



2019-2020

# Year in Review

# Contents

Introduction	1
Our Role in the Skills Standards Development Program	4
COVID-19 Work and the AISC Emergency Response Sub-Committee	9
Rationalisation of Qualifications and Units	10
Support for Government Initiatives	11
Digital Capability Project	12
Environmental Sustainability Skills Project	13
Agriculture, Horticulture, Conservation and Land Management	14
Animal Care and Management	24
Aquaculture and Wild Catch	30
Food, Beverage and Pharmaceutical	36
Forestry and Timber	42
Meat Processing	48
Pulp and Paper Manufacturing	54
Racing and Breeding	56
VET Insights	58
Award Winning Skills	66

# Introduction

**2019-20 was a year of unprecedented natural events which brought about many challenges, but which also highlighted the essential services and specific skills of the industries we work with.**

These industries were directly impacted by the drought, bushfires and floods, but they were also a key part of the management and recovery, continuing to supply essential products and services and helping affected communities and animals. The COVID-19 pandemic added additional challenges, but it also highlighted and reaffirmed the importance and necessity of skills to grow, maintain and produce essential food, medicines, building and sanitary products. Evidence of this was seen by the increased demand for key industry products and services, including toilet paper, meat, flour, bread and pharmaceutical products. It has also reaffirmed the benefit of an Australian-made supply of agricultural, food, timber, paper and pharmaceutical products.

Skills Impact worked with relevant Industry Reference Committees (IRCs) to identify areas within the training packages where rapid development of skills standards could help industry respond to COVID-19. This was in addition to the projects proposed in the Annual Updates to the Skills Forecasts, which outlined qualifications and skills standards in need of revision and development in the 2020-21 calendar year. Annual Updates also provided insights from our engagement with industry, training providers and other VET stakeholders. We engaged with these stakeholders daily to gather information and evidence to track industry trends, skills

opportunities and challenges. Annual Updates and proposed projects were submitted to the Australian Industry and Skills Committee (AISC).

Skills Impact's work with industry to support current and future skills needs places us in a unique position to respond to Government inquiries regarding industry workforce and skill needs and vocational education and training (VET). Over the past five years, industry stakeholders have shared with us their concerns and challenges with the current VET system and discussed possible solutions to these. In late 2019, we began compiling this information and undertaking further research to provide input to the governments' VET Reform Roadmap. Read about our VET insights and submissions on pages 58-65.



Skills Impact Industry Engagement Manager, Andrew Horgan with fellow volunteer, Terry, rebuilding fences in Jingellic as part of the Blaze Aid effort.



**Skills Impact Board and CEO** Left to right: Lisa Marty, Todd Loydell, Julie George (Chair), Michael Hartman (CEO), Duncan Fraser (Deputy Chair), Les Gordon and Paula Fitzgerald.

Skills Impact supports industry to work with the VET sector, to develop a skilled and flexible workforce for the future. The events of 2019-2020 have demonstrated the value of our work, as the industries we work with have been able to identify available skills and training package solutions for emerging industries, surge workforces, biosecurity and infection control, and displaced workers. National qualifications need to be industry-led, reflect real work activities, current skills standards and practices. Between July 2019 and June 2020, we supported industry to review dozens of qualifications and hundreds of skill sets and units of competency, through the management of 36 projects (20 of the projects were initiated in 2019 and the other 16 were undergoing completion from last year). The IRC for each sector oversaw project development, as part of their responsibility to support engagement with their industry and to ensure the projects met stakeholder needs. A description of project work is provided under the relevant industry sections on pages 14-57. For each project, qualifications and skills standards were drafted in consultation with industry experts and broad consultation took place across Australia, with representatives from various sub-sectors of the relevant industries, registered training organisations and Government bodies, and under the oversight and approval of the relevant IRCs.

In 2019-20, we also managed a national cross-industry Environmental Sustainability Skills Project and contributed to a framework and training handbook to guide future investment into developing digital skills for Australian agricultural industries.

The feedback, insights, challenges and solutions that industry share with us and our work with the IRCs is what drives each project and initiative outlined in this report. We appreciate the input from every stakeholder we work with, particularly IRC members. Thank you all for volunteering your time to support the improvement of national qualifications and skills standards. Thank you also to our staff, specialist project contractors, Directors, ForestWorks, National Farmers Federation, MINTRAC and Rural Skills Australia for your contributions.

**Snapshot of the industries we support**



**Total employment**  
**875,200**  
(\$40bn worth of wages in Australia)

**Contribution to Gross Domestic Product:**  
**Over**

**\$84bn**

**Revenue**  
**\$339bn**

**Export value**  
**\$58bn**

Which is almost 15% of all Australian industry exports

**Number of businesses**  
**223,000**

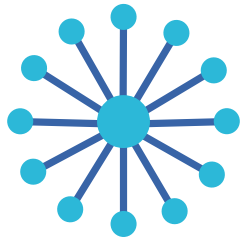


# Our Role in the Skills Standards Development Program

**Skills Impact is a not for profit, industry owned, expert skills and development service organisation. We hold a key role as a Skills Service Organisation (SSO), contracted by the Commonwealth Government. (Australia has six SSOs).**

In this role we are accountable for providing technical, operational and secretariat services to support 12 Industry Reference Committees as they plan industry engagement and to guide training package development and review activities.

# What is Our Role?



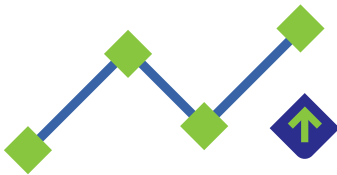
The Australian Industry and Skills Committee (AISC) appoints Industry Reference Committees (IRCs) to oversee the development and review of training packages (qualifications, skill sets and units).

*Skills Impact is contracted by the Commonwealth to support 12 IRCs.*

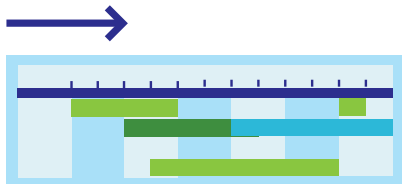


Gaps and emerging skill needs are identified by Industry Reference Committees and industry.

*Skills Impact captures this in Skills Forecasts.*



Skills Impact submits IRC Skills Forecasts, Cases for Change, and projects to the AISC for approval.



The AISC determines the national schedule of review and development projects.

*Skills Impact is contracted to carry out projects.*



Qualifications, skill sets and units are reviewed and developed in consultation with subject matter experts and stakeholders, to meet current and future industry needs.

*Skills Impact submits the work to the AISC.*



Revised qualifications, skill sets and units are endorsed by the AISC and made publicly available at [training.gov.au](http://training.gov.au)

# Support to Industry Reference Committees

**Twelve Industry Reference Committees (IRCs) guide and direct our Skills Service Organisation activities with industry and training providers to ensure training packages (i.e. units of competency, skill sets and qualifications) reflect industry's existing and emerging workforce development needs.**

All IRCs and their members are appointed by the Australian Industry and Skills Committee (AISC). Each IRC is made up of people with experience, skills and knowledge of their industry sector.

**We provide support to these IRCs in four key areas:**

- **Secretarial and operational support** – committee meetings, agendas, papers and travel.
- **Industry engagement** – to gather information about skills needs.
- Develop **Skills Forecasts** and Annual Updates, as well as proposals for training package projects to review units, skill sets and qualifications.
- **Undertake contracted training package projects** with oversight by the IRCs, including drafting units, skill sets and qualifications, in preparation for endorsement by the AISC.

The Skills Impact Board and management team oversee the delivery of services to 12 Industry Reference Committees. We employ dedicated Industry Engagement Managers who provide secretariat support services to seven of the IRCs. Skills Impact has contractual partnerships with ForestWorks and MINTRAC; these two organisations utilise their extensive networks and sector specific knowledge to, on our behalf, manage the secretariat services for the forest management, timber, pulp and paper and the meat processing sectors.

**We support the following IRCs:**

- Agriculture and Production Horticulture IRC
- Amenity Horticulture, Landscaping, Conservation and Land Management IRC
- Animal Care and Management IRC
- Aquaculture and Wild Catch IRC
- Food, Beverage and Pharmaceutical IRC
- Forest Management and Harvesting IRC
- Meat IRC
- Pharmaceutical Manufacturing IRC
- Pulp and Paper Manufacturing IRC
- Racing IRC
- Timber and Wood Processing IRC
- Timber Building Solutions IRC

**We support IRCs to improve and develop the following training packages:**

- ACM Animal Care and Management Training Package
- AHC Agriculture, Horticulture and Conservation and Land Management Training Package
- AMP Australian Meat Processing Training Package
- FBP Food, Beverage and Pharmaceutical Training Package
- FWP Forest and Wood Products Training Package
- PPM Pulp and Paper Manufacturing Industry Training Package
- RGR Racing and Breeding Training Package
- SFI Seafood Industry Training Package

## IRC Meetings

This year, Skills Impact supported IRC members at 29 meetings, including arranging all logistics, facilitating and managing the meetings, creating all supporting documentation and minute taking.

IRCs met more frequently in 2020 due to the COVID-19 pandemic and the need for IRCs to provide urgent information about skills requirements to the AISC Emergency Response Sub-Committee. In 2020 these meetings were all conducted through tele and video-conferencing, due to restrictions as a result of the pandemic.

IRCs met to make decisions, discuss concerns, respond to specific questions and to progress the development work on their industry's national training package. Committee members participated in exchanges of specific industry intelligence gathered through their activities to identify current and future skills needs and gaps.

Guests were often invited to these meetings. They have been key stakeholders interested in specific issues; state and territory-funded industry training advisory organisations, representing the needs of their own state or territory's industries; representatives from the Department of Education, Skills and Employment; or representatives of associations or organisations that may have members affected by the decisions the IRC make.



# What is a Training Package?

## Why are they important?



Training packages contain national skills standards, aligned to job roles

### Training Packages help deliver



Development, training, assessment



Productivity



Safety for workers and the public

## A training package is comprised of



### Units of Competency

which are building blocks for

#### A work function

Example:  
Install and repair fences and gates unit of competency



### Skill Sets

(3-7 Units) Providing potential pathway towards

#### A specialist industry need or regulatory/licence requirement

Example:  
Recognise Aboriginal Cultural Sites Skill Set



### Qualifications

(15-30 Units)

#### A job role

Example:  
Certificate III in Agriculture (Dairy Production)

## Training Packages are used in



Registered Training Organisations  
Formal training and assessment



Workplaces  
Informal on-the-job learning and assessment

The units of competency, skill sets and qualifications for a particular industry (or related industry sectors) are grouped together into 'training packages'. Training packages are the skills standards developed by industry and used by registered training organisations, like TAFEs, to help design training programs. Training packages describe industry expectations of the work outcomes that are expected to perform particular job roles and to what standard.

# Operational Systems and Processes

Skills Impact developed new operational systems and processes to support improved efficiency in our work, to provide better support for staff and their performance, and to improve stakeholder experience in providing feedback and participation in the national review and development of qualifications and skills standards. These systems and processes were designed to support our values of transparency, trust, collaboration and accountability, and to improve internal and external stakeholder experiences in a range of areas, including ease of access to provide feedback and attend meetings, particularly in an ever-increasing digital world. The developments included:

- **Travel and events service:** To ensure staff and stakeholders have all the information they need for meetings and travel. The service aims to make the process of booking and attending meetings as smooth as possible. While travel was curtailed in the second half of the financial year, the portal was used extensively for tracking webinar bookings and participation.
- **Online feedback hub:** To ensure stakeholders could more easily make comments on draft qualifications, skills standards and Skills Forecasts and to see other peoples' feedback. A summary of all feedback and comments are published at various stages of the project, with users' anonymity protected. Only Skills Impact staff and training package contractors working directly on the project are able to identify users against their unique IDs.
- **MS Project and Power BI data visualisation software:** To better understand how well and how often we engage with our industry stakeholders and to track the progress of projects.
- **Asset management database and contracts management database:** To more effectively manage and be notified of project milestones and software and hardware maintenance.
- **Human relations (HR) management software:** To bring all HR information, such as personal details, position details, leave, and performance reviews, together for better management and compliance, using proprietary HR software, Employment Hero, which also connects directly to accounting software for payroll.

The ongoing aims of the above initiatives is that our professional staff can focus their efforts on the job at hand, trusting that the systems and operational staff will deliver the required support and services. These changes also allow us to be a nimbler organisation, and one that can scale up or down in size or complexity with greater ease.

# COVID-19 Work and the AISC Emergency Response Sub-Committee

COVID-19 has disrupted the ways we work and highlighted critical skills areas. The industries we work with are essential to Australia's wellbeing and food security. As well as feeding our nation, they provide many of the key products and services currently under increased demand and which will support the economy to recover.

Throughout the COVID-19 crisis, the Industry Reference Committees (IRCs) have provided information on an urgent basis to the AISC Emergency Response Sub-Committee. In turn, the AISC has worked with the National Cabinet to highlight matters for attention to support industry and skills development, including support for essential services and displaced workers.

## Immediate Crisis Response

During March and April 2020, each IRC submitted information related to the essential skills within industry sectors for the purpose of emergency response. This supported a number of industries to make their case to be listed as essential businesses through an additional avenue and helped the AISC to define those priority industries which then enabled the National Cabinet to set skills and training priorities.

IRCs also provided information about any immediate training issues relating to workplace and campus-based training. Skills Impact carried out an analysis of all units of competency across the eight training packages we support to identify any requirements for mandatory work placement, assessment that had to take place in the workplace, or training and assessment that required physical attendance. This was to identify alternatives for assessment and training, and to identify where there might be delays in being able to carry out training and assessment. This was a particular issue for registered training organisations trying to deliver training using social distancing, and for employers looking to bolster the safety of workplaces by preventing non-essential personnel or visitors from accessing work sites.

## Training For Worker Movement And Potential Surge Workforces

During April – June 2020, Skills Impact worked with IRCs to identify any potential requirements for training to meet the needs of rapid worker movement and surge workforces. This included identifying potential training related to infection control.

Generally, the analysis demonstrated that within the training packages we look after, all the required skills are documented, including skills standards for higher levels of biosecurity, exceeding the proposed new cross industry skills standards related to infection control.

Specific issues raised included the importance of recognising any work with living entities, animal or plant, as essential work for welfare and social reasons, as well as the importance of protecting regional, rural, remote and local communities and economies.

## Critical Response Projects

In June 2020, Skills Impact worked with the IRCs to identify areas within the training packages where rapid development of skills standards could help industry respond to COVID-19. While the IRCs were able to identify a list of possible solutions to submit, all-in-all they found the training packages to be in a good position to meet the skills needs of industry, even as they adjust to the challenges of COVID-19.

### Skills Set in Pharmaceutical Manufacturing Approved

Of the submitted solutions, a project to develop a skill set in pharmaceutical manufacturing was approved for development in August 2020, as part of the emergency response to the pandemic. This skill set describes the foundation skills and knowledge required by workers entering the pharmaceutical manufacturing industry, especially those employed to work with bioprocessed products, such as vaccines and antibody testing devices.

The other projects that were submitted address relevant industry skills needs and opportunities. Some were referred to the National Careers Institute, while others were identified as being appropriate for consideration through the regular approval processes and will be submitted as part of future Skills Forecasts as the relevant IRCs deem necessary.

# Rationalisation of Qualifications and Units

Skills Impact supports Ministerial priorities and requirements to remove obsolete and superfluous qualifications and units. Skills Impact has continued to focus on ways to rationalise qualifications and units across its training packages and has successfully, with industry support, reduced the numbers of units and qualifications, making huge improvements to the quality of content.

The first priority for reviewing any qualification or unit has been to investigate the current industry skills needs, requirements and standards. Sometimes two or more units can be merged to cover the necessary skills and reduce the number of units on the national register. Sometimes several qualifications in a particular industry sector may share the same core skills and knowledge and we can find ways to merge them. Both solutions result in a reduced number of qualifications and units, without removing the coverage of any essential skills from the system or reducing the scope of job outcomes.

Merging qualifications that share similar skills to produce one qualification with specialisations offers learners more flexible training pathways. They can select one or two specialisations or choose the generalist option. They also have the option of gaining further specialisations in the future, by completing additional units, rather than having to undertake a whole additional qualification. An example of this is the Diploma of Veterinary Nursing, which, following our work, now offers specialisations in surgical, dental, emergency and critical care, and general practice. Previously, these skills standards were divided into four separate qualifications.

This year, several qualifications have been merged to create a simplified qualification with skills streams or specialisations. For example, ten qualifications in the horticultural and nursery industry have been merged into five qualifications. This industry sector is made up of many sub-sectors, all which share similar skills and knowledge.

Some other examples include:

- **Conservation and ecosystem management:** Four existing qualifications have been amalgamated into a single Certificate III in Conservation and Ecosystem Management, with streams of study for each sub-sector, while maintaining the possibility of a generalist qualification.
- **Animal care and management:** The Certificate III in Animal Studies, Certificate III in Companion Animal Services and Certificate III in Pet Grooming have been merged to create a Certificate III in Animal Care Services. This qualification can be undertaken as a general qualification or individuals can select to specialise in one or two of the following areas: animal care, pet grooming or customer service. A Certificate IV in Animal Care Facility Management has also been developed to replace the Certificate IV in Captive Animals and Certificate IV in Companion Animal Services. The revised qualification reflects the skills and knowledge for team leaders, supervisors, and specialist technical roles within an animal care facility, including companion animal and exhibited and wildlife environments.
- **Timber truss and frame:** Out of seven qualifications that have been reviewed, four have been proposed for deletion with proposals to use alternative qualifications. Twenty-five units of competency have been revised and improved to meet the current task requirements. Of the revised units, eight have been merged into four units and the content from one unit incorporated in two other units, resulting in a reduction of units.

Sometimes however, there is the example of a qualification or unit that is supported by an industry need, but has very few enrolments and the delivery challenges cannot be addressed by simply removing or replacing the qualification or unit. This year, Skills Impact launched a research program to look at the challenges and solutions around this. Further information is available under the section titled 'VET Insights'.

# Support for Government Initiatives

Skills Impact's work with industry to support current and future skills needs puts us in a unique position to assist Government with its inquiries into industry workforce and skill needs and vocational education and training reform.

Skills Impact works daily with people in a wide range of industries. These stakeholders share with us their views about workforce skill challenges and opportunities, training, what is working, what needs changing and possible avenues for improvement. In turn, we pass on these views through engagement with committees and where requested make submissions to the relevant inquiries.

Following a discussion and request, Skills Impact made submissions to the following inquiries between June 2019 and June 2020. All submissions can be downloaded from [skillsimpact.com.au/vetinsights/submissions/](https://skillsimpact.com.au/vetinsights/submissions/)

- Productivity Commission Study into the National Agreement for Skills and Workforce Development
- Follow up submission addressing specific questions raised by the Productivity Commission
- Feedback to the COAG VET Sector Roadmap
- Participated in the Co-design workshops for the National Skills Commission and the National Careers Institute
- Skills for Victoria's Growing Economy Independent Review
- Senate Inquiry into Growing Australian Agriculture to \$100 Billion by 2030
- Support for an Agricultural Workforce Development Strategy



**Digital Capability Project Launch at Parliament House.** Pictured left to right: Mike Ridout from Food Agility CRC, Bronwyn Harch from the University of Queensland, Alison Carmichael from Skills Impact, Jane Trindall from the Cotton Research and Development Corporation and Ben van Delden from KPMG.

# Digital Capability Project

A framework and training handbook were developed to guide future investment into developing digital skills for Australian agricultural industries.

Australia's agricultural industry, via the National Farmers Federation, has a vision to increase the value of farm output to \$100 billion by 2030<sup>1</sup>, a significant increase on today's \$62 billion. Improving the digital capability of the industry is an important enabler to achieving this target. Digital skills will support the workforce to better adapt to technology, seize the opportunities and innovations digital processes offer, and to remain competitive globally. In 2019, Australia's rural research and development corporations (RDCs) invested in the development of three national frameworks for digital innovation in agriculture.

KPMG partnered with Skills Impact, Faethm and The University of Queensland to produce the Agricultural Workforce Digital Capability Framework. Skills Impact were able to use the industry intelligence gathered from our work with Industry Reference Committees, industry

experts and trainers, and research bodies to help identify skills gaps, emerging trends and industry needs in a vocational context.

The Agricultural Workforce Digital Capability Framework provides industry with practical guidance for future work needs and up-skilling opportunities by mapping the digital capabilities required for the agricultural workforce to adapt in a rapidly changing technological environment.

To help deliver against the framework a training and curricula handbook for education and training providers and a questionnaire were also developed.

<sup>1</sup> TNFF 2030 Roadmap to guide industry growth, viewed August 2020, <https://nff.org.au/media-release/nff-releases-2030-roadmap-to-guide-industry-growth/>

# Environmental Sustainability Skills Project

Australia's transition toward a more environmentally sustainable society is being driven by economic, social and environmental imperatives. The transition brings challenges for the vocational education and training system to ensure the workforce is equipped with the skills required for new, and more sustainable, ways of working.

Under the direction of the Environmental Sustainability Expert Panel, Skills Impact has worked with the Department of Employment, Skills, Small and Family Business (as was its title then) to source information on usage and occupational outcomes from existing skill standards and qualifications, with a focus on environmental sustainability.

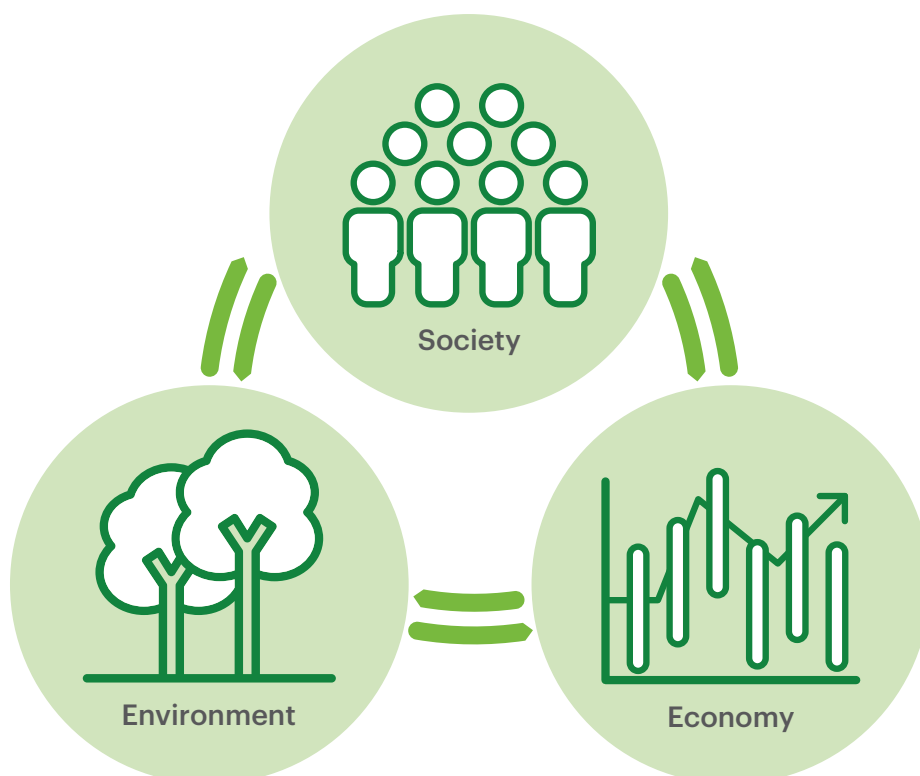
The Panel has identified significant challenges that are inherent to the project:

- Is addressing environmental sustainability compatible with the current domestic economic model?
- Does environmental sustainability include identifiable and discrete occupations?
- Can environmental sustainability skills and knowledge be transferred between industry contexts?
- Is it possible to develop cross-industry solutions for this topic for the VET system?

The Panel has consulted with all Industry Reference Committees (IRCs) to answer the above questions. The Panel compiled a report of their investigation, including 16 recommendations, and submitted this to the Australian Industry and Skills Committee (AISC) late in 2019.

An AISC communique from the Chair Emeritus Professor Tracey Horton AO commended the Panel on their work and outlined the steps to be taken to progress the recommendations 1-10.

In addition, the AISC has referred Recommendations 11-16 of the Report to the VET Reform Taskforce for consideration in the Skills Organisations pilot co-design process.



# Agriculture, Horticulture, Conservation and Land Management

**The agriculture, horticulture, conservation and land management industries are at the forefront of supporting Australia's future through the responsible utilisation and cultivation of our ecosystem.**

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A key aspect is the responsibility for food production for local and international consumers, through livestock and crop growth. They are also responsible for managing and maintaining the majority of Australian land and waters, which includes farmed land as well as our national and state parks, public gardens, sporting grounds and open spaces.

2019 and 2020 brought many challenges for this industry, through drought, fire, floods, and the 2020 COVID-19 pandemic, but it also highlighted the necessity of agricultural and horticultural skills and knowledge to maintain Australia's food security and support the economy.

COVID-19 has meant people are spending more time at home and exercising outdoors in parks and public spaces. Technical skills and knowledge are required to facilitate the integration of green spaces into different environments in ways that are safe, effective and sustainable. Knowledge of the impacts of human activities on the environment and the skills to conserve Australia's vast and varied nature reserves, waters and bushland are essential.

The sectors in this industry continue to show their resilience, adapting to the challenges presented by local and international agreements and markets, natural events and changes in cultural attitudes, government policies, and the environment. New skills needs and job roles have emerged – some of these were addressed as part of 2019-20 projects and others have been identified in the Annual Update to the Skills Forecast and proposed for development in 2020-21.

The national skills standards and qualifications for these sectors are overseen by the Agriculture and Production Horticulture Industry Reference Committee (IRC) and the Amenity Horticulture, Landscaping, Conservation and Land Management IRC.

**Employs over**

**452,000 people**

**More than**

**180,000 businesses**

**Contributes over**

**\$126 billion**  
to Gross Domestic Product

**Revenue of over**

**\$140 billion**

**Export value is almost**

**\$16 billion**

(Source: IBISWorld Industry Wizard, 2020)

Australian agriculture accounts for 58% of Australian land use (385 million hectares).

Due to agricultural production, Australia is one of the most food secure countries in the world: we produce more food than we consume,

**exporting around  
70% of farm products.**

(Source: ABARES, 2020, Insights: Australian food security and the COVID-19 pandemic)



# Skills Forecast

## Annual update and proposed projects for 2020-2021

This year's Annual Update to the IRC Skills Forecast and Proposed Schedule of Work (Skills Forecast) proposed five key projects for 2020 – 2021 and identified specific changes to the industry environment.

Both IRCs have been overseeing a major review of the AHC Agriculture, Horticulture and Conservation and Land Management Training Package, which is the largest training package in the VET system, through a new unit sector approach. The first major changes under this approach will be submitted to the AISC later in 2020, as part of the project work carried out in 2019-20. Projects for 2020-21 will look at skills standards in landscaping, including parks and gardens; broad acre and seed production; and dairy and milk harvesting. Additional projects for 2020-21 will include animal reproduction and the rehabilitation of mined land.

Digital skills continue to grow in importance so that industry can keep abreast of new technologies, interpret data, and identify links along the supply chain to make better-informed business decisions. Industry is also developing further skills in new and emerging food sources, sustainability, farm management and compliance to tackle challenges and pursue new opportunities.

Consumers' desire to eat healthier, ethically produced food, and reduce environmental impacts is driving demand for alternative proteins. With animal farming under heightened levels of scrutiny, agricultural producers are responding to emerging market opportunities. According to Australian Native Food and Botanicals (ANFAB), demand for native foods is also increasing. Aboriginal communities have long known the nutritional benefits of bush foods, such as ribberries, finger limes, bunya nuts and lemon aspen. However, according to ANFAB deputy chair, Russell Glover, there are skills shortages in working with the strict food safety regulations in order to commercialise bush food products.

**“Alternative proteins will have a key role in the food of the future. But so will meat. With the number of mouths to feed growing by on average 1.8 times the size of Australia’s population per annum for the next 32 years, there will be an increased need for protein sources. Plant-based proteins are expected to make up 33 per cent of the protein market by 2054 up from a current market share of less than five per cent by value (600 per cent increase). Both meat and alternative plant or algae-based proteins will clearly have a critical role to play in filling the dietary needs of two billion extra people, but our farming systems also need to dramatically evolve to produce more food using less land and resources.”**

KPMG, 2018, p.34, Talking 2030: Growing agriculture into a \$100 billion industry, National Farmers' Federation

There are unique business development and leadership skill needs for agricultural businesses. Agriculture is a business environment with legislative and regulatory requirements that mean farms must develop robust planning frameworks in order to achieve the desired balance of economic, environmental and social outcomes. For many businesses in industries across Australia, budgeting is a relatively predictable process, with inputs and outputs not deviating too far from what is generally expected. Agriculture is uniquely defined by unpredictability and instability.

Addressing the ongoing education and training needs of regional, rural and remote communities is of vital importance for Australian agriculture. The National Farmers' Federation has argued that labour shortages are far more pronounced in horticulture than in the dairy and broadacre sectors. Their CEO Tony Mahar is quoted as saying, “agriculture’s workforce deficit is one of the largest constraints to our sector’s productivity growth and we need solutions”. In December 2019, the Federal Government established the National Agricultural Labour Advisory Committee to develop a National Agriculture Workforce Strategy. Skills Impact made a submission to this inquiry and developed a discussion paper for industry input.



Environmental stewardship (responsibly using and protecting the land, waters and ecosystem through sustainable practices and conservation) has also received increased attention. Following calls from the National Farmers' Federation, the Australian Government has launched the Environmental Stewardship Program, under the National Landcare Program, to provide support for stewardship activities. This contains the four-year, \$34 million Agriculture Stewardship Package, with objectives of improving agriculture's social license through the development of a national biodiversity policy and incentivising the adoption of ecosystem boosting practices. There is likely to be strong interest in training and education in regenerative agriculture, especially to build on school-level learning, and bridge the gap to science-focused university curricula through the delivery of applied skills training.

**“Farmers have always been frontline stewards of Australia’s environment, managing 51% of our continent’s landmass. Unfortunately, efforts to incentivise and reward environmental practices historically have been short-term, or based on ad-hoc grants and programs. They have also been interfered with through complex and poorly understood regulatory requirements. We need a comprehensive approach that delivers the right incentives, and the right outcomes for farmers and the environment.”**

NFF President, Fiona Simson



## Projects for 2020-21

The following projects have been approved by the Australian Industry and Skills Committee (AISC) for 2020-21:

### Review of Unit Sectors

Given the size and complexity of the AHC Training Package, this work involves a continuation of the unit sector approach for Year 2 of the strategy, as outlined in the current 2019 – 2022 Skills Forecast. Skills standards for the following sectors will be reviewed:

- Cluster 1: Landscaping, including Parks and Gardens
- Cluster 2: Broad Acre and Seed Production
- Cluster 3: Dairy and Milk Harvesting

### Animal Reproduction

Continued consumer demand for animal-based proteins will place increasing pressure on farmers to use improved genetics in their breeding programs. New processes and technologies in the livestock industry are helping farmers to maintain a sustainable production system, improve profitability and competitiveness. The aim of this project is to review livestock units relating to animal reproductive practices, including impregnation techniques, pregnancy testing and birthing, so they include skills for current processes and technologies.

### Skills for Land Rehabilitation (Mined Land)

Recent mine closures, especially across Northern Australia, have highlighted a skills gap in current conservation and land management qualifications for work to rehabilitate closed mines. Large mining companies recruit Environmental and Rehabilitation Specialists and Advisors to help meet contract obligations. These roles may be supervised by university educated Environmental Engineers, however the field workers that perform the rehabilitation tasks are most suited to VET qualified employees. The responsibility for this work is often being left with Indigenous groups (including Indigenous Rangers), either by agreement or by default.

**The following project is still under consideration:**

### Indigenous Consultation for Annual Updates and Future Projects

A research and development project is proposed to improve long-term skills outcomes for Indigenous participants in the Australian workforce and the vocational education and training (VET) system. The aim is to uncover future projects that could expand productivity, employment and economic development opportunities, open new and emerging markets, improve training and job outcomes and upgrade industry skills in negotiations and partnerships with Indigenous business and community organisations. It is proposed that this will be a joint project, overseen by both the Aquaculture and Wild Catch IRC and the Amenity Horticulture, Landscaping, and Conservation and Land Management IRC. Both IRCs acknowledge the importance of Aboriginal and Torres Strait Islander involvement in the development of all aspects of their industries.

# Vocational Qualification Leads to Mid-life Career Change

**At 55 years old and after 30 years in the printing industry, Phil started to seriously think about what to do next. Over the past few years, Phil had experienced retrenchments, stints of casual work and periods of unemployment. The printing industry had changed and shrunk its workforce and with another retrenchment looming, Phil knew that he needed to change directions and find something that was going to keep him in work for the next ten years.**

Phil said he has always loved gardening, but he knew it would be a challenge to find someone willing to employ an older worker without experience. He thought vocational education and training could be the answer to growing a career in the horticultural industry.

**“I’ve loved gardening for years and am passionate about native plants and I realised this was what I really wanted to do for the rest of my working life. I took a risk and decided to study horticulture,”**

**said Phil.**

Phil enrolled in the Certificate III in Horticulture with Melbourne Polytechnic. By December 2019 he had completed all of his course work and had sent his resume to at least fifteen different companies.

“I knew my chances weren’t great. I was 56 by then, passionate and knowledgeable, fit and ready to work, but had no horticulture work experience.

“I got a job one day after finishing my course work. I couldn’t believe it. Although it was a low-skilled casual job I knew that this was the break I needed. So, I took it.

“I am now in a full time, ongoing position in property maintenance. I’m loving being outdoors, learning new skills and using what I learnt on my course. I’m so thankful to be employed during the COVID-19 crisis. If I hadn’t done that course it’s likely I’d be either unemployed or working casually in printing factories, wishing I was out in the sunshine,” said Phil.



Phil Ward, Maintenance Horticulturalist,  
Maintaining Melbourne Pty Ltd

Michael Hartman, CEO of Skills Impact, said Phil’s story is illustrative of the exciting career pathways a vocational qualification can offer somebody, at any age or stage of their career.

**“Many people associate vocational education and training with young people starting a career. It certainly is a great way for our younger generation to start a career, but there are people in our society of various ages and different points in their life who want to change their career and vocational education and training is an excellent way of doing this,” said Michael.**

Ray Redford, Lead Teacher at Melbourne Polytechnic Parks and Gardens, said they get a lot of students looking for a career change, including many students who already have university qualifications.

“Many students go on to find work in the industry or further study within TAFE. We engage with employers regularly to ensure our training materials are up to date and to organise worksite experience for groups of our students, so they can gain genuine practice working alongside horticulturists on worksites. An example of this is a local cemetery where we help with pruning,” said Ray.

Horticulture has been identified as a field where skilled workers are constantly needed, and it’s an industry that is expanding as innovations and technology in the field create new opportunities.

As with other vocational training programs, graduates of horticulture courses learn from people with real industry experience, obtaining practical skills and knowledge that relate to real work situations.

# Projects

## Project work between 2019-20

Outlined over the following pages is a summary of projects Skills Impact managed between July 2019 and June 2020.

The Agriculture and Production Horticulture Industry Reference Committee (IRC) and the Amenity Horticulture, Landscaping, Conservation and Land Management IRC oversaw the project development, as part of their responsibility to support engagement with their industry and to ensure the projects meet stakeholder needs.

The skills standards and qualifications updated as part of the following projects are expected to be endorsed by the AISC and State and Territory Ministers by the end of 2020.

## Ag Biosecurity and Emergency Response Project

Australia has a reputation for producing high-quality and safe agricultural produce, thanks largely to strict biosecurity controls and regulations. The commitment of industry and regulators in minimising risk and controlling outbreaks means we are one of the few countries to remain almost free from many of the world's most severe pests, weeds and diseases.

The outbreaks that have occurred in Australia show how devastating the impact can be for an entire industry. For instance, the 2013 discovery of banana freckle in Cavendish bananas in the Northern Territory and the 2015 discovery of Panama Disease TR4 in Queensland, which have cost an estimated \$26 million to eradicate, with the national response still ongoing<sup>2</sup>.

The skills for upholding biosecurity controls and measures are required at every stage of production, from purchasing through to growing, transport and sales. While different sectors face specific challenges, there is overlap in the ways in which these outbreaks can be prevented.

Industry has driven this project to define the skills and knowledge required to perform a wide range of processes for preventing a biosecurity outbreak, as well as the skills for managing an outbreak and emergency response. As a result, four new skills sets have been developed and 13 existing units reviewed. They capture skills required at every stage of the value chain, from purchasing through to growing, transport and sales. They also include skills for using new technologies, which are increasingly used to detect, analyse, monitor and respond to biosecurity risks.

Ross Brown of Sunpork Ltd is one member of industry who has expressed a positive reaction to outcome of the project.

**“Sunpork gives full support in the AHCBIO and AHCBER revised units... The changes reflect the industry requirements and also improves the student outcomes. They have been well designed for the Industry and will stand us in good stead if the unthinkable happens.”**

**Ross Brown of Sunpork Ltd**



### Key Outcomes

- Four skill sets developed to capture the skills needed for basic biosecurity, basic chainsaw operation, firearms and site management.
- Thirteen units of competency updated, including revisions to eight biosecurity emergency response (BER) to align with actual emergency response scenarios and five biosecurity (BIO) units to incorporate all agricultural and natural area needs.
- Biosecurity Incident Management System (BIMS) standards included across all units, as well a description in the Implementation Guide to support training delivery.
- Terminology updated across all units to align with current industry use.

<sup>2</sup> The University of Melbourne website, viewed August 2020, <https://pursuit.unimelb.edu.au/articles/from-racehorses-to-bananas-the-importance-of-biosecurity>

## Agronomy Project

Farmers and horticulturalists need the ability to adapt to weather and climate conditions, especially in a country like Australia, where drought is a recurring factor. Workers with practical skills in agronomy can help put research into practice to achieve this, assisting farmers to get the best long-term results from the land. The science of agronomy looks at how environmental influences can impact the growth and use of plants and animals for food, fibre, fuel and land reclamation. Agronomists consider factors across the entire farming system, such as the environment, soil, nutrition, weather and cultivation techniques, and how these can affect crops and/or pastures. Australia is one of the most food secure nations on earth and the science of agronomy plays a key role in this. This project came about due to a need for more workers with practical skills in agronomy and the lack of national skills standards to address the technical expertise required to apply agronomy practices.

Thanks to the efforts of those who contributed to this project, a national Diploma of Applied Agronomy has been developed, along with a skill set in digital agronomy. Two units in agricultural data and nutrition have also been developed and six units revised.

Consultation focused on the practical and hands-on expertise required to put the research of agronomy into practice, such as the skills and knowledge to address emerging changes in technology, as well as to plan, capture and interpret data and to preserve natural resources.

**“Having a qualification that reflects the professional standards of agronomists working in the field will be of significant benefit to the industry in ensuring advice is well informed and communicated. I highly recommend this qualification to agricultural industry players who want to have staff that have a solid grounding in the principles of a career in applied agronomy.”**

Mark Stanley, Director Regional Connections Pty Ltd

### Key Outcomes

- One qualification developed to capture the complex skills required to put knowledge of agronomy into practice, including skills for working with agricultural data.
- One skill set developed to support the digital expertise required for work in agronomy, including knowledge of system types and how to use them.
- Two units of competency developed to support skills in the interpretation and implementation of agricultural data and to support the skills and knowledge required to review, test and analyse site characteristics, determine plant nutrient requirements, design a nutrient management plan, and monitor and evaluate a crop or pasture nutrition program and nutrient management plan.
- Six units of competency reviewed so that they are applicable to the context of agronomy, as well as other industry sectors.

## Conservation and Land Management Project

Conservation and ecosystem management is a large and complex sector responsible for caring for Australia's unique flora and fauna, many of which are not found anywhere else in the world. While the skills needed for this work span a number of sub-sectors – including lands, parks and wildlife; natural area restoration; conservation earthworks; and pest management – common foundational skills are needed across job roles. It is important that those employed in the sector are equipped with the skills and knowledge applicable to all of the varied environments of this expansive country, some of which are extremely remote and home to unique ecosystems. Technological advancements, changing markets, and shifting climactic conditions are currently impacting the sector as a whole, presenting a need for updated skills standards.

Industry stakeholders from across Australia have been consulted as part of this project to review units, skill sets and qualifications relating to the sub-sectors of conservation and ecosystem management, addressing skills needs and promoting flexible work pathways. Skills in ecology have been incorporated where applicable, so that graduates in any conservation and land management related sector finish their training with an understanding of how their work can impact the environment, and the skills and knowledge required to make this a positive impact. These changes will support future industry workers and leaders to have the skills and knowledge required to thrive within the sector.

Consultation with industry experts and with the Consultation with the Amenity Horticulture, Landscaping, Conservation and Land Management IRC has also identified a more suitable description of this sector to be Conservation and Ecosystem Management. As such, qualifications have been renamed to Conservation and Ecosystem Management.

**“I’m grateful for the amount of consultation completed during this project and by the extension of the feedback periods. The updated and new units, skill sets and qualifications have been substantially improved and will play a pivotal role in the future of conservation and land management nationally.”**

Tein McDonald, conservation and land management expert and member of the Australian Association of Bush Regenerators

### Key Outcomes

- Four existing Certificate III level qualifications have been amalgamated into a single new Certificate III in Conservation and Ecosystem Management, with streams of study for each sub-sector, while maintaining the possibility of a generalist qualification.
- The Diploma and Certificates I, II, III, IV in Conservation and Land Management have been renamed to Conservation and Ecosystem Management.

- The unit AHCNAR201 Carry out natural area restoration works has been proposed for deletion, as industry feedback indicated it does not accurately describe current job roles. It is proposed to be replaced with the new unit AHCECR203 Perform basic ecological restoration works, which includes the technical detail needed to support skills in ecology, including understanding of environments, how they function and how to conserve them.
- Nineteen units of competency were developed, including:
  - Six marine units, to address the need for skills to perform conservation and land management activities in a marine environment
  - Six new units in Natural Area Restoration (or Ecological Restoration), which address the need for fieldwork skills, particularly digital skills, site inspections, and skills in restoration, regeneration and reconstruction
  - Four units to address skills for using new technology and processes developed in the area of Lands, Parks and Wildlife, including skills in data, biodiversity monitoring, using a GPS and operating a remotely piloted system
  - The unit described above (AHCECR203 Perform basic ecological restoration works), which will replace AHCNAR201 Carry out natural area restoration works
  - New units for identifying flora and fauna, conducting ecological burning, and recognising landforms and soil types.
- Two new skill sets to provide access to skills standards relating to the job task of seed processing and the basics of ranger work.

## Green Walls and Rooftop Gardens Project

Green infrastructure is a relatively new industry in Australia, and has seen expansion in recent times as city councils, architects and developers recognise the many benefits of roof gardens, vertical gardens and green facades.

Australian city dwellers will be all too familiar with the fierce heat that can be experienced on a summer's day, when surrounded by closely constructed buildings, concrete and other solid surfaces. With limited space for traditional parks, this kind of infrastructure can offer respite from these 'urban heat islands', while also improving air quality, helping to manage storm water, and creating a sense of privacy and enclosure while still being aesthetically pleasing. For these reasons, Australian city councils have developed plans and policies to increase the number of roof and vertical gardens in high density areas. This support, combined with better access to technology, is making green infrastructure even more popular and opening up job opportunities.

Consultation with industry has indicated that while job roles in this area draw on skills and knowledge relating to horticulture and landscaping, specialist skills and knowledge are required for the unique work of designing,



constructing and maintaining green infrastructure.

This work requires consideration of a range of factors, including how much weight a structure can bear, safety working at heights, access points, nutrient requirements, installation of waterproof barriers, drainage and filtration systems, environmental factors and microclimates, and local government legislation.

Thanks to the contributions of those who participated in this project, the unique skills required for work with green infrastructure have been captured in five units of competency and three skill sets. These new skills standards will support future skills development and assist training delivery.

**“The skills sets and units of competency have all been carefully considered and reflect what I, and the industry, consider to be key in training those entering the industry. I currently employ staff who work in this field and ultimately would like to have staff formally trained in these skills standards prior to commencing employment, in addition to the practical/ onsite training that currently occurs.”**

**Michael Casey, Director Evergreen Infrastructure**

### Key Outcomes

- Three skill sets developed to cover the knowledge and skills required to:
  - Design roof gardens, vertical gardens and green facades for commercial and or residential projects, in consultation with building, landscape and horticultural professionals.
  - Safely construct roof gardens, vertical gardens and green facades for commercial and or residential projects.
  - Maintain green infrastructure specific to commercial and or residential roof gardens, vertical gardens and green facades.

- Five units developed to capture the skills and knowledge required to:
  - Design roof gardens
  - Design vertical gardens and green facades
  - Construct roof gardens
  - Construct vertical gardens and green facades
  - Maintain roof gardens, vertical gardens and green facades.

## Horticulture and Nursery Project

Whether it be the vegetables on your dinner plate or the potted plant decorating your house, every plant grown for human use follows a horticultural journey. This journey involves the work of a series of industry sub sectors, each comprised of different practices and job roles, but all intrinsically connected with horticultural practices. Making up part of the same supply chain, the sectors of production horticulture, nursery production, and retail nursery share many transferable skills and face many of the same opportunities and challenges.

Robotics are increasingly used for watering and picking crops; drones are emerging as a way to identify disease; and forecasting crop yield potential is coming along in leaps and bounds as collecting and processing a wide range of data becomes easier. Such developments require higher levels of digital skills to enable workers and managers to engage with equipment, software and data.

These sectors are essential in providing plants for use as food, fibre, and decoration, so it is important that national qualifications and skills standards are up to date and meet the needs of industry every step of the way. Thanks to the input of industry, skills standards for these sectors have been updated and streamlined to reflect current technology, terminology and work practices.

**“These changes will support the ongoing training necessary to see participants who complete programs are skilled to a level that supports our industry. Streamlining the programs will now be in line with industry specific needs. This has been much needed in the industry for some time.”**

Shane Hickey, Chief Human Resources Officer, The Flower Power Group / Arborglen Pty Ltd

### Key Outcomes

- Ten qualifications have been merged into five qualifications to provide greater clarity and simplicity for industry regarding the qualifications available for their workforce.
- Three qualifications, five skill sets and 67 units of competency revised to include work functions that reflect current job roles in the industry and incorporate the latest technologies, equipment and advances.
- The Diploma of Retail Nursery Management is proposed for deletion by the Subject Matter Expert Groups, due to low current usage. These skills are now accessible through the Diploma of Nursery

Management, which a person working specifically in retail management can undertake with units specific to their job role.

- A new unit has been developed for AHCPM509 Apply knowledge of plant physiology to horticultural practices.
- The unit for AHCPT305 Regulate crops has been proposed to be replaced with the revised unit for AHCPT312 Implement a crop regulation program.

## Medicinal Crops Project

The production and use of medical cannabis is a rapidly expanding sector in Australia, offering new therapeutic options for a range of conditions including chemotherapy-induced nausea and vomiting, epilepsy, multiple sclerosis, chronic pain and palliative care. This is presenting new job opportunities in the horticulture sector as more licenses and permits for its cultivation and manufacture are issued.

Unique skills are required to operate within the strict regulatory framework and security requirements of the medicinal crops sector. Organisations producing medical cannabis require a license and permit granted by the Commonwealth Office of Drugs Control (ODC) and are regularly audited to ensure compliance to regulations. The high value of medicinal crops as pharmaceutical agents, means strong security measures also need to be maintained, including weighing and checking all inputs. It is essential that licensed sites have access to staff with the skills to meet these regulatory and security needs, as well as expertise in propagation, plant care, maintenance, harvest and pre-processing.

**“The medicinal cannabis sector has some unique features due to the regulatory environment in which it operates. This the employee pool, the required skills and knowledge of employees and the nature of production. Work needs to comply with regulatory and security requirements, combined with elements of agriculture, horticulture, protected crops and pharmaceutical systems.”**

**Rosemary Richards, Executive Manager, Medicinal Cannabis Industry Australia (MCIA).**

Industry has been consulted throughout this project to address the need for skills standards for the medicinal crops sector. This has resulted in the development of two new qualifications, four new skills sets, and 13 new units of competency. The qualifications have been developed to reflect the roles of individuals who work in licensed medicinal cannabis facilities as cultivation technicians and in supervisory roles.

Consideration was given to capturing the skills needed by individuals entering the workforce at an assistant level. However, further input suggested that entrants into this sector at this level should be provided with the



opportunity to develop a broad range of horticultural skills in both broadacre and protected cropping systems. Therefore, three units of competency have been developed for assistant roles in propagation, growth, and harvesting of medicinal cannabis plants and will be available for inclusion in existing qualifications as elective choices, rather than within a specialist qualification.

### Key Outcomes

- Certificate III in Medicinal Cannabis Cultivation and Production developed to provide the appropriate skills for those who work as cultivation supervisors and technical experts.
- Certificate IV in Medicinal Cannabis Cultivation and Production developed to support skills appropriate for head growers or facility managers.
- Four skill sets developed to support categories of knowledge, skills and experience necessary for working in the medicinal cannabis industry, covering induction activities, cultivation, production and management roles.
- Thirteen units of competency developed to capture the skills required to grow medical cannabis, including skills and knowledge in regulatory requirements, security measures, propagation, plant care, maintenance, harvest and pre-processing. Three of these units will be included in elective groupings of AHC20320 Certificate II in Production Horticulture (Elective Group C) and AHC21819 Certificate II in Protected Horticulture (Group E General electives).

## Rural Merchandising and Sales Project

Australian farmers and horticulturalists spend billions of dollars every year on products and services to keep their businesses efficient and economically viable. Rural merchandising workers are usually the first point of contact for farmers looking to invest in machinery and technology. Providing advice on merchandise, inventory control, order processing and warehousing duties, these employees have

an important role to play in making sure farmers get the right product for the job. They are often in customer-facing service and sales roles, requiring specific skills and product knowledge, including for services associated with livestock, auctioneers, stock and station agents, real estate agents to business managers and agronomists.

It is vital that skills standards for rural merchandising are regularly reviewed so that they are up to date with continuously evolving products and markets. Input from industry experts has informed the review of 11 units and one qualification in rural merchandising and the proposed deletion of one unit as it duplicates an existing and more relevant unit in another training package.

**“As an industry skills expert engaged from the beginning of the project, I have appreciated being able to consult both as an industry person and an assessor. Along with the Skills Impact team and other industry experts, it has been a process of information gathering, sorting, collating and reviewing, to ensure the qualification developed will meet industry needs... Though the uptake for this Qualification will be tested in our current climate, I am confident that, going forward, we have created a very applicable, useable and versatile qualification for our rural merchandising workers. I look forward to seeing the finished product available and for the opportunity to see the efforts pay off.”**

Lisa Wallace of Central Regional TAFE Western Australia

Consultation focused on the practical and hands-on expertise required to put the merchandising and sales into practice, such as the skills and knowledge to research changes in farm machinery technology. The skills standards have been updated to better describe current job functions and tasks of rural merchandisers and rural sales assistants and to make them appropriate for use in current retail settings.



**“There are many talented people living outside Australia’s main cities, but sadly, all too often they migrate to capital cities seeking career opportunities and recognised training. The Rural Merchandising and Sales qualification offers businesses such as Irrigear’s member stores a chance to give their talented staff, opportunities to upskill and follow a career path that’s tailored to living outside the cities. Additionally, I feel the qualification uniquely provides generalist training for people that do not want to follow a specialised, technical path but for whom no alternative was previously available. I’m confident that many of Irrigear’s 70+ member stores will encourage their staff to pursue the qualification when it becomes available.”**

Simon Treptow, General Manager at Irrigear

### Key Outcomes

- The Certificate III in Rural Merchandising has been updated to include new core and elective units of competency, adjusting for the fact that two core units in the current qualification have been deleted on training.gov.au: BSBSLS402A Identify sales prospects (deleted 25 March 2015) and SIRXSLS303 Build relationships with customers (deleted 18 April 2016). The qualification’s packaging rules have been adjusted to include six core units and six electives units, to provide greater flexibility for register training organisations and employers.
- Merchandising units of competency have been re-coded to reflect the specific industry sector, i.e.: AHCBC (Broad Acre Cropping), AHCCHM (Chemicals), AHCIRG (Irrigation), AHCLSK (Livestock), AHCMOM (Machinery Operation and Maintenance) and AHCSOL (Soils and Media sector).
- The unit AHCMER301 Process customer complaints is proposed for deletion as it has been identified as a duplicate of BSBCMM301 Process customer complaints.

## Completed Projects

The following projects were endorsed by the Australian Industry and Skills Committee (AISC). The revised qualifications, skill sets and units of competency, that were developed as part of these projects, are published on training.gov.au and available for delivery by registered training organisations (RTOs).

Visit [www.skillsimpact.com.au/completed-projects](http://www.skillsimpact.com.au/completed-projects) for further details.

### Arboriculture Project

Qualifications and skills standards were reviewed to improve accessibility (including the removal of unnecessary prerequisites and changing entry requirements), to better reflect job roles and industry standards, and to strengthen pathways from entry level tree workers through to strategic tree management roles.

### Carbon and Agribusiness Management Project

Skill standards were developed to support a range of carbon farming methods including vegetation, agricultural, soil-based and savanna burning. Qualifications and skills standards were developed and revised to encompass the skills required to run a commercial farming enterprise.

### Horticulture Technology Project

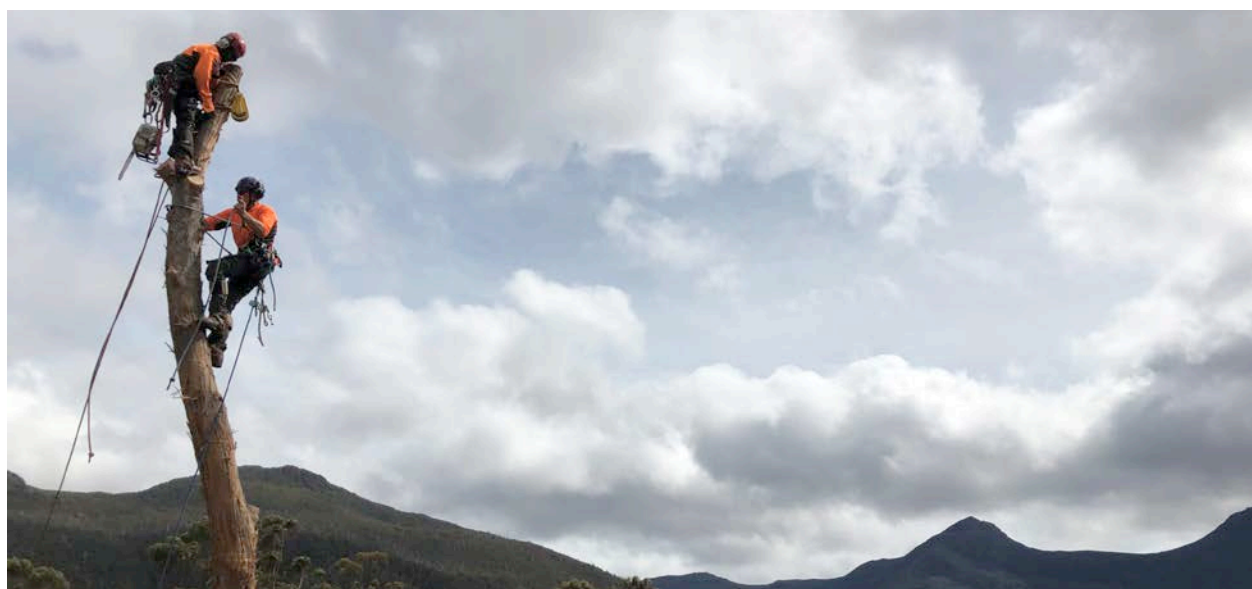
The expanding field of protected horticulture has been supported by the development of qualifications and revised skill standards. Skills to support the quality and sustainability of crops were also incorporated in updated irrigation qualifications.

### Sports Turf Management Project

Sports turf management qualifications have been strengthened to reflect skills needed at all levels – including volunteers, apprentices, tradespeople, managers and consultants.

### Viticulture Project

The Diploma of Viticulture has been revised to meet the needs of all table and wine grape producers in Australia, and to support the planning and implementation of biosecurity measures through skills in leadership and management.



# Animal Care and Management

**Animals and humans have a long history of coexistence, facilitated by the skills and knowledge of animal care and management.**

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Skills in this industry promote the safe existence of wildlife, exhibited, working and domestic animals, supporting our broader community and ecosystems. Updating skills in areas such as animal welfare practices, caring for wildlife, and supporting the mental and physical health of employees and the public are ongoing priorities in carrying out this work. The industry is diverse, including veterinary care, companion and assistance animal management, pet care and training, equine care and animal regulation.

The national skills standards and qualifications for this industry are overseen by the Animal Care and Management Industry Reference Committee (IRC).

**Veterinary services contribute**

**\$2.6 billion**

**to Gross Domestic Product, with a revenue of**

**\$3.9 billion.**

(Source: IBISWorld Industry Wizard, 2020)

**Almost 29 million pets**

in Australia today – more pets than humans!

This includes an estimated 5.1 million dogs, 3.8 million cats, 11.3 million fish, 5.6 million birds, 614,000 small mammals, 364,000 reptiles and 1.8 million 'other' pets.

Almost two-thirds of Australian households currently have one or more pets.

**Australia is spending over**

**\$13 billion per year**

to keep our pets fed, healthy and well-accessorised, with food and veterinary services continuing to account for half of all ongoing expenditure.

(Source: Animal Medicines Australia, 2019, Pets in Australia: A national survey of pets and people)



# Skills Forecast

## Annual update and proposed projects for 2020-2021

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This year's Annual Update to the IRC Skills Forecast and Proposed Schedule of Work (Skills Forecast) proposed two key projects for 2020 – 2021 and identified specific changes to the industry environment.

The droughts, bushfires and floods in 2019-20 have had a huge impact on wildlife and animal welfare. For example, the Zoo and Aquarium Association Australasia (ZAA) has supported a large-scale, coordinated response of zoos, wildlife parks and aquariums, focusing on wildlife rescue, rehabilitation and long-term species recovery. This has required significant expertise, resources, equipment and facilities across a network of accredited organisations to help native animals in crisis-affected areas. With estimates of more than one billion native animals killed by Australia's bushfires between September 2019 and January 2020, there is extensive short and long-term wildlife rescue, rehabilitation and recovery work ahead. The public's interest and concern about animal welfare, care and management continues to escalate, driven by these major events, as well as COVID-19.

There is also growing public interest in the welfare of horses' post work or sport involvement. Increasing expectations for horses to be appropriately cared-for in their post-racing life is expected to catalyse an increase in horse rescue centres, sanctuaries and charities. Extra skills will be required for the rehoming, care and management of geriatric horses, and horses unable to retrain. These are most likely to be available through importing units of competency from the RGR Racing and Breeding Training Package for retraining horses to new environments, which were developed in 2018-19.

The roles of pets, companion and assistance animals as a central component of human health and welfare has more recognition now, both through formal research and public attitudes. As a result, industry services are expanding into new fields of care for animals, and current services are experiencing market growth. While current 2019-20 project work has focussed on skills standards for these services in pet care, assistance animals and exhibited animals, it has not focussed on the services provided to equines.

The Animal Care and Management IRC commissioned an Equine Industry Survey to ascertain how work with equines is being done and who is doing that work. While several representative bodies have strong views on scope of practice, the survey was designed to provide evidence of the type and nature of services being accessed by equine owners, carers, trainers, riders and others responsible for the day to day welfare of equines. The combination of direct consultations, the equine survey, workshops and other feedback mechanisms identified two key issues to be addressed as part of the projects outlined below for 2020-21.

**When it comes to the welfare of living creatures, the IRC believes that practitioners across the industry should be appropriately qualified, given the dangers that inappropriate treatments and services can create if undertaken poorly, carelessly or ignorantly. This concern was expressed clearly by consumers of services in the equine survey.**

## Projects for 2020-21

The following projects have been approved by the Australian Industry and Skills Committee (AISC) for 2020-21.

### Equine Care Careers

There are transferable skills across a variety of sectors involved in the care of equines. It is recommended that existing qualifications and skills standards are reviewed and repackaged to enable a variety of job outcomes and reduce complexity in the VET system. To achieve this, a 'job family' is being proposed by the IRC to reflect the 'equine care' sector, which groups a range of current and emerging occupations, such as performance horse (equestrian events), rescue centres, sanctuaries, agistments, and allied health services (massage, body workers, saddle/equipment fitting, dentistry). Skills standards in these sectors will also be revised to meet industry expectations for practical skills in handling traditional and modern equine tools, horse safety, horse behaviour and horse welfare.

### Pre-Requisite Barriers To Training

The aim of this project is to remove barriers to training and to strengthen skills in horse safety, behaviour and welfare. Extensive industry consultation and feedback from the IRC-led Equine Industry Survey has suggested that pre-requisite units should be removed. More effective ongoing learning could be achieved by embedding horse safety, behaviour and welfare skills in every practical unit of competency. This will negate the need for pre-requisite units and remove barriers to developing specialist skills and knowledge. It will also ensure the robustness and consistency of training, and will reflect the holistic approach to equine welfare that survey participants overwhelmingly demanded.



# Equine Industry Survey

The aim of this survey was to determine the types of horse care services that are undertaken, who is carrying out this work and how, and the skills and knowledge workers and owners possess and, perhaps, develop (whether through formal qualifications or on-the-job experience). The results of this survey were used to inform the Annual Update, along with the information and feedback gathered through the interactions with industry and desktop research.

The survey received 546 responses.

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## Key findings

- The skills most in demand are associated with horse safety, animal behaviour and animal welfare.
- A shortage of skilled labour was mentioned in reference to specific occupations, including farriers, track (including exercise) riders, grooms and saddle fitters.
- There were calls for workplace-based training and practical skills, although some scepticism is expressed about its effectiveness given the lack of regulation in these areas of the industry.
- It is difficult to access equine services in regional, rural and remote areas. Many customers feel limited to 'what they can get', bemoaning the reliability of, or waiting times for, providers who service broad geographical areas.
- There continues to be specific labour force shortages, especially regarding farriers and track riders. These shortages are sometimes addressed by unqualified service providers, who are of varying quality.
- One key purpose of the survey was to establish the current use of equine dentistry in Australia. Most respondents (95%) to the IRC survey said they engage service providers for equine dental care, indicating widespread knowledge of the importance of horses' teeth to their overall health and the ongoing demand for services. The majority (53%) selected equine dental technicians as their service provider, while veterinarians were engaged by 23% of respondents. Around 24% arranged for both equine dental technicians and veterinarians to be present.

# Projects

## Project work between 2019-20

Outlined over the following pages is a summary of projects Skills Impact managed between July 2019 and June 2020.

The Animal Care and Management Industry Reference Committee (IRC) oversaw the project development, as part of their responsibility to support engagement with their industry and to ensure the projects meet stakeholder needs.

The skills standards and qualifications updated as part of the following projects are expected to be endorsed by the AISC and State and Territory Ministers later in 2020.

## Pet Care and Animal Training Project

Pets and assistance animals are highly valued by people in Australia for their contributions to our communities, as evidenced by the expanding market for pet products and services. As assistance animals become more common and the public look to a broader range of options to keep their pets healthy and happy, demand is increasing for skilled workers in areas such as pet grooming, animal health care, animal training, assistance animals, companion and therapy animals, and regulation. Job roles in these areas require similar skills at a foundational level to care for animal wellbeing, as well as specialist expertise to perform tasks relevant to each role.

Consultation with industry across Australia took place to describe the skills standards for these job roles. This feedback has resulted in the revision and update of qualifications and skills standards for general animal care, animal behaviour and training, pet grooming and animal regulation and management. The qualifications and skills standards have been updated to reflect the full breadth of the sector and the changing ways animals are valued, managed and cared for.

### Key Outcomes

- A Certificate IV in Animal Care Facility Management developed to replace the existing Certificate IV in Captive Animals and Certificate IV in Companion Animal Services. The revised qualification reflects the skills and knowledge for team leaders, supervisors, and specialist technical roles within an animal care facility, including companion animal and exhibited and wildlife environments.
- A Certificate IV in Animal Behaviour and Training developed to offer an entry level qualification for animal trainers and/or animal behaviour practitioners working with a specific species, or across a range of species and workplaces.
- The Certificate IV in Animal Control and Regulation revised and retitled to Certificate IV in Animal Regulation and Management. It has been updated to include specialisations for investigations, animal holding facilities/shelters, animal management education, and rural and remote communities, and reflect current work practices and community values.

- The Certificate III in Animal Studies, Certificate III in Companion Animal Services and Certificate III in Pet Grooming have been merged to create a Certificate III in Animal Care Services. This qualification can be undertaken as a general qualification or individuals can select to specialise in one or two of the following areas: animal care, pet grooming or customer service.
- The Certificate II in Animal Studies revised and retitled to Certificate II in Animal Care to better reflect the vocational outcomes of entry level and support roles in the animal care and management industry.
- The Certificate I in Animal Studies revised and retitled to Certificate I in Animal Care Industry Pathways to better reflect its outcomes and users - many of whom are learners with special needs and/or people seeking community engagement, doing animal care work activities undertaken under close supervision.
- Forty-one units of competency revised and 11 units developed, to support skills across animal-assisted services, grooming and behaviour and training. Five units are proposed for deletion, as industry advised they are no longer required. In addition, four existing units have been merged into two units to reduce duplication.
- Two skills sets have been revised for microchipping dogs and cats and promoting animal health in remote communities. Six skill sets have been developed that cover grooming, animal shelter work, animal assisted services, animal breeding and animal management coordination in remote communities.

M'Liss Henry from Claremont Therapeutic Riding Centre with Diana McNaughton, Skills Impact Industry Engagement manager



## Exhibited Animal Care and Marine Wildlife Project

Australia has one of the longest coastlines in the world and a vast landscape that is inhabited by some of the world's rarest animals. The work of our zoo keepers, animal carers and marine wildlife responders plays an important role in supporting the health, welfare and sustainability of some of our most vulnerable animals and marine wildlife. This project covered two distinct areas of animal care, to identify skills needs for both exhibited animal care and marine wildlife response.

Those who work with animals in zoos and wildlife parks play a key role in promoting animal welfare and conservation, through breeding programs, providing information to the public and supporting scientific research. Specialist skills are needed for working with endangered animals and rare species, as job tasks vary depending on the size and type of the animal and its environment. These animals need to be mentally and physically comfortable for successful breeding and conservation programs. As such, zookeepers and animal carers need to understand and be skilled at providing animal enrichment, as well as conditioning the animals to be handled.

Just as specialist skills are needed for different kinds of exhibited animals, a level of expertise is required for the participation and/or management of marine wildlife events and emergency situations. The skills to rescue marine wildlife are quite different to the skills required to rescue animals on land. The marine environment can present a particular challenge to humans involved in an emergency management situation. At the same time, marine life requires appropriate conditions to be maintained during the response, to comply with animal welfare regulations, legislation and workplace standards.

Over the past 12 months, industry has participated in the review of qualifications, skill sets and units of competency to better reflect current industry practices, terminology and skills gaps. As a result, the skills standards for a range of job roles in exhibited animal care and marine animal response have been updated.

**“The new and updated components will no doubt allow students undertaking this qualification to obtain a far better opportunity and insight into the exhibited animal industry. In turn, this will make them more employable due to the appropriate and improved quality of the components, soon to be delivered.”**

Anthony Molyneux, Wildlife Manager at Currumbin Wildlife Sanctuary QLD.



Kiandra from Moonlit Sanctuary with owl. Image by Natalie Davies

### Key Outcomes

- Units of competency for Captive Animals (CAN) sector have been renamed to Exhibited Animals (EXH) to better reflect the work outcomes and the animal care facilities and environments where these units will be used, as well as contemporary community attitudes.
- The Certificate III in Wildlife and Exhibited Animal Care was revised to reflect current industry practices, terminology and skill gaps, and titled changed to reflect current industry terminology.
- The Certificate IV in Captive Animals is proposed to be superseded by the new Certificate IV in Animal Facility Management (developed as part of the Pet Care and Animal Training Project) with a specialisation in wildlife and exhibited animal facilities.
- Eight skill sets developed to address skills needs, including large whale disentanglement, animal welfare management, zoological horticulture, exhibited animal visitor experience, orphan native wildlife care, exhibited animal behaviour and training, species population management, and marine animal stranding.
- Four species specific rehabilitation skill sets merged into ACMSS00022 Native Wildlife Rehabilitation Skill Set to reduce duplication of content.
- Fifteen exhibited animal units and ten species specific units updated to provide greater focus on animal welfare, enrichment, habitat design and behavioural conditioning to support the mental and physical health of animals. Eight units have been merged into four units, to reduce duplication of content.
- Five units developed for marine animal incident management, describing the unique skills required for responding to animal incidents in a marine environment, including entanglements, strandings and pollution events.
- Two general animal studies units developed to promote health and welfare of both animals and humans: ACMGEN303 Assess the welfare status of an animal and ACMGEN304 Promote positive wellbeing in self and others in animal care workplaces.



## Completed Projects

The following projects were endorsed by the Australian Industry and Skills Committee (AISC). The revised qualifications, skill sets and units of competency, that were developed as part of these projects, are published on [training.gov.au](http://training.gov.au) and available for delivery by registered training organisations (RTOs).

Visit [www.skillsimpact.com.au/completed-projects](http://www.skillsimpact.com.au/completed-projects) for further details.

### **Animal Incident Management Project**

The Certificate IV in Animal Control and Regulation was revised and skills standards developed to support the skills required to safely rescue large animals or groups of animals during an emergency.

### **Animal Technology Project**

Qualifications relating to the care and welfare of laboratory animals have been revised to reflect changes in technology and to support the ethical treatment of animals according to relevant guidelines.

### **Horse Education Project**

Skills standards have been revised and developed to address the various skills for educating horses, from basic handling skills, to interpreting equine behaviour, transporting horses and educating horses to be ridden and driven.

### **Veterinary Nursing Project**

Veterinary nursing units of competency and qualifications were reviewed and updated to reflect the occupational skill standards and needs of industry.

# Aquaculture and Wild Catch

Australia's reputation for high quality seafood is underpinned by a dedicated and skilled aquaculture and wild catch workforce. From the salmon farms of Tasmania, to crocodiles in northern Australia, to the commercial fishing operations in almost every coastal town, the industry is widespread across Australia.

The Australian aquaculture and wild catch industry is recognised as among the best-managed industries globally, due to sustainable methods and rigorous environmental and biosecurity practices. These practices are constantly evolving and improving through scientific research, so that Australian seafood can continue to be enjoyed for generations to come. Collaboration with Indigenous communities is an important focus, allowing traditional techniques to inform contemporary work practices and Indigenous Communities to access training and business opportunities.

The national skills standards and qualifications for this industry are overseen by the Aquaculture and Wild Catch Industry Reference Committee (IRC).

Employs almost

19,000 people

Over

6,750 businesses

Over

\$9.1 billion in revenue

Contributes

\$1.8 billion

to Gross Domestic Product

(Source: IBISWorld Industry Wizard, 2020)

Between 2020–25

Australian fisheries and aquaculture production value is projected to rise by 2.4% to \$3.41 billion

(Source: Mobsby, D, Steven, AH and Curtotti, R, 2020, Australian fisheries and aquaculture outlook 2020, ABARES, Canberra)



Top and bottom images provided by Seafood & Maritime Training, left image provided by Australian Southern Bluefin Tuna Industry Association



# Skills Forecast

## Annual update and proposed projects for 2020-2021

This year's Annual Update to the IRC Skills Forecast and Proposed Schedule of Work (Skills Forecast) proposed one key project for 2020 – 2021 and identified specific changes to the industry environment.

The Aquaculture and Wild Catch Industry has been significantly impacted by the various weather, bushfire and coronavirus pandemic events of the last 12 months. This year's Annual Update to the Skills Forecast recognised the substantial work undertaken in 2018-19 to update skills standards and qualifications with essential skills for biosecurity, regulation and compliance. The IRC believes this work will provide support over the coming months, both directly through training and by assisting employers to complete analysis of skills which will provide fundamental support.

The updated skills standards and qualifications were published in June 2019, so the IRC expects feedback on the implementation of the updated training package over the next 12 months and will monitor and address issues as they arise. The IRC also expects the current and recent weather, bushfire and pandemic events to give rise to new issues that will need to be addressed.

The IRC also recognises the importance of Indigenous involvement in the development of all aspects of the aquaculture and wild catch industries. They remain committed to finding better ways of assisting Indigenous communities in creating and maintaining commercial operations, and for ensuring there is accessible training for current and future workers.

Chad and Troy unload Southern Bluefin Tuna from Australian Southern Bluefin Tuna Industry Association



## Proposed Project for 2020-21

### Indigenous Consultation for Annual Updates and Future Projects

A research and development project is proposed to improve long-term skills outcomes for Indigenous participants in the Australian workforce and the vocational education and training (VET) system.

In July 2020, the new National Agreement on Closing the Gap was released with the agreement of Aboriginal and Islander Elders and leaders and all Australian governments. In part, the agreement notes:

**“This Agreement also stems from the belief that when Aboriginal and Torres Strait Islander people have a genuine say in the design and delivery of services that affect them, better life outcomes are achieved. It recognises that structural change in the way Governments work with Aboriginal and Torres Strait Islander people is needed to close the gap.**

**“The views and expertise of Aboriginal and Torres Strait Islander people, including Elders, Traditional Owners and Native Title holders, communities and organisations will continue to provide central guidance to the Coalition of Peaks and Australian Governments throughout the life of this Agreement.”**

This project seeks the opportunity to implement these principles in national qualifications and skills standards. The aim of the project is to identify current and future projects that could expand productivity, employment and economic development opportunities, open new and emerging markets, improve training and job outcomes and upgrade industry skills in negotiations and partnerships with Indigenous business and community organisations. It is proposed that this will be a joint project, overseen by both the Aquaculture and Wild Catch IRC and the Amenity Horticulture, Landscaping, and Conservation and Land management IRC. Both IRCs acknowledge the importance of Aboriginal and Torres Strait Islander involvement in the development of all aspects of their industries.

**This project is still under consideration by the Australian Industry and Skills Committee (AISC).**

# Projects

## Project work between 2019-20

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Outlined over the following pages is a summary of projects Skills Impact managed between July 2019 and June 2020.

The Aquaculture and Wild Catch Industry Reference Committee (IRC) oversaw the project development, as part of their responsibility to support engagement with their industry and to ensure the projects meet stakeholder needs.

The skills standards and qualifications updated as part of the following projects were endorsed by the AISC in August 2020. They will be considered for endorsement by the State and Territory Ministers before becoming available on training.gov.au later in 2020.

## Fishtech and Aquabotics Project

New underwater technologies, such as remotely operated vehicles (ROVs), underwater drones and biosensors, are changing the way work is done in Australia's aquaculture industry. From monitoring fish health and environmental conditions, to inspecting and repairing nets, many manual job tasks can now be performed remotely. These are important advancements, improving productivity, catch sustainability, environmental control, stock and habitat welfare, and biosecurity. It is expected that these developments will affect most job roles, as uptake of these new technologies becomes more widespread, requiring updated skills in digital literacy, data, automation and environmental sustainability.

"Innovation and technological advances are changing approaches to how work tasks are being performed. This in turn is driving the industry to introduce new technology, requiring employees to be adept in utilising the tools and computer programs to drive hardware. The industry therefore needs to prepare for the future and a focus now needs to be on the development of a workforce who is strong in digital literacy." Natalie Cheeque, Group Manager People and Culture, Huon Aquaculture.

Thanks to the input of industry throughout Australia, the skills required for working with new remote technologies in the aquaculture and wild catch industries have been outlined in new and updated skills standards.

To capture these skills standards the project team went on a national journey, to speak with industry experts and organisations across the various sectors. At various worksites they were shown the skills used to perform different work tasks. They were shown how probes and sensors are used to collect environmental data, how sophisticated and remote feeding systems are used across different fish species, how ROVs are being utilised for aquatic biosecurity and video imaging, and how sensors are replacing traditional methods for monitoring environmental factors and net conditions. This project focused on current skills needed now and for the future of work in aquaculture and wild catch.

**"Technology in the seafood industry is evolving and at a quick pace, so it was important that as soon as industry identified this skills gap, the IRC responded promptly to ensure it could be addressed. We are thankful for the input of industry from around the country in describing the ways job roles have changed as a result of these new technologies,"**

Johnathon Davey, Chair of the Aquaculture and Wild Catch Industry Reference Committee.

### Key Outcomes

- Three skill sets have been developed for aquatic technology induction, aquabotics, and aquatic environmental audit.
- Nine units of competency have been developed, with a focus on the use and future use of technology in the seafood industry. These units will be incorporated as electives into existing aquaculture qualifications, in addition to being available for import to other qualifications. Some units have been developed to meet immediate needs and others are intentionally generic to future proof them and allow for new and emerging technologies to be incorporated into training. These units will be placed as electives in:
  - SFI20119 Certificate II in Aquaculture
  - SFI30119 Certificate III in Aquaculture
  - SFI40119 Certificate IV in Aquaculture
  - SFI50119 Diploma of Aquaculture
  - SFI50219 Diploma of Fisheries Compliance
- Twenty-three units of competency have been revised so that they are applicable for use in the context of remote technologies

# Underwater robotic technology is making a splash in Australia's aquaculture industry

Large companies like Tassal and Huon Aquaculture are using Remotely Operated Vehicles (ROVs), drones and biosensors to perform tasks that were previously done manually. Fish are being fed by the push of a button from a control centre in Tasmania. Workers are monitoring the health and behaviour of fish and their environments in real time via ultra-HD screens and biosensors. ROVs are being used to inspect, repair and clean nets and to carry out environmental compliance monitoring.

These are important advancements, making for more efficient monitoring, improved welfare practices and more thorough biosecurity measures. When paired with decreasing costs of equipment, the uptake of these new technologies across industry is becoming more likely. This means workers will need further expertise in operating new equipment, understanding scientific information and managing compliance.

**“The training documents developed as a part of this project will assist our workers to improve their skill level and work with greater awareness and knowledge.”**

Peter Cheesman, WHS Induction and Training Coordinator Farming

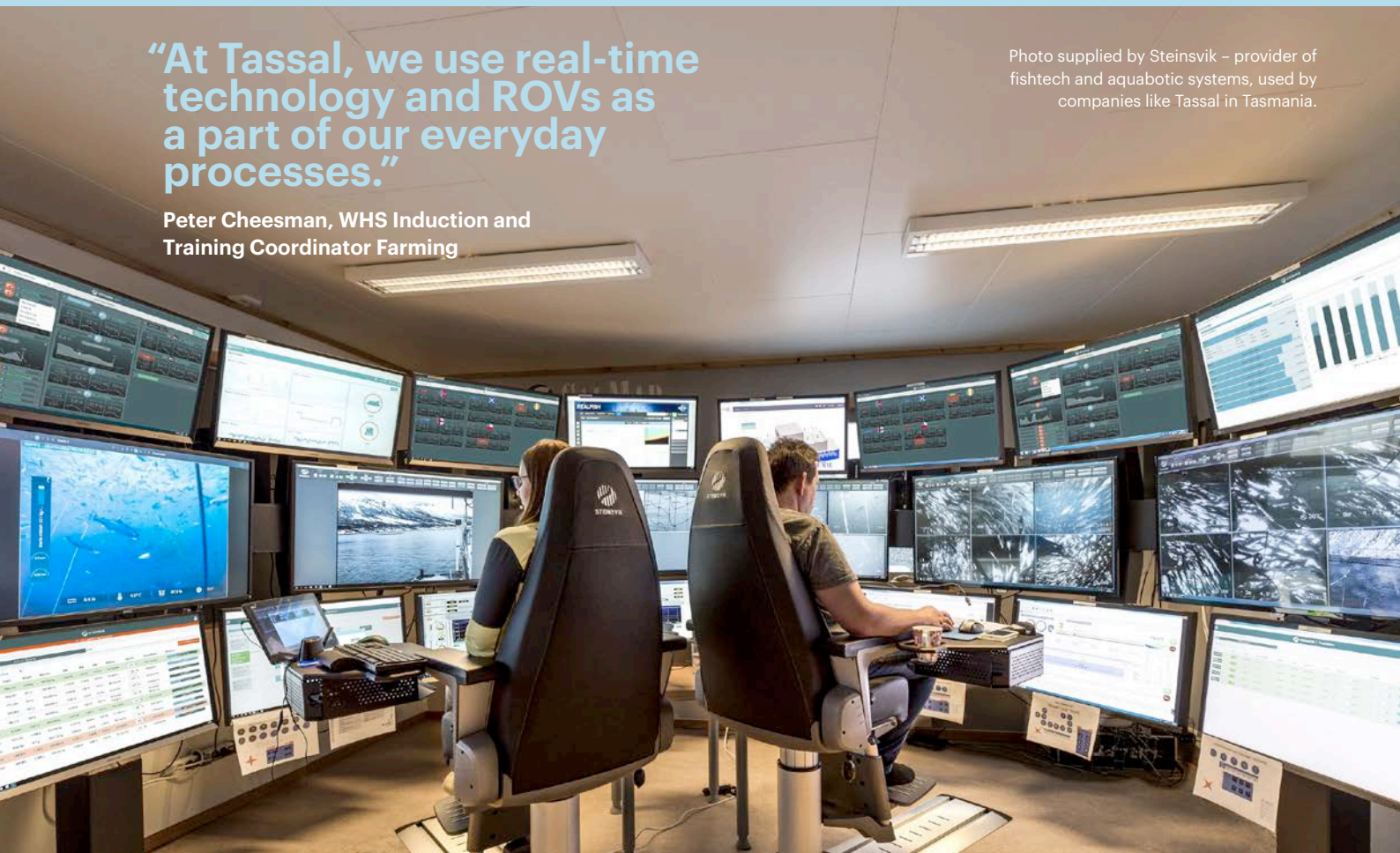
While training until now has occurred on the job, industry would like nationally recognised training that can support and recognise these skills across the board.

“The ability to work with leading edge training organisations and access these programs will greatly enhance our ability to receive industry leading training. Training in emerging technologies such as real-time systems for ponds, and better management of feeding and water quality in ponds will enable Pacific Reef Fisheries to be a leader in global prawn production.” Bastien Finet, Technical Manager, Pacific Reef Fisheries Technologies

**“At Tassal, we use real-time technology and ROVs as a part of our everyday processes.”**

Peter Cheesman, WHS Induction and Training Coordinator Farming

Photo supplied by Steinsvik – provider of fishtech and aquabotic systems, used by companies like Tassal in Tasmania.



## Work with Crocodiles Project

Crocodile farm workers, park rangers, zoo employees and licenced individuals all need the same foundational skills to work with crocodiles and their eggs in ways that are safe and sustainable. This requires knowledge of diseases, biosecurity management, and the humane treatment of crocodiles, as well as the ability to perform risk assessment and an understanding of cultural sensitivities relating to Indigenous communities. Additional expertise is also needed depending on whether animals are in the wild or in a controlled environment.

Working with crocodiles is a complex field, overlapping a number of sectors including conservation and land management, animal care and management, and aquaculture. It is also closely tied to Indigenous communities, who have respected crocodiles as entities and a source of food for thousands of years. Crocodile farming and conservation utilises Indigenous knowledge and provide economic benefits for Traditional Owners through employment and royalty payments for egg collection on their land.

Until now, only two units of competency have been available to describe the skills needed for this work. Consultation with industry throughout this project has indicated that a broader range of skills standards are required, resulting in the creation of a qualification, eight skills sets, and 11 units of competency. These new and revised skills standards aim to help support this developing industry, to promote its excellent international reputation and to support the remote economies and Indigenous communities working with crocodiles across Northern Australia.

## Key Outcomes

- Certificate III in Working with Crocodiles developed.
- Eight skill sets developed, including: Introduction to Working with Crocodiles, Care for Crocodiles in a Controlled Environment, Hatchling and Juvenile Crocodile Care, Crocodile Egg Harvesting, Crocodile Relocation, Crocodile Incident, Crocodile Survey, and Crocodile Public Relations.
- Eleven units of competency were developed with a focus on working with crocodiles and working in crocodile habitats. All of these are featured as core and elective units in the Certificate III in Working with Crocodiles. Some will also be included in elective lists for qualifications in the Conservation and Land Management and Animal Care and Management industries:
  - Certificate III in Conservation Land Management
    - SFICRO305 Prepare to work with crocodiles
    - SFICRO306 Work safely in crocodile habitats
    - SFICRO302 Conduct crocodile surveys
  - Certificate IV in Conservation Land Management
    - SFICRO401 Manage minor crocodile incidents in the wild
    - SFICRO403 Capture, transport and release crocodiles
  - Certificate III in Wildlife and Exhibited Animal Care
    - SFICRO303 Care for Crocodiles over 1.2 metres in a controlled environment
- Two existing units of competency are proposed for deletion – SFIAQU216 Work with crocodiles and SFIPRO303 Slaughter and process crocodiles – as they do not adequately address industry needs.





**Left to right:** Susie Falk, Industry Skills Standards Specialist at Skills Impact; Craig Moore, Manager of Lagoon Crocodile Farm; Anna Henderson, Industry Skills Standards Contractor for Skills Impact; Debbie Knight, Industry Support Officer at Industry Skills Advisory Council NT; Michelle Ingley-Smith, Industry Engagement Manager at Skills Impact; Dr Charlie Manolis, Chief Scientist at Wildlife Management International; and Dr Sally Isberg, Managing Director at Centre for Crocodile Research.

## Visits With Crocodile Industry Experts

**The unique nature of this crocodile project required Skills Impact to focus consultation in the northern parts of Australia (WA, NT and QLD). The project team met with many passionate industry and Indigenous people working with crocodiles. During these visits, Skills Impact observed firsthand the tasks being performed, enabling the project team to understand the unique skills and knowledge used when undertaking this work.**

The project team were invited into their operations and onto Country to observe the tasks being performed, so the unique skills and knowledge could be recorded as part of national skills standards. Along the Adelaide River they were shown some of the techniques to safely and humanely handle a crocodile. At another site visit on a crocodile farm, industry experts demonstrated the skilful methods of handling crocodile eggs in ways that do not disrupt the crocodile young. The demonstrations and conversations that took place throughout this project have been a valuable contribution towards embedding real job tasks and processes into the national skills standards and qualifications, so that the skills used to work with crocodiles can be recognised and passed on.

**“Farming any species is a responsibility,”**

says Dr Sally Isberg. “Training staff to understand that crocodile welfare is the pinnacle from where crocodile farming begins is imperative. Maximising welfare and farm production output are 100% aligned so having staff that are trained in this philosophy will ensure that animals are humanely farmed with appropriate access to food and housing requirements as well as being able to prevent and recognise disease early to reduce reliance on antibiotics. These, in turn, will increase the production output of farms and allow further expansion of this sustainable use industry with broad-reaching community benefits.”



# Food, Beverage and Pharmaceutical

Commercially made bread, fruit, snacks, beer, wine, and medicine are just some of the products created and manufactured by the more than 200,000 workers employed in Australia's food, beverage and pharmaceutical industries.

With Australians eating, drinking or using these products every day, consumer needs, preferences and demand play a big role in driving industry trends. In recent years, innovations in traceability, automation and contaminant control have affected the skills requirements of job roles throughout the supply chain. Consumers rely on employees in this sector to have the skills and knowledge to implement quality control measures, ensuring products are of high standard and safe to consume.

The importance of Australia's pharmaceutical manufacturing sector was highlighted this year with the COVID-19 pandemic. It reaffirmed the need for access to up to date skills standards to support an industry sector that puts science into action to produce and distribute life-saving and enhancing medical treatments. Society relies on the skills of this workforce to create safe and reliable products for both human and animal use, including molecular medicines, biologic drugs, and complimentary medicines such as vitamins, supplements, and sunscreens.

The national skills standards and qualifications for Australia's food, beverage and pharmaceutical industry are overseen by the Food, Beverage and Pharmaceutical Industry Reference Committee (IRC) and the Pharmaceutical Manufacturing IRC.

Employs more than  
**200,000** people

Contributes  
**\$22.7 billion**  
to Gross Domestic Product

Revenue of  
**\$93.3 billion**

(Source: IBISWorld Industry Wizard, 2020)

Food manufacturing is the largest single source of manufacturing work in Australia, with total employment growing **5%** since 2010.

(Source: J. Stanford, 2020, A Fair Share for Australian Manufacturing: Manufacturing Renewal for the Post-COVID Economy, The Centre for Future Work at the Australia Institute)

Pharmaceutical manufacturing sector employ over **26,500** people, with one of the highest projected employment growth rates of any industry up to 2024 (**11.3%**).

(Sources: a) ABS, 2020, 6291.0.55.003 - Labour Force, Australia, Detailed, Quarterly, May 2020; EQ06 - Employed persons by Industry group of main job (ANZSIC), Sex, State and Territory, November 1984 onwards; b) Labour Market Information Portal, 2019, 2019 Employment Projections)



# Skills Forecast

## Annual update and proposed projects for 2020-2021

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This year's Annual Update to the IRC Skills Forecast and Proposed Schedule of Work (Skills Forecast) proposed two key projects for 2020 – 2021 and identified specific changes to the industry environment.

The industry has seen a recent expansion in several emerging industry sectors, driven by consumers' desire to eat healthier, ethically-produced food, and reduce environmental impacts. Alternative protein foods, including plant-based meats, insects, algal and microbial proteins, new varieties and uses for legumes and edible hemp are in greater demand than ever before.

The indigenous food industry is also burgeoning, due to consumer demand for products with proven health benefits and uniquely marketable provenance. With only around 18 native foods currently in commercial production (from roughly 6,400 varieties), and in the context of growing international demand, the industry is lacking support in expanding its markets. The Cooperative Research Centre for Remote Economic Participation is working to identify how national policies and institutions can support the meaningful inclusion of Aboriginal and Torres Strait Islander peoples in the commercialisation of their traditional plant foods.

There is also a greater focus on innovation in packaging, that has moved beyond attractive design for marketing, into sustainable packaging that contributes to the growth of the circular economy. Reducing and managing food waste is described as one of the biggest environmental challenges of our time and an important factor in growing the circular economy.

Technological advancements have driven a demand for higher numeracy, literacy and equipment operator skills, as well as problem-solving skills. A reduction in the manual roles in food, beverage and pharmaceutical factories is concurrent with increasing automation, which requires a greater level of digital literacy; for example, in operating computerised touch screen interfaces to control a variety of machines.

The Food, Beverage and Pharmaceutical IRC and the Pharmaceutical Manufacturing IRC are closely monitoring emergent industry sectors, along with external factors that affect industry operations and the impacts of rapidly changing technology, to look at ways to embed the skills and knowledge requirements in skills standards for future use.

**Skye Blackburn from The Edible Bug Shop has farmed insects for food for over 12 years. In that time, she has seen consumer demand for sustainable, nutritious and ethical food increase. The market for insect protein in confectionary, snacks and powder form is steadily growing as our reliance on meat production reduces. Manufacturing products such as tortilla chips and pasta made from powdered crickets, Skye has built a successful business promoting edible bugs as a healthy and environmentally sustainable source of protein.**

## Projects for 2020-21

The following projects have been approved by the Australian Industry and Skills Committee (AISC) for 2020-21.

### Flour Milling

The flour and grain milling industry has been adapting its operations to keep up with continuing high demand and meet growing consumer preferences for healthier options. Organic, gluten-free and wholemeal products are no longer a niche market. The necessary skills for the workforce are evolving beyond 'traditional' practices to include machinery, supply chain and traceability systems management, and food safety regulations compliance. This project will review the Certificate IV in Flour Milling, to meet the current skills requirements of technical millers in Australia.

### High Volume Production Baking

The operation of factories that produce bread, bread products, biscuits and cakes, is becoming increasingly digitalised and automated. Many of the required skills and knowledge, including enhanced quality control, traceability and supply chain systems, and managing allergens and contaminants, are similar to the skills that are reflected in the units and qualifications that are under review as part of the Food and Beverage Processing Project that is currently underway. This project will include a review of the Certificate III in Plant Baking and consider whether to replace it with a specialisation within the Certificate III in Food Processing.



## Qualification Flexible Enough to be Used by Multiple Industry Sectors

Vocational education and training is considered valuable by employers when it can be contextualised to specific industries.

For example, the Certificate III in Food Processing is proving very popular for both aspiring craft beer brewers and artisanal cheese makers.

Stephen Nelsen, Head Brewery Lecturer at TAFE SA has developed a brewing course using the Certificate III in Food Processing. In recent years, there has been a dramatic increase of craft and micro beer brewers. He said his course is always fully booked, with approximately 30 per cent of students enrolling from interstate.

“There are backyard brewers starting up every day. They need the training to develop their commercial brewing knowledge and to manage the health and safety risks that come with producing food and beverage products.”

Graduate Janie Butterworth from Beer Garden Brewing, said the course was an important step in her journey to commercial success, “The technical focus of the Certificate III means that we have the capability to produce award winning, world class beer in our beautiful but isolated part of the world”.

Another graduate of the same course, Lachy Mutton, Head Brewer and Owner of Little Ripa Brewing Company, said “The course helped me to produce more consistent products and expand my business to a commercial level operation”. Lachy was awarded TAFE SA Brewery Student of the Year in 2019.

Gina Dal Santo has also contextualised the Certificate III in Food Processing to develop a cheesemaking course. Gina teaches at The Artisan Cheese Making Academy Australia (ACMAA), which operates as part of TAFE SA.

Students who have undertaken the cheese-focussed course at the Artisan Cheese Making Academy Australia have a high success rate in finding work associated with their learning soon after graduating: 29 out of the 30 recent graduates of this course are now working in cheese production facilities, start-up companies, as chefs or in retail roles.

The success of the cheese making course is what encouraged Gina to support the development of a national Diploma in cheesemaking, to incorporate the higher-level skills for producing premium high-value artisan cheeses.

**“I saw the opportunity to start something big. Since then we’ve run short courses, done a Churchill Fellowship on cheese education overseas, and secured not only a Cert III in Food Processing, which I contextualise for cheese making, but a new diploma in cheese!”**

Gina’s contribution to the development of Australia’s future cheese makers was recognised in the National Training Awards. Gina was a Finalist for the VET Teacher/Trainer of the Year Award.

The Certificate III in Food Processing is valued by the food and beverage processing industry because it is flexible enough to suit the needs of a range of sub-sectors.

The qualification is currently under review as part of the Food and Beverage Processing Project to make sure it meets the skills needs of the diverse range of sub-sectors. It is also being revised to incorporate new and current skills needs brought about by innovations and changes to processes due to changing consumer preferences for healthy, sustainable, organic and allergen-free foods.

Jake Nicholas, Janie Butterworth and Dan Treagus.  
Photo: Robert Lang Photography.





# Projects

## Project work between 2019-20

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Outlined over the following pages is a summary of projects Skills Impact managed between July 2019 and June 2020.

The Food, Beverage and Pharmaceutical IRC and the Pharmaceutical Manufacturing IRC oversaw the project development, as part of their responsibility to support engagement with their industry and to ensure the projects meet stakeholder needs.

The skills standards and qualifications being reviewed and developed as part of the Food and Beverage Processing Project, will continue into 2020-21.

The skills standards and qualifications updated as part of the Pharmaceutical Bioprocessing Project are expected to be endorsed by the AISC and State and Territory Ministers later in 2020.

## Food and Beverage Processing Project

A lot has changed in the food and beverage processing world in the past decade. Consumers want healthy, sustainable, organic and allergen-free foods. This is driving new innovations in the sector, with more options available today than ever before. Consumers also care more about where their food comes from, what is in it and how it is packaged. Industry is responding to the needs of the consumer, using new technologies and systems to improve the quality and diversity of products.

The industry now has a greater need for skills and knowledge relating to traceability, risk management, food fraud, contamination, allergens, recall procedures, sustainability, health and safety, and automation and digitalised manufacturing. These skills are required across the production chain, for those on the processing line, through to labelling, packaging and bottling.

As a result of these changes and more, the content and design of the food processing qualifications are currently being reviewed. Industry experts have been consulted to review and draft skills standards, which consider many key changes in the industry, from regulatory changes affecting food safety and manufacturing processes to trends in what consumers want to eat and drink.

The Certificate I, II and III in Food Processing and Certificate II and III in Food Processing (Sales) and the units of competency within them are all being reviewed. Consultation and review of these documents will continue into the second half of 2020.

## Project to Replace FDF Units in FBP Qualifications

Many trainers have asked why qualifications still contain the old FDF units. A project is underway to update these to the revised FBP units.

Many of the units of competency for the food and beverage industry have been updated over the past two years. As part of the update they received a new code – FBP (previously FDF). They were updated as part of national projects, that underwent consultation with industry and training providers. Qualifications that were part of these projects have been updated to include the FBP units. However, several qualifications were not part of these projects and so the FDF units could not be replaced with the updated FBP version.

This additional side project is underway to make sure the FDF units that have already been reviewed will be replaced by equivalent FBP units in qualifications which were not updated in the past two years.

The qualifications and units will be released at the same time as qualifications and units from the Food and Beverage Processing Project to ensure the changes can be incorporated into one major update on training.gov.au.

## Pharmaceutical Bioprocessing Project

Pharmaceutical bioprocessing techniques can be used to create life-saving and enhancing medical treatments such as vaccines, blood plasma products and gene therapy medicine. Specialist skills are needed to manufacture and distribute these products, as they contain delicate bacteria, yeast or mammalian cells prone to degradation, variation and contamination. High level analytical capabilities are also required for working with new technologies and interpreting data. This is a critical step in the supply chain, putting science into action to produce products for treatment and diagnosis and making them available for use.

With pharmaceutical companies playing a key role in the COVID-19 pandemic, through manufacturing of testing kits and vaccines, it is important manufacturers are equipped with all the expertise they may require. This includes the unique skills used in producing and distributing products made using pharmaceutical bioprocessing techniques.

National skills standards for pharmaceutical bioprocessing have been reviewed alongside industry experts and the drafts have undergone broad national consultation with industry. They have been revised to include work functions that reflect current job roles in the industry and to incorporate the latest technologies, equipment and advances in bioprocessing in pharmaceutical manufacturing.

“Bioprocessing skills are an essential and growing part of the pharmaceutical industry, with seven out of the top ten drugs by sales value globally requiring such skills for the manufacture. I know from personal experience that these skills are needed, now and in the future, in order for our pharmaceutical manufacturing sector to grow and flourish. The recent pandemic crisis has underlined this need, not just globally but within Australia, for increased pharmaceutical manufacturing capacity in order for the country to meet current and future needs more self-sufficiently. I therefore wholeheartedly support the endorsement of the Bioprocessing Technologies training units.” Dr Paul MacLeman, Chair of the of the Pharmaceutical Manufacturing Industry Reference Committee

### Key Outcomes

- Nine units of competency updated to describe the skills required to work in pharmaceutical bioprocessing manufacture. Feedback was sought on the need for a qualification specific to the manufacture of pharmaceuticals using bioprocessing techniques, but the majority of those who contributed indicated that it was not required at this time. The units were revised to include terminology that is current and accurate to the context of pharmaceutical bioprocessing. This includes:
  - The term ‘plant based’ materials has been replaced with ‘organic’ materials to be inclusive of the use of mammalian blood in some processes.
  - The unit FBPPHM3018 Operate a sterilisation process using an autoclave has been updated to apply to Good Manufacturing Practice (GMP) or other accreditation or certification requirements, enabling it to be used across many other training packages and settings.
  - The unit FBPPHM3007 Operate a separation process using chromatography has been renamed FBPPHM3XXX Operate a chromatography manufacturing process.



## Completed Projects

The following projects were endorsed by the Australian Industry and Skills Committee (AISC). The revised qualifications, skill sets and units of competency, that were developed as part of these projects, are published on [training.gov.au](http://training.gov.au) and available for delivery by registered training organisations (RTOs).

**Visit [www.skillsimpact.com.au/completed-projects](http://www.skillsimpact.com.au/completed-projects) for further details.**

### **Advanced Wine Operations Skills Project**

Skills standards were developed to include the coordination and leadership skills that are required of people working in cellar operations and bottling and packaging.

### **Artisanal Food and Beverage Processing Project**

Qualifications and skills standards were developed to support the specialist skills required to produce premium small-batch artisan food and beverages such as cheese, olives, fermented foods and beverages.



# Forestry and Timber

**Australian forests are a valuable, sustainable and renewable resource. They are managed by a skilled workforce that is part of the value chain for producing many products that are essential to our daily needs, from housing to paper.**

The industry is made up of many sectors and skilled occupations that all play a vital role, from growing and managing forests, to producing the raw materials that can be used to construct buildings, furniture, flooring, timber products and other items.

In keeping up with the high demand for these materials, industry has adopted new technologies and equipment to improve safety, sustainability, and efficiency. The manufacture of engineered wood products, like cross-laminated timber and glulam, has seen innovations like the 52-metre-tall office tower '25 King' in Brisbane. High levels of technical skills are required for operating the latest technologies and machinery, including optimisation equipment, allowing industry to continue to supply the high-quality timber that is used to produce some of our most necessary structures and products.

While bushfires, climate change and COVID-19 have presented recent challenges to industry, they have also highlighted the need and value of a skilled forest management and harvesting workforce. COVID-19 has also reaffirmed the importance of Australia producing its own timber and paper products, with an ongoing focus on environmental sustainability and safety.

The national skills standards and qualifications for Australia's forestry and timber industry are overseen by the Forest Management and Harvesting Industry Reference Committee (IRC), Timber and Wood Processing IRC and Timber Building Solutions IRC.

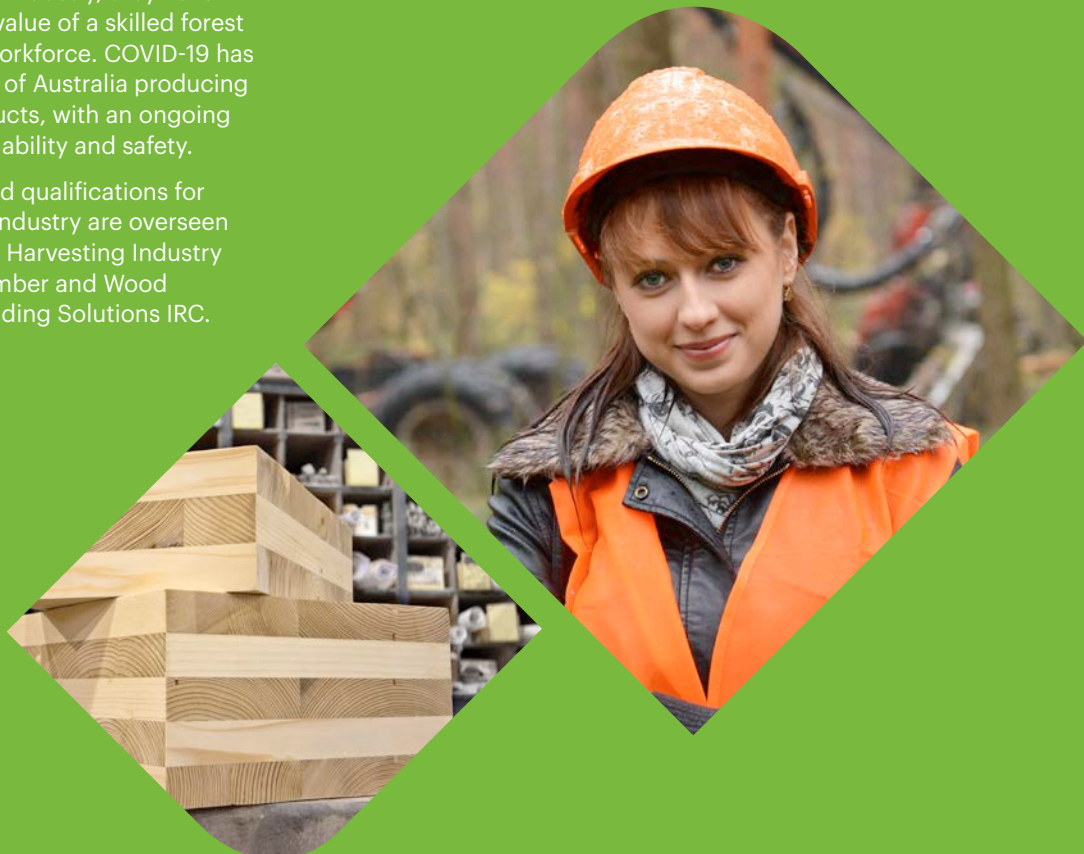
Employs about  
**52,000 people**

Contributes  
**\$7.2 billion**  
to Gross Domestic Product

Revenue of  
**\$23.1 billion**

Export revenue of almost  
**\$2 billion**

(Source: IBISWorld Industry Wizard, 2020)



# Skills Forecast

## Annual update and proposed projects for 2020-2021

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This year's Annual Update to the IRC Skills Forecast and Proposed Schedule of Work (Skills Forecast) proposed five key projects for 2020 – 2021 and identified specific changes to the industry environment.

2020 brought about many challenges for industry. Bushfires have, and will continue to, impact the industry and its resources. Skills and training in this space has become even more important, so operators can continue to safely respond and assist in bushfire situations. The impact of COVID-19 on supply chains has intensified the necessity of being able to produce timber and paper products in Australia.

Aside from these national challenges, the industry continues to grow, both in terms of revenue and employment. With that, demand for training will continue, but training supply is a challenge in thin, regionally dispersed markets. The need for clearly identified career pathways also continues to preoccupy employers throughout the country.

Government policy continues to focus on increasing both the supply and use of timber, including in response to climate change, with industry hubs commencing operations in key forestry regions this year. These hubs have identified the need for a skilled workforce among their key priorities.

### Projects for 2020-21

The following projects have been approved by the Australian Industry and Skills Committee (AISC) for 2020-21:

#### Review Qualifications to Attract New Entrants

In forestry regions around the country, school students should be able to access school-based vocational education or apprenticeships that provide a career path into a range of forestry roles. The forest growing, management and harvesting industry is aging, with the highest represented group between 53 and 68 years of age. Employers are consistent in their message that a high priority for the industry is attracting young people. This project will review entry level qualifications to support this industry goal, so they can be delivered in a school environment.

#### Review of High-Level Jobs in Forestry

Foresters continue to be an occupation in demand. Australian tertiary education has struggled to play a role in supporting future foresters, with few courses available and low uptake of the Certificate IV and Diploma. Often the gaps are filled through transfer from agricultural specialist areas and many vacancies are filled by foresters from

South Africa and New Zealand who need to be trained in the Australian forests' context. This project proposes a comprehensive analysis of skills and knowledge required by foresters to manage public and private forests. Three high level qualifications for forest management and operations and 52 units of competency will be reviewed to incorporate skills needed by the industry.

#### Safety Mindsets in Remote Operations

Working in remote areas requires a different set of safety skills than operating in a manufacturing site, on a construction site or in another location where medical assistance is only a phone call away. Forest Harvesting and Haulage Contractors work in small teams, sometimes only with two-way radio contact and in locations that are often difficult to access for emergency personnel. This project proposes the development of a skill set and up to two new units of competency for operators, relating to shaping and sustaining safety culture and practices whilst working in remote high-risk operations.

The following projects will be considered in the second half of 2020:

#### Assessment Materials

To support safer work practices in the forest harvesting sector, this project proposes the development of assessment materials for 40 units of competency. Consistent skills standards are particularly important for job roles which are inherently dangerous. These assessment materials will be developed with industry and registered training organisations. They will incorporate, moderate and validate content relating to a broad range of forest types and jurisdictional codes of practice.

#### Responding and Assisting in Bushfires

The frequency and intensity of bushfires in Australia is expected to increase, and these fires often burn in plantation and hardwood areas. Harvesting and haulage contractors provide valuable assistance in fire mitigation, firefighting, clean up and clearing operations. Safety of operators is a key concern. To support this, operators need to be effectively trained and ready to respond and assist. It is important that units of competency and qualifications in this sector reflect the need to undertake operations not only in harvesting operations, but also in firefighting and recovery assistance. This project proposes an examination of the roles played by forestry operators responding to and assisting in bushfire situations, to update national qualifications and skills standards with the necessary skills. The AISC considered this project in early 2020 and requested additional information and scoping.

# Projects

## Project work between 2019-20

Outlined over the following pages is a summary of projects managed by Skills Impact, with support from ForestWorks, between July 2019 and June 2020.

The Forest Management and Harvesting IRC, Timber and Wood Processing IRC and Timber Building Solutions IRC oversaw the project development, as part of their responsibility to support engagement with their industry and to ensure the projects meet stakeholder needs.

The skills standards and qualifications updated as part of the following projects are expected to be endorsed by the AISC and State and Territory Ministers later in 2020.

## New Timber Harvesting Technologies Project

The forestry industry is becoming safer, more environmentally sustainable and more productive thanks to the use of new technologies such as digital maps, forest operation plans, and new harvesting systems. Mapping and evaluation of forests is increasing in efficiency and accuracy as a result of drones and remote sensing methods. Developments in techniques for cable logging and tethered harvesting mean a higher degree of safety and efficiency when working on steep slopes. Many job roles have adapted to incorporate the technical and digital skills required to use these and other new technologies. At the same time, skills and safety standards have developed in other areas of timber harvesting, including those that use more traditional technologies such as chainsaws. It is important that these skills are captured in nationally endorsed skills standards, supporting the timber harvesting industry as it moves towards better ways of meeting the high demand for sustainably grown timber in Australia.

As a result of consultation throughout this project, the skills needed to perform harvesting activities using new technologies have been captured in five new units of competency. The project has also reviewed and updated 25 units across the forest harvesting sector, so that they are up to date with current work practices, safety standards, and equipment. They also reflect the skills required by harvesting machine operators who are involved in winch assisted harvesting and forestry site preparation on steep slopes. The skills needed to use chainsaws within a tree when conducting tree trimming or dismantling work have also been captured.

### Key Outcomes

- Five units of competency have been developed for accessing, capturing and communicating forestry field data using mobile devices, read and interpreting digital maps and forest operation plans, operating a harvesting machine with winch-assist system, using mechanised equipment for forestry site preparation on steep slopes, and using a chainsaw within a tree.

- Four cable logging units have been revised to clarify job tasks.
- Seven environmental care (forestry operations) units have been revised, and knowledge of cultural heritage protection principles, threatened and endangered plant and animal species and protection zone methods added where relevant.
- Two transporting forestry logs and produce units have been updated, and the skills requirements in the Draft Log Haulage Code of Practice were reflected in the transporting logs unit.
- Nine tree felling/chainsaw operations units were reviewed to improve their relevance to the full range of users, provide for the progressive development of tree felling skills through the addition of a relevant prerequisite unit, and include clear benchmarks for the assessment of competency.
- Three wood chipping units were revised, with separate units for using an integrated or split flail and wood chipper with a crane and for using a split flail and wood chipper fed by a mobile machine.
- One unit, FWPFGM2210 Implement animal pest control procedures, is proposed for deletion and to be replaced with AHCPMG309 Apply pest animal control techniques, a unit of similar content and outcomes from other training packages to reduce duplication across training packages.

Marcus Casey from AKS Forestry Solutions and Sam Elphinstone from Mechanised Logging





## Timber Merchandising Project

Construction businesses and individual consumers alike are dependent on the expertise of the timber supply industry for facilitating advisory and sales services specific to timber. This can include wholesale operators who provide services to timber retailers or companies that construct housing or timber products; the timber advisors, retailers and timber product companies themselves; and distributors who negotiate deals across the globe. Providing an integral step in the supply chain, timber supply businesses require their employees to have skills in timber advice, customer service, sales, purchasing, and managing sales accounts. Just as important in carrying out this work is knowledge of different timber types, along with technical skills to measure and cut wood, and correct practices for storage, dispatch and transport of goods.

Consultation has taken place throughout this project to identify the skills standards for those working in the timber supply industry. As a result, the Certificate III in Timber Merchandising has been redeveloped to create different learning pathways and relevant job outcomes for timber building supply job roles. The updated qualification, FWP30620 Certificate III in Timber Building Products Supply, will support all specialist jobs in the timber building supply sector from timber yard and warehouse operators to transport and dispatch coordinators and customer advisors and sales officers. It enables specialisations in timber warehousing, logistics, or customer advice and sales.

## Key Outcomes

- The Certificate III in Timber Merchandising renamed to Certificate III in Timber Building Products Supply and redesigned to reflect the skills needs of people who work in warehousing, logistics and customer sales roles in timber wholesales, hardware and timber supply and timber manufacturing businesses.
- Proposed deletion of Certificate II in Timber Merchandising, as appropriate alternative training is available at this level.
- Four units revised to update workplace health and safety and foundation skills requirements, and to more clearly define the nature and scope of work tasks described in the units.
- One unit, FWPCOT3251 Promote the carbon benefits of wood products, proposed for deletion as industry has not indicated a need for it, it has had very low or no student enrolment over the last five years, and it is not listed on in any other Forest and Wood Products (FWP) qualification or training package.
- Three units that were initially included on the project scope, but were not selected for the Certificate III in Timber Building Products Supply, have also been revised. They relate to job tasks in the broader timber manufactured products and sawmilling and processing industry sectors.

## Timber Truss and Frame Estimating and Design Project

Timber trusses and frames play an essential role in many modern homes and other buildings, as a key structural element supporting the weight of the building, as well as roofing including solar, air conditioning or hot water units, and providing surfaces for a wide range of cladding technologies. It is the responsibility of timber systems fabricators and designers (estimators) to work together to produce structurally sound trusses and frames for building construction. While the roles of timber systems designers and fabricators both require the ability to read plans, work as a team, and follow appropriate health and safety practices, distinct skills are needed for each position. Expertise in engineering, architecture, and building codes enable designers to draw up plans and calculate the quantity of materials used and their cost. Knowledge of different timber types and how to work with them using appropriate tools and methods allow fabricators to produce trusses and frames to put these plans into action.

While demand for timber roof trusses and wall frames is projected to grow over the next five years, there is a continued shortage of locally based timber systems designers in Australia. Support for more local designers is important, as nothing compares to having eyes on the factory floor or building site for smooth communication and checking building codes are being adhered to.

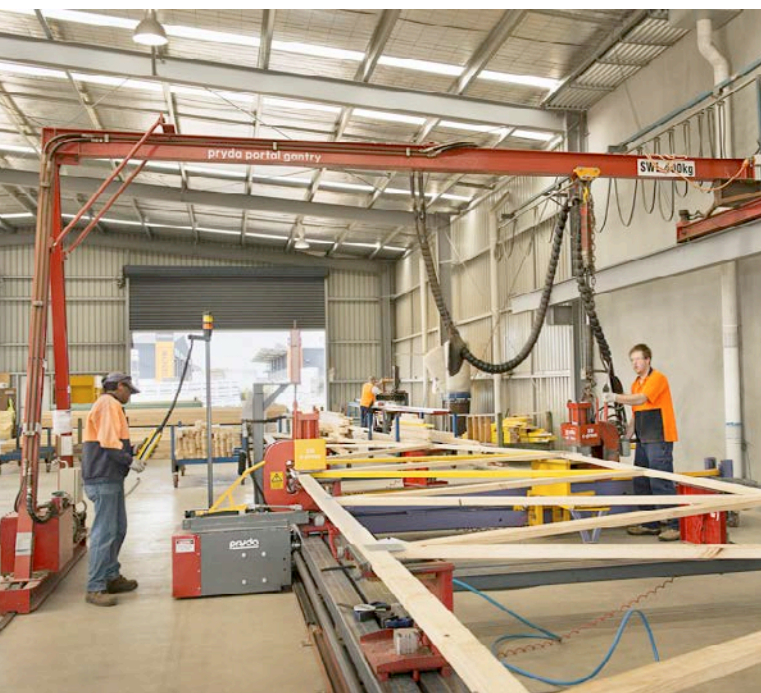
Industry has driven this project to review the current skills standards for timber truss and frame estimating and manufacture so that they reflect the distinct job roles within the sector. This has resulted in the update of three qualifications and 25 units of competency and the development of five new skill sets and one new unit of competency. They have been updated to broaden entry requirements and improve consistency.

**“Education, training and continuous improvement to process, product development and quality systems are critical success factors for the timber industry. The committee’s approach to update the incumbent courses is a step to recognise the essential skills required to educate current timber industry workers and introduce a new generation of timber systems designers.”**

Cris Garcia, Timber Systems Designer, TMIEAust

### Key Outcomes

- Three qualifications revised, including a Certificate III in Timber Systems Design and a Certificate III in Timber Frame or Truss Manufacture. The Certificate IV in Timber Systems Design supports a career pathway from the Certificate III in Timber Systems Design for junior designers/estimators, or direct entry for more senior designers/detailers.
- Four current qualifications from the Certificate II to Diploma level are proposed for deletion due of low demand for training and the availability of alternative qualifications.
- Five skills sets have been developed so that fabricators can develop technical skills related to a job function as opposed to a complete end-to-end manufacturing process. Each skill set is a subset of, and will provide credits toward, the revised Certificate III in Timber Frame or Truss Manufacture.
- Twenty units of competency revised. A number of units were re-titled to reflect the required skills and knowledge accurately. Eight units were merged into four units following feedback from experts in the industry. Content from the unit FWPCOT3243 Operate a truss press was incorporated into two units (assemble timber roof trusses and assemble timber floor trusses).
- One unit developed for working effectively in the timber systems design industry.
- Seven additional units reviewed. These units were initially included on the project scope, but were not selected for the Certificate III in Timber Systems Design, Certificate III in Timber Frame or Truss Manufacture or Certificate IV in Timber Systems Design. They relate to job tasks in the broader timber manufactured products and sawmilling and processing industry sectors.





## Completed Projects

The following projects were endorsed by the Australian Industry and Skills Committee (AISC). The revised qualifications, skill sets and units of competency, that were developed as part of these projects, are published on [training.gov.au](http://training.gov.au) and available for delivery by registered training organisations (RTOs).

Visit [www.skillsimpact.com.au/completed-projects](http://www.skillsimpact.com.au/completed-projects) for further details.

### **Advances in Woodmachining and Sawdoctoring Project**

Technological advancements and market demands have had a significant impact on how wood machinists and saw technicians perform their job. Qualifications and skills standards have been developed and updated to reflect current practices, equipment and terminology.

### **Sawmill Timber and Process Optimisation Project**

Skills standards have been developed and revised to support production efficiencies in sawmills, including the use of optimisation software to process information from a range of scanning technologies.



# Meat Processing

Australian meat is highly regarded in global and local markets for being top quality, wholesome and safe. The success of the industry in these markets sees it making a critical contribution to the Australian economy, bringing in almost \$50 billion in revenue this year.

Seventy per cent of all meat processed in Australia is destined for a growing export market with comprehensive region-specific processing and product standards. Consumer demand and taste have a strong impact on driving the meat industry, promoting new innovations, increased automation, and use of big data. The skilled meat processing workforce is responsible for making sure Australian meat products live up to their strong reputation, operating to the most up to date standards in food safety, quality control, animal welfare, and compliance requirements.

The national skills standards and qualifications for Australia's meat processing industry are overseen by the Meat Industry Reference Committee (IRC).

Employs over  
**92,000 people**

Contributes  
**\$7.2 billion**  
to Gross Domestic Product

Revenue of  
**\$49.3 billion**  
(Source: IBISWorld Industry Wizard, 2020)

Export over 70% of  
production, amounting to  
over **\$14.3 billion**  
of export income  
annually

(Source: IBISWorld, 2020, Australia Industry (ANZSIC) Report C1111: Meat Processing in Australia)



# Skills Forecast

## Annual update and proposed projects for 2020-2021

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This year's Annual Update to the IRC Skills Forecast and Proposed Schedule of Work (Skills Forecast) proposed four key projects for 2020 – 2021 and identified specific changes to the industry environment.

Australia's harsh and changing climatic conditions continue to threaten the ongoing quality and productivity of the industry. There were devastating floods in Queensland during February 2019, and since 2017 significant parts of Australia, especially in New South Wales and Queensland have been experiencing long-running severe drought conditions, with no end to these conditions in sight. Severe bushfires occurred throughout the last quarter of 2019 and continued in to January and February 2020. This has had a significant impact on stock levels, and these conditions will have multiple effects on stock, feed, and employment.

African Swine Fever and the COVID-19 pandemic have also had an impact, and attracting and retaining skilled and capable people to the industry continues to be an ongoing challenge.

Other key industry developments include the increasing amount of retail ready products that the meat processing industry is currently producing and trainer shortages in the smallgoods sector. The increasing amount of retail ready products is blurring the lines between meat processing and meat retailing roles and requires different types of skills for workers who are preparing cuts, portioning product, and packaging products to be ready to go directly onto supermarket shelves. The smallgoods sector is facing a lack of trained people who have the specific skills required for smallgoods production. Anecdotal evidence suggests the qualification is in line with industry needs, but the delivery of the training is not always at the level required. According to one RTO attempting to deliver smallgoods training, the issue is not so much the trainers but the size of the smallgoods qualifications, and also the challenges moving from cooked to raw product. During the course of 2020 the IRC will be seeking additional information to identify causes of and potential approaches to these issues.

## Projects for 2020-21

The following projects have been approved by the Australian Industry and Skills Committee (AISC) for 2020-21:

### Meat Rendering

Rendering processes offer a safe and effective way to transform animal by-products into a range of valuable proteins, minerals and oils. The Meat IRC recently investigated, through research and consultation, the viability of the Certificate III in Meat Processing (Rendering) to better understand why enrolments in this qualification are declining, while enrolment in individual rendering units are higher. Direct discussions with employers organised through the Australian Renderers Association and with all 17 RTOs revealed that the qualification needs to be reviewed to ensure that changes in technology and trends in international markets are addressed. In addition, two to three skill sets may need to be developed to allow for stand-alone delivery of the rendering units. One new unit of competency may also need to be developed, covering product quality checks.

### Electric Slicing Skills (Meat)

The majority of retail butchers use electric slicers to cut both fresh and cooked meats. There are specific skills and knowledge required of workers to safely and effectively use the equipment, to prevent injury and cross-contamination. Currently, there is no unit within in the Certificate III in Meat Processing (Retail Butcher) that covers the use of an electric slicer for a meat retail premises. There is a unit from the smallgoods manufacturing sector which may be suitable, titled AMPS207 Slice product using simple machinery. The unit application states the unit is for use in a smallgoods manufacturing establishment, so reviewing and updating this unit to a cross-sector meat industry unit is necessary. This would mean there would be no need to create a new unit. Instead, the updated unit could be used by retail and other sectors such as poultry, and could also be imported by other training packages such as the FBP Food, Beverage and Pharmaceutical Training Package.

## Pre-Rendering Meat Processing Technologies

In the rendering sector, different machines are used to reduce hard and soft tissue to a required size for processing. Sophisticated technologies and techniques are used to convert animal by-products into a range of edible and inedible products. To cover the full range of machinery used it is recommended that the term “size reduction equipment” is used. The units AMPA2158 Operate hogger and AMPA2159 Operate blow line have been identified as using language and terminology that is no longer used by industry, as well as containing redundant performance criteria that is already covered elsewhere in other units. This project would review and update these units to ensure they are current and accurately represent the skills and knowledge required of industry.

The following project will be considered in the second half of 2020:

## Training and Assessment Support Materials

This project is for the development of contextualised training and assessment support materials for up to 35 units of competency that have been identified as high priority for the industry. The project will improve consistency of training delivery and assessment across the industry, as well as supporting established and new RTOs to deliver quality services.



# Projects

## Project work between 2019-20

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Outlined over the following pages is a summary of projects managed by Skills Impact, with support from MINTRAC, between July 2019 and June 2020.

The Meat IRC oversaw the project development, as part of their responsibility to support engagement with their industry and to ensure the projects meet stakeholder needs.

The skills standards and qualifications updated as part of the projects for game harvesting auditing, halal meat processing and poultry processing have been provisionally endorsed by the AISC. It is expected that they will be endorsed by the State and Territory Ministers later in 2020.

The project work to review and update the Diploma and Advanced Diploma in Meat Processing is in the final stages. It is expected to be endorsed by the AISC and the State and Territory Ministers in 2020-21.

### Diploma and Advanced Diploma in Meat Processing Project

Australia is a major producer of meat for global markets, as well as one of the largest per capita consumers of beef and sheep meat in the world. To keep up with demand and maintain a competitive edge, the Australian meat processing industry requires strong management and leadership skills to develop business strategy, identify opportunities and produce new products. The diploma and advanced diploma level qualifications support the development of skills in management and leadership and are vital to the future of the industry.

Advances in automation and big data present space for innovation in processing methods, while scientific developments like cultured and artificial meat offer the means to develop new products. Leadership skills such as strategy, product development and marketing are required in order to take full advantage of these and other opportunities and to manage the many challenges of the industry, including improvement of animal welfare practices and adherence to the various compliance requirements of international markets..

The Diploma of Meat Processing and Advanced Diploma of Meat Processing define the skills standards needed to effectively manage organisations and the sector more broadly. These qualifications and the units of competency within them have been reviewed as part of this project. Through industry consultation, they have been updated to reflect changes in technology and job roles, and to make them applicable to a broader range of industry sub-sectors, such as feedlots, poultry and maintenance management. Other imported units have been identified where appropriate to cover general skills in management and leadership.

The meat industry has for some years been used to one qualification being embedded in another as they have seen this as a pathway into higher level qualifications. However, as part of the final review process, it was identified that the nesting of the Diploma of Meat Processing within the Advanced Diploma is no longer allowed, according to the Standards for Training Packages 2012. As a result, the qualifications have been revised and

assigned new qualification codes.

Industry validation of the final draft qualifications and skills standards will take place in the second half of 2020. The project will then move into the final stages.

### Game Harvesting Auditing Project

Over the past ten years there has been a significant shift towards formalising the training and accreditation requirements for the wild game harvesting sector in Australia. Given game harvesting is a pursuit performed by individual harvesters or property owners, quality control is a significant challenge. Compliance is required from harvest through to processing, including practices to ensure humane harvesting and food safety standards. To support the sustainability of the sector, there are regulations for where and when certain game can be harvested, as well as harvesting quotas. To support high quality, safe and ethically harvested game, skill sets have already been developed to address skills in wild game



harvesting, components of which are now requirements in most state licensing systems.

While the current skill sets assist in setting a standard for individual harvesters, further support is needed for ensuring suitable standards in the transport and audit of game meats. This particularly applies to mobile chillers, called 'depots', that receive and chill game and transport the product to licensed processors. At present, there is a need for nationally recognised training that specifically deals with the internal auditing and the inspection of game field depots. These skills are essential in ensuring biosecurity measures are adhered to and meat is wholesome and safe for human consumption. This is also essential for demonstrating the high quality and safety of Australian products to international markets.

Consultation with industry experts has resulted in the development of skill standards to support the Australian game processing sector to continue to produce high quality, safe products for expanding local and international markets.

### Key Outcomes

- The unit of competency AMPG307 Inspect wild game field depot has been developed to describe the skills needed for performing inspections of hygiene, equipment, carcasses, the harvester, records and documentation, and for preparing an inspection report. This new unit will be included as an elective in the Certificate III in Meat Processing (General) and Certificate III in Meat Processing (Quality Assurance). It will also be included in the skill set described below.
- The skill set, AMPSS00066 Wild Game Harvest Internal Auditor Skill Set has been developed to provide individuals with the skills and knowledge required to conduct internal audits in the game sector.

## Halal Meat Processing Project

Halal certification is required to access many international halal export markets, providing consumers around the world with peace of mind that they know where meat is coming from, how it has been handled and whether it matches their religious beliefs. While demand for halal meat products is increasing, variation in halal market requirements presents a major challenge to the Australian meat processing industry.

Traditionally, employees working in halal processing have obtained certification from one of a number of Islamic organisations in addition to holding an existing meat processing qualification. However, industry is supporting a move towards a single Australian halal certification system to promote a consistent standard in halal products, helping Australian products reach international markets. As part of this project, industry has led the review and development of skills standards in halal meat processing, to develop one new skill set and two new units of competency. This will support industry as it moves towards a single consistent certification system.

### Key Outcomes

- The AMPSS00065 Meat Processing Halal Slaughter Skill Set was developed.
- Two units of competency have been developed for performing animal slaughter in accordance with Halal certification requirements and for overseeing meat processing establishment's Halal compliance.
- The new units will be included as electives in the following qualifications:
  - Certificate III in Meat Processing (Slaughtering)
  - Certificate III in Meat Processing (Quality Assurance)
  - Certificate IV in Meat Processing (Quality Assurance)

## Poultry Processing Project

Poultry is a popular choice of meat in Australia, with demand forecast to increase. Annual consumption of chicken meat in Australia has already increased by 33% per capita, over the last ten years. To keep up with demand, automation is increasing throughout the entire processing line. This is having an impact on job roles in the sector, which require updated skills for working with automated processes and equipment.

While some employees in poultry processing may undertake a meat processing qualification, there is no separate qualification for the specific skills needed in this sector. The available training is also not accessible or applicable to much of the workforce. Industry has been consulted throughout this project to develop skills standards in poultry processing, addressing gaps in the availability of endorsed training for this sector. As a result, ten new skill sets and four new units have been developed.

### Key Outcomes

- Ten skill sets have been developed:
  - AMPSS00067 Poultry Processing Quality Assurance Skill Set
  - AMPSS00069 Poultry Stunning, Bleeding, Scalding and De-feathering Skill Set
  - AMPSS00070 Poultry Evisceration Skill Set
  - AMPSS00071 Poultry Processing Boning and Filleting Skill Set
  - AMPSS00072 Poultry Further Processing Skill Set
  - AMPSS00073 Poultry Processing Waste Disposal Skill Set
  - AMPSS00074 Poultry Processing Supervisor Skill Set – additional units were added to this skill set to cover important roles undertaken by poultry processing supervisors, including: AMPA3071 Implement a food safety program, AMPCOR401 Manage own work performance, AMPCOR403 Participate in workplace health and safety risk control process, and AMPX423 Supervise new recruits.
  - AMPSS00075 Poultry Pre-processing Skill Set (Gas Stunning) – addresses the industry need for staff to be trained to handle live birds at a processing premises. The original Poultry Pre-processing Skill

Set has been split into two different skill sets, as the requirements for this job task differ depending on whether the premises uses electrical or gas stunning methods.

- AMPSS00068 Poultry Pre-processing Skill Set (Electrical Stunning)
- AMPSS00076 Poultry Processing Initial Chilling Skill Set - addresses the industry identified need to have staff trained in the operation of the initial poultry chilling process.
- The following units of competency were developed and will be included in the Certificate II and III in Meat Processing (Food Services). They were also updated to have more emphasis on workplace health, safety and animal welfare.
  - AMPX316 Monitor product to be sent to rendering
  - AMPX317 Monitor product flow in an automated process
  - AMPP209 Operate the live bird receival process
  - AMPP210 Prepare birds for stunning

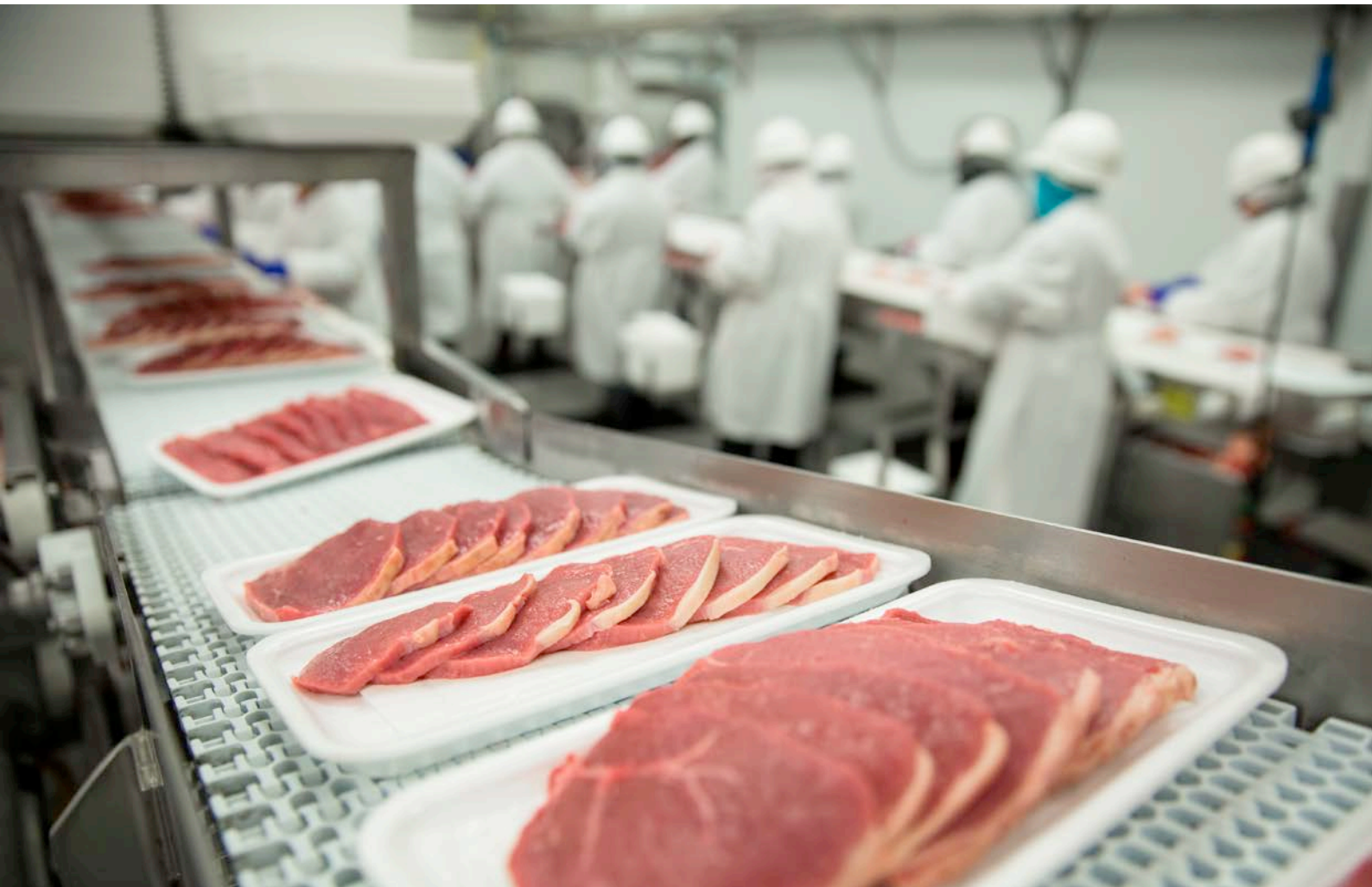
## Completed Project

The following project was endorsed by the Australian Industry and Skills Committee (AISC) on 13 August 2019. The revised skills standards that were developed as part of this project, are published on [training.gov.au](http://training.gov.au) and available for delivery by registered training organisations (RTOs).

Visit [www.skillsimpact.com.au/completed-projects](http://www.skillsimpact.com.au/completed-projects) for further details.

### Meat Processing Project

The skills to support systems and processes that protect the quality of meat products from contaminants, pests and food fraud were and embedded in national skills standards, across eight different industry areas.



# Pulp and Paper Manufacturing

Paper products are in our households, offices, hospitals, food outlets and public buildings – from tissues and toilet paper, medical and sanitary products, to packaging and printing.

These are all produced by the pulp and paper industry. While consumers have moved towards more digital and online habits, many paper products remain in high demand – especially packaging and family care products in the wake of the COVID-19 pandemic. In order to keep up with ongoing demand in a sustainable way, industry is pushing for more re-use and recycling in the production process, allowing for the maximum value to be made from the materials and resources available. Industry requires support for skills in areas such as bio-manufacturing and recovered paper, so that work can be conducted in a safe, effective, and consistent manner.

The national skills standards and qualifications for Australia's pulp and paper manufacturing industry are overseen by the Pulp and Paper Industry Reference Committee (IRC).

Employs over  
**30,000 people**

Over  
**1,580 businesses**

Contributes  
**\$3.3 billion**  
to Gross Domestic Product

Revenue of  
**\$16.7 billion**

(Source: IBISWorld Industry Wizard, 2020)

## Skills Forecast

### Annual update and proposed projects for 2020-2021

This year's Annual Update to the IRC Skills Forecast and Proposed Schedule of Work (Skills Forecast) proposed two key projects for 2020 – 2021 and identified specific changes to the industry environment.

There have been major impacts on the pulp and paper manufacturing industry this year, from drought, bushfires and COVID-19. There has been unforeseen and record demand for products such as toilet paper, tissues, medical, sanitary and packaging products as well as a recovered materials export ban.

At the same time, the industry has continued with its push for a circular economy and moving towards bioenergy and biomass opportunities. There have been sectoral changes, highlighted by consumers increasingly moving online and digital, Australian grocery stores moving to reduced paper quality and the closure of mill sites.

Without any registered training organisations (RTOs) delivering the PPM Pulp and Paper Manufacturing Industry Training Package, training continues to occur on-the-job. It is provided by in-house subject matter experts, often utilising the training package qualifications and units to design activities. The industry remains strongly committed to engaging with the national VET system. Two projects have been proposed (summarised below), which aim to re-establish formal VET training within the sector.



# Projects

## Projects for 2020-21

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The following project has been approved by the Australian Industry and Skills Committee (AISC) for 2020-21.

### Review Pulp and Paper Manufacturing Training Package

This project will review and rationalise the PPM Pulp and Paper Manufacturing Industry Training Package, identifying any possibilities for the utilisation of cross-sector units and ensuring accredited qualifications exist with core competencies supported by a larger bank of electives. It is believed that such a rationalisation will assist in attracting registered training organisations (RTOs) back to the sector. A range of electives will allow training providers to tailor the qualification to the needs of the learner. This project would be complemented by the project proposed below, which would support the development of standardised resources and materials that could be made available online.

The following project will be considered in the second half of 2020.

### Training and Assessment Materials

Without any registered training organisations willing and able to deliver the PPM Pulp and Paper Manufacturing Industry Training Package, this project will develop a suite of nationally consistent training and assessment materials to support technical units of competency. The industry has specialised training needs and is strongly committed to remaining engaged and represented in the national VET system. The inability of an RTO to provide technical expertise on-site is what deters prospective RTOs. The IRC has developed a strategy to re-engage with the VET sector through an industry-led partnership between stakeholders, enterprises and an RTO. Training and assessment materials are an important part of this RTO partnership model.



# Racing and Breeding

Horse or dog racing events are the result of years of effort by teams of skilled workers from the racing and breeding industry.

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These industry professionals are expected to achieve the highest possible standards of safety, animal welfare and sporting integrity across all areas of their work, while also supporting the success of each animal in sport or breeding. Reputable workers in this industry are skilled in training, nutrition, and biomechanics to care for dogs or horses actively participating in racing, keeping them physically healthy and preventing injury. Expertise is also required to retrain animals and support their welfare as they move into breeding or other environments. Knowledge of pedigrees, animal welfare issues, business management, and regulations are needed across the industry to maintain the high standards expected by the public.

The national skills standards and qualifications for Australia's racing and breeding industry are overseen by the Racing and Breeding Industry Reference Committee (IRC).

Employs around  
**15,000 people**

Contributes  
**\$669 million**  
to Gross Domestic Product

Revenue of  
**\$2.9 billion**  
(Source: IBISWorld Industry Wizard, 2020)

## Skills Forecast

Annual update and proposed projects for 2020-2021

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This year's Annual Update to the IRC Skills Forecast and Proposed Schedule of Work (Skills Forecast) proposed two key projects for 2020 – 2021 and identified specific changes to the industry environment.

The RGR Racing and Breeding Training Package has undergone significant reviews and updates over the past three years. The training package now covers animal welfare issues, including skills for re-training and re-homing horses and greyhounds, and training safety issues. It has also been updated to include all the general skills needed to work in the industry.

The Racing and Breeding IRC is now focused on training implementation to ensure the maximum uptake of training. Projects for 2019-20 focus on some solutions to simplify training delivery and participation in the industry, while maintaining focus on the safety and welfare of participants and racing animals. The IRC will also work to identify non-accredited training in the industry throughout 2020-21.

There remains a critical shortage of track riders, and the IRC is examining ways in which training package development may support industry solutions on an on-going basis.

An equine industry survey, conducted by Skills Impact on behalf of the Animal Care and Management Industry Reference Committee, which included participants in the racing and breeding industries, confirmed that the shortage of track riders is one of the industry's greatest concerns. Government policy has allowed track riders to be sourced internationally, but on the condition that they undertake training; for example, through an apprenticeship or traineeship. Industry stakeholders report that many visa holders already possess relevant skills, but Recognition of Prior Learning options have been limited due to the lack of RTOs with relevant training package products on scope and delivery issues, such as the inability to offer training in regional locations and the absence of formally qualified assessors.



**“We are screaming for track work riders and grooms. There is an untapped potential of rural kids who genuinely love working with horses.”**

“Trackwork riders are hard to find, my local racing club [...] has no other means for exercising horses, they used to use joggers but aren’t allowed on course anymore and the club would definitely benefit from another form of exercising as it gets quite hard on the track in the warmer months.”

Anonymous respondents to Skills Impact Equine Industry Survey, conducted on behalf of the Animal Care and Management Industry Reference Committee.

## Projects for 2020-21

The following projects have been approved by the Australian Industry and Skills Committee (AISC) for 2020-21:

### Alterations to Packaging Rules and Application Statement in the Certificate II in Racing Industry

The Certificate II in Racing Industry includes a core unit, ACMEQU205 Apply knowledge of horse behaviour, which is inappropriate for greyhound industry participants. Moving this unit to the list of elective unit options is the favoured approach, as the qualification is intended as an introduction to the racing industry, allowing for specialisation in distinct sectors or roles through elective units.

### Simplifying Certificate IV Qualifications for Riders and Drivers

This project proposes the removal of two units of competency from the BSB Business Services Training Package as core units from the qualifications. This will simplify delivery of the qualification while retaining all of the job role requirements. Feedback from RTOs is that learners are finding it difficult to complete the two BSB units because they include significant learning content that is not necessary for the context of the intended job roles. The change is supported by industry regulators and participants, with feedback indicating that these units do not provide skills needed for the job role of jockey.

# Projects

## Completed Projects

The following projects were endorsed by the Australian Industry and Skills Committee (AISC) on 13 August 2019. The revised qualifications, skill sets and units of competency, that were developed as part of these projects, are published on [training.gov.au](http://training.gov.au) and available for delivery by registered training organisations (RTOs).

Visit [www.skillsimpact.com.au/completed-projects](http://www.skillsimpact.com.au/completed-projects) for further details.

### Greyhound Health Assistance Services Project

The skills and knowledge requirements for Greyhound Health Assistants, administering complementary non-invasive therapies to greyhounds, have been documented within a specialisation within the Certificate IV in Greyhound Racing Industry as well as a specific Greyhound Health Assistant Skill Set.

### Horse Breeding Skills Project

The horse breeding sector is intrinsically linked to the racing sector. As such, this project has focused on revising breeding qualifications to ensure they are suitable for all kinds of breeding, including thoroughbred and standardbred horses.

### Retraining Horses and Greyhounds to New Environments Project

This project has developed and revised qualifications and skills standards to support the work of retraining horses and greyhounds moving into domestic, equestrian, recreational or farm environments.

# VET Insights

There has been much discussion over the past 12 months about ways the VET system can be improved, with the Government drafting a VET Reform Roadmap and offering the opportunity to provide feedback on the topic, building on the initiatives underway as part of the 'Delivering Skills for Today and Tomorrow' package.

These initiatives recognise that we can all contribute to change and be part of solutions for a better VET sector.

In our role as a skills standards development body, working every day with industry, training providers and other VET stakeholders, people often share with us their concerns and challenges with VET. Over the past five years, these stakeholders have talked about the challenges, but they have also shared with us some ideas for addressing them.

Skills Impact has compiled this information and in late 2019 we began undertaking further research and consultation to provide input to the governments' VET Reform Roadmap.

Our research has included both qualitative and quantitative approaches, including literature reviews, interviews and discussions with industry and VET stakeholders, data analysis, and surveys.

The aim of this program of research is to not only describe the issues important to our stakeholders, but to also offer solutions in key areas of impact, as part of our support for the Governments' VET Reform Roadmap.

## Five Key Themes

In 2020, we identified five key themes for further investigation. These themes outline common challenges that our stakeholders have shared with us, as well as some possible solutions. They are described in more detail over the following pages.

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### Industry Leadership

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### Competency is a Journey

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### Thin Markets and RTO Delivery Challenges

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### Contextualisation of Units

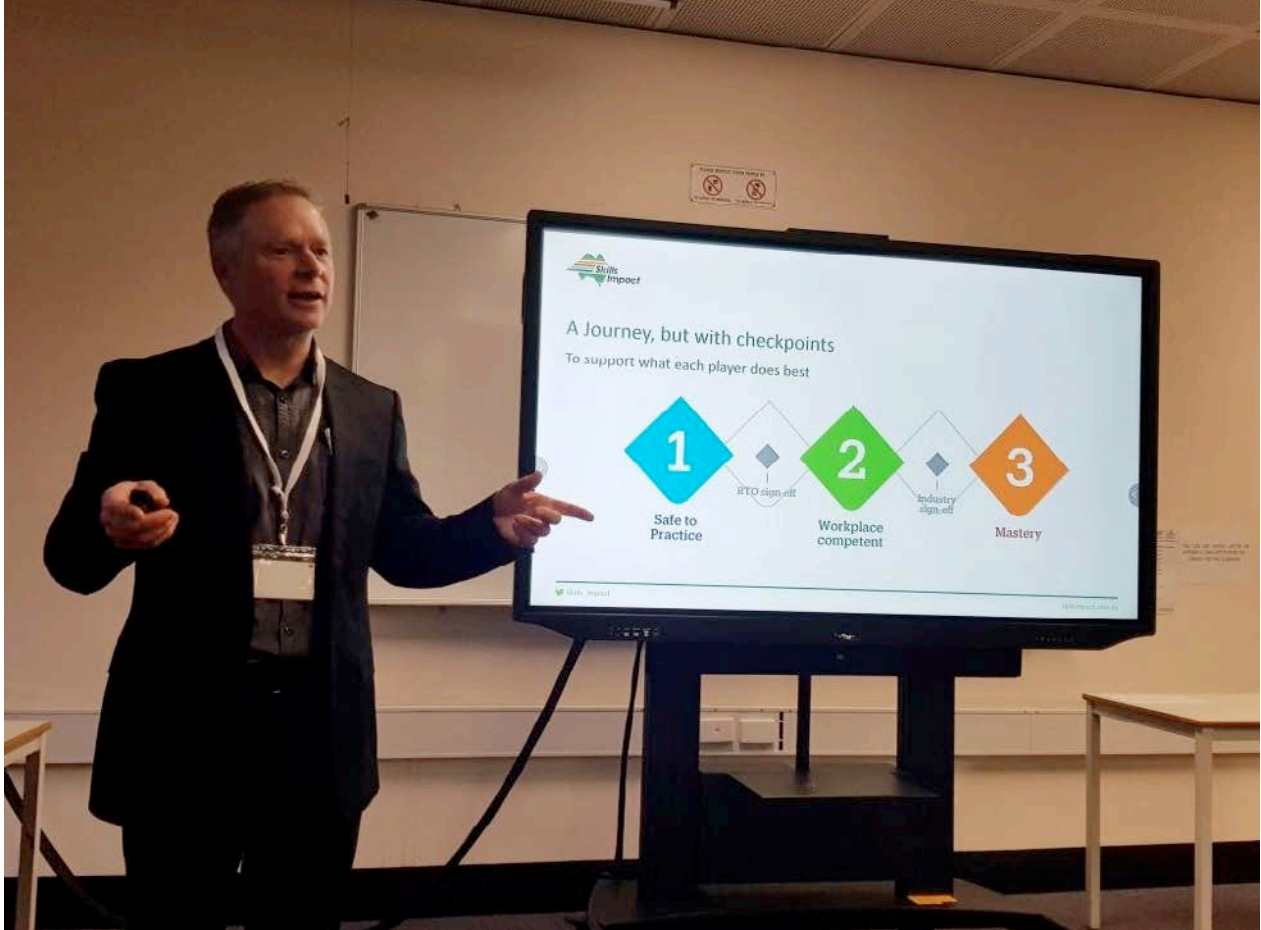
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### Skills Acquisition is a National Economic/Social Imperative

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### Griffith University Research

Skills Impact engaged Griffith University to conduct research into the challenges experienced under current competency-based system settings. A national online survey was distributed to employers, industry representatives and training providers in industries as diverse as agriculture, animal care and paper manufacturing. The questions centred on the concept of competency, and common understandings of it, to evaluate the potential efficacy of reimagining competency through a developmental framework. Over 550 stakeholders responded.



Skills Impact CEO, Michael Hartman presenting at NCVET National VET Research Conference 'No Frills'

## Industry Leadership

The VET sector is intrinsically linked to jobs and to productivity. It supports Australian industry to be globally competitive. For that reason, industry leadership of the VET sector is important.

Under the current system, industry plays a key role in identifying the skills requirements of their sectors. They are involved in the development of units of competency and the packaging of these into qualifications, however that is where their structured involvement with training and assessment ends. Industry has limited influence over what, how and when training is delivered, and how it is funded. It is recognised that industry does have a more integral role in apprenticeships or traineeships, but this pathway now represents less than 10% of the VET sector.

**A truly industry-led system would have industry involved, in a structured way, at all stages of the system, not only the beginning.**

The Skills Pipeline published in the Skills Organisations National Co-design Discussion Paper – September 2019 describes five stages under the current VET system to develop a competent workforce. The five stages are:

1. Skills forecast and identification
2. Skills standard development
3. Resources development
4. Training delivery
5. Skilled workers

Currently, industry is only involved, in a structured manner, in stages one and partially in stage two. There are degrees of engagement with industry in the other stages, but these have not resulted in industry having significant influence over the delivery of training or how it is assessed. As a result, the VET sector has accessibility issues where some industries miss out on much needed training, which is discussed in further detail under the third theme of **Thin Markets and RTO Delivery Challenges**.

Research in 2019-20 revealed potential solutions, where industry leadership can be channelled in the latter stages of the skills pipeline. Two key areas need to be addressed:

1. The first is renaming 'Training Packages' to 'Industry Work Skill Standards'. This would demonstrate to industry that they have a direct connection to the VET sector. We know that industry is far more interested in commenting on skill standards than commenting on something that appears to be an RTO training product.
2. The second is to ensure that industry has an active and recognised role in the VET sector, which would result in direct enterprise contributions towards training, mainly through supervised work practice. This potential solution is described in more detail under the third theme of **Thin Markets and RTO Delivery Challenges**.

## Competency is a Journey

Questions about the ways individuals develop competency often come up as we work with training providers and industry. The feedback received is that the VET system works with a definition of competency that is very difficult to achieve without workplace-based practice over a significant period.

The system definition of competency as used by ASQA is ‘the consistent application of knowledge and skill to the standard of performance required in the workplace’. There is an expectation that people with a VET qualification should be workplace competent, but most VET courses do not involve workplace practice in real life settings prior to assessment.



Research to date, demonstrates that competency is developed in stages, over time, with training inputs only part of the learning process. The Dreyfus and Dreyfus model<sup>3</sup> of skills acquisition, which suggests that expertise develops through stages – and is not something that someone either has or does not have – has been a key tool for exploration.

Feedback from industry informs us that many participants exit the VET sector with basic skills and up to date knowledge, but they are not competent or proficient in job roles to workplace standards. A ‘qualified’ learner from the VET sector is knowledgeable and safe to start practicing in a workplace. The skills and knowledge they have gained support them to safely continue the journey of developing proficiency over time, providing they receive the necessary coaching and supervision in a workplace with good standards of work.

Both industry and RTOs have voiced their concerns with us about these challenges. For industry, there is little visibility over how competent somebody is. RTOs currently spend too many resources trying to ensure workplace competency. It is costly for them to simulate certain work environments, particularly for some of the job roles and work activities in the industries we support.

### A solution will require improved training products

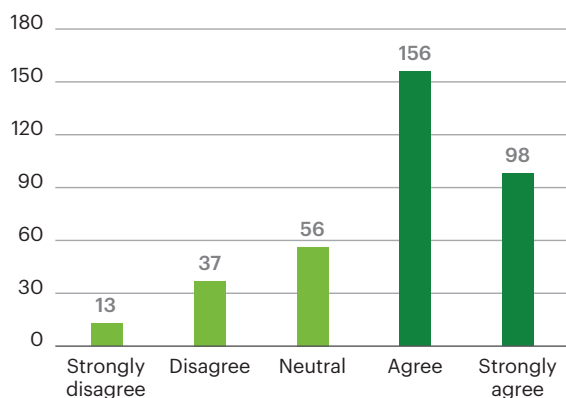
We will better meet enterprise and employer expectations if competency or proficiency is assessed in real work settings, through a collective delivery outcome between RTOs and enterprises. This is what occurs through the highly regarded traditional apprenticeship model which now make up less than 10% of student enrolments in the VET Sector.

Our survey of VET sector stakeholders showed that there is a lot of support to reconfigure the system to identify the parts of skill proficiency RTOs can deliver in partnership with enterprises.

A solution to embrace the strengths of both RTOs and industry in their role of training somebody to be competent could be to re-interpret units of competency and produce supporting materials for both training delivery and workplace assessment.

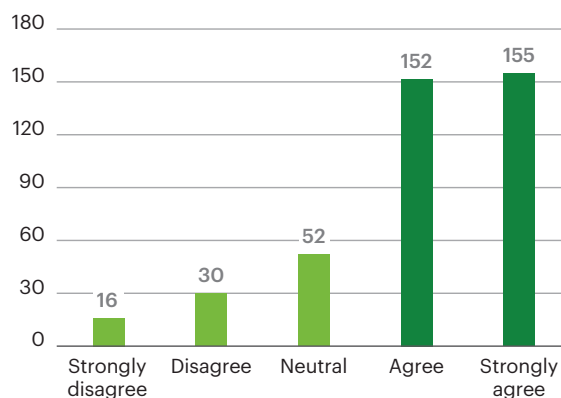
The unit of competency is an important document to outline occupational standards, but RTO learning materials and enterprise checklists could help with the deliverability of training and competency, particularly in the workplace.

<sup>3</sup> Dreyfus, H. & Dreyfus, S. (2009). The relationship of theory and practice in the acquisition of skill. In P. Benner, C. A. Tanner & C. A. Chesla (Eds), *Expertise in Nursing Practice* (pp. 29-47). New York: Springer.



71% of respondents agree that workplaces should have an expanded and direct role in training

Source: Griffith University 'Learning, Training, and Competency Survey' Preliminary Findings June 2020



76% support a developmental approach to competency (recognise different stages of learner performance)

Source: Griffith University 'Learning, Training, and Competency Survey' Preliminary Findings June 2020

### How could this work?

**National Skills and Training Materials** (based on units of competency) could be created to help define what an RTO is responsible for delivering, while offering a range of options to meet local requirements.

**Industry Work Skill Standards** could provide enterprise guidance on delivering relevant workplace practice and evidence of competency, similar to ISO and ANZSO standards.

Under this model, RTOs deliver in collaboration with enterprises a minimum acceptable standard of vocational training.

A point of confusion we often come across in our interactions with industry and training providers, is the fact that training packages are not a 'package of training' at all. They are industry work skills standards. Our research is exploring the options to add these missing pieces to the training package, whilst also ensuring industry involvement in the development and assessment of competency.

A project is underway to produce sets of exemplar materials that will show how to move the development and recognition of learning and assessment from institution-only into the workplace, in partnership with RTOs.



## Thin Markets and RTO Delivery Challenges

There is no question as to the importance of training for an industry's growth and competitiveness, or how it can support people to secure employment. The industries we work with clearly tell us where skills gaps are and where opportunities for training exist. Still, the same challenges rear their head for most industries we support. Those located in regional, rural or remote areas have limited access to training. Training for highly technical skills is also hard to come by, especially if expensive materials, processes or machinery are required. The national training packages are updated to include the necessary qualifications and skills standards as specified by industry, but this does not drive training delivery. One key question stands out – why are RTOs not delivering these qualifications and skills standards, even though they are needed by industry?

### Thin Markets and High Costs

**\$ Low ratios of student to trainer, access and safety issues**

**\$ Highly technical skills and or skills requiring access to expensive materials and machinery**

**\$ Learners spread across large geographical areas with low numbers of students in any one area**

All the above factors contribute to high costs per learner, often two to five times higher than for training in situations that are not subject to the same factors. This is an important issue as some of the skills most critical to Australia's future are highly technical and high cost to deliver, and do not meet the viability test so important to RTOs that trigger development of materials and processes leading to their delivery. Without delivery being offered, enterprises, over time, develop their own alternative solutions and no longer seek formal training for their staff.

There are a host of factors affecting RTOs and their decision as to whether to deliver training or not, any one of these issues by itself is enough to prevent delivery. More than one makes a compelling case for RTOs to not offer training for critical industry skills.

Filming content to describe key themes and insights. Videos are available on the Skills Impact website under 'VET Insights'





## Factors in an RTO's decision to add or remove a qualification or unit

Availability of prospective students	90%
Availability of skilled and qualified trainers	88%
Demand for the training from employer	88%
Availability of equipment, infrastructure, or other resources	87%
Ability to meet ASQA compliance requirements	87%
Changes in industry priorities	84%
WHS or other risks associated with delivery	82%
The ability to deliver the desired elements in your institution or a workplace	80%
Cost of course design and/or materials	74%
Access to public funding to support delivery	72%
Geographical spread of students and/or workplaces	59%

Source: Griffith University 'Learning, Training, and Competency Survey' Preliminary Findings, June 2020

## Industries we work with

Skills Impact provides services to a portfolio of industries with a predominance of operations in regional, rural and remote locations. These areas are generally high cost training environments with student numbers spread over a broad geographic range, leading to lower potential enrolment numbers for RTOs working in any particular region.

## RTO Delivery Challenges

**Training delivery is consolidating in areas where delivery is viable and not in areas of greatest industry need.**

Most training delivery is in areas that can be carried out in classrooms and simulated work environments or for areas driven by regulation guaranteeing a supply of students who need a "ticket" to perform a work function.

**RTO delivery decisions appear to be driven just as much by regulatory and operational risk as they are by cost factors.** RTOs are becoming more and more reluctant to take on new areas of training due to a demanding level of regulation, and the cost of meeting that regulation. Regulatory requirements for providers in thin markets are the same as for those in urban areas. A thriving, useful RTO business can be put at risk by attempting to meet industry needs in new or challenging skill areas. The result is that industry misses out on much needed training and perceptions are formed that due to low or no enrolments, a qualification or unit is not needed.



## Contextualisation of Units

There are more than 16,000 units of competency in the system, despite policy efforts over the last ten years to reduce the numbers. Training providers collectively struggle to deliver and be audited against so many discrete units. As a result, many units end up never being delivered, despite describing identified industry work practices and training needs.

It seems that there are two large contributing factors to this issue:

- New units are developed to describe new ways of work, but at the same time it is almost impossible to delete existing units that describe older methods of work that are still in use.
- When units are written broadly enough to apply across multiple industries, they lack contextualisation and become meaningless for each industry. As a result, many units with the same subject matter exist across many industries, but as separate units which contain details specific to an industry.

The number of units could be significantly reduced by national contextualisation statements and materials to deal with new and old methods of work, and issues of application specific to each industry. This is an approach that has recently been demonstrated for the new infection control units, developed in response to the COVID-19 emergency.

## Skills Acquisition is a National Economic/Social Imperative

VET sector training represents less than 2% of hours worked across the economy each year. It is a small but vital contribution to the amount of learning that takes place while working. It is critical that Australia's skills system recognises the quality and extent of learning taking place in the workforce, which is estimated to be between 2 and 10 times the volume of VET, and ways to capture data about it.

There is ongoing confusion about the VET sector's role in skill development/acquisition.

It is important to look at skills across the economy, as distinct from focusing solely on VET sector delivery. VET sector delivery is driven by RTO viability and not industry need or productivity.

## Industry works more than 20.5 billion hours each year

**If approx. 5% of hours worked include learning skills on the job, then industry spends 1 billion hours of worktime on learning and skills development.**

**VET sector delivers a lot less than 1 billion hours of training each year.**

Source: Australian Bureau of Statistics, 2019, 6202.0 – Labour Force, Australia, May 2019, Table 19. Monthly hours worked in all jobs by Employed full-time, part-time and Sex and by State and Territory – Trend and Seasonally adjusted.

It is critical that Australia's skills system recognises the quality and extent of learning taking place in enterprises as well as institutions, and ways to capture data about it.

Units of competency are developed to describe all work carried out in Australia, except work supported by university qualifications. A large waste of resources follows if these units are then only recognised as applying to the operation of the VET sector. They are the working IP of all Australian industries and should be available for use by industry in a supported manner. They should not just be seen as tools to be used by RTOs, and while they are called training products currently, they are in reality industry skill and work standards and perhaps they should be called what they are.

# Award Winning Skills

Each year the Australian Training Awards system, including the state and national awards, recognises and celebrates individuals, businesses and registered training organisations for their contributions to the Australian VET sector. This year, some of the Skills Impact team attended the awards, where they caught up with finalists and winners from the industries we work with, some of whom have been directly involved in projects to update skills standards in their sector.

## Sarah Ford

**VET Teacher/Trainer of the Year –  
National and New South Wales Award Winner**

Sarah Ford's career has taken her some interesting places. Since training as a teacher she has roamed all over NSW working with students in regional communities such as Lake Cargelligo, Broken Hill, Taree and Port Macquarie. It is clear Sarah is deeply invested in her students and her community from the level of enthusiasm and commitment she brings to her current work at Richmond River High Campus in Lismore.

**“I want to use this opportunity that I have been given as the NSW Vocational and Educational Teacher/Trainer ambassador to promote VET subjects, especially in our schools.”**



## Stephen Witkowski

**Trainee of the Year –  
National and Tasmanian Winner**

Completing a Certificate III in Aquaculture helped Stephen bridge the gap between the theoretical knowledge he already had from his university degree and applying it to his role as a technical officer at Tassal. Stephen believes working in the salmon industry is the best way for him to elicit real change, pursuing his vision of a world where sustainability is paramount.

Skills Impact project team members for the Fishtech and Aquabotics Project met Stephen during a site visit where he explained and demonstrated the skills required to use remotely operated vehicles for environmental monitoring at Tassal.

**“The training I had completed not only helped secure this position, but also equipped me with the skills and knowledge to combat the challenges of my new role.”**



## Gina Dal Santo

**South Australian VET Teacher/Trainer of the Year Award Winner and National Award Finalist**

Gina Dal Santo is a cheese enthusiast who has made a career out of bringing that passion to others. A founding cheesemaker and lecturer at The Artisan Cheese Making Academy Australia (ACMAA), which operates as part of TAFE SA, Gina is also one of many industry volunteers who helped develop new qualifications in cheesemaking, brewing, distilling, and fermenting as part of the Artisanal Food and Beverage Project.

**“I want to continue to grow the cheese education. I want to put SA on the map for cheese education.”**

## Kristy McDermott

**Queensland Vocational Student of the Year Award Winner and Runner-up for the National Award**

Kristy McDermott wanted to show her children that leaving high school in Year 9 did not prevent her from pursuing a fulfilling career. Kristy has proven this by being awarded the RA Wearne Award for Excellence in Learning at her graduation from a dual qualification in horticulture and landscape.

Kristy now works hand in hand with her partner, Dan (pictured right), with Kristy bringing landscape projects to life, and her partner offering his lawn mowing services to maintain them.

**“Being nominated by my TAFE showed me how far I’d come. It’s been a challenge, but incredibly rewarding, to do things I didn’t think I could.”**





## Heidi Rasmussen

**Victorian School-based Apprentice of The Year Award Winner and Runner-up for the National Award**

Heidi always knew she wanted to work with animals, beginning an apprenticeship while in Year 11, completing the Certificate III in Companion Animal Services.

She attained the highest level of achievement for a number of Year 11 subjects and was Trainee of the Year from The Gordon.

Heidi is taking the next step to becoming a veterinarian by completing a Certificate IV in Veterinary Nursing and plans to go on to university to do a degree in Veterinary Science.

## Sophie Nuske

**South Australian School-based Apprentice of The Year Award Winner and National Award Finalist**

Sophie's ambition is to run her family farm in Sheringa one day. For now, she is completing a school-based apprenticeship at Cleve Area School in SA, studying for a Certificate III in Agriculture.

Sophie is passionate about the merino wool industry, this year claiming first prize in the Merino Fleece Young Judges competition.



## Darren Scott

**Tasmanian VET Teacher/Trainer of the Year Award Winner and National Award Finalist**

From expert butcher to dedicated teacher, Darren Scott's commitment to the skills development of Australia's future butchery specialists has been recognised as part of the National Training Awards. Darren is passionate about the wellbeing and learning experience of his students, supporting not only their individual careers, but the future of the meat processing sector as a whole. With more than 30 years' experience as a butchery specialist and more than 10 years' teaching, he is now head teacher of cookery at TasTAFE.

**"I take pride in the fact that I have never let a student down, and that my word is true – and I would do what was required to get them completed at the level required."**







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