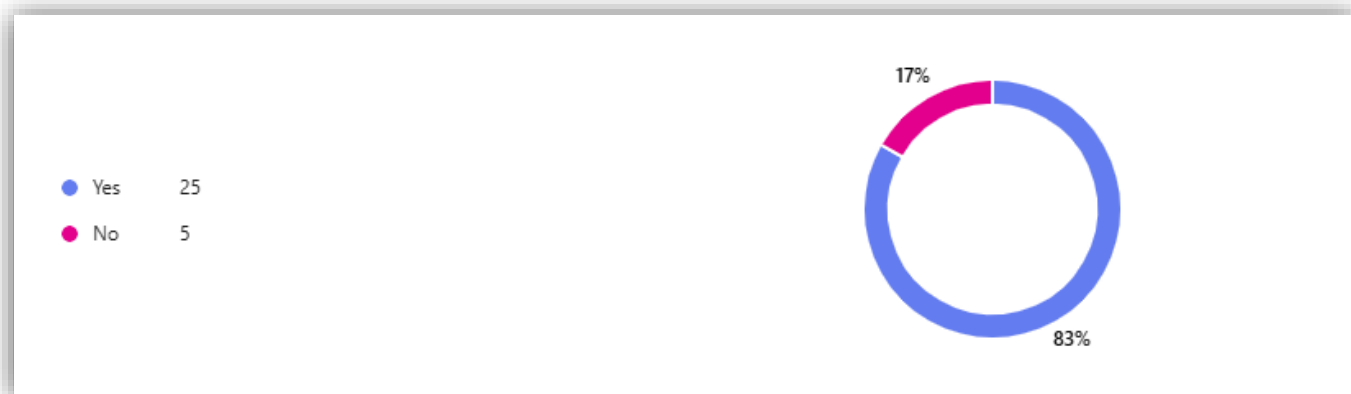
Contractor	Availability of training programs to run at a time they are required. Often have to wait a very long time. The only reason we are now closer to having the proper qualifications for our long-standing operators is the funding received post fire to train actually got the courses up and running. We now have about 6 operators ready to go with the Plantation Skill Set and machine assessment and awaiting timing on the training availability.
Contractor	Availability cost time
Contractor	We already train all new operators and upskill experienced operators (via skills gap assessment) who join the company with a Certificate 3 in Forest Operations. Therefore, we have 100% of our workforce certified to the Safe and Skilled units of competency.
Grower	Quality and access of workplace trainers or assessors, Cost, suitable candidates, flexibility of system, relevance of some of the training modules.
Grower	If it is similar to NZ, some of the content is not that relevant, and it misses the more important things like - the operator understanding the harvester's computer to a better level.
Grower	I have not heard of anyone undertaking units of competencies - not sure you can even do them?
Mill	The CIV TAE requirements for trainers and assessors is large barrier to attract them into the VET system. High quality operators will earn more operating than training. Therefore, its typical to only attract operators at the end of their working career who want part time work and thus again causes turnover of trainers which causes bottle necks for the RTOs who need to remain commercial as well. The cost of direct fee for service courses is very expensive. There haven't been any funded machinery or truck driver skillsets since the latest release in 2018. Therefore, the industry has had to pay fee for service which can be around \$900 per person.
RTO	As an RTO I don't feel qualified to answer this question.
RTO	We ensure operators are competent in their relevant unit of competency through training (on the job) and assessment through an RTO.
RTO	Tafe Gippsland is an RTO.

q25. How should operators be assessed to the approved nationally recognized Safe and Skilled units of competencies?

Response Grouping	How should operators be assessed to the approved nationally recognized Safe and Skilled units of competencies?
Contractor	On the job
Contractor	RPL is the only way available and works if you have a good assessor. Unfortunately, the theory/practical assessment is often delivered by someone who has never operated the machinery in question & comes across as "impractical" to our operators. The only way to have existing/new operators take the training seriously is to step through clearly defined & easy to understand steps with "competency" points along the way.
Contractor	Less red tape on this the better, the red tape is the main thing that got us in the position we're in now with lack of operators. Most skilled and experienced operators that have left the industry have done due to over-the-top administration, safety and compliance.
Contractor	In both classroom and in the field on active sites per op type, either active production sites or active training sites (which would require industry input).

Contractor	In field in and around the machine.
Contractor	Through NSW TAFE.
Contractor	Onsite assessment, and a short theory assessment.
Contractor	By qualified people in the field.
Contractor	By their peers.
Contractor	You need to train more assessors.
Contractor	Ensuring the Safe and skilled are relevant for example we have truck drivers that are required to undertake environmental care and soil and water etc, however they drive on roads only that have been created by the Forestry so seems pointless expense to have them trained in that.
Contractor	Through using simulators and on the job assessment.
Contractor	Infield by accreditation assessors.
Contractor	By completing theory that indicates an understanding of the core requirements to perform the role followed by practical assessments whilst operating equipment.
Contractor	Existing assessments are probably fine, just need to be available as and when required.
Contractor	On site with some experience under a ticketed operator.
Contractor	Training and Assessment, and when skills are already held yet not certified, verify competency to validate skills.
Grower	Firstly, by developing a set of national standards that are agreed to by all states - with input from industry stakeholders. By completing set tasks that are verified by an approved assessor.
Grower	I think there should be a certification that has input from the right people - like the manufacturer operator trainers, I see some operators in NZ that have a unit standard to operate a harvester, and they know very little about the harvester computer. I think the program I developed is very good as far as assessing practical skills and operator knowledge in the harvester computer.
Grower	Ideally, if already operating, they would be assessed by quality trainers that know their stuff, add value and knowledge whilst testing competency.
Manufacturer	On the job by registered trainer.
Mill	Timing needs to be flexible and the smallest time impost possible. The units are so large they take a lot of questions to cover the theory components.
RTO	These could reasonably be made skill sets in the FWP training package and then could be subsidised in some states (currently NSW and Victoria).
RTO	Knowledge, skills, third party observations/opinions as per RTO standards of Assessments.
RTO	On the job assessment by RTO

q26. Is the Safe and Skilled Competency assessment of operators important to your business?

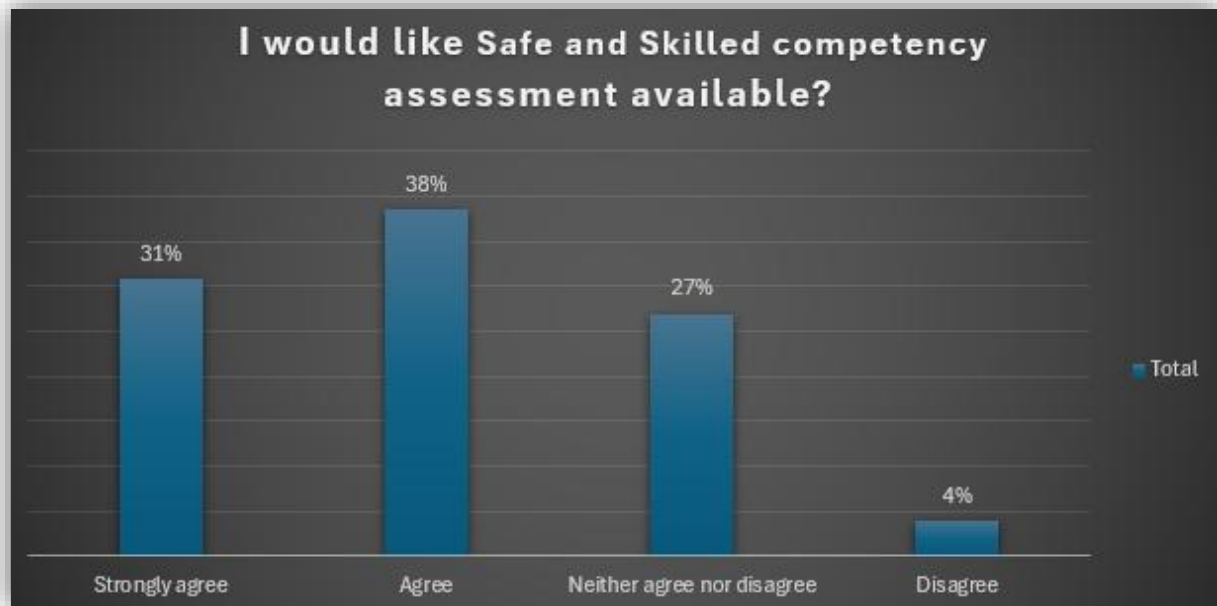
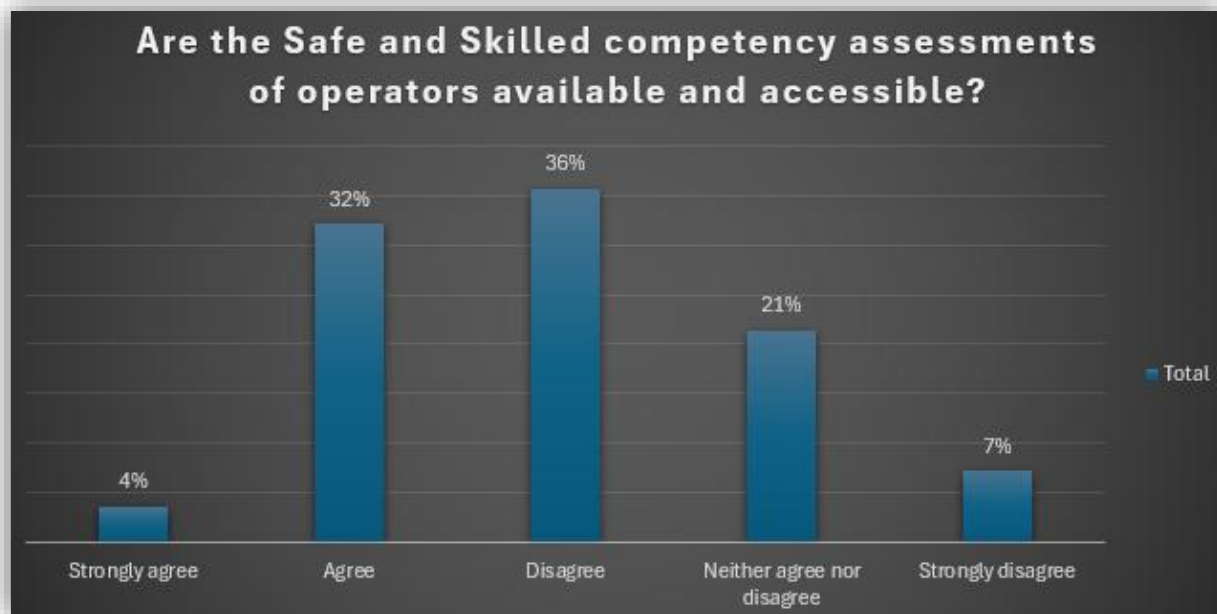


q27. If Safe and Skilled competency assessment of operators is important to your business...why?

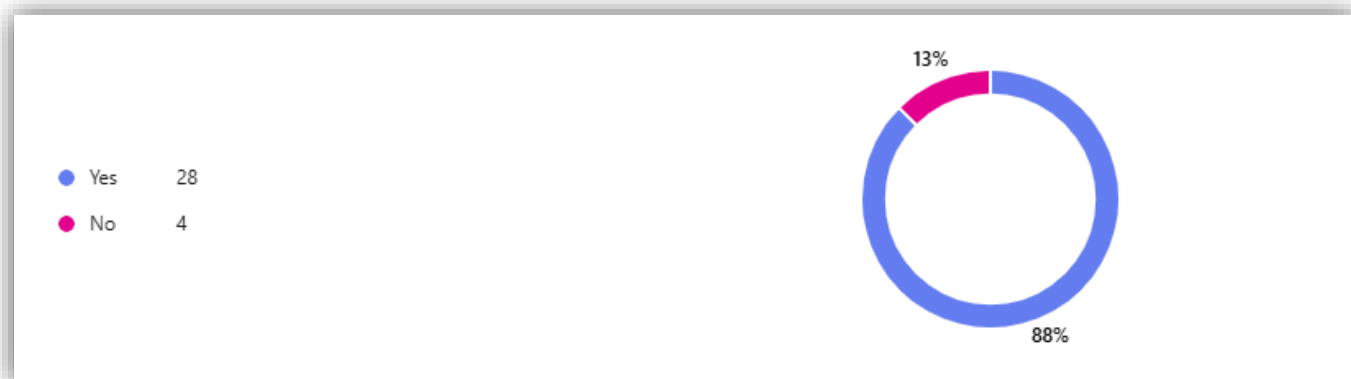
Response Grouping	If Safe and Skilled competency assessment of operators is important to your business...why?
Contractor	To be qualified to meet WHS requirements. To keep employees safe.
Contractor	It is seen by our operators as an investment in our people. It is seen as the bare minimum by WorkSafe assessors.
Contractor	It's not!
Contractor	It's more of a question of what do we have without it. At least it legitimises what we do and love.
Contractor	It is a minimum standard to ensure our business is compliant in 2025.
Contractor	To ensure operators know the safety aspect of forest work.
Contractor	IT IS A REQUIREMENT OF OUR CONTRACTS.
Contractor	Shows they have the right qualifications. And it's a requirement of our contract.
Contractor	Helps me sleep.
Contractor	Our principle has made it compulsory otherwise we would ignore it.
Contractor	It is a part of our contractual requirements, having the safe and skilled does not mean the operators aren't exposed to risks of the industry just because they have undertaken the training.
Contractor	Knowing that our operators/new operators have been assessed and certified, proves they have the skills for the job. It also benefits operators for future employment.
Contractor	Encourage and support the training of staff.
Contractor	Keeps our operators to industry standards.
Contractor	It is a contractual requirement.
Contractor	Having a level of competence and confidence among the forestry industry.

Contractor	As mentioned, due to training all operators to a Certificate 3 in Forest Operations, we are already compliant with Safe and Skilled competency.
Grower	Now that I've read what it is, I definitely think that these sorts of competency assessments are necessary to ensure operators can work within the operational space safely.
Grower	I haven't seen the Safe/Skilled competency - but I will check it out when I have time.
Grower	Proves that all operators are competently safe and skilled. Everyone's butts are covered!
Manufacturer	Ensure all workers are able to accomplish tasks safely and effectively.
Mill	Safe and Skill list the industry equivalent units and this is helpful as many operators hold these and have remained current in industry. However, RTOs can only assess and advise on the 2018 release as it stated they aren't equivalent to TGA.
RTO	It gives new industry entrants a minimum standard to achieve, raising the professionalism of the industry overall.
RTO	NOT APPLICABLE

q28. Are the Safe and Skilled competency assessments of operators available and accessible?



q29. Would you be happy to receive a follow up phone call to explore responses in more depth?



q30. Would you like to be kept informed about the AFCA project Optimising RTO Training and Assessment Methods for Harvesting Operators?



q31. General Comments:

Response Grouping	General Comments:
Contractor	Forest operating was a simple, enjoyable job - cut the trees down, cut them up and take them to the road. That now seems like a small part of it! Forest owners have continued to add administrative and safety to daily tasks that cost time and add to fatigue, and it's driven operators out of the industry and made it much more difficult to train new people.
Contractor	Question 28 was confusing
Contractor	More funding from forest owners towards new operators.
Contractor	Thanks very much for the work you are doing in this space.

Contractor	Whilst I agree that operators require training and assessment to undertake their daily tasks I don't feel they should be a mandatory part of our contracts. In the way that staff have to be trained prior to operating, and operators cannot be deemed competent without having experience in the machine operations, it is more unsafe to deem an operator competent when they have no experience, this is currently our struggle with our current contract requirements.
Contractor	We are relatively new to the Harvesting section. From a business perspective, to be able to put new workers through a certification prior to starting would be of huge benefit to our company. I am a big advocate for training and upskilling workers.
Contractor	Highly experienced operators with the relevant training need to be treated with the respect they deserve, this is a skill developed and refined over many years. The experience of these operators is a resource that is not often recognised and appreciated. Our observation is that good operators when given training, ownership and trust, they will deliver the productive results we all need.
Contractor	Thank you.
Grower	As you know, more value recovery training for operators would be amazing!
Grower	As a harvesting manager I am keen to see the outcome and will support our contractors in the process.
Grower	There needs to be a greater investment in the training and recruitment of forestry equipment operators across all states. The current system is not working and is too fractured. Currently there are too many Quazi industry groups achieving nothing meaningful for the next generation of Forestry equipment operators. The training has been left up to the contractors, with no support or direction from industry or growers. We as an industry need to do more to promote the industry and therefore make it an industry that school leaves / next generation want to make a career in. An apprentice style training system is a step in the right direction; we also need to see the re-establishment of the specific Forestry degree.
Grower	I was in a very unique role in NZ and Aust, so I think you are asking some great questions. # I have written training manuals in 'operator terms' that are easily understood, and have had great feed-back on the ease of use, (I do still supply some of this to Waratah NZ). # I have learnt when supplying training manuals to operators, it's great to have examples of exactly what they are looking at, so they can follow the process and learn.
Grower	I really hope we can lock in a clear and long-term sustainable training pathway for anyone dreaming of being a harvest operator - if we get a pathway first, we will find dreamers :)
Mill	I became a trainer and assessor for my industry to help bring new operators in and help the current ones achieve higher standards. # I am training my own operators to not only work safely, competently and at an industry leading standard for our operations but so if they move on continue to deliver. # I think there is a lot we can learn from how FMO's (forest machine operators) are currently being trained in Europe and apply some of the teaching methods there to build our industry capability and achieve better outcomes. # I have a lot of opinions and many not so many answers but I would like to be part of the solution and not the problem so that others can enjoy a career such as I have.
Mill	You are missing log truck drivers as well. Just as important

RTO	Under questions 7 and 8 I have included our trainer capability and age demographic rather than employed workers. All but one of our harvesting trainers are contractors or casuals to this organisation.
RTO	TRAINING IN GENERAL - unless there is public funding there are not too many that can afford to work or have a business in this area. Training is spasmodic and limited, that's why there is a lack of providers eventually go broke!
RTO	I work for TAFE Gippsland, not a contractor

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