Exploring Training Demand & Supply Challenges Report

February 2025

Skills Insight

Skills Insight acknowledges that First Nations peoples have been living on and caring for country for thousands of years.

This is respected in our values and the way we work.

Contents

List of abbreviations

Abbreviation	Meaning
VET	Vocational Education and Training
RRR	Regional, Rural and Remote Australia
RTO	Registered Training Organisation
JSA	Jobs and Skills Australia
JSC	Jobs and Skills Councils
AQF	Australian Qualifications Framework
ASQA	Australian Skills Quality Authority
DEWR	Department of Employment and Workplace Relations (Federal)
IRC	Industry Reference Committees
LLN	Language, Literacy and Numeracy
LLEN	Local Learning and Employment Networks
NCVER	National Centre for Vocational Education Research
VOCEDplus	Vocational Education and Training Database
ANZSCO	Australian and New Zealand Standard Classification of Occupations (**Note:** The ANZSCO was the classification system used for occupations at the time this research took place. In December 2024 the OSCA was announced to replace the ANZSCO, although the ANZSCO will continue to be in common use throughout the transition period.)
OSCA	Occupation Standard Classification for Australia

Executive Summary

Stakeholders in the agribusiness, fibre, furnishing, food, animal and environment care industries have expressed concerns about the effectiveness of the VET system to respond to industry need. A series of decisions have been made over the years based on selective evidence of skills and training needs without properly considering the actual needs of these industries.

A key area of decision-making involves the availability of VET qualifications (and other training products), particularly whether they should be retained on the National Training Register and funded under relevant programs. Decisions have been made based on notions of industry demand as reflected in quantitative data, particularly enrolment numbers, as though enrolment numbers were actual indicators of industry demand for skills. This report examines this issue and finds that enrolment numbers often reflect the training being offered by Registered Training Organisations (RTOs) and accepted by students, and are often not reflective of industry demand.

The Exploring Training Demand and Supply Challenges Project was undertaken by Skills Insight Jobs and Skills Council with Federal Government funding through the Department of Employment and Workplace Relations. It was designed to examine the dynamics around demand signals and supply responses to understand why supply responses are not targeted to meet industry needs, rather they meet a range of other factors relevant to the provision of training, namely the viability of RTO operations. The aim is to provide explanations and supporting evidence to improve decision-making.

This research tells a story of invisible demand, an absence of supply and industry left without the skills they need to remain productive and competitive. It shows that reliance on a mythical concept of a 'VET market' and 'one-size-fits-all' approaches evidently do not, and cannot, lead to responsive, high quality and efficient supply of training to develop a skilled and available workforce.

There is consensus among commentators that policymakers need to define whose interests the VET system is intended to serve, as well as how they negotiate competing priorities for public good and private benefit. While research participants were not united on the cause, **they did identify that the 'multi-stakeholder' nature of VET has contributed to a complex environment stakeholders find challenging to understand and navigate.**

The research also provides evidence that l**ow enrolment numbers do not equate to low industry demand**, and may instead be impacted by structures, policies, funding, investment, regulation, information flows, labour supply, business decisions and training viability considerations. These factors are intensified in regional, rural and remote Australia.

Some research participants felt that Australia's qualification and training funding system diminishes RTOs' ability to plan long-term investments in facilities, infrastructure, staff, and training materials. **As funding can fluctuate based on government priorities or economic projections, RTOs face reduced incentives to invest in qualifications with low enrolment numbers, thus perpetuating a cycle of low delivery and low investment.**

Remaining compliant with training package updates is often a significant challenge for RTOs, primarily due to the lack of investment and availability of training materials. This issue is compounded by the costs and risks associated with developing and maintaining training and

assessment materials for a potentially uncertain market. In some cases, RTO respondents **were reluctant to put certain qualifications on scope due to perceptions that the qualifications were too difficult to deliver.**

Central to the discussion of VET qualifications, were conversations about accredited and non-accredited short courses, skill sets and units of competency. These conversations centred around incremental training that is cost effective, time effective and readily accessible by stakeholders.

Improvements in information could contribute to enhanced industry and employer networks, which could assist employers in their considerations about qualifications and provide more accurate demand signals to RTOs.

Across all the sectors examined in this research, employers' support of relevant qualifications and, in some cases, VET in general, is hampered either by a lack of accurate information or the possession of inaccurate information.

In some instances, employers were simply not aware that a qualification existed for a particular role.

Trainer shortages are widespread and there is a need for new approaches to enabling teaching and learning at all levels. The requirement for educators to possess both training and assessment qualifications and relevant industry experience can make it difficult to source appropriate staff to fulfil training and assessment roles with RTOs.

The cost of maintaining facilities for practical training and assessment is a barrier for many RTOs in offering quality and cutting-edge training and assessment; as is the cost and expertise required to develop training and assessment resources, such as learning materials. Supporting improved participation in formal VET training from cohorts such as learners with low language, literacy and numeracy (LLN) skills or people for whom English is a second language may require different approaches and additional resources.

It is important that RTOs are supported to deliver training when, where and how it is required. **Currently, RTO viability is the key determinate of what gets delivered, where and when.** Where overwhelming barriers to delivery result in training not being offered (i.e. a lack of supply) there can be a false perception of low demand, which in turn impacts on future supply, limiting the choices available to employers and learners.

Many stakeholders reported difficulty in generating enrolments not because of a deficiency in the qualification/s, but due to current workforce shortages and long-term concerns around the attraction and retention of workers to their industry. For most of the industry sectors in the study, this will often require attraction to regional, rural and remote locations, in addition to attraction to specific industry sectors or occupations.

Many enterprises have great need for skills and knowledge that are delivered most effectively through formal training, **yet lack the time, resources, informational networks, and understanding of the value of VET to embrace opportunities as they arise.** Formal vocational training is just one of many investment decisions for any business and where there are scarce resources available, strategic focus will usually centre on meeting organisational needs. While there may be value to the broader industry and the learner, formal training (versus unaccredited training or informal learning) provides fewer tangible benefits to employers.

The overall result in some instances is that employers lack commitment to training people in the formal VET sector, as it is seen as too difficult, costly, and inconvenient. Instead, they rely on on-the-job learning, which may be an easier process for all involved, but lacks the professionalism towards improving performance, occupational learning and independent assessment. It also inhibits professional knowledge transfer, potentially resulting in substandard workplace health and safety outcomes, lower productivity, and limited capacity for innovation. As discussed in more detail in the RTO delivery challenges section of this report, informal workplace learning becomes an attractive option which actually works for some of the learning needs in some sectors.

This study had a focus on addressing disadvantage, whether experienced by certain business types, notably small businesses, or in particular locations, especially regional, rural and remote Australia.

In these contexts, training need is rarely communicated as a collective demand signal from multiple industry enterprises. Rather, individual stakeholders often stop looking for a solution that is not forthcoming, engage other options, and so further weaken demand and potential supply viability.

This research project identified a host of areas of opportunity that may, with government and industry responses, lead to improvements. **Many of these require actions in a coordinated manner by governments, industry representatives, regulators and training providers (i.e. RTOs), while others fall within the responsibilities of Jobs and Skills Australia and Jobs and Skills Councils** to guide, plan, research or implement.

Some areas of opportunity are currently being addressed (or actions are being planned), while others present new ways of thinking about potential solutions. From the findings of this research, **there is an opportunity to develop methodologies for analysing qualifications and delivery challenges based on the factors identified,** which would provide improved information to inform decision-making by all stakeholders. Work is already underway by Skills Insight to investigate how this might be done.

Introduction

About the research

This research constructs an evidence base outlining misalignments in the demand for, and supply of, training delivery from the Australian vocational education and training (VET) system. These misalignments often contribute to low enrolment numbers, which are used as a key metric of the system. The findings of this report are based on rigorous and robust analysis of 420 research encounters, including semi-structured interviews and focus groups, involving 213 stakeholders, bolstered by literature review and case studies. The research was designed to create an evidence base to complement existing quantitative data sources. The research design was tested for validity prior to implementation, with a detailed methodology outlined later in the report.

This research delves into the reasons why industry demand for VET can be invisible, or why registered training organisations (RTOs) are unable to viably respond by supplying training. It presents stakeholders' perceptions of these challenges, as well as Skills Insight's observations from extensive thematic analysis and published evidence, before identifying areas of opportunity for further research, consultation, and activities.

This evidence can be used by all stakeholders, including governments, unions, industry, RTOs and Jobs and Skills Councils (JSCs), to support decision-making and advocacy for a stronger, more cohesive skills system with policies and system architecture that better enable the right skills to be delivered in the right places at the right times. The findings should also be used to help guide investment, funding and regulation decisions in shaping the skills system as a necessary adjunct to government strategies and available and improved quantitative data.

Consistent with the Australian Government's *White Paper on Jobs and Opportunities* (Treasury, 2023) and the *National Skills Agreement* (Australian Government, 2023) this report identifies areas of opportunity under the principle that appropriate education and training should be available and accessible for all potential learners, to ensure an appropriately skilled and safe workforce, where and when it is needed. These areas of opportunity have then been analysed to provide guidance on which stakeholders are best placed to potentially implement actions towards improvements.

This aspiration encompasses all stakeholders, with a focus on addressing disadvantage, whether experienced by particular business types, notably small businesses, or in particular locations, especially regional, rural and remote Australia. In these contexts, training need is rarely communicated as a collective demand signal from multiple industry enterprises. Rather, individual stakeholders often stop looking for a solution that is not forthcoming, engage other options, and so further weaken demand and potential supply viability.

Importance of the research

Addressing systemic barriers with evidence-informed strategies is essential because industries are currently facing widespread skills shortages, with ten-year projections indicating that more than 90% of employment growth in Australia will be in roles that require post-secondary qualifications

(Jobs and Skills Australia, 2024a). To alleviate skills shortages and proactively build the future workforce, policymakers need to understand and address the complex dynamics of formal training demand and supply.

High quality training delivery has significant benefits for learners, employers, industry and the wider economy (Jobs and Skills Australia, 2024b). Delivery of training occurs as an outcome of a complex VET ecosystem, in which multiple actors must collaborate effectively, requiring an enabling policy environment in which barriers to inclusive, equitable access are recognised and addressed.

Skills Insight undertook this work to substantiate anecdotal evidence that there is demand for VET even where engagement with VET is low or supply of training is low or non-existent. This contradicts widespread assumptions that qualifications with low or no enrolments are not in demand, mainly due to obsolescence, duplication or complexity. Over recent years, these erroneous assumptions have been highly influential in government policymaking (see for example: Korbel and Misko, 2016) leading to strategies that do not adequately address the underlying causes of VET system inefficiency and inequity. This has sustained the trend of the majority of enrolments proliferating in a minority of qualifications.

The Standing Committee on Employment, Education and Training in its 'Shared Vision, Equal Pathways' report (2024) reported that many stakeholders' views were 'negative and reflected a low level of understanding of VET' (paragraph 2. 77), and went on to say:

'There is compelling evidence that additional, more granular data should be collected to enable government and other stakeholders to identify, understand and respond appropriately to key issues facing the sector…'

This research is designed to provide evidence that can be used to identify, understand and respond to a key metric available about the VET system: enrolments. Quantitative research numbers alone will not lead to better decision-making. As Johnny Saldana (Saldana, 2021) notes:

'Quantitative analysis calculates the mean, qualitative analysis calculates meaning.'

The visions apparent in the Australian Government's *White Paper on Jobs and Opportunities*, the *National Skills Agreement* and the *Shared Vision, Equal Pathways* reports are not going to be achieved without research that gives meaning to the available data. This applies particularly to the critical and complex investment and funding decisions that need to be made by actors within the VET sector. It is difficult to see how these visions can be achieved when investment and funding are so substantially different to the university and school sectors, and the true costs and benefits related to each sector are not fully understood. It is important to understand whether more equitable approaches to investment, funding and regulation may lead to improved outcomes for Australian society and the economy.

Background to the research

This project grew from experiences over the last decade relating to the ways various stakeholder groups in the VET system viewed enrolment data and how that data was used. Often the way industry stakeholders would view the availability and utility of training products on the National

Training Register was at odds with the views of government and RTO stakeholders. In addition, previous research indicated beliefs that there were too many training products which was creating confusion, complexity and an impact to the costs of the system (See: Korbel and Misko, 2016).

Statistics that indicated low enrolment numbers, and which set apparent enrolment benchmarks, were used as a tool to reduce the number of training products in the system, which met resistance from industry stakeholders who viewed the meaning of those statistics differently and questioned the rationale for enrolment benchmarks.

While somewhat hidden by a variety of differing language concerning obsolete, duplicative, unnecessary, superseded and unused training products, there was an underlying theme that low enrolments meant lack of demand from industry. Low enrolment numbers were not linked to potential supply issues, including investment, funding, viability, regulatory or policy positions affecting the whole of the VET system.

However, this perceived lack of demand did not align with industry feedback at the time. Stakeholders reported that training is needed, but not supplied, for a range of reasons not related to simple demand, such as the frequency and timing of their training needs (especially for seasonal, small and niche industries), and the requirement for access to expensive materials and machinery. At the same time, Registered Training Providers (RTOs) are confronted with multiple constraints when assessing if training is viable to deliver, or to continue delivering, because of safety concerns, high costs, lack of trainers and low numbers of potential students, who may be geographically dispersed, especially in regional, rural and remote areas.

This clash of perceptions was demonstrated during a project led by the Australian Industry and Skills Committee from 2020 to 2021, in which Industry Reference Committees (IRCs) were required to identify which qualifications and units had low enrolments so they could be presumptively deleted, with IRCs required to justify retention. The prescriptive reasons for retention were limited to the following:

- there were enrolments in 2020

- there were likely to be enrolments in 2021

- the identified product was going to be rationalised (deleted) in a current review project (noting that this presumed deletion and not changes that may encourage enrolments)

- a new unit was not equivalent to its predecessor unit and therefore required time for transition and availability.

An option to provide another reason was provided to the IRCs. The additional reasons provided by IRCs in sectors now covered by Skills Insight included:

- industry and government forecasts and strategies aimed to encourage growth in the sector, which could be supported by future training, but only if those opportunities were available over a strategic period, not in the short-term outlook of this project

- regulatory changes had recently been made or were in process that would be supported by the training product

- the training products were particularly relevant to priority cohorts and should be retained to encourage greater opportunities for learners within these cohorts

- recent changes to qualifications and units after consultation with industry had addressed previous relevancy issues that were inhibiting enrolments

- the skills covered were highly specialised requiring formal training, and while it was critical to industry that a small number of these qualified workers were available for market, QA and similar reasons, the skills did not need to be widely held

- some (mostly higher AQF level) qualifications were only offered once every few years to meet industry needs, but were fully subscribed when offered, and often fully funded by industry without government support

- recently developed units had been developed in the context of a particular qualification, and were not yet identified as specified available electives in other qualifications, but were expected to be in due course

- units that had been superseded in a review of identified qualifications could not replace non-equivalent units in other qualifications other than through a major change process, and were likely to have enrolments when those replacements could be made

- qualifications and units had recently been approved by the Ministers and uploaded onto the National Training Register and removal would diminish the potential impact of the changes and would cause additional churn

- identified training products were only included in accredited courses and not in national training packages.

While this is just a selection of examples, they serve to illustrate the wide gap between perceptions of stakeholders as to the meaning of low enrolment numbers.

The focus on enrolment numbers led Skills Service Organisation Skills Impact and their partner organisation ForestWorks to conduct a preliminary exercise to identify whether there were other factors impacting the perceived low demand for nationally endorsed VET training, including barriers to supply. The result of this work was reported in numerous Skills Forecasts and Industry Skills Reports produced by Skills Impact between 2020 and 2022, and the Skills Impact *Agribusiness, Food and Fibre Industries Skills Report* published in September 2023, which includes a version of the following summary table on p93:

Industry demand for trained and qualified workers

Industry Perspective: Barriers to Uptake	RTO Perspective: Barriers to Delivery
Lack of capacity/willingness to finance and engage with formal training	Difficulties in basing RTO business strategy on low-volume training package products

Difficulties identifying a workforce need and linking it with a training solution	Difficulties in forward planning and responding quickly to industry demand signals
Lack of HR management in industry businesses to drive RTO partnerships	Limited business development opportunities
Limited options for enrolling in short courses with 'just in time' delivery	Limited government funding for skill sets
Preference for informal/non-accredited learning	Competition with informal/non-accredited options

Practical participation/delivery barriers

Industry Perspective: Barriers to Uptake	RTO Perspective: Barriers to Delivery
Training not delivered where it is required	Difficulties offering training in regional, rural and remote areas/thin markets with dispersed clients
Difficulties releasing staff for dedicated training time, especially during skills shortages	Flexible delivery stretches resources and creates inefficiencies
Difficulties offering employees workplace-based learning experiences	Difficulties developing 'work-ready' graduates

Quality of available training

Industry Perspective: Barriers to Uptake	RTO Perspective: Barriers to Delivery
Qualification learning and assessment content and materials considered outdated/too general	Prohibitive cost of researching, developing and updating learning and assessment materials
Concerns over responsiveness of training solutions and flexibility of delivery methods	Onerous compliance requirements and concerns over risk
Trainers and assessors felt to lack industry currency	Lack of available qualified/experienced trainers and assessors with industry expertise

Having established that there were both demand and supply factors that impacted enrolment numbers in qualifications and units, stakeholders asked the newly established Skills Insight Jobs and Skills Council to go further and produce validated qualitative data, established through stakeholder research.

Behind the research approach

Skills Insight identified qualifications associated within its industry coverage, where there is demand for skilled workers – and in many cases skills shortages – but low enrolment numbers.

The research was designed to gather evidence on numerous variables that may impact the supply of and demand for training delivery, including:

- the perceived currency and appropriateness of training products

- the flexibility of education and training pathways for desired occupational outcomes and industry needs

- duplication in existing pathways, including through non-VET training (e.g.: higher education and non-accredited training and development)

- whether funding levels are sufficient for RTOs to consider training delivery viable, especially in regional, rural and remote areas

- perceptions of the attractiveness of industry careers and associated VET training, and the potential for promotional activities to support prospective learners' decisions

- whether the development of nationally consistent training and assessment materials may be an enabling factor for RTOs to deliver training and ensure that all learners have equitable access to quality resources

- where there is a need to support RTOs and industry in exploring the potential for new partnerships and delivery models that suit all parties (which may include the development of new mechanisms and data to help publicly advertise local industry skills and training needs and corresponding market opportunities for RTOs).

This report documents the various factors that currently constrain training delivery. A range of responses may be required to remove these constraints, including responses from JSCs. The findings of this report can help inform the design, provision and relative priority of those responses.

Methodology

The Exploring Training Demand and Supply Challenges Project utilised a qualitative methodology based on semi-structured interviews, to explore stakeholders' perceptions, opinions, and experiences of 29 low-enrolment VET qualifications in the industries Skills Insight works with.

Qualification selection and industry coverage

An initial list of potential qualifications for inclusion in this study was selected from the Skills Insight coverage of training packages that had an average of 40 or fewer commencements per year for the period 2020 to 2022 (the latest available data).

The list was then fine-tuned using a metric based on quantitative factors and qualitative inputs from industry stakeholders. Consideration was also given to ensuring a broad representation across different industry sectors and qualification levels, e.g. Certificate II through to Graduate Diploma (See: Appendix 1 for more details on the index approach).

The selection of qualifications resulted in 11 industry sectors coming under the scope of this study, which are:

1. arboriculture
2. protected and production horticulture
3. nursery operations
4. permaculture
5. landscaping
6. irrigation
7. pest management
8. aquaculture
9. seafood post-harvest
10. fishing operations
11. fisheries compliance.

Sample selection

To support the objective of undertaking a qualitative study, the process used to recruit participants was designed to engage with as broad a spectrum of stakeholders of all sizes including RTOs (Universities, TAFEs, private RTOs and training consultants), industry associations, government and other relevant bodies, and individuals such as trainers and consultants. Three recruitment strategies were utilised:

- Relevant organisations and individuals were identified from the Skills Insight database and contacted to ask for their input.

- Study participants were also asked for suggestions of additional people or bodies whose contribution may be relevant. This proved successful in broadening the pool.

- The study was widely promoted in Skills Insight newsletters, on the Skills Insight website, and via social media, with interested parties encouraged to book in to sessions or contact Skills Insight directly to arrange a time.

Care was taken to ensure representation of small RTOs and enterprises in regional, rural and remote areas. See Appendix 2 for details of the distribution of study participants.

Data collection and thematic analysis

Stakeholders were interviewed individually or via focus groups both online and in person. Interview sessions ranged in length from 30 minutes to over two hours. Permission to record the sessions was obtained from participants. The discussions focused on the participants' views on the reasons for low enrolment in the qualifications related to their sectors, but they were also encouraged to provide broader comment and input on the supply and demand challenges in delivering VET in their sectors.

Transcripts of the interviews were subjected to in-depth qualitative analysis using a combination of thematic, grounded theory, and narrative analysis approaches to identify common themes at qualification, sector, and whole of VET system levels.

While supply and demand challenges manifest differently across various qualifications and sectors, clear thematic patterns emerged. Through analysis, we categorised these patterns into themes, with broad implications for addressing training demand and supply challenges, at an industry sector level but also structurally, across the VET system.

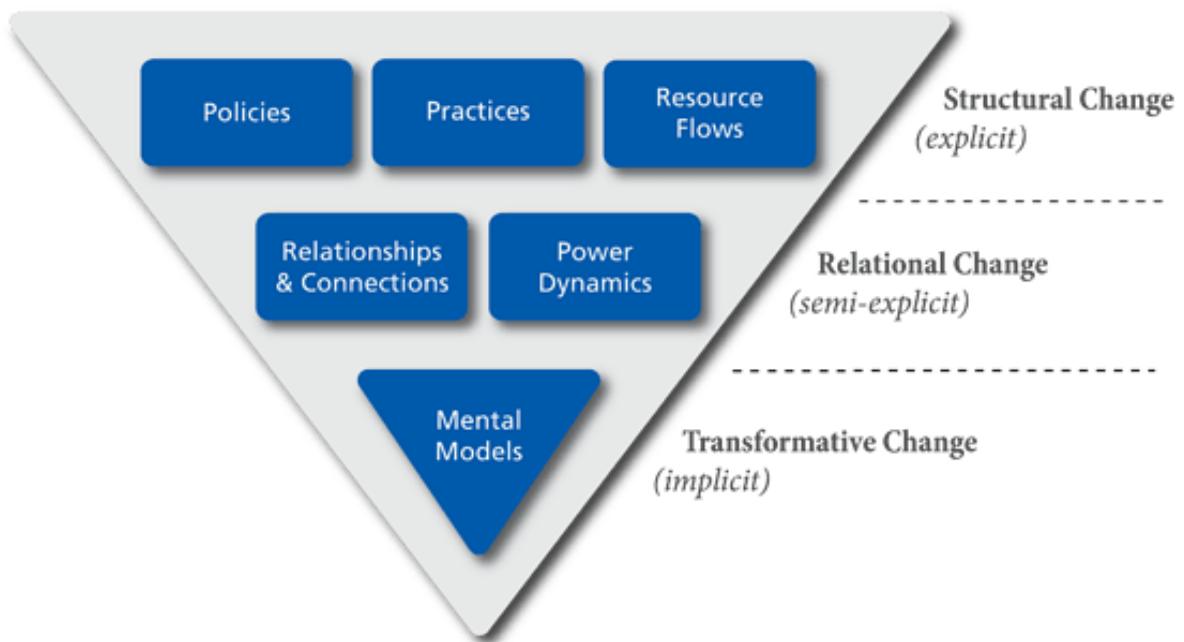## Systemic analysis using Six Conditions of Systems Change

Australian VET is considered an important mechanism for delivering opportunities to meet two fundamental rights – education and employment – yet there are enduring tensions over how best to service the individual and collective interests of all stakeholders. VET is a dynamic system, constantly having to adapt to changing regulatory and technological requirements, all the while serving 'multiple masters' (Pilcher and Hurley, 2020, p.5), comprising individual students, businesses, industries, state and federal governments, and taxpayers. To understand how conflicting priorities arise and create systemwide imbalances in training demand and supply, there is a need to map the current conditions which hold the system in place, which are at once structural, institutional, political, economic and social, all of which are shaped by historical legacies.

This research has used 'Six Conditions of Systems Change' (Kania, Kramer and Senge, 2018) as an analytical framework for exploring VET-related dynamics and identifying areas of opportunity. It was selected due to its purpose of helping distinguish and understand what processes are occurring, whether explicitly or implicitly, and what conditions need to be addressed to enact change within complex, dynamic systems.

The framework demonstrates the interconnection between constraints or 'conditions' such as government policies, institutional practices, resource flows, relationships and connections, power

dynamics (both formal and informal), and mental models – our deeply held attitudes and assumptions – and how they can impede but also enable change.

Six Conditions of Systems Change

Policies   Practices   Resource Flows   **Structural Change** *(explicit)*

Relationships & Connections   Power Dynamics   **Relational Change** *(semi-explicit)*

Mental Models   **Transformative Change** *(implicit)*

Source: Kania, J. Kramer, M. and Senge, M. (2018) The Water of Systems Change. FSG

The concept identifies six conditions which require one or a combination of structural, relational or transformative change, as illustrated in the pyramid above. In the VET context, these shifts require collaboration, shared strategies, and coordination to achieve collective impact across the VET sector. For each condition, it can be challenging to create necessary shifts without also working on other conditions across the other two levels of the pyramid.

The 'Six Conditions of Systems Change' has been used to analyse the evidence from this research to interpret and identify opportunities for change, setting the groundwork for meaningful progress in addressing access to and delivery of high-quality training.

Structure

The findings of this report are divided into two sections, one that explores the overarching themes and issues experienced by all stakeholders and one that provides insight into the specific factors impacting particular industries where there are low enrolment qualifications. Readers can therefore engage with the broader systemic challenges of supply and demand and/or investigate findings at a more granular level. Throughout the report, 'Areas of Opportunity' have been identified so that analysis of the evidence was not compromised by a search for solutions. These have been identified using the Six Conditions of Systems Change as a framework.

Section 1: Overview of Findings and Discussion

The research identified systemic and non-systemic issues affecting enrolments within the VET sector that have significant implications for workforce development and industry sustainability. There is clear evidence that, in many cases, enrolment numbers are not directly the result of industry demand but are subject to a variety of factors shaped by policy, regulation, governance, location, economies, skills needs, industry sectors, stakeholder knowledge, and other variables across different points in time.

The range of factors are broad, inter-related and situation-specific to the extent that they cannot all be reported in detail; however, emergent cross-sectoral themes have been summarised in this section of the report, with industry-specific issues discussed under the Industry Sector Analysis section, including profiles of the contextual factors and VET demand and supply challenges experienced by each of the 11 participating industries.

Across the report, 'Areas of Opportunity' identify where practical and impactful change can occur to enable better outcomes. These sections also draw on overarching observations from the research and VET sector expertise developed through ongoing stakeholder engagement and targeted consultation for the development of Skills Insight Workforce Plans (as well as the work of the predecessor organisation, Skills Impact, including Industry Skills Reports and Skills Forecasts).

The findings in this section have been categorised into four themes for discussion:

- VET Governance, Funding and Regulation

- RTO delivery challenges

- issues of industry attraction and career pathways

- barriers to industry engagement in VET.

Given the nature of the stakeholders involved in the research, particularly their geographical distribution, a section is also set aside for discussion of common factors impacting training demand and supply in regional, rural and remote areas.

Highlighted stakeholder issues are often experienced differently according to varying local, social, economic and political contexts; however, their commonality and the interdependencies that underpin them mean they are illustrative and in the main representative of shared challenges and areas of opportunity. The four themes are useful constructs for the purposes of this report but, are not delineated by distinct boundaries and we invite stakeholders to organise and utilise the evidence in different ways.

VET governance, funding and regulation

The most common issues raised by research participants in relation to VET demand and supply related to structural elements of the system: essentially how it is governed, funded and regulated.

VET is a regulated system controlled by a range of policies and institutions at the Commonwealth, state, and territory government levels. Each state and territory has a state/territory training authority, responsible for allocating funding to VET qualifications within its jurisdiction and developing state-level training and assessment policies. While most publicly funded VET is under the governance of state/territory training authorities, some activities – such as VET in Schools and Priority Cohort programs – are managed by other state departments (Atkinson and Stanwick, 2016).

Both employers and RTOs make training and investment decisions that are strongly influenced by government strategies and policies, and regulatory environments. Stakeholders struggle with inconsistent federal and state alignment, which leads to complex funding arrangements and a fragmented VET system. Conversely, stakeholders can benefit from decisions made to suit local or regional conditions, rather than relying on national approaches.

VET features a multitude of funding sources, types and focusses, which can shift at short notice based on government priorities, identified skills shortages and economic projections. Changes in funding availability reflect short-term governance strategies that focus on the cure to, rather than the prevention of, skills shortages, inhibiting longer-term VET sector planning and investment. The complex and risky nature of planning and investment decisions leads, ironically, to a lack of VET supply in the areas that are most dangerous, complex and critical to the functioning of Australia's sovereign capability and food security. Uncertainty in funding availability also adds to the existing (and with good reason) widespread belief that funding is inadequate. The spectrum of VET funding issues were outlined by Burke in 'Funding vocational education in Australia 1970 to 2020' (Burke, 2023).

Reshaping the system for one stakeholder group inevitably causes issues for another (Pilcher and Hurley, 2020) and can cause imbalances in the supply and demand of VET. There is consensus among commentators that policymakers need to define whose interests the VET system is intended to serve, as well as how they negotiate competing priorities for public good and private benefit. While research participants were not united on the cause, they did identify that the 'multi-stakeholder' nature of VET has contributed to a complex environment stakeholders find challenging to understand and navigate.

Key factors identified by participants

Volatile governance and policy frameworks

Administrative and regulatory burdens significantly impact RTO viability and investment assessments, which drive supply decisions and directly impact enrolment numbers.

Changes to governance and policy frameworks are a necessary response to changing contexts, but VET is subject to a multitude of changes that occur at federal, state and territory level, which research participants report has a detrimental effect on training decisions.

NCVER's VOCEDplus *Timeline of Australian VET policy initiatives 1998-2023* lists hundreds of policy interventions 'that may have influenced participation in vocational education and training (VET) courses, apprenticeships and traineeships' (National Centre for Vocational Education Research, 2024a), and links to an additional programs and policies page with other system interventions.

Key policy changes, including employer incentives for 'existing worker' traineeships being withdrawn and entitlement schemes in jurisdictions such as Victoria and South Australia being tightened, resulted in government-funded VET, overall enrolments and the number of non-trade employers using the system declining since 2012 (Burke, 2023).

Government funding and subsidies are influenced by various factors, including the cost of delivery, the balance of public versus private benefits, and incentives aimed at directing learners towards skill shortage areas (Pilcher and Hurley, 2020). In VET funding policy, there is a strong focus on addressing occupational shortages in the labour market, informed by perceived public value and skills needs (Atkinson and Stanwick, 2016). However, such changes are not always in alignment with what is needed by the majority of actors in the system, as decisions are not always made in collaboration with them.

'Governments have their particular flavours of how they're funding things and if they haven't spotted that the industry is struggling, which is hard to do because the data is particularly scattered due to remoteness and size of businesses et cetera, then it really impacts on industry.' – Industry body

This volatility of funding arrangements is detrimental to the development and nurturing of longer-term relationships between industry and RTOs, and hence the accessibility of VET to potential learners. Without guaranteed future funding, RTOs may not see the developing of new courses (including investment in facilities and training and assessment materials) as a viable option. Research participants indicated that advance assurance of learner demand assists RTOs to bridge their planning challenges to address fluctuating or low density of demand.

Complex and opaque qualification funding arrangements

The research shows government funding is one of the greatest enablers of, or barriers to, the provision of VET. Government funding currently supports around 66% of program enrolments in 'agriculture, environmental and related studies' (National Centre for Vocational Education Research, 2024b), making it a key feature of VET training in the sector.

Broadly, states and territories are responsible for their own arrangements regarding subsidised training, establishing subsidy rates and eligibility according to local social and economic needs and the availability of VET providers. Between 2012 and 2019, government-funded enrolments in training programs in the 'agriculture, environmental and related studies' field of education fell from 66,000 to 40,000, representing a 39% decrease in enrolments (National Centre for Vocational Education Research, 2021).

Training subsidies and grants for learners have in recent years been allocated increasingly to priority skills areas, people undertaking their first qualifications, and those who need assistance to participate in training (Joyce, 2019). Themes of insufficient funding to support engagement with and supply of training were prevalent among respondents throughout the research. Regardless of

whether staff were undertaking apprenticeships or seeking to enrol in a single qualification, many employers cited 'government funding' as a key barrier that influenced their decision to enrol staff in training and was particularly emphasised by respondents from protected and production horticulture and aquaculture sectors.

'Lack of funding that prevents enrolments creates a vicious cycle as industry isn't driving the demand. RTOs don't run the course because there isn't enough engagement and subsequently it doesn't receive funding.' – RTO

'Although the Cert IV is funded in Tasmania, variation in state funding means that the qualification is not funded in NT.' – Employer

'The AHC rates for the course are not high enough. The time and resources spent on the qualification outweigh the financial remuneration because the number of nominal hours is too low for an RTO to consider putting it on scope.' – RTO

State based differences in funding also create blockages in the demand for and supply of training. RTO respondents in South Australia noted that although the Federal government may fund certain qualifications, accessing the subsidies requires state agreement. However, the available funding for traineeships and apprenticeships varies by state, leading to inconsistencies in what qualifications employers choose for the same occupation.

'The federal government have said that the people can get the training and the training incentives. But even though the federal Government say it's there, the state government must agree to that. It's got to be on the Traineeship and Apprenticeship Pathways Schedule. And it's not on that in the state. And even though the qualification is on the subsidised training list, it's not recognised as a vocation currently, which is why there's another application process to get that done. There are people that want to do [the qualification]. Employers would like to know that the government subsidy's there. They know it's coming, so why not wait for the opportunity.' – RTO

RTOs also experience challenges regarding perceived inconsistencies with regional loading (also called location loading), which is paid to training providers in combination with subsidies to account for higher delivery costs in regional, rural and remote areas. There is confusion about how the government chooses to allocate funding, and how much:

Pilcher and Hurley (2020) illustrate that calculating course fees is intensely complex for learners and providers due to the sheer number of possible permutations, resulting in at least 430,000 possible funding rates depending on the qualification, jurisdiction and learner. Research participants also alluded to such complexities:

'There are so many buckets of funding and maybe it might be better to clarify where does it go to.' – RTO

Funding availability – and clarity – further impacts the plans of industries, employers and individuals, and their intentions to engage or re-engage with VET. The withdrawal of subsidies for relevant qualifications can damage the impetus an industry has gained from participation in formal training (Senate Standing Committee on Education, Employment and Workplace Relations, 2012). Employers are left in doubt as to the sustainability of their investment in VET delivery arrangements given the ad hoc and reactive nature of government funding (Productivity Commission, 2020).

From the supply perspective, RTOs experience similar issues regarding inconsistencies with regional loading, creating confusion about how governments choose to allocate funding.

'Sometimes we're losing money on these things. The rate that you get for funding it's like someone has drawn a weird circle. And so, if you go to Bordertown, you get an extra 5%, but if you go six kilometres up the road, you get an extra 3%. So, it's not just that the regional loading is inconsistent, it also actually doesn't cover the petrol, let alone the accommodation.' – RTO

Some research participants felt that Australia's qualification and training funding system diminishes RTOs' ability to plan long-term investments in facilities, infrastructure, staff, and training materials. As funding can fluctuate based on government priorities or economic projections, RTOs face reduced incentives to invest in qualifications with low enrolment numbers, thus perpetuating a cycle of low delivery and low investment.

Market complexity and interventions, including Fee-Free TAFE

The Productivity Commission has conducted numerous examinations of the VET system over the last 15 years, each of which recognises the market complexities that are inherent in trying to meet Australia's skills needs. During this research, participants described the impact of market complexities on training and investment decisions.

Policy and funding interventions by government are intended to counteract prospective or actual market failures, inefficiencies or unethical behaviours (Food, Fibre and Timber Industries Training Council, 2015). However, in recent years there has been growing concern that policies may defy competitive market principles and even exacerbate the inequalities of VET training (Schmidt, 2020).

Pilcher and Hurley (2020) argue that VET has struggled because it operates as a 'market for public subsidies' within a mix of public and private education and training services. This imbalance creates an uneven playing field where public and private providers, governed by different principles, compete for the same government funding.

TAFE providers, with their public funding, are traditionally expected and obligated to support regional economic and social development. In contrast, private RTOs are often criticised for prioritising profit over customer interests, being 'free to wind back or exit delivery at any time, including when returns on investment are too low' (Victorian TAFE Association, 2015).

The Fee-Free TAFE initiative has been positively impacting the VET system, especially in addressing critical skills shortages. By removing financial barriers, it has increased access to training, particularly for cohorts such as First Nations learners, those with disabilities, and people

in regional areas. For example, in South Australia, the introduction of Fee-Free TAFE saw significant enrolment growth, with a 5% rise in government-funded VET students in 2023 (Department for Education, 2023).

Qualifications available through Fee-Free TAFE often achieve, or sustain, greater enrolment numbers than qualifications that are not funded to the same extent or are only available through fee-for-service. This was evident in the research, for example, with stakeholders frequently highlighting a preference for the Fee-Free TAFE 'Certificate II in Horticulture' over more specialised horticultural qualifications.

Prior to the establishment of the Fee-Free TAFE initiative, the 'Certificate II in Horticulture' averaged 3,673 enrolments per year at TAFE providers between 2020 and 2022, whereas no enrolments were registered for the comparable 'Certificate II in Protected Horticulture' during the same period (National Centre for Vocational Education Research, 2024b). Since then, the 'Certificate II in Horticulture' has been eligible for Fee-Free TAFE in some states whereas the 'Certificate II in Protected Horticulture' has not. Uncertainty remains about how Fee-Free TAFE eligibility is determined beyond general skill shortages and whether it prioritises high-volume qualifications over low enrolment qualifications.

In this research, stakeholders commonly voiced the perception that Fee-Free TAFE often channels learners or their employers towards free qualifications that may not directly align with their workplace needs or interests.

'You can now go to a TAFE college and do your Certificate II or III in Horticulture. So suddenly you've got to decide, well, do I send someone for the free course or do I say no, I want to do it. We'll get a group up, but they've all got to pay 'fee-for-service', so you know, there's a bill for $8,500 or whatever it is, and it just becomes prohibitive.' – Employer

For RTOs, Fee-Free TAFE was cited as a reason for reducing the number of qualifications on scope.

'When you get all these separate qualifications, it does make it really difficult for things like free TAFE and getting it onto the funded course list et cetera, et cetera and that's a two-way door. If you've got a qualification that has many, many, streams, they may not want to fund that.' – RTO

While the Fee-Free TAFE initiative was designed to make education more accessible, the large financial investment required for its implementation has raised questions about whether the funds could have been better used in more targeted programs that address industry-specific skills gaps. The concern is that while the policy alleviates immediate financial barriers, it does not address the deeper structural issues in the VET sector. This gave some research participants the perception of TAFE as a market disruptor rather than an enabler.

'If you went back and if you look at historical data around where you see these peaks and troughs in enrolments and these qualifications, I think each time you see the peak, you'll probably find it's a TAFE somewhere enrolling a bunch of students who are keen as opposed to a

progression of industry taking on new people. As I said, TAFE is a market disruptor.' – RTO

In an initial review, Karmel (2024) states that the Fee-Free TAFE program has improved the market share of TAFEs at the expense of private RTOs. In this context, there are concerns that no current evidence suggests Australian government priorities have had a substantive impact on directing enrolments towards areas of national priority, especially as the states and territories administer their own funding priorities (which may not align). While Fee-Free TAFE can undoubtedly benefit eligible learners, there could be advantages for delivering on national priorities if decision-making around, and reporting the outcomes of, Fee-Free TAFE was more transparent.

Constraints in the RTO operating environment

The regulation of the training landscape supposedly reduces RTOs' risk of failure by providing tools to identify and report on their operations, as well as independent oversight through regulators. However, for some research participants, regulation and governance of training was seen to be too stringent, preventing private RTOs from delivering subsidised training despite there being a clear gap in the market.

'The biggest barrier there for the industry is the inability to access state-based funding outside of the state in which you operate. Remove that barrier. This problem goes away. Like literally there's RTOs at the moment that have the capacity to deal with these smaller courses periodically interstate. It's just they can't access the funding to make those courses worthwhile. It's just not going to happen. So, it's honest to God, it's the funding issue. That's the barrier at the moment.' – RTO

The research demonstrates that participants, especially those within RTOs, perceive complexities associated with the governance of training, including regulation, as a barrier to the delivery of training. In addition to administrative burdens and difficulties navigating the regulatory environment, some respondents also cited regular changes to RTO standards and training packages as issues affecting RTO investment decisions.

'There's been constant updates [to qualifications]. I feel like we've been on the back foot trying to keep up with those changes. And, you know, there's also changes happening at a regulatory level for skills like with ASQA and the standards and things like that. We're a fairly small organisation and to keep on top of all of those things is very difficult.' – RTO

The complexity of Australia's funding system creates barriers to deliver funded training when and where it is needed. For example, seafood stakeholders in Queensland identified that they required the Certificate II to support their local industry and decided that a training provider based in Tasmania was the best option to meet their industry needs. The process to request government funding support for that training to be delivered in Queensland, with Qld Government funding, took approximately a year. This example highlights a need for cross border

solutions to make it easier for interstate providers to deliver outside of their jurisdiction to bridge skill gaps where training is not readily accessible.

Remaining compliant with training package updates is often a significant challenge for RTOs, primarily due to the lack of investment and availability of training materials. This issue is compounded by the costs and risks associated with developing and maintaining training and assessment materials for a potentially uncertain market. In some cases, RTO respondents were reluctant to put certain qualifications on scope due to perceptions that the qualifications were too difficult to deliver.

'It's fairly onerous to have a training package that, you know, you're not going to put 20 people through it every six months or 12 months or, you know, it's something that's going to actually only be run on a needs basis. So therefore, RTOs don't necessarily want to take that up either, because it's something they have to have on their list and keep up to date with as well.' – Industry body

Training providers counter viability concerns by reducing the variety of training package products they offer, instead focusing on broad qualifications that are likely to attract higher volumes of enrolees to safeguard their business in thin or thinning markets (Education and Training Committee, 2012).

One research participant from an RTO explained the decision-making process for determining which qualifications to include on scope:

'I mean, as an RTO, you need to make that decision about which track you're going to go down. You can't be everything to everyone.' – RTO

The Food, Fibre and Timber Industries Training Council (2015) discuss how numerous RTOs have previously offered a broad repertoire of qualifications, driven by a desire to reflect, and cater to, industries' expanding and increasingly specialised job roles and occupations. The resulting diversity of training products has unintentionally triggered market thinning due to the fragmentation of cohorts, locations and resources.

The lack of relevance or lack of capacity to tailor some units to local contexts and business processes is often noted in literature as a primary reason for employers' dissatisfaction with VET (Billett et al., 2015; Yu, 2015).

Inflexible VET qualification policies, frameworks and models

The misalignment between accredited qualifications and employer needs emerged as a significant barrier to increasing enrolments, with a number of causes for misalignment becoming apparent. To ensure a balanced supply and demand of VET across the sector, it is crucial to ensure that qualifications are fit for purpose and align closely with market needs.

'With appropriate RTOs funded to deliver, who have the capability and are prepared to deliver in a model that suits industry – there's a clear increase in demand from employers.' – Industry body

Research participants suggest that achieving higher use of nationally endorsed qualifications requires fostering of alignment between all actors of the VET ecosystem, including employers, industry stakeholders, and training providers.

While sector-specific data remains limited, feedback from stakeholders is consistent with broader industry findings that reveal approximately one-third of Australian employers who engaged with VET expressed dissatisfaction with training outcomes. The primary concerns centred on two key issues: the absence of relevant skill development and insufficient practical application (VET Qualification Reform Design Group, 2024).

In response to their dissatisfaction, and to the logistical, cost and inconvenience issues raised elsewhere in this report, employers have gravitated towards training options that are alternatives to full accredited qualifications. This trend is particularly evident in the uptake of short-format courses, which have gained significant traction across the studied industry sectors.

'Micro-credentialing makes so much sense. It's less risk for not only business and industry, but for the student because they can go: I can have a taste, I can get trained, I can go into this industry. Not that much risk, not two years, it's not $40,000. And I can try and get supported internally with informal training. And hey, look, I like this. I might then go and seek something more.' – Employer

RTOs have supported this movement through the provision of various short-format courses outside of the full qualification structure. These take various forms across industries, ranging from standalone skill development modules to units of competency taken from formal qualifications. Most commonly, these courses are delivered in concentrated periods of one to two weeks, focusing on specific units or other skills sets and their practical application.

The delivery landscape for this approach to training shows interesting variations, with some RTOs offering these courses alongside their formal qualification programs. Notable examples raised during the research were in the irrigation and permaculture sectors, in which industry bodies have developed non-accredited courses to meet the needs of the workforce.

'So, there's a design qualification (non-accredited) out there and that's kind of seen as the technical pinnacle of the industry' – Industry body

'And that is the fact that most people who study permaculture study a non-accredited course called the PDC, which is internationally recognised permaculture design course.' – Industry body

Data from NCVER (2023) indicates that non-accredited qualifications are gaining momentum in the Australian marketplace, and this may be occurring at the expense of formal VET qualifications, although recent policy changes such as Fee-Free TAFE may have an impact on this. This aligns closely with findings from research conducted by Bowman and Callan (2021), and NCVER's 2023 survey on Employer's Use and Views of the VET System, which shows employers who had access to comparable nationally recognised training largely opted for unaccredited alternatives because of practical considerations (National Centre for Vocational Education Research, 2023).

These collective challenges highlight the significant obstacles facing efforts to increase enrolments in nationally accredited training package qualifications. While the Qualifications Reform initiative is seeking to address these issues at a systemic level, their complexity warrants careful consideration in future policy development.

Central to the discussion of VET qualifications, were conversations about accredited and non-accredited short courses, skill sets and units of competency. These conversations centred around incremental training that is cost effective, time effective and readily accessible by stakeholders.

Reflecting this approach, RTOs often choose to deliver units of competency, skill sets, or short training courses to bridge skills gaps/shortages so employees can work safely and with some skill. This is of value to RTOs covering regional, rural and remote areas, as well as some metropolitan respondents noting that formal qualification structures can be difficult to deliver.

'You are not going to get people to sit down and do a complete Certificate IV in Pest Management. They don't do that. [Employers] have got far too many irons in a fire, but they do need to know how to use chemicals and how to use dog management poisons, which are particularly dangerous. So, they would only take certain sections of it, not try and do a whole course for it.' – RTO

Skill sets and short training courses were often preferred due to ease of accessibility and lower time and cost commitment for employers. The Qualifications Reform Design Group (2024) has identified skill sets as a key element in developing a more responsive and adaptable VET system. They are similarly recognised by the *Australian Universities Accord Final Report* (Department of Education, 2024), which identifies them as a component in a comprehensive system of modular, stackable and transferable qualifications.

Aspects of the VET system are designed to reflect a 'one qualification, one job' logic, whereby each qualification should correlate to a specific occupation. In the National Training Register, qualifications are allocated a single ANZSCO Identifier, detailing the intended occupational outcome for graduates. For some stakeholders, this has resulted in a lack of understanding of the benefits a qualification can provide across many careers and jobs. It is also perceived to limit flexibility and responsiveness to industry needs, resulting in many qualifications that experience low enrolment because stakeholders believe they are not fit for purpose.

'I can't sell [the qualification] to the employees of this business, locking people into certificates when the majority of the course is finfish or filleting. They just look at me and go why am I going to spend my money doing something when there is no relevance to our core business.' – RTO

The reality is that many qualifications translate to a wide range of occupational outcomes, but this is not clear to potential users due to a combination of factors, such as funding challenges, competition and communication shortcomings between industry and training providers. Limiting each qualification to one ANZSCO Identifier entails multiple irregularities. Firstly, it undermines Skills Ministers' priorities for VET to promote and enable skills transferability and flexible career pathways. Secondly, the ANZSCO Identifier assigned to qualifications is not under the direct control of industry or industry-led development processes, meaning intended occupational

outcomes are sometimes assigned incorrectly without further consultation and validation. Thirdly, in spite of these shortcomings, a qualification's ANZSCO Identifier is a pivotal administrative data point for federal and state governments, who allocate funding and incentives for training delivery, and other nationally significant programs, based on its alignment with other data, such as in occupational shortage lists. This means that if the assigned ANZSCO Identifier is inappropriate or insufficient so too will be the corrective measure.

Career pathway information is also blunted by this quirk of governance. Research participants emphasised how it was difficult to recognise the necessity or value of pursuing qualifications that do not clearly lead to career progression.

'And when you get it [the opportunity to enrol in a qualification], you just go, well, that won't work. And what am I actually going to get out of it.' – Employer

For example, while an individual may see the benefit of enrolling in a Certificate III qualification, they may struggle to see the benefits of continuing to a Certificate IV or Diploma if no occupational benefit is articulated. Indeed, research suggests that many learners are not using VET to facilitate the transition to higher skill level (Wheelahan, 2016).

The requirement for direct entry into most VET qualifications provides the opportunity for ill-informed attempts to move directly to higher level qualifications without the required industry experience needed to successfully work at that level, motivated by quicker completion, cost savings and earlier income opportunities. It is difficult to expect RTOs to be in a position to provide advice on this, when they are also encouraged to provide direct entry pathways. This inefficiency creates strain on resources for training providers – who must continually update training materials for qualifications with low demand – and confusion for employers and prospective learners – who are unsure of the best training option for their career prospects (Qualification Reform Design Group, 2024).

'The Certificate IV is kind of neither here nor there, so it's slightly more qualified than apprentices when they finish their apprenticeship. But not much more. Whereas I think the Diploma should be the next level. Certificate IV, I don't really know where they fit as far as the workplace, because I think they're not quite supervisor level. I wouldn't trust them necessarily to supervise a number of other people. And the numbers are so low that if someone says I've got a Certificate IV in Nursery Operations, I will sort of go, oh, what does that mean? Why is that different to an apprentice?' – Employer

It must be noted that the 'one qualification, one occupation' framework may not meet Australia's future workforce needs, as the workforce is likely to move across multiple roles, vocations and often states and territories throughout their career, skilling and upskilling as required to meet labour and workforce demands. Indeed, as noted by Wheelahan and Moodie (2017) 'the low proportions of VET graduates who work in the occupation for which they are prepared raise questions for policies which tie all vocational qualifications to specific occupations'.

Supporting the broad applicability and transferability of skills through the design of qualifications and development of mechanisms to support them is particularly important in optimising the available workforce in regional, rural and remote (RRR) locations.

Some respondents indicated that qualifications do not always meet industry needs due to the selection process used by RTOs to determine the mix of core and elective units that they will deliver.

It must be noted that from a government policy perspective, full qualifications are the preferred option for lifting skills and the capability Australia needs, however some respondents believe a considered approach to skill set development with incremental skill sets that build to full qualifications, can lead to more accessible training in the current global economic climate.

Shortcomings in qualification and careers information infrastructure

One of the persistent barriers to the use of VET is the difficulty of finding key information, such as qualification and careers information. A key principle informing the development of the National Skills Agreement is that it:

'Supports informed decision-making for students, workers, employers and governments through skills and labour market analysis informed by Jobs and Skills Australia, access to relevant career information and improved transparency.'

The persistence of this issue suggests that transformative change through challenging attitudes and approaches may be required. While openness and transparency are critical, information overload can obscure the necessary and valuable detail that meets individual stakeholder needs. The complexity of VET will not change, so it may be that the strategic approach to information flows will need to transform.

A key objective of the 2021 *VET Reform Road Map* is to ensure that industry 'finds the VET system simple to navigate and can trust that qualifications and credentials include the knowledge and skills required in the workplace' (Department of Education, 2021). This objective addresses the information overload faced by employers in attempting to engage with VET in some areas, and lack of accessible information in others.

As the *Strengthening Skills Expert Review of Australia's Vocational Education and Training System* (Joyce, 2019) noted, while substantial amounts of information on VET exist online, due to fragmentation, incompleteness, and difficulty in navigating, stakeholders continue to report challenges in finding reliable information.

Across all the sectors examined in this research, employers' support of relevant qualifications and, in some cases, VET in general, is hampered either by a lack of accurate information or the possession of inaccurate information.

In some instances, employers were simply not aware that a qualification existed for a particular role.

'I'm not aware of the nursery operations one to be honest. I've only heard of the horticulture ones.' – Employer

'I think here in South Australia, you probably heard a few people say: it is that we're just unaware that there's a course to be offered.' – Industry

'I'll be frank, I'm not sure that there'd be that many stakeholders in our industry that even know that a Certificate II exists. It wouldn't be on the radar for the majority of our stakeholders. It's just not that important.' – Industry

'Well, I didn't even know that you actually had certificate twos or threes in fishing operations. I don't know where they actually do this training.' – Industry

This may indicate that key stakeholders have lost motivation to try to navigate through the options and complexities, even potentially not looking towards VET for training and skills solutions. This highlights a need for improved information flows to raise awareness of qualifications, and their benefits to RTOs, industry and employers.

Improvements in information could contribute to enhanced industry and employer networks, which could assist employers in their considerations about qualifications and provide more accurate demand signals to RTOs.

The findings from this study align with the work of the former Australian National Training Authority (Australian National Training Authority, 2000), which investigated the need for strategic communications and marketing approaches to enhance employer engagement with VET. This research confirms the enduring relevance of three key findings from the ANTA report, demonstrating the persistent nature of these challenges:

1. **The first critical issue centres on VET terminology complexity.** Employers consistently report finding their knowledge base inadequate, viewing available information as overly complicated and laden with sector-specific jargon that impedes clear understanding. A lack of knowledge about adult learning, education and the VET sector compounds with communication barriers to significantly affect employers' ability to engage effectively with the system. This problem arises with other services and products in our society of similar importance to VET, e.g.: superannuation and other finance products, insurance, investments, decisions on what sort of work to pursue. The solutions are not readily apparent as they all cost money, money that is currently not part of the associated system. It appears that consumers are not willing to meet the costs of information to support informed decision making. However, the costs of poor decision making are often felt across society, resulting in suboptimal outcomes often with a much higher cost than the cost of the information provision service.

2. **Information accessibility about VET offerings remains a substantial challenge.** Employers express significant uncertainty about qualifications, including identifying appropriate Australian Qualifications Framework (AQF) levels, and how to identify providers who currently deliver and provide quality, business-relevant approaches to training and assessment. There was also limited understanding that VET qualifications are fundamentally based on industry-validated competency standards and assessment protocols, a fact that could enhance employer confidence if better communicated.

3. **A persistent challenge lies in the system complexity.** Employers noted that they found significant barriers when attempting to engage with the VET system. This was also noted in the comprehensive analysis by Bowman and Callan (2021), which concluded that the intricate nature of the system often discourages participation, particularly among smaller enterprises with limited resources for navigation and engagement.

While individual RTOs undertake marketing activities, they also suggest that mass marketing of the value of VET to employers could assist in generating demand to support their own marketing programs. Current initiatives, including the Qualifications Reform Project (VET Qualification Reform Design Group, 2024) and the VET Blueprint projects (Skills and Workforce Ministerial Council, 2024), may make improvements to the VET sector but most likely will not result in improvements in information flow to users.

The complexity of the issues suggests the need for multiple complementary approaches, with direct employer communication and collaboration networks offering promising additional support mechanisms and exemplars of effective practice and outcomes. Such networks could also be an interface for engagement with local RTOs to help understand the practical steps required for communicating demand and training needs.

The impact of higher education on the VET market

Another factor influencing qualification uptake is the alternative offerings from higher education. This choice may be driven by workers' long-term career aspirations or personal interests. Some employers support higher education, either for themselves (in the case of owner-managers) or for their workforce, if they believe it will bring a higher level of knowledge and expertise to the organisation. However, many respondents cited the 'cultural shift' towards higher education as a factor affecting the supply and demand of VET.

'The number of people entering the workforce in the industry is decreasing. And because you know there's a lot of focus on going to university right, so you're not having these funds come up through the vocational pathway. So, the cultural shift of pushing people to go to university means there's a shortage of people in VET.' – RTO

Many students engage in prolonged university studies that do not lead directly to employment, exacerbating skill shortages in sectors that rely heavily on vocational qualifications. Despite its potential to equip students with practical skills, VET is frequently viewed as a less prestigious alternative to higher education. This stigma is compounded by a narrative that places university at the forefront of education opportunities (The Organisation for Economic Co-operation and Development, 2021a).

For example, VET in Schools serves as a retention mechanism for students seeking alternative academic pathways, yet many still perceive it as a 'fallback option' rather than a legitimate choice, particularly those from regional areas (Billett, Choy and Hodge, 2020). The challenge in this context is ensuring that both the employer and the learner have an accurate understanding of the nature and value of vocational qualifications relative to higher education options.

Understanding the specific components of VET qualifications is important, as is comprehending what is genuinely valued and needed by the sector. In discussion about the benefits of university education, one stakeholder said:

'It [the university education] didn't give them any new knowledge that changed the way they were doing stuff. It certainly didn't give them knowledge that helped them in running their businesses.' – Industry body

Employers and industry professionals echoed this feedback right across Australia, acknowledging that in comparison to university education, the VET pathway provides a 'hands-on' and practical approach to training, where the university pathway is seen to be 'theoretical' and lacking practical technical experience.

Areas of opportunity

The nature of VET governance, investment, funding and regulation suggests that change will need to be mainly structural, but this will require successful transformative and relational changes and the creation of new approaches.

Identified areas of opportunity for further consideration:

- **Reviewing the structures and funding of skills development:** Systemic issues could be addressed if reviewed by the responsible VET actors using an overarching skills approach that considers all avenues towards the development of safe, effective and productive industry workforces. This includes addressing accessibility and funding mechanisms across VET, higher education and other industry training (formal or informal), with the view to develop transparent, consistent, more simplified and equitable approaches to funding of skill development that meets industry needs.

- **Encouraging equitable delivery of training:** Subsidies and funding allocations should be reviewed to ensure that training providers have the capacity and capability to deliver training to meet the local skill needs, regardless of market size. Flexible and innovative approaches to funding should be considered to support delivery of high-quality, accessible training. Further research may be required to explore how other mechanisms could be used in addition to Fee-Free TAFE to provide better outcomes in some skill areas and industry sectors, including re-modelling of RRR support.

- **Improving regulation of VET and compliance policies:** Options to improve regulatory frameworks and education and training compliance policies could be explored, to enable flexibility relative to place-based needs and minimise costs without creating duplication for training providers.

- **Renaming 'training packages':** Training Packages define occupational skill standards, but they do not describe the training that needs to take place. Employers often confuse the programs of training that RTOs deliver with the documents called Training Packages developed by Jobs and Skills Councils. The current work in qualifications reform may provide the opportunity to name the nationally endorsed skill standards products in ways that do not continue to spread confusion amongst industry users.

- **Redefining the competency system design:** Skills Insight's contribution to the current program of Qualification Reform work suggested, among a range of initiatives, the exploration of a system to identify parts of units and qualifications that can best be delivered by RTOs and

parts that can best be learnt on the job or through other training options. This would simplify delivery activities and costs for RTOs and support more enterprise involvement and responsibility for the learning process.

- **Understanding the true value and use of the National Training Register**: An analysis of the return on investment of the National Training Register and its uses (such as design of in-house training, benchmarking of industry awards and creation of position descriptions, as well as design of VET and non-VET training options), and a comparative analysis of the efficacy of VET and non-VET training options (including for important outcomes associated with productivity and workplace safety), would provide a clearer picture of the value of the Register. At the moment this is seen as a tool for the use of RTOs. It is not presented as the valuable skills information resource that it is.

- **Reviewing duplication and overspecialisation of skills and promoting flexibility in qualifications**: Ongoing work to support for the work of the Qualification Reform Design Group (2024) will require further review of qualifications. Support for RTO program designers, compliance officers, and regulators to better understand the flexibility of the new qualification framework will be key factor to the success of qualification reform, but at this point of time this support does not appear to be emerging as an accepted necessity.

- **Recognising and integrating non-accredited training into formal qualifications**: Establish the feasibility of creating a framework for recognising and potentially integrating successful non-accredited training elements in formal qualifications to bridge the gap between employer and learner preferences and accredited training outcomes.

- **Encouraging reconsideration of approaches to and funding of information flows**: Influence the responsible VET actors to re-examine systemic approaches to information flows, including strategies for simplification of communication and addressing information overload utilising network thinking and redirection of funding.

- **Reviewing VET administrative and informational infrastructure:** Further encouragement could be given to address the administrative and informational shortcomings of assigning one ANZSCO Identifier to each qualification. This will enable better alignment with: Skills Ministers' priorities, careers pathways information for industry and learners, and measures to address national jobs and skills priorities through data-supported decision-making.

RTO delivery challenges

Resource availability plays a crucial role in informing decisions made by RTOs. This includes challenges with accessing appropriate training staff, as well as the cost involved in equipment and resource development. There are a number of current government-funded reform programs addressing training and qualification design and delivery, including Qualification Reform and the VET Workforce Blueprint. The importance of these programs was further supported by the findings of this research.

Trainer shortages are widespread and there is a need for new approaches to enabling teaching and learning at all levels. The requirement for educators to possess both training and assessment qualifications and relevant industry experience can make it difficult to source appropriate staff to fulfil training and assessment roles with RTOs.

The cost of maintaining facilities for practical training and assessment is a barrier for many RTOs in offering quality and cutting-edge training and assessment; as is the cost and expertise required to develop training and assessment resources, such as learning materials. Supporting improved participation in formal VET training from cohorts such as learners with low language, literacy and numeracy (LLN) skills or people for whom English is a second language may require different approaches and additional resources.

It is important that RTOs are supported to deliver training when, where and how it is required. Currently, RTO viability is the key determinate of what gets delivered, where and when. Where overwhelming barriers to delivery result in training not being offered (i.e. a lack of supply) there can be a false perception of low demand, which in turn impacts future supply, limiting the choices available to employers and learners.

Key factors identified by participants

Trainer shortages

The shortage of trainers across the whole of the VET system and the challenges it poses in supporting the delivery of qualifications is widely documented including in the *Shared vision, equal pathways* report from the Standing Committee on Employment, Education and Training (2024). There are also a range of strategies proposed for addressing VET teacher, trainer and assessor shortages, including in the VET Workforce Blueprint (2024) and the NSW VET Review 2024.

Multiple low enrolment qualifications reviewed in this study were only on scope for a small number of training providers, and some were not currently offered by any. While in some cases, the decision not to offer a particular qualification reflected the training provider's assessment of a lack of demand for the qualification (the quality of these demand assessments appeared to be low), this study found many instances in which training providers were keen to offer the qualifications but lacked the trainers and other resources to enable delivery. Even those training providers who did offer various low enrolment qualifications cited a lack of teachers, trainers and assessors as a limiting factor to expanding the number of learners that could be accommodated in their programs.

'The person that was currently teaching that qualification left, that was a bit before my time, and we have only just secured a casual replacement

to be able to deliver our existing irrigation units within our existing courses.' - RTO

Many participating RTOs felt that increasing the recruitment of industry professionals with specific industry expertise to become trainers is required to address this issue.

'So, I actually create my own trainers because you can't find trainers. So, they're usually people in their mid-40s who've been on the tools for 20, 25 years and can't lift things anymore or don't want to, they have broken their shoulders, broken their bodies, but they've got so much experience. And so, we actually encourage them to still work part time.' - RTO

This stems from the requirement that trainers must possess specific, hands-on expertise under the Standards for RTOs, and that is typically only available from industry professionals. This expertise, stakeholders argue, cannot easily be replicated by trainers from other educational sectors, as it requires deep practical knowledge of the vocational field. Data from Jobs and Skills Australia (2024b) reveals that only 16.5% of new Certificate IV in Training and Assessment (TAE) graduates in 2022 came from vocational occupations, which indicates a limited flow of industry professionals into teaching roles.

The VET Workforce study further illustrates that while regional Australia produces a higher proportion of TAE graduates relative to both the VET student population and the Australian population, the figures for remote and very remote Australia are disproportionately low. The study shows that only 0.4% of all Certificate IV in TAE graduates are employed in agriculture, forestry, and fishing industries (Jobs and Skills Australia, 2024b). This data suggests that the trainer shortages reported by RTOs in this study are also impacted by regional, rural and remote locations.

RTOs commented that studying for the TAE was a disincentive to some industry professionals on a number of levels, including the study workload and the extent to which it recognises the experience of the industry professionals undertaking it.

'So, I'm working through my TAE at the moment. It is clunky. It is not an easy thing. I'm not jumping out of bed in the morning, you know.' - RTO

'So, we have a new team member right now who I think worked at Unis across the world in aquaculture. Starts to go through a TAE course, which is great because it is a totally different system, and the training needs to be there but basically being treated as you've never done that before in your life. It's not really setting up the motivation of new and upcoming staff.' - TAFE

Another challenge in recruiting trainers is the cost of acquiring the TAE accreditation. Some RTOs are so keen to support the development of trainers that they are funding industry professionals to undertake the TAE.

'I know from my experience and again with one RTO that I've worked for, but I'd imagine it's across the board that they're often willing to pay for the TAE process for trainers who are willing to engage with that RTO in a longer-term time spent as well. There's often interest for those who are semi-retiring to come out of the industry to do a Cert IV TAE as a bit of pocket money.' – Industry body

Recognising these issues, TAFE NSW has introduced a program to support tradespeople to transition to become VET teachers, trainers and assessors via a 14-week full time Paid to Learn program (TAFE NSW, 2023).

RTOs reported that many skilled professionals are deterred by the potential reduction in income that often accompanies a transition into a training role. Data shows that new VET teachers, trainers and assessors experience a reduction in average annual wages ranging from 9.5% to 16.5%, with new teachers earning on average $8,061 less than their previous income in other vocational fields (Jobs and Skills Australia, 2024b). This salary reduction, coupled with the pressure to invest in additional qualifications, creates a significant barrier for experienced industry personnel considering a shift into teaching roles.

'High loads of paperwork and assessments as well as the poor pay act as a deterrent for potential trainers.' – RTO

'But where you've got those really specialised units at that high level you really need people who are very well qualified, who actually are able to deliver those quite successfully. So, to bring that expertise on, you need to be able to pay them at the right level because they would be obviously people that would be probably working within some of the universities and things like that.' – TAFE

Technological advancements often outpace the ability of the VET sector to equip trainers with the requisite skills. Initially, those who possess expertise in new technologies are typically involved in their development, marketing, or proprietary training for commercial enterprises (Hartman, 2022).

As a result, there is a considerable delay between the time a technology becomes widely used and the moment qualified VET educators are available to deliver training on it. This lag exacerbates the perception among employers that RTOs are unable to keep pace with technological developments, which undermines the sector's credibility and its ability to provide timely and relevant training (Hartman, 2022).

Insufficient capital to update resources and facilities

Delivering VET across the studied industry sectors presents unique challenges, primarily due to the cost of maintaining physical training facilities. RTOs frequently raised concerns regarding the cost of building and maintaining training facilities for learners. One stakeholder from the aquaculture sector said:

'The government regulation to maintain an aquaculture facility in a school is just as complicated as if you're running a business doing aquaculture. So, the investment from the training provider gets questioned, the person gets bored and leaves because they find it all too difficult to maintain. There are redundant and vacant underutilised assets in schools and TAFEs all around. And the lights are turned off, it's all just sitting there.' – RTO

Many RTOs rely on grants to fund facilities, but this dependency can hinder long-term planning if funding is limited or unavailable.

'It costs $2M to set up facilities so will only be done if there is government funding.' – RTO

The provision of funding to support RTOs in keeping facilities to the required industry standards is potentially problematic given both the scale of the capital investment and the necessity for continual updating. Although, some research suggests workplace-based delivery of training can help combat these delivery challenges (Osborne et al., 2020), some respondents emphasised that this only shifts the burden onto the employer, due to contamination risks, production disruption and safety concerns associated with commercial training facilities.

'The facilities to train are very expensive to build. So, you're going to be relying on going to commercial properties. That's problematic because of biosecurity and of course disruption to their production.' – RTO

Evidence suggests that barriers affecting training facilities negatively impact skill development (Noonan et al., 2019).

Training and assessment resource challenges

VET qualifications are developed on the premise that appropriate training materials will be available or created to meet specific industry or organisational requirements. Some RTOs estimated that developing materials for a new qualification cost from $50,000 to well over $150,000. In response, a substantial third-party industry has evolved in the development and publishing of course materials. However, to recoup this investment, course material developers focus on courses with high enrolments, further supporting RTO moves towards high volume course delivery and further away from low volume delivery that lacks the support of commercial development of training materials.

Many RTOs are committed to developing their own training and assessment materials to ensure their appropriateness for the local industry. However, having to develop materials in-house can pose significant challenges to small RTOs that have limited staff resources.

Recent research by ForestWorks highlighted the need for developing verification resources for training and assessment in the forest and wood products industry, recommending the creation of an online catalogue of relevant training resources and Australian standards (ForestWorks, 2023). Such a centralised resource would facilitate industry-specific, standardised training across regions, providing a blueprint for resource-sharing in other sectors.

The research also recommended the development of a 'virtual RTO' and the use of travelling assessors for critical workforce functions, highlighting the growing interest in adapting digital tools to address the logistical challenges of delivering qualifications nationally.

According to respondents, communities of practice to co-develop training materials have proven to be an effective strategy in mitigating the high cost of developing and updating materials

'Looking at an organisation in isolation and being told to deliver a Certificate III or IV and having to develop and run and all those training materials on your own that are not available for purchase. This community of practice I felt was a very successful model in terms of building up that capability.' – RTO

'I was teaching every unit in the Certificate III. I didn't know much about pumps, so I was trying to write materials on operating pumps. This is just an example. Sharing best practice and skill sets and so this allowed us to … just do it on our own as trainers – share materials, moderate each other's materials and improve them. And it really built our confidence and kept really good people in the training community.' – RTO

'We developed materials across Cert III and IV. We had RTOs involved from WA, from the NT, Queensland, NSW, Tasmania, South Australia.' – Industry body

Low language, literacy and numeracy skills among potential and current learners

Language, literacy and numeracy (LLN) issues are widespread across all sectors of the Australian economy, with 88% of employers acknowledging the negative impact of low literacy and numeracy levels (Ai Group, 2024). Many research participants referred to the connection between low enrolments and workforce characteristics, suggesting that some workers were not always suited to formal training.

Numerous RTOs commented that low LLN skills prevented some workers from undertaking qualifications. The issue is multi-dimensional with some employers hesitant to support training of workers who they don't believe have the requisite LLN skills to complete qualifications, some workers unwilling to put themselves forward as they questioned their own ability, and RTOs who feel that they lack the resources to support LLN learners.

RTO and employer perspectives on the capability of their workforce impact the demand for and supply of training, with alternative approaches to training often being utilised. For example, to support educational attainment among the low LLN workforce, some RTOs are offering limited level 2 training or skill sets, building on the units of competency in Certificate II qualifications without delivering the full qualification.

Additionally, the research found that some employers prefer to skill low LLN employees through informal, on-the-job training as VET is seen as challenging and daunting for workers who require

additional language and learning support. RTOs also tailor training to meet the needs of the learner where possible:

'We keep it as practical as possible, but obviously if you have a Certificate III or Cert III level, you're going to have trouble with people being able to write their own answers. How we deliver this, you know, contextualise, the training to suit the people.' – RTO

The Commonwealth Government's Skills for Education and Employment (SEE) Program contracts RTOs to provide training and additional support aimed at enhancing learners' literacy, numeracy, and digital skills. Temporary visa holders with work rights, including those under the Adult Migrant English Program (AMEP) and the Pacific Australia Labour Mobility visa stream, are eligible for SEE (Department of Employment and Workplace Relations, 2024a). This focus on foundational skills offers a promising pathway to address LLN challenges within the agricultural sector.

Targeted support programs for learners whose first language is not English present a significant opportunity for sector growth. These programs could include industry-specific language support integrated within technical training, as well as clear career progression pathways that link qualification attainment to earning potential. A notable example is an online induction program developed by Agriculture Victoria, in collaboration with a local employer, specifically designed for LLN students. The program's structure allows learners to revisit and repeat sections if they experience difficulty with the material (Prentice, Boland and Anderson, 2022).

'The areas that we've struggled, the challenges we've come across in meeting those demands is there's a high percentage of workers in the industry that come from non-English speaking backgrounds.' – RTO

Inconsistent trade legislation and regulatory requirements

Some occupations require workers to hold specific credentials, qualifications or licenses – regulated by state and territory authorities and, in some cases, obtained from endorsed training providers – to maintain quality and safety. As regulation is often governed at the state and territory level, some jurisdictions may require that only certified (qualified) workers can be licensed, while others do not. Inconsistent licensing and regulatory requirements across states and territories, as noted by research participants provides challenges to the efficiency of the supply of training.

'And every state's different and has different requirements. For people working on the east coast, they're working for government, local government parks, that sort of thing. They don't really recognise our training; they do their own in-house training. So yeah, everything's different. I suppose it's not a consistent field out there. But yeah, in Victoria, New South Wales, you don't need that qualification. You don't need that licencing because it's in house stuff.' – RTO

The suggestion for a national alignment of training and assessment resources appeared frequently from RTOs. Research participants commented that state variation in licensing resulted in unnecessary duplication of course content between training providers, as RTOs must conform to

different regulations, and hence different course content, while delivering the same qualification. Given the previously reported difficulties of cross-border delivery, most RTOs will develop these materials based on local regulatory requirements, making them less relevant and potentially misleading for learners in other jurisdictions.

'The industry is spread over every jurisdiction but treated as a single jurisdiction. You know, funding, training, delivery is all very much within the boundaries of jurisdictions. So, a comment I got was that every state's running their own show and there's a massive waste, duplicated effort. There's little desire for collaboration from large organisations like TAFE.' – Industry body

Some RTOs felt there was an unnecessary strain on resourcing due to differences in training materials between states. For RTOs who are already operating at maximum capacity, the ability to pool resources through national alignment of material was viewed as an efficient way to free up capacity and improve the quality of training for providers and learners.

While alleviating resourcing constraints on RTOs should be a key priority for the VET sector, national alignment of resources may not be the solution. As Pilcher and Hurley highlighted, 'VET is complex because it serves multiple masters' (Pilcher and Hurley, 2020). Treating the system and its stakeholders as homogenous – rather than variable – according to factors like funding and location, runs the risk of failing to acknowledge such multiplicity in VET.

As discussed by Toner (2018), many students want training that facilitates transferability across different job roles, enterprises and industries, while businesses generally want lowest cost training tailored to their specific needs. This leads to inherent tensions in trying to balance out these often-competing objectives. As noted earlier, reshaping the system for one stakeholder group causes issues for others (Pilcher and Hurley, 2020) and can cause imbalances in supply and demand of VET. There is clear evidence supporting the view that policymakers must define who VET primarily serves, as well as how they are negotiating the competing priorities for 'public good' and 'private benefit'.

Areas of opportunity

RTO delivery challenges are highly problematic, requiring structural change. There is a need to consider innovative approaches to addressing these to achieve transformative change.

Identified areas of opportunity for further consideration:

- **Exploring alternative training approaches and innovative delivery models**: There are opportunities for further research into the investment in and use of online and blended learning models to enhance VET delivery for learners, including the potential for 'virtual RTOs'. Skill sets could be explored as an effective way to give learners a taste of the VET system and their area of interest, allowing them to explore various industries while showcasing the transferability of skills (see: Investigating the design and promotion of VET in School and taster programs below). This not only benefits students but also employers, who gain access to a more knowledgeable and versatile workforce. Pilot identification of specific workplace, classroom (including online) and simulated training and assessment requirements within units and qualifications may also aid innovation.

- **Explore strategies for building partnerships between RTOs and employers:** Partnerships between RTOs and employers to deliver formal training in the workplace could help reduce the costs associated with investing in and maintaining equipment and facilities. This could be mutually beneficial, with evidence that training in the workplace results in business productivity gains and greater employee retention, while RTOs see greater learner retention and better opportunities for iteratively improving training and assessment practices (Osborne et al., 2020). Skills Insight has already made a series of recommended next steps to facilitate increased and improved RTO-employer connections.

- **Developing trainer shortage strategies:** Reviewing the feasibility of the various current and proposed trainer supply strategies, including current work on the VET Workforce Blueprint project, could provide insights for how to effectively tackle trainer shortages.

- **Mapping of training as a vocation within industry careers mapping:** Most career pathway mapping relates to task and research-based occupations within industry sectors, and tends to ignore VET teachers, trainers and assessors as potential career pathways. Mapping training as a vocation would make it a more visible option.

- **Providing support for industry experts to deliver training in a supervisory role:** Further design thinking could be utilised to support the capabilities and knowledge of industry experts so they can contribute to training apprentices and trainees under the guidance of RTOs.

- **Evaluating and improving training resource development:** Further investigations could take place into mechanisms to support RTO co-development of training resources. It could also be beneficial to develop methods to evaluate the effectiveness of training resources and identify improvements.

- **Focusing on LLN-challenged learners:** Further research and engagement may refine strategies to enable equitable access to VET for LLN-challenged learners and support their ongoing needs. This may be driven by the *Foundation Skills Study* led by Jobs and Skills Australia. Strategies may be aided by initiatives like regional training hubs (see: Specific factors impacting regional, rural and remote Australia below) and blended learning approaches.

- **Maximising the Commonwealth Government's Skills for Education and Employment Program:** Explore strategies to enhance the uptake and effectiveness of the SEE Program for addressing LLN challenges among workers.

Issues of industry attraction and career pathways

Many stakeholders reported difficulty in generating enrolments not because of a deficiency in the qualification/s, but due to current workforce shortages and long-term concerns around the attraction and retention of workers to their industry. For most of the industry sectors in the study, this will often require attraction to regional, rural and remote (RRR) locations, in addition to attraction to specific industry sectors or occupations.

Widespread workforce shortages and the difficulties in attracting workers across many industries were key drivers of the 2022 Jobs and Skills Summit and the consequent *Working Future: The Australian Government's White Paper on Jobs and Opportunities* released in 2023.

The research demonstrates that stakeholders are using multiple approaches to gain additional skilled workers, covering attraction, retention and career pathways, including the potential of return to industry after previously leaving.

Work currently being undertaken by Jobs and Skills Australia to assess how plausible it would be for workers in a given region to move from their current occupation to another occupation in the region (known as the 'adaptive capacity') will provide important quantitative measures of retention and return-to-career pathways.

Key factors identified by participants

Attracting young people to industries

Numerous stakeholders across multiple sectors commented that the shortage of young people entering their industries limits the potential VET market, which in turn limits the uptake of VET qualifications. Feedback indicated that where occupations were once popular, there has been a shift in recent years. Competition from industries with better conditions or reputations creates challenges in attracting new entrants to industries without these features.

'Once upon a time, the romance was in our industry, you know. Take Port Lincoln. Kids wanted to become fishermen. They wanted to work in the aquaculture industry. Now, unless you are [in] the highest roles, you can make more money in so many other places and not go to sea for weeks on end. And we've got alternate industries everywhere, and you know our sectors are going to be up against it. South Australian government has released the green energy jobs program and they're driving hydrogen. That's on the doorstep of Port Lincoln. Every school leaver in the next ten years is going to the green hydrogen and not going fishing.' – Focus group

Industry and employer stakeholders advocated for initiatives that would attract new entrants with many focusing on the need to promote the positive aspects of working in their industries at school levels.

'We've started a school aquaculture program where we're giving schools fish tanks and aquaculture tanks to grow ornamental native fish.' – Industry

While not directly indicative of future career directions, research has found that exposure to agriculture in secondary school increases the likelihood of deciding to study these subjects at a higher level (Cosby et al., 2022). This same research stated that ensuring adequate learning experiences across a student's schooling career is imperative to ensuring a thriving future agricultural workforce (Cosby et al., 2022).

These findings are highly consistent with other research in which school student's informants (those who actively influence students' career choices) ranked the best ways to promote VET. This included schools providing more personalised career information about VET jobs and exposure to a range of work situations and education facilities (e.g.: visits to TAFE institutes), along with exposure to young people who have successful careers after completing VET qualifications (Billett, Choy and Hodge, 2020).

'As we have seen in the arboriculture sector, parental and school qualification support is important to meet Australia's future workforce and economic needs. Where qualifications are deemed to be too high risk and don't get the support of schools or parents, we are relying on workers to fall into the industry. Without quality careers counselling in schools our students will not be aware of the wide range of options available to them in the VET sector.' – RTO

The reputation of industry, including safety, working conditions and social considerations, are important to attract young workers. More broadly, Billett, Choy and Hodge (2020) observed that 'a public education or social marketing process seems necessary to promote vocational education as a viable and attractive alternative (e.g.: give VET a "fair go")' and that this type of marketing will be most effective when it involves industry bodies, RTOs, and governments in a coordinated approach. The Seafood Careers Australia and Seafood Jobs Tasmania websites are examples of initiatives that seek to promote employment opportunities in the industry (Skills Insight, 2024).

'I guess, support from the school leavers, the new entrants, the parents, all those people that say now that's the right way for my kids to go. Or for my partner to go. Then we need to be jumping on board as industry. So, it needs to come from different directions.' – Focus group

The availability of VET training as one of the attractions into industry was not apparent among research participants, other than as 'taster' and introductory programs, potentially including VET in Schools.

Promotion of career pathways

A message from research participants is that a lack of clear career pathways acts as a barrier to enrolment to VET qualifications. Without clear career pathway information, it is difficult for learners, parents and career advisors to understand industry options (however, the notion of career pathways may need re-examination).

'People generally just don't see irrigation as a career pathway. If you do a job search in WA and use irrigation as your keyword, you'll probably get 100 hits.' – RTO

The uncertainty regarding the relationship between VET and career progression potentially contributes to the low demand for qualifications and training in the agriculture and seafood industries. Low enrolments have many impacts as the qualification is less likely to be considered for government funding, and an RTO is less likely to put the qualification on scope. Low enrolments make it unviable for training providers to continue offering a broad array of qualifications, leading to a reduction in the scope of available qualifications within a pathway.

'You're paying more money for a trade [worker] than what you are for a good farm [worker]. I think if the pathways were available, people will be taking them and they'll be more likely to lock into their career in horticulture and nursery operations, than they would be to be moving off to the mining industry for the big bucks.' – Focus group

Many research participants acknowledged that people change industries and roles throughout their career. However, they argued that making it easy for a young person, and their parents or other advisors, to understand a route that would lead to a desirable role was critical to the consideration of the industry as an option.

Implicit in these discussions was a general sentiment that, as they were not aware of it themselves, career pathway information of this nature was not readily accessible to individuals.

This assumption by stakeholders that career pathway promotion would increase VET participation is challenged at a range of levels.

Hargreaves and Osborne (2017) highlight that while there is a notable interest in VET-related jobs among students, this interest often does not translate into enrolment in VET programs. This suggests that while students recognise the potential of VET jobs, they may not perceive the formal pathways to those jobs as accessible or necessary. This aligns with findings reported in the RTO delivery challenges section of this report, concerning employer views of the need for formal training, informal training or on the job development.

Simons et al. (2009) questions whether there is a need for a clear pathway for progression within VET. Their study found that only 40% of respondents expressed views of careers as linear pathways which are followed, and which lead to progression and promotion, suggesting a significant portion of the workforce may not see VET as a pathway to progress through to acquire a specific job.

This approach gives rise to two schools of thought around career pathways: on the one hand, they are not clear and need to be articulated; on the other, the concept of a formal pathway is outdated and does not reflect the realities of peoples' non-linear experiences.

Indeed, in other research, the occupation-specific focus of VET courses was found to be a notable deterrent for learners who were undecided about their preferred occupation (Sikora, 2018).

Retention and re-attraction

People leaving an industry to pursue more lucrative careers was identified by many research participants as a factor causing low enrolments. Low retention of workers within a career pathway means they discontinue their upskilling journey and do not enrol in further qualifications relevant to that industry. Without direct links between ongoing opportunities, career pathways and greater income potential, many workers were perceived to 'jump ship' when clearer opportunities arose. Employers in the agriculture and seafood sectors most commonly reported losing their workers to higher paid industries such as real estate, oil and gas, renewables and mining.

'They are very attractive to the mining industry because there are a lot of transferable skills, that the mining industry find valuable.' – Focus group

'Ship owners and operators will say, you know, that their staff, they do all the training, they put in all the time, the energy and the mentoring into it, and then someone who's larger offshore or mining comes in and basically drops $100,000 extra on the table.' – Focus group

Retention within the industry is of great concern within the generally lower paid sectors which participated in this study. The research found that while some people leave their occupation to find more lucrative opportunities, as discussed above, there is also feedback to suggest that some, albeit not all, workers return to their original career pathway despite it not being as lucrative as other sectors.

'Same way we're fighting with the mining industry, but yeah, but they're not happy with the mining. That's why they keep coming back. I mean, they go up but they don't really like the work. They want to farm. They want to come back and they want to do the production part.' – Focus group

'Now there's competition with the mining industry but I'm seeing that a lot of the people that are coming into the course have been in the mining industry, and they don't want any part of it. It's not a healthy, they don't want it.' – Focus group

This feedback has been prevalent in industries such as horticulture and nursery operations where there is high job satisfaction for employees. Often the return to employment occurs later in life as a 'sea change' to seek job satisfaction rather than seeking higher wages.

Areas of opportunity

The nature of the issues related to workforce supply and career pathways are challenging in both relational and structural ways. Emerging issues such as re-attraction and changing sector perceptions and conditions are important industry issues not necessarily related to skills and training. The lack of recognition by participants that training is seen by career aspirants as an

attractive employment benefit was a concern. However, for many workers, being able to access work without a long period of training was also an attraction.

Identified areas of opportunity for further consideration:

- **Encouraging industry-based strategies to improve the reputation of sectors and roles within them**: Attraction of younger entrants is dependent upon the reputation of industry, particularly regarding social impact, work conditions and safety, and particularly as understood by parents, careers advisers and influencers.

- **Developing strategies to communicate qualification benefits and outcomes**: Evaluating the potential for better communication of VET qualification sequences and their associated job outcomes in the context of career development could support VET uptake by young people.

- **Working with local and regional bodies to promote attraction to RRR areas to assist with career attraction**: An approach that may assist RRR workforce issues is to start with attraction to live in the location, and then focus on industry and career opportunities, taking advantage of Australia's remarkable diversity of landscapes and lifestyles. However, a significant barrier to this promotion is evident for regions that lack sufficient social infrastructure including affordable housing, care facilities and medical support and this will require massive policy change and investment to address.

- **Researching the potential for re-attraction strategies**: Given this is a relatively new approach to industry attraction, research is needed to evaluate potential options and success rates for re-attraction strategies and the impact on enrolments.

- **Investigating the design and promotion of VET in School and taster programs**: Introductory programs to industry during primary and secondary schooling may be more effective if directly aligned to VET and can count towards future completion of a qualification.

Barriers to industry engagement in VET

There are various approaches enterprises might use to skill their workforce, including both nationally recognised training – VET qualifications – and non-nationally recognised training. These decisions are made based on various factors, including relevance to workplace needs, flexibility in fitting in with business cycles, and affordability (Bowman and Callan, 2021).

Many enterprises have great need for skills and knowledge that are delivered most effectively through formal training, yet lack the time, resources, informational networks, and understanding of the value of VET to embrace opportunities as they arise. Formal vocational training is just one of many investment decisions for any business and where there are scarce resources available, strategic focus will usually centre on meeting organisational needs. While there may be value to the broader industry and the learner, formal training (vs unaccredited training or informal learning) provides fewer tangible benefits to employers.

Employment dynamics, particularly relating to seasonal and casual work, are also a key factor informing decision-making around the kind of training employers are choosing to skill their workforce.

Some sectors have high proportions – up to 75% – of enterprises that are non-employing. Employer decisions in relation to training are not that relevant when the enterprises survive on contractor services.

Employers can consider alternatives to formal VET training, which may deliver more focused, relevant or immediate training outcomes. In some industries, there is a lack of propensity for formal training and non-formal options are considered suitable or even preferable, particularly when VET qualifications have previously been considered not to be relevant, convenient or affordable. There is a continuing perception that VET does not produce safe, effective and productive workers ready for unsupervised activities in the workplace, and this perception is greater when the training is not workplace-based. Higher level qualifications (AQF levels 4-6) are often considered unnecessary or irrelevant due to industry experience or design that does not meet learner needs.

A lack of simple and accessible information has an impact on the use of the VET system, especially the decision-making of employers (including those that employ staff who provide contracting services) for whom such decisions are only a small part of running a business, and learners who are trying to make difficult life-changing decisions.

Key factors identified by participants

Uncertainty around return on investment

Enterprise investment decisions are shaped by a range of perceptions and behaviours. Evidence suggests that when employers experience quality VET-related outcomes, such as increased workplace efficiency and productivity, they are more likely to value the system and the opportunities it presents (Osborne et al., 2020). However, this research suggests employers are finding it increasingly difficult to understand their return on investment from VET.

Existing literature on return on investment (Griffin, 2016) shows that perceptions about the value of VET are context-specific – varying based on the stakeholder, their environment and business

model. The sectors covered by this study have a high proportion of non-employing enterprises and this has an impact on demand for formal training.

For employers, a worker delivers maximum value to the business when they have both enabling skills (also known as soft or employability skills) and technical skills. Research by Misko and Circelli (2022) found that employers are more inclined to invest in formal training for staff who already have enabling skills. Similarly, it was found that some employers look to hire people based on their passion for the job, rather than their technical skill.

'We like to hire on character. Not necessarily on technical skills. I think university does demonstrate a strength in character in certain aspects of being able to apply oneself to a three, four, five-year degree. But there are a lot of people that have, you know, come through the business who don't have even high school qualifications that have been the right character.' – Employer

In such instances, employers find it difficult to justify the return on investment in training if their staff are not passionate about the job. However, this may perpetuate a paradox, formal training is a key mechanism to generation passion for an occupation and staff may not feel valued if their employer does not invest in them. Smith (2001) highlights this dynamic, suggesting that the value enterprises gain from investing in training is conceptualised by the '*demonstrable changes in the way people do their jobs and talk about their jobs*'.

A common concern that emerged through the research was the fear that investing in staff training and formal qualifications might not yield a return on investment, as employees could leave the business in pursuit of better pay or opportunities elsewhere.

'There's still a risk from the employer if they put them through the qualification and they decide it's not for me and off they go. They've invested all this time and money and it's just a lot [for no return].' – RTO

These perceptions led to employers questioning the short- and long-term value to businesses of supporting employees to achieve a VET qualification. However, evidence suggests that providing training and development can deliver significant benefits to employers, including a stronger workforce with higher staff retention. Formal training can enhance employee skills and productivity, which often results in cost savings, improved customer satisfaction, and greater competitiveness in the market (Schueler, Stanwick and Loveder, 2017).

The overall result in some instances is that employers lack commitment to training people in the formal VET sector, as it is seen as too difficult, costly, and inconvenient. Instead, they rely on on-the-job learning, which may be an easier process for all involved, but lacks the professionalism towards improving performance, occupational learning and independent assessment. It also inhibits professional knowledge transfer, potentially resulting in substandard WHS outcomes, lower productivity, and limited capacity for innovation. As discussed in more detail in the RTO delivery challenges section of this report, informal workplace learning becomes an attractive option which actually works for some of the learning needs in some sectors.

Some respondents highlighted the broader benefits of formal training, emphasising how it supports the sector, even if the worker does not stay with the same enterprise.

'Everybody moves for whatever circumstances, but the bigger picture is that we're trying to build up a local workforce labour market of qualified people and if they stay with me for three years and then move across to another business, awesome […] we have an improved standard.' – Employer

However, given the high proportion of small and very small businesses in the industries studied, it is likely that many employers find it difficult to support staff for the benefit of the region they live in or the broader industry.

Measuring the return on investment in training remains a challenge for many organisations. Committee for Economic Development Australia research indicates that only 15% of organisations have a clear approach to measuring training return on investment (Barker and Dillon, 2024). To address this, UNESCO-UNEVOC International Centre for Technical and Vocational Education, in collaboration with NCVER, developed a practical guide to help stakeholders understand and measure return on investment from VET, offering frameworks and indicators for effective assessment (Schueler, 2020). As one research participant noted:

'Our current branch manager doesn't really see the value in [the qualification]. So, I won't put people through courses. It's a lot of money. It's a lot more money than it used to be. I know that's just the sign of the times.' – Employer

For employers, government funding support is available for enterprises supporting certain apprenticeship or traineeship programs, as determined by a range of incentives and the Australian Apprenticeship Priority List (Department of Employment and Workplace Relations, 2024b). In cases where apprenticeships or traineeships were unavailable, employers were more inclined to enrol staff in subsidised qualifications.

This choice often reflected a value-for-money assessment, with employers prioritising apparent cost-effectiveness over suitability. As a result, even when a more appropriate qualification was available at a higher cost, the subsidised option was frequently preferred. If employers felt that no formal qualification was a good fit, they often opted to provide in-house training instead. As one RTO stakeholder pointed out during the research, these enrolment decisions impact not only the individual but also the broader supply and demand chain.

'The other thing is it's a bit of a Catch-22. If you don't have enrolments, you're not seen as a priority course, which means you don't make any of the state skills lists, which means you don't attract any subsidies, which means the workers in those sectors can't access the training, or it's very difficult for them to access the training because in the middle of a cost of living crunch, I guess people are very reluctant or very hesitant to invest in training.' – RTO

The need to financially support workers enrolled in training is an added expense for businesses. Any investment in formal training came with concerns that it might impact the business in terms of time or cost. This was particularly challenging for enterprises relying on a workforce of visa-holders and casual labourers.

'If you've got a huge international workforce, you've paid already $10,000 just to have them in the country working with you. To then enrol them in additional training, that's then a lot of investment into one person. If you've paid the permanent residency and the visa and whatnot, you know, we're looking at $20,000 roughly. So, to then do another certificate on top of that is highly unlikely. You wouldn't really be funding that unless there was some sort of government subsidy.' – Employer

To enhance the skills and training of this workforce, a review of funding available to employers looking to enrol migrant workers in training could support the upskilling of the workforce through VET.

There is evidence that VET units of competency are being used for purposes other than formal training delivery, including to design in-house training modules and to benchmark against industry awards. Migrant workers form a significant portion of the workforce across agricultural sectors (Australian Bureau of Statistics, 2024), and training requirements under relevant visas are sometimes met by industry training based on units of competency. This suggests that training packages and the National Training Register (training.gov.au) have greater value than can be gleaned from VET enrolment and completion data alone. As informal and non-accredited training, and approaches to it, are not monitored through government data and research, its value and extent remain unquantified.

Suitability of alternative training options

The research identified various types of non-nationally recognised training that were chosen by enterprises in place of formal VET certification. Most notably, informal, on-the-job training, whereby knowledge and skills are acquired by working in the job role, either alongside experienced colleagues or alone, was often cited by employers as a key method for training workers. In some cases, there was an expressed preference for on-the-job training:

'In my opinion, the qualifications are not necessary. Yes, you can have all the skills and qualifications that you want, but unless you have got someone who is willing to work on a farm and is passionate about the job, bits of paper are not going to be worth anything really. The managers have a role to play to teach staff and train them properly through hands on work.' – Industry body

This reflects an industry culture to learn on the job without formal training. It is important to note that although some enterprises may have the capacity to sufficiently train workers on-the-job, many do not. The agriculture sector has the highest fatality rate by industry in Australia (Safe Work Australia, 2024), emphasising the need for better approaches to training workers and managers about WHS risks and treatments.

Previous research has highlighted a range of challenges in implementing structured and formal on-the-job training. Employers may lack the expertise or time to develop structured training programs that meet VET standards, which may result in training being tailored more to the business's immediate needs than to broader qualification requirements (Smith et al., 2017).

On occasion, research participants did not highlight any distinct advantage to on-the-job training, but instead emphasised how such training was an 'organisational norm' or behaviour that has been established over many years.

'For the last 20 years or whatever we've always been head down, bum up. Just keep going. My dad told me there is no strategy, just get the work done. Whereas I see now if we don't do something now, we're going to be in big trouble. So now I'm like, I need to start looking to the future.' – Employer

Other respondents noted that 'there has been no pathway for anyone to train staff' suggesting that on-the-job training was used to fill a gap caused by lack of access to other options. However, this entrenched behaviour of disengagement with the VET system is starting to shift as stakeholders recognise the need for structured approaches to training. Crucially, any growing demand for VET must be communicated and met with supply – otherwise this demand will remain invisible and industry will continue to have its skill needs unmet. Smith and Somers (2024) reported that RTOs experience difficulties initiating new partnerships with industry, feeling employers are not as cooperative or open to collaboration as they could be.

Qualifications not meeting employer needs

In order to engage with formal training, employers must feel adequately informed (with supporting evidence) about the impact of completing a full qualification, including benefits compared to disruption and cost. Some employers express concern that certain qualifications contain too many irrelevant core units or that they lack sufficient relevant units.

'Most skills obtained through the Certificate IV are learned either in house or from the Certificate III. Need project management skills at this level not more landscaping skills.' – Employer

'So, then it's actually the employer understanding what is actually in that course itself, because a lot of it might be irrelevant to our particular enterprise or the way that we operate.' – Employer

These views, while based on similar evaluations of potential return on investment, reflect different perspectives on the value of vocational education as a mechanism for skills development. It is important to note that despite the perceptions of some stakeholders, all accredited qualifications are developed via a highly structured and inclusive industry consultation and analysis process to ensure that the units within the qualification accurately match industry requirements and practices.

The final criterion for employers' support of accredited qualifications is a belief in the ongoing value of employees obtaining skills from these additional units. However, some research participants feel that undertaking more than is necessary for the job is counter-productive to the business.

'I think if I sent him along to waste time with an RTO right now, it would actually be a regression of his learning and me having to explain why a

lot of that doesn't apply, or yes it's nice that you've talked about it in class, but here we've got to actually do it for real.' – Employer

Lastly, the broader benefits of the learning experience, such as developing IT skills, exposure to different operational methods, networking with other learners, and gaining diverse perspectives, appears to not currently be acknowledged.

Addressing these concerns requires strategies similar to those previously discussed, with key variations. Educating employers on the skills outcomes of qualifications is crucial, as is ensuring they understand the potential for a qualification to be tailored to suit the specific requirements of the business and the development of the individual. The opportunity to incorporate units from other qualifications, such as business-related units, can be particularly valuable in this context.

However, given the information flow issues outlined previously and that, in the main, the sole source of information to employers on training comes from RTOs who need to sell a standardised product to meet viability needs, it is unlikely that employers will become educated on the worth or flexibility contained within qualifications as distinct from what RTOs are offering.

Units of competency describe all areas of work performance and the knowledge to perform that work. They do not identify what parts of that work are best learnt on the job or other training options, and what parts can benefit via formal training mechanisms. As a result, RTOs need to demonstrate delivery to regulators based on every job task described in units of competency, not just those that benefit from formal training. In many of the studied sectors, research participants had a range of assumptions about VET training potentially not based on current or best practice. Extensive references to 'experience' and 'on the job' training, and discussions about alternative training options indicate a perception that the majority of skills can be learnt informally on the job, and hence that RTOs are not essential to their business.

Reviewing the composition of qualifications to ensure their relevance to the targeted roles is an important consideration in addressing barriers related to the perceived value of the qualifications. The Aquaculture and Agriculture Tech Skills Hub run by TAFE Queensland (2025) provides an example of how training can be adapted to better engage with industry need. The hub offers a range of skill sets, designed in partnership with industry and arranged into categories that help describe the value of their content to the employer: work skills, focusing on essential competencies for effective participation in the agriculture and aquaculture industries; digital skills, which develop competencies in current and emerging digital technologies and data management; and technology skills, focusing on advancements like autonomous equipment and precision farming.

The evidence gathered from this research suggests a need for VET providers, government and industry to re-evaluate how they articulate the value of qualifications. By focusing on the practical applications of VET training and demonstrating how these skills can lead to diverse careers, training providers can bridge the gap between interest in a VET-related occupation and enrolment. Approaches could include providing work experiences that help students appreciate how the VET system can deliver skills and knowledge they might not obtain through other forms of education (Billett, Choy and Hodge, 2020).

High percentage of casual workforce

Many roles within the studied industry sectors are seasonal, with employers relying on a high volume of transient workers and a large migrant workforce to meet fluctuating labour requirements. This directly impacts training decisions within these communities and strongly influences enrolment numbers.

For instance, apprenticeship and traineeship models, which are typically built around permanent positions over one to four years, present difficulties when trying to integrate transient or seasonal workers into formal training pathways.

In regional areas, where there is a marked reliance on labour from individuals with Working Holiday visas, many employers choose to train staff on-the-job because the time taken to complete a formal qualification does not align with the terms of their visa. Indeed, the Department of Home Affairs Migration Strategy (2023) was critical of the coordination of the education, training and migration systems, emphasising the need for a greater focus on building local workers' skills and job opportunities.

Some employers mentioned they were reluctant to invest in training for a casual workforce, such as short stay migrant workers or backpackers, who are often not expected to be long-term, permanent employees. This reluctance stems from the perception that training costs may not bring about sufficient returns if workers are only temporarily employed.

'So, we've got our backpackers and they're great, a lot of them could be future leaders, but they just can't stay. So, who do I have left?' – Employer

'We only have a very small number of permanent staff who we would bother to put through a traineeship or send off to TAFE or whatever. The rest of them are all part time cane workers coming in and working seasonally. In the winter they're in the cane fields and during the summer they're in the ponds.' – Employer

Employers highlighted seasonal workers often lacked interest in pursuing formal qualifications or accredited training. When structured training was considered, they expressed a preference for non-accredited 'fast' training options. Employers found these non-accredited programs particularly beneficial, as they allowed them to quickly address skill gaps while meeting constraints around time, cost, and resources. This approach helped balance the immediate needs of the business with the limitations posed by a transient workforce.

'I think the qualification is probably too hard for them to sign up to because we do seasonal work, we have ebbs and flows of staffing [...] So it's not like a Monday to Friday where they can take time off and stuff. Which is why we've got three people enrolled in a skill set at the moment.' – Employer

'They're on shift work for the season, they barely get 20 minutes. We've actually got a trainer coming up right now. We're scheduling 20-minute

blocks because they're on the job. Requirements are around the clock.' – Employer

A variation in attitudes was noted, with some employers concerned about spending money to put workers through qualifications and training due to the likelihood of the worker leaving the organisation. Others felt that it was good to provide training to upskill workers – and if they left the organisation there was trust that the industry would benefit from it.

While training via non-accredited courses is available to support local enterprises in RRR areas, it must be noted that this training bridges immediate skill gaps but does not always meet employers' or employees' long-term skills needs.

Perceived disruption to enterprise workflow

Many employers mentioned that maintaining the workflow of the business is a key challenge that influences their investment decisions in VET. In small enterprises, respondents mentioned that even one or two workers travelling offsite for training can disrupt workflows.

'Can we afford downtime to let people go off and do training when we need them on-site? No probably not.' – Employer

'Managers or owners of businesses didn't want staff to be off site for long periods of time. So, you know, a one-day or two-day course seemed to be more attractive than a longer-term course. Particularly after COVID there was really a reluctance to release staff for longer periods of time.' – Industry body

Although some respondents noted a desire for formal training, the concern of reduced productivity and unmet business demands frequently outweighed the perceived benefit of VET. The key factors that influenced these business decisions were largely centred around the location and seasonality of the work.

Employers working in seasonal enterprises, where an 'all hands on deck' approach was taken during peak periods, were more hesitant to enrol in formal qualification opportunities. Similarly, the remote location of many of the enterprises engaged with was cited as a perceived barrier to demand for VET.

'The farms are remote, so employers don't like sending their staff to like a college or anywhere. They like the RTO provider to come to them. And then if the training is done on the site, then it's more valuable.' – Industry body

Employers often chose informal alternatives to training when there was a perceived lack of access, capacity, or capability for VET certification. Gelade and Fox (2008) note that the incapacity of small, struggling businesses means some employers are *far more concerned about personnel shortages than […] about skill shortages or training*. This disconnect can leave employers feeling under-served by the VET system, as they cannot balance the need for professional development with operational demands.

It is important to note that although some employers felt they could not justify sending staff offsite for training, many respondents still favoured nationally recognised training as a means of upskilling the workforce because they recognised the importance of VET in serving the workforce for the future.

'I don't think we are able to give our people enough perspective of what else there can be. So, it would be absolutely beneficial for the individuals and then subsequently for the organisation, if they get skills from a different place or from somewhere else, because they can then bring that knowledge into the co-op. So, getting them to train somewhere else, I think absolutely would be beneficial overall.' – Employer

In some sectors, the cost involved in training new staff through on-the-job training was seen to be higher than formal training in the long term. To balance both the need for training and workplace productivity, respondents in some sectors expressed a desire for skill sets and short courses to ensure staff have the essential skills needed for the workplace while maintaining appropriate staffing levels.

Speed of completion is part of the appeal of short courses, particularly in time-sensitive operational environments where the extended training periods associated with full qualifications can disrupt business continuity (The Organisation for Economic Co-operation and Development, 2021b). This is particularly relevant to the studied sectors in which small businesses may have limited capacity to cover staff absences. The cost effectiveness of these programs, compared to full qualifications, also proves attractive to small enterprises operating with constrained training budgets.

Apprenticeships and traineeships considered the end of the learning journey

Formal workplace-based training, typically associated with apprenticeships and traineeships, has been a feature of Australian VET (Osborne, 2021). It includes practical, on-the-job learning with supervised instruction as well as off-the-job training with an RTO. Research participants emphasised that apprenticeships are sometimes seen as a final destination, which could impact the demand for other VET qualifications, as there is no incentive to undertake further training upon completion of an apprenticeship.

'If I did my Certificate III to become an apprentice, then I am fully qualified. And if I wanted to then leave you as an employer and start my own business then I can do that because I have all the skills that are required. I don't need to do a Certificate IV; I don't need your Diploma.' – RTO [retelling views of trainees]

Research participants noted that the decision to undertake a traineeship or apprenticeship is influenced by various factors, including funding availability, regulatory considerations, and the career aspirations of the learner. The fact that apprenticeships may be funded, unlike some standalone qualifications, can be a significant factor in this decision-making process. Addressing this particular challenge is complex, given the varying nature of apprenticeships and apprenticeship funding between regions.

Information provision in industry networks

Information networks have provided value to stakeholders and may act as an important vehicle in transformative change.

Research participants indicated that there is significant potential to enhance knowledge exchange between stakeholders in industries within a limited geographic area via formal structures that support peer engagement. Such structures enable information sharing between employers, between RTOs, and between both employers and RTOs on training needs and options.

Industry associations across all participating sectors in this study demonstrate strong commitment to supporting their members' education and training needs, with several operating as RTOs themselves. However, a significant finding emerged regarding scale and focus: many employers noted that their industry association's strategies and activities typically addressed state-wide or national concerns, often overlooking the specific challenges faced by small enterprises in remote locations.

Farmers generally prioritise learning from their peers and in-person events (Hansen et al., 2022) and participants in this study reported that networks at the local industry level were reported by employers to be delivering beneficial outcomes.

Employers noted that these networks manifest in various forms, ranging from casual peer discussions to more structured regular gatherings and formal industry association meetings. Training and skills development consistently emerges as a central topic in these forums, highlighting its importance to the employer community.

'So that's kind of where I guess I'd like to work a bit more collaboratively with other industries in the area, help them all with their retention just as much as ours. Be able to share resources and skills. So, you know, finding the right people that want to work together. We're developing slowly, a little group of, you know, people that have a collective vision.' – Focus group

Industry and employers reported that these networks facilitate valuable benchmarking and best practice sharing, enabling them to learn from each other's VET implementation experiences. This knowledge exchange encompasses recruitment strategies, mentoring approaches, and methods for optimising apprentice productivity. The peer-to-peer nature of these exchanges allows businesses to adopt practices proven successful in similar operational contexts.

Research participants reported that collaborative workforce planning is a significant benefit of these networks. Through regular discussions about workforce needs and skills gaps, employers can identify industry trends and develop collective approaches to VET engagement.

'No point fighting, there's no resources. We gotta work together as an industry because we're all experiencing the same issues.' – Focus group

These findings suggest that it would be beneficial to have support available to help develop formal or informal forums for regional employers to engage with RTOs about upcoming demand, so that RTOs can prepare to supply training to learners. RTOs could provide information on relevant qualifications, how to determine and negotiate training content needs, and options for

workplace-based training. As a result, all parties may gain a better understanding of the demand, which may otherwise have remained uncommunicated, and be able to better plan for qualification delivery.

The Victorian Local Learning and Employment Networks (LLEN) are designed to build connections between young people, schools, employers, families, the government, and the wider community to improve education, training and employment outcomes for all young people. They use a place-based approach that tailors services and strategies to the unique cultural, economic, geographical, and social contexts of a specific locale. The LLENs offer a potential model for engaging with the challenges surrounding supply of VET, particularly in regional, rural and remote locations (VicLLENs, 2025).

Social media networks also offer a potential means of collaboration though there is debate on their efficacy on building collaboration between farmers. Research from 2020 indicated comparatively lower levels of digital networking activity among farmers and attributed it to practical factors including issues of access to internet technology options, lower data speeds, inadequate reliability, lower data allowances, and higher data costs (Marshall et al., 2020). However, recent survey data also suggests that social media is the least trusted source of information for farmers (Burbury and Petzold, 2024).

It is important to note that opinions are divided on opportunities for collaboration within industries, with some stakeholders believing that competitive pressures will always limit the extent to which individual employers will work together for a common good.

'The one thing about our industry, and, you know, it's a very divided industry, they're trying to get the whole industry together as one body. I think it's a good effort, but I don't think it'll work. Personally, I don't think it'll work because a fisherman fishes for himself.' – Employer

Competitive pressures may also be a factor in RTO information flows, but this did not arise during the research.

Areas of opportunity

Low engagement in VET often relates to a lack of information and certainty in how training will affect businesses, as well as learner views on the value of training. It is likely that relational change is needed, which will require substantial change to challenge thinking about current business and skills models.

Identified areas of opportunity for further consideration:

- **Improving employer understanding of return on investment:** Strategies could be identified to help employers leverage the NCVER/UNESCO-UNEVOC guide and other mechanisms to measure the return on investment of training in their own business. Evidence-based communications on this topic could also be developed.

- **Developing employer guidance resources:** The creation of resources, such as an employer guide to inform employers of their obligations regarding staff skill development, may support skill development of the workforce.

- **Greater JSC involvement in employer/educator relationships through network approaches**: JSCs could play a role in providing guidance to employers and RTOs on how to take advantage of local networks, including Regional Development Australia branches, local government economic development units and business chambers to facilitate local training accessibility and improve delivery viability.

- **Building local area networks**: There is the potential to develop new or support existing local networks including cooperatives, local business networks, special interest groups, and social network groups to support the dissemination of information and exchange of experiences around accredited qualification outcomes.

- **Promotion of high-functioning RTO-employer relationships through case studies**: Communications product could be developed to share stories of high-functioning RTO-employer relationships and promote the successful strategies engaged.

Specific factors impacting regional, rural and remote Australia

Many of the industry sectors engaged in this project are concentrated in RRR areas. Entailing unique contextual factors, as evidenced throughout this report, must be central to developing appropriate responses to the challenges faced.

Firstly, strategies must recognise that most enterprises in these locations are small or very small businesses, with a low proportion of employing organisations. These factors significantly affect capacity and capability on both sides of the training equation. For small enterprises, limited capital, cash flow, and labour resources constrain the ability to support structured training initiatives and partnerships with RTOs, including their capacity to research the most appropriate training options for their needs. This places additional pressure on RTOs, which must navigate similar resource limitations while meeting both compliance requirements and the specific training needs of the local workforce.

Secondly, in RRR areas, a substantial proportion of relevant VET enrolments are with independent RTOs. Indeed, the majority of learners undertaking the qualifications in scope for this project are enrolled in private RTOs (National Centre for Vocational Education Research, 2024b), which are often the sole providers of training services within remote regions (Independent Tertiary Education Council Australia, 2024). RTOs in these locations are also typically smaller than their counterparts in metropolitan areas and are frequently short-staffed and struggling to maintain industry-relevant teaching facilities.

It is also important to note the dynamic nature of the labour markets across RRR Australia, which in recent years have been subject to various and uneven impacts across different regions. While in capital and major cities there has been a shift in employment demand towards occupations that are viewed as requiring higher education qualifications, in regional and remote areas there is a shift towards both higher education qualification roles and occupations for which VET is the primary pathway (Jobs and Skills Australia, 2023a).

Key factors identified by participants

Supply factors in RRR

Many RRR areas do not have the population density to support multiple RTOs, nor are they close to TAFE campuses. As a result, private RTOs will often be the only provider situated locally to provide bespoke services to a given sector. Consequently, RTOs face additional pressures, navigating resource limitations while trying to meet the specific training needs of the local workforce.

‘When you're that remote, you just need as many hands on deck as possible. A lot of it just does come down to your location and how remote you are and the sort of support you get.’ – RTO

Compounding this issue, as many enterprises in RRR areas are small or very small businesses, there are significant effects on an RTO's capacity to deliver training. Employers stated that

limited capital, cash flow, and labour resources constrain their ability to support structured training initiatives and partnerships with RTOs.

The cost of relocating RTOs closer to learners is often not financially viable in thin markets. In essence, RTOs felt they could not viably meet training delivery opportunities in RRR areas without greater levels of funding support.

'When you're going to the Northern Territory, the time and effort we put into training was far superior to what we usually do in Victoria, South Australia, Tasmania. We have to travel at least five hours; we have to get the gear up there but then you're also time poor. So, we have an issue across North Australia where getting any training company into these areas obviously costs a fair amount of money for trainers and then there's also overheads, paperwork and other stuff. The funding at the moment just doesn't cut it, doesn't cover it at all.' – RTO

As noted by Pratley and Archer (2017), travelling long distances to one business with few learners is inefficient and, with no other potential customers, RTOs will often discontinue delivering a course, even if this results in future skills demands being unmet. The National Regional, Rural and Remote Tertiary Education Strategy contends that more needs to be done to avoid inadvertently disadvantaging RRR learners educationally or making their continuing enrolment untenable (Regional Education Expert Advisory Group, 2019). This is a complex issue as delivery in RRR areas requires flexibility, which an RTO may not have the capacity for due to a wide range of issues affecting viability.

The failure of regional loadings

The feedback from research participants suggests that particular attention should be paid to the need for equity in the distribution of RTO funding, including between states. 'Regional loadings' are paid to RTOs in combination with subsidies to account for higher delivery costs in RRR areas. The Productivity Commission (2020) noted that loadings and subsidies are applied variously across the states and territories.

The research findings suggest that loading does not cover the true cost of delivery in RRR areas.

'The regional loadings are too low. So, if the government really, truly want to support the people doing VET in the rural areas, the loadings for the trainees and the business owners from the federal perspective need to be higher. And then from the state, they need to be higher because I choose not to pass on that travel cost to our clients.' – RTO

For regional, rural and remote RTOs, there are very few low-cost operational areas. As a result, these providers receive a proportionately lower subsidy relative to their operating expenses, and loadings are less likely to make up the shortfall. For employers and learners, there are also additional financial expenses, potentially including travel, accommodation, internet access and higher insurance costs, as well as potential resource drains with loss of access to productive staff time while away training, and lower productivity from on-site training delivery.

Other research echoes participant reports that subsidies do not take into account both the development of training and assessment materials and practicalities of provision (Zoellner and Stephens, 2019). Nor do loadings cover the required capital investment for training where high levels of initial investment are required for delivery.

This results in widespread low viability training environments due to the double burden of high capital investment requirements and student cohorts being spread over a broad geographic range meaning low learner-to-trainer ratios in any delivery location. As a result, the cost per learner is often much higher for the RTO than in a metropolitan area and well beyond the ability of simplified loadings to address.

Regional training hubs and centres of excellence

As discussed earlier, RTOs experience great difficulties with the capital and other investment required to deliver much of the training needed in RRR areas, including funds for infrastructure, equipment, land, plants and structures.

The federal government has supported the development of a variety of Regional Training Hubs over the last decade, including:

- The National Regional Training Hub initiative for universities (https://ausframe.org/wp-content/uploads/2023-National-RTH-Toolbox.pdf)

- Industry Training Hubs aimed to encourage young people in regions with high youth unemployment to build skills and choose occupations in demand in their region, and to reposition VET as a first-choice option (https://www.dewr.gov.au/industry-training-hubs, program closed 30 June 2023)

- Remote Training Hubs supporting Central Australian First Nations people to access On-Country vocational education and training matched to local jobs (https://www.dewr.gov.au/remote-training-hubs-network)

Although the National Regional Training Hub initiative was only open to universities, it appears facilities may have also been open to some VET learners.

Some RTOs suggested a potential solution might be a 'centre of excellence' – a single large facility with up-to-date equipment that supported research, industry consultation, and on-site training. This strategy has been proposed in a review conducted for Hort Innovation (Chavan et al., 2022) and may offer a more practical solution, with access for geographically isolated learners supported by block learning and residential colleges. It is evident from our consultations there are risks to be overcome with this approach, as made clear during discussions about recent closures of residential Ag Colleges. Unless the root causes of RTO viability issues are addressed, particularly in RRR areas, 'centres of excellence' may experience the same fate.

The National Skills Agreement supports the development of TAFE Centres of Excellence for a variety of industries, and further proposals are to be considered. Given the nature of training delivery in RRR areas, there may need to be consideration of opening the program up to private RTOs, keeping in mind that many private RTOs are industry or community owned not-for-profit entities.

Areas of opportunity

The study highlights that a different transformational change approach needs to be taken to RRR VET jobs and skills support, based on the fair and equitable provision of education and employment opportunities as experienced elsewhere in Australia.

Identified areas of opportunity for further consideration:

- **Place-based focus for market conditions research:** Data collection and research could be undertaken into local labour markets, skills and training needs, and RTO coverage (geographical and qualifications on scope), to produce advice and brokerage for demand and supply opportunities. This work would require collaboration from Jobs and Skills Councils, Jobs and Skills Australia, Regional Development Australia, and regional workforce and skills committees.

- **Regional funding strategy to replace the 'loading' system:** The assistance of JSA and state/territory training authorities would be required to influence Skills Ministers to undertake detailed work to identify true costs of RRR delivery at regional area levels (using current definitions from each state and territory) and develop a regional funding strategy that more accurately and effectively supports RRR training delivery, so that RRR learners are not disadvantaged as compared to their capital city counterparts.

- **Encouraging further investment in Regional Learning Hubs and Centres of Excellence:** Further development of Regional Learning Hubs and TAFE Centres of Excellence could be encouraged by advocating for opportunities and appropriate funding, assisting with evaluation and building stakeholder support, and shifting the focus of Regional Learning Hubs to ensure students are supported to participate in VET and non-accredited training.

- **Leveraging adaptive capacity measures:** Working closely with JSA and industry bodies on utilising adaptive capacity measures, insights could be generated into inter-occupation mobility and skills shortages in RRR areas.

VET actor opportunity to drive change

Systems change within the VET system requires contributions from a range of VET actors. This idea is supported by the Six Conditions of System Change framework as well as stakeholder understanding of the VET system. The Six Conditions of Systems Change acknowledges the importance of understanding which actors within a complex system can lead the various actions required to implement change. Kania, Kramer and Senge (2018) explain:

'It requires that changemakers look beyond any single organisation to understand the system by identifying all of the actors that touch the issue they seek to address. One must then go further to explore the relationships among these actors, the distribution of power, the institutional norms and constraints within which they operate, and the attitudes and assumptions that influence decisions.'

Throughout this report, areas of opportunity have been identified through analysis using the Six Conditions of System Change. This section articulates the VET actors required to leverage these opportunities and provides an initial allocation of responsibilities for consideration. The following information relates to Section 1 of the document, leaving aside the industry sector areas in Section 2, which may require more specific interventions.

Opportunities for systematic change, as identified in this report, relate to the following areas:

- VET governance, funding and regulation

- RTO delivery challenges

- issues of industry attraction and career pathways

- barriers to industry engagement in VET

- specific factors impacting regional, rural and remote Australia.

These key areas will need leadership from among those involved in the VET system to support the required change. While more detailed responsibilities could be allocated, there are five groups that emerged as potential drivers of system change: governments, tripartite bodies (representing government, industry and unions), RTOs, JSA and JSCs. The key areas of responsibility have been provisionally allocated and should be considered further by the identified actors.

Federal, state and territory governments

Working individually and collaboratively, within the National Skills Agreement, governments will need to be responsible for much of the structural, relational and transformational change relating to purpose, governance, policies, funding, regulation and equitable delivery of training.

This could include:

- reviewing the structures and funding of skills development

- National funding for student cohorts thinly dispersed across Australia

- policy settings that encourage equitable delivery of training

- understanding the true value of the National Training Register

- replacing the 'loading' system with an effective regional funding strategy

- improving regulation of VET and compliance policies.

Tripartite bodies

Major tripartite bodies, representing government, industry and unions, will need to be responsible for changes to jobs and skills environments that go beyond VET, but which have significant impacts on VET.

This could include:

- encouraging employers to take responsibility in recognising their role in supporting RTO training viability and student enrolment growth

- encouraging industry-based strategies to improve the reputation of sectors and roles within them

- encouraging reconsideration of approaches to and funding of information flows

- considering the confusion created by misnamed 'training packages' and making changes to terminology

- challenging the competency system design to consider what roles RTOs and enterprises should play in skilling

- maximising the Commonwealth Government's Skills for Education and Employment program

- encouraging further investment in Regional Learning Hubs and Centres of Excellence.

Registered Training Organisations (RTOs)

While RTOs face systemic challenges beyond their control, training providers and their representative bodies can enact relational change to improve outcomes for industry and learners while also advocating for structural reforms to strengthen the VET system.

This could include:

- working more closely with enterprises to tap into the facilities, skills and knowledge they can contribute as part of skills development

- collaboration between RTOs to co-develop nationally consistent training materials

- working cooperatively with other RTOs to deliver viable services by segmenting markets and training delivery solutions

- engaging with the VET Workforce projects being implemented by JSCs to build the evidence base and recommendations for effectively tackling trainer shortages

- engaging with best practice evidence and guidance to support LLN-challenged learners, including the Foundation Skills Study led by Jobs and Skills Australia

- supporting local networks and providing impartial information to educate people new to VET about the range of options available

- working with governments to demonstrate the actual cost of delivery in RRR areas and support funding governance improvements

- working with JSCs on qualification reform solutions.

Jobs and Skills Australia (JSA)

JSA has been tasked by the federal government to be a catalyst in activating the potential of Australia's human capital to meet present and future skills needs. It will need to be responsible for research and capacity studies that provide options for change affecting VET markets and delivery.

This could include:

- focusing on local market condition research

- recognising and integrating non-accredited training into formal qualifications

- leveraging adaptive capacity measures.

Jobs and Skills Councils (JSCs)

JSCs are well positioned to lead actions where the expertise of industry and educators are required, although the JSC role will often be to influence, rather than deliver, change.

Responsibilities could include:

- improving return on investment analysis

- developing strategies to communicate qualification benefits and outcomes

- recognising and developing resources around best practice in local and regional bodies to promote attraction to RRR areas to assist with career attraction

- researching the potential for re-attraction strategies

- investigating the design and promotion of VET in School and taster programs

- developing employer guidance resources

- involvement in employer/educator relationships through network approaches

- promotion of high-functioning RTO-employer relationships through case studies

- reviewing duplication and overspecialisation of skills, and promoting current flexibility in qualifications

- providing support for industry experts to deliver training in a supervisory role

- developing trainer shortage strategies

- mapping of training as a vocation within industry careers mapping

- demonstrating the need for a nationalised approach to training resource development

- engaging with the JSA Foundation Skills Project

- exploring alternative training approaches and innovative delivery models

- focusing on how to improve the accessibility of the VET system for LLN-challenged learners.

Section 2: Industry Sector Analysis

This research explored the story behind low enrolments in specific qualifications across 11 industry sectors within the agriculture and seafood industries. This section outlines the findings of the research as they relate to each industry, demonstrating how factors affecting VET enrolments can vary between industries. It also presents more detailed areas of opportunity based on the specific contexts, challenges and enablers documented through engagement with participants.

The analysis provides examples of where the VET system and employment arrangements have been unable to respond to growing skill needs and occupational shortages. For example, arboriculture is an occupation in demand. It is high risk and requires expertise from entry-level tree pruning through to detailed natural disaster planning and providing expert evidence in court. Arboriculture is an industry requiring multiple levels of formal and ongoing training yet has three qualifications which have minimal enrolments. VET providers are not encouraged to invest more heavily in delivery of these qualifications given the current low enrolment numbers, but industry is crying out for more skilled workers and has been for years.

Note: Some reported statistics in this section use the terms "unskilled" and "semi-skilled" labour. These terms are outdated but still used in statistical reporting and in academic works based on these statistical sources. There is no such thing as an unskilled or semi-skilled labourer, and to use those terms on an ongoing basis further perpetuates the misunderstandings about the labour force and the skills needed to perform basic work safely, effectively and productively in any Australian workplace. They are used here only in the context of other research and evidence.

Arboriculture

Industry profile

Arborists care for trees and shrubs by pruning, shaping, applying fertilisers and insecticides, removing dead or decaying trees, and offering general tree care advice. The role is physically demanding, outdoors, and is considered a high-risk industry involving potentially dangerous work situations and equipment, as well as working at heights.

Consulting arborists typically have higher qualifications and prepare tree reports, assess hazards, evaluate trees for pollution removal and carbon storage, value amenity trees, assess impacts of nearby activities, and conduct visual inspections and surveys.

Arborists have been in national shortage for four straight years (Jobs and Skills Australia, 2023b), with horticultural trades workers (the ANSCO minor group with which arborists are grouped) projected to have an 8% employment growth over the ten years to 2034 (Jobs and Skills Australia, 2023b).

'There is a desperate shortage of qualified arborists in this country,' according to Meg Caffin, Chair of Arboriculture Australia (Wilson, 2024), with industry leaders estimating 20,000 qualified arborists and tree care workers will be required in the next decade (Mossman, 2022).

Given the level of risk involved and skill required, nationally endorsed skills standards play a crucial role in skilling the workforce. However, enrolments are not matching the strong demand.

While eight RTOs offer the Certificate II in Arboriculture, in the period from 2020 to 2022 there was only an average of 16 enrolments per year. In that period, no RTO had either of the diploma qualifications on scope and an average of three people enrolled in the advanced diploma and zero in the graduate diploma.

Qualification name	ANZSCO classification	No. of RTOs with qualification on scope (2024)	Average national enrolments (2020-2022)
Certificate II in Arboriculture	Horticultural Nursery Assistant	8	16
Advanced Diploma of Arboriculture	Arborist	0	3
Graduate Diploma of Arboriculture	Arborist	0	0

Key factors identified by participants

Fractured demand

The very low annual enrolment in the Certificate II in Arboriculture can be linked to a combination of regulatory requirements, and the funding available for comparable qualifications but not for the arboriculture qualification. However, this does not provide a significant identification of the underlying problem.

Much of the work undertaken by new employees involves tree pruning and ground-based vegetational work, often around powerlines. A key requirement for this work is the safe operation of chainsaws and mobile chippers/mulchers, both subject to regulation. Certificate II in ESI - Powerline Vegetation Control (UET20319) is a funded course that qualifies employees to use both pieces of equipment and is tailored to powerline work. The Certificate II in ESI is also widely known and recognised as the industry-standard qualification.

While the Certificate II in Arboriculture also contains the chainsaw and mulcher units, it is currently unfunded. Some employers did not see the value of funding their employees to undertake additional training such as the Certificate II in Arboriculture given that the Certificate II in ESI – Powerline Vegetation Control was the minimum regulatory requirement and the electricity industry provides significant work.

Promotion of career pathways

Research participants in the arboriculture industry believe that low awareness of career opportunities limits enrolments, particularly of young people. Industry bodies are attempting to engage young people with specifically designed events and targeted communications campaigns. For example, Arboriculture Australia is running a campaign named 'Arborists Don't Grow On Trees'.

'In order to address this shortage, we are running the campaign Arborists Don't Grow On Trees, and the Tomorrow's Tree Team initiative is an important part of that. Ultimately, we want students, while still in school, to know about Green Collar industries like arboriculture and consider a career in professional tree care.' – Meg Caffin, Chair of Arboriculture Australia (Wilson, 2024)

Encouraging post-school new entrants to the industry is also an important idea for consideration. All respondents agreed that a lack of awareness of the industry and career paths on offer is a major barrier to uptake. Arboriculture Australia Director James Maund noted that 'Not many people think about tree work as a career but it's a highly skilled job to be an arborist, it's just not many people know about it' (Rheinberger and Moss, 2022). This sentiment was echoed by a wide range of respondents.

One employer described how they try and explain a career pathway in the arboriculture industry as a sequence of steps that could lead to a desirable goal.

'And we say to our guys, there's a career path in the industry. You can start at the ground and you can work your way through. And so obviously you come and do your basic, you know, chainsaw stuff and

you'll go through and do your Certificate III and if you stay in an organisation, there is an opportunity for you to go and get a Diploma. And that Diploma means you come off the tools.' – Employer

Ultimately, employers need to be making compelling employment and training opportunities available to industry entrants to both attract them into the industry and support the viability of RTOs currently engaged in this sector with higher enrolment numbers.

Qualification design

While the Certificate II in Arboriculture is recognised as appropriate for school-based delivery, in practice RTOs reported that parents are concerned about their children undertaking perceived high-risk mandatory units that involve operating heavy machinery, e.g.: FWPHAR2206 Operate a mobile chipper/mulcher and AHCARB212 Operate and maintain stump grinding machines. Therefore, many don't support their children to undertake the Certificate II in Arboriculture. Schools are also reluctant to deliver what they perceive to be high-risk units.

'Schools and parents are not comfortable with their kids completing high-risk units of competency such as chainsaws, working at heights, et cetera.' – Focus group

RTOs have suggested two strategies to increase engagement at the school level:

- As most of the units are delivered as short courses, they could potentially be finished as electives once the student has entered full-time employment in the industry.

- The qualifications could be restructured and 'high-risk' units offered as electives.

Trainer shortages

A challenge for training providers to deliver the graduate diploma and advanced diploma is the difficulty in recruiting trainers.

The occupation associated with both the advanced and graduate diplomas of arboriculture is Senior Consulting Arborist. Trainers for these qualifications therefore need to be highly skilled and experienced. RTOs find it very difficult to recruit people of this level as (due to the industry shortage) their services are in high demand, and they can make very good incomes which are far greater than those they could make as trainers.

'There are not enough people on the ground that hold the qualification currently to be able to service the needs of the community to deliver the course. Trainers could go from earning $2,000 a day in industry to $200 a day.' – Focus group

The shortage of trainers leads to RTOs not having the qualifications on scope, leading to a lack of awareness of the qualifications among people who may wish to undertake them. In addition, some people operating at the level of a Senior Consulting Arborist will undertake tertiary qualifications through a university pathway.

Areas of opportunity:

- **Qualification design** – An opportunity to address the barriers to parental and school curriculum support of the Certificate II may involve reviewing the qualification and changing the 'high risk' units to electives. Identifying the optimal approach to unit delivery (as in workplace, post-school or via block delivery) may also assist. Potential for designing specialist 'VET in Schools qualifications' may be an option to consider.

- **Trainer shortages** – For some members of the industry, the highly physical aspects of the work, and in particular tree climbing, lead them to seek alternative roles in the later parts of their career. These can include working as a supervisor, manager, or consultant. Some stakeholders have suggested that these people represent a pool of potential trainers for the advanced and graduate diploma qualifications. Working with industry associations to promote these opportunities to their members may be an effective mechanism to raise awareness. As in many other sectors, RTOs have highlighted the challenges in qualifying experienced industry professionals as trainers under the current regulatory framework.

- **Career pathways, attraction and retention** – Encouraging new entrants, particularly young people, to the industry is crucial. As noted earlier, employers need to consider whether promoting opportunities to industry entrants may attract them into the industry, which will support the viability of RTOs currently engaged in this sector with higher enrolment numbers.

- **The existing school-based arboriculture programs that focus on tree care have shown promise in engaging young people in the industry.** There are many opportunities to support these with additional funding, and cross-promotion with other sectors under the banner of 'green collar' careers.

  For post-school new entrants, highlighting the physicality and outdoor focus of the industry via competitions may also be helpful. Arboriculture Australia runs regular tree climbing competitions to encourage its members' professional development and to highlight the appeal of the industry to potential new entrants. These types of events could leverage the public interest in climbing generated by the rock climbing events at the recent Olympics that involve similar skills.

  Concerns have been raised by some stakeholders, however, that the speed climbing components of these competitions attract people who use their work time to practice their speed climbing skills which can encourage unsafe behaviour, though this could be addressed via the messaging used in promoting the events.

Protected and production horticulture

Industry profile

Protected and production horticulture are key components of the diverse and evolving horticulture industry. Protected horticulture involves growing vegetables, fruits, berries, and plants in controlled environments like greenhouses or polytunnels and is the fastest-growing food-producing sector in Australia (Chavan et al., 2022). Production horticulture refers to large-scale crop production for processing and export, using both controlled and open environments.

There are an estimated 116,900 people employed in the horticulture industry (Roth and Kachenko, 2023), undertaking work in the areas of picking, packing, crop and nursery work. Over 11,800 workers hold qualifications in protected and production horticulture, however with increasing crop production and a growing reliance on seasonal workers, parts of the industry are facing significant skill shortages.

Qualification name	ANZSCO classification	No. of RTOs with qualification on scope (2024)	Average national enrolments (2020-2022)
Certificate II in Protected Horticulture	Horticultural Nursery Assistant	1	0
Certificate III in Protected Horticulture	Horticultural Nursery Assistant	1	0
Certificate IV in Protected Horticulture	Horticultural Supervisor or Specialist	1	3
Diploma of Production Horticulture	Horticultural Crop Growers nec	5	39

Key factors identified by participants

Fractured demand

Analysis of the horticulture peak season workforce reveals that 'unskilled labour' (individuals who have not received any training) constitutes the largest segment of the workforce at 40%, followed by 'semi-skilled workers' (those who have received some training) at 23% (Slatter, 2024).

The predominance of people referred to under the categories of 'unskilled' and 'semi-skilled' labour (63% combined) reflects the nature of horticultural operations during peak periods, particularly harvest seasons. These periods are characterised by labour-intensive tasks that primarily require manual dexterity and basic operational understanding rather than formal qualifications or extensive experience with training typically undertaken on the job. While seasonal labour demands vary across the country depending on crop requirements, often the opportunities last for as little as three months (Slatter, 2024).

The majority of workers classified in the data as 'unskilled' and 'semi-skilled' are working holiday makers who make up 44% of the entire horticulture industry labour force during peak seasons (Aither, 2024). Their high proportion is largely due to temporary and inconsistent work in the sector creating cyclical spikes in demand for labour that are unattractive for domestic workers looking for more secure positions (Aither, 2024).

Given the short periods of employment, the largely transient workforce, and the level of skills required, many employers found it difficult to justify the investment in training their less experienced staff in Certificate II in Protected Horticulture. On a purely functional level, the length of employment may not be sufficient to complete a Certificate II qualification.

Qualification design

While a high proportion of the workforce are seasonally employed, there is still a proportion of employees with the capacity to engage in formal qualifications. There are, however, different perspectives on what are the most useful qualifications for this sector.

Some research participants questioned the need for a specialised qualification in protected horticulture on the basis that much of the content overlapped with the Certificates II, III, and IV in horticulture and that protected horticulture could be encompassed with some adaption of the core units and/or electives.

'I don't see the need for it [separate qualifications], I really don't. Some of the important units should be just dragged across and put as potential electives for production horticulture. And that's it. And then it's up to the RTOs to write a syllabus accordingly because a lot of the skill sets are exactly the same.' – RTO

Research participants commented that advantages of this approach included that the certificates in horticulture are funded and that learners achieve a qualification that would be suitable for multiple careers in horticulture.

At the other end of the scale, the Diploma of Production Horticulture faces different challenges. This qualification is ideally suited for management level employees. In the first instance, the highly competitive nature of the production horticulture sector, and the intensity of time demands during peak seasons, make it difficult for participants to make time available to complete the reading and assignment work associated with a diploma level qualification.

Workforce characteristics

Like many other agricultural sectors, a significant proportion of people who would potentially benefit from a diploma level qualification in horticulture started their careers as lower skilled

workers and may not have undertaken any formal training or study in many years. Some also have limited English language skills.

'We were seeing some really high percentage of employees who were from non-English speaking backgrounds and may have low levels of English literacy. So, a Diploma of horticulture or protected or production horticulture probably wasn't appropriate for those learners.' – RTO

RTOs commented that often people in this situation are concerned about their ability to study at the level required and some may be reluctant to expose their limitations.

Approaches to training that influence supply and demand

The Australian horticulture sector is rapidly increasing the utilisation of advanced machinery. For around 40% of horticulture farms, this has been a response to chronic labour shortages and focuses on replacing low skilled roles (Downham and Litchfield, 2024).

This has increased the demand for higher skilled employees, for example the rapid development of urban vertical farming is generating new careers for technologists, project managers, maintenance workers and marketing and retail staff (Chavan et al., 2022). An influx of a younger, more technology-orientated generation may also address the aging of the workforce in the sector (Stirling, 2021).

There are concerns in the industry that these new developments in career opportunities in the sector have not been adequately communicated.

'Need to promote the courses better to show the range of technology and innovation used in the industry as it is often overshadowed by dairy farming/agriculture, etc.' – Industry body

This trend has affected the appeal of the Certificate IV in Protected Horticulture. Both employers and RTOs commented that people will often pursue tertiary level qualifications believing they will acquire more sophisticated skills and knowledge benefitting long-term career goals.

'There has been a cultural shift in the way education is approached. There is a bigger focus on university education and therefore less people are going through the VET system.' – Focus group

Research participants also commented that a proportion of people who are still determining their career path will choose to undertake an apprenticeship in horticulture as a way of 'keeping their options open'. Some of these will later specialise in protected horticulture.

Constraints in the RTO operating environment

While the trend towards advanced technology has many positive outcomes for the industry, it does pose a significant challenge to RTOs seeking to offer on-site protected horticulture training. Both RTOs and employers commented that the increasing use of specialised technology in protected horticulture is making it very difficult for RTOs to offer facilities for protected horticulture on site.

'When you start talking about protected horticulture, you're talking about, you know, multimillion-dollar facilities to do the training' – RTO

Some RTOs felt that Centres of Excellence were a potential solution with a single large facility with up-to-date equipment that supported research, industry consultation, and on-site training. This strategy has been proposed in a review conducted for Hort Innovation (Chavan et al., 2022).

Trainer shortages

More generally, the combination of the severe labour shortage in the protected horticulture industry, and the rapid changes in technology in the sector, have made it very difficult for RTOs to find suitably qualified trainers. In some instances, this has prevented RTOs from putting qualifications on scope.

'Many people would like to get involved but we are asking them to undertake some fairly extensive training before they can. It would be better if we had some way for them to come into the class and try it without onerous restrictions.' – RTO

As noted in other sectors, a challenge in sourcing trainers from industry is the requirement that trainers have experience relevant to the qualification they are training as well as qualification in training and assessment. While various strategies have been put in place to facilitate the use of industry professionals, RTOs are still challenged with implementation.

Areas of opportunity

- **Qualification review –** There is an opportunity to formally review of horticulture qualifications to provide essential industry knowledge in core and electives across all levels of VET qualifications within funding capability. This may involve the consolidation of some certificate levels to better meet industry needs for Australia's future.

- **Specialist RRR training design** – due to the transient nature of the horticulture workforce, skill sets allowing students to build towards a qualification may be more accessible for workers, particularly those located in regional, rural and remote locations across Australia.

- **Rethinking transience in the workforce** – An option may be to re-think the nature of transience and seek out seasonal opportunities within regions by offering skill sets across regional employment opportunities such as horticulture, hospitality, tourism, construction and ecosystem management.

- **Promoting higher level qualifications** – The environmental benefits of high-tech horticulture and the transferability of these skills could be better highlighted. Industry support to promote the benefits of this qualification including 'real life' stories of successful students may be particularly motivating.

- **Aiding upskilling and mature industry entrants** – Development of content resources and support mechanisms could help support entrants who may be less proficient in the technology used in learning and industry.

Nursery operations

Industry profile

The nursery industry plays a crucial role in the Australian horticultural landscape. Individuals working in this sector produce a variety of plants including ornamentals, vegetable seedlings, native plants, and trees for food production. There are around 4,100 people employed as Nurserypersons and a further 6,300 employed at lower skill levels, currently incorrectly referred to or classified as Nursery Hands within the ANZSCO.

The sector is highly fragmented, without any particularly large businesses dominating the market. However, large hardware companies are increasingly positioning themselves as go-to businesses for DIY and home gardening, competing with traditional smaller and widely dispersed plant nurseries. Despite the current market challenges, forecast projections indicate growth, with the industry expected to reach a gross value of $3.2 billion by 2030.

The nursery sector is also vulnerable to extreme weather events and climate change, which can hinder plant growth and consumer demand. Rising labour costs and regulatory compliance present further operational challenges for enterprises, contributing to the skills shortage. Promoting the nursery sector as a career choice is essential for attracting skilled workers and ensuring long-term sustainability. Emphasising practical training, along with increased promotion of qualification pathways and apprenticeships, may help address low enrolments and work to futureproof the industry.

There are three nursery operations qualifications experiencing low enrolment: Certificate II and IV in Nursery Operations and the Diploma of Nursery Management. Only two RTOs across Australia have these qualifications on scope, emphasising the need to better understand the relationship between supply and demand of training across the nursery sector.

Qualification name	ANZSCO classification	No. of RTOs with qualification on scope (2024)	Average national enrolments (2020-2022)
Certificate II in Nursery Operations	Horticultural Nursery Assistant	2	22
Certificate IV in Nursery Operations	Nurseryperson	1	2
Diploma of Nursery Management	Nurseryperson	1	0

Key factors identified by participants

Fractured demand

Most research participants felt the low enrolment nursery operations qualifications were not utilised by employers because of competition from alternative training options, such as informal, in-house training, or alternative VET funded qualifications or apprenticeships.

The development of training and assessment materials for nursery operations qualifications is a resource intensive process for RTOs, exacerbated by a shortage of trainers across the sector. RTOs do not always have the capacity to keep their course content updated with advancements in industry practices and technologies, leading to a disconnect between what is delivered and the skills required for the workplace.

For example, some employers have stated that the Certificate II in Nursery Operations is too niche in its content – at this level, a more general understanding of the horticulture industry is preferred. As such, enrolments in the Certificate II in Nursery Operations are often overshadowed by the broader Certificate II in Horticulture qualification because it indicates a wider perspective on the industry and a versatile and adaptable range of skills.

'Certificate II in Horticulture covers a lot of what's in nursery operations. People that do Certificate II in Horticulture are generally those who are wanting a bit of a taste of the industry and rather than streaming at that lower level, they just want an introduction to horticulture.' – RTO

Similar patterns occur at the diploma level. Some respondents felt the Diploma of Horticulture Management covered more advanced technical, management and business skills, whereas the Diploma of Nursery Management was perceived by employers as too specific and lacking in qualified trainers.

As a result, some respondents suggested a need to simplify qualification structure by merging some nursery operations and horticulture qualifications to create streams. This would avoid duplication of content, free up time and resources for RTOs and allow for specialisations once learners have aligned their knowledge to the wider industry needs.

Effective qualification design requires collaboration between all actors of the VET system, including industry bodies, RTOs, governing bodies, and employers to ensure practicality and alignment with labour market demands.

Different mechanisms are used to determine funding for qualifications and courses

Funding of training opportunities is seen as a significant factor influencing decision making. Unlike the Certificate II in Nursery Operations, the Certificate II in Horticulture is funded in some states under various agreements such as VET in Schools or Fee Free TAFE, furthering its competitive edge.

Additionally, competition within the nursery operations pathway means some qualifications are preferred over others. For example, the Certificate III in Nursery Operations, which is funded

under the Australian Apprenticeship scheme, is more accessible to both learners and employers due to the financial support and opportunity to earn a wage while working in the field. With learners drawn to the apprenticeship pathway, the Certificate II and IV in Nursery Operations are overshadowed.

Indeed, many respondents recognised that competencies required for the Certificate II and Certificate IV do not differ significantly from those offered in the Certificate III apprenticeship program. As quoted earlier in this research, there is confusion about where someone with the Certificate IV would fit in the workplace.

This overlap creates a perception that pursuing additional qualifications may not bring about substantial advantages in terms of employability or skill development, suggesting a need to clarify the nursery operations pathway and create a stronger distinction between the qualifications. This may help learners to see progression through the VET pathway.

Areas of opportunity

- **Qualification pathways** – Further exploration is required to clarify pathways from entry-level qualifications (e.g.: Certificate II) to higher levels (e.g.: Diploma) to ensure these pathways have distinct value. This would need to be considered alongside the current program of Qualification Reform.

- **Qualification review for entry level qualifications** – Review the horticultural programs to avoid duplication and confirm suitability for nursery occupations. Consideration should be given to a format that allows students to complete their first 2 years in horticulture, then specialise in their 3rd year. Specialisations could include landscaping, arboriculture, nursery operations, production or protected horticulture, turf, parks and gardens, etc.

- **Qualification review for higher level qualifications** – At the Certificate IV and Diploma level, there is an opportunity to establish core units focused on essential management skills with elective units tailored to specific fields.

Permaculture

Industry profile

Permaculture involves designing sustainable environments focusing on integrating low impact approaches that support the existing ecology. Permaculture addresses all aspects of human culture, not only food production but broader principles of design and labour utilisation, and draws on some of the oldest methods to farm food including those used by Indigenous cultures around the world.

Qualifications in permaculture range from Certificate I to IV through to the Diploma of Permaculture, though only the Diploma of Permaculture meets the low enrolment criteria of this project.

The Diploma in Permaculture is no longer on scope in Australia. It should be noted that recent changes to the Diploma of Permaculture, endorsed in 2023, have reduced core units to four, and identified a broader range of electives (as well as retaining two open electives) to provide opportunities across a larger range of employment opportunities. The effect of these changes on enrolments is unlikely to be known for two more years.

Qualification name	ANZSCO classification	No. of RTOs with qualification on scope (2024)	Average national enrolments (2020-2022)
Diploma of Permaculture	Broadacre Crop Growers nec	0	11

Key Factors identified by participants

Information flow

Permaculture's holistic philosophy presents a unique challenge within Australia's vocational education framework. Unlike traditional disciplines that fit neatly within specific training packages, permaculture transcends conventional boundaries, encompassing principles that extend beyond agriculture into areas such as community development, ecological design, and sustainable systems thinking.

This makes it particularly challenging to contain permaculture solely within the *AHC Agriculture, Horticulture and Conservation Training Package*. The philosophy's expansive nature suggests a need for its principles to be woven throughout various disciplines, reflecting its role as a design framework applicable across multiple sectors.

'Permaculture is often perceived narrowly as merely 'gardening'. There is a need to shift the narrative from gardening to 'ecological-based systems design' that encompasses a broader scope including community

development and bioregional food security. The field of permaculture, while broad in applicability, suffers from a niche market image primarily related to gardening, which can be limiting.'' – Employer

Research participants identified several issues around the delivery of the diploma that could be limiting its use, including failing to leverage the potential to tailor the qualification via the integration of units from other qualifications.

'I don't think they (RTOs) realise that the diploma is still a viable qualification and that it can be you know, combined with other units to make a really quite extraordinary job for the future, if you like. So, I think that one of the issues is awareness raising.' – Focus group

RTOs also identified the absence of funding as limiting the appeal of the qualification.

'And the other thing, obviously, which is the lack of state funding like these courses used to be on the funded list and now they're not. RTOs would have these things running if they could get funding so that they can get enrolments.' – Focus group

There is a circular predicament regarding qualified trainers – to teach the diploma, one must possess both the diploma and a TAE qualification, yet the qualification's limited availability creates a scarcity of eligible instructors. This was mentioned by multiple RTOs.

'It's not hard to find any good permaculture teachers but finding ones that also have the updated TAE is trickier. If no RTOs are out there, offering the diploma, what's the point of keeping your qualifications up to date?' – Employer

Fractured demand

Another significant challenge is competition from the internationally recognised Permaculture Design Course (PDC). This non-accredited alternative has gained considerable traction within Australia, offering several advantages over the formal VET qualification. Its shorter duration, online accessibility, and international recognition make it an attractive option for many prospective students.

The PDC's popularity derives from the perception of many practitioners who view permaculture not as a discrete occupation but as a philosophical framework or mindset. This perspective often leads individuals to seek knowledge through channels that emphasise practical application and philosophical understanding over formal accreditation.

'There is an emerging interest from companies for permaculture training as part of professional development to meet sustainability goals. This is not gardening related, more about sustainable living and working practices.' – Industry body

Areas of Opportunity

- **Integration with qualifications in other sectors** – There is opportunity to develop an integration strategy allowing permaculture units to be embedded within other qualifications across various training packages, perhaps utilising modular qualification design. This approach would provide permaculture streaming options through other funded pathways, such as horticulture. This approach acknowledges permaculture's cross-disciplinary nature while creating multiple pathways to formal recognition of permaculture skills.

- **Recognition of non-accredited qualifications** – Opportunity to establish a transitional recognition of prior learning pathway that acknowledges prior learning from PDC completion, potentially offering accelerated progression through the diploma. This would help bridge the gap between non-accredited and formal qualifications while maintaining the integrity of the VET framework.

Landscaping

Industry profile

Landscaping firms specialise in crafting outdoor spaces. These companies transform gardens and grounds through expert planting schemes, earthworks, construction of stone walls and pathways, installation of proper drainage solutions, sophisticated irrigation systems and architectural elements.

The sector comprises 17,722 enterprises generating $6.1bn in turnover. The vast majority of firms are small, independent contractors averaging two employees (Kelly, 2024). Modest industry growth of 1.3% annually is forecast over the coming years (Kelly, 2024), which should have a positive impact on VET enrolments.

Many small firms are involved in residential landscape design and maintenance with limited involvement in the design and construction of larger permanent fixtures. The licensing requirements to undertake landscape construction projects, e.g.: building retaining walls, vary significantly between states.

The qualifications studied as part of this project are: Certificate IV in Landscape Construction Management, Certificate IV in Landscape Design, and Diploma of Landscape Construction Management.

All three of these qualifications were revised in 2022 with one of the objectives being to more accurately reflect the current job roles of the industry (Australian Industry and Skills Committee, 2022). They are on scope at a number of RTOs.

Qualification name	ANZSCO classification	No. of RTOs with qualification on scope (2024)	Average national enrolments (2020-2022)
Certificate IV in Landscape Construction Management	Landscape Gardener	2	0
Certificate IV in Landscape Design	Landscape Gardener	1	0
Diploma of Landscape Construction Management	Landscape Gardener	0	0

Key factors identified by participants

Qualification design

The recent revision of landscape management qualifications has garnered initial positive feedback from RTOs, though it remains early in their implementation phase.

The 2022 updates sought to align qualifications more closely with contemporary industry roles, yet employer perspectives reveal persistent concerns regarding the Certificate IV and Diploma in Landscape Construction Management, particularly regarding the depth of project management content. Some employers who contributed to this project contend that skills typically acquired through the Certificate IV largely duplicate those gained through in-house training or the Certificate III, suggesting a need for enhanced project management focus at higher qualification levels.

These perceptions may be erroneous and stem from limited awareness of the 2022 revisions and could shift as understanding of the updated qualifications grows. Nevertheless, they emphasise the importance of developing targeted course materials that address project management competencies.

Additionally, RTOs have identified potential overlap between the Diploma of Landscape Construction Management and the Diploma of Landscape Design, suggesting this duplication might fragment enrolment numbers across both qualifications. This concern may be addressed through careful development of distinctive course materials that clearly differentiate the pathways and their respective career outcomes.

Separating the Certificate IV in Landscape Design has created some controversy with one interviewee advocating to have the course moved from AHC to the creative arts. RTO feedback differed, pointing to online non-accredited landscape design courses internationally and in Australia that were gaining market share. However, there was concern that the qualification may not meet industry needs.

'It's something that you do usually in your 40s or 50s, after you've spent 20 years working across the breadth of the industry. It's from experience. It's not something that can be taught in a six, 12 month or even 24-month qualification.' – RTO

The landscape sector demonstrates significant potential for growth, particularly in response to shifts towards sustainable infrastructure development. The expansion of green infrastructure initiatives, exemplified by programs such as the New South Wales Government Greening our City Program targeting 40% urban canopy coverage by 2036 (New South Wales Government, 2025), may increase demand for sophisticated landscape design and construction expertise at Certificate IV level and above.

Workforce characteristics

The landscape industry presents challenging demographic characteristics. The workforce is highly casualised, and small business practitioners often have English as their second language and may

not have any existing qualifications in landscaping. ABS census data indicates that 43% of people in the landscaping sector either do not hold any relevant qualifications or have only up to Certificate II level (Australian Bureau of Statistics, 2021).

This demographic cohort faces challenges regarding LLN skills, especially when engaging with sophisticated content in higher-level qualifications such as the Certificate IV in Landscape Construction Management. This can prove a deterrent to enrolment, indicating a need for enhanced support mechanisms.

A further challenge involves retention of skilled workers, particularly following apprenticeship completion. The industry experiences considerable attrition to adjacent sectors, notably construction, where remuneration packages prove more attractive. This pattern is particularly evident at the Diploma of Landscape Construction Management level, where skilled practitioners often transition away from landscaping entirely.

Areas of opportunity

- **Promotion of the updated qualifications**: Collaboration with industry bodies and other relevant organisations to promote the revised landscaping qualifications and how they benefit industry could improve perceptions of the qualifications and their uptake.

- **Seek additional LLN support**: In association with RTOs, ways could be sought to support LLN cohorts in completing the qualifications.

Irrigation

Industry profile

Irrigation is the application of controlled amounts of water to plants at needed intervals, helping to grow crops, maintain landscapes, and revegetate disturbed soils in dry areas and during periods of less than average rainfall. This is achieved through use of smart technologies that can save water, keep a check on the weather, monitor evaporation rates and soil quality; and operate sprinklers and water scheduling systems. Irrigation is the largest use of water in Australia and the rest of the world, comprising about 70% of total water use (Zhang et al., 2022).

Two-thirds of commercial irrigation in Australia occurs in the Murray–Darling Basin which faces major challenges in the form of climate change, return of water to the environment, and an increasingly open water market. New irrigation development is occurring in Tasmania and there are prospects for developments in northern Australia, and along the east coast.

Irrigation specialists design and install irrigation systems. In addition, they inspect, audit, adjust and repair the systems to ensure they perform at maximum efficiency and conserve water. They work in residential and commercial environments as well as for municipalities and in sports turf management.

According to the 2023 Occupation Shortage List, the Certificate IV in Irrigation Management and Diploma of Irrigation Design are in skills shortage within Australia (Jobs and Skills Australia, 2023b).

Qualification name	ANZSCO classification	No. of RTOs with qualification on scope (2024)	Average national enrolments (2020-2022)
Certificate II in Irrigation	Irrigation Assistant	0	0
Certificate IV in Irrigation Management	Irrigation Designer	2	38
Diploma of Irrigation Design	Agricultural Engineer	0	1

Key factors identified by participants

Workforce challenges

The differences in licensing requirements between states (such as being certified in WA rather than licensed) limit free labour flow across Australia, underscoring the need for harmonisation or at least better alignment of training and certification standards across regions.

However, another issue is the perceived lack of regulation in the industry as articulated by research participants. Respondents believe that without clear regulation and enforcement there is little need for irrigators to prove their competency, resulting in low demand for qualifications.

'Nobody checks and polices that requirement which is something that should be done.' – Employer

Employers have called for further regulation within the industry to support consistency and competency which qualifications could play a key role in supporting.

'You know the VBA, the Victorian Building Authority that we've got in Victoria that looks after the building industry and the plumbing industry, we need an industry watchdog.' – Employer

'The industry needs to have the formal rules and regulations, just like electricians and plumbers and builders do.' – Employer

Fractured demand

Challenges of attraction and retention within the sector create barriers for employers and RTOs alike who face high costs when training individuals, particularly in regional, rural and remote areas, where many irrigation businesses reside.

While large RTOs such as Irrigation Australia can offer training services across mainland Australia, it can still be costly for employers to send students to major cities to attend block training.

Many businesses offering specialised services in the irrigation sector are small and geographically dispersed, making it difficult for RTOs to deliver training profitably. This results in limited access to tailored training programs, particularly in regional, rural and remote areas.

Large industry suppliers employ significant numbers of people with irrigation skills and often opt for in-house training solutions for their staff that focus on skills and knowledge relevant to selling and supporting the organisation's brand and equipment. This can include tailoring training to the design and specifications of sophisticated irrigation systems and specific types of agriculture. This highly focused approach can lead to a perception that the Certificate IV in Irrigation Management lacks relevance.

Contextualisation to local community needs is deemed as an important aspect of training although it is not currently included in existing qualifications.

Promotion of career pathways

Irrigation is not a well-recognised career within Australia. Despite high demand for skilled workers and the feature of the Certificate IV and Diploma of Irrigation on the 2023 Occupation Shortage List, respondents noted that employers are still struggling to find workers.

'Employers are screaming out for irrigation people. If you do a Seek search in WA and use irrigation as your keyword, you'll probably get 100 hits.' – RTO

Some industry representatives are calling for an apprenticeship program to promote irrigation careers in high schools and provide a clear career pathway into the industry.

Industry feedback indicated that any potential apprenticeship would need to be adaptable to the environmental needs of the local area such as soil type and depth.

'We're trying to get subject matter together to get an apprenticeship running with a real urban mix, so that the apprenticeship can be matched to the local environment. Because what we do in Sydney is completely different from what they do in Western Australia. We work on 10 centimetres of soil, whereas they have metres of it.' – Employer

The implementation of a recognised career map together with a formal VET qualification and training standard may assist to raise community awareness of irrigation as a reputable career choice for young Australians.

Qualification design

The research revealed that industry training choices are largely influenced by qualification design and course content. Demand for the Certificate II in Irrigation is considered low, if not negligible. Industry has expressed concerns about the qualification structure and the proportion of relevant units.

'People want a skill set not a whole qualification. There should be funding to support students to study skill sets.' – Focus group

'So, the qualification's completely undeliverable in an urban context due to the structure of the units. Without the numbers of students you would get with an urban relevant qualification, it's difficult to get enough participants to make it profitable to deliver.' – RTO

RTOs have reported that students often receive enough irrigation knowledge through other qualifications such as agriculture, horticulture, sports turf management and viticulture.

'At least four students who we've had go through horticulture and landscaping, have then gone on to work in irrigation, and then gone chasing a Certificate III in Irrigation.' – RTO

There are only two RTOs delivering the Certificate IV in Irrigation in Australia, however many more RTOs deliver irrigation units embedded into other qualifications. At present, this method of delivery is deemed effective for entry level workers. While employers are seeking highly skilled workers for their irrigation companies, RTOs appear to feel the delivery of selected units is sufficient for the general workforce who complete some irrigation activities as part of their work.

Where students love irrigation and wish to pursue it as a standalone career, they are often referred to the Irrigation Peak Body for training. This organisation appears to have cornered the market by delivering the Certificate III in Irrigation Technology, together with the [Certified Irrigation Designer](#) (CID) non-accredited course which is seen to be the international technical pinnacle of the Irrigation industry.

'There's a Certified Irrigation Design qualification out there and that's seen as the technical pinnacle of the industry.' – Industry body

The CID is delivered across most states (except Tasmania) with innovative delivery methods that support employer and labour workforce needs through a combination of online and block training.

The popularity of the CID also overshadows the Diploma of Irrigation Design. Industry has indicated that the Diploma of Irrigation Design content may be outdated, with a lack of clarity regarding its value proposition. Although there may be an appetite for the Diploma of Irrigation if funding were available to make it more affordable for employers.

'If the Diploma was funded it might be a different story, but it would cost a lot to complete and the CID certificate is much more desirable and familiar to the industry.' – Industry body

Areas of opportunity

- **Apprenticeship program** – There is interest within the irrigation sector to create a structured apprenticeship program to provide young people with an opportunity to attain a nationally recognised trade certification. Exploration would be required to determine whether this is a viable option and to promote the potential apprenticeship program as a vocational training pathway within the high school system, raising awareness of irrigation as a career of choice.

- **Qualification design and delivery** – Qualification content could be reviewed to align with industry needs in urban and localised rural environments nationally and provide contextualisation for the different landscapes in Australia. This may include enhanced flexibility in qualification design through increased use of electives or skill sets, allowing for better customisation to learner, employer and RTO needs.

Pest management

Industry profile

Pest Controllers apply pest management techniques to control invertebrate and insect pests inside and outside domestic, commercial and industrial premises. There are more than 80 vertebrate pest animal species established in Australia. Their impact on our environment, primary industries, and social amenity costs more than $1 billion nationally per year (Department of Primary Industries and Regions, 2021). Landholders need to manage pest animals on their land for biosecurity and productivity reasons, but the control requirements vary according to each species and its location, making it a complex skill area to train.

The focus of this research is pest management in rural environments, involving the shooting and trapping of vertebrate animals such as rabbits, foxes, wild dogs and non-vertebrate animals, such as snakes. Pest management in rural environments also extends to the use of chemicals to control insects and weeds. Legislation applies to the purchase, sale, licensing, use, transport, storage, disposal, workplace safety and environmental impact of rural chemicals.

According to the 2023 Occupation Shortage List, no skills shortage has been identified for the pest management qualifications represented in this report (Jobs and Skills Australia, 2023b).

Qualification name	ANZSCO classification	No. of RTOs with qualification on scope (2024)	Average national enrolments (2020-2022)
Certificate III in Rural and Environmental Pest Management	Pest Control Technician	3	18
Certificate IV in Pest Management	Pest Control Technician	0	0
Diploma of Pest Management	Pest Control Technician	0	0

Key factors identified by participants

Workforce challenges

While there is some demand for pest management qualifications within the industry, industry representatives have reported a lack of jobs for skilled workers. RTOs have indicated that there is demand for Certificate III in Rural and Environmental Pest Management, however demand is low for Certificate IV and Diploma of Pest Management. As a result, they are not on scope anywhere in Australia.

The pest management industry is highly regulated with varying governing rules across each state determining how pest controllers are required by law to control pests in rural areas. Additionally, there are licencing requirements for firearms and chemical use in Australia to help mitigate risks within the industry. Many within the industry feel that the regulatory requirements such as a chemical user licence and/or a firearms licence is sufficient for the job role. However, there is a growing concern among industry professionals regarding the health and safety of individuals working with pest management chemicals (Morris and Norman, 2024), which results in regular updating of chemical handling standards with potential implications for updating VET training.

Supply factors in RRR areas

Given the nature of rural pest management, many students who are interested in completing these qualifications are living in RRR areas across Australia and may have limited access to formal qualification pathways.

Crucially, some cohorts such as First Nations communities, cattle stations and ranger groups may have a high need for pest management skills and expertise yet are more likely to experience issues with accessing training and qualifications. Many RTOs offer the Agricultural Chemical Skill Set in place of a full VET qualification.

Indeed, it has been noted that for First Nations communities, low LLN skills can create a barrier to entry to formal qualifications and training. For priority cohorts, this often requires contextualised and practical training delivery to make training more accessible and time appropriate for the learner/employer than a full qualification.

Qualification design

There is low demand for Certificate III in Rural and Environmental Pest Management as well as the Certificate IV and Diploma of Pest Management qualifications. While some research participants indicated that the qualifications don't meet industry needs due to the selection of core and elective units, the qualifications are also perceived as difficult to deliver due to their niche nature and high-risk components.

'It's a high-risk area and it's difficult to get teachers when units involve firearms training.' – RTO

As a result, RTOs are often choosing to deliver units or skill sets to bridge skills gaps/shortages and quickly skill employees to work safely. This is of value to RTOs covering regional, rural and remote areas, as formal qualification structures are difficult to deliver and engage in due to a multitude of interconnected factors. As quoted earlier in this research, employers are likely to prioritise training in high-risk tasks like use of chemicals. In this instance, skill sets were often preferred due to ease of accessibility and lower time and cost commitment for employers.

Animal welfare concerns

Stakeholder interviews revealed a desire for quality VET delivery with a focus on ethical pest management to increase industry knowledge of ethical and humane pest management principals across Australia.

'I've got first-hand experiences of, you know, there's breaches that aren't being reported about, you know, animal welfare issues.' – Employer

Respondents who reported a strong ethics focus feel that formal qualification and training through the VET system is important to attract and retain skilled workers.

Promotion of career pathways

Career pathways are not always clear or well-known to young people. Pest management is not a formal trade pathway, therefore is not necessarily identified as a career pathway in schools and can be unclear even once working in the industry. While the Certificate III in Rural and Environmental Pest Management provides a clear job outcome, this is not the case for Certificate IV and the Diploma of Pest Management.

'So, a lot of the people that come through and I've interviewed and are saying, okay, so I've got a job with you. What's my career?' – Focus group

However, industry professionals feel that increasing the knowledge, skills and ethics standards in the industry may help to attract young people and contribute positively to pest management being recognised as a valuable career pathway, promoting improved retention.

'As for the Certificate IV and the Diploma, I'm lucky to get one inquiry a year. I don't know anyone delivering it… those qualifications are a natural stepping stone for career development… I see it as a need but it is not available.' – RTO

The implementation of a recognised career map together with formal VET qualifications and training standards (outside of the existing licencing standard stipulated by the Department of Health) may assist to raise community perceptions of quality, professionalism and ethics when it comes to the extermination of vertebrate and non-vertebrate animals across rural environments in Australia. This may also assist to increase interest from young people to join the pest management industry.

Areas of opportunity

- **Qualification pathways** – Qualification, skill set and upskilling options could be reconsidered to better meet needs. This may lead to retaining the qualification pathway in the Certificate III in Rural and Environmental Pest Management to continue to address environmental and ethical pest management considerations flagged by the industry, and the Diploma of Pest Management to provide skills for pest management professionals to complete strategic report writing to meet regulatory land management compliance requirements. With the Diploma of Pest Management not on scope, this opportunity is not currently available to the Australian workforce.

- **Innovative learning models** – Skill sets could be used to provide a flexible modular approach for learners with low LLN or regional, rural or remote access barriers to obtain the necessary skills required to meet immediate industry needs, while encouraging progression to full pest management qualifications. Innovative learning models, including online and blended learning delivery models and block training, could also be considered.

Aquaculture

Industry profile

Aquaculture refers to the breeding, rearing, and harvesting of fish, shellfish, aquatic plants, and other organisms across a variety of offshore, coastal and inland facilities. The aquaculture sector constitutes 60% of Australia's seafood production value and is experiencing rapid growth (Department of Agriculture, Fisheries and Forestry 2024). Advances in biosecurity, disease management, and technological processes are enhancing yields while ensuring environmentally sustainable development. Improved production and management techniques could make aquaculture one of the most resource-efficient primary production sectors (Fisheries Research and Development Corporation, 2023).

The aquaculture sector employs around 5,385 people, of which 1,650 are Aquaculture Farmers and 750 are Aquaculture Workers (Australian Bureau of Statistics, 2024). The Certificates II and III in Aquaculture, intended for aquaculture workers, have moderate enrolment levels each year, but the Certificate IV in Aquaculture (for aquaculture workers) and Diploma of Aquaculture (for aquaculture farmers) both had low enrolments between 2020-22.

Qualification name	ANZSCO classification	RTOs with qualification on scope	Average national enrolments (2020-2022)
Certificate IV in Aquaculture	Aquaculture Worker	1	11
Diploma of Aquaculture	Aquaculture Farmer	4	16

Key factors identified by participants

Supply factors in RRR areas

The majority of aquaculture businesses across Australia are largely based in regional areas (Curtotti et al., 2023). VET delivery plays an important role in developing the skills and expertise

of individuals living in regional, rural and remote (RRR) areas, however ensuring adequate supply and demand of VET training can be challenging for training providers and enterprises alike (Jobs and Skills Australia, 2023a). Many of the supply and demand challenges experienced by stakeholders across the aquaculture sector can be attributed to RRR structural barriers.

Additional expenses associated with regional delivery of training, such as greater allocation of cost associated with travelling to a remote region or competitive salary packages to attract trainers, often absorb a higher proportion of assigned government funding, meaning that regional RTOs often have less resources to put towards delivery, in comparison to metro RTOs (Ferrier, Dumbrell and Burke, 2008).

'Back in the good old days there was a lot more uptake in the aquaculture certificates. And then there was a restructure in the system in how training was funded, how training was delivered. I believe there was a dip in capacity and capability to deliver, certainly in North Queensland.' – Industry body

Funding, especially in thin markets, not only affects what training package products are offered, how they are delivered and where, but also if training is offered at all – regardless of local demand (see: VET governance, funding and regulation). Indeed, despite government and industry strategies nationally, the Certificate IV in Aquaculture and Diploma of Aquaculture are only on scope in four RTOs across Queensland, Tasmania, and Western Australia.

Different mechanisms are used to determine funding for qualifications and courses

The complexities of state versus federal funding complicate the delivery of appropriate qualifications, creating barriers to the operational capabilities of RTOs. Research participants across the aquaculture sector noted significant challenges in establishing interstate delivery of aquaculture qualifications. There are concerns regarding funding allocations between TAFE and private RTOs and how this competition affects the availability of essential qualifications, such as the Certificate IV in Aquaculture.

'There was no government support that any other RTO could access. It took us over a year to allow any interstate RTO to be able to get those subsidies.' – RTO

The complex legislative requirements and subsidy arrangements between states inhibits the capability of private RTOs to deliver financially viable training interstate. As a result, RTOs across Australia often duplicate resources and processes, as national alignment and collaboration is restrained by bureaucratic red tape. Many RTOs are already time-poor, so RTO partnerships and resource sharing are essential for the aquaculture sector to have the capacity and capability to grow (National Centre for Vocational Education Research, 2017).

'Crazy. Each state creates their own resources. And you can use the word crazy. Yes, they need to be tailored for different species in different localities. We've got tropical species but they're common across northern Australia. So, we could share the same resources across Queensland, Western Australia and the Northern Territory. So, it's ridiculous that we'd

all try and develop those resources when sharing would make much more financial sense for everybody.' – RTO

'We believe that demand will grow if the capability to deliver can grow because in a thin market environment with great geographic distribution of the sector, growth can happen if there is collaboration across the states between providers of training.' – Industry body

Trainer shortages

Recruiting and attracting trainers to the aquaculture sector was also a key challenge noted by research participants from RTOs. Training providers, particularly in the Northern Territory and Queensland, noted difficulties in sourcing enough trainers to deliver aquaculture qualifications, citing geographical and financial barriers as inhibitors to recruitment.

'The lack of trainers its purely geographical. It's the lack of market which means that there's not that many trainers employed. So really at the moment with the business we've got, we can barely support me as a trainer.' – RTO

Competition from other industries or cities where salary rates and professional development opportunities may be higher means that RTOs in RRR areas often struggle to offer attractive salary packages with the funding they have been allocated.

Constraints in the RTO operating environment

With many aquaculture farms located a high distance from the nearest RTO, training providers often struggle to maintain delivery of aquaculture qualifications due to fluctuating demand from learners. For employers, the distance often means formal training is inflexible to work schedules and on-site needs.

'I was happy enough with the modules, the issue that we have is firstly the training of being undertaken three hours away from site. And then also it was being undertaken in such a fashion that if I signed up a few staff members on the same day to do the training, then I've got no one left on site. And we then have to get them down to the RTO. We have to accommodate; we have to provide meals. It all becomes quite expensive.' – Employer

Some enterprises have indicated that financial support for training is insufficient, particularly for businesses located in RRR areas who can face up to a 9-hour commute to the nearest delivery location, incurring additional costs associated with travel, overnight accommodation and overtime pay.

'Typically, with all the farms, you know, they're typically in quite remote locations. And you know, it's sort of difficult to find the time and the resources to get the people to those larger cities, to do that sort of training.' – Employer

Without adequate financial compensation or the ability to free up time for staff, employers may not have the capacity to enrol staff in training. Consequently, staff often acquire job-specific skills through practical experience and targeted in-house training rather than relying on formal qualifications as it is seen to be more cost-effective and flexible to the needs of the workplace.

Areas of opportunity

- **National training material development** – There is an opportunity to develop training materials across providers to support regional skills development. Training and assessment materials cannot be purchased off-the-shelf and must be developed to industry and legislative requirements, by people in the industry with subject matter expertise. A project to support First Nations delivery is currently being investigated as part of the [Community-Based Aquaculture Training Tools Project](#) (Skills Insight, 2025).

- **Adaptive and creative approaches to training delivery** – Due to expansion of sea, river and land-based aquaculture, there is the opportunity for development of new approaches to meet the changing needs of aquaculture, particularly the use of immersive and other digital technologies.

Seafood post-harvest

Industry profile

The seafood post-harvest sector represents both wild-catch and aquaculture businesses in Australia. Individuals working in the post-harvest industry are classified by the ANZSCO as Aquaculture Workers or Farmers, however, they utilise a different set of skills to those in the aquaculture sector. Typical knowledge and skills include skinning, filleting, shelling, boning or freezing of seafood to be processed for manufacturing.

Australia's seafood industry is facing increasing pressures to meet biosecurity standards due to the effects of climate change, labour dynamic challenges (such as an ageing workforce and skills and labour shortages), and evolving compliance requirements (Seafood Industry Australia, 2024). As a result, it is crucial to invest in specialised skills and training to ensure that individuals working in the seafood post-harvest sector are equipped to handle the complexities of seafood preparation, packaging, and storage across various environments, from aquaculture farms to retail markets.

There are three accredited VET qualifications in the seafood post-harvest sector with low enrolment: Certificate II in Seafood Post Harvest Operations, Certificate III in Seafood Post Harvest Operations, and Certificate IV in Seafood Post Harvest Operations. Only two RTOs currently have these qualifications on scope and delivery varies by state.

Qualification name	ANZSCO classification	No. of RTOs with qualification on scope (2024)	Average national enrolments (2020-2022)
Certificate II in Seafood Post Harvest Operations	Aquaculture Worker	2	0
Certificate III in Seafood Post Harvest Operations	Aquaculture Worker	2	21
Certificate IV in Seafood Post Harvest Operations	Aquaculture Farmer	2	10

Key factors identified by participants

Constraints in the RTO operating environment

There are relatively few providers of VET training for seafood post-harvest. The two RTOs with qualifications on scope work in isolation from each other, with one focusing on face-to-face training in Tasmania, and the other on blended delivery across all states and territories. Although

these RTOs may have a qualification on scope, it does not mean they are consistently delivering the qualification (Nankervis, 2021). This is illustrated by the zero enrolments across the Certificate II in Seafood Post-Harvest Operations between 2020-2022.

In New South Wales and Tasmania the Certificate III and IV in Seafood Post-Harvest Operations are subsidised by the government. These state-based funding variations can create inequalities in training opportunities, as RTOs based in states without funding cannot afford to deliver the qualifications.

Stakeholder interviews revealed that many enterprises across the seafood post-harvest sector have a desire to enrol staff in formal qualifications, as they perceive the importance of learning new and innovative practices to uplift the skills and value of the sector (through quality of the produce, enhancing the yield and reducing waste), but do not have capacity to do so because of a lack of RTOs.

An absence of funding can impact the visibility of qualifications, which not only directly affects the number of enrolments but can indirectly impact the sector's overall health, contributing to a continuous cycle of underrepresentation and low enrolment in formal training pathways. With the seafood processing industry rapidly automating, using advanced equipment to become more efficient, there is a need to ensure workers are skilled to maintain a strong workforce (Pacific Labour Scheme, 2021).

The Tasmanian seafood landscape illustrates how enabling both RTO and employer capacity and capability, through effective collaboration and alignment between government and industry, can uplift the entire sector. Tasmania is recognised as the most valuable seafood industry in Australia and has one of the highest labour retention rates and best workforce relations in Australia. This strong market has been fuelled by a funded education and training system, in turn driving opportunities for innovation and growth (Department of State Growth, 2019).

Workforce characteristics

With the exception of some employers operating within Tasmania, visibility of and access to formal training opportunities is limited. With 76% of workers having no post-school qualifications, the seafood processing industry has one of the highest proportions of workers in this category (Pacific Labour Scheme, 2021). Enterprises across the seafood post-harvest sector, often rely on in-house and on the job training to meet their needs. In-house training can provide specific skills needed for the business, but without sector-wide skills obtained through formal qualification pathways it can be difficult for those working in the industry to reach their full potential including visualising the broader career opportunities available across the sector.

Some respondents emphasised the challenge of recruiting staff to the sector, noting difficulties in attracting young people who may be unaware of opportunities within seafood post-harvest (Miller, Ellis and Petherick, 2013). As a result, the seafood post-harvest sector relies largely on a migrant workforce.

'It's very hard for us to now find people that are interested in working in our industry other than migrants or people on visas that are on working holiday visas. The problem with that is if it's a working holiday visa, it's usually a short two- or three-year period, unless they decide to settle in Australia through marriage or whatever. Then by the time you train them

up and they become proficient in what they're doing, they're gone.' – Employer

Relevant work visa conditions often require availability of workplace-based training as a prerequisite for approval to employ workers from overseas. Given the costs associated with these visas, this can be a significant barrier for employers seeking formal training for their staff, as non-accredited training can be more flexible to meet the specific workplace needs, with delivery at the time and in the place needed.

The challenge of formally upskilling staff is compounded by an ageing workforce, placing the sector at risk of skill and knowledge loss through a retiring labour market. Many individuals in the industry view fish filleting as an artform and historically this skill has been passed down through in-house learning. While the sector continues to evolve with technological advancements and innovation, fish filleting remains crucial in many businesses. For the sector to retain this skill a commitment to structured and accessible training to promote knowledge transfer between younger and older workers is needed. However, research participants have cited challenges with ensuring such skills and knowledge are formally recognised.

'We're getting to the end of our careers. We just want to get through. Yeah, and that's why we need young people to try and get us through what's happening at the moment. The world's changing around us, but a Gen Xer doesn't change. A Gen Xer just knows one thing. That's how I'm doing it.' – Employer

To support the formalisation of skills and training across the seafood post-harvest sector, some respondents emphasised the need for new, innovative training models that align with the needs and labour dynamics of the sector and address the barriers contributing to low enrolment in seafood post-harvest qualifications.

Areas of opportunity

- **Increased use of skill sets** – Increased use of skill sets in 'advanced knife skills' could not only help combat potential knowledge loss from an ageing workforce but also allow migrant workers to engage in formal training while remaining compliant with visa conditions.

- **Development of apprenticeship programs** – To address recruitment challenges and attraction to the sector, stakeholders are considering the benefit of an apprenticeship or traineeship to generate interest and demonstrate career opportunities in the seafood industry. An apprenticeship could facilitate attraction and retention of young people to the sector – a notable gap in the labour market – and could help increase the visibility of seafood post-harvest, particularly in areas where the seafood industry is overshadowed by other trades and professions. Opportunities to skill the seafood sector through similar initiatives and approaches such as the meat processing sector's Butcher Apprenticeship program should be considered.

Fishing operations

Industry profile

The fishing operations sector sits within the broader wild-catch industry, which is recognised as a vital part of Australia's food chain. Australia holds the third largest exclusive economic zone in the world – the Australian Fishing Zone. Larger than the area of mainland Australia, the Australian Fishing Zone is mainly comprised of Commonwealth managed fisheries. However, state and territory jurisdictions manage coastal waters where most economic activity occurs (Food and Agriculture Organisation of the United Nations, 2024).

In recent years, many commercial fisheries have experienced challenges due to prescriptive regulations that inhibit innovation and the implementation of more efficient practices (Productivity Commission, 2016). Consequently, the industry faces difficulties balancing regulations with evolving sustainability concerns and shifts in fishing practices driven by market dynamics and technological advancements.

The fishing operations qualifications cover a range of skills needed to work as a deck hand in the fishing industry, such as maintaining seafood catch, repairing netting, and performing other deckhand duties. The sector relies on the Seafood Industry (SFI) and Maritime (MAR) training packages to ensure that VET training aligns with regulatory requirements. The use of diverse qualifications reflects the complexity of the fishing and maritime industries and the need for a range of competencies to ensure safety and compliance.

Low enrolment qualifications in the SFI Training Package within the scope of this project include the Certificate II and III in Fishing Operations. Although there are seven RTOs with the Certificate III on scope, there has been only one enrolment each year between 2020-2022.

Qualification name	ANZSCO classification	No. of RTOs with qualification on scope (2024)	Average national enrolments (2020-2022)
Certificate II in Fishing Operations	Deck Hand	3	39
Certificate III in Fishing Operations	Deck Hand	7	1

Key factors identified by participants

Qualification design

One of the key barriers to enrolment in Certificate II and III in Fishing Operations is the disconnect between the qualifications offered and the specific licensing and regulatory requirements of the

industry. The fishing operations certificates provide learners with technical skills relevant to the role of a deckhand, including maintaining ship equipment and structures, as well as catching fish and other seafood (Australian Bureau of Statistics, 2022).

To operate fishing vessels in Australia, individuals are required by The Australian Maritime Safety Authority to obtain essential certifications such as the Marine Engine Driver Grade 2 (MED 2) and Master Class 5. These certifications are crucial for compliance with industry regulations and safety standards, so are prioritised.

'Everyone seems to be leaning towards the legislative requirement skills and that's gained through the MAR Qualifications.' – Industry body

As a result, the emphasis shifts to qualifications that align more closely with immediate operational needs and labour demands, resulting in low enrolment in the fishing operations qualifications.

Workforce characteristics

Challenges attracting local labour to the fishing industry have resulted in a sector which relies on migrant workers. Some research participants noted how enrolment in formal training pathways can be too costly, especially when they are already investing resources in securing permanent residency for their workers.

'Say for example, we paid for the 482 visa to get them here. That's $5,000, give or take. And then we pay for his permanent residency [PR] which is also $5,000. But now we're paying another $5,000 for his master 5, you know. If you've paid the PR and the visa and whatnot, you know, we're looking at $20K roughly. So, to then do another certificate on top of that is highly unlikely. We wouldn't really be funding that unless there was some sort of government subsidy.' – Employer

This added cost means employers are hesitant to invest further in training programs, particularly when the potential return on investment is uncertain due to a large casual and transient workforce.

Many individuals in the fishing operations sector are not in full-time roles, making it difficult for employers to justify sending them to formal training programs. Given the transient nature of casual employment, enterprises often struggle to facilitate training for their workers, as employees may only be available for short periods or may move between different jobs frequently.

'The fishing industry is dominated by people who aren't in full time employment. It tends to be a casual workspace. Given the issues associated with accessing funding for any form of qualification, it's just not viable for RTOs or employers to offer it or engage with it. Given the nature of the workforce, that's probably the biggest hassle.' – Industry body

Moreover, the nature of the fishing industry, characterised by long periods at sea, further complicates the delivery of training. With limited internet access offshore and irregular work hours, traditional delivery methods do not align with workplace demands.

Areas of opportunity

- **Qualification design** – The current structure of the qualifications does not appear to meet the needs of the fishing industry. If the qualifications remain in the SFI training package: consider the introduction of skill sets to build accessible pathways that include mandatory tickets. This may include blended delivery and assessment models that allow workers to balance sea time with formal training and skill development.

- **Career pathways** – A structured pathway for traineeships to nurture young talent from entry-level positions to more skilled roles over several years could be effective in increasing enrolments.

- **Exploring partnerships** – Collaboration with maritime training providers to streamline qualification pathways and provide a stronger emphasis on sustainability in fishing practices could be considered. Industry bodies and governing bodies could participate in a review to see how SFI and MAR packages can work together, rather than in competition.

Fisheries compliance

Industry profile

The fisheries compliance sector monitors fishing vessels and tracks catch to safeguard Australia's fisheries. Compliance within the Australian Fishing Zone is under the governance of the Australian Fisheries Management Authority (AFMA), however states and territories govern coastal waters, up to three nautical miles off the coast (Fisheries Research and Development Corporation, 2024). Individuals in this sector work as fisheries officers, patrolling waterways to ensure responsible regulation, conservation and management of fisheries.

Fisheries officers require important knowledge to enforce fisheries laws and legislation. Their roles require skills across biosecurity, surveillance, and compliance activities including boating, diving and swimming. Entry requirements for this occupation can vary between states and territories; some states mandate specific training through government departments, whereas others require relevant VET qualifications, such as the Certificate III in Fisheries Compliance.

With approximately 400 officers employed across Australia, enrolment data for fisheries compliance qualifications are expectedly low. Regardless, it's crucial to ensure that this qualification pathway remains accessible and aligns with industry needs. In doing so, VET can better support and enhance the skills and development of individuals across the sector, ultimately contributing to more effective fisheries management and enforcement.

Qualification name	ANZSCO classification	No. of RTOs with qualification on scope (2024)	Average national enrolments (2020-2022)
Certificate II in Fisheries Compliance Support	Inspectors and Regulatory Officers nec	2	2
Certificate III in Fisheries Compliance	Fisheries Officer	3	4
Certificate IV in Fisheries Compliance	Fisheries Officer	1	0
Diploma of Fisheries Compliance	Fisheries Officer	1	0

Key factors identified by participants

Constraints in the RTO operating environment

Low enrolment in the fisheries compliance sector is influenced by the complex regulatory environment shaping the industry. Each jurisdiction in Australia manages its own fisheries compliance learning materials to match state-based regulations. This means a lack of standardisation in the knowledge requirements for fisheries officers, with some using the VET training package and others use non-accredited training. This fragmentation is a significant barrier to the accessibility of training as both employers and RTOs struggle to navigate multi-jurisdictional factors.

Updating course content to align with evolving fisheries laws and regulations is a significant obstacle for RTOs, as they must consider the complexities of individual legislation in each delivery state. The necessity for continual updates to maintain compliance with the most recent legislation has deterred some RTOs from putting the fisheries compliance qualifications on scope.

The limited market size across the sector compounds this issue, as RTOs are not assured of the supply of learners, making it difficult for RTOs to justify the investment of time and resources required to update training materials and course content.

'If you look at the workforce that sits nationally in this space, you may be talking 400 people. So, you know, it's fairly onerous to have a training package that you're not going to put 20 people through it every six months or 12 months or, you know, it's something that's going to actually only be run on a needs basis. So therefore, RTOs don't necessarily want to take that up either, because it's something they have to have on their list and keep up to date with as well.' – Employer

Different mechanisms are used to determine funding for qualifications and courses

Although some RTOs have the qualifications on scope, state versus federal funding arrangements have created barriers to the interstate delivery of training. In response to the lack of access to the fisheries compliance qualifications, some stakeholders sought out alternative qualifications that are more widely available.

'It was quite complex trying to work out how our agency could work with an interstate agency in doing that. And then what happened was we moved towards the Certificate IV in Government Investigations because the qualifications overlap a lot. So, a lot of the units from the Certificate IV in Fisheries Compliance and the Certificate IV in Government Investigations are the exact same. So, then we thought, well, let's do the Certificate IV in Government Investigations.' – Employer

While some enterprises expressed a preference for the Certificate IV in Fisheries Compliance, the lack of RTOs and flexible delivery options has created barriers to enrolment. Furthermore, there

are state-based variations in how the fisheries compliance qualification are used. For example, in Victoria, research participants felt that the Certificate II in Fisheries Compliance Support was not relevant to their workforce because the minimum standard to work as a fisheries officer requires a Certificate III qualification or higher.

'Pretty much an entry level fisheries officer is straight away at Certificate III level. So, there's no reason for us to really look at the Certificate II. I'd be guessing that's sort of like a support officer role, someone who wouldn't have all of the powers and authorisations of a full officer. So, it's not something in Victoria that we would consider.' – Industry body

In Western Australia however, the Certificate II in Fisheries Compliance Support has been adapted to fit local needs and is utilised by RTOs to train Indigenous ranger groups, helping individuals gain skills to contribute to fisheries compliance on Country. A similar initiative is taking place in the Northern Territory with the Certificate III in Fisheries Compliance. The course, which spans one year and includes four one-week blocks supplemented by practical training, supports the integration of First Nations knowledge into fisheries management (Charles Darwin University, 2022).

Variation in how each state uses the fisheries compliance qualifications creates challenges for adopting a unified national approach that meets the diverse needs of all. A coordinated effort involving collaboration across jurisdictions is required to align nationally endorsed training with workforce needs.

Areas of opportunity

- **Training and assessment support** – Training providers could benefit from training and assessment resources that, where appropriate, simplify and streamline standard knowledge requirements, and highlight where there are jurisdictional variations in fisheries compliance.

- **Training hubs** – A national training centre could be established and funded, so that learners from around the country can obtain the basic justice system knowledge required to enforce fisheries laws and legislation.

- **Promotion** – Training and assessment resources for the qualification could be promoted so everyone is using the same foundation training materials.

Conclusion

The VET ecosystem in Australia is diverse, encompassing a variety of actors that, in theory, could meet the training needs of the workforce, if they all worked together collaboratively. Key actors in this system include employers, training providers, universities, schools, industry bodies, governments, unions, and learners. In practice, the interactions between these actors are dynamic, complex and diverse, resulting in difficulties in relationship development to create strategic and unified working practices as the foundations for the VET system.

This study found that the quality of the system and stakeholders interactions effects when, how and if VET is delivered. Understanding these interactions and behaviours is crucial, as challenges within the VET ecosystem often arise not from the decisions of any one actor, but from systemic and multiple-actor issues that have evolved over time as part of a complex environment, ultimately affecting the supply and demand of high-quality VET delivery.

The study has identified numerous factors that influence training demand and supply, impacting the use of nationally endorsed qualifications. Many of these factors are not considered in decision-making by VET actors, from the major policy, governance and funding settings through to individual delivery of training programs.

This study provides the evidence as to the interaction of these factors, the effects they have and provides an avenue to make them visible to decision-makers. Further work is now underway to devise tools for analysing qualifications and the factors impacting their uptake and delivery in a way designed to assist all stakeholders in the Australian skills system.

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Appendices

Appendix 1 – Qualification Selection Process

The initial process aimed to select appropriate VET qualifications under Skills Insight's remit that are considered as having had both 1) low enrolments (defined as below 40 annual enrolments) and 2) evidence suggesting that training delivery support may be required. In considering the number of enrolments, the timeframe of interest was averaged across the latest three years with available data (2020-2022), accounting for a number of training package updates that have taken place just prior to this period.

Skills Insight's coverage of VET qualifications extends across nine training packages (ACM, AHC, AMP, FWP, RGR, SFI, MSF, MST, PPM) containing a total of 204 qualifications. Upon analysis of the enrolment number data, 84 qualifications were identified as having had low enrolments between 2020-2022. This total excludes any new qualifications introduced during this period.

An index was created to score the 84 qualifications based on both quantitative and qualitative factors. The quantitative factors are as described in Table 1, as a function of demographic (e.g.: whether most of the students are in a rural or remote area), qualification (e.g.: whether the qualification is associated with registration or licensing), targeted occupation (e.g.: whether the qualification's target occupation has more average (mean) outflow than inflow in the financial year prior to 2020-2022), and occupation-qualification factors (e.g.: whether the units within the qualification are recognised as the most similar to the targeted occupation tasks), where one point is allocated to each factor that may warrant increased training delivery (e.g.: high occupation outflow) and/or training supply challenges (e.g.: rural/remote location).

The qualitative aspect of the index was based on input from Skills Insights' Stakeholder Engagement Managers' industry knowledge and experience of relevant issues.

For both quantitative and qualitative factors, the highest total possible score is 14, with the maximum score from each being 7 (See examples in Table 2). An average (mean) was computed from all 84 scores, with those scoring above average selected as being part of the study. Findings of this process resulted in 40 qualifications, including

- 20 Agriculture, Horticulture, Conservation and Land Management (AHC) qualifications

- 10 Seafood Industry (SFI) qualifications

- 6 Forest and Wood Products (FWP) qualifications

- 4 Pulp and Paper Manufacturing (PPM) qualifications.

Qualifications in FWP and PPM training packages were determined to be investigated in a separate project by ForestWorks, a partner organisation of Skills Insight which has an enduring and strong connection working with the forestry, timber, paper, fibre and furnishing industries. Skills Insight therefore undertook studies in a total of 29 AHC and SFI qualifications.

Table 1. Description of the datasets used to extract parameters for the quantitative factors.

Dataset	Source	Timeframe /Timestamp	Parameters extracted
Total VET activity (Enrolments)	NCVER *via* VOCSTATS	2020-2022	Qualification enrolments (including whether more than 1 AQF level has low enrolments) Student remoteness region index (ARIA+)
Data on Occupational Mobility	JSA	2019-2021 (Financial years leading up to 2020-2022)	Occupation stock flows (Outflow > inflow)
Qual-to-occ recommendations	JSA *via* DEWR	2022	Whether there are multiple (>1) occupation pathways Whether qualifications & their targeted occupations have registration/licensing Whether the qualification is most similar to the targeted occupation
Automatability scores	JSA *via* DEWR	2022	Whether the targeted occupation is highly automatable

Table 2. An example of the scoring process based on both quantitative and qualitative factors

Location	Qual1	Qual2	Qual3	Qual4
Rural/Remote (1)	1	0	1	0
Outflow > Inflow (1)	0	1	1	1
Registration/licensing (1)	1	1	0	1
Task automatability (1)	1	1	0	1
Qual-to-occ similarity (1)	0	1	1	1

>1 low enrolment level (1)	0	1	1	0
>1 occ pathway (1)	1	1	1	0
Stakeholder recommendation (7)	7	0	7	0
Total Score	11	6	12	4

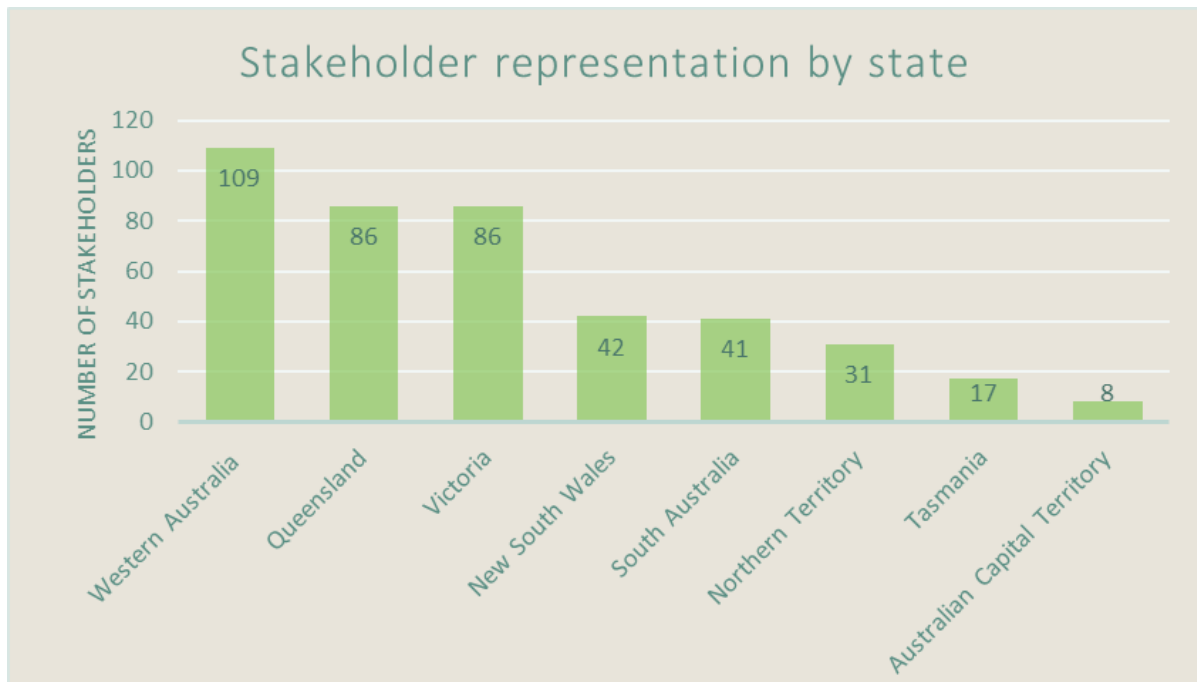# Appendix 2 – Interview Statistics

The Exploring Training Demand and Supply Challenges Project included the completion of a total of 420 interviews across all states and territories in Australia, with 213 interviewees located in metropolitan locations and 207 interviewees located in regional, rural and remote locations.
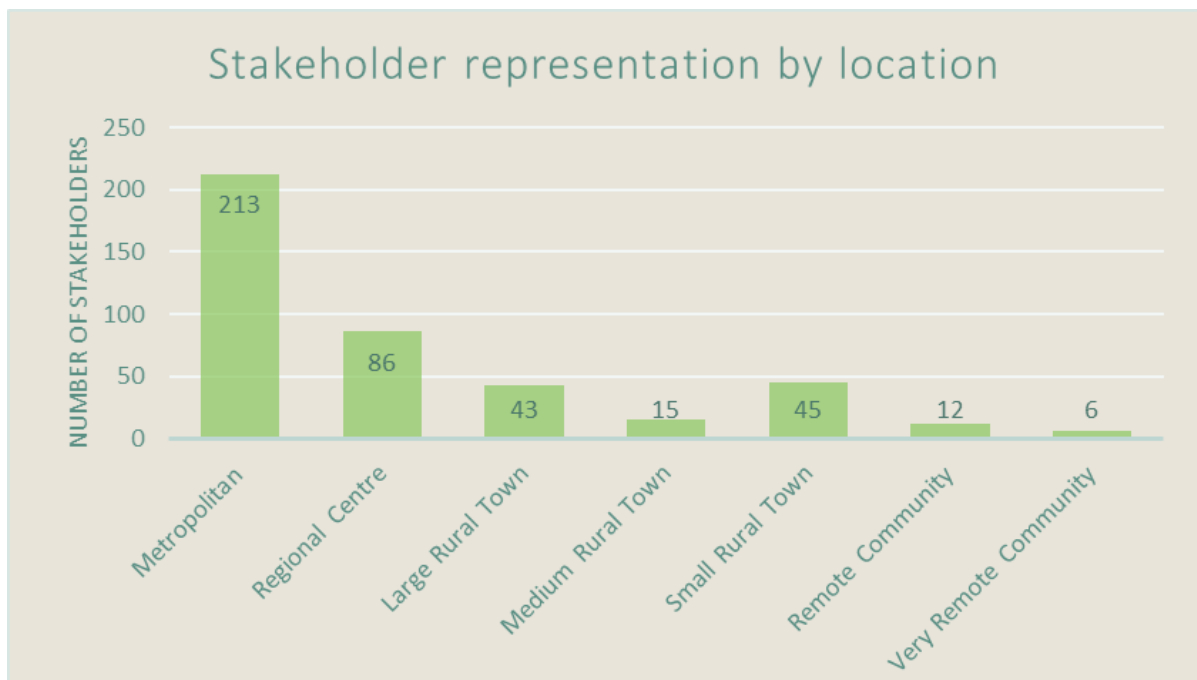
The below table shows the breakdown in the type of stakeholders interviewed.

The table below shows the breakdown of interviewees across each state and territory.

Stakeholder representation by state

State	Number of Stakeholders
Western Australia	109
Queensland	86
Victoria	86
New South Wales	42
South Australia	41
Northern Territory	31
Tasmania	17
Australian Capital Territory	8

The table below shows the breakdown in locations, which includes 18 people in remote or very remote locations.

Stakeholder representation by location

Location	Number of Stakeholders
Metropolitan	213
Regional Centre	86
Large Rural Town	43
Medium Rural Town	15
Small Rural Town	45
Remote Community	12
Very Remote Community	6

Appendix 3 – Potential data areas based on factors in demand and supply of training

Data areas	Description and sources
Current enrolments, completions, conversions to jobs	Standard data numbers currently available to Skills Insight
Qualification purpose	Requires development based on the Qualifications Reform guidance, to be produced by Skills Insight
Proportion of core v elective units	Requires development to identify internal qualification flexibility to be produced by Skills Insight
Criticality of role to industry	Requires development based on stakeholder consultation to identify roles without which industry cannot operate, especially those with low workforce numbers, to be developed by Skills Insight
Niche-ness of role and trainer requirements	Training for more niche occupations can be difficult to deliver and may be more effective if delivered through industry bodies, but may also need formal training for regulatory, licensing or safety reasons. Requires development based on stakeholder consultation to be developed by Skills Insight
Employer and Industry characteristics	This will include size of sales, employment, types of employers, management and labour levels, relevant awards, growth opportunities to be compiled from multiple sources, and potentially improved through the RDCs/ABARES ENRI project
Worker characteristics	Full and part time, casual and gig workers, diversity, potential for role share/communal delivery-based stakeholder engagement with unions and desktop research, to be developed by Skills Insight
Clash of peak operational and training times	Whether learners will need to be absent from workplaces at peak operational times to participate in training. Employers are concerned about loss of productivity during peak operational times. Requires stakeholder consultation with employers and RTOs by Skills Insight
Ability to deliver to the industry rhythm/ability to recruit enrolees to the industry rhythm	Whether training can be scaffolded to align with the seasonal activities and timelines of industry. Requires development based on stakeholder consultation with educators to be developed by Skills Insight

Qualification requirement to secure a job	Identification of importance of having a qualification to be able to gain employment or meet criteria, to be developed by Skills Insight based on the National Training Register and other sources
Alternative pathways to secure jobs	Analysis of the usage of pathways to employment other than formal qualifications, based on multiple existing sources, but potentially requiring additional data
Risk Profile of the industry sector	Evaluation of the risk profile of the sector based on insurance and similar information, if available
Safety in industry	Evaluation of sector safety based on Safe Work Australia analysis and data, and union data
Level of regulation within industry	Identification of Australian regulatory requirements as defined by regulatory bodies, to be compiled by Skills Insight
State/Territory Funding Support/Fee free/no support	Evaluation of State and Territory funding support based on data provided by Training authorities
Fed/State/Territory/Local government industry support strategies	Evaluation of the level and nature of strategic support for industries within JSC coverage, based on data provided by relevant governments
Capital investment levels and access requirements to deliver training	Identification of levels of capital investment required to deliver training, and availability of investment funds, based on information from industry and RTO stakeholders
RRR delivery need or preferences	Analysis of the need for or preference for local, regional, rural, remote or On Country delivery of training, as a result of practical, financial, regulatory or workforce attraction requirements, as identified by industry stakeholders
Priority cohort focus, including supporting economic development	Evaluation of the potential for qualifications to deliver employment opportunities and economic development for priority cohorts
Cross-border delivery/national delivery suitability	Analysis of the potential opportunities and barriers for cross-border and national delivery as identified by RTOs
Competing qualifications	Analysis of alternative qualifications which might lead to employment within the industry sector, as identified by industry stakeholders and compiled by Skills Insight

Visibility of career progression opportunities in industry	Clarity and existence of career mapping, and whether they have been accepted and used by industry, identified through stakeholder engagement
Historical/known connection with VET	Whether the industry has been historically serviced by VET providers, or well-known through the VET system, to be identified by RTO stakeholders
Training-based competency v experience-based competency	Evaluation of the competency journey and the level to which competency can be trained, and additional level of competency that requires practical experience
Workplace/simulation/classroom delivery	Analysis of qualifications for best options for workplace, classroom (including online), virtual and augmented reality training environments, based on unit performance criteria and assessment conditions, to be undertaken by Skills Insight
LLN requirements	The LLN requirements for each qualification as identified by RTOs and specialists in LLN
Availability of trainers/replacements/ holiday or other activity coverage	Current state of the VET Workforce, including the ability for trainers to take holidays or undertake industry or other work, as reported by educators
Potential for educator career progression and potential barriers due to expertise	Analysis of RTO career progression opportunities, and whether progression may be hampered due to the nature of expertise or the limited availability of similar specialists
Training Return on Investment – reality and visibility	Evaluation of Training Return on Investment based on a formula to be developed by Skills Insight