Skills issues in the horticulture industry of the Riverina

Regional Development Australia
RIVERINA NSW







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This study was funded by the NSW Government.
RDA Riverina thanks them for their support.

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RMCG

August 2017

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Regional Development Australia Riverina (RDA Riverina) is part of a national network of committees fostering regional economic development.

RDA committees work with all three tiers of government, regional business and the wider community to boost the economic capability and performance of their region. Focused on the economic, social and environmental issues affecting its communities, RDA Riverina has a pivotal role in ensuring the long-term sustainability of the Riverina.

In early 2017, through RDA Riverina's relationships with the local horticulture industry, we became aware of a skills shortage. Growers expressed difficulty in finding skilled staff after advertising widely. Affected horticulture industries in the Riverina include irrigated crops of citrus, tree nuts, vegetables, stone fruit, wine grapes and the cooler climate apple industry.

With the Riverina region producing:
- One third NSW fruit and nuts - $271 million
- One third NSW vegetables - $141 million
- Half NSW wine grape production - $81 million

this skills issue has had an enormous impact and will continue to impact on economic development in the Riverina and as well as NSW if solutions are not found. RDA Riverina's Regional Sponsored Migration Scheme (Subclass 187 visa) (RSMS) enables regional employers to sponsor overseas skilled workers and employ them in skilled positions that cannot be filled using the local labour market. We found that the horticulture industry was using RSMS at a higher rate than before.

RDA Riverina sought funding from the NSW Government to conduct a study to establish and validate the extent of the issue and formulate policy responses to address these skills shortages. This formed part of a broader study across NSW of skills needs. In June 2017, RDA Riverina engaged RMCG to lead this investigation.

With new initiatives in the Riverina supporting agriculture, including TAFE NSW Griffith Campus hosting the Agribusiness Skills Point and the new AgriSciences Research and Business Park at Charles Sturt University in Wagga Wagga, this study supports the growing recognition of the importance of the horticulture sector in our community.
Including a desktop review, stakeholder consultation and industry surveys, this research informs government, industry and community about skills in the horticulture industry and makes five recommendations.

RDA Riverina look forward to working with others to bring these recommendations to reality for the economic benefit of our region

Diana Gibbs
Chair, RDA Riverina

Diana Gibbs

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Executive Summary

Challenges exist with the attraction, retention and development of a skilled workforce in the production horticulture industries of the Riverina region in New South Wales.

THE STUDY

Anecdotal evidence has suggested there is a skills issue in the Riverina horticulture industries in New South Wales. In response to expressed concerns, RDA Riverina sought to establish and validate the extent of the issue and formulate a policy response to address it.

RM Consulting Group (RMCG) was engaged by RDA Riverina to establish and validate the extent to which there may be a skills issue in the Riverina horticulture industry, and provide clear policy recommendations on strategies to address the identified problems.

The study was undertaken through a desktop review, industry survey and a series of stakeholder consultation workshops across the region, structured around a systemic approach to workforce development. The systemic approach considers the various elements across the entire workforce system and their interaction and relationship in determining workforce outcomes. This focused the study beyond human resource management practices and the training system, to also include the broader labour market conditions and influencing policy environment factors, such as regional conditions and infrastructure.

FINDINGS

The study confirmed there is a skills issue in the horticulture industry of the Riverina region. The extent of the issue has not been properly defined, as many in the industry struggle to entertain the idea of recruiting higher skilled workers when challenged to meet existing general farm labour needs. In part, this challenge is attributed to a failure of reflective and critical self-appraisal by the industry as to why it is not considered an employer of choice.

Substantive opportunities exist for improved coordinated effort across horticultural industries and other relevant stakeholders to assume ownership and address the skills issue. Relevant stakeholders need to include existing training providers located in the region, including the Riverina Institute of TAFE and Charles Sturt University. While these institutions are considered amongst the best training providers of production horticulture qualifications in Australia, they have failed to deliver a skilled horticulture workforce in the region. Dwindling student enrolments in these courses is problematic and should be addressed through means such as targeted marketing and promotion of their existing training packages.

Of the workforce currently employed in horticulture, there is a lack of recognition of the value and opportunity to develop existing staff resources through internal recruitment and upskilling strategies. Gaps in available support services, including human resource management tools such as position descriptions and defined career pathways, inhibit existing staff development opportunities. Opportunities to improve training course

content and delivery methods, including on-farm, could also be explored to upskill existing staff, whilst improving the viability of training providers.

Horticultural businesses within the Riverina region demonstrated a preference to employ international workers, however, there is a demonstrated constraint in investing in the upskilling of visa workers due to risks in immigration policy changes. International workers are favoured over domestic labour based on perceptions of the work ethic, attitude and welfare dependency of Australian horticulture labour. Furthermore, housing availability was considered a priority issue in specific geographic areas of the region, such as Griffith, to be able to attract skilled workers in the first instance.

Attracting workers to the horticulture sector will continue to be challenging, however, due to the perceived negative image of the industry. This is a foundational challenge that must be addressed in order to have any success at addressing the issues of horticulture skill attraction and development in the Riverina.

RECOMMENDATIONS

Recommendation 1: Establish a collaborative working group of industry stakeholders to champion horticulture skill development in the Riverina.

A collaborative platform of industry and service providers is recommended to champion the development of skill needs to support the horticulture industry. Leadership for this group should be driven by industry, however a cross sector agent may be more appropriate in the interim development phase, e.g. RDA Riverina.

The recommended first task for the working group is to review the findings of this report to establish a clear vision, work plan and budget to progress the development of a skilled horticulture workforce in the Riverina.

Recommendation 2: Support the promotion of existing priority training programs offered in the Riverina, including through school career days.

A coordinated effort to promote existing tailored training programs on offer within the Riverina region, specific to horticulture skill development is also advised. The region is recognised as home to exceptional institutions in the delivery of horticulture skill training, however, these institutions fail to promote this as an asset. This recommendation encourages a collaborative approach between these institutions and a rigorous monitoring program of the promotion strategy to ensure evaluation of its effectiveness.

Recommendation 3: Develop industry relevant on-the-job training packages to support the skill development of existing staff resources.

Support for horticultural businesses to deliver formal and informal training programs in-house to support the skill development of existing employees is advised. Existing workforce capacities are presently under-utilised, and targeted support in the delivery of multi-disciplinary training packages in-house is recommended to encourage on-the-job upskilling and internal recruitment practices.

Recommendation 4: Develop a human resource management toolkit for horticulture employers, including clear career pathways.

The development of a regional human resource management toolkit for horticulture producers is encouraged to include capacity building and decision support tools such as a skills register, needs analysis tool, induction packs and position descriptions. The toolkit should also include clear career pathways which outline the career progression opportunities in horticulture careers in the Riverina region.

Recommendation 5: Develop and implement a regional promotion strategy, including the promotion of skilled horticulture jobs.

As the Riverina region has a number of attractive selling points to potential skilled workers, a coordinated approach with local government and industry groups is encouraged. The collaboration should aim to ensure representative key messaging on the availability of jobs, the quality of regional infrastructure and services, transport and proximity to major urban centres, to promote the region to potential skilled workers and their families.

1 Introduction

1.1 PROBLEM STATEMENT

Attracting, retaining and developing a skilled workforce in horticultural businesses is a challenge to horticultural industries Australia wide. Several recent studies[1] provide empirical evidence of skills issues and shortages in horticulture in Australia. The collective findings of these studies identify several driving issues contributing to skill availability in horticulture, including:

- Low number of people attaining specific agriculture and horticulture qualifications
- Labour competition from other sectors, including mining and coal seam gas
- Poor promotion of the industry as an employer of choice, including lack of clear career pathways within the industry
- Poor promotion of horticulture to people trained in relevant disciplines such as Logistics, Business Management, Engineering
- Small to medium enterprises cannot afford to employ several specialists; they require multi-skilled staff in management positions
- Seasonal and casual/part time nature of the work, inhibiting job security, on-the-job training and career progression as well as potentially requiring long working hours during the peak season
- Lack of regional level collaboration to build skilled and adaptive labour pools
- Industry image, employment conditions including remuneration, work place conditions
- Remote locations affecting the ability of partners of those employed to find adequate work, quality of infrastructure (e.g. schools, hospitals, transport)
- The predominant disinterest of local unskilled labour to work in horticulture, and
- Reluctance by the local industry to engage skilled migrant labour or participate in seasonal worker programs due to factors including costs, the length of time seasonal workers may stay and minimum work hour requirements.

THE RIVERINA REGION, NSW

Anecdotal evidence has suggested there is a skills issue in the Riverina horticulture industries in New South Wales. Affected horticulture industries in the Riverina include irrigated crops of citrus, tree nuts, vegetables, stone fruit, wine grapes and the cooler climate apple industry. As a result of the expressed concerns, RDA Riverina is seeking to:

- Establish and validate the extent of the issue, and
- Formulate a policy response to address the issues.

An assessment of the skills issues in horticulture industries in the Riverina region has direct relevance to:

- The “skills shortage in rural and regional NSW” initiative being addressed by the Regional Development Advisory Council (the NSW RDA Chairs’ Group)
- Goal 3 of the 2013 – 2016 RDA Riverina Regional Plan, to support education and skill development initiatives that enable all people to have the capacity and confidence to contribute to the region’s growth.

[1] Growcom, 2013; AgriFrood Skills Australia, 2015; RMCG & GVFGSWG, 2013

This Goal is driven through the priority issue of workforce development and ensuring support for a skilled workforce, and

- State Government and regional policy development with particular relevance to horticultural skill development within the Riverina region. This considers new initiatives including TAFE NSW Riverina Institute Griffith Campus hosting the Agribusiness SkillsPoint and the new AgriSciences Research and Business Park at Charles Sturt University in Wagga Wagga.

1.2 PROJECT OBJECTIVE

RMCG were engaged by RDA Riverina to establish and validate the extent to which there may be a skills issue in the Riverina horticulture industry, and provide clear policy recommendations on strategies to address identified problems. The objectives of the project included:

1. Identify the necessary skills for the horticulture industry in the Riverina
2. Validate the issues relating to the availability of these skills, and
3. Recommend clear policy ready strategies to address any skills issues.

1.3 PROJECT APPROACH

To deliver on the objectives of the project, this study has:

1. Identified the necessary skills for horticulture in the region through a desktop study
2. Validated the extent to which these skills are, or are not available in the region through stakeholder consultation and industry surveys, and
3. Developed recommendations to resolve related issues, and provided clear strategies on how to address them in the region.

Delivery of the project has been structured around a systemic approach to workforce development. A systemic approach (Nettle and Oliver, 2009) determines that workforce outcomes, such as the availability of suitably-skilled workers, arises from the interactions of the various elements across the entire workforce system, not just direct employment or training. This includes elements such as:

- The policy environment
- Regional conditions (e.g. hospitals, schools, transport, housing, image, climate, ‘things to do’)
- The formal and informal training system
- Career paths
- Broader labour market conditions
- Human resource management practices
- The interactions between employers, and
- The interactions between other stakeholders in the region.

An illustrative representation of a systemic approach to skills development, Figure 1-1, demonstrates the features of the workforce system, such as career paths, the policy environment and the ways in which skills are formed. An important consideration through a systemic view, is that while there are some workforce issues that can be addressed through specific action by employers at an individual business level, there are other issues that require collaboration between stakeholders across the regional workforce system.

Figure 1-1: The interacting elements (system) that affects a regional workforce (adapted from Nettle and Oliver, 2009)

We have applied the theory of the systemic approach to workforce development during the delivery of the project, by addressing the key research questions as identified by RDA Riverina grouped against their relevant workforce element, as summarised in Table 1-1.

Table 1-1: Key research questions grouped by workforce element

WORKFORCE ELEMENTS	RESEARCH QUESTIONS
Policy environment	▪ What are the barriers to employers? ▪ Is there a housing affordability / obtainability issue?
Training system	▪ Who provides training for the horticulture industry in the Riverina? ▪ What level/s is this training aimed at? ▪ Does the training match the skills needed?
Broader labour market conditions	▪ Is attracting employees to the region an issue? ▪ Is there an industry perception problem?
Human resource management practices	▪ Are employers skilling their workforce on the job? ▪ Is there limited career progression in the industry / remuneration?

1.4 REPORT STRUCTURE

The key findings from the data sources used for the project, including the desktop review (section 2) and the consultation workshop and online survey findings (Section 3) are briefly summarised in the first part of this report. These findings are synthesised in a discussion in Section 4, with the key recommendations of the study discussed in Section 5.

All of the data collected through the study is presented at the back of the report. This includes the desktop study (Section 6), consultation workshop (Section 7) and online survey results (Section 8).

2 Desktop review summary and key findings

A brief summary of the key findings of the desktop preview is outlined in this section. The full desktop review is provided as a reference in Section 6.

2.1 THE STUDY AREA

The RDA Riverina region is in southern NSW and stretches 550 kilometres east to west across the Riverina region of NSW, and is a major food producing area in Australia. The region includes the Murrumbidgee and Coleambally Irrigation Areas, which produce around one-third of NSW fruit and nuts, and one-third of the state's vegetable production. Horticulture production is concentrated in several areas of the region with access to reliable irrigation supplies with suitable climatic and soil conditions for specific crops. These areas include the local government areas of Griffith, Tumut, Leeton and Carrathool (RMCG, 2016). The Riverina region produces half of the wine grape production in NSW, is a significant producer of carrots, (85 percent of NSW production) and onions (68 percent grown in the region). The Riverina also has a significant production of fruit and nut trees, including almonds (72 percent of NSW production), oranges (67 percent) and apples (59 percent).

2.2 THE NEED FOR SKILLS IN HORTICULTURE

Over the past decades, horticulture, the third largest agriculture sector in Australia behind meat and grains, has moved beyond a 'market garden' mentality, to focus on business acumen including supply chain management, technology, product innovation and export competitiveness (RMCG, 2015). Horticultural operations of today operate at levels of complexity that did not exist 20 years ago. Businesses are faced with a range of compliance responsibilities in the areas of workplace health and safety, pesticide management, food safety, customer relationships and environmental sustainability.

There is broad recognition that to remain internationally competitive and equipped to capitalise on opportunities, the horticulture industry needs to attract the best educated people (Pratley, 2012). There is also a need to secure a continued pipeline of well-trained experts to support the capacity of the industry into the future. Presently, horticultural businesses are struggling to attract and retain the necessary skilled workforce; this is forecast to cost the Australian horticulture industry $1.55 billion in lost profit by 2020 (Horticulture Australia Ltd, 2008).

2.3 SKILLS ISSUES IN THE RIVERINA

Previous studies specific to skill shortages in horticulture in the Riverina region are limited. Of the studies available, all have observed that most agricultural related sectors in the Riverina experience skill shortages (RIRDC, 2015). Some studies (Griffith City Council, 2011), attributed the skill shortages to a prolonged period of drought at that time, which prompted a skill migration of agriculture and farming related skills from the region.

2.4 POLICY ENVIRONMENT

Detailed studies assessing industry specific skill shortages are limited, and where available, are based on high level, cross industry aggregated datasets. Despite this, there is a rhetoric around the factors that are seen to contribute to skill shortages, particularly in regional Australia, which include structural changes to the economy, an ageing workforce, environmental factors including prolonged drought, labour competition from other industries, migration of workers from regional areas to metropolitan centres and suitability of regional infrastructure. The perceived poor image of agricultural industries also plays an important role.

Within the Riverina region, housing affordability and obtainability was identified as a potential barrier to attracting skilled workers. The Griffith region, in particular, has a perception of having an issue with rental availability. The desktop review identified market demand data, indicating there is only an average demand for rental properties in Griffith.

2.5 TRAINING SYSTEM

Within the Riverina region, both the VET sector, serviced by TAFE NSW Riverina Institute, as well as tertiary education through Charles Sturt University, have dedicated horticulture and wine industry schools. There is limited availability of targeted VET training in horticulture, with only 2 specific options for both production horticulture and wine operations. In 2017, there were no student enrolments in production horticulture certificates at Riverina TAFE, and subsequent concern over the current and future availability of qualified trainers and assessors at the institute to deliver courses. Within the tertiary education sector, a pattern of consistently low enrolments has been observed which is reflective of a national trend in horticulture and agriculture studies. In 2017, there were just 9 enrolments in the Bachelor of Horticulture offered through CSU.

2.6 BROADER LABOUR MARKET CONDITIONS

Recognition of the perceived image of agriculture, and attracting a skilled workforce has been identified as a challenge to attracting skills to the industry. While no direct evidence from the Riverina region was identified, several studies suggest the need to change the image of agriculture through various marketing mechanisms.

2.7 HUMAN RESOURCE MANAGEMENT PRACTICES

There is mixed practice across horticulture industries across Australia with respect to upskilling the work force. In some regions, internal recruitment has been observed as a risk management strategy to ensure the appropriateness of candidates to business culture. Where new or additional skills are sought, businesses tend to assess potential candidates based on industry experience, and references, rather than their formal qualifications.

Many horticultural employers prefer to recruit internally, due to the importance that they place on business specific knowledge. Internal promotion also allows managers to ‘hand pick’ candidates who have shown motivation and aptitude in the workplace.

The provision of clear career pathways would support opportunities for career progression and development in the horticulture sector.

2.8 SYNTHESIS OF KEY FINDINGS

The desktop review considered the extent to which there is a skill shortage in the Riverina horticulture industries. The key findings of the review conclude:

- The Riverina region has challenges in attracting and retaining a skilled workforce in horticulture
- Despite the availability of quality training facilities (TAFE Riverina, Charles Sturt University), the region is not developing a skilled workforce in horticulture
- Horticulture employers are not necessarily seeking technical skills, rather a job-ready attitude and willingness to work
- Small to medium businesses need multi-skilled disciplined managers
- Horticulture in Australia has an image problem
- Positions and career pathways in horticulture are not clearly promoted.

3 Key consultation workshop and online survey findings

3.1 CONSULTATION WORKSHOPS

A series of stakeholder consultation workshops were convened across the Riverina region (Yanco, Wagga Wagga and Batlow) to identify and validate the extent to which the horticulture industry in the region has a skills issue. A summary outcome of the workshops is presented as follows, with the data collected through the workshops outlined in Section 7.

3.1.1 WORKSHOP RECOMMENDATIONS

As a workshop exercise, participants were asked to identify the number one action they associate with attracting, retaining and developing a skilled workforce in horticulture. The actions reported were prioritised through a participatory comparative scoring exercise. The priority actions from each workshop were carried through to produce a collective prioritised list of the top actions as presented below. This list demonstrates the priority of actions demonstrating collaboration and industry promotion.

1. Promote the image of horticulture
2. Create a collaborative approach to develop and promote recruitment into the industry
3. Collaboratively facilitate and develop industry led pre-employment pathways into the horticultural industry
4. Have more “on-the-job” training available to producers / businesses
5. Promote the value of production horticulture at a regional, national and global level
6. Develop group training initiatives to attract apprentices
7. Change the way the community views the industry - to be a vibrant, progressive and profitable ‘place’ to work
8. Gain a collaboration of employers that think training of staff is a need not a luxury for later
9. Cadetship through school experience, school leaver, apprenticeship/traineeship, diploma, degree leads to increased employment
10. Promote career pathways in horticulture
11. Promote horticulture as a career
12. Improve the image of industry as a potential career opportunity
13. Better understand the demand
14. Work collectively as an industry, increase our standards on recruitment and demand more from our applicants
15. Identify in which aspect of the industry skilled people will work – locations / employers.

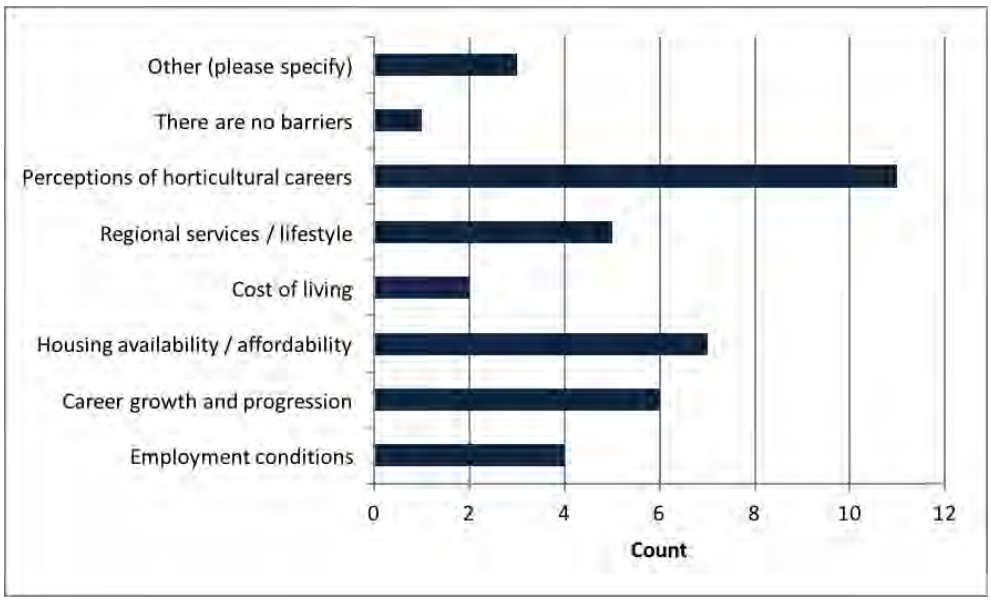
3.2 ONLINE SURVEY

Twenty-one representatives from the horticulture industry in the Riverina participated in an online-survey. Full results of the survey are presented in Section 8. Key findings from the survey included the measures respondents had undertaken to address a skill shortage in their business as presented in Figure 3-1. The highest response was to keep looking for skilled staff, followed by training existing staff.

Figure 3-1: Measures taken to address skill shortages

When considering the barriers to attracting skilled workers, overwhelmingly the perception of horticultural careers was identified as the main barrier to attracting skilled workers to horticulture careers in the Riverina region by almost 80 per cent of respondents. The second highest barrier was noted as housing availability / affordability, followed by career growth and regional services as illustrated in Figure 3-2.

Figure 3-2: Perceived barriers to attracting skilled workers to horticulture in the Riverina



4 Skills in horticulture in the Riverina

Findings from the desktop review and stakeholder consultation, consistently highlight the challenge of attracting, developing and retaining a skilled workforce for horticulture industries in the Riverina. Several key discussion points have emerged from the study, aligned to the interacting elements affecting the regional workforce.

4.1 SKILL NEEDS

Despite rhetoric around the challenges of attracting, retaining and developing a skilled workforce in horticulture in the Riverina, a discrepancy was observed between producers and service providers around interpretation of “skilled workers” and “general farm labour needs”.

For the purposes of the study, a definition of skilled workers was applied based on a two-tier job classification of skilled (decider) and un-skilled (doer) positions. Described in Figure 6-2, the adopted definition considered skilled workers in the decider level, including the need for on-the job strategic thinking, risk management, business planning and technical knowledge. The definition was adopted as a means of focussing the scope of the study as to avoid issues of general labour access, such as hiring pickers and packers.

This definition adopted by the study was challenged on several levels.

Firstly, attracting and retaining general farm labour was observed as equally challenging for horticulture businesses in the Riverina, as is the recruitment of skilled workers. Small to medium businesses in particular, highlighted the challenge of assessing their need for skilled workers when facing an immediate challenge of attracting farm labour.

Secondly, the type of skills sought by horticulture businesses are not necessarily available through a qualification. A number of employers highlighted a preference towards prospective employees who have on-the-job training and skills around labour tasks, such as pruning, tractor operation or produce grading.

Thirdly, there was a trend amongst horticulture producers to seek prospective employees who had a job-ready attitude and demonstrated a willingness to learn. This correlates with the observation of employers seeking employees with conducive personal characteristics, with 75 per cent of survey respondents identifying on the job training as their preferred means of up-skilling an existing workforce.

Finally, the broader issue of attracting a workforce, skilled or unskilled, was observed as inhibiting some in the industry to think beyond their current requirements to be able to focus on emerging skill needs, such as technological developments, including robotics and other precision farming practices; and other non-traditional horticulture fields such as information technology, engineering and marketing.

While the study has maintained a differentiation of skilled and non-skilled labour, it is an important finding that the capacity of industry to explore opportunities to recruit and develop skilled workers is restricted whilst pressed with the broader labour management issue.

4.2 EMPLOYER NEEDS AND ATTITUDES

The workforce needs of horticultural businesses in the region vary, based on the type of business along the spectrum of attracting, retaining and developing a workforce. Medium to larger businesses have a focus and immediate need around the attraction, retention and development of skilled labour, while smaller businesses need access to multi-skilled workforce sources on a seasonal basis. This variation in workforce need supports opportunities for diversity of individual skill sets and employment arrangements across the industry.

It was also observed that the focus of discussion about workforce skills by the industry tended to be driven from an outward problem identification perspective, i.e. 'it's up to the schools to fix the problem' or 'I just can't get quality workers', rather than an internal reflection i.e. 'we want to be an employer of choice, we will support the capacity growth of our employees to retain them'. Negative connotations towards upskilling and developing workers was noted during the consultation. These were largely associated with the perceived risk of skilled employees demanding higher payment and conditions, or seeking alternative employment. The drivers behind these viewpoints can be attributed to cost of production and business profitability, but cannot be justified by this argument.

Recognition of the challenges with a skilled workforce in the region as both an employee and employer responsibility is necessary to address any development of a skilled workforce in horticulture.

4.3 COLLABORATION AND INDUSTRY LEADERSHIP

The one recommendation that repeatedly emerged from the consultation process to address the challenges of skills issues in horticulture, was the need for greater collaboration. Given the geographic coverage of the Riverina region, and diversity of horticultural commodities produced, it is necessary to be realistic in terms of what can be achieved at a regional level, as opposed to what may require state or national scale collaboration. The focus of collaborative opportunities should be prioritised on those within the sphere of regional influence, that includes those that are tangible and achievable by the local industry with available resources. Such collaborative opportunities identified through the study included the creation of pre-employment pathways, recruitment strategies, seasonality sharing of skilled workers, cross pollination of ideas / shared lessons, and regional promotion.

Foremost in the need for greater collaboration to address the issue, is need for ownership of the issue. Stakeholders with existing capacity, such as local government or regional community consultative networks, such as RDA Riverina, may be best positioned in the interim. However, long-term collaboration leadership needs to come from within the industry to ensure sustained ownership and relevance of the issue. In the absence of regional horticulture association (observing the existence of commodity and region-specific associations such as the Griffith & District Citrus Growers Association, Riverina Wine Grape Marketing Board or Batlow Growers Cooperative), there are opportunities for the establishment of a coordinated horticulture industry network to drive the regional policy on skills in horticulture. A number of similar models are observed in other horticultural regions across Australia[2], that have provided an effective policy platform to coordinate local industry efforts to attract and develop local skill needs, in addition to other regional priorities.

[2] Examples include State based networks, such as the Tasmanian Agricultural Productivity Group (TAPF), Queensland Agriculture Workforce Network (QAWN), or region specific including the Southern Forests Food Council (Manjimup, WA), Bundaberg Fruit and Vegetable Growers Production Horticulture Workforce Development Action Plan (Bundaberg, Qld).

The study identified the issue of skills in horticulture as a priority for a number of industries, however, efforts to progress the issue have not been coordinated across all sectors of the industry. There is significant scope for a coordinated effort, through industry ownership, to progress the issue.

4.4 PROMOTION OF TRAINING OPPORTUNITIES

In assessing the suitability and relevance of available training for horticulture skill development within the region, the Riverina hosts some of the leading facilities, institutions and initiatives of the training available in production horticulture in Australia. Some of the emerging programs, relevant to skills development for horticulture in the Riverina, include the TAFE NSW Riverina Institute Griffith Campus hosting the Agribusiness SkillsPoint and the new AgriSciences Research and Business Park at Charles Sturt University in Wagga Wagga.

Despite the availability of quality training facilities, the region is not developing a skilled workforce in horticulture. Enrolment and graduation numbers in both VET and tertiary relevant qualifications are declining. CSU is the only known provider of a Bachelor of Horticulture in Australia, and due to consistently low student numbers the course is at risk of being discontinued. Low student enrolments also risk the capacity to provide training in horticulture in the future due to the loss of skilled trainers and lack of future investments in course development. This is of particular concern given the extensive list of emerging skill needs in the horticulture industry, particularly around future skill needs identified in the industry audit survey around technology and production practices.

The way in which training is provided, including informal training and on-the job training, also emerged as a key area of interest. Through several data sources, industry has identified the need for more targeted training design, delivery format and curriculum content. The majority of survey respondents were constructive with their approach to skill development within the workplace, with most employers noting that they provide on the job training through learning by doing (75 per cent), provide formal training internally (50 per cent) and support staff to undertake external training (32 per cent).

There is substantive scope to promote the formal training opportunities in production horticulture in the Riverina, for both VET and tertiary courses, to attract enrolments and recognition of the capacity of the region to lead the provision of horticulture training in Australia.

Opportunities are present to support informal training, including through train-the-trainer programs and design of curriculum resources and materials.

4.5 POSITIVE INDUSTRY AND REGION PROMOTION

A consistent finding across the study was the identification of the image of horticulture as the primary barrier to attracting a skilled workforce. The challenge with the perception of the industry is a foundational challenge that must be addressed in order to have any success of addressing the issues of skill attraction and development in horticulture.

Isolating the exact driver of the perception around horticulture is problematic. A starting point is with employers themselves. During the consultation, many employers noted that they actively discourage their own children from entering the industry, yet in the same conversation condemn the lack of interest from Australians to work in the sector. Concerns around the risks of training workers by employers, such as demand for higher pay, conditions or seeking alternative employment, add to negative attitudes about the industry.

These viewpoints are not isolated to the Riverina region, but rather are representative of a national perception of the industry. While there is an argument to suggest the need for a change in the national attitude towards horticulture, the opportunity exists to drive this from a regional level. The region has a number of key selling points, such as the availability of jobs, the quality of regional infrastructure and services, transport access and proximity to major urban centres, which all position the region to be attractive to suitably potential skilled workers and their families.

Horticulture in the Riverina, and across Australia, has a challenge with perception. This is difficult to overcome, as many of the attitudes exist within the industry itself. There are constructive opportunities, however, to promote the skilled employment opportunities in horticulture and the Riverina region as a package.

4.6 HOUSING AVAILABILITY

Findings established through the desktop review suggest that there is not an issue with housing affordability and availability in the region. However, the issue was repeatedly identified through the consultation process, including as the second biggest barrier to skilled worker attraction through the survey (50 per cent, after industry perception). The issue appears to be an isolated challenge, particularly around the Griffith region, and is notable for comment due to the priority it was given during consultation. Localised strategies may be appropriate to resolve the challenge where and as required.

Housing availability, rather than affordability, has emerged as a key challenge in specific areas of the region, particularly Griffith. Opportunities exist to address the challenge through localised strategies.

4.7 SUPPORT FOR EXISTING STAFF

Through the course of the study, there was a lack of recognition of the value and opportunity to develop existing staff resources through internal recruitment and upskilling strategies. Of the businesses surveyed, while some provided internal training for staff (45 per cent) and internally recruited for higher skilled positions (30 per cent), a higher proportion (60 per cent) preferred to continue looking for skilled candidates, rather than build the capacity of their existing staff resources.

These findings are closely linked to issues of poor perception of the industry, in that employers are not willing to invest in their staff; and challenges with the training system, in that there is opportunity for improved content and delivery methods to support the skill development of existing staff.

Discussion through the consultation of general human resource management practices and capacity building programs, including train-the-trainer and clear position descriptions, were identified as a measure that may provide support for existing staff. Furthermore, the development of defined career pathways in horticultural industries may support the skill development opportunities of existing staff and support the promotion of the industry to potential job seekers.

Existing staff resources appear to be underutilised with missed opportunities through on-the job upskilling and internal recruitment to higher skilled positions. Changes to the way in which training is delivered and the development of career pathways, may support higher skill development amongst existing employed workers.

4.8 SOURCE OF SKILLED WORKFORCE

While not directly assessed through the study, a key finding was the value placed on international workers, both skilled and un-skilled. Employer recruitment practices were largely identified as short term, failing to implement any long-term strategy to support workforce development. This included a dependency on international staff with visas, and challenges with federal government immigration policy to enable the facilitation of skill development with their international workforce.

Generally, preference was given to international workers, citing issues with domestic Australian labour including competition from other industries with better pay rates and conditions; and the poor work attitude, ethic and welfare dependency of locals.

Employers value the skills and willingness to develop skills of international workers, however, feel restricted to develop workers on a visa due to lack of certainty and periodic changes to Australian immigration policy. Employers look less to Australian workers, due to perceptions of poor work ethic.

5 Recommendations

Through the validation and establishment of the extent of the skills issue in the Riverina horticulture industry, the following five recommendations have been identified. The recommendations provide policy and implementation activities that should be pursued further through resource mobilisation and partnership development to attract, retain and developed skilled workers in the Riverina horticulture industry.

Recommendation 1: Establish a collaborative working group of industry stakeholders to champion horticulture skill development in the Riverina.

Horticulture in the Riverina is a significant contributor to the regional economy through direct employment and provision of service support industries. Challenges to the current and future viability of the industry, through a lack of skilled workers will have significant long-lasting impact on the region.

A collaboration platform of industry and service providers is required to champion the development of skill needs to support the horticulture industry. Long-term, the group should be industry led. However, given the pressing priority of the issue, it is recommended that an interim agent that has the capacity to facilitate the partnerships across the region be engaged and resourced to facilitate the group, such as RDA Riverina.

The collaborative working group would provide an appropriate platform to action relevant issues to the development of a skilled horticulture workforce in the region including housing availability, regional infrastructure development, training delivery and regional promotion.

The recommended first task for the working group would be to review the findings of this report to establish a clear vision, work plan and budget to progress the development of a skilled horticulture workforce in the Riverina.

Recommendation 2: Support the promotion of existing priority training programs offered in the Riverina, including through school career days.

Given the existing availability of quality training programs on offer in the Riverina region, specific to horticulture skill development, a coordinated approach to promote and market these courses is recommended. A collaborative approach between registered training organisations (RTOs), Riverina TAFE and Charles Sturt University would support in the development of career pathway opportunities as well as strengthen the availability of a future skilled workforce. Target audiences for the promotion activities should include school career days.

A rigorous monitoring program is advised in the promotion strategy to ensure performance measurement and evaluation of the promotion activities.

Recommendation 3: Develop industry relevant on-the job training packages to support the skill development of existing staff resources.

In-house training provided in horticulture businesses in the Riverina, both formal and informal, should be supported to ensure it is meeting the needs of employers and supporting skill development in employees. Training packages may be developed and provided to horticultural businesses as a means of developing existing workforce capacity and skills to lead to greater on-the job upskilling and internal recruitment practices.

Training should include multi-disciplinary skill development to support the needs of small businesses.

Recommendation 4: Develop a human resource management toolkit for horticulture employers, including clear career pathways.

Clear career pathways and opportunities to progress a career in horticulture in the Riverina region should be developed. The career pathways could be developed as part of a human resource management toolkit for employers, which includes other capacity building and decision support tools such as a skills register, needs analysis tool, induction packs and position description.

Recommendation 5: Develop and implement a regional promotion strategy, including the promotion of skilled horticulture jobs.

The Riverina region has a number of attractive "selling points" that can be promoted to attract appropriately skilled workers to the region. A coordinated approach with local government and industry groups would support key messaging on the availability of jobs, the quality of regional infrastructure and services, transport and proximity to major urban centres, to promote the region to potential skilled workers and their families.

The mediums in which the promotion strategy should be delivered in, should be reflective of the target audiences including school leavers, university graduates and international workers.

6 Desktop review

6.1 HORTICULTURE IN THE RIVERINA REGION

6.1.1 REGIONAL CHARACTERISTICS

The RDA Riverina region is in southern NSW and stretches 550 kilometres east to west across the Riverina region of NSW, as depicted in Figure 6-1. The Riverina region is a major food producing area in Australia. The region includes the Murrumbidgee and Coleambally Irrigation Areas, which produces over one quarter of all fruit, vegetable and nut production in NSW and is one of the largest wine exporting regions in Australia. In addition to horticulture production, the region also produces significant agricultural product including meat, rice, cereal and cotton (RDA Riverina, 2014).

The region has an estimated population of 158,854 (ABS, 2015), with 60.8 per cent labour participation rate, unemployment rate of 4.9 per cent (ABS, 2011) and a median employee income of $43,205 (ABS, 2013). The agriculture, forestry and fishing sector is the largest employer by industry, accounting for 11.6 per cent of the workforce. Other major employment by industry includes retail trade (11.1 per cent), health care and social assistance (11.1 per cent), and manufacturing (10.8 per cent) (ABS, 2011).

Figure 6-1: RDA Riverina region (Source: RDA Riverina, 2017)

6.1.2 HORTICULTURE PRODUCTION IN THE RIVERINA

The Riverina region produces around one-third of NSW fruit and nuts, and one-third of the state's vegetable production. Horticulture production is concentrated in several areas of the region with access to reliable irrigation supplies with suitable climatic and soil conditions for specific crops. These areas include the local government areas of Griffith, Tumut, Leeton and Carrathool (RMCG, 2016). As highlighted in Table 6-1, the region has half of the wine grape production in NSW, as well as a diverse range of high value agricultural commodities. The Riverina region is a significant producer of carrots, growing 85 percent of NSW production and onions, with 68 percent grown in the region. The Riverina also has a significant production of fruit and nut trees, including almonds (72 percent of NSW production), oranges (67 percent) and apples (59 percent).

Table 6-1: Horticultural commodities in the Riverina region[3] (ABS, 2016)

COMMODITY DESCRIPTION	RIVERINA ESTIMATE OF PRODUCTION	TOTAL NSW ESTIMATE OF PRODUCTION	PERCENTAGE OF STATE OF NSW
Orchard fruit and nuts - Total area (ha)	15,184	47,483	32%
Grapes - Total - Total area (ha)	20,290	44155	52%
Vegetables for human consumption - Total - Area (ha)	5,153	15,909	32%
Vegetables - Tomatoes - Processing - Area (ha)	44	928	5%
Vegetables - Potatoes - Area (ha)	1,840	4,112	45%
Vegetables - Onions - Area (ha)	316	462	68%
Vegetables - Melons - Area (ha)	1,081	1,665	65%
Vegetables - Carrots - Area (ha)	156	184	85%
Vegetables - Capsicums - Undercover - Area (m2)	141,639	198,395	71%
Vegetables - Capsicums - Outdoor - Area (ha)	5	121	4%
Vegetables - All other vegetables - Area (ha)	318.5	2,366	13%
Nurseries - Outdoor - Area (ha)	89	1,193	7%
Nurseries - Cultivated turf - Area (ha)	50	2,556	2%
Stone fruit - Peaches - Total trees (no.)	41,761.5	360,767	12%
Stone fruit - Total trees (no.)	586,442.5	2,986,402	20%
Stone fruit - Nectarines - Total trees (no.)	26,562	363,911	7%
Stone fruit - Cherries - Total trees (no.)	97,775	816,143	12%
Pome fruit - Apples - Total trees (no.)	1170,047.5	1,997,635	59%
Other orchard fruit - Total trees (no.)	8,938	419,332	2%

[3] Due to regional area classifications and local government mergers, inconsistencies were observed in the ABS Agricultural Commodities, Australia, 2010-11. Data for the Murrumbidgee SD/SLA was combined with data for the SA4/SA2: Riverina to calculate an average estimate of production in the RDA Riverina region. Total NSW estimate of production (ABS Agricultural Commodities, Australia, 2010-1) was used to calculate the averaged Riverina horticultural production as a percentage of the estimated total state production.

COMMODITY DESCRIPTION	RIVERINA ESTIMATE OF PRODUCTION	TOTAL NSW ESTIMATE OF PRODUCTION	PERCENTAGE OF STATE OF NSW
Other orchard fruit - Olives - Total trees (no.)	212,811	906,795	23%
Other orchard fruit - Avocados - Total trees (no.)	1,702	202,941	1%
Other fruit - All other fruit - Total area (ha)	3	133	2%
Nuts - Almonds - Total trees (no.)	238,607	329,597	72%
Nuts - All other nuts - Total trees (no.)	12,854	60,438	21%
Grapes for wine production - Total area (ha)	20,245	42,246	48%
Citrus fruit - Other citrus fruit - Total trees (no.)	6,584	26,473	25%
Citrus fruit - Oranges - Total trees (no.)	3,313,263	4,955,020	67%
Citrus fruit - Mandarins - Total trees (no.)	73,444	213,903	34%

PERENNIAL HORTICULTURE

Perennial horticulture (RMCG, 2016) contributed $271 million, or eight per cent of GVAP of the region in 2010-11. The main perennial horticulture commodities grown in the Riverina include orchard fruits and wine grapes. The most economically important fruit crops in 2010-11 were oranges and apples contributing 26 percent and 16 percent respectively of the region's perennial horticulture GVAP. Other notable fruit crops for economic contribution include nectarines, cherries and olives.

Nut crops accounted for 9 percent of the perennial horticulture output ($24 million). Walnuts and almonds are the two most economically important nut crops in the region, contributing $11 million and $9 million respectively. The production and value of walnuts and pistachios is forecast to increase significantly in the future, as current tree plantings mature and being to bear harvestable fruit. In 2010-11, 86 percent of planted walnut trees were under 6 years of age, indicated that recorded values of production were only a fraction of the potential value of nut crops in the region.

Wine grapes accounted for 30 percent of the perennial horticulture GVAP, worth $81 million. Wine grapes first emerged as a major commodity in the Riverina during the mid to late 1990's and continued to grow for around a decade peaking at $173 million GVAP in 2008. Global over-supply and drop in prices has resulted in a drop in a value of wine grapes. The market for wine grapes is highly volatile from year to year between grape varieties and regions.

ANNUAL HORTICULTURE

Annual horticulture (RMCG, 2016) contributed $141 million to the gross value of agriculture in the Riverina region during 2010-11. The most important economic crop was potatoes, which accounted for 31 per cent ($44 million) of the total vegetable output. Other important annual horticulture crops included melons ($35 million), pumpkins ($15 million), onions ($11 million), fresh tomatoes ($8 million) and lettuce ($8 million). Broccoli, carrots, cauliflower, sweet corn and seed vegetable crops were minor contributors to regional GVAP.

6.2 SKILLS SHORTAGE IN HORTICULTURE

6.2.1 THE NEED FOR SKILLS IN HORTICULTURE

Over the past decades, horticulture, the third largest agriculture sector in Australia behind meat and grains, has moved beyond a 'market garden' mentality, to focus on business acumen including supply chain management, technology, product innovation and export competitiveness (RMCG, 2015). Pratley (2012) presents an argument that horticultural operations of today operate at levels of complexity that did not exist 20 years ago. Horticultural businesses are faced with a range of compliance responsibilities in the areas of workplace health and safety, pesticide management, food safety, customer relationships (ACCC Horticulture Code of Conduct) and environmental sustainability. Managing carbon emissions due to increasing concern over climate change is a further responsibility that may become compulsory.

Business principles require greater attention through regular business activities including an increasing need for data capture and management for compliance and business efficiency. Marketing is increasingly becoming the responsibility of the business including quality assurance, accreditation, logistics and supply chain relationships. To remain viable, horticulture businesses have to be technologically adept and remain 'cutting edge' e.g. with robotic systems in packing sheds, a plethora of precision agriculture application as well as data monitoring and management systems.

There is broad recognition that to remain internationally competitive and equipped to capitalise on opportunities, the horticulture industry needs to attract the best educated people (Pratley, 2012). There is also a need to secure a continued pipeline of well-trained experts to support the capacity of the industry into the future. Presently, horticultural businesses are struggling to attract and retain the necessary skilled workforce; this is forecast to cost the Australian horticulture industry $1.55 billion in lost profit by 2020 (Horticulture Australia Ltd, 2008).

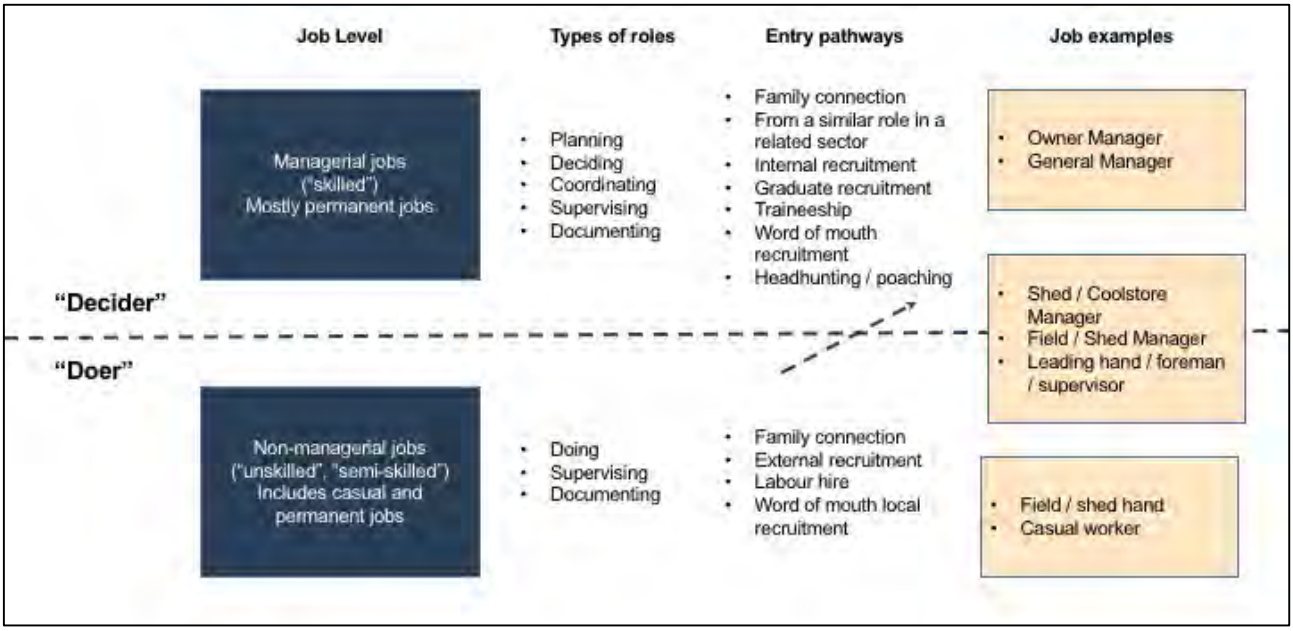
6.2.2 JOB LEVELS IN HORTICULTURE

A study by Santhanam-Martin and Cowan (2017) into skilled workforce issues provides a two-tier classification of job levels within the horticulture sector in Australia. This includes jobs which involve independent decision-making as managerial jobs ('deciders'), and jobs which are mostly about carrying out instructions provided by others as non-managerial jobs ('doers').

The classification of jobs as either a decider or a doer means different skill sets are necessary to perform tasks. Deciders are engaged in managerial jobs that rely on strategic thinking, risk management and business planning skills, combined with a sound technical knowledge to make decisions. While doer workers need to demonstrate competence in completing required tasks; the capacity to identify urgent problems or risks associated with tasks; and the ability to communicate and supervise other staff in implementing day-to-day tasks combined with the required technical knowledge. The level of technical knowledge required varies for both groups, depending on the level of responsibility and complexity of tasks.

This classification refers to employees, and their required skill set, as either being above the line (a decider) or below the line (a doer) as summarised in Figure 6-2.

Figure 6-2: Classification of horticulture job level (Adapted from Santhanam-Martin and Cowan, 2017)



6.2.3 CURRENT SKILL GAPS IN HORTICULTURE

The range of tasks and skill requirements for both decider and doer jobs within horticulture businesses is diverse. A study of the Australian vegetable industry, undertaken by Macquarie Franklin (2012), identified a range of industry skill gaps amongst producers. The following four areas were identified as primary skill weaknesses, including:

1. Occupational Health and Safety
2. Marketing
3. Information technology
4. Compliance / quality systems.

A subsequent, in depth study by RMCG (2015) identified gaps in skills as well as gaps in education and training offered to vegetable producers. The summary is presented in Table 6-2. Many of the issues identified for the vegetable industry, are representative of perennial horticulture also.

Table 6-2: Identified horticulture industry skill gaps (RMCG, 2015)

KNOWLEDGE AND SKILL AREA	SKILL GAPS
Technology	Information technology, machinery & equipment, precision horticulture, spatial technology, remote sensing, GPS/GIS, vision/sensing technology (e.g. for grading or in the field), robotics, irrigation technology, spray application technology, waste management, energy efficiency
Production environment	Climate/climate change, landscape / land capability / site selection, natural resource management / sustainability, water resources / quality, resource use efficiency, emission management, carbon farming, environmental sustainability, site selection
Field production and advanced crop management	Soil management, crop nutrition / fertilisers, plant health and crop protection, machinery & equipment, irrigation management, integrated

KNOWLEDGE AND SKILL AREA	SKILL GAPS
	crop management, agronomy, sustainable production, variety selection, on-farm research methods (farm trials)
Protected Production/Hydroponics	Structures/crop covers, hydroponics, greenhouse soil / substrate management, nutrition management / fertilisers, plant health and crop protection, climate and atmosphere control, machinery & equipment, irrigation management, integrated crop management
Postharvest Management	Grading, cool chain management, post-harvest physiology, packaging, storage, temperature and atmosphere control, logistics, transport/shipping, distribution, food safety, waste management
Managing the Vegetable Business	Strategy, financial management, business planning/management, cost of production, record keeping, investment decisions, commercialisation, managing growth, compliance (legislative / regulatory), quality systems, managing risks
Products to markets	Understanding markets and consumers, marketing / promotion / selling, exporting, product development, supply chain management, product development
People	Leadership & management, conflict management / negotiation, WH&S / OH&S, managing staff, mentoring, people development, managing apprentices, labour management, communication
Information transfer	Adult learning, consulting, extension methodologies, facilitation, communication e.g. via public media, public speaking

6.2.4 SKILLS GAP OUTLOOK

In addition to existing skills gaps within the production horticulture sector, several emerging issues have been identified that may challenge future skills and skill development in horticulture. An assessment by the Australian Industry Skills Council (2016), has identified several drivers and potential future skill gaps as relevant to production horticulture as summarised in Table 6-3.

Table 6-3: Skills Outlook (Australian Industry Skills Council, 2016)

DRIVER	SKILLS OUTLOOK
Transition to ongoing implementation of new processes and technologies in irrigation.	Skills required around various types of irrigation such as pressurized irrigation operations and gravity fed irrigation systems.
The National Agvet Chemical Task Force working group harmonisation to chemical training requirements, including a review of state based regulatory frameworks and future developments in managing spray drift risks.	Skills required in the industry are required to reflect the recommendations of the Task Force.
Transition to new technology and processes used in conservation and land management.	New knowledge and operational capacity to optimize technology.
Recent deaths on Quadbikes has led to concern over the safety of operation. New Machinery may be used instead of quads (drones).	Concern regarding the level of skills of quadbike operators. New and emerging skills will be required for the use of new technology such as drones.

DRIVER	SKILLS OUTLOOK
Over reliance on chemicals to manage pests is causing concerns environmentally with increasing resistance to chemicals requiring new variants of chemicals to be developed. A holistic approach of balancing chemical use with a greater use of introducing beneficial insects and use of organic rather than chemical agents will be more environmentally sustainable benefitting the overall ecosystem.	Industry requires skills in botanical knowledge, pruning techniques, grafting techniques, plant identification, pest identification, integrated pest management, and identifying soil/media composition.
Free trade agreements have opened opportunities for market access to Australian farmers.	Skills required in how to export food to emerging markets and global logistics.
Investment in integrated technology, such as robotics and digital and wireless technology to monitor farm operations and detect crop issues.	Need for skills in strategic planning, risk management, mergers and acquisitions, online marketing business development and financial planning to respond to the dynamic and changing operating environment, with increased competition and opportunities to reach global markets.
Increasing market demand for innovation in product development to ensure viability of enterprises.	New knowledge and operational capacity related to innovation and product development.
Growing investment in integrated farm technology, quality standards and data analysis are expected to influence the roles of farmers. Continuous development of biotechnology with new discoveries providing the potential to support farmers with emerging challenges, including those arising from climate change, pressure on global food supplies and fresh water, and the management of pests and diseases, will add to the vocational outcomes of agricultural work sector.	In response to climate change and government policy, knowledge of relevant science, digital and analytical skills, assessing crop health, data capture from a range of devices, and strategic planning and business management.

6.2.5 EVIDENCE FROM THE RIVERINA

Previous studies specific to skill shortages in horticulture in the Riverina region are limited. Of the studies available, all have observed that most agricultural related sectors in the Riverina experience skill shortages (RIRDC, 2015). A study undertaken by the Griffith City Council (2011), attributed the skill shortages to a prolonged period of drought at that time, which prompted a skill migration of agriculture and farming related skills from the region.

A workforce skills survey undertaken by the NSW Business Chamber (2017) identified the Murray-Riverina region as having the second highest skills shortages across all industries (60%) in the state, second only to Western NSW. The most significant factor noted for the skill shortage was geographic location as a barrier to a businesses' ability to recruit skilled workers. These findings are validated through a DEEWR (2012) survey of the recruitment experience of employers, including within local government areas of the Riverina region. The study found a low level of competition for employment vacancies, with an average of 4.8 applicants per vacancy. Of the applicants applying for vacancies, only 1.8 applicants were considered suitable to fill the position. The most commonly cited reasons for those considered unsuitable were lack of experience and insufficient qualifications or training.

Some large businesses within the Riverina region have reported to take measures to address skills shortages, such as offering higher wages to attract and retain suitable employees and workers, and undertake

international recruitment (Sharma et al., 2017). However, there is no evidence to suggest these measures have produced the desired results in attracting and or retaining skilled staff.

A study undertaken by Sharma et al. (2017) identified several indicators of skill shortages across all industries in the Riverina region including an assessment of total vacancy rates, presented in Table 6-4. While horticulture specific data was not presented in this research, the grouped data for the agriculture, forestry and fishing sector had a moderate average vacancy rate of 4.3 percent, but a high proportion of businesses with vacancies at 57.1 per cent.

Table 6-4: Vacancy rates by industry type

INDUSTRY TYPE	NUMBER	TOTAL VACANCY RATE	% OF BUSINESSES WITH VACANCIES
Agriculture, forestry & fishing	7	4.3	57.1
Manufacturing	11	3.1	63.6
Electricity, gas, water and waste services	2	15.8	100
Construction	2	4.2	50
Retail trade	1	0	0
Accommodation and food services	5	28.4	60
Information media and telecommunications	1	0	0
Financial and insurance services	2	12.5	50
Professional, scientific and technical services	3	18.2	33.3
Administrative and support services	1	0	0
Public administration and safety	4	0.8	25
Health care and social assistance	5	1.1	20
Arts and recreation services	2	8.3	50
TOTAL	46	3.7	47.8

6.2.6 CAUSES AND PERCEPTIONS OF SKILL SHORTAGES

The study undertaken by Sharma et al. (2017) surveyed businesses in the Riverina on causes and perceptions of skill shortages in the region. The main causes of skill shortages that were identified, included:

1. A shortage of qualified applicants (81 percent of businesses)
2. Lack of sufficient experience (72 percent of businesses)
3. Lack of technical ability (67 percent of businesses)
4. Not attractive pay rates (40 percent of businesses)
5. Competition from other employers (39.5 percent of businesses)
6. Lack of succession planning (13.2 percent of businesses)

Through the study, all medium and large sized companies surveyed in the Riverina reported that skill shortages influenced all aspects of their operations. Several actions were identified to address skill shortages, which included training existing staff, continuing to look for and attract skilled workers, recruit less qualified staff and increase reliance on automation. With respect to the most important skills that businesses believed TAFE and

universities should provide for graduates; communication was categorically the most important with 96.3 percent of businesses identifying it. This was followed by accounting, finance and administration (86.1 percent), information technology (80.7 percent) and sales and marketing (70.5 percent).

The study also noted the importance of skills development of soft skills in the workforce, such as lateral thinking, problem solving, and work-ready personality traits including positivity and enthusiasm, to couple with technical and other hard skills.

6.3 POLICY ENVIRONMENT

Detailed studies assessing industry specific skill shortages are limited, and where available, are based on high level, cross industry aggregated datasets. Despite this, there is a rhetoric around the factors that are seen to contribute to skill shortages, particularly in regional Australia, which include structural changes to the economy, ageing workforce, environmental factors including prolonged drought, labour competition from other industries, migration of workers from regional areas to metropolitan centres and suitability of regional infrastructure. The availability of regional infrastructure is particularly important to ensure an adequate level of facilities to attract and retain a skilled workforce, and may consider services including schools/education, hospitals and health services, telecommunications, transport, council services, housing, after hours/holiday activities and shopping. The perceived poor image of agricultural industries also plays an important role.

> *"I have to say that industry works very hard on not portraying a very attractive profile, to be frank, so it is somewhat understandable that careers advisers perhaps are not breaking their necks to recommend careers in agriculture and horticulture to young people when the industry itself says the things about itself that it does. That needs to be corrected, and some of us are working on that at the moment." - Cornish, 2007*

The impact of skill shortages has been widely identified, including lower levels of production, higher production costs and loss of competitiveness, and in turn lower opportunities for economic growth.

There is broad recognition for government intervention to address the risks associated with skills shortages through a variety of measures. These include improving and increasing vocational training and targeted training initiatives to meet the need of horticultural businesses, skill immigration programs, and the employment of skilled workers on temporary work visas. In addition to direct programs to support skills development, there is also recognition of the need for indirect support to attract skilled workers to regional areas, through developing and upgrading regional infrastructure and services to meet workforce needs. The National Farmers Federation (2013) for instance, argues that better access to health, education, transport and telecommunications infrastructure will help retain and attract skills to regional areas.

There is recognition of the national barriers to meeting industry needs for labour and skills include low levels of industry involvement in formal education and training, poor promotion of agricultural pathways and the limited capacity of the current education and training system to deliver relevant and innovative training solutions (Industries Development Committee Workforce, 2009).

6.3.1 HOUSING AFFORDABILITY / OBTAINABILITY IN THE RIVERINA

Within the Riverina region, housing affordability and obtainability has been identified as a potential barrier to attracting skilled workers. Local discussions have focused on the issues of business expansion in the region

due to housing supply issues (2016), suggesting job recruitment is restricted by available infrastructure (housing) to support the jobs.

The Griffith region, in particular, has a perception of having an issue with rental availability (Stakeholder Consultation Workshops, 2017). Market demand data from realestate.com (2017) suggests comparatively to NSW, however, there is only average demand for rental properties in Griffith.

ABS (2011) data indicates the Riverina region has high property ownership rates, with 68.4% of households owned outright or owned with a mortgage. Cost of living within the Riverina is considerably lower in comparison to the NSW average, with median data suggesting the average weekly rent at $175/week is 19% of the median weekly household income of $929.

A rental affordability report card produced by Anglicare (2017), confirms that it is possible to find available rental properties in the Riverina, and that most vulnerable people would be able to find a rental property, due to the low rent and higher vacancies. The report does raise concern, however, around transport and access issues and the need for a car, due to the lack of public transport.

6.4 TRAINING SYSTEM

> *"The Review found that some teachers and students expressed negative views about agriculture, and that some career advisors discouraged students from pursuing careers in agriculture due to perceptions that agriculture does not offer a secure career path. This emphasises the need for the agriculture sector to actively promote itself, and for there to be improvements in training and professional development for career advisors." – Review into Agricultural Education and Training in New South Wales (2013)*

6.4.1 EDUCATION AND TRAINING PROVIDERS

The current Australian institutional and organisational structures supporting education and training in agriculture include state and federal departments of agriculture and natural resource management, private extension providers, private agricultural businesses, vocational education and training providers, the national training authority, state training authorities, industry training advisory bodies, research and development corporations, universities, farmer organisations, and other non-government organisations (RTOs and non-registered organisations). Increasingly, online training services are offered for agricultural audiences. These online providers may not always be Australian based.

Most formal education and training providers are government (plus fee) funded on a 'throughput of students' basis; there are no rewards attached to outcomes on farms or impacts on profitability of the industries serviced. Some VET providers work closely with industry e.g. with an industry controlling content and, to a degree, delivery mechanisms (e.g. the cotton or dairy industry). This provides a close link between industry needs and training services.

An analysis of several vocational education training (VET) courses in horticulture search engines[4] reveals a limited range of horticulture courses are provided in the first instance, and secondly limited offering of these course within the Riverina region.

[4] https://training.gov.au, https://www.myskills.gov.au, https://www.studiesinaustralia.com, https://www.tafensw.edu.au, https://www.training.com.au

A general search for horticulture returned, at most, 58 courses. Filtering non-relevant courses to production horticulture, through removing training around disciplines such as landscape design, rural training, sports turf management, retail nursery, Aboriginal sites work, racing services (track maintenance), parks and reserves and superseded courses, restricts the list to the 10 courses outlined in Table 6-5.

Table 6-5: Available VET Courses in production horticulture in Australia

CODE	TITLE
AHC60216	Advanced Diploma of Horticulture
AHC10316	Certificate I in Horticulture
AHC20416	Certificate II in Horticulture
AHC20316	Certificate II in Production Horticulture
AHC30716	Certificate III in Horticulture
AHC30616	Certificate III in Production horticulture
AHC40416	Certificate IV in Horticulture
AHC40316	Certificate IV in Production Horticulture
AHC50416	Diploma of Horticulture
AHC50316	Diploma of Production Horticulture

None of these units offer training in agricultural technology (e.g. genetics, precision farming, robotics, information technology etc.) or in business management /economics or logistics. Courses that offer units in understanding markets and marketing are limited, as are those that offer units related to postharvest and supply chain management.

Some TAFEs offer short courses in, for example, pest management, chemical handling, or machinery use (e.g. tractors or quad bikes). These would be relevant to existing employees in the horticulture sector.

6.4.2 PROVISION OF HORTICULTURE TRAINING IN THE RIVERINA

Establishing delivery of relevant training for skill development in the Riverina region is varied. Both the VET sector, serviced by TAFE NSW Riverina Institute, as well as tertiary education through Charles Sturt University, have dedicated horticulture and wine industry schools. Table 6-6 outlines the targeted training course options provided by these institutes in the Riverina region. There is limited availability of targeted VET training in horticulture, with only 2 specific options for both production horticulture and wine operations. In 2017, there were no student enrolments in production horticulture certificates at Riverina TAFE and concern over the current and future availability of qualified trainers and assessors at the institute to deliver courses (pers. Comms. N. Maddern, 2017).

Table 6-6: Targeted horticulture training in the Riverina region

INSTITUTE	SCHOOL	COURSE OPTIONS
TAFE NSW Riverina Institute	Horticulture (Production)	▪ Horticulture – Certificate II ▪ Horticulture – Certificate III ▪ Chemical Application — Statement of Attainment ▪ Chemical Application (Refresher) — Statement of Attainment

INSTITUTE	SCHOOL	COURSE OPTIONS
		▪ Introduction to Agro-ecology — Statement of Attainment
	Wine Industry Operations	▪ Laboratory Techniques — Certificate IV ▪ Wine Industry Operations — Certificate II ▪ Wine Industry Operations — Certificate III ▪ Wine Evaluation — Statement of Attainment
Charles Sturt University	Agricultural and Wine Sciences - Undergraduate	▪ Bachelor of Agricultural Business Management ▪ Bachelor of Agricultural Science – includes integrated Honours ▪ Bachelor of Agriculture ▪ Bachelor of Horticulture ▪ Bachelor of Viticulture ▪ Bachelor of Wine Business ▪ Bachelor of Wine Science
	Agricultural and Wine Sciences - Postgraduate	▪ Graduate Certificate in Agricultural Business Management ▪ Master of Agriculture Business Management ▪ Graduate Certificate in Sustainable Agriculture ▪ Graduate Diploma of Sustainable Agriculture ▪ Master of Sustainable Agriculture ▪ Master of Viticulture and Oenology

The availability of suitably trained staff to deliver horticulture training in the Riverina region was also identified in a study undertaken by Reynolds (2001) in assessing irrigation training for horticulture producers in the Murrumbidgee Irrigation Area. Other challenges for the delivery of horticultural training in the region as identified in the Reynolds report includes:

- Lack of formal training and education programs, government or privately funded
- Lack of informal training programs – many farmers are self-taught and struggle to teach workers or next generation farmers
- Lack of individual and overall industry strategy to skill and retain workers
- Lack of qualified trainers
- Existing training organisations dependent on government funding.

6.5 BROADER LABOUR MARKET CONDITIONS

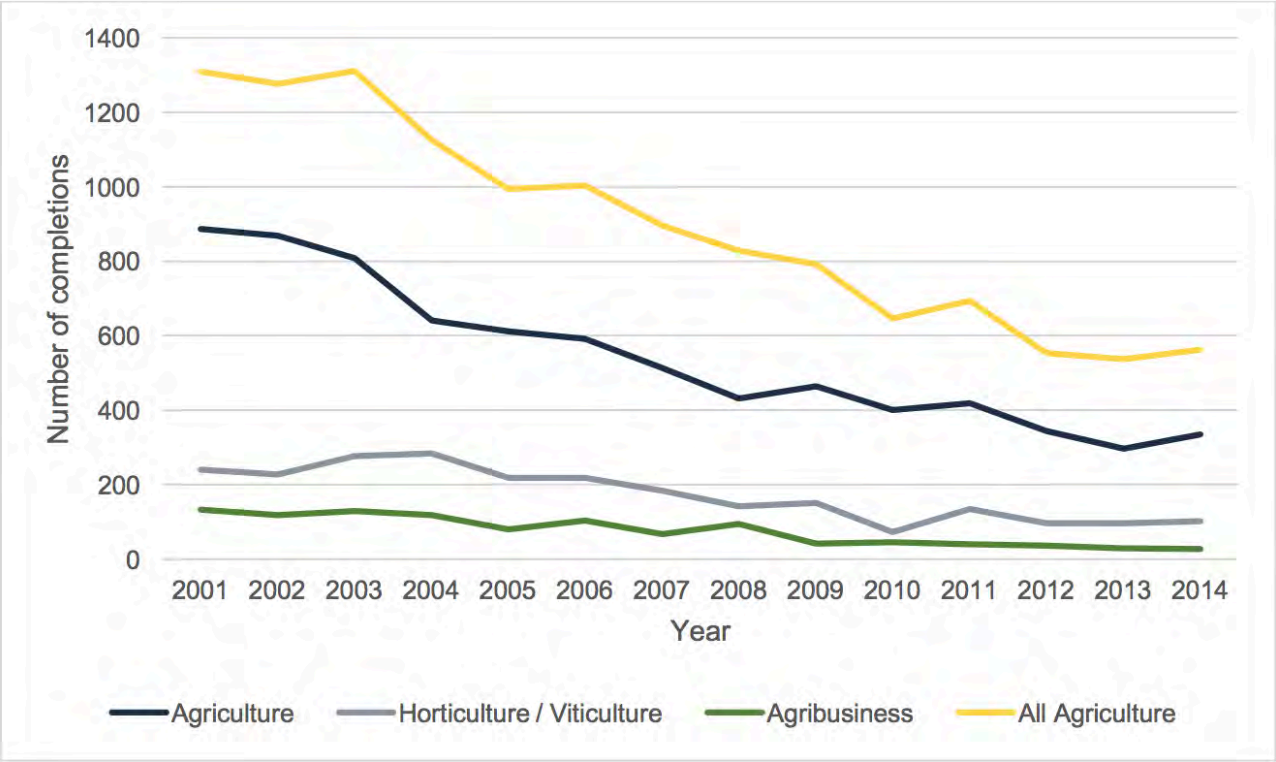
6.5.1 ATTRACTING SKILL DEVELOPMENT IN HORTICULTURE

> *"You have to understand that agriculture-horticulture is a peasant industry. We cannot avoid that. All around the world, in every country you go to, it is regarded as a peasant industry ... People do not want to be out in the sun in the middle of summer doing labour work in horticulture." - Sims, 2006*

The image portrayed by Sims (2006) aligns with a broad perception about careers in horticulture. However, this is an image of the past. While horticulture still requires a large amount of manual labour, it additionally needs skilled people to use and drive efficiency, technology and innovation at all levels.

In spite of this need and the opportunity for skilled workforces, there has been a national trend of declining enrolment in higher education qualifications across all of agriculture, including horticulture. As illustrated in Figure 6-3, this trend is cause for alarm, as not only do declining enrolments affect the availability of skilled workers, it also affects viability of training providers to continue to provide relevant training (Pratley, 2017).

Figure 6-3: Completions in agriculture and related courses (Pratley, 2017)



Specifically, within the Riverina region, this trend is observed with enrolment patterns in the Bachelor of Horticulture undergraduate degree, offered through Charles Sturt University. Enrolment and graduations by year data provided by CSU (2017) presented in Table 6-7 highlight a pattern of consistently low enrolment (a minimum enrolment of 25 students is required for a course to be considered viable).

Table 6-7: Enrolment and graduates in CSU Bachelor of Horticulture (CSU, 2017)

YEAR	2010	2011	2012	2013	2014	2015	2016	2017
Commencing enrolments by year	?	?	14	15	25	23	21	9
Graduated students	1	4	3	3	2	0	2	?

A similar trend is observed in the VET sector. Table 6-8 outlines student enrolments in the Agriculture, Horticulture and Conservation Land Management Training package (AHC) in 2012, separated by level of qualification. The enrolment numbers presented highlight horticulture is in a competitive training market, attracting only 10 per cent of students in an already diminishing market of agricultural studies. Participation rates in the lower certificate levels are also greater, causing concern about the extent and capacity of skills developed in horticulture through the level of training delivered. It is understood this trend has continued in subsequent years, which contributes to many courses not being offered and restricting the actual availability of training.

Table 6-8: Total AHC10 Student and Course Commencements, 2012 (NEST, 2014)

SECTOR	CERT 1.	CERT 2.	CERT 3.	CERT 4.	DIP.	ADV DIP	TOTAL
Agriculture	0	4,343	2,579	831	435	35	**8,223**
Production Horticulture	0	142	623	505	59	0	**1,329**
Agriculture services	881	1,143	1,018	197	0	0	**3,239**
Total Agriculture	**881**	**5,628**	**4,220**	**1,533**	**494**	**35**	**12,791**
	7%	44%	33%	12%	4%	0.27%	**Rounded**

6.5.2 CHANGING THE IMAGE OF HORTICULTURE

Recognition of the perceived image of agriculture, and attracting a skilled workforce has been identified as a challenge to attracting skills to the industry. While no direct evidence from the Riverina region was identified, several studies suggest the need to change the image of agriculture through various marketing mechanisms. Key messages to focus on may include (Allen Consulting Group, 2012):

- Modern agriculture is high tech, diverse and interesting
- Opportunities to help solve the big problems of the world including food security and global warming
- Diversity of jobs and career opportunities.

6.6 HUMAN RESOURCE MANAGEMENT PRACTICES

6.6.1 INTERNAL UPSKILLING AND RECRUITMENT PRACTICES

There is mixed practice across horticulture industries across Australia with respect to upskilling the work force. A report by Macquarie Franklin (2012) in the Australian vegetable industry concluded that growers tend to have “apathy” to training their workers, and in most cases, only participate for financial, market or legislative imperatives. Despite the negative connotations regarding apathy, this approach would appear to suggest a high level of value is attributed by employers to the development of business relevant skills (RMCG, 2015).

This approach is reflected in an observed preference to build the skills of existing staff to enable internal recruitment for increasingly skilled positions. Internal skill development is seen to value the understanding of existing employees have of the business, and how particular tasks are approached. A study by Santhanam-Martin and Cowan (2017) observed internal recruitment as a risk management strategy to ensure the appropriateness of candidates to business culture. Where new or additional skills were required that had to be sourced externally, businesses tended to assess potential candidates based on industry experience, and recommendations for others in the industry, rather than their formal qualifications.

6.6.2 REMUNERATION

Limited published data exists regarding remuneration levels for skilled workers in horticulture. One study (Santhanam-Martin and Cowan, 2017) called for the establishment of common jobs, pay scales and associated position descriptions (career paths) as a means of attracting skilled workers to the region. In this review, it suggested skilled positions, such as an Orchard Manager, ranged in pay rates from between $60,000 to

$100,000. Given this variability, it is challenging to determine the level of skill and responsibility associated with these positions.

The award rate for a full-time adult horticultural worker ranges from $649 per week (Level 1) to $809.00 per week (Level 5) (Fair Work Australia, 2017), these award rates are comparable to hospitality, retail and agriculture, but lower than building and construction, and mining. This discrepancy in remuneration has led to a perception of workers previously employed in horticulture leaving the industry to pursue more lucrative employment opportunities in the mining sector.

6.6.3 CAREER PATHWAYS

Many horticultural employers prefer to recruit internally, due to the importance that they place on business specific knowledge. Internal promotion also allows mangers to 'hand pick' candidates who have shown motivation and aptitude in their prior position.

However, most businesses rely on both external and internal recruitment when a positon becomes vacant or the business grows. External recruitment is more common in 'doer' jobs, such as crop husbandry, picking and packing, due to the unskilled to semi-skilled nature of the positions. As these jobs usually offer only seasonal work, they are often filled by migratory workers who are recruited through external labour hire companies. 'Decider' jobs are often filled using internal recruitment, however, roles such as farm, business, personnel, compliance, marketing or logistics mangers, will be recruited externally, especially in larger businesses.

Often, throughout a worker's career, there is potential for them to move between jobs, such as field work and packing shed work, or 'up the career ladder', as employees are internally recruited from "doer' to 'decider' roles or between 'decider' roles. This shows that there is an opportunity for career progression and career pathways in horticultural careers.

There are currently no specific career pathway programs known for horticulture in the Riverina, to attract both skilled employees and unskilled workers, or potential employees (current students) into such careers.

6.7 SYNTHESIS OF DESKTOP REVIEW FINDINGS

The desktop review considered the extent to which there is a skill shortage in the Riverina horticulture industries. The key findings of the review conclude:

- The Riverina region has challenges in attracting and retaining a skilled workforce in horticulture
- Despite the availability of quality training facilities (TAFE Riverina, Charles Sturt University), the region is not developing a skilled workforce in horticulture
- Horticulture employers are not necessarily seeking technical skills, rather a job-ready attitude and willingness to work
- Small to medium businesses need multi-skilled disciplined managers
- Horticulture in Australia has an image problem
- Positions and career pathways in horticulture are not clearly promoted.

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7 Stakeholder workshops

A series of stakeholder consultation workshops were convened across the Riverina region to identify and validate the extent to which the horticulture industry in the region has a skills issue. The workshops were delivered in:

- Yanco
- Wagga Wagga, and
- Batlow.

The workshops were used to validate the findings identified in the desktop review and establish the collective knowledge of the industry to support the identification of a clear strategy and recommendation to address the issue. The objectives of the workshop included:

- Bring together key industry stakeholders to discuss the workforce needs of the Riverina horticulture industry with respect to attracting, retaining and developing skilled workers
- Enable industry to explore potential actions through the sharing of experiences
- Identify systemic issues, and
- Determine the industry vision to ensure there is a skilled workforce that meets the industry's current and future needs.

7.1 DESKTOP REVIEW VALIDATION

Collective discussion from the workshops validated the key findings from the desktop review. The validation identified several areas of discussion including:

DEFINING SKILLS

- Need to define skilled workers
- Not above & below – left right instead
- At what level do we want to target "gaining skills" – what level will we attract people into the industry

BUSINESS REFLECTIONS

- Who are the employers/businesses going to fit these skilled/qualified workers in?
- Need for advice on job opportunities
- What are the roles / careers?
- Change of "skills needs" with introduction of technology & automation
- Challenge around "outward" facing, rather than inward facing
- Pull rather than push growth in the industry

PROMOTION OF HORTICULTURE

- Promotion of industry – what we're doing well now
- Better promotion, push the glam side
- Perception of industry – need industry approach
- Change perception of horticulture
- Partnerships and collaboration
- Partnership and collaboration with other industries
- Need work for partners to help attract people into the industry
- Business work hubs to help develop and upskill partners with less barriers (co-working spaces)

SOURCING WORKERS

- Guest workers versus local workforce
- Local contribution
- Problem with casual / itinerant / unskilled labour
- Opportunities for coordination of casual workforce (local / regional)
- Dependence of staff with visas – an area we can't control
- Employers' recruitment practices are short (sighted) term
- Need for long term support of workforce
- Attraction to industry – early age/School program
- Bring exposure to horticulture at school level
- More exposure as schools
- Clear identified pathways
- Identify work experience opportunities
- Employer sponsor training

WORKER TRAINING

- Sustainability of training / education providers in region is issue
- On-the-job training with appropriate supervision / support / mentoring
- Need for on-job training / professional development
- Need to retain workers (mentoring) (learning support and coaching)
- Multi-skilling across sectors to sustain full time employment

7.2 RECOMMENDED ACTIONS

Workshop participants were invited to identify the number one action they associate with attracting, retaining and developing a skilled workforce in horticulture. The actions reported were prioritised through a participatory comparative scoring game called "the game of 35". The priority actions from the Yanco and Wagga workshops were carried through to the Batlow workshop to produce a collective prioritised list of the top actions across the three workshops as presented below in Table 7-1.

Table 7-1: Combined recommended actions from consultation workshops

YANCO	WAGGA WAGGA	BATLOW
1. Collaboratively facilitate and develop industry lead pre-employment pathways into the horticultural industry 2. Collectively promote the industry 3. Support guest worker program from selected countries for productivity Have more "on the job" training available to producers / businesses 4. Work collectively as an industry, increase our standards on recruitment and demand more from our applicants 5. Advertise horticulture in a way of outside work being fund and active 6. Create a national training for the industry with incentives to the worker and employer 7. Address many different issues that in combination will result in a more skilled horticultural workforce. These include attracting workers to the industry through promotion, training and use of government incentives. There is no single fix. 8. Unite horticultural industries (as a whole or by commodity) so that all "members" work together for industry as a whole eg. NZ – branding fruit	1. Collaboratively facilitate and develop industry lead pre-employment pathways into the horticultural industry 2. Create a collaborative approach to develop and promote recruitment into the industry 3. Have more "on the job" training available to producers / businesses 4. Identify in which aspect of the industry skilled people will work – locations / employers 5. Start with the employer's recruitment needs and practices 6. Promote the value of production horticulture at a regional, national and global level 7. Reboot employer attitudes to employees 8. Industry, business and Government sit down and 'nut' out a path forward including assigning responsibilities 9. Work collectively as an industry, increase our standards on recruitment and demand more from our applicants 10. Support guest worker program from selected countries for productivity	1. Promote hort's image 2. Create a collaborative approach to develop and promote recruitment into the industry 3. Collaboratively facilitate and develop industry lead pre-employment pathways into the horticultural industry 4. Have more "on the job" training available to producers / businesses 5. Promote the value of production horticulture at a regional, national and global level 6. Develop group training initiatives to attract apprentices 7. Change the way the community view the industry to be a vibrant, progressive and profitable 'place' to work 8. Gain a collaboration of employers that think training of staff is a need not a luxury for later 9. Cadetship through school experience, school leaver, app/traineeship, diploma, degree leads to increased employment 10. Promote career pathways in horticulture 11. Promote horticulture as a career

YANCO	WAGGA WAGGA	BATLOW
9. Engage RDA Riverina to work with each Hort producer to examine skilled migration possibilities 10. Promotion of opportunities to Year 10-12 students to encourage entry into this area 11. Promote agriculture on media as the future for generations to come by showing the advanced technology agriculture is developing 12. Collaborate, communicate and keep the momentum going from this initiative to try to achieve positive recruitment outcomes 13. Have systems and regulations in place to ensure workers can gain enough financial benefit to stay in the workforce not necessarily grower funded 14. Make it easier to bring in suitable staff from overseas to fill seasonal employment opportunities in horticulture within Australia 15. Sell the idea of horticulture as a professional industry with good career prospects to years 10 to 12 in high school	11. Make horticulture more attractive to younger people and provide a more positive career pathway for them as they see a bigger picture and more worthwhile! 12. Promote the opportunities available 13. Build better temporary worker accommodation (assist in a better experience) promotes industry – might make permanent 14. Collectively promote the industry 15. Ask the employees	12. Improve the image of industry as a potential career opportunity 13. Better understand the demand 14. Work collectively as an industry, increase our standards on recruitment and demand more from our applicants 15. Identify in which aspect of the industry skilled people will work – locations / employers 16. Support guest worker program from selected countries for productivity 17. Cooperate in growing the industry 18. Start with the employer's recruitment needs and practices

8 Stakeholder survey

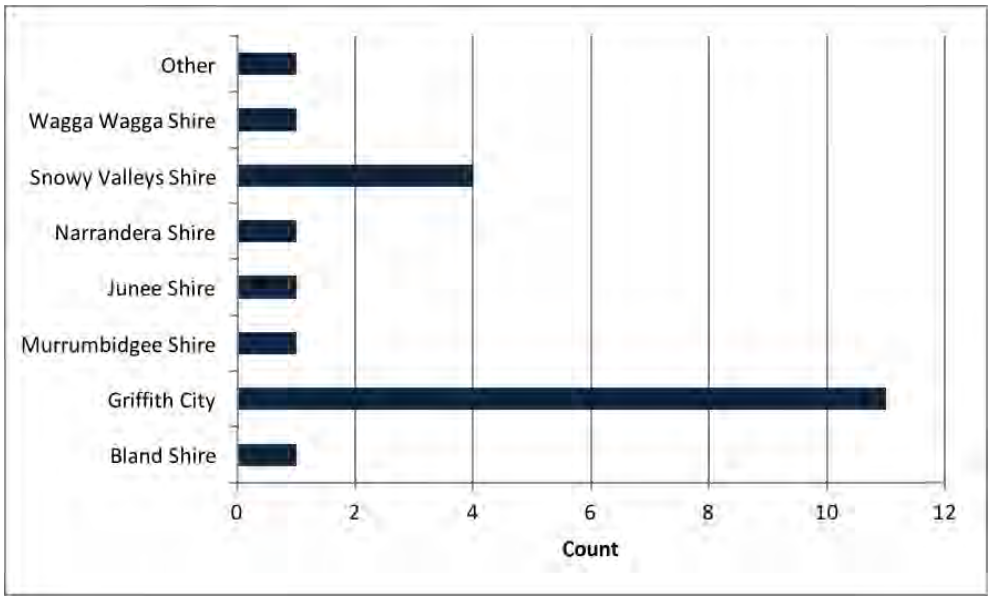
Development and distribution of online survey (via survey monkey) to key stakeholders in the region to enable broader stakeholder consultation. The short survey will be targeted at employers and other relevant stakeholders including labour hire companies, across the horticulture supply chain. Questions will be developed based on identified gaps through the desktop review, and include a mix of closed questions and Likert scales around questions including:

- The type of horticulture business size and type
- The type and number of jobs available
- How employers approach the task of meeting their workforce needs
- Identification of the major challenges of employers meeting these needs.

8.1 SURVEY RESPONDENTS

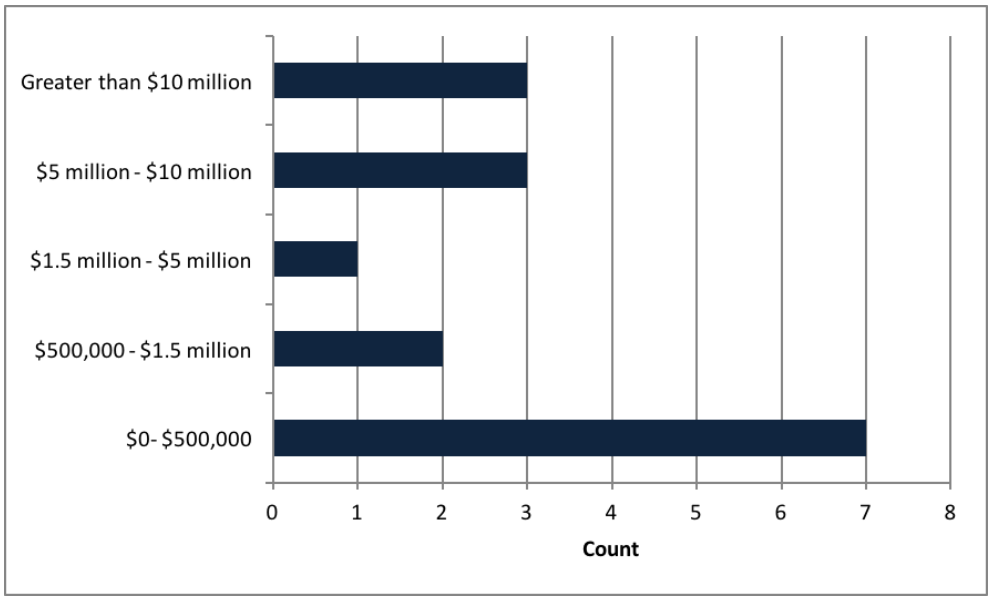
A total of 21 responses were received from industry representatives across the Riverina region, with regional distribution by local government area presented in Figure 8-1. Survey respondents represented a diverse range of horticulture commodities including citrus, wine grapes, stone fruit, nut crops including almonds and hazelnuts and vegetable crops including glasshouse tomatoes, cucurbits and onions.

Figure 8-1: Survey respondent count by Local Government Area



Participating respondents were from a range of business sizes, this is represented in Figure 8-2, which indicates the estimated gross turnover of the participating businesses in the survey. This was also represented in the responses to the number of employees, with some businesses reporting up to 70 full time staff, and others more than 300 part-time/seasonal employees.

Figure 8-2: Estimated business gross turnover (2016/17) of survey respondents

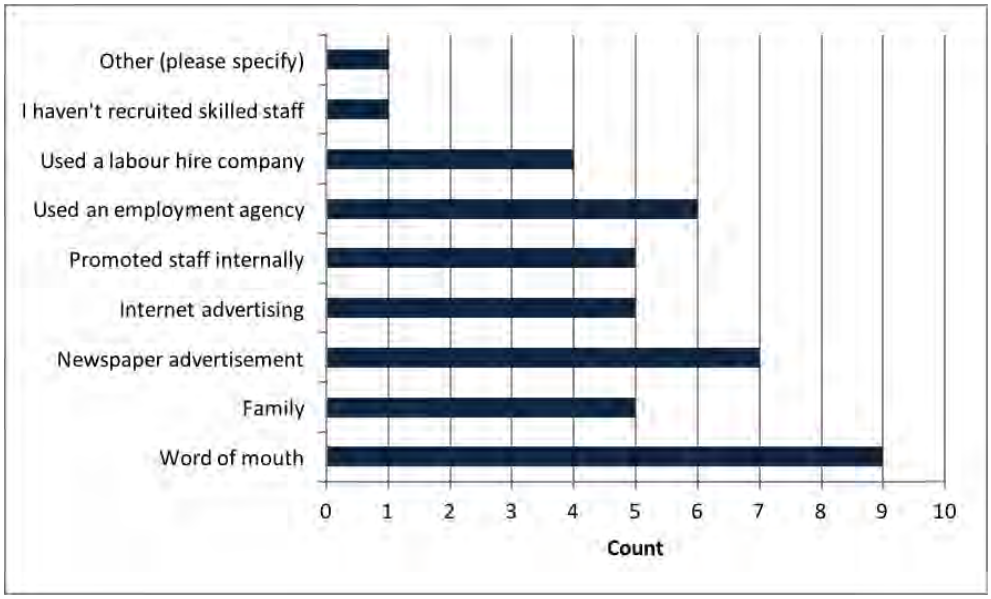


8.2 RECRUITING SKILLED WORKERS

Of the survey respondents, 65 per cent of respondents indicated they had all the skills their business required to run as expected in 2016/17. Only 35 percent indicated that they did not.

The main ways in which skilled staff are recruited includes word of mouth, newspaper advertisements and the use of an employment agency as illustrated in Figure 8-3.

Figure 8-3: Main ways recruit skilled staff

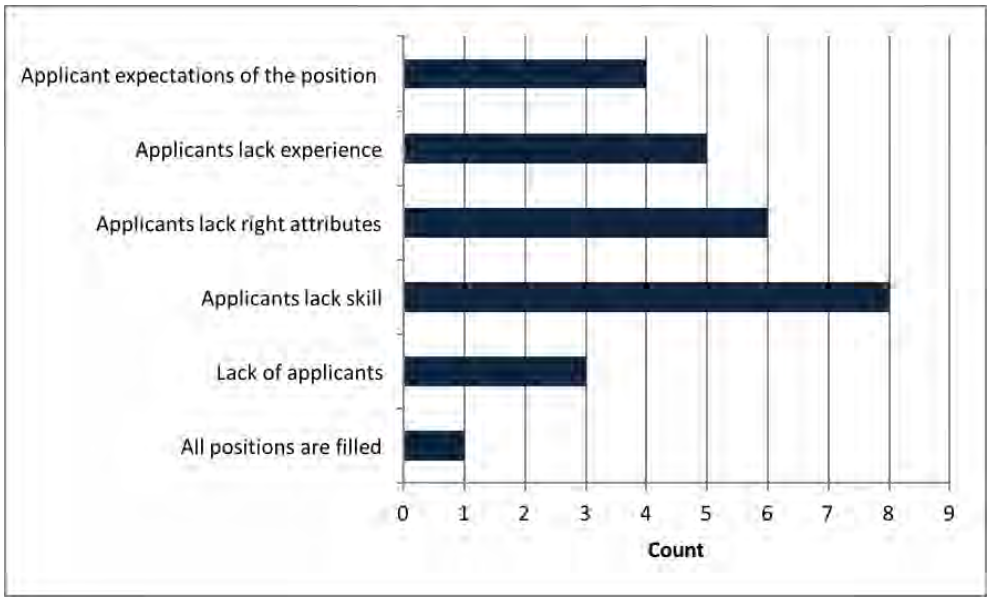


For those who did try to recruit a for a skilled position vacancy during 2016/17, 45 per cent on respondents said they were not able to fill that position. The types of positions responders indicated they find most challenging to recruit include:

- Skilled picker and packers
- Agronomy
- Farm and packhouse manager
- Electrician
- Mechanics.

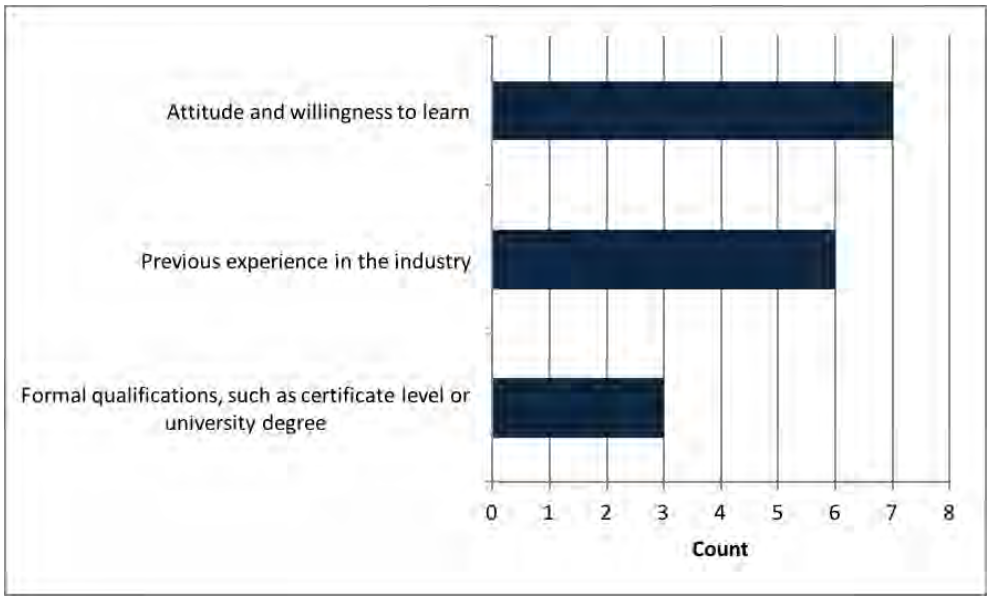
Respondents were asked what were the main reasons that have not always been able to fill a skilled position they are trying to recruit. Responses are presented in Figure 8-4, with applicant lack of skill identified as the main reason, followed by applicants lack of attributes.

Figure 8-4: Main reasons identified for not filling skilled positions being recruited



When recruiting new skilled workers, respondents were asked to identify what the main quality, skill or attribute that they seek. The results, as presented in Figure 8-5, identify that attitude and willingness to learn was the highest priority, followed closely by previous experience in the industry. Comparably, formal qualifications did not rank highly.

Figure 8-5: Main quality, skill or attribute sort in new skilled workers when recruiting



8.3 DEVELOPING SKILLED WORKERS

Responders were asked what measures they have undertaken to address skill shortages in their business. The highest response was to keep looking for skilled staff, followed by training existing staff. Responses are highlighted in Figure 8-6.

Figure 8-6: Measures taken to address skill shortages

When asked how they build skills within their business, the majority of respondents indicated that they provide on the job training, through learning by doing. This was followed by the delivery of internal training and external contracting of specific skills required as presented in Figure 8-7.

Figure 8-7: How skills are built within the business

8.4 SKILL NEEDS

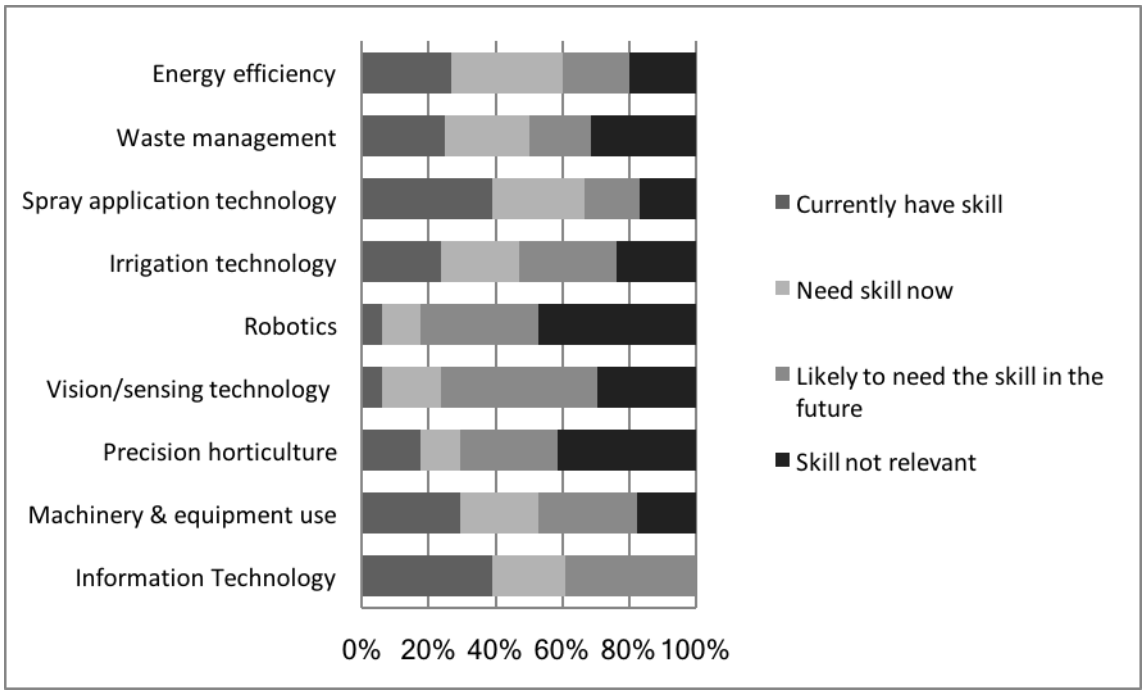
A skill needs assessment was undertaken to identify categories of skills currently present, needed or likely to be needed in the future horticulture industry of the Riverina. The various categories of skills are presented in the following stacked bar graphs.

8.4.1 TECHNOLOGY

The results of the technology skill need assessment, presented in Figure 8-8, demonstrate a variation in perception of relevancy of future skill needs. This was particularly observed with skill sets that are currently considered emerging, such as robotics, vision/sensing technology and precision horticulture, with the results demonstrating a mixed response of a high level of both likely need and also not relevant.

Energy efficiency was identified as the skill most in need now, with areas of priority for skill need in general including information technology, spray application technology, machinery and equipment use and irrigation technology.

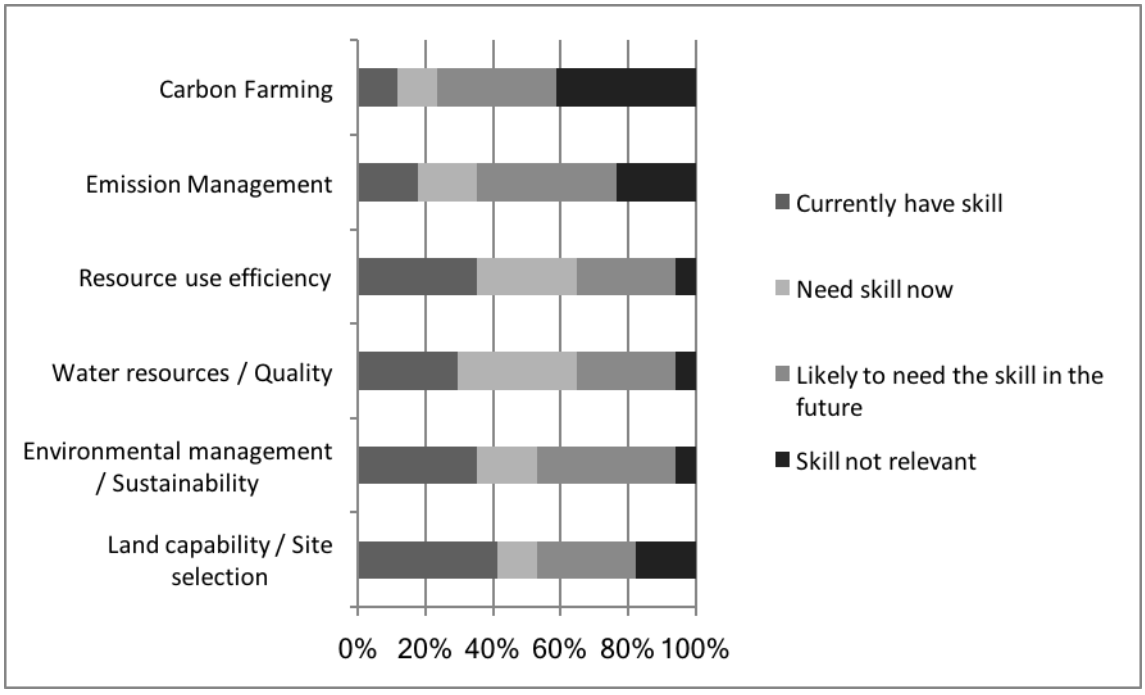
Figure 8-8: Technology skill needs



8.4.2 PRODUCTION ENVIRONMENT

A high level of demand was identified for skills within the production environment as demonstrated in Figure 8-9. Present and likely future demand existed for skills in resource use efficiency and water resource management, while existing skills in environmental management and land capability were considered appropriate. Carbon farming was considered by a number of respondents as not relevant for horticulture.

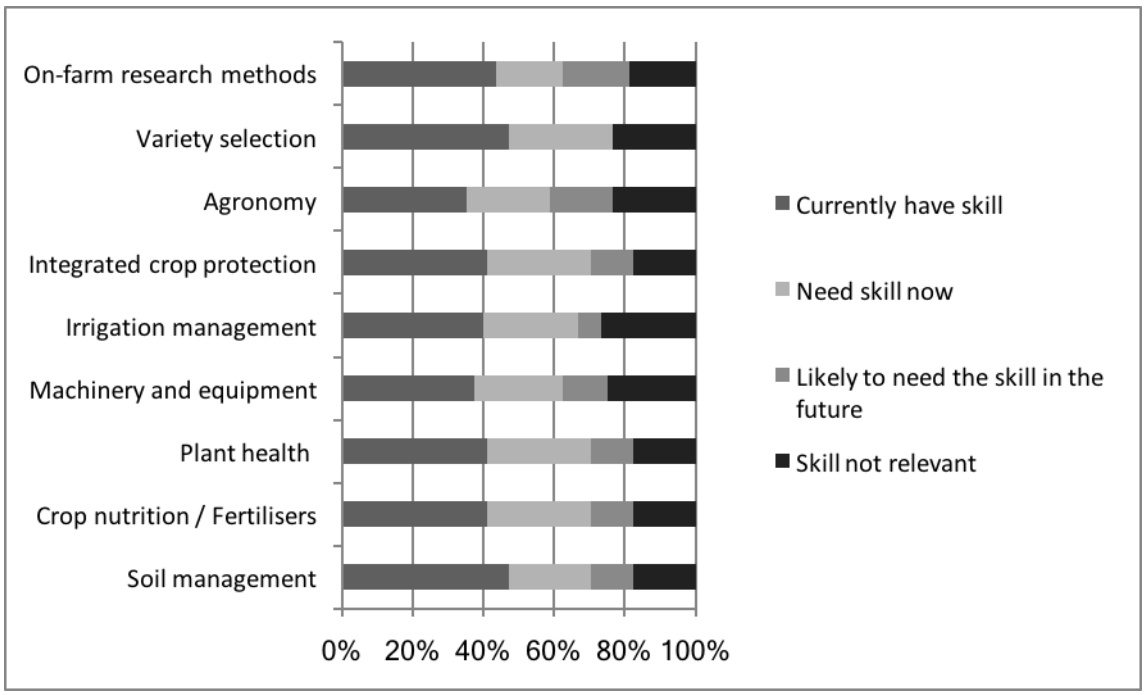
Figure 8-9: Production environment skill needs



8.4.3 FIELD PRODUCTION AND ADVANCED CROP MANAGEMENT

As illustrated in Figure 8-10, a high level of skill was identified as currently available across all field production and advanced crop management skill needs. With the exception of variety selection, which was not considered to have a future skill need, there was consistency in the perception of the currency of the availability of the skill, the demand for the skill and the likely need for the skill in the future.

Figure 8-10: Field production and advanced crop management skill needs

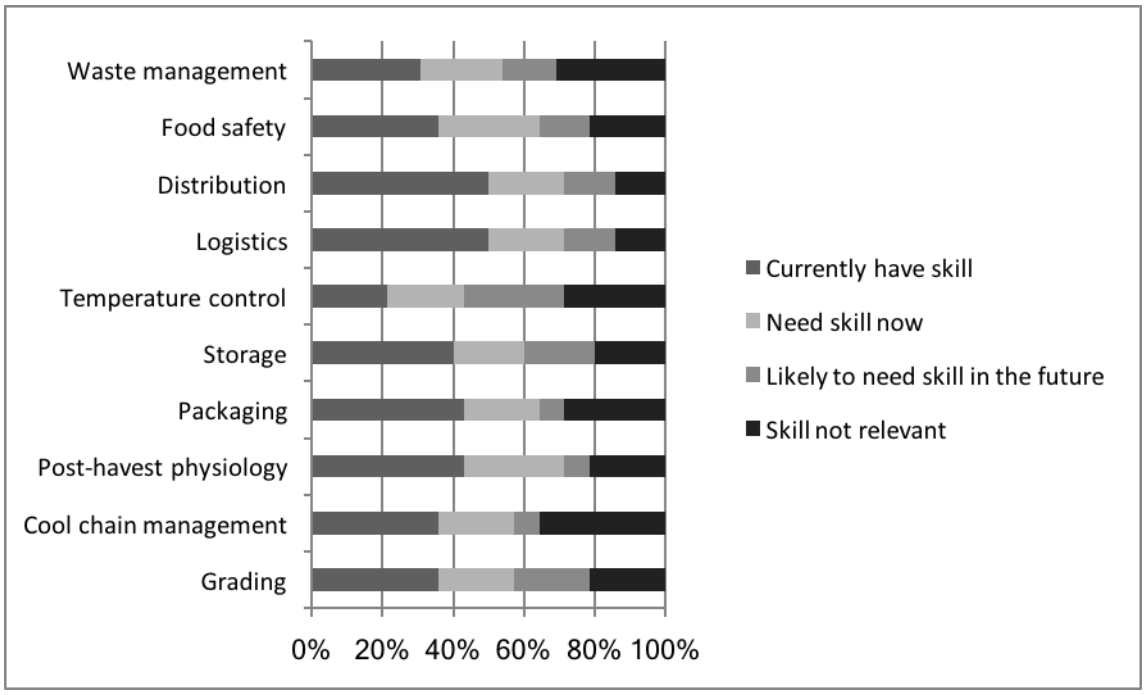


8.4.4 POST HARVEST MANAGEMENT

A high level of skill was currently available in a number of areas in post-harvest management as highlighted in Figure 8-11. This included transport distribution, logistics, post-harvest physiology and packaging.

Only limited opportunities were identified for future skill needs, including in the areas of temperature and atmosphere control, grading, storage, food safety and waste management.

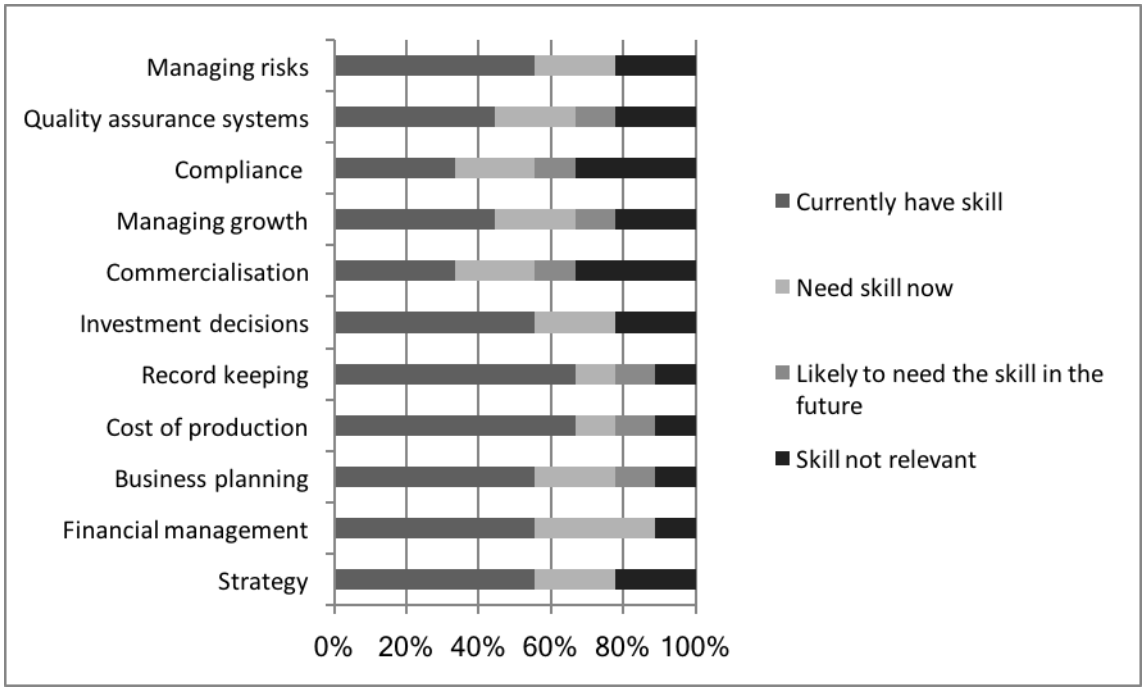
Figure 8-11: Post harvest management skill needs



8.4.5 MANAGING THE VEGETABLE BUSINESS

A very high level of current skill was identified in business management as demonstrated in Figure 8-12. The current skill needs in this category of note included better business development skills such as financial management, strategy, managing growth and risks, as well as quality assurance and compliance requirements.

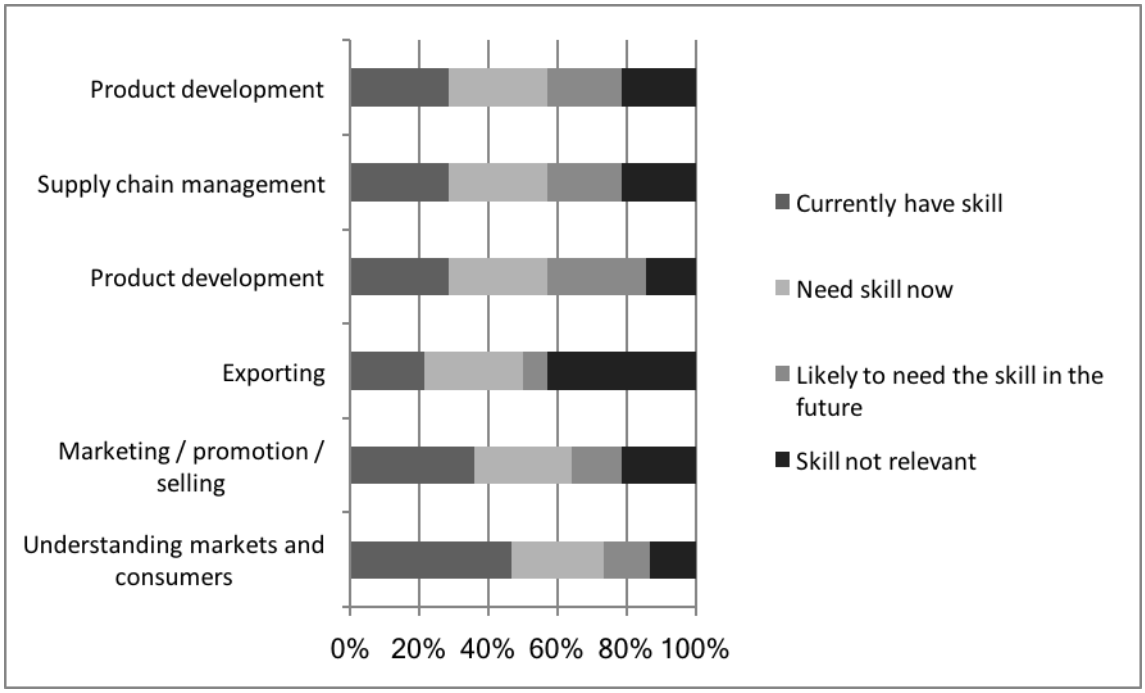
Figure 8-12: Managing the vegetable business skill needs



8.4.6 PRODUCTS TO MARKETS

The findings presented in Figure 8-13 in relation to products to markets, identify a moderate need for these skills now the region. Also of interest to note is the lack of relevancy of export skills.

Figure 8-13: Products to markets skill needs



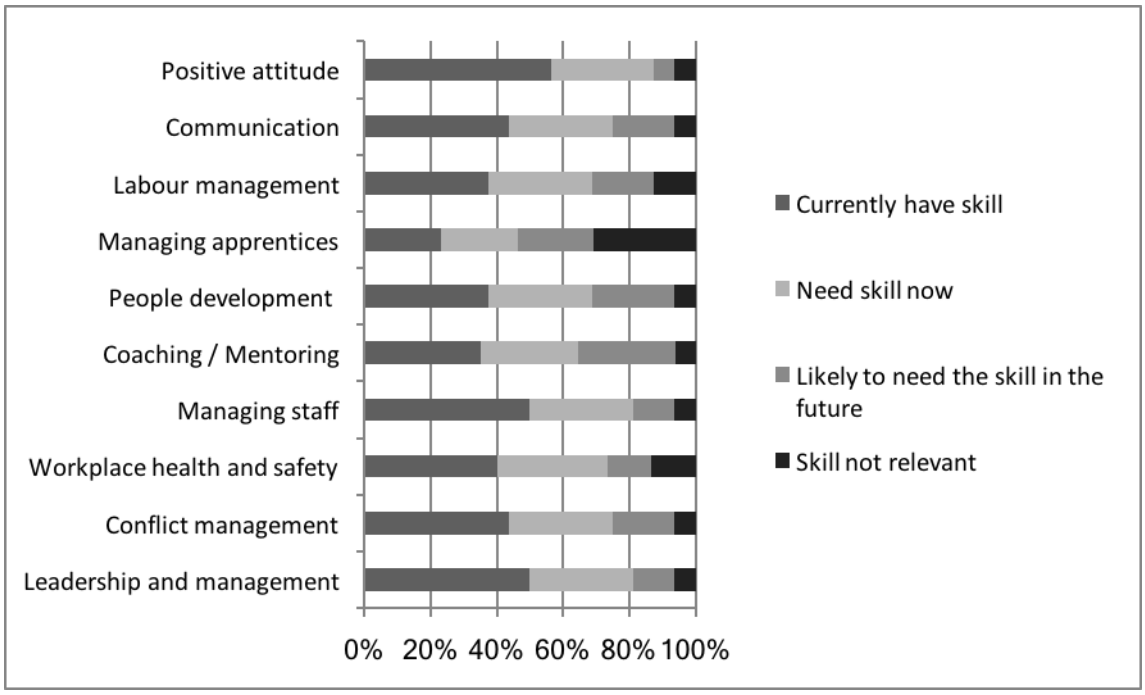
8.4.7 PEOPLE

In general, respondents considered the region to currently have a high level of skills relating to people management. The responses, presented in Figure 8-14, were particularly high for current skills in leadership and management, managing staff, conflict management and a positive attitude.

Skill areas needed included workplace health and safety, coaching / mentoring, people development, labour management and communication.

While recording a low level of current skill around managing apprentices, respondents saw this a skill not relevant to industry in the region.

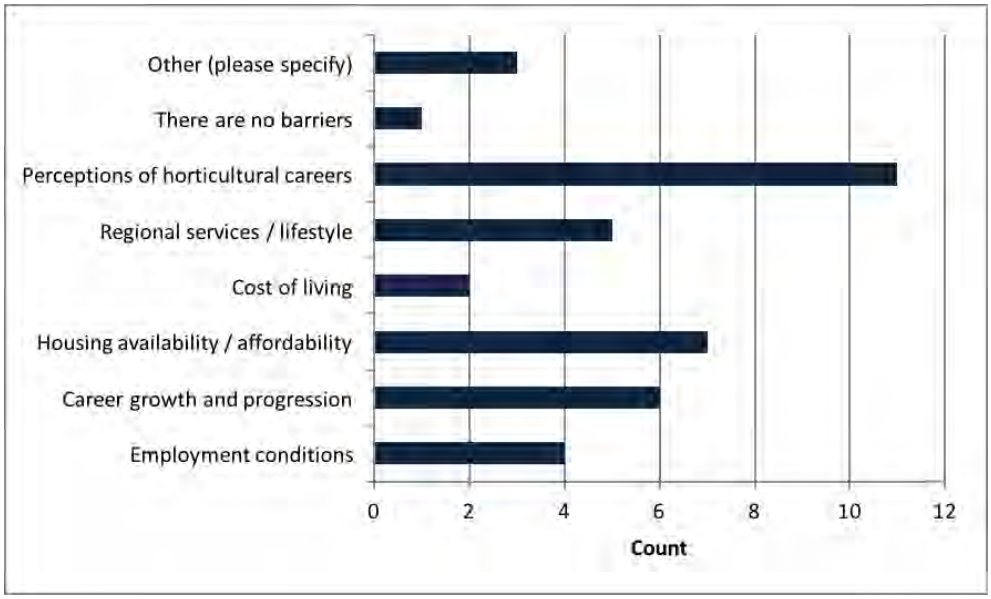
Figure 8-14: People skill needs



8.5 BARRIERS TO ATTRACTING SKILLS IN THE RIVERINA

Overwhelmingly, perceptions of horticultural careers was identified as the main barrier to attracting skilled workers to horticulture careers in the Riverina Region by almost 80 per cent of respondents. The second highest barrier was noted as housing availability / affordability, followed by career growth and regional services.

Figure 8-15: Perceived barriers to attracting skilled workers to horticulture in the Riverina



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Document review and authorisation

Job Number: 85-R-01

Doc Version	Final/Draft	Date	Author	Reviewed by	Quality checked	Release approved by	Issued to
1.0	Draft	18/08/17	C. Muller	S. Lapsley			R. Whiting
2.0	Final	28/08/17	C.Muller	A. Kennelly	H. Buck	A. Kennelly	R. Whiting

Proudly funded by

NSW GOVERNMENT

An Australian Government Initiative

This study was funded by the NSW Government.
RDA Riverina thanks them for their support.

Regional Development Australia
RIVERINA NSW