

Supporting On-Farm Labour During the Dry Times

A literature review

Report to Holbrook Landcare Network

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Table of Contents

Executive Summary	3
Introduction	6
Methods.....	7
Method A – Rapid appraisal of grey literature (professional studies and reports, industry studies and reports)	7
Method B- Rapid appraisal of the peer-reviewed academic literature.....	8
Findings	9
1. The effects of drought on the farm workforce.....	9
a. The farm workforce as part of adaptability	10
b. Effects of drought on human health	11
c. Different experiences of drought within farm families and in the community	12
2. Factors associated with farm workforce retention	12
a. Employee retention in small businesses	13
b. Farm practices enhancing employee retention	15
c. The importance of employer leadership in employee retention	16
d. Retaining younger workers	17
e. Regional approaches to retaining employees.....	18
f. Industry strategies.....	19
3. Options for support to retain the farm workforce during drought in Southern NSW	20
b. Local shared work models.....	21
c. Regional/place-based strategies for retention (Regional workforce development)	21
d. Education efforts.....	23
e. Industry efforts at a regional level	23
Gaps in the literature & Opportunities for Further Research	23
Conclusion.....	24
Recommendations	25
References.....	25
Appendices.....	30
Appendix 1 Example of a regional dairy sector retention plan.....	30

Table of Figures

Figure 1 General factors affecting employee retention (in Nettle et al. 2011, p. 20.)	13
Figure 2 Factors affecting intention to stay among fruit sector employees in the Goulbourn-Murray fruit sector (Wilkinson et al., 2019, p. 24)	14
Figure 3 The industry employee retention framework developed for the Australian Meat Processing sector (Glass et al., 2022, p. 20).....	17

Executive Summary

This report provides the findings of a literature review on the factors contributing to retaining a farm workforce, with a specific reference to the workforce challenges posed by drought. This review complements the community engagement and workshops conducted by the Holbrook Landcare group (March-July, 2024). It aims to identify gaps in the literature, highlight opportunities for further research and make recommendations on the opportunities for co-design of subsequent initiatives by stakeholders in the Greater Hume and southern NSW regions (including Wagga and Albury Wodonga) to support farm workforce retention.

The literature review involved a rapid appraisal of international and Australian peer reviewed literature and industry documents pertinent to the context of farm workforce retention. While not exhaustive, the review identifies important patterns in workforce effects of drought, important contributors to farm workforce retention and examples of initiatives that could be considered in the region to better prepare and respond to workforce challenges.

Effects of drought on the farm workforce

The workforce effects of drought included effects at the farm level (i.e. needing to target retention to a core workforce; significant negative health impacts for farm and community members; differential effects on health, stress, work and career for farm women and men), and at the community level such as in flow on effects to farm services employment, community resources and populations.

Factors associated with farm workforce retention

Overall, the farm-level studies suggest that businesses may be able to retain employees longer if they include development and career advancement. Small businesses face the biggest challenges however and here local groups, or industry may have a role in developing approaches to support small businesses in addressing this challenge, such as in collective training opportunities for employees; HR support to employers and fostering career paths between farms. Targeted strategies to the needs of managers are also needed, including attention to work-life balance and professional development.

Opportunities to better retain people at the farm level involve attention to people management practices that engage, motivate and satisfy the needs of the workforce whether that be family members, contractors, managers or employees.

The common factors reported to enhance retention on farms were:

1. Higher than the average pay rates in industry for their role
2. Flexible work hours
3. Placing limits on the extent of weekend hours and limiting the extent of long shifts
4. Training and development opportunities
5. Feedback and appreciation for a job well-done
6. Individual attention to career development and mentoring
7. An enjoyable work environment with good facilities
8. Varied work

To enact these practices however were shown to require leadership behaviours that continually reinforced the value of people to the business.

The needs of young people ('millennials') were identified as being different from other segments of the workforce and retaining young, skilled workers was considered to require targeted strategies involving rapid professional development/promotion opportunities, attention to work-life balance and flexible working, mentoring and soft skill development. Overall, targeted retention strategies to cater for different age groups is required.

Options for support to retaining a farm workforce

Regional efforts to retain a farm workforce were also considered critical, particularly related to drought, where farms alone do not always have the resources and connections to provide continuity in employment. The review identified Narrabri's 'make it work' program and New Zealand's 'Amuri farm employer group', as examples of collective action by farm employers to retain young people and employees in the region, and across their farms or in local businesses. Commonly involving partnerships with local government, education providers or community organisations, these initiatives and other examples hold promise for trialling similar approaches in the Holbrook region.

Further research needed

The review has identified significant gaps in knowledge regarding farm workforce dynamics and workforce retention at farm and regional levels. Some gaps in knowledge include:

- The nature of workforce shortages and retention issues during drought periods
- The consequences of drought strategies and responses for family members and the employed farm workforce in terms of well-being, jobs, careers, and retention.
- How the ongoing digitization of farms effect the farm workforce and the potential to undermine regional resilience by continuing to reduce the need for on-farm employment (Phelps & Kelly, 2019).
- The effects of drought on the employed farm workforce outside the phenomena of job losses (e.g. health and well-being and their decisions to stay or leave a region).
- The range of workforce strategies deployed in drought and their effects on people.
- The interrelationship between farm workforce change and regional communities .
- Evaluation of workforce interventions during drought/critical success factors
- More research into employee, contractor and casual workers' perspectives of jobs and careers and the effects of drought.

Recommendations

The following recommendations are provided as ideas for consideration by the Holbrook Landcare network and southern NSW drought hub.

- The farm retention factors identified in the review can be developed into local resources to assist farmers in enhancing their management practices. A range of local case studies of farmer practices related to retention could be developed and promoted alongside local extension or training efforts.
- Support farmers' workforce planning to include scenarios/visioning of different strategies (response options) for the employed, contract and family workforce and alternative strategies during drought, including for family members or in conjunction with other farmers.

- Support farmers in developing targeted retention strategies for young people and middle managers, identified as vulnerable in many studies.
- Promote exploration of collective approaches to share workforces or provide different experiences to new entrants and young people and explore partnerships outside the agricultural sector in drought times.
- Examine the potential for trialling the successful initiatives to retain young people in regional areas identified in the review, including bringing stakeholders together from education, employment, local government, industry and employers to develop a project.
- Consider forming a regional agricultural workforce planning and action committee to champion alternative approaches and to develop local/regional retention plans.

Introduction

This report provides the findings of a literature review on the factors contributing to retaining a farm workforce, with a specific reference to the workforce challenges posed by drought. This review complements the community engagement and workshops conducted by the Holbrook Landcare network (March-July, 2024) regarding the co-design of initiatives to support farm workforce retention in the Greater Hume and southern NSW regions (including Wagga and Albury Wodonga). There is an interest from the region in targeting the retention of young, skilled workers.

An important context for the review is the broader issues and challenges relating to the farm workforce. Farm workforce shortages and the retention of high performing employees is a major concern for agricultural small to medium enterprises (SMEs) globally (Nye, 2021). In Australia, there has been a reduction in the family workforce as a proportion of the total farm workforce, more reliance on hired farm labour and an increase in casual (temporary), contractor and seasonal workforces, including from overseas (Bahn, 2014; Nettle, 2015). The trends are largely attributed to increased farm size shifting the structure of farm production, the substitution of labour with capital (i.e. labour-saving technologies) as well as broader demographic and social changes related to farm family members, such as their interest in remaining in, or returning to, farming (Santhanam-Martin & Nettle, 2014). These farm workforce trends in Australia are mirrored internationally with workforce shortages, attracting and retaining young people in agriculture, migrant workforces, farm health and safety, farm succession and regional labour market problems being commonly reported issues (Christiaensen et al., 2021; Malanski et al., 2021).

Workforce changes at the farm level are closely linked to the need for flexibility, given the dynamic nature of agricultural production in terms of seasonal variation, drought, resource availability, product price variations from year to year and in response to large-scale regional labour market trends, for example the impact of the mining boom, the millennial drought and COVID-19 on regional workforces in Australia. There is currently a major skills shortage in agriculture, which is exacerbated during peak periods due to an over reliance on seasonal labour (Cosby et al., 2023; Donca, 2018). The COVID-19 pandemic constricted the mobility of migrant workers to agriculture, worsening farm labour shortfalls which have not since recovered (Cosby et al., 2023).

While it is commonly noted that human resources are of key importance to gaining a competitive advantage and are not easily reproduced (Kuvaas & Dysvik, 2010; Luthans & Youssef, 2004), the seasonal variability and uncertainty in markets in agriculture as well as challenges such as drought presents additional complexity for farm workforce attraction and retention. These not only relate to the farm level and the specific needs of the farm business, but also to the region and what is happening in the local labour market. Commonly reported workforce issues associated with drought include:

- Farms may have less work available and may struggle to keep a workforce on, whereas others may have more work than their current staff can handle due to the additional workload of drought feeding, etc.
- It can be difficult to attract people into an area that is struggling with drought, with public perception of there being no work or drought-areas not being pleasant places to live.
- Long running drought can mean people leave the region due to a lack of work overall, meaning there is less people to draw from, if recruiting. Existing low population densities that negatively influence the ability to recruit are exacerbated (de Hoyos & Green, 2011)

- There can be a greater training burden on employers if they are needing to use casual or inexperienced staff.
- Maintaining the morale of farm staff in difficult times can be more difficult.
- Low-skilled jobs may be abundant, therefore young people looking for career progression opportunities may need to look elsewhere (de Hoyos & Green, 2011).

This context means that workforce planning needs to consider both farm and regional level capacities to respond, as well as capacity to mobilise collective efforts to support farmers in retaining staff in the region. Farm and regional level responses are also pertinent given the broader workforce trends related to technology and higher skills in farming. Research predicts that the future agricultural workforce will be highly educated and operate within a dynamic landscape influenced by advances in technology, changing consumer demands, and the effects of climate change (Bassett et al., 2022). As the digitization of agriculture develops, farm workforce skills and training will need to keep pace or risk the further marginalization and exploitation of unskilled workers (Rotz et al., 2019). Several authors emphasise that the next generation of agricultural professionals will need to have a better understanding of technologies, along with basic data literacy (Bampasidou et al., 2024). Regional development trajectories and technological development are considered the key influences on the future of the Australian agricultural workforce (Wu et al., 2019).

Balancing the changing agricultural workforce with the ability to adapt and respond to drought therefore presents major challenges for the agricultural sector. This review examines the literature related to this challenge to guide the development of actions plans to secure and support a farm workforce in drought.

Key Questions guiding the review were:

- What are the impacts of turnover/shortages in communities and the effects of drought on the farm workforce?
- What factors influence farm labour retention?
- What interventions or practices have been found to improve retention? (both on-farm and in regions)

Methods

The literature review involved a rapid appraisal of international and Australian peer reviewed literature and industry documents pertinent to the context of farm workforce retention. The review was conducted in two-modes, involving a desk-top scan of industry reports and resources, known as 'grey' literature (Method A) and published peer-reviewed research (Method B). The following sections outline the sources for each method and the analysis approach.

Method A – Rapid appraisal of grey literature (professional studies and reports, industry studies and reports)

Sources

- **RDC websites, including 'people in Ag':**
 - Grains Research & Development Corporation

- AgriFutures industries
- Australian Meat Processor Corporation
- Meat & Livestock Australia
- Australian Wool Innovation Limited
- Dairy Australia
- Nation Farmers' Federation
- **HR consultant and other private websites:**
 - Agricultural recruitment companies (i.e. Agricultural Appointments, Drover Ag, Agri Labour, Rimfire Resources)
 - Specialist HR & Industry professionals (i.e. WHS, workforce planning)
- **International websites:**
 - Beef and Lamb NZ
 - Canadian Agricultural Human resources council
- **Small-medium sized enterprise and family business web sites**

All sourced items were assessed for relevance to Southern Australia and Southern New South Wales and mixed farming (cattle, sheep, grains).

Reports were excluded if not relevant to work retention and work-force shortages. Reports not pertaining to drought/dry times were included and reviewed, as specific work on these areas was reasonably limited.

Introductions and table of contents were initially reviewed and if deemed relevant by the authors, the findings and specific areas of interest to this research were read including case studies. Key themes and findings were collated from each report which are:

- Factors influencing workforce retention.
- The impact of drought on farm workforce.
- Industry strategies and recommendations to address workforce shortages.
- Options to support farmers, industry, and regions, particularly during drought.

A full list of reports and sites reviewed are in the reference list.

Method B- Rapid appraisal of the peer-reviewed academic literature

Sources

- Web of Science and Scopus databases
- Publishing Period: 2000 – 2024
- Topic' level searches (including title, author, keyword)
- English language

Search protocols

An initial search of journal articles was conducted in the using 'Queries to retrieve the articles of relevance will use key search terms and keywords for the rapid appraisal of the literature in agriculture and non-agricultural contexts.

In agriculture, a broad search using the search string farm* or agri* AND workforce retention) AND (management) OR (employment), was run.

Additional searches were performed in both agriculture and non-agriculture fields to include:

1. Retention/retain*
 - a. search string 'agri* OR ('farm'), and 'people'; 'workforce'; 'labour/labor'; staff*
2. Work*
 - a. search string 'agri* OR ('farm'), and 'people'; 'workforce'; 'labour/labor'
3. Drought*
4. Employ*

Analysis approach

All sourced items were assessed for relevance to Southern Australia and Southern New South Wales and mixed farming (cattle, sheep, grains).

General human resource management studies were excluded if not adding to the information generated by the farm/agricultural sources.

Abstracts were reviewed and then the full paper read if deemed by the authors to be relevant to the context and needs of the mixed farming community. Key themes and findings were noted from each study. The themes are: reported effects of drought on farmers, farm families or farm employees/workforce; factors associated with retaining farm employees; HRM practices related to retention on farm; interventions and the assessment of their impact in improving workforce retention.

Findings

1. The effects of drought on the farm workforce

There have been several Australian studies over the last 20 years that have monitored the effect of drought on rural and regional communities and farm households. However, there has been less emphasis on the effects on the employed farm workforce outside the phenomena of job losses.

In an ABARES study in the effects of drought and climate variability on Australian farms (ABARES, 2019), there is a focus on revenue, costs, stocks and profit, but not work and employment. So, whereas 'active management' is identified as a key strategy to reduce risk exposure (e.g. off farm income, diversification (i.e. undertaking a variety of crop and livestock activities, or farming in multiple locations), there is no recognition of the workforce requirements for these strategies such as in the skills, worktime and people required to undertake them. Where attention has been given to the effects of drought, significant losses in jobs have been reported. For instance, in a study of the effects of drought in rural America, large job losses from farms and farm services were reported. These effects arose because of greatly reduced crop plantings (fallow) measured in loss of hired farm

worker wages and jobs and the ripple effect of reduced purchases of seed, fertilizer and other necessary farm inputs representing losses to agricultural service businesses, and employment in those businesses (Villarejo, 2004). The most reported effects of drought on the farm workforce outside of job losses are related to:

- Workforce strategies farms undertake to deal with variability and uncertainty in farming.
- The mental and physical health effects from prolonged drought.
- The differential effects of drought on different job roles and within farm families.

These effects are described next.

a. The farm workforce as part of adaptability

In a study of workforce strategies deployed to cope with reduced water allocations on Australian cotton farms, combinations of workforce options defined as 'core', 'contract' and 'casual' workers at different levels of skills and experience were identified (Nettle et al., 2018).

- The 'core workforce': was a medium-term focus for sustaining farming operations between seasons. 'Core workforce' were prioritised for retention and development.
- The contract and casual workforce was a response to shorter-term, or within season, operations. Contract and casual staff represented 'room to move' in farming operations, or flexibility (Dedieu, 2009, p. 402).

The choice of strategies by farmers in the study was found to influence and be influenced by sources of financial capital, irrigation water availability/holdings, farm remoteness, new farm infrastructure and human resource management practices. The farm workforce was a response option to provide production flexibility, yet high levels of workforce adaptability was associated with some negative consequences for managers and employees.

Strategies of the farmers' that prioritised human resource stability and low turnover were evidenced by employers focusing on 'employee engagement', where employees feel vigorous, dedicated, and absorbed at work (Albrecht et al., 2015), which contributed to empowering, motivating and developing the workforce (Liu et al., 2007).

Work practices that were linked to human sustainability in the study, i.e. where the work environment is not disruptive of people's health, included:

- Building effective teams
- Bonuses
- Flexible arrangements
- Training

Some farmers preferred to avoid turnover of staff and aimed to secure a stable or permanent staffing regime. This was described in the study as 'involved' management, demonstrating pro-social actions (e.g. reciprocity) toward their employees and were likely to make workforce decisions that are primarily related to maintaining stability or capacity in the workforce. Here, farm owners and managers prioritised the importance of the knowledge, skills, and experience of everyone working in the farm business, and through their management style, emphasised the development of employees and the importance of establishing a favourable workplace culture.

Alternatively, strategies of some farmers in the study focused on cost and these were found to lead to an inability to retain high-performing employees, chronic understaffing, employee fatigue, risk of injury and workplace stress. These farmers managed high turnover to enable flexibility and responsiveness in farming operations. Described as ‘uninvolved’ management, these farmers gave less priority to the impact of workforce change on employees or the work environment in the overall business context.

Not all workers are interchangeable. Madelrieux and Dedieu (2008) suggest flexibility can have negative consequences for farm managers and employees. As argued by Dedieu (2009), it is important to look at how farmers work with uncertainties rather than smooth them out, and here, we find the farm workforce a part of operational flexibility and a response option for constraints from climate or water, and priorities for financial returns (external capital).

The different strategies offered different response options, with seasonal, temporary and contract workforces providing a way to respond to challenges with water resource availability or to drive investment in particular technologies or infrastructure and so reduce the reliance on a workforce. The farm workforce was a source of flexibility to preserve the functioning of the farm business for owners, or to serve the priorities of shareholders that lie outside the farm. Farm workforce strategies are therefore a central part of the farm owners’ adaptive capacity. In this regard, the farm workforce is a crucial factor for farm performance but also to adaptability (Dedieu, 2009; Sraïri & Ghabiye, 2017).

The farm workforce strategies of farmers are an important aspect of managing drought, yet this is an under-acknowledged area in research, as is the provision of support to farms and regional communities during drought. Much drought support focuses on farm management decisions related to crops and livestock or income support, however the farm workforce responses can have a substantial impact on the productivity and wellbeing of family members, employees and contractors, and evaluating options for the farm workforce should gain greater attention.

b. Effects of drought on human health

Drought is found to have a substantial negative economic and health impact on farmers and others employed in the agricultural sector. There is some evidence that groups not employed in agriculture are also adversely affected, with a widespread loss of services in drought-affected areas and some marginal labour market groups (e.g. carers) experiencing poor employment outcomes in a drought-affected local economy (Edwards et al., 2019; Fennell et al., 2012).

Mental health is negatively affected during times of drought. Incidence of mental health concerns during times of drought escalate, with one estimate suggesting rural populations experience a 10.5% decrease in mental health problems when not in drought (Edwards et al., 2015). A positive correlation was found between the length and severity of a drought, and the measured impact this has on farmers and farm workers mental health, primary driven by the economic downturn drought has on farming businesses (O'Brien et al., 2014). Whilst this correlation highlights a concerning trend, research by Guiney (2012) found no increase in the pattern of suicides among farmers during times of drought.

c. Different experiences of drought within farm families and in the community

Several studies have reported different types of drought effects among farm family members experiencing drought, particularly women. In a study of women on farms in NSW and Qld (Stehlik et al., 1996) extended dry periods and consecutive seasons without rainfall were found to have a profound impact on both the loss of stock and physical resources, but importantly also the deterioration of community networks, family cohesion, and at times a sense of abandonment by broader Australian society (Stehlik et al., 2000). It has been argued that men and women experience drought differently, that family forms the important first line of defence against drought, and that women's additional farm labour efforts go largely unnoticed, and expand upon their pre-existing family work roles with the expectations that they will cope with the extra burden (Alston & Kent, 2006).

For many women, the long-lasting impact of extended drought most affects their relationship to their community, which is not automatically repaired upon the arrival of a timely rain event. Communities may have lost permanent residents, local community stores and services which further effect women's mental health and wellbeing, which they are unlikely to share with their partners or family so as not to add to the overall drought burden for the family (Lester et al., 2022). Another effect reported from the loss of farm income during drought is the need for some women and men to seek off farm work, for instance to ensure school fees can still be paid so children are not disrupted in their schooling or separated from their peers (Alston & Kent, 2006). In contrast, some working women have had to engage in full-time farm work due to the inability to afford farm labour during dry times, with this change being at the expense of more preferred paid work and retaining their careers (Alston et al., 1995). This work often continues after the drought is broken due to increased farm debt incurred during the drought (Lester et al., 2022).

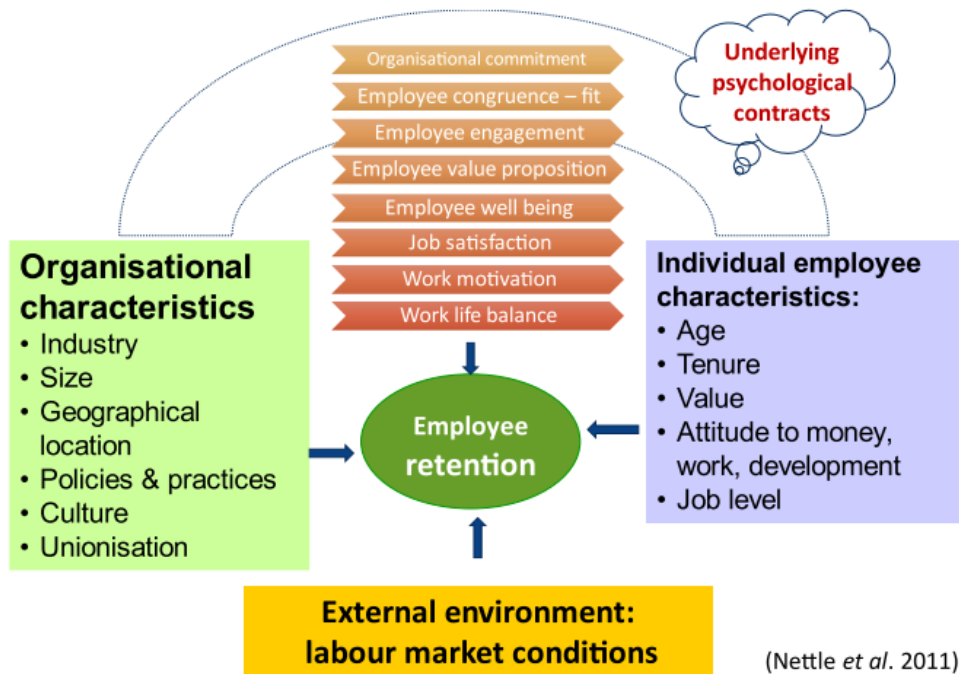
The internal strategies of families when managing the work demands of drought therefore has a major effect on overall workforce needs. This is an under-acknowledged area in research and in the provision of support to farms and regional communities during drought. Farmers may believe there are no alternatives or feel locked-in to responses that may have unrecognised negative consequences for family members.

The following sections review the literature relating to these constraints to retention.

2. Factors associated with farm workforce retention

Farm workforce turnover, or poor workforce retention, places an economic burden on farms as new employees require a minimum of basic induction training, particularly given the increased safety and physical injury risks associated with farmwork (Skiba, 2020). Many business managers seek to implement practices that target the retention of capable staff as labour supply constricts and recruitment costs rise (Sofa, 2007). Failure to retain high performing employees has shown to: increase employee fatigue due to understaffing; increase risk of injury and/or workplace stress; decrease business competitiveness (Rappaport, 2003).

Employee retention is driven or best enhanced by employee/organisational commitment; employee engagement; value/goal similarity between employees and employers; employee wellbeing; work satisfaction; job motivation; and work-life balance (Nettle et al., 2011). Figure 1 depicts the range of factors known to influence employee retention.



(Nettle et al. 2011)

Figure 1 General factors affecting employee retention (in Nettle et al. 2011, p. 20.)

Figure 1 illustrates how employee retention is influenced not only by individual job or work experiences, but a range of factors at different scales. This phenomenon was highlighted by a recent study in Southwest England (Nye, 2021), where farm workforce constraints contributing to labour shortages and retention issues were found to have farm-level, local-level, and national-level sources. At the farm level, constraints included low-pay, poor farm culture/people management skills, lack of career progression, and owners being protective of farm capital and machinery. Local-level constraints were poor community relations, particularly for younger members; a lack of small farms to act as training grounds; a return of family to the family farm therefore displacing workers; capable youth being recruited by large agri-corporations; and insufficient agricultural training by colleges/universities. At the national-level, long hours and work life balance; a general lack of education regarding food production; poor career advice regarding farming exacerbated by a lack of funding; and antiquated social perceptions of farming as career, were key retention constraints (ibid).

a. Employee retention in small businesses

Attracting and retaining qualified people is a major concern for most small businesses, and low retention among small businesses is suggested to be caused by less effective recruitment and training practices compared to their larger counterparts (Tanova, 2003). There are several issues relating to the public image of small businesses that is considered to put them at a disadvantage regarding attracting and retaining good people. Employees are at times concerned about the economic stability and long-term viability of small businesses, therefore affecting perceptions of job

security and limited career progression and development prospects (Atkinson & Meager, 1994; Chowdhary & Sisodia, 2006).

Upsides of small organisations include freedom from supervision, opportunities to be creative and to take on responsibility. However, this positive image tends to be offset by perceptions of favouritism toward any family members involved in the business, with notions that better career opportunities tend to be passed on to family members, thereby hindering the career prospects of non-family employees (Tanova, 2003). In small businesses, opportunities for promotion can be limited and thus, ambitious and experienced staff often report needing to leave if they wanted promotion and further career progressions.

Research conducted in the orchard industry with employers and employees investigated the challenges of retaining middle-managers, as well as the aspects of the industry and of individual jobs that contributed to employee satisfaction or dissatisfaction with their jobs and the industry, and to their future career intentions (Santhanam-Martin & Cowan, 2017; Santhanam-Martin & Cowan, 2018; Wilkinson et al., 2019).

Figure 2 represents the most important factors involved in orchard employee's intention to stay with their employer, with a study by Wilkinson et al. (2019) indicating the biggest contributors to employee retention related to job security, good working environment, training, and career development opportunities.

Contribution to intention to stay with current Goulburn Murray fruit industry employer

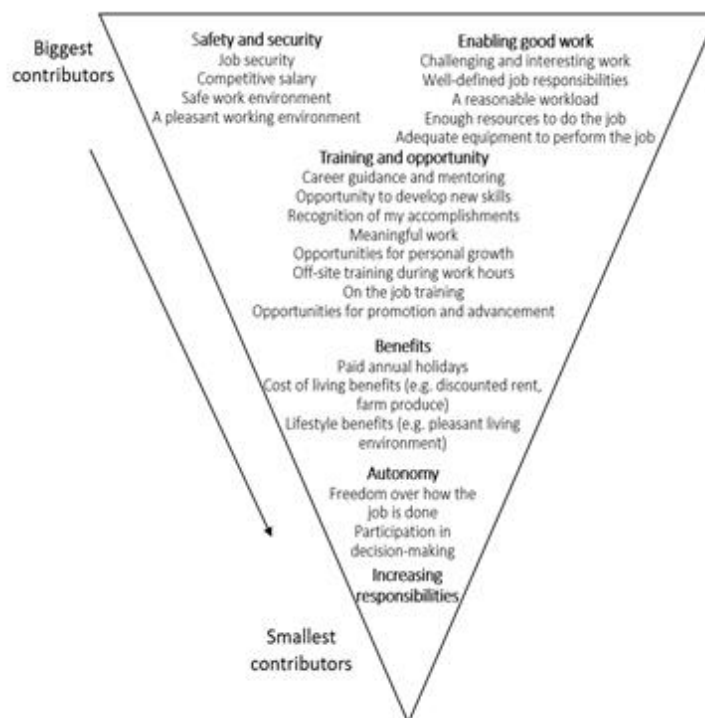


Figure 2 Factors affecting intention to stay among fruit sector employees in the Goulbourn-Murray fruit sector (Wilkinson et al., 2019, p. 24)

This study found that senior managers and middle managers in small firms had lower job satisfaction than those in large firms, and had fewer training and development promises made to them. Middle managers in small firms were significantly less satisfied with their job than all levels of employees in large firms. In addition, all levels of employees in small firms had significantly higher scores on intention to leave their employer than those in large firms and had significantly higher scores on intention to leave the fruit industry than those in large firms. Employees stayed significantly longer with an employer when they received a promotion (suggesting development), and that informal learning was valued by all respondents.

Overall, the farm-level studies suggest that businesses may be able to retain employees longer if they include development and career advancement. Small businesses face the biggest challenges however and here local groups, or industry may have a role in developing approaches to support small businesses in addressing this challenge, such as in collective training opportunities for employees; HR support to employers and fostering career paths between farms. Targeted strategies to the needs of managers are also needed, including attention to work-life balance and professional development.

b. Farm practices enhancing employee retention

In a study of managers of greenhouses, nurseries, and landscape contractors, the retention of employees was found to require strategic planning on workforce issues (Bitsch & Harsh, 2004, p. 743). These strategies needed to include the following characteristics:

1. To avoid managers overloaded with peak labour needs
2. Use of temporary employment services to address interim labour shortages
3. Training new recruits
4. Practices such as occasional get-togethers and meals, involvement in employees' lives
5. Flexibility in scheduling
6. Sharing business information with employees
7. Prolonging the season with diverse activities
8. Arrangements with employers with a complementary hiring season
9. Provision of benefits and bonuses

Similarly, in a study of employers in the pork sector, Marchand et al. (2008) proposed 10 practices for enhancing retention:

1. Setting HRM policies: to improve clarity for both employers and employees. (e.g. recruitment and selection, job materials including job responsibilities and working hours performance reviews and training, benefits)
2. Providing a competitive compensation package: benefits, overtime pay and bonuses
3. Designing farm jobs to enhance job satisfaction
4. Showing appreciation or recognition (i.e. linked to employee motivation)
5. Involving employees in decision making (providing a sense of ownership and responsibility (i.e. linked to job involvement, employee motivation, employee engagement)
6. Scheduling working hours fairly to allow flexibility and vacation time (i.e. linked to work-life balance)

7. Training and developing employees (i.e. linked to motivation)
8. Creating a friendly and social interactive environment (related to value congruence)
9. Giving additional benefits for jobs well done or recognition of work (e.g. dinner or events)
10. Promoting career opportunities to non-farm and urban people – “these are the job options requiring different skill sets and attributes”.

In an Australian study of dairy farm employers and employees (Nettle et al., 2011), employment practices that enhanced employee retention involved comprehensive employment strategies of farm employers. Dairy farm employees were influenced to stay with their employer because they were promised, and experienced:

9. Higher than the average pay rates in industry for their role
10. Flexible work hours
11. Placing limits on the extent of weekend hours and limiting the extent of long shifts
12. Training and development opportunities
13. Feedback and appreciation for a job well-done
14. Individual attention to career development and mentoring
15. An enjoyable work environment with good facilities
16. Varied work

c. The importance of employer leadership in employee retention

In a study of employee retention in the Australian meat processing sector (Glass et al., 2022), poor leadership in processing plants was a key factor contributing to staff turnover. Practices such as the failure of supervisors to address in-team coercion, favouritism, perceptions of management aloofness, and a lack of mobility in roles or ability to develop new skills were highlighted. These leadership insights indicated that improved leadership behaviours would significantly improve retention rates at certain plants, such as in creating a more welcoming environment for new employees by providing rotation and development opportunities.

Figure 3 presents the retention framework of excellence, which focuses on workplaces having an effective workforce plan and structure. Appropriate leadership was identified in a variety of positions including room managers, plant managers, laundry staff, trainers, induction trainers, payroll staff and buddies, highlighting the importance for company culture to be thought of as everyone’s responsibility (Glass et al., 2022). Strong retention systems exhibited a robust leadership culture across all levels of work that promoted a collegial environment, both in the workplace and among the values of its staff.

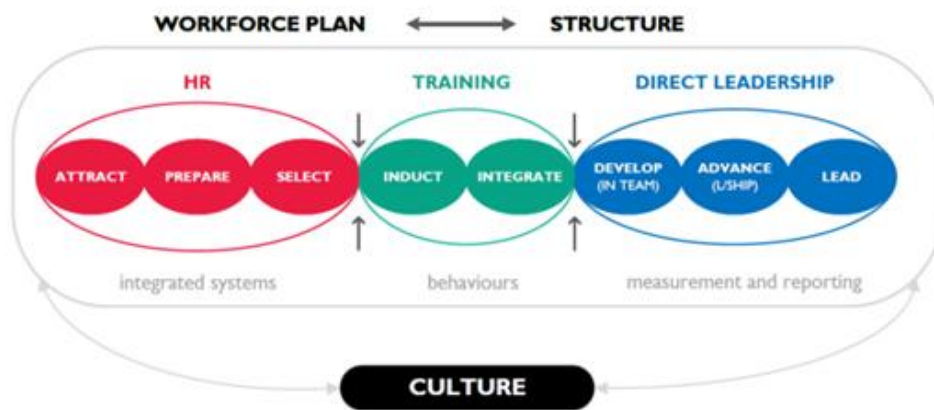


Figure 3 The industry employee retention framework developed for the Australian Meat Processing sector (Glass et al., 2022, p. 20)

The importance of leadership in people management was also reinforced by the National agricultural workforce strategy (Azarias et al., 2020) which urged that the agricultural sector move beyond a focus on minimum legal requirements to the optimal people management practices required for workers to be engaged, motivated, and satisfied with their jobs. Transformational leadership was encouraged in which genuine efforts to improve the quality of job roles is undertaken.

d. Retaining younger workers

The practice of 'job hopping' in which employees leave a position within two years, is becoming more common. Companies that offer pathways to help employees develop a broad range of skills, rather than simply offer a range of jobs requiring the same skills, are considered to be in a better position to retain Gen Z workers. Good first impressions (at recruitment and induction) are important as some industry surveys suggest that as many as 29% of new hires decide within the first week if a job is the right fit, 70% decide within the first month, with reports stating companies have just 44 days to influence someone to remain for the long haul. Jobs with clear purpose, flexibility in work and provision of training is suggested as important to harness the intellect and motivation of next gen workers.

In a New Zealand dairy study, Kyte (2008) argued that although the industry had a reputation for long working hours, this was offset to some degree by the ability of some employees to rapidly progress their career through to farm ownership. However, it was noted that a vast majority of employees were not going to achieve this outcome, nor wanted to – and so options that allow for good jobs with good pay and conditions as well as farm ownership pathways are needed to attract and retain people in the industry. This was particularly pertinent for younger workers, who also look for effective leadership, challenging work, and access to training and professional development opportunities (Wilson & Tipples, 2008; Simpson, 2004).

Younger workers tend to have higher injury rates than older workers worldwide (Salminen, 2004), so the HR strategy should support OHS and training on workplace safety. Marchand et al. (2008) suggest younger workers are easier to train and therefore it is more important to recruit on work-ethic or attitudes rather than worker skill, having the added benefit of providing a larger pool of potential young applicants to be sourced from (Burchart & Rachunkowosci, 2007). Brenny and Yelich Biniacki (2024) suggest the engagement of millennials in agriculture can be achieved through facilitating peer

mentoring and supporting soft skill development. Overall, targeted retention strategies to cater for different age groups is required.

e. Regional approaches to retaining employees

Following the millennial drought, interest in attracting a workforce back to the Murray region of Victoria and into the dairy industry provided the context for a study in the dairy industry on employee and employer experiences of attracting, retaining and encouraging people to return to the region to dairy jobs (Eastwood et al., 2010). Employers and employees in the study noted several challenges to be addressed.

The study found employees that had left the region had low confidence or uncertainty in the sector's viability and found better working opportunities in another region. Improvements in working conditions were suggested as the main retention strategy, including better management of time off, better rostering systems, more use of formal employment contracts, job descriptions for staff, and career progression. Former employees in the study suggested other industries proved attractive due to constant income, potentially higher rates of pay and stable and more suitable working hours. While former employees acknowledged the financial difficulty for farmers to hire sufficient staff, the resulting overwork of existing employees were suggested to be another factor in turnover, and it was suggested that younger staff needed to see some progression in responsibility/pay otherwise they were at risk of moving on.

The distance from towns to farms was also mentioned as being an issue for employees/potential employees. The employees working on the farms in the region reported "enjoyment from farming" and "having a good employment relationship" as the main reasons for their retention, and noted that good communication between employees and employers about job performance and expectations was important. Other factors noted by employees as important to their retention were:

- Provision of extra benefits: e.g. house on-farm, electricity, telephone, diesel, new tyres for vehicles, incentives.
- Workplaces where a workers family feel included is important, noting it is often partners that push to leave farm jobs.
- Active respect by the employer e.g. listening to employee suggestions and acknowledging their experience and skill, delegating tasks and providing some autonomy. Ensuring a good roster system was suggested as essential to provide time off. Not calling in employees to help when they are not rostered on "should be paramount".
- Commuting distances and "getting sick of the job".

The issues of retaining regional workforces have led some authors to advocate for more emphasis on a diversity of training and career opportunities and promoting employment in a diverse range of occupations in order to raise the skills structure of an area or creating a more diverse skills ecosystem (de Hoyos & Green, 2011).

The issue of attracting and retaining workers to regional Australia has been an ongoing acknowledged concern, which was heightened by the COVID-19 pandemic. People move to urban areas because of limited regional infrastructure or services, limited development opportunities, comparatively lower salary, and variability in demand for skills (McKenzie 2003; Miles et al., 2006). Other factors contributing to regional businesses unable to attract and retain suitably qualified

professional staff include distance from major centres, lack of job opportunities for partners, schooling, and medical facilities. Schoo et al. (2005) likewise report the exit of allied health professions from rural areas because of lack of a career path and/or personal and social isolation.

Employee retention in regional areas is deemed to be complex and not only effecting the farming sector. Regional employment engages with the personal and professional identity of potential workforces; family needs; community characteristics; and attributes of the location as well as knock-on effects of workforce shortages, such as the example of increasing workload and job stress faced by many rural doctors who are unable to find time away for family recreation or be provided with work-relief. In the absence of good on-call arrangements and professional support, the unrelenting nature of after-hours care imposes an excessive workload, with negative effects both on doctors' health and well-being (Humphreys et al., 2002). Employee wellbeing is closely related to job satisfaction and stresses leading to job dissatisfaction can result in turnover.

The National Agricultural Workforce strategy also identified that attraction and retention is aided by regional services, infrastructure and amenity (Azarias et al., 2020). Increased social support structures need to be in place to support those living and working in rural areas. The decline and aging of the population across many areas of rural and remote Australia, along with the introduction of policies designed around economic efficiencies rather than social supports has led to a downturn in quality-of-life factors (ibid p. 119). Potential agricultural workers want good access to education and health services. Workers and their families assess whether there are quality schools for their children that are accessible, modern, and offer a wide range of subjects taught by highly skilled teachers (see for example Alston and Kent 2006). They also require accessible health services that provide skilled medical practitioners delivering quality services that cover the range of needs of families (ibid p. 120).

f. Industry strategies

In a study of over 800 employers and employees in Australia's beef, sheep and pastoral industries (MLA, 2008) it was found that long working hours were a feature of the sector (62% of the red meat workforce works more than 51 hours/week) which is known to increase risk of employee burn-out and lowering the long-term sustainability of their work. This was particularly the case on larger farms (of 15+ employees), although they tend to work less weeks of the year when compared to smaller enterprises.

Industry recommendations to come from this report were to:

1. Improve the image of the pastoral livestock industry, with a focus on promoting the lifestyle benefits, outdoor nature of work, working with animals, and community orientation.
2. Provide a skills portfolio that employees can use when moving between farms.
3. Continue to provide interpersonal and management skills training and development opportunities.
4. Conduct a review of remuneration and best practice approaches.

Recommendations at the farm level included:

1. Effectively communicating competitive remuneration packages highlighting both the monetary and conditions dimensions with a focus on work-life balance, flexible hours and a collegial workplace culture.

2. Developing a 'keep in touch' approach with previous employees which may encourage their return in future.
3. Ensuring remuneration packages are fair and consistent across employees.
4. Adopting a transformational leadership style that encourages employees to voice their ideas in a collaborative and meaningful way, including involving them in decision making.
5. Giving regular feedback on role expectations, performance and recognising a job well done.
6. Promoting the farm enterprises reputation among current staff.
7. Being proactive regarding employees' skillset via auditing and encouraging them to engage their abilities.
8. Actively managing and monitoring the farms human resources to maximise efficiency and measure workforce engagement.

Dairy Australia and Cotton Research and Development corporations have dedicated resources, training and extension programs to support best-practice people management (People in Dairy and Cotton My BMP). Appendix 1 provides an example of a regional retention plan developed in a research project to support the retention of dairy employees in the MurrayDairy region.

3. Options for support to retain the farm workforce during drought in Southern NSW

a. Farmers working together to enhance retention

A New Zealand study of a regionally-based, farmer-led, employer of choice model - the *Amuri Dairy Employers Group* (Edkins & Tipples, 2002) found that when employers acted collectively there were positive impacts on reduced employee turnover, the time to fill vacancies, and there was an increase in the number of quality applicants for jobs with good skills.

Attributes of the project were:

- Farmers jointly developed a Code of Employment Practice that was audited for employer compliance.
- Employer training to help recruit and retain quality dairy farm staff.
- Extensive employee training opportunities.
- A social programme to help combat the isolated nature of the regional area.

The collective action approach was also shown to be effective in the context of addressing recruitment and retention for allied health workforce in Victoria (Schoo et al., 2005). Emphasising a set of HRM strategies (such as provision of competitive remuneration package; fair workload allocation and variety of job and task designs etc.), combined with community development programs (such as helping search for job opportunities for partners; building social and cultural infrastructure, as well as distance communication facility and easy transport system; and addressing educational and health needs for children) provided a way to retain staff in regional areas. These findings are of particular relevance for regional retention strategies.

Such approaches reflect the application of systemic HRM strategies which provide career pathways, supportive work environments, flexible working hours, and opportunities for work exchange to gain

experience (Armstrong, 2003) whereby a coherent approach to manage staff attraction and retention in regionally located agricultural industries brings benefits.

The National agricultural workforce strategy reports on a range of initiatives in Australia focused on attracting retaining and developing an agricultural workforce (Azarias et al., 2020 p 237-242). Some of these initiatives include Facilitated placements and cadetships with an emphasis on ensuring good experiences for those involved.

A GRDC report found one employer engaged in one-on-one discussions with a valued employee to tailor a strategy addressing their specific motivational needs, and then developed these into employee goals that fostered ownership of their work (GRDC, 2015). Another approach identified by Cooke and Crawford (2023) in Corowa NSW found that valued full-time employees were offered the opportunity to directly invest in parts of the farming enterprise. This predominantly involved a staff syndicate that enabled monetary investment in farm machinery, that could then be hired out to other local farming businesses (ibid).

b. Local shared work models

A case study conducted by the Grains Research Development Corporation (GRDC) detailed a farming business that purchased cutting-edge machinery to implement a no-till system, but due to the economic pressures of drought made a deal with an adjacent neighbour exchanging labour and machinery (GRDC, 2015). This in essence led to the running of two adjoining farms as one throughout sowing, spraying and harvest, having the added benefit of removing issues arising from timing misalignment (GRDC, 2015, p. 104). This approach was reported as successful, owing to their comparable approaches to farming and work ethic.

c. Regional/place-based strategies for retention (Regional workforce development)

The Narrabri Initiative 'Make It Work' was initiated by AgriFood Skills and jointly funded with the NSW Department of Industry and Investment (Davey et al., 2010). The initiative involved:

- A cross industry regional skills development model driven by a local employer and community leaders' group to attract, train and retain workers in the region, and to improve the mobility of workers across enterprises
- Cross industry skills training in machinery and operations where participants are trained to work across a range of industries and enterprises in the region. This training also introduces trainees to basic management concepts and operational practices to help them better understand the role they play in the business, and equips them to better communicate with their employers

The Employer of Choice program aimed at improving employer's workforce management capabilities by enhancing employers' capability in job design, contemporary employment and remuneration packaging practices, work organisation and skills utilisation. This builds the capacity to attract new entrants to industry and the region and to retain and better utilise existing workers.

Employers collectively work to manage seasonal and other employment needs to enhance innovation and productivity through a range of initiatives including through new career pathways;

developing skilled labour pools; and demand schedules within the region. The **'labour pool pilot'** (Davey et al., 2010) established a pool of skilled labour resources that can be tapped into by a range of businesses across the region. The Council offered pool participants 12 months full time employment, which involved subcontracting employees out to business in the region as needed, with many ultimately being offered jobs by industry. This led to improved skills in the regions broader transport, services, and local government workforces that support key agrifood and resources sectors.

A regional economic evaluation of the initiative identified two potential quantifiable impacts:

- An improvement in the productivity of the Narrabri labour force of potentially as much as 3.2% Per Annum (Labour productivity only)
- A 33% reduction in net migration of workers in the target labour market (Labour productivity plus reduced outward migration)

In a similar regional initiative, the 'Our Place' initiative of the Colman Education Foundation engages local employers to provide 46 entry-level jobs within the region in the areas of hospitality, heavy diesel, engineering, horticulture, light auto, business, and tyre fitting (Our Place, 2024). It is funded through the Foundation's ten-year partnership with the Victorian state government. This also included a horticultural pilot program involving seasonal workforce group traineeships which was rolled out across Sunraysia, the Goulburn Valley and Gippsland regions.

Drought specific grants in central West Qld such as the Foundation for Rural and Regional Renewal (FRRR) 'Tackling Tough Times Together' provided both long-term and immediate financial relief for farmers in need, which was found to generally improve local facilities, stimulate the local economy and assist in addressing labour force needs. (Phelps & Kelly, 2019).

In their work with the Manufacturing and VET sectors, (Watson et al., 2003, p. 37) propose a workforce development rather than 'gap filling' . Gap filling refers to approaches that attempt to project labour demands, identify gaps and recommend resources to meet them, which often result in training solutions as the only option. Such approaches have largely failed to meet skills gaps or improve workforce issues because they fail to factor in changing skills needs, decent work and innovative ways to link education, work-place productivity and a focus on the system of people development. Further most 'gap filling' efforts also fail due to insufficient resourcing of organisational structures that foster innovative approaches and suffer a lack of stakeholder participation and limited industry/regional capacity for planning, coordination and action. Workforce development, on the other hand, identifies skills gaps and shortages as well as considers:

1. Business settings
2. Institutional and policy frameworks
3. Modes of engaging labour (labour hire)
4. Structure of jobs (job design and work organisation)
5. Level and type of skill formation
6. Ensures industries and organisations have the capacity to act.

An example of a workforce development approach from the racing industry involved the situation where the industry was lamenting a shortage of track-riders yet the work situation for track riders, being casual employees working a few hours a day, were unable to earn a "living wage" by this work alone. Through a new initiative, racetracks hired a group of track riders and offered training and work

at the racetrack during the day, boosting retention. In other words, a re-think of supply-side issues in workforce planning away from skills or lack of interest/attractiveness in the work toward making links between the real needs of employers and employees. (Buchanan, et al, 2002)

d. Education efforts

Education providers can play an important role in supporting regional workforces to retrain or upskill during periods affecting demand for workers like drought. From late 2019 to early 2021 the Victorian State Government delivered the 'drought employment program' (DEP) which provided two to four days a week work and training in First Aid, Agriculture Chemical Users Permit (ACUP), Construction induction (Work safe White Card), and Asbestos identification to farmers and farm workers who were impacted by the drought (Victoria State Government, 2021). At the end of the program, 55% of participants had returned to the farm or agribusiness they were employed prior to the program, with the other 45% moving to other working arrangements within the region.

Some larger farming operations have developed internal education graduate programs to reskill and/or upskill their workforce, particularly in relevant technology-based skills as demonstrated in the livestock/dairy sector, which is used as both a recruitment and retention strategy (Wu et al., 2019). Structured mentorship programs for those in regional areas have been proposed to help build a culture around harvesting and picking seasons, acting as an education and training drawcard for transient workers to return to familiar regions as a local labour force (Wu et al., 2019).

e. Industry efforts at a regional level

The role of industry bodies in supporting workforce issues at a regional level was highlighted in the results of a Queensland study examining the 2012-19 drought on the vulnerability and resilience of rangeland communities in central West Queensland. The importance of government, community and philanthropic responses was highlighted (Phelps & Kelly, 2019) where the donation of Q-Fever vaccines by Longreach Rotary and Qld Health to agricultural workers coming into contact with livestock was found to decrease vulnerability to productivity losses, and generally increase workforce resilience.

Gaps in the literature & Opportunities for Further Research

Research specific to workforce shortages and retention issues during drought periods is severely lacking, particularly in the Australian context. The impact of this research gap is highlighted in a study by de Hoyos and Green (2011), that notes retention issues are inseparable from the local demographic, economic, and political context. A lack of data has also been noted regarding frontline agricultural workers job movements and aspirations, along with an understanding of the career pathways of those with no farm capital investment or succession trajectory (Nye, 2021). Further, the review has highlighted the importance of the internal dynamics of farm family members employment because of drought, and this is poorly understood in terms of the consequences for family members and the employed farm workforce in terms of jobs, careers, and retention.

How the ongoing digitization of farms effect the farm labour workforce is not well understood. This is an important area of examination, as this is a major source of change in other sectors. For instance, in the retail sector the rise of internet shopping has seen a shift in store retail positions to warehouse work, leading to increased worker fatigue and surveillance (Rotz et al., 2019). This calls for focussed research to further examine how ongoing digitization can support both food production as well as the agricultural labour-force. For the agricultural workforce in the context of shortages and retention, it is important to note how ongoing investment in pastoral industries that improve labour efficiencies has the potential to undermine regional resilience by continuing to reduce the need for on-farm employment (Phelps & Kelly, 2019).

There is also a lack of studies with an emphasis on the effects on the employed farm workforce outside the phenomena of job losses, such as in health and well-being and their decisions to stay or leave a region. Further, a focus on the farm workforce strategies of farmers, an important aspect of managing drought, has not been researched and consequently, farmers are not well supported to consider a range of strategies, and their potential effects, in their decision making. The implications of farm workforce change and the interrelationship with regional communities also requires further exploration.

There is a need to examine the different initiatives taken to support the farm workforce during drought in order to inform and equip stakeholders of the effectiveness of different approaches. This mode of continuous improvement can also help build capability in regions and amongst employers, industry, government, education, employment and community providers in working together to plan and act in workforce development.

Conclusion

Without sensitivity to the human and social costs of managing drought, support to retain a farm workforce is unlikely to bring sustained improvement and there will be continued lock-in to patterns of workforce loss and then attraction in better times. Surveys consistently reveal that people value the quality of their work highly, that is, who they share it with, and how satisfying they find it. If a job cannot readily be made satisfying, it is important that the pay and conditions at least enable people to flourish outside of work. Decent jobs embody at least one, and ideally both, of these aspects. Regions can foster a balance between clusters of high, intermediate and low-level competency work and look to jobs and skills through a network lens and not only through an individual employer or industry lens.

The complex and increasingly important relationship between drought, globalization, commodity process and rural reorganisation is thoroughly highlighted in the literature, however many policymakers who may perceive drought as something to be managed and then moved past, require more familiarisation with the long-term impacts and the needs to think innovatively to retain a regional workforce (Stehlik et al., 2000). While farmers can improve the jobs on offer and their capacity as employers, farm workforce retention requires a regional and collective approach. This is because farmers have incomplete knowledge of labour market institutions, and they often have unsatisfactory interactions with employment network providers. The role of local government in supporting workforce initiatives and health has been highlighted in the review and community events, support networks, and having strong connections to the community are all collective coping strategies that support and bolster individual resilience which extends also to farm employees.

Addressing farm workforce retention as a collective problem can bring benefits including:

- Greater impact from attraction, retention and development activities
- Greater co-investment by employment services that meet mutual needs
- Better informed employment services to farm needs
- Greater farm productivity
- A more attractive industry to potential entrants

Drawing on the expertise of workforce development specialists and building capacity to act collectively at a regional level to support retention is important. This will increase the relevance of funded programs by ensuring that the goals or outcomes are aligned directly to the needs of the sector. However, stakeholder commitment and participation in planning and implementation will be required.

It is important that alternative approaches to addressing farm retention are developed because if a sector does little to address the problem and if farm employers are also not willing to recommend a farm career to their own children, then promoting or advertising jobs and careers to attempt to address misperceptions of career opportunities will fail. Retaining a farm workforce is an important risk management strategy for individual farms and regional communities.

Recommendations

While not exhaustive, the following recommendations are provided as ideas for consideration by the Holbrook Landcare network and southern NSW drought hub.

1. The farm retention factors identified in the review can be developed into local resources to assist farmers in enhancing their management practices. A range of local case studies of farmer practices related to retention could be developed and promoted alongside local extension or training efforts.
2. Support farmers' workforce planning to include scenarios/visioning of different strategies (response options) for the employed, contract and family workforce and alternative strategies during drought, including for family members or in conjunction with other farmers.
3. Support farmers in developing targeted retention strategies for young people and middle managers, identified as vulnerable in many studies.
4. Promote exploration of collective approaches to share workforces or provide different experiences to new entrants and young people and explore partnerships outside the agricultural sector in drought times.
5. Examine the potential for trialling the successful initiatives to retain young people in regional areas identified in the review, including bringing stakeholders together from education, employment, local government, industry and employers to develop a project.
6. Consider forming a regional agricultural workforce planning and action committee to champion alternative approaches

References

Albrecht, S. L., Bakker, A. B., Gruman, J. A., Macey, W. H., & Saks, A. M. (2015). Employee engagement, human resource management practices and competitive advantage: An

- integrated approach. *Journal of organizational effectiveness: People and performance*, 2(1), 7-35.
- Alston, J. M., Norton, G. W., & Pardey, P. G. (1995). *Science under scarcity: Principles and practice for agricultural research evaluation and priority setting*. International Service for National Agricultural Research.
- Alston, M., & Kent, J. (2006). The impact of drought on secondary education access in Australia's rural and remote areas. *Centre for Rural Social Research (ILWS), Charles Sturt University, Wagga Wagga*.
- Atkinson, J., & Meager, N. (1994). Running to Stand Still: The Small Firm and the Labour Market, in: J. Atkinson and D. Storey (eds) *Employment, the Small Firm and the Labour Market*, Routledge, London.
- Azarias, J., Nettle, R., & J, W. (2020). *National Agricultural Workforce Strategy: Learning to excel*. N. A. L. A. Committee. agriculture.gov.au/ag-farm-food/agricultural-workforce
- Bahn, S. (2014). Migrant workers on temporary 457 visas working in Australia: implications for human resource management. *Asia Pacific Journal of Human Resources*, 52(1), 77-92.
- Bampasidou, M., Goldgaber, D., Gentimis, T., & Mandalika, A. (2024). Overcoming 'Digital Divides': Leveraging higher education to develop next generation digital agriculture professionals. *Computers and electronics in agriculture*, 224, 109181. <https://doi.org/https://doi.org/10.1016/j.compag.2024.109181>
- Bassett, K., Newsome, L., Sheridan, A., & Azeem, M. M. (2022). Characterizing the changing profile of employment in Australian agriculture. *Journal of Rural Studies*, 89, 316-327. <https://doi.org/https://doi.org/10.1016/j.jrurstud.2021.12.007>
- Bitsch, V., & Harsh, S. B. (2004). Labor risk attributes in the green industry: Business owners' and managers' perspectives. *Journal of Agricultural and Applied Economics*, 36(3), 731-745.
- Brenny, K., & Yelich Biniiecki, S. M. (2024). Supporting future roles of millennials in rural agriculture retail: The role of technology in continuing education solutions. *New Directions for Adult and Continuing Education*, 2024(181), 19-28.
- Burchart, R., & Rachunkowosci, O. Z. (2007). Prophylaxis and accidents in agriculture. *Biuletyn Naukowy. Uniwersytet Warminsko-Mazurski w Olsztynie (Poland)*(28).
- Chowdhary, N., & Sisodia, S. (2006). Employee retention in small woollen and hosiery manufacturing firms. *Small Enterprise Research*, 14(2), 46-58.
- Christiaensen, L., Rutledge, Z., & Taylor, J. E. (2021). Viewpoint: The future of work in agri-food. *Food Policy*, 99, 101963. <https://doi.org/https://doi.org/10.1016/j.foodpol.2020.101963>
- Cooke, A., & Crawford, C. (2023, November-December 2023). Clarity and communication key to keeping quality staff. *Groundcover*, (167). <https://groundcover.grdc.com.au/farm-business/business-management/clarity-and-communication-key-to-keeping-quality-staff>
- Cosby, A., McDonald, N., & Lovric, K. (2023). Designing a skills training pathway for the agricultural workforce from the employer perspective: skills micro-credentials from seasonal worker to supervisor. *The Journal of Agricultural Education and Extension*, 1-18. <https://doi.org/10.1080/1389224X.2023.2249435>
- Davey, A., Jakeman, G., & Sanchez, M. (2010). *Developing the Narrabri workforce*. https://www.pc.gov.au/data/assets/pdf_file/0003/125823/sub018-labour-mobility-attachment.pdf
- de Hoyos, M., & Green, A. (2011). Recruitment and retention issues in rural labour markets. *Journal of Rural Studies*, 27(2), 171-180. <https://doi.org/https://doi.org/10.1016/j.jrurstud.2010.12.003>
- Dedieu, B. (2009). Qualification of the adaptive capacities of livestock farming systems. *Revista brasileira de zootecnia*, 38, 397-404.
- Donca, G. (2018). Aspects of the maintenance workers' skill shortage in agriculture.
- Eastwood, C., Nettle, R., & Crawford, A. (2010). Aligning objective data with grazing management decision making. *Proceedings of the 4th Australasian Dairy Science Symposium*,

- Edkins, R. J., & Tipples, R. S. (2002). Dairying and employment in the Amuri: 1983 to 2002. *Labour, Employment and Work in New Zealand*.
- Edwards, B., Gray, M., & Hunter, B. (2015). The Impact of Drought on Mental Health in Rural and Regional Australia. *Social Indicators Research*, 121(1), 177-194.
<http://www.jstor.org/stable/24721393>
- Edwards, B., Gray, M., & Hunter, B. (2019). The social and economic impacts of drought. *Australian Journal of Social Issues*, 54(1), 22-31.
- Fennell, K. M., Kettler, L. J., Skaczkowski, G., & Turnbull, D. A. (2012). Farmers' stress and coping in a time of drought.
- Glass, R., Moore, A., Whitton, A., Leahy, T., & Trumper, E. (2022). *AMPC: 2019-1058 Retention Project*.
- GRDC. (2015). *A GUIDE TO FARM LABOUR - How to find and retain on-farm staff*.
https://grdc.com.au/data/assets/pdf_file/0029/59825/aguidetofarmlabour-pdf.pdf.pdf
- Guiney, R. (2012). Farming suicides during the Victorian drought: 2001–2007. *Australian Journal of Rural Health*, 20(1), 11-15.
- Humphreys, J. S., Jones, J. A., Jones, M. P., & Mara, P. R. (2002). Workforce retention in rural and remote Australia: determining the factors that influence length of practice. *Medical Journal of Australia*, 176(10), 472-476.
- Kuvaas, B., & Dysvik, A. (2010). Does best practice HRM only work for intrinsically motivated employees? *International Journal of Human Resource Management*, 21(13), 2339-2357, Article Pii 928505453. <https://doi.org/10.1080/09585192.2010.516589>
- Kyte, R. (2008). A different approach to staffing in the dairy industry. *South Island Dairy Event (SIDE)*.
<https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=c6730983136142a9493507b72600660ef3505076>
- Lester, L., Flatau, P., & Kyron, M. (2022). Understanding the social impacts of drought. *Perth: The University of Western Australia*.
- Liu, A. M., Chiu, W., & Fellows, R. (2007). Enhancing commitment through work empowerment. *Engineering, construction and architectural management*, 14(6), 568-580.
- Luthans, F., & Youssef, C. M. (2004). Human, social, and now positive psychological capital management: Investing in people for competitive advantage. *Organizational Dynamics*, 33(2). <https://doi.org/10.1016/j.orgdyn.2004.01.003>
- Madelrieux, S., & Dedieu, B. (2008). Qualification and assessment of work organisation in livestock farms. *animal*, 2(3), 435-446.
- Malanski, P. D., Dedieu, B., & Schiavi, S. (2021). Mapping the research domains on work in agriculture. A bibliometric review from Scopus database. *Journal of Rural Studies*, 81, 305-314.
- Marchand, L., Boekhorst, J., & McEwan, K. (2008). Human resource needs assessment for the Pork Industry. *Ontario Pork Industry Council and University of Guelph, Ridgeway Campus*.
- MLA. (2008). *Attracting and retaining staff in the southern beef, sheepmeat and pastoral wool industries* (B.NBP.0370). M. L. Australia.
- Nettle, R. (2015). More than workforce shortages: How farm human resources management strategies will shape Australia's agricultural future. *Farm Policy Journal*, 12(2), 17-27.
- Nettle, R., Kuehne, G., Lee, K., & Armstrong, D. (2018). A new framework to analyse workforce contribution to Australian cotton farm adaptability. *Agronomy for sustainable development*, 38, 1-19.
- Nettle, R., Semmelroth, A., Ford, R., Zheng, C., & Ullah, A. (2011). *Retention of people in dairyfarming – what is working and why?*
- Nye, C. (2021). The farm worker and the 'drift to the land'. Roots, routes, opportunities and constraints to career pathways in farming. *Journal of Rural Studies*, 83, 201-214.
<https://doi.org/https://doi.org/10.1016/j.jrurstud.2020.11.004>

- O'Brien, L. V., Berry, H. L., Coleman, C., & Hanigan, I. C. (2014). Drought as a mental health exposure. *Environmental Research*, 131, 181-187.
<https://doi.org/https://doi.org/10.1016/j.envres.2014.03.014>
- Our Place. (2024). *Our Place: Education is the Key to the Door*. <https://ourplace.org.au/our-approach/>
- Phelps, D., & Kelly, D. (2019). Overcoming drought vulnerability in rangeland communities: lessons from central-western Queensland. *The Rangeland Journal*, 41(3), 251-270.
<https://doi.org/https://doi.org/10.1071/RJ18052>
- Rappaport, J. (2003). US urban decline and growth, 1950 to 2000. *Economic Review-Federal Reserve Bank of Kansas City*, 88(3), 15-44.
- Rotz, S., Gravely, E., Mosby, I., Duncan, E., Finnis, E., Horgan, M., LeBlanc, J., Martin, R., Neufeld, H. T., Nixon, A., Pant, L., Shalla, V., & Fraser, E. (2019). Automated pastures and the digital divide: How agricultural technologies are shaping labour and rural communities. *Journal of Rural Studies*, 68, 112-122. <https://doi.org/https://doi.org/10.1016/j.jrurstud.2019.01.023>
- Salminen, S. (2004). Have young workers more injuries than older ones? An international literature review. *Journal of safety research*, 35(5), 513-521.
- Santhanam-Martin, M., & Cowan, L. (2017). Understanding Skilled Workforce Issues in the Goulburn Valley Fruit Industry. *Government. Melbourne: Department of Economic Development, Jobs, Transport and Resources*.
- Santhanam-Martin, M., & Cowan, L. (2018). Making" middle managers": workforce development for agricultural industries in transition.
- Santhanam-Martin, M., & Nettle, R. (2014). Governing Australia's dairy farm workforce: a new terrain for negotiating rural community sustainability. *The International Journal of Sociology of Agriculture and Food*, 21(1), 31-50.
- Schoo, A. M., Stagnitti, K. E., Mercer, C., & Dunbar, J. (2005). A conceptual model for recruitment and retention: allied health workforce enhancement in Western Victoria, Australia. *Rural and remote health*, 5(4), 1-18.
- Skiba, R. (2020). Mitigating the Risk of Fatality Through Increased Uptake in Vocational Education and Training in Australian High Risk Occupations. *International Education and Research Journal*.
- Sofa, F. (2007). An exploration of staff perceptions of learning organisation characteristics within Australian clubs. 21st Australian and New Zealand Academy of Management Conference,
- Sraïri, M. T., & Ghabiyel, Y. (2017). Coping with the work constraints in crop-livestock farming systems. *Annals of Agricultural Sciences*, 62(1), 23-32.
- Stehlik, D., Lawrence, G., & Gray, I. (2000). Gender and drought: Experiences of Australian women in the drought of the 1990s. *Disasters*, 24(1), 38-53.
- Stehlik, D., Witcomb, A., Lawrence, G., & Gray, I. (1996). Towards a social construction of drought: A preliminary analysis.
- Tanova, C. (2003). Firm size and recruitment: staffing practices in small and large organisations in north Cyprus. *Career Development International*, 8(2), 107-114.
- Victoria State Government. (2021). *Goulburn Murray Irrigation District Drought Employment Program 2020*. Goulburn: Goulburn Broken Catchment Management Authority Retrieved from https://www.gbcma.vic.gov.au/downloads/Publications/GBCMA_DEP_FINAL.pdf
- Villarejo, D. (2004). Jobless After a Man-made Drought. *Fresno County Economic Opportunities Commission and the Fresno County Workforce Investment Board*.
- Wilkinson, R., Santhanam-Martin, M., & Cowan, L. (2019). Career Journeys and Job Experiences in the Goulburn-Murray Fruit Industry.
- Wilson, J., & Tipples, R. S. (2008). Employment trends in dairy farming in New Zealand, 1991-2006.
- Wu, W., Dawson, D., Fleming-Muñoz, D., Schleiger, E., & Horton, J. (2019). The future of Australia's agricultural workforce. Retrieved from Canberra, Australia: <https://www.aff.org.au/blog/future-australias-agricultural-workforce-report>.

Appendices

Appendix 1 Example of a regional dairy sector retention plan

Murray Dairy Region

A plan for improved retention of people in dairying in the region (2011-2014)

People involved in the development of the plan:

MurrayDairy

- Sarah Parker, Jeff Odgers

The Regional education and extension committee of Murray Dairy:

- Ruth Kydd,
- Rob Schloss,
- Ian Goodin,
- Brett Davidson,
- James Dillon,
- Stephen Henty
- Durham Prewett
- Tony Flett
- Neil Aird

Proposed Targets:

- 1. Increase the number of best-practice workplaces in the region by 100 a year**
- 2. Increase the number of farm businesses confident to be able to transition their business ownership to the next phase**
- 3. Career pathways are better known/more visible in the region for employees**

Activity/project	Plan	Timeline, People, Resources
1. Industry leadership for best-practice workplaces in region (and nationally?)	Develop a “regional retention system” in the MurrayDairy region with a focus on <ul style="list-style-type: none"> • Raising expectations and promote a “new normal” for dairying: where attention is paid to workplace culture • Developing more employers into best-practice employment to underpin the system (e.g. work via Dairy Business Networks/People GPS courses/ focus farms as a key source for developing more best practice employers) • Coordinating career pathways of talented employees into senior 	<ul style="list-style-type: none"> • Over next 3 years • Priority for REEC/MurrayDairy (part of achieving REEC people strategy goals)? • Seek funding/partnering/support for the network and link into other regions/national efforts: e.g. People in Dairy

	<p>management and asset ownership.</p> <ul style="list-style-type: none"> • Based on principles of continuous improvement for farm businesses; improving industry reputation; and seeking efficiencies from the training system - rather than competing for staff • Engage service providers, career groups, employment services, etc in the network. • An entry point for employment services and agencies and career groups. • Use this network to build up a register of positions/farms where employees can progress 	
2. Use all current initiatives to better profile and promote better workplaces, careers and business ownership options	<p>e.g. Bring new entrants, high potential trainees etc to focus farms/DBN where better employment practices and opportunities are profiled.</p> <p>Have a workplace culture focus in activities (feedbase, fertility, mastitis)</p>	<ul style="list-style-type: none"> • REEC nominees to meet with leaders/coordinators of the activities to consider ways to align retention and career options in current initiatives.
3. Develop a project to “pilot” business ownership models on farms (farmers) seeking staged exits and willing to explore different models.	<ul style="list-style-type: none"> • Identify farmers (e.g. 3 or 4) wanting to explore business exit/ownership options (e.g. Steve Henty) • Support matching of potential business managers/owners to the farms. • Provide professional support (e.g. legal/advisory) and evaluate strengths and weaknesses of different options for new business pathways in industry • This exercise is building service sector capacity and career path options as well – not just a farm-owner benefit. 	<ul style="list-style-type: none"> • Scope project (need co-ordinator and expertise) • Build off cluster-farm work and Alpine Valleys work around alternative business ownership models. • Gain support for trial (funding, farms, interested entrants) • This would have broader support in industry (perhaps should be seen as a pilot for Australia – broader funding for it)
4. Utilise TPiD People GPS courses as a platform for changing	<p>Target of 200 farmers completing People GPS in the region and these farms are tracked/supported so that:</p>	<ul style="list-style-type: none"> • REEC to work with People in Dairy to generate demand

<p>culture in employment</p>	<ul style="list-style-type: none"> • More farm employers in the region have an opportunity to think about and plan around people in their farm business • Region has the opportunity to identify and build more best-practice farms for attraction and training efforts to be focussed on. • These farms may want to be part of the regional retention strategy (See point 1) 	<ul style="list-style-type: none"> • Resources: Funds to resource post GPS support? See mentoring below
<p>5. Build off DairySage mentoring to establish farmer-to-farmer mentoring on <i>how to make changes</i> to people and business aspects of the farm</p>	<ul style="list-style-type: none"> • Develop a “People in the farm business – mentoring program” • This initiative would build off farmers who have indicated they do want to improve in this area (i.e. done a People GPS course) – but need some help and support from fellow farmers in how to change and what to change. • Need to establish a small group of potential mentors in this area • Would be designed to not replicate DBN/FF or consultants, etc – but provide one-on-one help to <i>early stages of change in a business to a people –focussed approach.</i> • Set up mentoring scheme for farmers post People GPS? 	<p>For small working group to see if this is a viable/workable option.</p> <p>Meet with TPiD and DairySage mentoring project to discuss possibilities and funding options</p> <p>Date: plan together by Feb 2012</p> <p>Resources: Could be another option for Gardiner foundation proposal – to pilot/trial mentoring in this context?</p>
<p>6. Track training graduates in terms of – staying in region and developing in careers</p>	<ul style="list-style-type: none"> • Develop concept of “Dairy career TRACKA”: a way that industry can measure and evaluate retention of qualified staff in dairy and identify issues or problems with progression in real-time and of a good scale (meaningful numbers). • Focus on formal qualification level to begin with (people completing formal qualifications as dairy trainees, apprentices, Cert 3 and 4 and 5). • Move to short-course tracking 	<ul style="list-style-type: none"> • Develop a proposal/plan to do this (considering ease/difficulty, timeliness, use, resourcing, etc) • Work with NCDEA and other providers to develop system • Seek funds e.g. Agri-food skills? Skills Victoria • Date: • Who:

<p>7. Explore potential for a Dairy employment awards – like WestVic – to bolster regional retention system (point 1):</p>	<ul style="list-style-type: none"> • Scope a business case for developing a dairy employment award scheme for the region. 	<ul style="list-style-type: none"> • REEC sub-committee put together draft case • Meet with WestVic to go over idea • Develop a recommendation for MD board. • Date: • Resources: if business case is there – seek sponsorship and funding and link to idea of regional retention system.
<p>8. Develop an “employee development” campaign in the region.</p>	<ul style="list-style-type: none"> • A campaign to raise awareness amongst employers of the importance of employee development in farm business success and retention and provide a greater number of employees with an opportunity to network amongst peers, develop their knowledge and skills and gain awareness of industry issues and training opportunities. • E.g. A day where the employer stays home – and the employees invited to come to a special day for them.... • Profiles/media on the value of employee development and benchmarks – e.g. 3-4 opportunities per employee per year (paid training off farm)... • Involves all service sector • Promoted by all of industry in region (factory, farmers, ncdea, community groups, etc). 	<ul style="list-style-type: none"> • Develop concept with REEC.(feasibility, interest, how to align it with broader goals of retention, etc).
<p>9. Develop resources to put the spotlight on retention (examples of farms where employees are retained, what</p>	<p>Retention information available to use:</p> <ul style="list-style-type: none"> • Adapt research case studies of different employer practices • Short, punchy “Retention material” that can be used by any group in 	<ul style="list-style-type: none"> • For any future events in the region to have a people and business focus • Material used by a broad range of service providers

<p>employers can do and the benefits of this, etc)</p>	<p>any situation to include a retention focus</p> <ul style="list-style-type: none"> • Develop tool so employers can measure retention • All training courses that have farm employees and employers – have a “retention audit/expectations” checklist 	<ul style="list-style-type: none"> • Date: For use in next 3 years • A small working group to adapt material – work with The People in Dairy? • Resources: some extra help/\$ provided to working group (People in Dairy?) • Use in People GPS courses?
<p>10. Continue to increase understanding/ a. research/ b. knowledge about retention:</p>	<p>Develop indicators the region can use to track progress in retention and career pathways.</p> <ul style="list-style-type: none"> • Measuring retention in the region: reasons for turnover, pathways of people, which groups are turning over (e.g. extent of trainee turnover vs non-trained, etc) • Have workforce planning and action reporting (including tracking entry, retention, exit and drop-out) as a formal task of the REEC/board/careers. 	<p>Develop a project proposal (Gardiner foundation?) for:</p> <ul style="list-style-type: none"> • Ways to cost effectively track NCDEA graduates, exits from farming, industry, career pathways possible, etc. • Develop reporting structure for progress in workforce planning and action • Dates: by Feb 2012 • Resources: put project proposal together. RN happy to work with regions to do this.