

Skills and Workforce Analysis for Seafood Industry Victoria

Lead Organisation/s: Ternes Scientific
Collaborating Organisation(s): Seafood Industry Victoria

Executive summary

The analysis provides guidance on a future Victorian Workforce development strategy including training, skills, and development opportunities for the industry. This report underpins the position of the industry that it is highly desirable for the industry to develop strategies to underpin responses to emerging future issues for example recruitment and retention of the next generation of seafood industry employees, the impacts of climate change on fishery stocks, consumer dietary choices and community engagement.



Summary of brief

The Seafood Industry Victoria (SIV) strategic planning framework identifies key workforce sustainability issues. These issues are encompassed by Theme 4 - SIV Capability, Network and Development framework that identifies a requirement to build capacity to deliver on current opportunities for the industry and grow future benefits through support for members (SIV A Blueprint for the Future 2017-2022). This component of the Capability, Network and Development framework needs to be underpinned by a comprehensive seafood industries workforce analysis to ensure that current and future investments in skills and training represent industry needs and requirements. The analysis will consider:

1. The current state of the industry (current workforce demographics, size (and efficiency), structure, future innovations and change management) including the relationship between workforce skills and high integrity supply chains.
2. Current understanding and learnings from other workforce development strategies that inform seafood industries in other state jurisdictions (e.g. Tasmania (TSIC, 2019), WA (DPIRD, 2020)) and at a Commonwealth level ABARES (2012).
3. Workforce skills analysis (the benchmark for the industry and ability of industry to adopt skills as part of product integrity)
4. Career pathways (on-going maintenance and future skills base for high integrity supply chains)
5. Need, gaps and demands analysis for current and future industries.

It is envisaged that the analysis will provide guidance on a future Victorian Workforce development strategy including training, skills, and development opportunities for the industry. This outcome is highly desirable for the industry to develop strategies to underpin responses to emerging future issues for example recruitment and retention of the next generation of seafood industry employees, the impacts of climate change on fishery stocks, consumer dietary choices and community engagement.

The key outputs, outcomes and impacts of the project are:

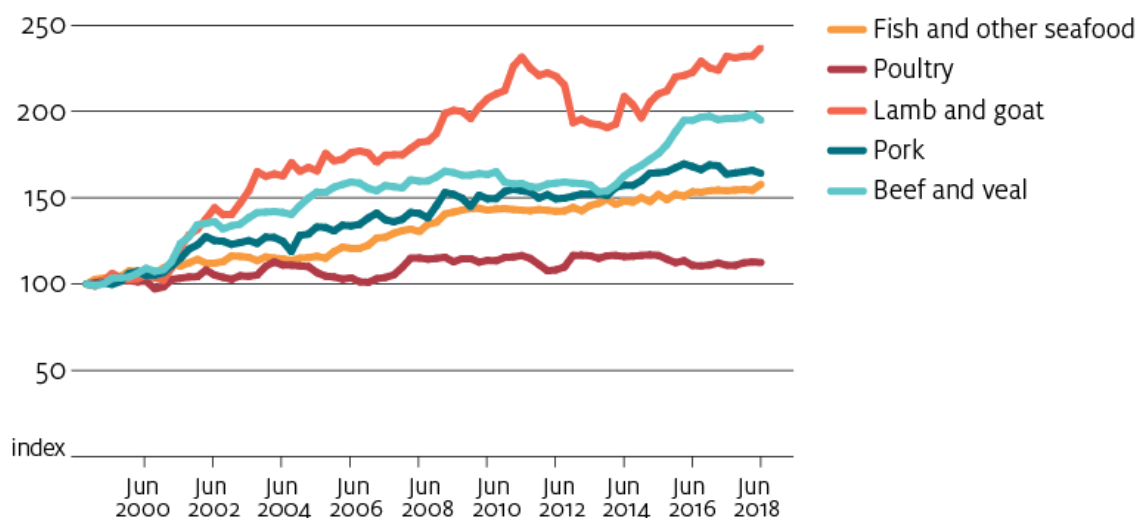
- A scan of Australian and near region (NZ) scan of workforce development strategies to evaluate opportunities for the Victorian Industry
- Establish a needs, gaps and risk analysis framework for the project.
- Design and develop the Victoria workforce strategy and skills analysis including career pathway analysis.
- Evaluate the benefits realisation and high-level workforce data to provide the basis for upstream and downstream business strategies to deliver sustainable workforce that is highly skilled with on-going opportunities for training and continuous professional development.

1 Industry overview – diversity and structure

- A 340 kt, \$ 3bn Australian value chain
- Market dominated by imported products (>65%) and constrained by fragmented SME structure scattered across regional, rural and remote communities.
- Victorian industry contributes to 3% of GVP but is important in key category channels (e.g. abalone)
- Industry is heavily regulated at both Commonwealth and State levels.

The consumption of seafood products has increased on average by 1.9% from 1998-1999 to 2017-18 to an estimated 341 kt (ABARES, 2018). Typically the per capita consumption of seafood ranks behind poultry, red meat and pork, and a downward trend is noted (14.7 to 13.7 kg/person from 2007-08 to 2017-18). This trend reflects the increases in poultry consumption and the relatively stable rates of consumption across all other meat and seafood product categories. The main driver to this pattern is price as highlighted by several recent surveys, which poultry prices per kg being substantially lower than other products (Figure 1).

Figure 1 Growth in major animal protein sources for human consumption (Australia 2000-2018)

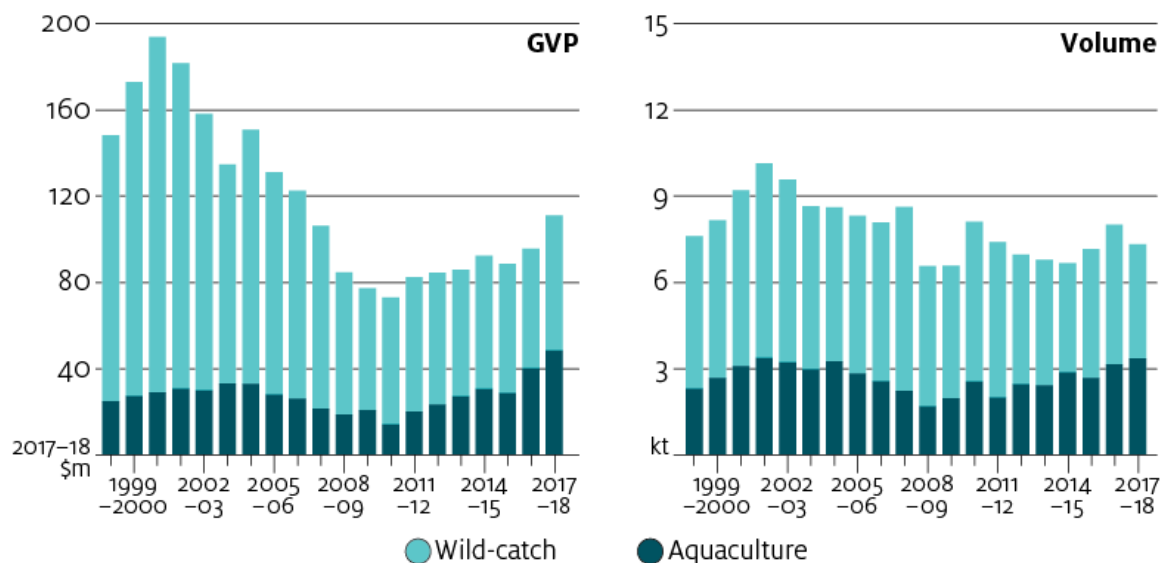


ABARES 2018.

The industry tonnages reported by ABARES reflect fish and fish products entering the whole sale and retail supply chains and is approximately 55% of that reported by the FAO (ca. 650 kt) as whole fish equivalents.

The most recent GVP for the industry was \$3.15 bn (2019-20). Wild-catch GVP accounted for \$1.58 bn and aquaculture was valued at \$1.60 bn. The Victorian industry represented \$122 m of which \$62.8m was from wild catch sources and \$48.3 m from aquaculture (Figure 2). By far the most important sector for Victorian wild catch is abalone and rock lobster, accounting for ca. 80% of the total value. Furthermore the aquaculture sector receipts were dominated by the abalone industry (52%) and salmonids (pre-dominantly rainbow trout) (28%) account for >80% of total value.

Figure 2 GVP for Victorian seafood and aquaculture industries (1998-2017)



ABARES 2018

Victoria

Victorian fisheries and aquaculture production (GVP) is one of the lowest nationally. Victorian state fisheries and aquaculture represents about 3% of the national GVP (or 4.6% when Victorian-landed Commonwealth fisheries are included; Table 1). In 2016-2017, the Victorian industry GVP were \$155 m GVP (\$54 m State professional fisheries, \$48 m Commonwealth professional fisheries, \$48 m aquaculture and \$323 m of added value (\$112 m State professional fisheries, \$111 m Commonwealth professional fisheries, \$100m aquaculture); \$186 m of household income (\$55 m State professional fisheries, \$74 m Commonwealth professional fisheries, \$56 m aquaculture).

The estimated direct and indirect workforce for the industry was 3,100 FTE (909 State professional fisheries, 1,205 Commonwealth professional fisheries, 987 aquaculture).

The seafood industries processing sector is estimated to contribute \$37 m of added value and 645 full-time equivalent jobs.

However, Victorian data on workforce suggest ca. 2800 FTE or a difference of 300 FTE identified in ABARES employment statistics. This discrepancy may reflect ancillary jobs related to compliance and other government/non-government services.

Table 1 Regional economic performance (\$m added value, FTE and per capita added value (\$/FTE)

Regional economic performance (2016-17)	Added value (\$m)	FTE	per capita added value (\$/FTE)
Far east coast (East Gippsland)	76	810	93,800
Near east coast (Gippsland and Mornington peninsula)	26	298	87,250
Melbourne are (Melbourne and Geelong)	28	276	101,000
Near west coast (Bellarine and Great Ocean Road)	22	198	110,000
Far west coast (west of Warrnambool)	42	352	119,000
Coastal aquaculture	35	427	82,000
Inland aquaculture	52	447	116,300
Total	281	2808	100,000

Note regional scale data captures added value of the industry and does not account for household GVP and discounting for non-Victorian seafood processing activities (ABARES, 2018).

Even though the industry is small, the wide variety of fishing and farming methods, and target species that are harvested are of national importance (e.g. abalone, rock lobster; Table 3 FSV licencing structures). The spans the whole coastline, several inland waterways, and land based aquaculture.

The Victorian seafood processing sector is however nationally important with processors concentrated in Melbourne handling Victorian-produced seafood, interstate products and international processing supply chains for both product imports and exports.

Table 2 Victorian fisheries profiles, 2016–17 to 2020-2021 (VFA)

Fishery	Species	Method	Number (2016–17)	Number (2020-21)
Abalone	Greenlip Abalone and Blacklip Abalone	Diving	71 licences	71 licences
Scallops	Scallops	Dredge	90 licences	89 licences
Bay and Inlet	Mixed species	Various	57 licences	26 licences
Rock Lobster	Southern Rock Lobster	Pots	107 licences and 7235 pots	103 licences and 7,235 pots
Giant Crab	Giant Crab	Pots	14 licences	9 licences
Inshore Trawl	Mixed species	Various	54 licences	54 licences
Wrasse (Ocean)	Wrasse	Hand lines	22 licences	22 licences
Bait (General)	Mixed species	Various	12 licences	10 licences
Ocean (General, multiple species)	Mixed species	Various	171 licences	205 licences
Total			598 licences	589 licences
Aquaculture	Abalone	Flow-through systems	10 licences	9 licences
	Freshwater Eels (Short fin and Long fin Eels)	Recirculation units and cultured waters	13 licences	13 licences
	Mussels	Longlines	16 licences	14 licences
	Ornamental Species	Recirculation units and ponds	9 licences	6 licences
	Yabbies	Recirculation units, ponds and farm dams	17 licences	14 licences
	Salmonids (Atlantic Salmon, Rainbow Trout)	Recirculation units and raceways	18 licences	13 licences
	Warmwater Finfish (Barramundi, Murray Cod, Golden Perch, Silver Perch)	Recirculation units, flow-through system and ponds	18 licences	14 licences
	Other		21 licences	21 licences
Total			122 licences	104 licences

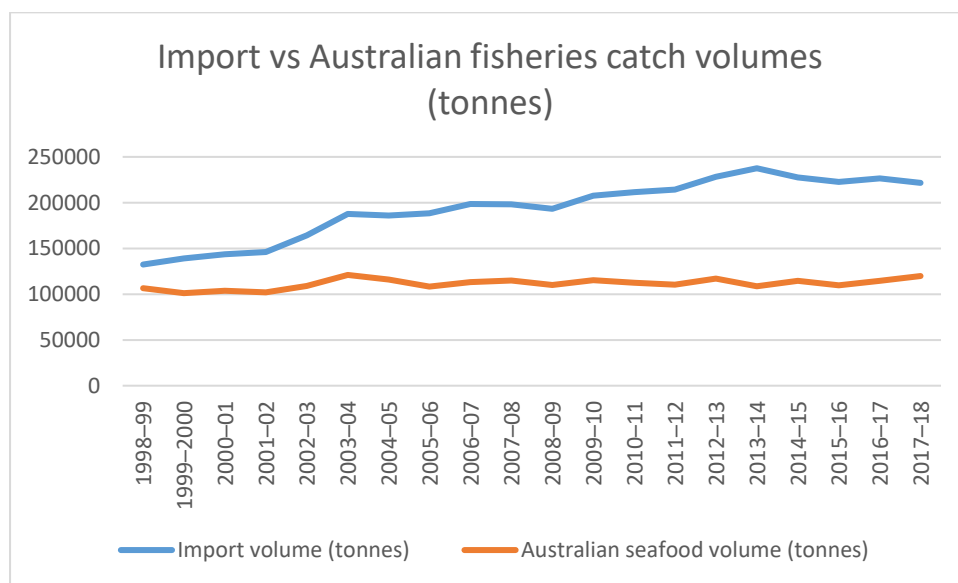
One of the key findings from the FRDC (2020) survey report was the intangible economic returns to regional, rural and remote (RRR) communities across Victoria. The key intangibles are that seafood production adds a greater diversity in economic opportunities for RRR communities reflecting that many of these communities have little or no alternative employment or industries. Fisheries activities contribute to the economic stability of communities as it provides year-round employment activities

at a regional scale that maintains financial and business activity in communities that may also be exposed to seasonal tourism. *This does not mean that these communities face shortages in staff during some period of the year.*

Pricing and consumer issues

Imports of fish products dominate the Australian market. Seafood imports increased from 132,396 tonnes to peak at 237,511 tonnes between 1998–99 and 2013–14, with a concurrent increase in the proportion of seafood accounted for by imports (by volume) increased from 55% to 69%. During this period the domestic seafood supply remained steady at about 112,000 tonnes (Figure 3).

Figure 3 Import vs Australian domestic supply of seafood products (tonnes)



ABARES 2020

Fish consumption in Australia is dominated by imports. More than 65% of fish and seafood products consumed are from import supply chains (Figure 4). In 2018, the Australian Government reviewed Country of Origin labelling (CoOL) legislation with an expansion of the scheme to cover all seafood. More recently (2022) further work has commenced to ensure that clearer Country of Origin Labelling would be developed to allow consumers to easily identify if the seafood they choose in hospitality is Australian. This approach to the Commonwealth aims to allow consumers to support domestic seafood production and the associated jobs and economic activity within the seafood supply chain. This is critical for local suppliers and processors especially in seafood supply chains that are dominated by SME or microbusinesses. In 2016–17, the sector produced 4,845 t from state fisheries and 10,187 t from Commonwealth fisheries. Aquaculture operations produced a further 3,147t of seafood.

The recent FRDC survey (2020) outlined that 94% of wholesalers, processors and retailers were claiming that Victorian product was important to the success of their business. However the industry was concerned that past fisheries closures had resulted in lost employment reduced profitability of the whole value chain and loss of customers.

Melbourne is a major centre of post-harvest manufacturing, processing, wholesaling and retailing with > 55,000 t of seafood per year being managed within the domestic and international export supply channels. In 2016–17, >37,000 t was from overseas – or 67% of the manufacturing, processing wholesale or retail. It is not known how much of the Victorian or interstate catch is processed. This gap within the data series can result in impacts in workforce security.

National and Victorian Fisheries Industries strategies

The current Commonwealth Fisheries policy framework is under review and is to be reported for consultation in late 2021 (currently not reported in November 2022). In 2017, The Commonwealth designed a framework to ensure that the management of Australian fisheries is based on the principles of right to fish, access to safe, high-quality seafood that has been sourced from our sustainably managed fisheries. This policy framework has direct impacts on sustainability of fish stocks, science-based decision-making, rights-based fisheries management, maximising utilisation and productivity, ensuring regulatory effectiveness and cost recovery and industry governance. The policy framework also guides and enables State policy frameworks such as the Victorian Aquaculture Strategy 2017-2022, Wild-catch fisheries policies and management plans. All of these policy settings can have an impact on the seafood workforce.

2 Workforce and employment

- **Low national employment sector represented by many low FTE businesses.**
- **Poor National and State data and information on how many people are engaged in the industry.**
- **Workforce employment projections are low (<2% per annum) – a factor that may have significant impact on the ability to train and retain a workforce.**
- **Low rates of industry succession, exposure to casual and seasonal workforce constraints**

Employment structures

The Australian seafood industry has about 17,000 employees in over 7,000 businesses (2019-20 ABARES). The majority of the Australian industry (ca. 70%) is represented as commercial fishing businesses that employ 1-5 FTE and the balance are employers that employ less than 20 FTE. The average FTE/business is 2.4.

These seafood businesses are represented across four broad domains of employment:

1. commercial fishing.
2. aquaculture.
3. seafood processing and the wholesale supply chain and
4. industry compliance.

The broad sectoral breakdown of employment across commercial fishing, aquaculture and processing is 45%, 37% and 18% respectively. It should be noted that there are a number of discrepancies within national and State data series concerning employment. For instance, compliance officers that work directly with fisheries businesses may be reported within government services rather than the seafood supply chain.

Sector employment variability

An important sector statistic is the intra year and inter-year variation of employment. Nationally, the intra year variability of employment across each sector is greater than 25% with processing representing employment variability approaching 33%. This intra-year variation is surprisingly high for a primary and processing sector within the food value chain (for instance comparable figures for livestock agriculture suggest intra-year variation of no more than 15%). The seafood processing sector employment has a marked 5-year cycle in employment with low numbers of staff engaged in the industry (2009, 2014 & 2019) where the processing industry represented only 10% of the total workforce (ca. 1170 FTE) compared to a long-term average of 19% or about 2800 FTE. These low points in the employment cycle do not closely mirror low processing volumes of product. What is not clear from these intra-year variability statistics is:

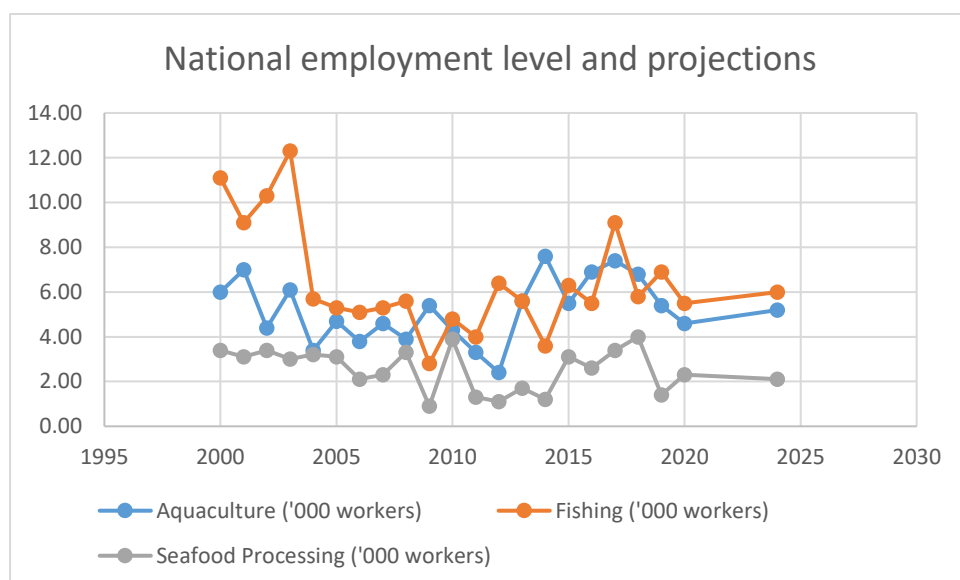
1. What is the variability within what is known as 'mission-critical occupations', key employees and roles – for instance in the wild catch sector – masters, coxswains, chief engineers.
2. The incidence of occupations and skills that are difficult to recruit or retain; and
3. Any particular strategy to ensure that the right people are available to get particular work done (credentialing).

Employment growth and development

National

After a significant decline in fishing industries employment in the early 2000s (2000-2004), the national trend for employment across all sectors has been relatively stable. There is evidence of a low rate of growth in employment in commercial fishing (+0.5% growth per annum over a time series from 2004-2018), aquaculture (+0.7% per annum over a time series from 2004-2018) and a shallow decline in employment within the processing sector (-0.2% per annum over a time series of 2004-2018). Recent Australian Industry and Skills Committee (AISC) data (Figure 5) suggest the medium-term growth rates for the various sectors are projected as -0.1 (processing) to 1.8% per annum (aquaculture) across the period 2020-2024). The growth in aquaculture (2020 to 2024) reflects producers (owners and workers) but some areas of employment are identified as contracting for example technical support staff.

Figure 5 National employment level and projections (AISC, 2021)



Victoria

The Victorian seafood Industries employed about 12% of the national FTE in 2016, with the majority of employees classified in general or other fishing (57% of the fishing and aquaculture total employment), 32% in aquaculture and the balance in other activities. This pattern of employment reflects that the majority of fisheries business in Victoria are small-scale operations, with diverse licenced fishing activities.

The diversity of the industry is key to its on-going operations but is an Achilles heel when considering workforce training, skills and re-skilling. The majority of operations are characterised as fishing from small boats with low-impact fishing technologies.

The most recent employment data from Victoria (ABS 2016 Census) suggests that 1667 people are directly employed in categories 1 to 3 (commercial fishing, aquaculture and seafood processing and the wholesale supply chain) with little or no data provided for category 4 (industry compliance).

Of the 1667 FTE, 52.3% were engaged in fishing and aquaculture and 47.7% engaged in processing and fish and seafood wholesaling (excluding retail and other industry sectors such as manufacturing). It is not known exactly how many people work in the industry as census information classify employment by principal income source and the collection of data across the manufacturing and processing sectors is problematic reflecting businesses may manufacture and process seafood products but are classified within other manufacturing sectors.

Furthermore the ABS data seem to conflict with the recent FRDC survey information that suggest estimated direct and indirect workforce for the 'All Victoria' industry was 3100 FTE (which includes ca. 300 FTE that are indirectly engaged through other seafood related activities (compliance, governance etc.).

Inadequate workforce data poses a problem when conducting a workforce needs and skills analysis. Traditionally, the analysis of the internal and external labour markets is undertaken to understand factors that will influence the supply of future labour for the sector. By analysing the internal and external labour force, characterisation of the workforce can be undertaken. This will result in:

1. The composition, characteristics and supply of current labour for the organisation (from internal and external sources) and
2. The type of jobs and skills available within or outside the current sector.

Typically, any analysis of the industries internal labour supply would yield information on the characteristics, composition, competencies and workload of the current and future available workforce. This would also need to consider the industries reliance on contractors, temporary labour, casuals etc. Analysis of the opportunities to enter the industry (external labour force) provides understanding of potential labour supply issues and conditions of engagement and how to undertake workforce planning strategies.

It is important to note that as there is a poor understanding of the sector wide employment, planning for engaging future employees or skilling the workforce is difficult as there is no known data on the potential volume of employees that may require upskilling or training. This level of uncertainty poses training providers a significant issue when evaluating the potential economic returns to those businesses derived from training.

Connections between industry employment and regional GVP

The connection between employment and regional GVP are important in understanding current and future workforce and are critical to strategic planning by the industry. It should be noted that there is a balance required between economic output (regional), future investment, socio-economic impact of the industry on small regional communities, and the ability of the industry to grow.

In all Victorian regions surveyed by FRDC (2020), gross economic output (full supply chain representing direct and flow-on economic activities) is low, ranging from 0.01 to 2.00% of regional GVP or 0.02 to 3.5% of employment.

The economic contributions of the seafood industry to regional and remote Victorian communities varies and changes over time. Over the last 10 years there has been a marked contraction of Victorian State and Commonwealth professional fishing fleets resulting from changes in regulatory and

sustainability plans, low rates of succession and an aging fleet. These factors have reduced their ability to make a meaningful economic contribution to these communities.

A good example of this structural change in the industry was the 2015 Victorian government legislation that prohibited commercial net fishing in Port Phillip Bay. This sector supplied more than 800 t of product directly into the Melbourne seafood supply chain (via the Melbourne Market).

The impact of the policy change was to lose traditional professional fisheries businesses (either closure or re-location), price increases reflecting constraints in Victorian retail fish products, job losses and a loss of direct customers and other supply chain businesses. The Melbourne and Bellarine professional fisheries sector now has a small number of vessels operating in dispersed fisheries (generally outside of the region – Near West) harvesting a range of fish, Southern Rock lobster and abalone.

The shift to onshore aquaculture sector, and the consumer appetite for salmonid and, in the future white fish (barramundi) has resulted in some substitution of product from the traditional wild-catch sector. The Victorian aquaculture sector is dominated by a small number of large farms which have high staffing efficiencies. These farming systems are stable from an economic point of view and may expand into new markets driving some employment options.

It is clear that many industry operators are under significant pressure reflecting Australia's continued reliance upon seafood imports. Small businesses without the means to compete have been forced to exit the industry. This has increased the market share of the leading businesses, with the four largest aquaculture operators accounting for 40% of industry revenue.

Diversity in employment in the Victorian seafood industry

The Victorian seafood industry provides a range of employment opportunities in many regional communities, as well as metropolitan based employment sectors. The whole sector is diverse in its requirements ranging from catch-harvest, processing, manufacturing, wholesale and retail, businesses.

For instance, depending on the sector, employment includes master's and deckhands (professional fishing, dive fisheries, offshore trawlers), labourers, technicians, researchers and managers (aquaculture), administrative and financial jobs, post-harvest transport, processing, wholesaling, and retailing. There are a number of indirect sectors engaged by the industry including IT, mechanical engineering, environment and sustainability, compliance.

As with any industry sector, the Victorian seafood industry employs full time, part-time, casual and seasonal workforces. Recent data from FRDC (2020) suggest that casualization rates (part-time, casual or seasonal) are approximately 30% (Table 3). This is a similar benchmark to other primary industry sectors.

Table 3 Percentage of Victorians employed in full-time and part-time in fishing, aquaculture businesses, seafood processing and wholesaling.

	% of Victorian workforce engaged in sectors					Total (average)
	Fishing	Aquaculture	Processing	Wholesaling		
Employed FTE	56	65	55	71		64
Employed part time	31	32	38	26		30
Employed away from work	9	4	6	3		5
Employed hours not stated	5	0	0	0		1
Total*	100	100	100	100		100

(Note*: not all columns add to 100 reflecting rounding errors)

These rates of casualization equate to direct jobs within the seafood industry (ABS census data and FRDC, 2020 data series) of a pool of 1050 to 1950 ‘employed full time’ workers. This relatively low number of full-time employees poses a significant challenge to any form of on-going training as demand for training within any year would be low.

The seasonal workforce issues.

Even though a seasonal workforce may not seem apparent for the seafood industries, there is considerable evidence that within individual sectors, seasonal or temporary engagement in employment is commonplace. For instance, in inland aquaculture, hatchery work can be highly seasonal and in professional fishing, fish stocks can be seasonally abundant or there may be times where the season is closed.

The impact of this pattern of seasonality is important in RRR communities with a high reliance for income from fishing. There are positives and negatives to workforce seasonality including opportunities to maintain equipment, participate in other industry sectors (e.g. tourism) and recruit new workers as well as difficulties in engaging existing staff who may be in demand from other sectors (e.g. deckhands, coxswains who may work in the offshore gas and mining exploration sectors, charter industries).

As part of the recent National Agricultural workforce strategy (2020), Seafood Industry Australia highlighted the impacts of labour shortages and the intersect with seasonality of production viz. :

Seafood is seasonal and looking for increased workforce coming into spring and summer. October sees the start of the Southern Rock Lobster fishing season. Availability of skilled crews will be restricted by the lack of foreign and transient workers.

Recently two key labour force issues have emerged. The PALM scheme will remain as the principal labour mobility program to meet workforce shortages across primary production. The SIA response to the new program was:

“The Australian seafood industry welcomes the creation of the Federal Government’s Ag Visa,” SIA CEO Veronica Papacosta said. The Australian seafood industry has been heavily impacted by the COVID-19 pandemic and ensuring necessary border closures. Most notably through an inability to access the foreign labour market. Which, like other primary producers around the country, our sector is underpinned by. Importantly, the visa will be available to the whole of agriculture including fisheries, forestry and agricultural processing sectors and will target seasonal, skilled and semiskilled workers. With the ability for them to move between locations to follow the seasonality of sectors. We are optimistic the visa will provide a solution to the ongoing, severe labour shortages being faced by the broader ag industries and provide a crucial and timely lifeline to the Australian seafood industry. The consequences of the current labour shortage cannot be understated. A lack of access to on-water crews has left many fishing vessels tied up at the wharf and unable to operate for two to three months at a time. Aquaculture farms have been unable to meet productivity targets and manage growth without access to a skilled workforce. While the post-harvest sector’s workloads are becoming unmanageable for current workers. Quite simply, without access to foreign labour the industry would not be able to continue in its current form. Despite high unemployment rates in Australia, and the displacement of workers in tourism and hospitality sectors, the seafood industry has remained unable to attract more of the local skilled labour market due to the nature of the work, and as such we rely on international labour. We see this visa as an extension of the strides made under the Pacific Labour Mobility, with broader access and more opportunities. We applaud this commitment from the Australian Government, and we look forward to continuing discussions on how the visa will assist in a pathway to permanent residency. The Ag Visa will provide a long-term, reliable workforce for our commercial seafood sector, allowing us to continue to put our Great Australian Seafood on tables around the country, and internationally, for generations to come. We’d like to acknowledge the hard work of the industry members who have worked tirelessly behind the scenes and alongside the government to develop this visa.”

The second emerging issue is the recent advice that SIA has received advice from the Department of Home Affairs.

The Minister has agreed to the addition of the Seafood Process Worker (ANZSCO 831313) occupation, and the approval to allow permanent residency pathways for the ENS and SESR visas. This approval is for category 2 (regional area of Australia and under the category ‘Cities and major regional centres’ for skilled migration purposes) and 3 (regional area of Australia and under the category ‘Regional centres and other regional areas’ for skilled migration purposes). These categories cover the majority of regional centres where aquaculture and fisheries industries are located. However it does not cover metropolitan Melbourne (a major location for fish processing).

Sector training requirements

There are a number of minimum standards that are required for businesses to operate within the seafood and wild catch industries. Broadly, the key minimum standards are governed by Commonwealth and State Legislative and regulatory requirements – for example Australian Maritime Safety Authority qualifications and practical assessments or PrimeSafe (Victoria) licencing under the Seafood Safety Act 2003, Seafood Safety Regulations (2014), and SCARM Report 60 (CSIRO, 2003; Table 4).

Table 4 Training options - Victoria

Organisation	General purpose hand	Coxswain grade 2	Coxswain grade 1	Marine engine driver 3	Marine engine driver grade 2	Master (inland waters)	Master <24m
TAFE Gippsland (0417)	Yes	Yes	Yes	Yes			Yes
Marine Training Services (4653)		Yes	Yes	Yes	Yes	Yes	Yes
South West Institute of TAFE (3120)		Yes	Yes	Yes	Yes	Yes	Yes

3 The training environment

- **Training and qualification sector complex and poorly understood by industry.**
- **Industry tends to rely on private RTO sector rather than TAFE.**
- **High diversity of accredited products available to industry but very low enrolments making a number of products not viable for RTO sector**
- **Industry is not engaged in accredited training, product development or review with the outcome being that industry tends to focus on non-accredited credential-based training.**
- **A lack of consistent training may result in low recruitment rates into the industry and hence a progressive decline in trained staff.**

Employment in seafood industries requires a diverse and often high-level specific set of skills and training. The Aquaculture and Wild-catch IRC (Industry Reference Committee) annual report 2021 suggested that it is increasingly apparent that *the largest barrier for growth in the industry is a lack of training opportunities that results in a perception that there are few opportunities to build a career.* The report also noted that this issue was directly linked to the ability of other industry sectors to recruit and retain staff. The net result for the seafood industry *is the sector is finding it increasing more difficult to fulfil worker's needs and requirements for training.*

The IRC annual report also notes that there is a lack of migrant and visa workers available to the sector. Even though significant progress has been made concerning this situation (labour force consultation and a draft agreement in force and a new class of agricultural workers visa), there are still concerns that the sector is not attractive. *This situation is not unique to the seafood sector.* There seems to be a general sentiment across primary production that there are problems in attracting and retaining new workers to the broad sector (even though currently the sector recognises that nationally there are moderate to high rates of underemployment within the Australian economy) and this low rate of recruitment may result in constrained growth of the food supply chain.

Stakeholder engagement feedback to the Aquaculture and Wild-catch IRC suggested that a qualification is evidence of a level of knowledge, at least to the level that the candidate is safe to operate within a workplace and capable of learning further proficiency. This is important as the qualification structure within the Wild-Catch sector is important reflecting minimum AMSA standards to operate.

There is evidence from the IRC report that there does not seem to be any lack of willingness for employers to upskill and train staff. In 2020 there did not seem to be appetite to change State government funding arrangements (through qualification programs). The most recent Victorian (SKILLS FIRST FUNDING) funded list (November 2021) outlined a range of courses focus on the MAR (Maritime) and SFI (seafood industry) training package.

Of considerable concern is the evidence that there is a lack of value assigned to VET within industry cultures and networks. This situation is not uncommon across various industry sectors including primary industry focused employers. However within the industry there is evidence of dissatisfaction in job-readiness and the potential of training agencies not to train within the workplace.

FRDC in 2008 (Workforce and skills summit 2008/341) identified that "The seafood industry needs to be proactive to ensure it is able to address its workforce development and skill needs. While it was widely recognised that a national approach was needed, and that good communication between

industry and those organisations that are equipped to deliver in this area was essential, current arrangements were not delivering the required changes. It was clear that there was an urgent need to build communication between industry, Government, advisory and support agencies, and education and training providers”.

The workforce training environment is complex, and many businesses find it exceptionally challenging to understand (Table 5).

Table 5 Qualifications accessible by the Australian seafood industries

Australian Framework benchmark	Qualifications	Qualification	Employment descriptor
Higher Education		Associate degree	Team leader/senior administration/technician
		Degree (including honours)	Team leader/junior manager
		Graduate certificate	Mid manager
		Graduate diploma	Mid/senior manager
		Masters degree	Senior manager/research leader
		PhD	Senior manager/research leader
Vocational education		Certificate (I-IV)	Entry level to skilled workforce/team leader
		Diploma	team leader
Vocational education/other		Skill set	targeted workplace training
Other		Micro-credential	targeted workplace training/non accredited

Vocational training

Two major training packages are required by the seafood industry to ensure businesses can trade. These are:

MAR Maritime training package <https://training.gov.au/Training/Details/MAR>

SFI Seafood Industries training package <https://training.gov.au/Training/Details/SFI>

MAR training package

The MAR training package contains 17 qualifications ranging from entry level (Certificate I) to advanced standing (Diploma). Underpinning the 15 qualifications there are 179 units of competency, 27 units of competency that are imported from other training packages (8 from Business Services, 2 from Health, 3 from Manufacturing and engineering, 2 from Manufacturing, 1 from Resources and Infrastructure, 9 from Tourism, travel and hospitality and 2 from Transport and Logistics). There are 36 skill sets defined for the MAR training package.

There are currently 103 RTO providers with the qualification package on scope of registration. Out of the 103 training providers there are 42 with the training component currently in scope and notified delivery in Victoria. Of these 42 RTO, two are Victorian TAFE and 4 are Victorian based private RTO. In Victoria 7 qualifications are currently funded under the SKILLS FIRST FUNDING (non-apprenticeship) being:

MAR10418	Certificate I in Maritime Operations (Coxswain Grade 2 Near Coastal)
MAR20318	Certificate II in Maritime Operations (Coxswain Grade 1 Near Coastal)*
MAR20418	Certificate II in Maritime Operations (Marine Engine Driver Grade 3 Near Coastal)
MAR30818	Certificate III in Maritime Operations (Marine Engine Driver Grade 2 Near Coastal)
MAR30918	Certificate III in Maritime Operations (Master up to 24 metres Near Coastal)
MAR31018	Certificate III in Maritime Operations (Master Inland Waters)
MAR40320	Certificate IV in Maritime Operations (Master up to 35 metres Near Coastal)

These qualifications support the minimum standards required by AMSA; *however it should be noted that the training guarantee is demand driven, and if there is a disengagement from training by the industry, funding may be withdrawn* (unless a case is made to reinstate funding). Generally industry does not become aware of changes early enough to canvas opinions and the engagement by the training provider can be informal.

The key indicators of training for the MAR training package drawn from NCVET are:

- Reduction in enrolments by 1.6% per annum from 2015 to 2019, but a subsequent increase especially in MAR20418 (Certificate II Marine Operations (Coxswain Grade 1 Near coastal)).

Total	State/territory of	Program name	Year	2,019	2020	2021				
	Totals			2,875	2,820	3,260				
		Totals		2,875	2,820	3,260				
		MAR10418 - Certificate I in Maritime		125	55	50				
		MAR20318 - Certificate II in Maritim		1,065	1,450	1,585				
		MAR20418 - Certificate II in Maritim		230	155	210				
		MAR30818 - Certificate III in Maritim		605	490	585				
		MAR30918 - Certificate III in Maritim		760	655	795				
		MAR31018 - Certificate III in Maritim		90	20	-				
Total	Victoria	MAR40320 - Certificate IV in Maritim		-	-	30				

Source: NCVET 2022, Total VET students and courses 2021: subject enrolments DataBuilder, Total, State/territory of residence, Program name by Year
Numbers are rounded to the nearest 5 except for FYTEs and Reporting hours. A dash represents a true zero. Categories are not displayed if no data are available.
Filters applied: State of residence: Victoria; Program name: 7 of 4379

- Unit of competency completion rates ranging from 62 to 66% from 2015 to 2019 (similar to national average completion rates) but overall program completions are low (ca. 5-10%)

Total	State/territory of	Program name	Year	2,019	2020	2021 (preliminary)				
	Totals			190	120	145				
		Totals		190	120	145				
		MAR10418 - Certificate I in Maritime		10	5	5				
		MAR20318 - Certificate II in Maritim		65	60	75				
		MAR20418 - Certificate II in Maritim		25	10	10				
		MAR30818 - Certificate III in Maritim		30	15	30				
		MAR30918 - Certificate III in Maritim		45	20	25				
Total	Victoria	MAR31018 - Certificate III in Maritim		10	-	-				

Source: NCVET 2022, Total VET students and courses 2021: program completions DataBuilder, Total, State/territory of residence, Program name by Year
Numbers are rounded to the nearest 5. A dash represents a true zero. Categories are not displayed if no data are available.
Filters applied: State of residence: Victoria; Program name: 7 of 4497

- 62% of vocational education qualifications are at Certificate I and II (entry and general workforce levels); 31% of qualifications are at Certificate III (Master or engineer)
- 7% are Certificate IV or Diploma level (representative of CPD rates for the industry)

- *Near-coastal training dominates the sector with >95% of enrolments.* It is however not clear how much of this training is focused on the seafood industries compared to recreation or tourism. This sector of training is serviced by 54% private providers, 38% TAFE, 6% University and 2% other (e.g. community-based organisations)
- In 2019 only 5.8 of enrolments (n=347) were in Victoria. It is assumed that about 220 enrolments would complete. This represents about 7% of the workforce received training of which, it is assumed that 6.5% were entry level (or about 200 new entrants to the industry via formal training).
- It is estimated that there were 3 apprentices or trainees training in 2019 across Victoria (AISC 2020 data).

Industry skills requirements and insights

The Maritime IRC's 2019 Skills Forecast identifies the top priority skills for the Maritime workforce (2020-2024):

- Health and safety
- Operational skills
- Digital literacy
- Risk management.

The top five generic skills in order of importance are listed as:

- Managerial / Leadership
- Learning agility / Information literacy / Intellectual autonomy and self-management (adaptability)
- Design mindset / Thinking critically / System thinking / Solving problems.
- Communication / Virtual collaboration / Social intelligence
- Technology.

The top priority industry and occupation skills include navigation and vessel handling.

The Maritime IRC's 2019 Skills Forecast identifies that >78% of employers in the sector have reported experiencing a skills shortage during the last 12 months. Shortages were reported in the following occupations:

- Small vessel (<35m) masters
- Engineers (various)
- Marine engine drivers
- Deckhands
- Navigation.

The major reasons employers indicate as drivers for the shortage of skilled workforce were:

- Cost/time to achieve the required qualification.
- Ageing workforce / current staff retiring.
- Wages / salaries considered too low.
- Competition from other organisations.
- Geographic location of the vacancy.

SFI training package

The SFI training package contains 15 qualifications ranging from entry level (Certificate I) to advanced standing (Advanced Diploma). Underpinning the 15 qualifications there are 168 units of competency, 186 units of competency that are imported from other training packages (8 from Animal Care and Management, 27 from Agriculture, Horticulture and Conservation Land Management, 2 from Australian Meat processing; 1 Automotive Retail Service and repair; 53 from Business Services, 21 from Food, Beverage and Pharmaceutical, 5 from Health, 14 from Maritime; 2 from Sustainability; 30 Public Sector, 1 Public safety; 5 Retail services; 5 Sport fitness and recreation; 4 from Tourism, travel and hospitality and 9 from Transport and Logistics).

There are 27 skill sets defined for the SFI training package. There are currently 34 RTO providers with the qualification package on scope of registration. Out of the 34 training providers there are 12 with the training component currently in scope and notified delivery in Victoria. Of these 12 RTO, none are Victorian TAFE and 2 are Victorian based private RTO. In Victoria 3 qualifications are currently funded under the SKILLS FIRST FUNDING being:

SFI20111	Certificate II in Aquaculture (no 2022 data)
SFI30111	Certificate III in Aquaculture – traineeship
SFI30319	Certificate III in Seafood Post Harvest Operations – traineeship (no 2022 data)
SFI30611	Certificate III in Seafood Industry (Sales and Distribution)

Interestingly, *Certificate III in Seafood Post Harvest Operations receives a higher rate of funding for trainees than non-apprentice funding*. This is relatively unusual but an indicator that funding is targeting directly work industry training and developing new entrants to the industry. *The paucity of training opportunities across SFI within the subsidised funded training domain is of significant concern.*

The key indicators of training for the SFI training package drawn from NCVET are:

- Reduction in enrolments by 5.9 % per annum from 2015 to 2019. Currently there are no enrolments in these sectors.

Total	State/territory of	Program name	Year	2,017	2018	2019				
	Totals			10	10	5				
		Totals		10	10	5				
		SFI30111 - Certificate III in Aquacult -			5 -					
Total	Victoria	SFI30611 - Certificate III in Seafood		5	5 -					
Source: NCVET 2022, Total VET students and courses 2021: program enrolments DataBuilder, Total, State/territory of residence, Program name by Year										
Numbers are rounded to the nearest 5. A dash represents a true zero. Categories are not displayed if no data are available.										
Filters applied: State of residence: Victoria; Program name: SFI										

- Completion rates ranging from 32 to 36% from 2015 to 2019 (similar to national average completion rates)
- 45% of vocational education qualifications are at Certificate I and II (entry and general workforce levels); 48% of qualifications are at Certificate III (Master or engineer)
- 7% are Certificate IV or Diploma level (representative of CPD rates for the industry)
- Aquaculture dominates the sector with >80% of enrolments. This sector of training is serviced by 51% private providers, 37% TAFE, 8% University and 4% other (e.g. community-based organisations). Interestingly the fisheries sector is serviced by 32% private providers, 62% TAFE, 6% University and 0% other (e.g. community-based organisations).

- In 2019 only 1.1 of enrolments (n=11) were in Victoria. It is assumed that about 4 enrolments would complete. This represents about 0.15% of the workforce received training using the SFI training package.
- It is estimated that there were 1 apprentices or trainees training in 2019 across Victoria (AISC 2020 data).
- There has been no training in seafood processing (Certificate II or III) for the last 5 years.

Industry skills requirements and insights

The Aquaculture and Wild-Catch IRC's 2019 Skills Forecast identifies the top priority skills for the industries workforce (2020-2024):

- learning agility and information literacy,
- communication and virtual collaboration skills,
- language, literacy and numeracy (LLN),
- managerial and leadership skills
- Technology.

The top priority industry and occupation skills include industry leadership and succession planning.

The Aquaculture and Wild Catch IRC's 2019 Skills Forecast did not identify employer information on skills shortages across the last 12 months. It did however define the drivers for the shortage of skilled workforce as:

- Declining and ageing workforce
- Attracting and recruiting young people
- Restrictions on visa programs for skilled migration
- Limited options for subsidised training
- Geographical and regional dispersion of businesses
- Limited access to registered training organisations (RTOs)
- Competing industries
- Regulation and licensing implications.

The striking observation supported by both the Maritime IRC and the Aquaculture IRC is that the total enrolment across all MAR and SFI training programs amounts to about 350 enrolments, of which nearly 97% were in the MAR training program (95% of which were near coastal maritime operations). The Victorian SFI trained sector represented 3% of the total industry training load (ca. 10 enrolments).

The majority of training was conducted by the industry using private RTO providers (52% nationally) with 47% of training provided nationally by TAFE. In Victoria, approximately 170 of the 350 enrolments were trained by TAFE.

From these two conclusions, it is inevitable that SFI training is now quiescent in Victoria resulting in few, in any formal VE training for the seafood processing industry and that the future of MAR training is questionable from an economic point of view unless reform is undertaken.

The greater emphasis on formal education and training at the expense of formal competency assessment and certification, including industry, informal and non-formal training and learning has resulted in a lack of industry involvement across the whole training system. The disengagement of industry from the formal training sector (and in particular during review of qualifications) reflects:

- industry roles mainly confined to the skills identification element of the system.

- formal VET system (RTO learning) is often at odds with the views and requirements of industry.
- lack of flexibility in the approach to vocational learning especially when centred on the workplace.

This disengagement has led to training outside the national system (in house training and micro-credentialing/work instrument and SOP focus). Many businesses adopt unaccredited training models as they are adaptive, flexible, short duration training that focuses on equipment and workplace practices. This has resulted in NCVET survey responses that employers rate satisfaction with unaccredited training significantly higher than accredited training.

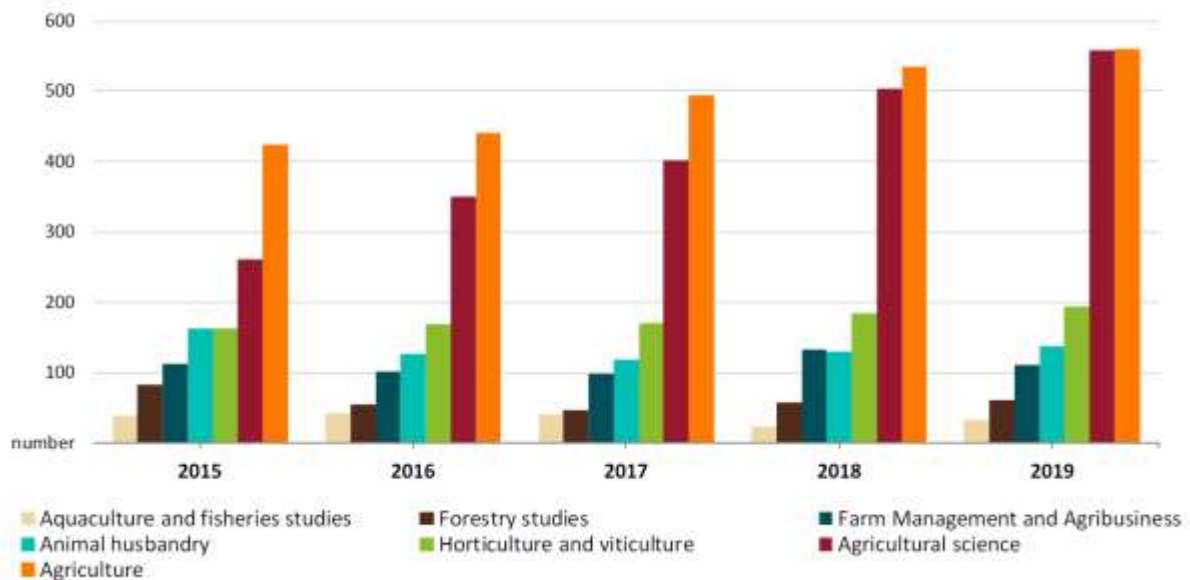
The major drivers for industry to undertake non-accredited training in this form to train and upskill the workforce are:

- Employer needs, disconnect between the type of training they are looking for and what they need, training content and time available.
- An understanding that the national system may assist with long-term, entry-level training, and upskilling, but is not flexible enough for internal change management, introduction of new systems, manufacturer-based training, training from industry associations etc.
- Industry is often offered products that are driven by RTO capability/availability, and what is funded at individual State levels. Industry is sympathetic to the opinion that RTO need to run viable training operations and have scheduling requirements that don't fit within employer needs. As the industry is represented by large numbers of SME and micro-businesses, these businesses have a low volume of training requirement and are hence less attractive to RTO who have to base decisions on volume.
- RTOs may not have the proprietary content for training staff to the level that the industry operates at. For instance there are many examples of manufacture-based training required to support new innovations and technology within the aquaculture industry that private RTO do not have content for, and have a need to upskill their training staff before industry training can commence.
- Part time, casual, seasonal workers (foreign or Australian) may not be able to access accredited training reflecting residency requirements, domicile or benefit cost to the business to underwrite costs of training.
- Barrier to understanding the accredited training sector, products on offer and match to business requirements.

As the industry is predominantly SME or micro-businesses unaccredited training has been the preferred option reflecting the low numbers of employees, the possible lack of a CPD culture within that business and a greater proportion of seasonal workers/casual staff that require on the job training but are not eligible or interested in accredited training.

Higher Education

Nationally, there are very limited opportunities to undertake HE education programs that are solely focused on aquaculture, fisheries or seafood industries. Currently there are four higher education providers that are aligned to fisheries and aquaculture rather than the broader discipline of marine biology/zoology/marine science/marine ecosystems. These providers (University of Tasmania, Flinders University, University of Wollongong, and Melbourne Polytechnic) have low enrolments per qualification but offer a full range of qualifications – Graduate Certificates (2); Graduate Diploma (5); Associate degree (2); Bachelor degrees (4) and Master’s degree (7).



This situation has resulted in a number of providers testing the viability of these programs and there is evidence that one provider (Melbourne Polytechnic) may exit this higher education discipline. The enrolments across AQF 6-7 (associate degree /degree) are low reflecting (i) a poor understanding of the wild catch and aquaculture industries through school career advisors and (ii) the potential crowding of the HE ‘fisheries’ domain through perceived cross over from marine biology and marine ecology/ecosystems programs. It is interesting to note that, through consultation with the sector, aquaculture will recruit ‘good’ graduates from many disciplines and develop the workforce through internal training programs.

The target of the majority of higher education providers is postgraduate certificates, diplomas and masters programs to upskill mid and senior managers / technical specialists within the seafood sector. This target is clearly reflected in pricing of products. *It should be noted that the current (2021) pricing of HE products could be a significant barrier to industry engagement.* A review of publicly accessible pricing from HE providers (Table 6) has demonstrated:

Table 6 Higher education training products

Graduate Certificate	\$8,000 – 20,000 (generally 4 units of assessment ranging from \$2,000 to \$5,000 per unit)
Graduate Diploma	\$35,000 – 40,000 (generally 8 units of assessment ranging from \$4,375 to \$5,000 per unit)
Associate Degree	\$50,000 – (generally one year of study post foundation study or 12 units of assessment \$4167 per unit)
Bachelor Degree	\$100,000 – \$150,000 – (generally 36 units of assessment ranging from \$2177 to \$4167 per unit)
Master’s Degree	\$50,000 - \$75,000 – (generally 12 units of assessment ranging from \$4167 to \$6250 per unit)

Pathways

There is a lack of coherent pathways in employment within the wild-catch sector reflecting the micro-business / SME structure of the industry. In the aquaculture sector, there are more opportunities for a defined career pathway, reflecting entry level qualifications, in-business and continuous professional development and use of specific skill sets. The Australian Apprenticeships & Traineeships Information Service provides some information on pathways for apprentices that are working within the industry (see: <https://www.aapathways.com.au/industries/seafood> and <https://www.aapathways.com.au/industries/maritime>). It is estimated that there were 1 apprentices or trainees training in SFI and 3 apprentices/trainees in MAR in 2019 across Victoria (AISC 2020 data).

The pathways identified across the seafood, wild-catch and aquaculture industries are reflective of the traditional employment structure of the industry (<https://www.aapathways.com.au/job-pathways/chart/seafood-industry-sfi/889abb91-244e-4731-84a1-75a43a6c4231>) with a VE attainment to operate within a business within the industry (Certificate III or IV). A similar situation is noted for MAR (<https://www.aapathways.com.au/job-pathways/chart/maritime-mar/39dd9bc4-cdfd-4cf6-9046-68a5e61d22ca>) with the exception of very large vessel operations or specialist work (e.g. marine surveyors).

Seafood Industry Australia (SIA) have proposed the modernisation of career opportunities in the seafood sector recently. This is presented as *‘A thriving, skilled and effective fishing sector requires a commitment to training, and the availability of career paths. The use of technology, and identifying the worker, can feed into better promotion of career paths and job vacancies. The new SIA platform will provide an app to encourage, and empower, online solutions for engagement, learning and inductions, by bringing together information, applications and safety. In the Australian seafood industry there is a lack of connection between new workers and a long-term career path. The seafood industry lacks a mandatory, easily accessible entry-level certification. A mandatory ‘blue card’ that would be delivered through the app would create a culture of care and professionalism on entry into the sector. The building industry’s ‘white card’ has had widespread success. This use of the app could bring a standardised approach to training to RTOs by ensuring that other training packages deliver online training that delivers operational roles that are relevant, are not generic, and are combined with adequate support. Industry programs, and content, will be coordinated via a hub to provide extension of programs across the seafood sector – and thus provide long-term ‘on-the-boat’ and ‘beyond-the-boat’ career path opportunities’.*

Skill sets

Currently there are 27 skill sets published for the SFI training package. The majority of skills sets are clustered around key sectors and tasks within sectors (e.g. SFISS00042 - Wild Harvest Diver Skill Set has five units of competency: SISOSCB008 - SCUBA dive using Enriched Air Nitrox, SFIDIV304 - Undertake emergency procedures in diving operations using SSBA, SFIDIV307 - Perform underwater work in the wild catch sector, SFIDIV301 - Work effectively as a diver in the seafood industry and SFIDIV30 2- Perform diving operations using SSBA.

In this particular case, the clusters of units are designed to prepare individuals with skills and knowledge requirements to conduct wild harvest diving activity. The skill set meets some of the workplace health and safety (AMSA and State WHS) regulatory compliance requirements for diving for wild species to depths of 30m.

The MAR training package has 42 skill sets identified with a number (e.g. MAR00017) being appropriate for the fisheries industries. Many of the skill sets are focused on ocean going vessels and national/international shipping including bulk carriers, passenger shipping etc.

However, no licensing, legislative or certification requirements apply to the skill set and all work must be carried out to comply with workplace procedures, according to state/territory health and safety, biosecurity and environmental regulations, legislation and standards that apply to the workplace.

This does not mean that individual units of competency are required for licensing (e.g. C-card certification), but the skills set as a whole does not provide that level of training. This situation results in a degree of misunderstanding when considering the deployment of skills sets within the business environment.

Furthermore, in Victoria, skills sets are not funded through the Victorian Training Guarantee, and hence industry bears full cost recover from the education provider.

Skills access

Inevitably, there are accessibility issues facing all rural industries. The skills providers (TAFE and private RTO) cannot provide services and access to skills to all communities and all businesses. The thin market impact for service providers as well as business poses a significant risk to business when trying to skill or re-skill the workforce.

As an example of new ideas in skills access, the SeSAFE initiative (<http://www.sesafe.com.au/>) is identified as a model for skills access for industry. The SeSAFE project (FRDC, 2018) aimed to raise awareness and improve safety performance in the fishing and aquaculture industry. The project developed an online safety learning and management system consisting of many short duration training modules designed to deliver essential WHS training for the industry before working on the water.

The SeSAFE program delivered information via a bespoke LMS allowing businesses to induct individuals into relevant workplace health and safety and safety requirements under WHS legislation and specific requirements under Australian Maritime Safety Authority legislation. The evaluation of knowledge and skills was undertaken using simple metrics of success and engagement with individual modules. The project was initially supported by a \$550,000 grant from the Fisheries Research and Development Corporation (FRDC), which included a \$250,000 cash contribution by Austral Fisheries. During the first three years of the project (2018-2021), AMSA made a \$100,000 financial contribution, and an in-kind contribution of \$100,000 was made by Austral Fisheries. Funding was also received

from the Australian Council of Prawn Fisheries, the Western Rock Lobster Council, the Australian Fisheries Management Authority, and several commercial fishing companies. In 2021, FRDC continued their support for SeSAFE with a further grant of \$560,000. Funding support was also received by several industry bodies, commercial fishing companies, and individuals working in the fishing industry.

4 Skills analysis and workforce development

There are some common characteristics that are required to develop a skills analysis and workforce development. These include work readiness in terms of work ethic, attitudes, willingness to learn and communication, as well as STEM and information communication technology (ICT).

Work Readiness

One of the key aspects of work readiness is that key stakeholders across the industry are required to determine certain characteristics and skills of foundational employees, the opportunities across the whole of the industry (including the supply chain) and the types of jobs to ensure that employees are ready to engage fully with the workplace (attitude, willingness to learn, work ethic, integrity, resilience, initiative and critical thinking).

These skills or abilities for work readiness provide employers and businesses staff who can communicate effectively, good customer service, creativity, understanding of workplace health and safety (WHS) requirements, ability to collect, analyse and communicate information, good organisational and management skills, basic finance skills, basic technology skills, problem solving, cultural sensitivity, and working as part of a team.

Work readiness does not equate to job readiness as it is not reflective of the specific skills for a position. This is a key point for the seafood industry when reflecting on recruitment of future staff, succession planning and engagement with education and skills providers. It also drives an opportunity for the industry to develop and engage with multi-skills and different approaches to training (e.g. skill sets, micro-credentials and, more traditional work industry training/placement models).

There is currently little evidence that the seafood industry fully embraces the objectives of 'work readiness'. The lack of work readiness outcomes is symptomatic of the barriers to employment that have been identified in several national surveys.

The key barriers to work readiness are:

- No clear entry to employment in the industry. Vacancies are seldom advertised or listed resulting in access to employment being 'word of mouth', local or family contacts, informal networks or, potentially walk-ins (mainly seafood processing sectors).
- Lack of skills or experience, or means to demonstrate those skills, and the only national recognition is through the AMSA enforcement of various Marine orders and related legislation.
- No clear and definitive means to identify required skill sets.
- Lack of qualifications (not reflecting the diversity but lacking the clear choice by the industry of preferred qualifications for certain roles and tasks)
- Lack of recognition of qualifications (transportability) and/or lack of practical experience (i.e. qualifications v skills)
- Lack of understanding of the industry, the workplace, what to expect and what the job really involves.
- Career pathways are unclear as the industry is not identified as a career of choice by schools/ AFE advisory staff.
- Seasonal working hours
- Sufficient time at sea is difficult to achieve for accredited training (potential links to AMSA Task Books and other evidence to ensure competency & time-based assessments of qualifications can be undertaken to achieve accreditation).

Multi-skills requirement and adaptability

Employers and job requirements change frequently. This is certainly true for the wild-catch sector in terms of fishing protocols, sustainability and wholesale, and the aquaculture sector reflecting changes in technology, genetics of fish stock and processing.

There is however an apparent gap between future employees whether that reflects STEM or a lack of engagement via existing vocational training programs. This results in future employees not holding foundation-level work readiness skills and a specific qualification that may be required for a business to fulfil its statutory requirements. Irrespective of which Australian industry sector, the future employee is likely to be required to hold at least two other qualifications or skill bases to be readily employable.

For example, in the seafood sector, an employee may require some form of minor trades certification (e.g. forklift/materials handling), (ii) seafood focused qualification and (iii) basic business skills to be sufficiently adept in operating a business within the industry sector. This level of training would support those employees in terms of workplace health and safety (WHS) certification as well as a relevant white card to ensure products harvested are managed correctly within the supply chain.

Negative perception of Agri-business and seafood industries employment pathways

There is good evidence that there is a general lack of interest in agriculture-related employment nationally. This sentiment also includes the fishing industry as well as ancillary industries such as meat and fish processing. There is a perception that the career structure presented from the industry does not provide viable employment or career paths. There is also a community perception that the sector relies on low cost, manual labour and offers little financial gain unless you are a business owner. This intransigence across the Australian community is further reinforced by a high reliance on seasonal labour or casualization.

Lifelong learning, re-skilling and up-skilling

Concurrent to the issues concerning perception of the industry and a lack of work-readiness in new entrants is the trends of lifelong learning, re-skilling and up-skilling in employment sectors that may be within the same geographic area as the fishing and seafood industries. This 'market competition' is a critical issue to address as fisheries sector may well have problems in attracting and recruiting new entrants/retain existing workforce reflecting other industry sectors have been proactive in providing skills stability' (the continuous provision of re-skilling and up-skilling).

Key issues facing current workforce development in the seafood industries.

- 1. School based learning** - there have been a number of 'false-starts' in this area of future workforce development. *It is critical that the seafood industry engages with schools and demonstrates the important role of the industry to both primary and secondary schools.* This approach builds awareness of the industry in young people and helps in a future engagement through supporting new entrants. Schools have a strong influence on young peoples' attitudes towards work and the workplace (the role and careers in agriculture, fisheries and other food related industries). A good example of a 'false-start' was the FRDC SIPS program

(<https://www.frdc.com.au/media-publications/educational-materials/seafood-industry-partnerships-in-schools>) - a program with the aim of offering Australian school students of all ages an 'up close and personal' look at life in the seafood industry, while giving those who work in the industry the opportunity to share their knowledge and passion with the next generation. An excellent example of a fully operational schools outreach program is MURES Tasmania (<https://www.mures.com.au/education>) and its linkage to the Marine Stewardship Council Salt water Schools (<https://www.msc.org/en-au/for-teachers/ocean-literacy/australian-education-curriculum>).

2. **Vocational Education and Training (VET)** – the report provides considerable information in VE training and its relationship to the industry. Training is delivered through a private registered training organisations and TAFE. *There are currently limited offerings focused on seafood industry skills development within the region.* Furthermore, there is a long-term disengagement with this sector of training (resulting in a gap within the mapping of qualifications and career pathways reflecting poor experience with training organisations, lack of local provision and lack of awareness/value for the qualifications).
3. **Tertiary education** - *There is no local comprehensive university providers for seafood/aquaculture industries in Victoria.* Local students would need to enrol in interstate programs.
4. **Work-based skills development** – *this area of workforce development is poorly characterised.* In general, the primary production sector (agriculture, horticulture, fisheries and forestry) place a high level of importance on development of their workforce and are generally able to provide skills that are required within the business. However, there are a range of skills that are reflective of compliance to legislative or regulatory practices that have to be provided through accredited training programs. Where external education or training options are available and that suit the needs of their business, the majority of businesses across the primary production sector would engage positively and enrol staff into programs. However, this optimistic view has to be countered by the common challenges a business faces when enrolling into accredited training – for example costs, time constraints and willingness of staff to undertake training.

5 Future training and education programs

The low annual enrolments into the MAR and SFI programs has resulted in a 'thin' market (regional and rural) which poses a significant future threat to industry training and upskilling the current employees. In Victoria, this situation **MAY** result in a reduction or change in the government funding subsidies available reflecting consistent low enrolments. This situation would result in an increase in fee for service or full cost recovery programs being delivered to up-skilling of existing or new employees.

One of the options for a future education training program would be the co-delivery of training with other subsidised or more profitable, growing sectors of the market. This may be an attractive solution for SFI training where there are commonalities between the existing curriculum and that already delivered to support the hospitality and/or meat processing sectors of the national economy. The MAR curriculum is however in many ways unique to the industry and hence cannot be easily co-delivered with other similar sectors (e.g., automotive, agricultural mechanisation, recreation or ecosystems management).

One pathway forward for the seafood industries is the formation of public-private partnerships and/or consortia to share costs of training (assuming loss of subsidy), ensuring training systems will meet the needs of industry and supporting sector growth. This approach has been successful in the past in other training sectors (e.g., meat processing) but inevitably it results in TAFE (VET) based training programs becoming less viable in the medium (3-7 year) term. The typical design of programs developed for VET and related service providers met the demands and needs for large (population) cohorts with a range for specialised and more generalist needs. This is not necessarily an option for the seafood industries reflecting the small workforce and the specialist training needs. Furthermore, if TAFE (VET) training do not fulfill the requirements of the industry, the sector training may need to become reliant on private RTO and other organisations to conduct training. As Government remains the principal funder of VET in Australia, as well as manage standards relating to delivery, quality, licensing and accreditation, and monitoring and assessment of learning, it is desirable for partners being developed between industry and regional TAFE. This approach is attractive to both learners and workers that are upskilling as the reputation of training body is critical to job flexibility and, if necessary, movement from one industry sector to another.

To reduce the impacts of the above noted constraints, it is proposed that there is an expansion of short course provision, and different models of delivery (work industry training) and assessment. In Section 3, the quantum of skill sets was identified (SFI program being 27 and MAR program being 42). Many of these products are focused on maritime sectors that are no relevant to the fisheries industries (60% in MAR are not directly related to wild catch operations in Victoria, and 30% of SFI skill sets are not directly related to fisheries operations in Victoria). Recently (2022-2023) the Victorian Government introduced Skills First funding for skill sets (FSSL). The initial listing for skill sets to receive funding is restricted with no courses identified for SFI or MAR programs. It is important that SIV advocates for FSSL funding to be extended to, initially, a limited number of skills sets to ensure that participation of the seafood industries as part of the broader Victorian economic and industry training requirements are fulfilled.

The traditional assessment strategies used for units of competency within TAFE and RTO training programs and skill sets needs to be reviewed in light of the majority of future training for the seafood sector is envisaged as workplace based. Recently, City & Guilds (UK) have changed their assessment strategies for a number of programs including those that have licencing and regulatory aspects necessary for certification. The approach taken has been to expand workplace assessments using

verbal and discussion-based approaches rather than approaches that require documentations. This approach is attractive to business operations as it reflects the ability of a staff member to perform the job/task and also communicate all aspects of the actions taken to perform the task/job. Documentation for statutory/certification processes is completed by the assessor rather than the trainee. This is attractive as the assessment and documentation is not impacted by any potential education fraud. The approach mirrors the current approaches used for commercial audit of businesses. Inevitably, any change in assessment strategy would be disruptive to the TAFE or RTO sector and create obligations on those organisations to re-train staff to gain skills in 'in-field' assessment strategies.

6 Needs, gaps and recommendations.

The study has identified that there are already many initiatives related to workforce development. Many of these are operational albeit at a limited level and, to ensure the success of the industry in the future, many of these initiatives need to be expanded and strengthened to meet the emerging workforce needs.

It is however interesting to note that fisheries / seafood and associated sectors were not part of the recent Settle Review - The Future of Agriculture Training Review. In many ways there are similarities that can be drawn from that review that are just as relevant to the seafood industries. Furthermore, the recent Macklin Review identified the need to collaborate and enable the education sector in Victoria to maintain its industry competitive advantage.

The recommendations are designed to (i) intensify and (ii) focus activities in relation to the specific of the industry. For each recommendation there are some immediate and longer-term actions that can be progressed. The recommendations will require active engagement and partnership with regional stakeholders including industry, government and community.

Recommendation 1

Promote the Victorian Seafood Industry

A concerted effort is required to overcome negative perception of primary production industries (agriculture, horticulture, fisheries and forestry). There is a clear opportunity to prepare branding and industry collateral in such a way that demonstrates the clear connection to the vision for the industry.

Recommended actions:

1. Increase awareness of the seafood industry brand through broader community wide marketing and promotion.
2. Engage with activities and events across the broader primary production sector to provide updates on industry initiatives (collective learning and clustering)
3. Promote job futures focussing on career pathways and roles within industry.
4. Develop a strategy of high-level champions to lead initiatives.
5. There is a need to re-affirm the position of the industry to Government.
6. Advocacy and lobbying where required to influence training funding models that enable skill sets/micro-credentialing.
7. Early conversations with relevant agencies regarding food and fisheries export chains and investment opportunity to build links for export-related opportunity identification and development.

Recommendation 2

Comprehensive review of current MAR and SFI curricula outside of the normal review cycle.

A complete review into the current training curricula is required to ensure that the curriculum creates a graduate that have had the opportunity to develop comprehensive skills through training.

Part of the review process would be to develop communication planning tools to support the industry in its choice of training. It is well understood that there is a range of higher education, pre-accredited,

and accredited training opportunities but significant confusion in choice, relationship and interconnectedness of training available. There is an acknowledgement that training may be siloed and not delivered optimally to support industry.

One pathway to achieve outcomes that support industry is to undertake a comprehensive industry review of curricula including industry points of engagement, communications, and new product development.

In particular:

1. Review and co-design fit-for-purpose training programs to deliver across regional needs and consider emerging and growth sectors.
2. Evaluate industry and employer resources and assets to support regional delivery of training co-designed to fulfil skill needs.
3. Evaluate and support new initiatives to develop training capabilities for the sector.
4. Identify the opportunities for a range of skill sets/micro credentials that would add value to the current training portfolio. This may result in shorter and more focused delivery of accredited training to support a regionally fragmented training model.
5. Review assessment strategies and understand if they are fit for purpose in the workplace (including feasibility work on the use of verbal/discussion assessments for licensing and regulatory practices).

Recommendation 3

Encourage work adaptation and skills development across the industry.

A regional skills demand analysis underpins future workforce planning, adaptation and skills development. The workforce will need to be multi-skilled with opportunities to continuously up-skill and reskill. More information will be required to promote multi-, transferable skills. There is also a broader requirement for higher skill levels and the need for better understanding of STEM and ICT.

Recommended actions:

1. Design and deliver a regional skills demand profile.
2. Promote the need for new entrants to be multi skilled and adaptable to employers' changing requirements through promotion of proactive skills delivery across the industry supply chains to meet future employer demands.
3. Raise awareness of career pathways and skilling opportunities especially for non-traditional cohorts
4. STEM is an integrated approach to learning which will become more important as the industry transitions in its skills base and workforce requirements.
5. Continue to work with schools, Victorian Department of Education & Training, Commonwealth Department of Education, Skills and Employment to emphasise the necessity of both foundational and vocational skills.

Recommendation 4

Transform school-based work readiness and skills development for the industry

A future workforce is required that has positive attitudes and resilient foundation skills such as a willingness to learn, work ethic, integrity, resilience, initiative and critical thinking. These core

competencies are founded at school and the industry need to promote its values to strengthen its relationship with schools. By taking a proactive approach to influencing the education and training on offer at school builds a pipeline of future employees relevant to industry needs.

Good practice principles are available for school-based training pathways and already included in the comprehensive information provided to students and parents. Industry effective collaborative partnerships between schools, VET providers and industry are essential. The Saltwater Schools and MURES model achieves a number of these objectives.

Recommended actions:

1. Regularly attend education, training and employment networks and events to raise awareness of future jobs and technology relevant to the industry.
2. Connect with existing workforce development programs (e.g. JVES and other job Active programs) to ensure that new entrants are aware of careers and new technologies in the industry and the requirements of the future workforce.
3. Encourage regional high schools to engage with existing initiatives that promote careers in the industry (e.g. facilitation of that process via the Victorian TechSchool initiative)
4. Engage with primary schools and encourage them to incorporate food and fishing education into their curriculum from early years of primary school.
5. Facilitate discussions between the Department of Education & Training, Industry and schools to encourage offerings of for seafood-based programs across Victoria.
6. Tap into local innovators to support opportunities for visits/tours by students showcase technology.

Recommendation 5

Motivate business investment in local skills development.

Industry and businesses have to be committed to developing skills and taking on employees that need development. Businesses will need some support and incentives to engage with this approach. It is important for the industry to capitalise on the training and employment opportunities that arise for instance through local and regional jobs funds. This is difficult for local businesses to achieve and relationships between this sector and others to drive opportunities need to be evaluated.

Recommended actions:

1. Encourage local businesses to take on employees to assist in local unemployment issues through the development of a hire local policy and movement.
2. Encourage successful businesses to employ a fixed number of job entry level traineeships and apprenticeships across key skills areas – e.g. port operations, mechanics, logistics and supply chain, fishing operations etc,
3. Undertake a regular survey of businesses across the industry to assess their workforce requirements and compare data over time to adjust workforce development strategies and determine their outcomes.

Recommendation 6

Stimulate entrepreneurship.

Any local new business entrants are likely to be small to medium enterprises. The current level of business skills across regions. Working with Chambers of Commerce, LGA, RDV and other business support organisations would promote the business opportunities available or new entrants in the industry.

Recommended actions:

1. Investigate local interest in development of a database or network of business mentors/consultants that are willing to give their time to help businesses address roadblocks and participate in informal round tables for problems solving in local businesses.
2. Liaise with Victorian Government to target future assistance to the industry during transition.

Recommendation 7

Matching and mentoring for real work requirements

A barrier that is consistently mentioned by business is the level of fragmentation in the education, training and employment support sectors. This is exacerbated in the seafood sector through the thin market, negative perceptions of the industry and lack of knowledge about developments within the industry. Businesses lack the time and resources to search for the ideal staff and invest in their skills development. There is a demand for a simple and timely matching and skill development service that could communicate employer requirements and provide better information on the skills of the prospective workforce. This is an important recommendation as the connections between employers and prospective is essential for the future of the industry.

Recommended actions:

1. Consider and plan for a broker service between industry, training/education sector and jobseekers.
2. Consider mechanisms to fund a development officer and workforce development centre at a regional node to assist with business partnerships to employ local people and continue to build local workforce capability.
3. Investigate ways to improve job matching services, particularly for those exiting education, training or further education.
4. Work collaboratively on solutions to engage First Nations people in future opportunities.

Recommendation 8

Infrastructure requirements

Immediate workforce skill development cannot require additional infrastructure for implementation however it is recognised that schools and training providers may require investment. The opportunity

for shared use and cooperation between industry and training providers has to be maximised. In the longer term, consideration should be given to the development of common use infrastructure through an on-site multi-functional asset that could be utilised by both industry and education or training providers.

Recommended actions:

1. Work to meet common use training needs as they arise, for example work with industry, TAFE and government to develop a business – training hub.