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What difference does labour choice make to farm productivity and profitability in the Australian horticulture industry?

A comparison between seasonal workers and working holiday makers

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Foreword

Labour shortages can challenge the profitability, economic contribution, and sustainability of agriculture industries. The Australian Seasonal Worker Programme (SWP) was set up in 2012 in order to contribute to the supply of low-skilled labour to Australian horticulture industries, where employers can't meet their needs with local labour, whilst also advancing the economic development of Pacific Island countries and Timor-Leste. While the SWP faces competition from other labour sources to meet labour demand in the horticulture industry, arrivals under the SWP have been increasing steadily since the program started. The World Bank commissioned ABARES to compare seasonal workers with working holiday makers in terms of their impacts on farm productivity and profitability. A previous small-scale ABARES study carried out in 2013 suggested that the productivity of seasonal workers was higher than working holiday makers. This report extends the 2013 study to include analysis of implications for profitability shedding light on the non-wage factors that influence growers' decision-making about labour choices. These factors may affect growers' decisions to join the SWP as a direct employer, or to engage seasonal workers through other arrangements, such as labour hire companies or contractors.

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The productivity and cost of labour have considerable impacts on farm profitability, especially in labour intensive industries such as the horticulture industry. The analysis in this study compared the productivity and implications for farm profitability of workers employed under the Australian Government Seasonal Worker Programme (SWP) (referred to as 'seasonal workers' in this report) and working holiday makers. We investigated other factors that could influence growers' decisions about the sources of labour they employ. Data was obtained from a small sample of growers who are approved employers under the SWP. Using a mixed-method approach we used a grower survey, growers' records of weekly employee payments (referred to as wages in this report) and hours worked, and semi-structured interviews with growers and labour hire approved employers.

Seasonal workers contribute to productivity and profitability gains

The productivity of seasonal workers was, on average, 20 per cent higher than that of working holiday makers for the farm businesses in this study, based on fruit picking tasks. This estimate was derived from data for 150 seasonal workers and 109 working holiday makers over three years. Seasonal workers who returned to the farm were on average 15 per cent more productive than new seasonal workers. This is mainly because returned workers required minimal induction and training in subsequent seasons as they had previously acquired skills and farm knowledge. This may also reflect potential 'selection effects', such as a stronger incentive to be re-employed, or grower preferences to re-employ them because of their higher productivity. Selection effects were not assessed in this study.

Non-wage labour costs were higher per hour and per worker for seasonal workers, relative to working holiday makers. However, these costs were estimated to be only a small part of total farm cost so is likely to have a limited impact on farm profitability. The non-wage labour cost related to seasonal workers was 2.3 times higher per hour worked than for working holiday makers. This estimate includes costs associated with the recruitment process, some transport, training and administration, which could not be recouped from workers' wages. Much of the difference can be attributed to a number of requirements of the SWP designed to protect seasonal workers as a vulnerable workforce—that do not apply to the employment of working holiday makers.

The profitability benefit from hiring seasonal workers cannot be determined without further detailed information about the production process and cost structure of the farms that participated in this study. However, the direct monetary benefits of hiring seasonal workers is likely to at least cover the higher non-wage labour costs and hence deliver a profitability gain; otherwise growers would be unlikely to opt for seasonal workers when working holiday makers are a viable alternative.

Growers consider other factors in labour decisions

In addition to the direct monetary benefits associated with different labour sources, a key consideration for many growers was the reliability of labour during the critical period of harvest. A priority for growers was for the harvesting process to run smoothly with minimal disruption. Growers in general said they viewed seasonal workers as a reliable workforce as they have a predictable, contracted employment term and they are driven by the desire to earn a good income to take back to their home country. Working holiday makers were generally seen by growers as less reliable, typically working for shorter periods (on average, five weeks per farm, compared to 22 weeks for seasonal workers), and often worked for shorter hours per day.

A high level of staff turnover was seen as an undesirable risk, particularly during the critical period of harvest.

Benefits of working holiday makers included easier access to these workers at short notice. It was common for growers to employ seasonal workers and working holiday makers in a complementary fashion where seasonal workers formed the core of the workforce and working holiday makers were employed casually as needed, particularly during peak labour periods.

Many growers reported that they gained greater control over the selection of their labour supply by becoming an approved employer under the SWP and could save costs. However, growers also reported that the processes to become an approved employer and recruit seasonal workers were challenging. Several pointed to too much 'red tape', and visa changes that had caused disruptions and uncertainty about planned worker arrivals. Some regarded the recruitment process and other requirements a barrier to more growers becoming approved employers, and expressed the need for clearer and simpler processes. The need to provide accommodation was a key factor that some growers identified as limiting them from employing more seasonal workers.

Several growers engaged an intermediary who assisted them employ seasonal workers, typically a person from the same home country or a leader within the seasonal worker team. This helped overcome language and cultural differences, and facilitated worker management. These issues could otherwise have reduced worker productivity and farm profitability. When employing a larger number of seasonal workers, additional staff were needed to take charge of worker management and pastoral care, adding to farm costs. Seasonal workers from the same country tended to have good teamwork abilities when working on the same farm, which is likely to increase their productivity.

Implications and future research

This study finds the SWP offers an opportunity for growers to increase their profitability, and suggests the relatively higher productivity and other benefits of accessing seasonal workers warrant further promotion of the SWP in the Australian horticulture industry—for employers who might otherwise find it challenging to meet their seasonal labour demands. The extent to which growers could benefit may depend on their farms production processes and cost structure, as well as how well they are able to handle potential challenges associated with the employment of seasonal workers.

The study also points to scope for further research including further analysis of worker productivity, costs and outcomes for growers under different labour supply models such as labour hire and contractors (relating to both seasonal workers and working holiday makers).

The findings suggest that further streamlining the recruitment process and other SWP requirements for approved employers could increase the attractiveness of participating in the program. It is important that these requirements are designed so that businesses can operate in the program efficiently and cost effectively, in turn contributing positively to farm profitability—while also maintaining safeguards for a vulnerable workforce.

1 Introduction

This study compares the productivity and costs associated with different groups of workers employed on Australian horticulture farms. It compares seasonal workers—that is, workers under the Australian Government's Seasonal Worker Programme (SWP)—with working holiday makers hired by a sample of horticulture farms. The former mainly consists of low-skilled labour sourced from nine Pacific island countries and Timor-Leste, while the latter are backpackers visiting from many overseas countries.

Demand for labour within the Australian horticulture industry has a strong seasonal pattern. Many horticulture growers are located in regional areas and depend on workers being available at peak times during the harvest season to undertake picking, packing and other farm activities. This labour demand has not traditionally been satisfied by the domestic labour supply.

A previous study by ABARES (Leith and Davidson 2013) suggested that seasonal workers under the SWP—particularly those who returned for a second or subsequent season—were more productive than working holiday makers. However, the authors also pointed out that the profitability impact of each labour source could not be determined because the study did not take into account all labour costs. In particular, we did not consider non-wage labour costs associated with employing the two types of workers. Non-wage labour costs include expenses incurred by the employers and opportunity costs (such as time commitments) associated with compliance and reporting on relevant regulations. Other non-wage labour issues include worker reliability and the increased need of staff training when staff turnover is high.

1.1 Research objectives

The primary aim of this study is to contribute to the understanding of the productivity of seasonal workers compared to working holiday makers. It also assesses the contribution of workers to farm profitability by considering non-wage labour cost. Fruit picking was selected for the comparison, as a clear way to compare workers doing the same task. Through interviews with approved employers, the study provides insights about the advantages and disadvantages that growers experience related to the two labour sources investigated.

Compiling information on the productivity of different sources of labour, potential implications on farm profitability and the experiences of employers is important because it can assist employers' planning and decision making about their future workforce and investments. For instance it may be useful for growers, either aware or unaware of current government initiatives, if they are considering participating in programs such as the SWP.

The World Bank commissioned ABARES to undertake this study, as part of its labour mobility work program in partnership with the Australian Government. It is intended that the results be communicated to relevant Australian Government departments, industry and other interested parties. In particular, the findings may assist the Department of Jobs and Small Business (formerly Department of Employment), Department of Foreign Affairs and Trade, Department of Home Affairs (formerly the Department of Immigration and Border Protection) and the Department of Agriculture and Water Resources, which share responsibility for managing aspects of the SWP. The findings may also be of interest to other countries that engage with the World Bank on the issue of labour mobility.

2 Background

The Australian horticulture industry comprises growers producing a diverse range of products across the fruit, vegetables, nuts, flowers, turf and nursery sectors. The industry's labour demand is highly seasonal. A significant number of horticulture farms rely on the availability of casual labour to undertake seed planting, picking and packing of produce, as well as thinning and pruning activities. Having the capacity to tap into reliable sources of temporary workers is imperative for these farms to maintain production, and it has significant implications for their productivity and profitability.

The Australian Government has introduced a number of measures to assist horticulture growers to access casual labour:

- Seasonal workers under the SWP. Under this program employers can employ workers from nine Pacific island countries and Timor-Leste for up to six or nine months (depending on the country), supported by the subclass 403 Temporary Work (International Relations) visa. Until 19 November 2016 this was the Special Programme visa (subclass 416).
- Working holiday makers based on the Working Holiday (subclass 417) and the Work and Holiday (subclass 462) visas. These visas allow working holiday makers to stay in Australia for up to twelve months and undertake short-term work.
- The Seasonal Worker Incentives Trial, a newly commenced initiative aimed at encouraging unemployed Australians to participate in seasonal horticultural work (since July 2017).

Since 2012 and the 1970s respectively, the Seasonal Worker Programme and Working Holiday visa initiatives have made it easier for Australian horticulture growers to access overseas labour to supplement local sources. The SWP has two primary objectives: to assist in increasing the supply of low-skilled labour in Australia; and to contribute to the economic development of Pacific Island countries and Timor-Leste. The Working Holiday Maker visa program was introduced to strengthen ties and cultural exchange between Australia and a range of partner countries and over the years it has become a core source of on-farm labour.

As the success of these programs depends on community, industry and government support, there is a need to understand how well they have met intended policy objectives and gauge their economic and social impacts. However, only a handful of studies has examined the seasonal labour market within the horticulture industry, and the evidence-base supporting policymakers has been thin and largely anecdotal. Even less understood is the relative productivity of the different groups of seasonal workers (specifically those under the SWP and working holiday makers), and how these productivity differences may impact on farm profits.

2.1 Seasonal Worker Programme

Since 1 July 2012, the SWP has provided eligible citizens from nine Pacific island countries and Timor-Leste with the opportunity to undertake seasonal work in Australia. The SWP has enabled horticulture businesses to organise the seasonal workers they need in advance of the season. The Department of Jobs and Small Business has lead responsibility for implementing the SWP, with considerable input from the Department of Home Affairs, the Department of Foreign Affairs and Trade, and the Department of Agriculture and Water Resources.

Under the SWP there are three categories of participating employers in the horticulture industry. These are growers, labour hire companies and contractor companies (see Box 1). To

access seasonal workers on their property under the SWP, horticulture growers must either become an approved employer, or enter into arrangements with labour hire or contractor companies who are approved employers.

Box 1 Categories of Approved Employers

Growers

- These are horticulture growers who directly employ seasonal workers to work in their farm business.

- The grower is directly responsible for seasonal workers' pay and conditions and the day-to-day management of workers.

Labour hire companies

- These are horticulture labour providers that negotiate with growers for the provision of labour and enter into agreements with them specifying the number of workers to be provided, the type of work undertaken, and on-hire rates. The grower/business pays the labour hire company a fee for providing workers to work for them, 'hosts' the seasonal workers on their property and provide them with day-to-day direction.

- The labour hire company, as the employer, is responsible for ensuring seasonal workers receive their minimum employment entitlements.

Contractors

- These are horticulture service providers that negotiate with growers for the provision of a service and enter into agreements with growers specifying the work to be undertaken and a piece or paddock rate for the work. The agreement is not likely to specify the number or type of workers the contractor will use to provide the service.

- The grower/business pays the contractor a fee for the service. As the direct employer of seasonal workers, the contractor is responsible for the seasonal workers' pay and conditions and they provide day-to-day direction to the workers.

Source: Department of Employment 2014.

There are administrative costs to businesses that participate in the SWP. Growers, labour hire companies and labour contractors interested in becoming approved employers are required to complete applications to the Department of Jobs and Small Business and to the Department of Home Affairs. Approved employers are obliged to keep records, and provide relevant information to the Department of Home Affairs as needed. Approved employers are held accountable, financially and administratively, in case of breaches of agreed conditions.

In addition to requirements that apply to all Australian employers, specific requirements that apply to approved employers in the SWP include the need to:

- Test the local labour market, by making efforts to recruit local workers before seeking access to seasonal workers.
- Comply with visa-sponsor obligations associated with employing overseas seasonal workers.
- Ensure that seasonal workers under the program have appropriate accommodation.
- Organise flights and transport for workers. International and domestic travel must be paid for by employers, although transport costs over $500 (and all accommodation costs) can be recouped by employers through deductions to seasonal workers pay. Transport is also needed between the place of accommodation and the workplace.
- Ensure workers have health insurance that meets their visa requirements and assist workers in accessing health care as needed.

- Ensure seasonal workers have access to a minimum average of 30 hours of work per week for the duration of their stay, although in some weeks seasonal workers may work more or less hours due to factors such as the climate and status of the crop.
- Regularly monitor workers progress, placement and wellbeing.
- Provide pastoral care for workers, including opportunities for recreation and religious observance, access to a 24 hour contact number, and assisting workers to access services in the local community.

In 2015–16, there were 69 approved employers across Australia, with 74 per cent of the seasonal workers recruited by approved employers operating under a labour hire or contractor business model (Smith 2016). Around half of these approved employers were growers. The uptake of the SWP has increased from 1,473 visas granted in 2012-13 to 4,490 in 2015–16. The Kingdom of Tonga is the largest participant in the SWP, accounting for 58 per cent of the total seasonal worker population in 2015–16 (Table 1).

Table 1 Participants in the Seasonal Worker Programme by year and country

Country	2012–13	2013–14	2014–15	2015–16
Fiji	0	0	<5	160
Kiribati*	34	14	11	20
Nauru*	10	0	0	17
Papua New Guinea	26	26	35	42
Samoa	22	162	185	140
Solomon Islands	42	9	21	61
Timor-Leste	21	74	168	224
Kingdom of Tonga	1,199	1,497	2,179	2,624
Tuvalu*	0	20	7	<5
Vanuatu	119	212	567	1,198
Total	**1,473**	**2,014**	**3,177**	**4,490**

Note: *Workers from these countries can be employed for up to nine months (others can be employed for up to six months)
Source: Department of Home Affairs.

In its *White Paper on Developing Northern Australia* released in June 2015, the Australian Government introduced measures to expand and streamline the SWP to enable it to be more demand-driven by:

- removing the cap on the number of workers participating in the program
- expanding it to the broader agriculture industry and to include the accommodation sector as a permanent part of the program
- inviting the northern Australian tourism industry to apply to join the program on a trial basis
- removing the minimum stay requirement of 14 weeks
- simplifying the cost sharing arrangements to a single requirement that obliges employers to contribute $500 to each seasonal worker's airfares.

The changes may potentially provide an opportunity for Australian horticulture growers to employ more workers from the Pacific Island countries and Timor-Leste.

2.2 Working Holiday Maker visa programme

The first Working Holiday Maker visa program was introduced in 1975. It allows eligible young adults (aged 18-30) to engage in short-term work and study during their 12 month stay in Australia.

The program now consists of the Working Holiday (subclass 417) visa, which accounts for the bulk of working holiday maker visas (around 197 000 in 2015–16), and the Work and Holiday (subclass 462) visa (DIBP 2016). The main differences between the visas relate to caps placed on the number of visas granted and some eligibility requirements (DIBP 2016). The Work and Holiday (subclass 462) visa, which accounts for around 9 per cent of the two visa types, was introduced in November 2005 with conditions modified in 2006 and 2008. These visas involve no restrictions on the regions where working holiday makers are able to work in Australia. In 2015–16, the United Kingdom, Germany, Taiwan, South Korea and France were the top five countries for Working Holiday visa grants (DIBP 2016).

Subclass 417 visa holders are eligible for a second visa, after undertaking 88 days of work in the agriculture, mining or construction industries in designated areas in regional Australia. The agriculture industry has been the primary beneficiary of the second Working Holiday visa as 92 per cent of these visas granted in 2014–15 have acquired eligibility through agricultural work (Commonwealth of Australia 2016).

The 2015 White Paper on Developing Northern Australia also included announcements to expand the Working Holiday Maker visa programme (Commonwealth of Australia, 2015). The ability to obtain a second visa was extended to subclass 462 visa holders working in designated, high demand areas in northern Australia.

For the horticulture industry, having the opportunity to tap into the Working Holiday Maker visa programs as an alternative labour source has offered growers flexibility in their workforce planning. In a business survey of horticulture farms in 2011, Hay and Howes (2012) found that 73 per cent of growers employed mainly working holiday makers, most of whom were likely to be participants of the working holiday maker program. According to this study, working holiday makers helped fill a significant gap in the demand for seasonal labour and are an effective alternative to the labour supply from SWP. In 2014–15, there were about 40,000 working holiday makers employed in the horticulture industry (Hay and Howes 2012). The number of second Working Holiday visa grants increased from 2,692 in 2005-06 to 36,264 in 2015–16 (DIBP, 2016).

However, a number of factors limit the benefits some growers can gain from employing working holiday makers. Anecdotal evidence from horticulture farms suggests that working holiday makers are associated with high turnover, leading to recurring administrative and training costs that adversely affect farm productivity and profitability. Visa requirements generally prohibit working holiday makers remaining with one employer for more than six months (DIBP 2016), although there are exceptions for working in northern Australia, or in other areas provided that the second six months is in a different region. Based on the number of employees in 2011, around 23 per cent of horticulture industry activities are outside the areas designated as eligible areas classed as ‘regional Australia’ (ABS 2011). These include peri-urban areas of greater Sydney, greater Melbourne, greater Brisbane, the Gold Coast and Perth. Farms in these areas do not have access to working holiday makers who are working to obtain their second Working Holiday visa.

3 Concepts and methods

For this study we aimed to estimate the productivity of seasonal workers and working holiday makers on Australian horticulture farms and draw implications about farm profitability.

The target population of our analysis was approved employer growers. Some labour hire companies and contractors that are SWP approved employers were interviewed to learn from their experiences. However, labour engaged through these employers was not included in the productivity analysis because their business is primarily about provision of employment services rather than production of horticultural products.

3.1 The research approach

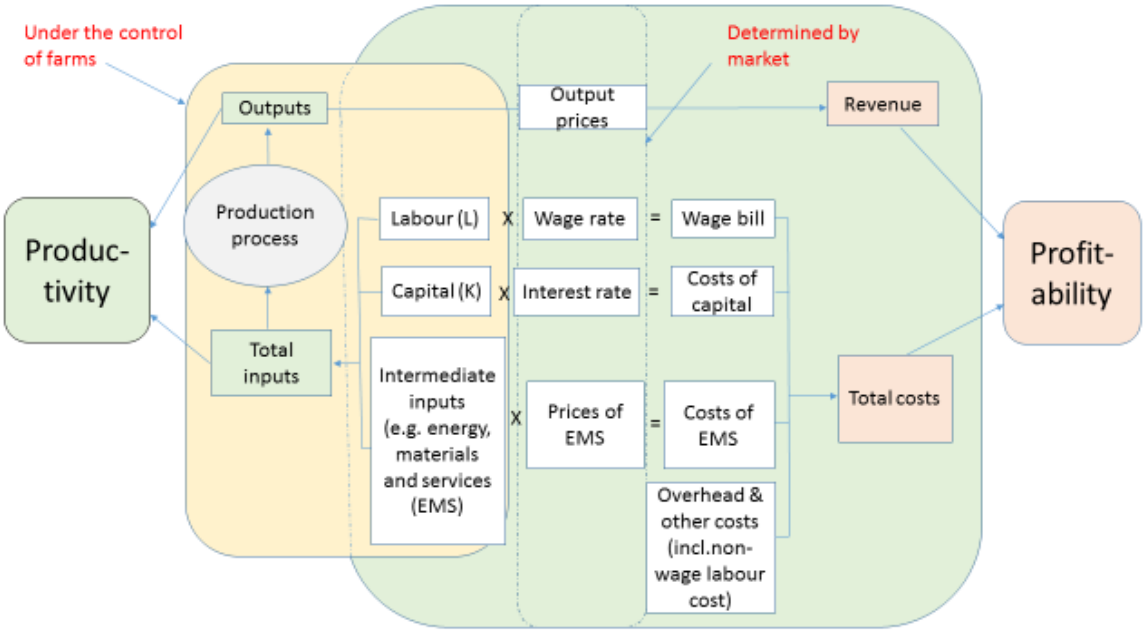
3.1.1 Conceptual framework of productivity and profitability

Figure 1 shows the conceptual framework underpinning the analysis that will be presented later in this paper. This framework illustrates that growers use labour (L), capital (K) and other inputs (such as energy, materials and purchased services (EMS)) to produce outputs. In this study, labour productivity was used for comparing seasonal workers and working holiday makers. Labour productivity is a measure of the ratio of output produced and labour inputs used. Increases in farm productivity occur when growth in output exceeds growth in labour input. In the horticulture industry, labour productivity of a farm is determined by many business decisions in relation to the employment of labour, capital and other inputs, choice of technology, enterprise mix, and management of risks arising from seasonal conditions and changes in market conditions.

Growers earn revenue from supplying farm outputs to the market and incur costs for their use of labour and other inputs. Revenue is determined by the quantity of total outputs sold and the prices growers received. Similarly, total costs are determined by the total inputs used and the prices growers paid. Profitability is defined as the ratio of total revenue to total costs (O'Donnell 2010). Hence, while productivity reflects the efficiency with which growers use inputs to produce outputs (the rectangular yellow box on the left side of Figure 1), farm profitability is determined by productivity as well as prices of outputs and inputs.

Growers have incentives to increase farm profitability, however, they have limited capability to influence the prices they receive and pay. Therefore, in this study, prices of both outputs and inputs were assumed to be externally determined and beyond the control of individual growers. With this assumption, growers' ability to increase profitability is through improving farm productivity.

Figure 1 Concepts and measurement of productivity and profitability



3.1.2 How labour productivity was estimated and compared

In this study, labour productivity is defined as the quantity of output per hour worked. The estimates of output and working hours of seasonal workers and working holiday makers were derived from data collected through a survey of approved employer growers. The data contains the total wages, hours worked and output for individual seasonal workers and working holiday makers. Although the workers were paid based on piece rates, hourly earnings can be derived to calculate labour productivity (*output per hour worked measured in monetary terms*). Aggregate productivity of seasonal workers and working holiday makers was derived by averaging across individuals within each group for each year. This approach was also used in a previous ABARES study by Leith and Davidson (2013).

There are several limitations to this approach:

- In this study, productivity was measured based on fruit picking tasks that were paid based on piece rates. Fruit picking may not be the only activity undertaken by workers. Growers often allocate seasonal workers and working holiday makers to different and complementary tasks based on their experience and skill. It is not known if the same productivity ratios would apply across all tasks.

- Our estimation of productivity and profitability does not include costs and losses associated with labour shortages. Anecdotal evidence suggests that horticulture growers sometimes incur significant losses as a result of not being able to access workers during the harvest season (see for example ABC (2016)).

3.1.3 How the impacts on profitability were analysed

In this study, profitability is measured as the ratio of revenue to total costs (Figure 1). Two measurement issues are worth noting. First, productivity and profitability were defined at different levels. Labour productivity was measured as the ratio of output and input for *individual workers.* Profitability was defined at the farm level, because profitability only makes sense for a

business. In this study, it is assumed that labour productivity of a farm is determined by the average productivity of all individual workers.

Second, as prices of outputs and inputs are not affected by the choice between the two types of workers, non-wage labour costs (Box 2) are considered the main contributor to the difference in a farm's total costs.

Box 2 Definition of non-wage labour cost components

Recruiting and establishing workers

- Advertising (including labour market testing where applicable), recruitment and selection of workers, including interviews
- Communicating with partner countries (where applicable), but not including costs of any overseas visits as part of sourcing seasonal labour
- Setting up superannuation accounts / registering foreign workers
- Other costs associated with recruiting and establishing workers (for example checking visa status)

Transport for workers

- Travel costs to get workers to Australia and/or domestically to the farm (normally applicable to seasonal workers only). For seasonal workers, approved employers are required to contribute up to $500 per worker for transport to Australia
- Transport between farms or to town centres

Training workers

- On-site training costs, including associated with turnover of new workers

Administration and compliance

- Reporting to government agencies, or assisting inspections
- Insurance (workers compensation)
- Providing on-arrival, pre-departure briefings or area orientations, where applicable

Note: These categories were used to analyse costs for both types of workers (see grower survey part 2 in Appendix A). The words 'where applicable' indicate a specific item may only apply to seasonal workers

Several practical issues required decisions about what to include and exclude in the calculation of non-wage labour costs. First, all costs incurred by the farm business that could be recouped from seasonal workers' wages were excluded. This involves much of the upfront costs that farm businesses pay before workers could enter Australia and start working on farms (see section 2.1).

Second, the cost and time involved for a grower to employ seasonal workers as an approved employer was included in the non-wage cost calculations. Becoming an approved employer and complying with the associated requirements (section 2.1) requires financial and time commitments from growers or their administration staff. This study collected data on financial costs (including wages paid to administrative staff), and time spent by growers on employing seasonal workers and working holiday makers. Time costs were calculated by converting the allocated time into monetary values. To avoid double-counting, growers were asked to exclude the monetary value or time of the administrative staff spent on matters unrelated to the employment of seasonal workers and working holiday makers. It was assumed that growers work eight hours per day at $22.60 per hour based on the agriculture award rate (Fair Work Ombudsman 2016). This hourly rate was also applied to administration staff if their wages were not reported.

Third, costs relating to seasonal workers' accommodation were excluded because we assume the rent that workers are charged would cover these costs. Accommodation costs have two components: (i) running costs (for example, providing fresh water and electricity) and (ii) costs associated with the use of accommodation facilities (such as depreciation and maintenance costs of building and fixtures). Some approved employers indicated that they had made significant investment in accommodation facilities specifically for seasonal workers and the rent was inadequate to recover all the costs. However, the investment costs should not be included in the calculation of seasonal workers' non-wage labour costs, because this investment would likely add value to the employer's assets. Although we consider our assumption reasonable, it is not statistically verified in this study. This is because testing the validity of this assumption is not straightforward and beyond the scope of this study. However, this may be a subject of investigation in future studies.

3.2 Research methods

3.2.1 Data collection

Three data collection tools were used:

- A written survey – to collect information on growers' farm businesses and how many seasonal workers and working holiday makers were employed. It also gathered information about non-wage labour cost; workers' characteristics and on-farm work activities; and issues around accessing labour in general. The survey is contained in Appendix A.

- A wages spreadsheet – to gather growers' data on the weekly wages and hours worked of seasonal workers and working holiday makers over the same period doing the same task, where possible, using piece rates. It also requested respondents to provide data across three years, to maximise the size of the sample of workers for each farm—and indicate whether workers had returned to, or were new to that farm. It is contained in Appendix B.

- Semi-structured interviews – to gather qualitative data and gain a deeper understanding of the reasons for employing different types of labour from a grower's perspective. Interview questions followed the survey questions, gathering similar information and were adjusted to account for the different categories of approved employers (growers, labour hire companies or contractors). Some labour hire companies and contractors were interviewed to collect information on their experiences as employers and to understand factors influencing their grower clients' preferences for SWP workers and working holiday makers.

In addition, ABARES Irrigation Survey (2016) was used as a data source to estimate total farm costs.

3.2.2 Sampling and respondents

The target population of this study was 32 approved employer growers whose contact details were provided to ABARES. All of them were invited by email in early November 2016 to complete the survey and spreadsheet. They were given opportunity to respond until the end of January 2017. ABARES staff carried out three field visits in different horticulture regions in November and December 2016 to undertake interviews with selected approved employers (Map 1). An overview of the data collected and responses received is in Table 2.

Table 2 Data sources

Data collection tool	Approved employer growers	Approved employer labour hire companies	Approved employer contractors	Total
Written survey	13 complete 2 partial	Not applicable	Not applicable	15
Wages spreadsheet	3 complete (for one or more years) 4 partial (seasonal worker data only, comprising 2 for new workers only and 2 including new and returned workers)	2 (seasonal worker data for one or more years only)	-	9
Interviews	12	3	1	16
Total respondents	17	3	1	

Note: Some respondents provided data through more than one data collection tool, hence total respondents are less than the sum of all data sources.

There was considerable variation in crops, planting area and number of workers across the approved employer growers who participated in this study (Box 3).

Box 3 About the approved employer growers in this study

States/regions: 6 in Victoria (Yarra Ranges/Koo Wee Rup/Shepparton), 1 in South Australia (Riverland), 7 in Queensland (central and Far North), 1 in Tasmania (northern), 2 in New South Wales **a**

Crops: Citrus (7), vegetables (2 asparagus and zucchini), bananas (2), raspberries/strawberries/blackberries/blueberries (3), apples (2)

Planting area: 2 to 2,100 hectares. The larger farms were citrus and bananas and the smaller ones asparagus and berries

Seasonal workers per farm, 2015–16: Between 4 and 109 (median 28, average 38). The proportion of workers who had returned from previous years estimated between 0 and 95 per cent (median 60 per cent)

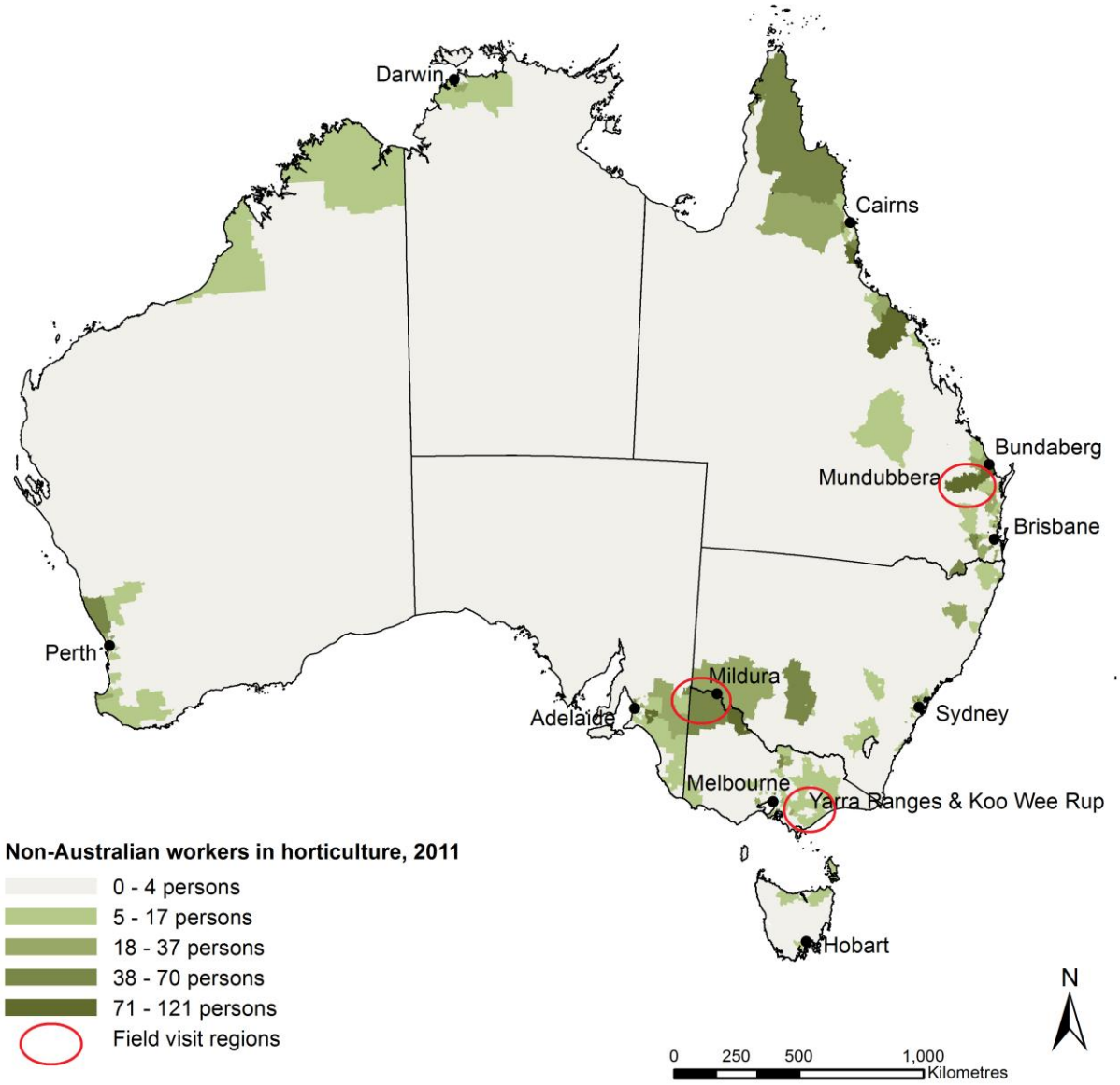
Working holiday makers per farm, 2015–16: Between 0 and 437 **b** (median 56, mean 118). Three properties employed no working holiday makers. Most growers said none of these workers had returned from previous years, however two growers estimated a small number had returned (up to 20 per cent)

Total worker numbers: Across all participating growers, 572 seasonal workers and 1,300 working holiday makers were estimated to be employed in 2015–16. The totals exclude Australian resident/permanent staff

Number of years an approved employer: 5 years (5), 4 years (2), 3 years (3), 1 year or starting 2016–17 (6)

Notes: **a** several growers have secondary production areas in other states. **b** Some growers employed WHM indirectly through contractors, but did not know exact numbers.

Map 1 Field visit regions and non-Australian horticulture worker distribution in 2011



Sources: ABARES; Census data from ABS (2011).

3.2.3 Data collection limitations

The wages spreadsheet was developed to provide key comparative data for the calculations relating to productivity. However, there was a limited response with only seven growers providing some wage data. Three hired both seasonal workers and working holiday makers and provided wage data for a total of 259 individual workers. A number of factors contributed to this. Several growers did not employ both types of workers, or workers did not do the same tasks. In other cases, growers preferred to pay workers hourly rates regardless of their output. Obtaining the data required considerable effort for growers, and several spoke about the need to contact their accountants. Some growers expressed reluctance to provide wage values.

As a result of the low response rate, productivity differences are based on three farms where the two types of workers did the same task, and caution is required interpreting the results.

4 Results and discussion

4.1 Labour productivity and implications for farm profitability

4.1.1 Estimates of labour productivity

Comparing seasonal workers and working holiday makers

Seasonal workers delivered higher productivity than working holiday makers to the growers who participated in this study (see Table 3). Based on data for 150 seasonal workers and 109 working holiday makers on three farms over three financial years, seasonal workers delivered relative productivity gains that varied between 1 and 37 per cent (column c) and averaged 20 per cent. Productivity differences between the two groups were statistically significant except for the berry farm (see Appendix C). These results are similar to the findings of the previous ABARES study—which suggested that seasonal workers were 22 per cent more productive than working holiday makers on a single citrus farm (Leith and Davidson 2013).

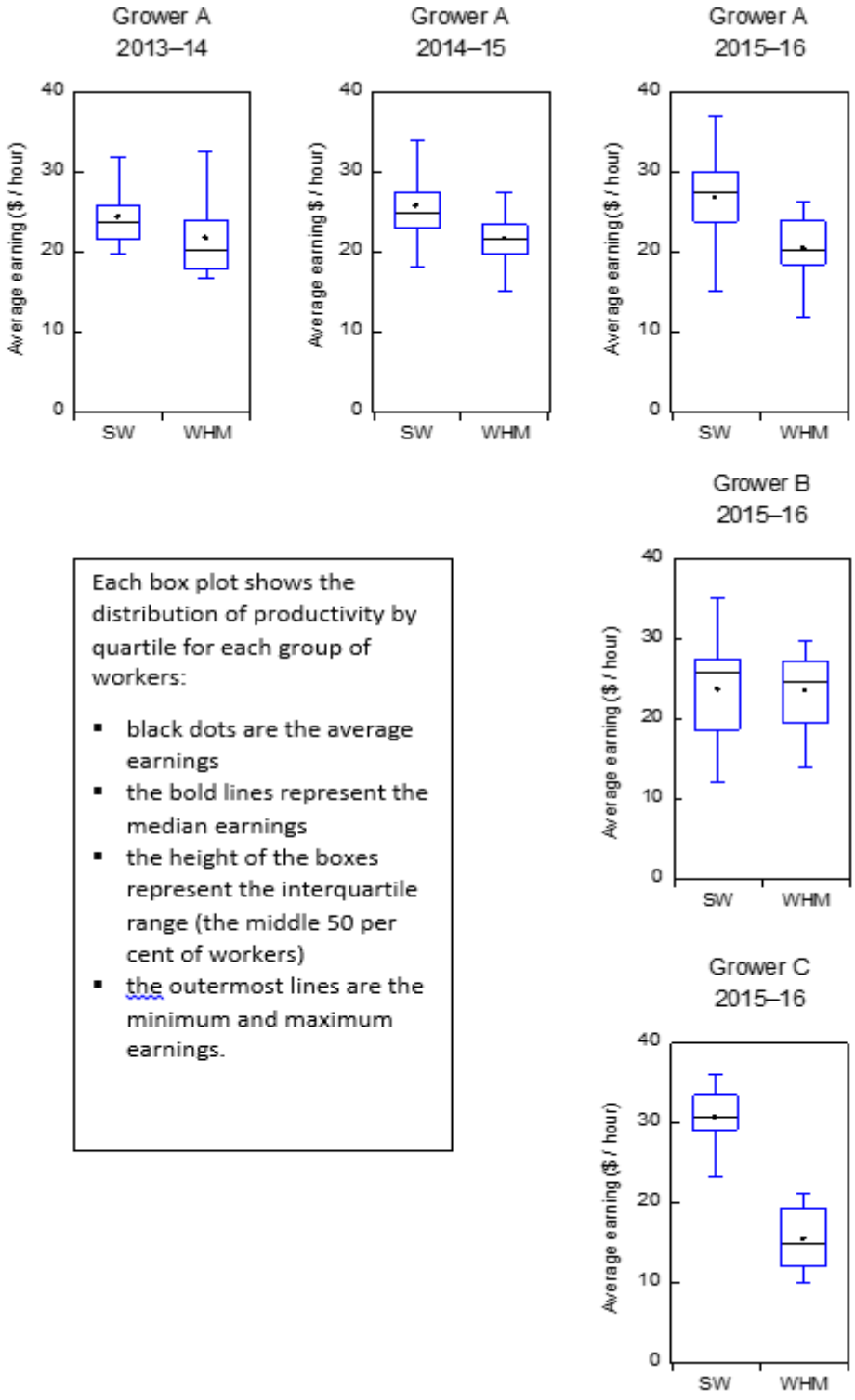
Table 3 Number of workers and labour productivity, seasonal workers (SW) and working holiday makers (WHM)

Grower ID	Financial year	Produce	Number of workers		Labour productivity ($/hour)		Relative productivity
			SW	WHM	SW	WHM	SW/WHM
					(a)	(b)	(c)=(a)/(b)
	2013–14	Citrus	25	11	24.4	21.7	112%
Grower A	2014–15	Citrus	44	23	25.7	21.6	119%
	2015–16	Citrus	44	39	26.8	20.4	131%
Grower B	2015–16	Berries	25	25	23.7	23.4	101%
Grower C	2015–16	Citrus	12	11	32.5	23.7	137%
				Average relative productivity			**120%**
Leith and Davidson (2013)	2012–13	Citrus	30	34	24.7	20.2	122%

Note: Leith and Davidson (2013) results provided for illustrative purposes. Their study used the same method but a different dataset.
Source: ABARES

With the exception of the berry farm, the average productivity of seasonal workers lies within the top quartile of the working holiday makers (Figure 2). This means that only the top 25 per cent of working holiday makers were comparable to the average seasonal worker in terms of productivity.

Figure 2 Distribution of labour productivity for seasonal workers and working holiday makers



Comparing new and returned seasonal workers

Returned seasonal workers can bring significant productivity benefits to growers. They were on average 15 per cent more productive than seasonal workers who were new to a particular farm (although new workers may have previous experience on other farms). The relative productivity of returned seasonal workers compared to new seasonal workers in a given year ranged between 93 per cent (returnees are 7 per cent less productive) and 141 per cent (returnees are

41 per cent more productive) (Table 4). The average in this study is consistent with the findings of Leith and Davidson (2013) who reported that seasonal workers who had returned for another season were 12 per cent more productive than new workers. Working holiday makers on the other hand can be employed by the same grower for generally no longer than six months during their stay in Australia (see section 2.2), and they are less likely to return to the same farm a year later. Therefore it was not possible to compare the relative productivity of returned working holiday makers with new working holiday makers.

Higher average productivity within groups of returned seasonal workers may be reflecting potential 'selection effects'. The fact that these workers returned to the same farm may imply that they had stronger incentive to be re-employed than other workers (who may choose to work for other growers), or that the grower preferred to re-employ them because they had demonstrated higher productivity. Selection effects like these have not been assessed in this study.

Across farms with new seasonal workers and working holiday makers, the productivity of new seasonal workers was 13 per cent higher than working holiday makers. A comparison of this estimate with the average of both new and returned seasonal workers (20 per cent productivity benefit) suggests that a significant productivity gain to the growers resulted from seasonal workers who returned to the same farm. The interviews with approved employers confirmed this finding. Several said that the productivity of seasonal workers and working holiday makers are comparable during the first year of their employment, but that productivity gains became more obvious in subsequent years when seasonal workers return.

Table 4 Number of workers and labour productivity, new and returned seasonal workers

Grower ID	Financial year	Produce	Number of workers		Average earning ($/hour)		Relative productivity
			Returned	New	Returned	New	Returned/New
					(a)	(b)	(c)=(a)/(b)
Grower A	2013–14	Citrus	17	8	24.7	23.7	104%
	2014–15	Citrus	34	10	26.5	23.4	113%
	2015–16	Citrus	26	18	29.7	22.5	132%
Grower D	2013–14	Citrus	4	2	22.5	24.1	93%
	2014–15	Citrus	3	2	23.1	23.4	99%
	2015–16	Citrus	3	2	30.6	24.2	126%
Grower E	2013–14	Pome fruit	8	2	24.3	20.2	120%
	2014–15	Pome fruit	6	4	32.1	22.8	141%
	2015–16	Pome fruit	7	5	23.2	21.8	106%
					Average relative productivity		**115%**
Leith and Davidson (2013)	2012–13	Citrus	22	7	25.6	22.8	112%

Note: New workers on a farm may include workers with previous experience on other farms. Leith and Davidson (2013) results provided for illustrative purposes. Their study used the same method but a different dataset.
Source: ABARES

4.1.2 Respondent perspectives on worker productivity

Respondents interviewed raised several points relating to worker productivity, which support and give context to the above calculations, with implications for farm business productivity.

Most respondents mentioned that the productivity of seasonal workers is higher than that of working holiday makers. Key reasons mentioned for the higher productivity include physical capabilities and motivation level; seasonal workers aim to earn a good income to support their families and therefore they are hard-working, reliable (for example come to work each day) and willing to do what it takes to get tasks done. Many seasonal workers are also used to working in hot and humid conditions.

Case study - A reliable and movable workforce

Mr X oversees a farming business producing different crops at different localities across Australia. He found that labour supply from working holiday makers and retirees in these regions has been on the decline for some time. He became an approved employer as accessing seasonal workers meant that he had a reliable workforce with a strong incentive to work.

In Mr X's experience seasonal workers are high calibre workers who want to earn good money to send home. It also means he can move workers between sites and this reduces the need for training. Likewise, workers who returned are able to 'hit the ground running' as 'they know your business, know the job, and they are inducted into the culture already'. Additional labour needs are met through working holiday makers or contract labour.

Many respondents said that they employ seasonal workers as a key risk management strategy to secure their labour supply in advance of critical periods. Employing seasonal workers as part of the core workforce lowers the risk of not finding workers, due to the predictable employment period, and the contractual nature of their employment and visa conditions. The reliability of seasonal workers was a key theme across respondents. This is how some respondents explained it:

> We became interested in the scheme because we didn't want staff churn and wanted reliability at peak harvest. In getting Pacific workers it's a guarantee that you're going to have the workers on-farm, on the day you need them. (Apple grower)

> We could not get the fruit off the trees one year because there were not enough productive workers. That's when we got the seasonal workers. (Citrus grower)

A labour hire company representative was asked 'what is the main factor that influences a grower's labour choice?'. He replied:

> Reliability. That is main thing. Will they turn up? This relates to individual workers and groups of workers. And can they do the job? The last thing they want is for someone to turn up, stay two days, leave and then they have to start again.

While some respondents mentioned that accessing working holiday makers was difficult in their region, several expressed appreciation about the flexible nature and the easy process related to employing this workforce. For several respondents, working holiday makers were fairly easy to engage even on short notice, with limited up-front cost and administration. This was of particular benefit for weather-dependent tasks, such as when picking was delayed due to rain. Working holiday makers, as well as other workers hired through labour hire companies and contractors, therefore offer flexibility to growers and are often hired to provide 'top-up' labour during peak periods.

Survey respondents explained that workers who returned were more experienced and skilled, better understood expectations and were familiar with the farm layout and operations. This meant that these workers required less induction and they knew where to find things or who to ask. Another key benefit of returned workers is that they can be trained for specialised tasks. The tasks returned workers were trained for included forklift driving, pruning, specialised picking, sorting and packing, installing irrigation and other tasks related to 'block work' (repetitive field tasks). This is how some respondents expressed the benefits of returned workers:

Case study - Benefits of returned workers

Mr W is the manager of a large horticulture farm business that has been an approved employer for over five years. The business started employing a few seasonal workers as a trial and has since increased the number year after year ensuring a high ratio of returned workers. Close to 100 seasonal workers are now employed. The business has made considerable investments in training seasonal workers in exactly how they like certain tasks done, including picking and pruning. Several workers have been trained to be forklift drivers. Mr W pointed out that to him, 'the philosophy is to have a core group of people that we can rely on and then source more people during peak periods'.

> An advantage of seasonal workers is the fact that you are able to build a relationship and provide training so that skills are with them and can be used repeatedly. (Berry grower)

> We just had a group of 25 return for their second trip. First time it took six weeks to get them trained up. Second time it took them less than a week to bring them up to speed. (Labour hire company representative)

> The first year backpackers and seasonal workers are the same. It is when seasonal workers return that you see the productivity pick up because they are skilled, more aware of what the job is and what is involved. The numbers in productivity difference is then staggering. (Citrus grower)

4.2 Non-wage labour cost and implications for total farm cost

4.2.1 Non-wage labour cost

For the farms that participated in this study the annual non-wage labour cost of seasonal workers was 12.1 times higher per worker than for working holiday makers during 2015–16. For this period, the average non-wage labour cost per seasonal worker was $1,620 across the 13 respondents, compared to an average of $134 per working holiday maker for farms that employed both types of workers (Table 5).

Seasonal workers were typically employed for longer periods per farm and they also worked more hours per week than working holiday makers (Table 6). When this is factored in to express non-wage labour cost on a per hour basis, then non-wage labour cost for seasonal workers was 2.3 times higher than for working holiday makers (Table 5). The average non-wage labour cost per hour of a seasonal worker was $1.80 and $0.80 for a working holiday maker. For comparison this cost represents around 8 per cent or 4 per cent of the award wage respectively, for a seasonal worker or working holiday maker (the minimum hourly rate for a casual worker 20 years or over picking fruit was $22.13 at the time of the study (Australian Government 2018)).

During the interviews, growers suggested that upfront costs added considerable financial burden. While they can recoup most costs through deductions from seasonal workers' wages,

the growers had to pay the costs upfront which may cause cash flow issues. The estimates of the non-wage labour cost and its sub-components do not reflect the opportunity costs or non-financial costs incurred by these issues.

Table 5 Total non-wage labour cost adjusted for the length of work, 2015–16

	Seasonal worker	Working holiday maker	Cost ratio
	($)	($)	(SW/WHM)
Per worker per year	1,620	134	12.1
Per week worked	74	25	3.0
Per hour worked	1.8	0.8	2.3

Source: ABARES

Table 6 Employment characteristics of seasonal workers and working holiday makers, 2015–16

	Seasonal worker	Working holiday maker
Average employment length (weeks)	22	5
Average weekly working hours	41	32

Note: Averages are per farm, not for a worker's entire stay in Australia
Source: ABARES

The components of non-wage labour cost differed significantly between seasonal workers and working holiday makers (Table 7). For seasonal workers, transport costs accounted for 38 per cent of the total non-wage labour cost. This cost included $500 per seasonal worker as part of the transport arrangement under the SWP, which is not deductable. For working holiday makers, the main cost items were administration (34 per cent), training (32 per cent) and recruitment (32 per cent). This pattern of non-wage labour cost was consistent with the views expressed by growers during the interviews.

Table 7 Composition of average annual non-wage labour cost per worker by seasonal workers (SW) and working holiday makers (WHM), 2015–16

	Seasonal worker			Working holiday maker			Cost ratio per worker
	($/worker)	($/hour)	% of total	($/worker)	($/hour)	% of total	(SW/WHM)
	(a)			(b)			(c)=(a)/(b)
Recruitment	522	0.59	32	43	0.25	32	12.3
Transport	622	0.70	38	3	0.02	2	190.2
Training	132	0.15	8	43	0.25	32	3.0
Administration	344	0.39	21	45	0.26	34	7.6
Total non-wage labour cost	1,620	1.82		134	0.78		12.1

Note: Average cost components calculated across 13 respondents for seasonal workers and 10 respondents for working holiday makers. Accommodation costs are not included (see section 3.1.3)
Source: ABARES

The time costs for seasonal workers were considerably higher than for working holiday makers (Table 8). For seasonal workers, the value of time cost was $474 per worker and accounted for

29 per cent of the total non-wage labour cost ($1,620 per worker). The highest proportion of time costs was administration (44 per cent), followed by recruitment (33 per cent) and training (16 per cent), whereas transport was only 6 per cent.

Table 8 Monetary and time non-wage labour cost per worker, 2015–16

	Seasonal worker					Working holiday maker				
	Money cost		Time cost		Total money and time costs	Money cost		Time cost		Total money and time costs
	($)	% of money	($)	% of time	($)	($)	% of money	($)	% of time	($)
Recruitment	363	32	159	33	522	10	25	32	34	43
Transport	592	52	30	6	622	2	5	1	2	3
Training	54	5	78	16	132	5	14	38	40	43
Administration	137	12	208	44	344	22	56	23	24	45
Total non-wage labour cost	1,147		474		1,620	40		95		134

Note: Differences in row and column sums of total are due to rounding error.
Source: ABARES

For working holiday makers, the value of time cost was $95 per worker which was 71 per cent of the total non-wage labour cost ($134 per worker). It was the highest for training (40 per cent) followed by recruitment (34 per cent), while transport and administration together accounted for 26 per cent of time costs.

Recruitment costs for each seasonal worker were on average 12.3 times higher than for each working holiday maker. These cost differences mainly reflect costs of paying administrative staff or extra time spent for undertaking the recruitment process.

Most respondents interviewed mentioned that the high turnover of working holiday makers can be problematic. Growers said that they have little control over how long working holiday makers stay on their farms. Several mentioned that working holiday makers are often primarily focused on fulfilling their visa requirement of working for 88 days in designated rural areas and moving on to more exciting activities. Many working holiday makers have their own transport making them very mobile. These comments suggest that growers constantly have to manage risks of disruption to the smooth operation of the production process during the critical period of harvesting.

Non-wage labour cost as a proportion of total costs

Non-wage labour cost was a small proportion of total farm cost and it exhibits ‘economies of scale’ (Table 9). The proportion of non-wage labour cost of total farm cost ranged from an average of 3.4 per cent for small farms (employing less than 46 workers) to 1.9 per cent for large farms (employing more than 110 workers). On average across all farms, the proportion of non-wage labour cost of total farm cost was 2.4 per cent. This pattern is not surprising because a significant proportion of the non-wage labour cost was ‘fixed costs’. For example, growers or their staff require a fixed amount of time to understand the approved employer registration process, regardless of the number of workers they intend to employ.

Table 9 Non-wage labour cost as a proportion of total cost

Size of seasonal workforce	Number of farms	Average non-wage labour cost per farm	Average total cost per farm	Average proportion
		(a)	(b)	(c)=(a)/(b)
1 to 45 workers	3	12,392	366,727	3.4%
46 to 70 workers	3	32,855	1,716,161	1.9%
71 to 110 workers	3	126,758	5,652,094	2.2%
> 110 workers	4	123,188	6,530,605	1.9%
			Weighted average proportion*	*2.4%

Notes: Size of seasonal workforce (includes working holiday makers and/or seasonal workers), number of farms and non-wage labour cost per farm were based on data provided by survey respondents in this study (section 4.2.1). Average total cost per farm includes capital depreciation and the wages of self-employed labour, and were estimated from ABARES 2015-16 Irrigation Survey data (see Appendix D). *The weighted average is across the average proportion in each category, using number of farms as weights
Source: ABARES

4.2.2 Respondents perspectives on how the choice of workers affects farm production costs

Further to the upfront cost needed to employ seasonal workers, large capital expenses might sometimes be required to provide accommodation meeting program requirements, or vehicles (such as buses or cars) for workers local transport while in Australia. Growers spoke about the high cost of investing in new housing on their farms; difficulties with planning approvals; and the need for maintenance, paying council rates; and providing a suitable ratio between occupants and facilities such as toilets and showers. For several growers, the number of seasonal workers they employ is limited by the accommodation they have available, or have access to nearby, with some calling it 'the biggest challenge' or 'massive issue' in employing more seasonal workers.

Several growers mentioned that when more than a certain number of workers are employed, additional investment is needed in a full-time staff member to look after the workers' pastoral care needs. These included the need for workers to have access to local transport, churches, sporting activities, doctors and shops. While being fit and healthy is an eligibility requirement of the SWP, workers do sometimes get sick and some growers pointed out that when this happens, they may need to initially pay for the treatment and then go through an administrative process to recoup the cost from workers. Pastoral care may also involve following up with doctors and specialists, or assisting workers to obtain documentation that they need to make a health insurance claim.

Some growers reported that workers occasionally caused damage, including to produce, vehicles, equipment and machinery, although these anecdotes related to both seasonal workers and working holiday makers. A few respondents reported experiencing (or know of another grower who has experienced) seasonal workers absconding, with all associated costs and loss of income left at the expense of the grower. The Department of Jobs and Small Business has indicated the percentage rate of absconding is low (pers. comm., 7 August 2017).

Respondents also identified savings made by employing seasonal workers, in addition to the benefits associated with workers who returned. Horticulture farm businesses that have sites across the country tend to move seasonal workers between locations, which saves on worker

training and induction costs. Farm businesses that have long or multiple peak seasons are able to employ multiple groups of seasonal workers.

4.3 Other factors influencing growers choice of labour

Respondents were asked about their experiences with seasonal workers under the SWP and working holiday makers in order to understand the considerations associated with employing the different groups. There were four main considerations comprising labour supply; capabilities and skills; worker management; and cost, losses and risks associated with each group. These are each discussed below.

4.3.1 Labour supply

Many respondents stated that they would not be able to meet their labour demand by relying on local Australian residents, and several said without access to seasonal workers and/or working holiday makers they would not be able to pick their crops. Challenges related to employing Australian residents included the low availability of local workers, that manual work is unappealing and the casual nature of positions. Several respondents mentioned that they need both seasonal workers and working holiday makers, because of their different strengths.

The geographical location of farms also influences growers' labour options. Some regions are not popular destinations for working holiday makers, resulting in these areas being more dependent on seasonal workers. In other areas growers face competition from the mining industry that also demands low-skilled labour. Some growers with orchards in more remote areas indicated that they are not preferred employers, because working holiday makers prefer to work on farms close to town.

The benefits growers identified in working through a labour hire company or labour contractor include that it reduces the administrative burden involved in becoming an approved employer to directly recruit workers from source countries. However, some growers prefer having greater control over their choice of workers and retaining more of the management responsibility for their workforce that comes with being an approved employer. Some growers said cost savings was a key reason they recruited seasonal workers themselves.

Case study - An opportunity to choose workers

Mr and Ms Y run a relatively small horticulture operation which employs a total of 36 people comprising 17 locals, 12 seasonal workers and six working holiday makers. They decided to become approved employers after they started to distrust labour contractors in relation to possible dubious practices. Becoming an approved employer, even as relatively small operators, assisted them to take more control of their labour supply, despite the need to plan their workforce four months ahead. While they felt that the SWP has 'a bit of red tape', benefits include that they can choose their workers to maximise productivity and returning workers save time on inductions and training. They also no longer have to pay payroll tax to the contractor.

4.3.2 Capabilities and skills

Many respondents spoke positively about the work capabilities of seasonal workers. For example, these workers were often seen as physically stronger than most working holiday makers. Many seasonal workers were used to physically demanding jobs, including in harsh environments, such as picking fruit in high temperatures and humidity levels. They often have experience with working on farms, either in their home country and/or working as a seasonal worker in New Zealand. It was not uncommon for seasonal workers to work in the field and the working holiday makers to work in the shed. Some respondents who produce commodities that involve tight timeframes to get fresh produce to market spoke highly of the determination of seasonal workers to get the job done.

In the survey, respondents were asked to rate a list of abilities and behaviours for both worker types. Seasonal workers rated consistently higher than working holiday makers in terms of being reliable, motivated and enthusiastic, being emotionally and physically well matched to the job and having good team skills. These and other respondent ratings on a range of matters are provided in Appendix E.

Positive traits mentioned during the interviews relating to working holiday makers included having good information and computer technology skills and often good English abilities. These skills offer potential for growers to deploy working holiday makers to tasks which may not fit seasonal workers, because the SWP is explicitly targeted at low-skilled and unskilled work.

4.3.3 Worker management

As mentioned in section 3.1.1, business and management decisions are an important part of the production process that in turn determines farm productivity. Growers raised different aspects relating to worker management that they need to deal with. These include maintaining effective interaction with workers, teamwork abilities, adjustment to life in Australia, their formal responsibilities for workers, and the stress and inconveniences that may be related to these. It should be noted that the Australian Government shares responsibility with approved employers in preparing seasonal workers for work in Australia and assisting in their management. For example, a dedicated contract manager is provided to guide approved employers with program requirements.

Growers spoke about the strategies and systems they use for managing workers. For example, many growers had a supervisor or group leader who in both instances acted as an intermediary in their dealings with seasonal workers. Intermediaries were typically persons from the same country or leaders within the seasonal worker teams. Where seasonal workers had low proficiency in English the intermediary translated information to and from the other workers. Growers saw that intermediaries were often well placed to deal with language and cultural differences and played an important role in developing the relationship and trust that existed between growers and the workers.

Several growers also had a personal connection with someone who assisted them to find suitable people from the source country. This could be a previous worker that the grower had built a relationship with and who now assisted the grower with vetting people from his/her village or local region. In Australia, this person often was the team leader or supervisor of the workers. A respondent mentioned that this arrangement meant that the workers 'are not so lost when they come and they are more efficient'.

Case study - Developing trust with a team leader

Orchardists Ms and Mr Z built a good working relationship with a seasonal worker, Tom*, when they hired him some years ago from another approved employer. Tom approached them with the idea that he could work directly for them as a seasonal worker team leader. This contributed to Ms and Mr Z decision to become approved employers.

For the last few years Tom, with help from his wife, vets workers from his home village in Tonga to work for Ms and Mr Z as they know the workers and their families. Once the workers are in Australia, Tom is employed as the team leader who supervises and provides pastoral care to the workers. As a pastor, Tom also looks after the workers' spiritual needs. He is paid at a higher rate than the other workers.

* *not his real name*

Several respondents spoke about seasonal workers being good team workers, particularly if they are from the same nationality working on the same farm. Such groups might come together to Australia, sometimes from the same village. Several respondents said that seasonal worker groups tend to be 'community-minded' as is evident from the support workers give one another. They may

encourage each other, or, towards the end of the day, faster pickers might help slower pickers to fill their bins, despite being paid piece rates.

Growers talked about the processes they have in place for new seasonal worker arrivals and briefings, including assistance with bank accounts, showing them around town and talks involving cultural awareness about to living in Australia. In a few cases there were existing ex-pat communities of a certain nationality group within the local town that also played a large role in supporting seasonal workers. Most growers provided seasonal workers with cash advances and basic groceries on arrival.

English proficiency was reported to vary amongst seasonal workers and working holiday makers, although overall, working holiday makers were seen as more proficient in English than seasonal workers. Some respondents spoke about the differences in seasonal workers' English abilities based on their nationalities. Literacy levels of some seasonal workers can be very low, which required existing farm staff to fill in a range of forms on behalf of the workers. For some growers this influenced task division amongst workers. For example, one grower mentioned that only workers who are proficient in reading English were asked to do chemical spraying to ensure that they can read and understand the label instructions. This reassured the grower that the product will be used as intended and worker safety risks are managed.

Several issues were raised that cause stress or disruption in relation to seasonal worker management. Some growers find it stressful to ensure that they meet all requirements, such as monitoring workers' health insurance expiry dates or that workers do not accidently overstay their visa. Several growers also mentioned that they had to deal with cultural issues, including explaining to seasonal workers what is acceptable practice in Australia and what is not. Occasionally a worker may be involved in unacceptable behaviour that the grower (or a staff member) needs to get involved in. Several respondents mentioned they have rules restricting alcohol consumption. On occasion issues need to be resolved with the Australian and/or partner country governments. Breaches of specific visa conditions can lead to workers being sent back to their home country.

4.3.4 Other potential costs, losses and risks

Approved employer growers raised a number of challenges relating to the SWP requirements that increase the time that approved employer growers need to commit to the recruitment and pastoral care of seasonal workers. This time is included in the non-wage labour costs outlined in section 4.2.1. In addition, some issues cause frustration and stress that are difficult to express in monetary values, but that may influence growers' decisions to become approved employers.

Further to the upfront costs associated with employing seasonal workers, many respondents were frustrated with the yearly application process of employing seasonal workers. Many respondents would like to see a clear structured process, as currently the process seems 'chaotic' and 'stressful', involving too much 'red tape' and 'continued changes' between years, such as changes to visa requirements. For some growers, disruption when visa re-applications were required had led to lost time, uncertainty about whether the needed labour will arrive on time, or actual delays. Some growers had to delay booking flights until they were certain workers had visas, leading to booking expensive flights close to the departure date. One grower said he booked workers on business class to ensure they arrived on time.

Several respondents were frustrated that they had to deliver the same information year after year and thought this could be simplified. For example, as part of their yearly application, approved employers are required to provide evidence (including photos) that they are providing

suitable accommodation to workers. This is required regardless of some growers employing the same workers for the same tasks without changes to the worker housing arrangements, or the growers' own financial and other circumstances.

Challenges mentioned include the time and effort needed for growers and/or their staff to interact with different Australian Government and overseas government agencies. Some respondents spoke about the difficulty of collating the requirements from different government agencies, such as the Department of Jobs and Small Business, Department of Home Affairs and Fair Work Ombudsman, to succinctly communicate them to prospective workers. Some growers hired the services of a solicitor to integrate the different SWP requirements with their own letter of offer to workers. This assists in minimising the number of documents that workers are required to sign-off on. Some respondents would like to see government staff respond more quickly and clearly to their requests for information or clarification of conditions.

While respondents appreciated why the labour market testing was necessary, it was often mentioned as a frustrating process. Several respondents thought that unemployed Australians on benefits apply for jobs to meet the requirements placed on them, but with little real intention to accept the position. Some spoke about the tension that results when their records show that there are Australians interested in on-farm positions, which means they are not allowed to recruit seasonal workers for these positions. However, in these respondents' experience the risk is high that the Australian applicants either would not turn up, or they may not stay for very long, which leaves the grower with unfilled positions.

Case study - Challenges with administration

Mr V is the operations manager of a medium size farm, which has been an approved employer since the early years of the SWP. While the managers are highly appreciative of their seasonal workers, Mr V mentioned that the recruitment process can be tedious, frustrating and time consuming because for him it meant dealing with many government departments, both in Australia and overseas. He said 'Sometimes officials do not proceed fast enough or are poor getting back to you as they don't understand the urgency involved'.

'Lots of phone calls are needed to follow up to make sure things happen…It doesn't matter how early we start we always have things to do at the last minute…it can be quite stressful'.

Mr V helped developed the farm's own spreadsheet detailing the steps they need to complete. He said 'it would be good if there was a central person in the program who can look after everything and keep us updated'.

Another challenge involved with seasonal workers is having sufficient work available to keep workers actively working for all of the agreed number of hours within a set period of employment. Some large farm businesses were able to overcome this challenge by shifting workers between sites across the country. A few respondents spoke about the challenge of harvesting delays due to weather conditions, and the associated difficulty in occupying workers productively during the waiting period. Some would like to see more flexibility around this requirement.

Some thought that the distribution of risk was disproportional, with growers believing they carried all the risk when there is an issue, such as under-performance or absconding. For example, in the case of absconding there is little growers can do to recoup their investment made in employing the absconder. Some growers mentioned the risk of absconding was a reason why they preferred to house seasonal workers on the farm rather than in town.

Case study - Risk of workers absconding

Mr W experienced two out of 100 seasonal workers disappearing on arrival at the airport, the most serious case of absconding his company had experienced. He was disappointed that the cost of the associated losses rests fully with his business, including the upfront costs of bringing these workers to Australia (including airfares, visas and insurance) as well as having to manage with fewer workers than what he initially planned for. Mr W suggested that a pool of funding be created from which growers can offset these losses, with the partner countries as major contributors.

4.4 Limitations and suggestions for future research

This work had several limitations and several of them offer opportunities for further research. Limitations include the small sample (for productivity analysis) and the focus on fruit picking tasks using piece rates. Greater representation from other horticulture industries as well as worker performance in other on-farm tasks would further strengthen insights about the different impacts that the type of workers have on farm productivity and profitability.

A study focusing on the role of labour hire companies and contractors would increase understanding about the benefits and costs they bring to growers and the SWP. As well, it could provide insight into whether horticultural growers accessing workers through these operators experience different productivity and profitability outcomes with seasonal workers and working holiday makers than growers who are approved employers.

As the horticulture industry is a highly diverse industry, further work is needed to understand experiences with the SWP for different types of growers (such as family versus corporate ownership). Further information about benefits and challenges could assist growers in their decision-making about labour and inform government policies relating to the design of the SWP. More insights could also be gained from extending this work to other industries with seasonal labour demand, such as the tourism and accommodation sectors.

A study to better understand why some horticulture growers do not become approved employers may identify further opportunities to strengthen the SWP. This topic was explored to some extent by Doyle and Howes (2015), who carried out a survey in 2014 that included growers in the broader horticulture industry as well as SWP approved employer growers. It found that grower awareness of the SWP was low in certain regions. The growers surveyed indicated that the costs and risks associated with the SWP needed to be reduced. Further work could assess the extent that these factors remain barriers and develop approaches to encourage industry demand for the SWP more widely, and in priority areas like northern Australia.

5 Conclusion

Implications of productivity and non-wage labour on farm profitability

The analysis in previous sections indicates that seasonal workers employed on the farms in this study were, on average, 20 per cent more productive than working holiday makers. Higher productivity is expected to have a positive influence on farm profitability. However, the way it impacts on profitability is complex and depends on how a given farm's production process works and the relationship between labour and other inputs. In general, higher productivity can impact profitability by delivering higher revenue, or generating cost savings, or both. For example, if the farm's production is not constrained by land availability, higher productivity may lead to more output produced in the long term and higher revenue earned from the market. However, if land is a limiting factor, it is not possible for the farm to produce more output in the short run. In this circumstance, higher productivity of seasonal workers may deliver saving on the costs of labour and other inputs.

The monetary benefit from seasonal workers' higher productivity will at least be somewhat offset by their higher associated non-wage labour costs—2.3 times higher per hour worked, than for working holiday makers. In 2015–16, the contribution of non-wage labour costs towards total costs was higher on small farms (3.4 per cent of total costs on average), compared with large farms (1.9 per cent of total costs on average). However, it is not possible to determine a net profitability benefit without detailed information about a farm's production process and cost structure. The direct monetary benefits of hiring seasonal workers is likely to at least cover the higher non-wage labour costs and hence deliver a net profitability gain; otherwise growers are unlikely to opt for seasonal workers when working holiday makers are a viable alternative.

Other key findings

This study identified a range of benefits and challenges associated with hiring seasonal workers in comparison with working holiday makers, which may influence farm net profitability. Much of the productivity gain associated with seasonal workers is attributed to their return to a farm in subsequent years. Returned seasonal workers were on average 15 per cent more productive than new seasonal workers.

Growers highly valued the reliability of seasonal workers and may see their employment in harvest periods as a key risk management strategy in the production process. The contracted nature of employment, in advance of the season, provided more certainty than accessing working holiday makers at short notice. Seasonal workers can also be seen as more reliable in terms of their availability in areas that are isolated or less popular for working holiday makers. Most growers regarded seasonal workers as generally more motivated to work hard and better matched for physically demanding tasks. Working holiday makers can offer flexibility to growers during peak periods, but were associated with higher staff turnover than seasonal workers.

Some growers reported that they recruited seasonal workers directly (as an approved employer), rather than through labour hire or contractor companies because they could gain greater control over selecting and managing their workers.

The higher non-wage labour cost for seasonal workers than working holiday makers was strongly influenced by requirements of the SWP for employers, such as recruitment and administration processes, training, and providing pastoral care and transport. Providing accommodation for seasonal workers was a key challenge for several growers and some

reported that a lack of accommodation had limited them from employing more seasonal workers.

Several growers perceived the processes to become an approved employer and to recruit seasonal workers each year as challenging because of the 'red tape' involved and dealing with changes between years.

While the study covered 259 individual workers over three seasons, it had several limitations including a reliance on a small sample of growers; and a focus on fruit picking tasks using piece rates. Further work could build on the study by aiming for representation from wider horticulture industries and analysing other on-farm tasks. The study also points to scope for further research including about the productivity of workers, costs and outcomes for growers (relating to both seasonal workers and working holiday makers) under different labour supply models such as labour hire and contractors.

This study finds the SWP offers an opportunity for growers to increase their profitability, and suggests the relatively higher productivity and other benefits of accessing seasonal workers warrant further promotion of the SWP in the Australian horticulture industry—for employers who might otherwise find it challenging to meet their seasonal labour demands.

The findings suggest that improved clarity and further streamlining of the recruitment process and other SWP requirements for approved employers could increase the attractiveness of participating in the program. It is important that these requirements are designed so that businesses can operate in the program efficiently and cost effectively, in turn contributing positively to farm profitability—while also maintaining safeguards for a vulnerable workforce.

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Appendix A: The approved employer grower survey

Australian Government
Department of Agriculture and Water Resources
ABARES

This form can be filled out electronically and emailed, or printed and completed on paper.

Labour productivity and profitability in the Australian horticulture industry

Questionnaire for employers in the Seasonal Worker Programme

Thank you for participating in this study. You are an important source of knowledge about the costs, benefits and other factors impacting on farm profits associated with the Seasonal Worker Programme (SWP), compared to other sources of labour.

This survey is part of a study being conducted by the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) to assess productivity of workers participating in the SWP and Working Holiday Makers. It builds on earlier work conducted by ABARES in 2013, which suggested employees in the SWP were more efficient than Working Holiday Makers (backpackers).

This survey asks for information about farm operations and non-wage labour cost including recruitment, accommodation and compliance costs, as well as your views about labour sources. A separate Excel worksheet is being used to collect wage costs for a sample of workers.

Your privacy

The information collected will be analysed and presented as summary results only and no individual(s) or businesses will be identified. All information collected is confidential and will be stored securely by ABARES. Please read the statements below.

I acknowledge that:

- participation in this study is voluntary
- this survey is carried out for a study to inform/contribute to management and further improvement of the Seasonal Worker Programme in Australia
- the data from this survey may be used for further Australian Government research purposes and/or may be reported in summary documents
- de-identified farm level data will be shared with the World Bank
- responses from this survey will remain anonymous – any names and contact details will be kept confidential by ABARES and not be passed on to any third parties

Please tick one

☐ I agree to participate in this survey
☐ I do not agree to participate in this survey

Who should fill out this survey?

The person or persons who have the best knowledge about your business should fill out this survey.

What information will you need to fill out this survey?

The questions have been designed to be straightforward for you to answer, based on your current knowledge. You may need access to:

- business records for 2015–16

If you would prefer to complete this survey over the phone, or have any questions, please call ABARES on (02) 6272 5425

Part 1 – Your farming operations and labour use

Q1.1 What is the name of your business?

Business name:

Q1.2 When did your business become an Approved Employer for the Seasonal Worker Programme?

Year:

Q1.3 What is the total land holding of this business?	____ hectares
OR	____ acres

Q1.4 What are the main horticultural products this business produces?

Citrus	☐
Pome fruit (apples or pears)	☐
Bananas	☐
Vegetables (including tomatoes)	☐
Other (please specify)	_____

Q1.5 Please estimate the total number of people you employed in your farm operations in 2015-16, in the worker groups below.

	Accessed workers from this source (tick)	Number employed 2015-16	Proportion returned from previous year (estimated %)
Seasonal Worker Programme (visa 416)	☐	_____	_____
Working Holiday Makers (visas 417 or 462)	☐	_____	_____
Other foreign contractors	☐	_____	_____
Locals (Australian residents)	☐	_____	_____

Q1.6 Please indicate when your main activity periods were in 2015-16, for your farm [where applicable].

	Approximate start date (day/month)	Approximate end date (day/month)
First harvest season	___/___	___/___
Second harvest season (if applicable)	___/___	___/___
Other activity (e.g. pruning, weeding, packing) [specify below]		
	___/___	___/___
	___/___	___/___
	___/___	___/___

Q1.7 For the worker groups below, please estimate the average number of workers per week, working on your farm in 2015-16, in each of these periods.[Write N/A if you don't have workers in this group]

	Seasonal Worker Programme (per week)	Working Holiday Makers (per week)
First harvest season	_____	_____
Second harvest season (if applicable)	_____	_____
Other activity (e.g. pruning, weeding, packing) [specify below]		

	Seasonal Worker Programme (per week)	Working Holiday Makers (per week)
	_____	_____
	_____	_____
	_____	_____

Q1.8 What was the average number of hours worked per week in 2015-16, for an individual worker in each group? Average across the periods above. [Write N/A if no workers in this group]

	Seasonal Worker Programme	Working Holiday Makers
Estimated weekly hours, per worker	_____	_____

Q1.9 Across your farm or farms, what was the average number of weeks worked in 2015-16 by an individual worker in each group?

	Seasonal Worker Programme	Working Holiday Makers
Average number of weeks worked per worker	_____	_____

Part 2 – Non-wage labour cost

Non-wage labour cost consist of non-wage expenses and time incurred by your business (all staff time). This includes costs of recruiting and establishing workers, transport, training, administration and compliance, and accommodation.

Do not include any expenses that you recoup later from workers (e.g. rent, or other deductions).

Q2.1 For the 2015–16 financial year, please estimate total expenses and time to your business associated with employing all workers in the groups below. Please include all items listed below*

[Write N/A if no workers in this group, or if items don't apply]

Recruiting and establishing workers	Expenses ($)	Time (number of days)
Seasonal Worker Programme workers	_____	_____

Working Holiday Makers	_____	_____

**Include:*
- Advertising (including labour market testing).
- Recruitment and selection (including interviews)
- Communicating with partner countries (where applicable). Do not include costs of any overseas visits you have made to countries as part of sourcing seasonal labour
- Setting up superannuation accounts / registering foreign workers
- Other costs associated with recruiting and establishing workers (e.g. checking visa status)

Transport for workers	Expenses ($)	Time (number of days)
Seasonal Worker Programme workers	_____	_____
Working Holiday Makers	_____	_____

**Include:*
- Travel costs to get workers to Australia and/or your farm
- Transport between farms/town centres (including as part of Pastoral care)

Training workers	Expenses ($)	Time (number of days)
Seasonal Worker Programme workers	_____	_____
Working Holiday Makers	_____	_____

**Include:*
- On-site training costs, including associated with turnover of new workers

Administration and compliance	Expenses ($)	Time (number of days)
Seasonal Worker Programme workers	_____	_____
Working Holiday Makers	_____	_____

**Include:*
- Reporting to government agencies, or assisting inspections
- Insurance (workers compensation)
- Providing on-arrival, pre-departure briefings or area orientations (if applicable)

Accommodation

Q2.2 In 2015-16 did your business provide substantially different accommodation for Seasonal Worker Programme workers and Working Holiday Makers?	Yes ☐	No ☐

If no, please go to Part 3.

Q2.3 Did your business provide the accommodation or running expenses for free, to these groups in 2015-16? (running expenses may include cleaning, cooking, bedding, water, electricity, cooling/heating, telecommunication, internet and appliances replacement costs)	Accommodation		Running expenses	
Seasonal Worker Programme workers	Yes ☐	No ☐	Yes ☐	No ☐
Working Holiday Makers	Yes ☐	No ☐	Yes ☐	No ☐

If you don't provide free accommodation or running expenses (IF all above is no), please go to Part 3.

Q2.4 For any worker groups marked yes in Q2.3, please fill in applicable accommodation details below, giving 2015-16 totals for all workers.

[Do not include any costs that you recoup later from workers]

Off-farm accommodation

	Seasonal Worker Programme workers	Working Holiday Makers
Accommodation type 1 (e.g. house, units, caravan)	_____	_____
Weekly rent and all running expenses incurred by your business ($)	_____	_____
Accommodation type 2 (e.g. house, units, caravan)	_____	_____
Weekly rent and all running expenses incurred by your business ($)	_____	_____

On-farm accommodation

	Seasonal Worker Programme workers	Working Holiday Makers
Accommodation type (e.g. house, units, caravan)	_____	_____
Year of construction	_____	_____

	Seasonal Worker Programme workers	Working Holiday Makers
Construction cost of building (estimated $)	_____	_____
Replacement cost (estimated $)	_____	_____
Running expenses (estimated $)	_____	_____

Part 3 – Workers' on-farm activities and characteristics

Q3.1 Did seasonal workers and working holiday makers you employ use similar technology (such as machines, tools and production methods) when they were assigned to do the same tasks?	Yes ☐	No ☐	N/A ☐
Q3.2 Are you more likely to assign different work tasks to different groups? (i.e. seasonal workers and working holiday makers on your farm)	Yes ☐	No ☐	N/A ☐

If no for Q3.2, please go to Q3.4.

Q3.3 What type of tasks are you more likely to assign to each group? [tick any that apply]

	Seasonal Worker Programme	Working Holiday Makers	N/A
Complex tasks	☐	☐	☐
Work with high value crops	☐	☐	☐
Work with delicate products	☐	☐	☐
Tasks where experience is important	☐	☐	☐
Urgent tasks	☐	☐	☐
Other tasks where you assign work differently [please specify below]			

Q3.4 Thinking about the abilities and behaviour of the majority of workers you have employed, to what extent do you agree or disagree with the following statements, for different worker groups?

Rate on a scale of 0 to 10, where 0 is strongly disagree and 10 is strongly agree.

	Seasonal Worker Programme	Working Holiday Makers	N/A
Skills and abilities			

	Seasonal Worker Programme	Working Holiday Makers	N/A
Workers have good teamwork skills	_____	_____	☐
Workers abilities with English impacts my business	_____	_____	☐
Workers are physically well matched to the job	_____	_____	☐
Workers are mentally/emotionally well matched to the job	_____	_____	☐
Workers have relevant on-farm experience	_____	_____	☐
Behaviours and productivity			
Workers returning year to year advantages my business	_____	_____	☐
New workers need considerable training to be fully productive	_____	_____	☐
Absences or unanticipated departures is a problem for my business	_____	_____	☐
Workers are motivated and enthusiastic	_____	_____	☐
Workers are reliable	_____	_____	☐
After training, workers' overall productivity is high	_____	_____	☐

Part 4 – Accessing labour and general issues

Q4.1 What are the main reasons that you access Seasonal Worker Programme workers and/or working holiday makers? [tick any that apply]

	Seasonal Worker Programme workers	Working Holiday Makers
Supply critical base labour	☐	☐
Supply critical peak labour	☐	☐
Planning flexibility	☐	☐
Immediate availability/reliability	☐	☐

	Seasonal Worker Programme workers	Working Holiday Makers
Managing risk in labour supply assists my long term investment decisions	☐	☐
Outcomes for workers and home countries	☐	☐
Heard about positive experiences from other employers	☐	☐
Had a negative experience with other sources of labour	☐	☐
Other (please specify) _____	☐	☐
Other (please specify) _____	☐	☐

Q4.2 Why does your business recruit workers directly though the Seasonal Worker Programme, rather than through a labour hire company or contractor?

[open text] _____

Q4.3 What barriers or difficulties might businesses, like yours, experience in accessing Seasonal Worker Programme workers and/or working holiday makers? [tick any that apply]

	Seasonal Worker Programme workers	Working Holiday Makers
Outlay for up-front costs (e.g. travel)	☐	☐
Complying with regulations and paperwork (e.g. accommodation, approvals)	☐	☐
Finding sufficient workers	☐	☐
Uncertainty about government settings (e.g. expanded industries, taxes)	☐	☐
Other (please specify)	☐	☐

	Seasonal Worker Programme workers	Working Holiday Makers
_____		
Other (please specify) _____	☐	☐

Q4.4 What pastoral care do you provide as part of being involved in the Seasonal Worker Programme? (e.g. this may include enabling religious observance, social and recreational opportunities)

[open text] _____

Q4.5 Thinking about the wider effects different labour sources may have in your region – to what extent do you agree or disagree with the following statements?

Rate on a scale of 0 to 10, where 0 is strongly disagree and 10 is strongly agree.

	Seasonal Worker Programme workers	Working Holiday Makers	N/A
These workers are critical for farms in this region	_____	_____	☐
These workers contribute to the community's economy	_____	_____	☐
These workers contribute to cultural diversity of the community	_____	_____	☐

Q4.6 What changes, if any, would you suggest to improve the Seasonal Worker Programme, to make it more attractive to growers?

[open text] _____

Q4.7 What changes, if any, would you suggest to improve programmes in place for accessing working holiday makers? (e.g. the Working Holiday Maker visa programme)

[open text] _____

Q4.8 If you would be happy to further discuss your experiences employing seasonal workers and working holiday makers, please provide your preferred contact details below.

Email _____
Telephone _____

How to return your survey:

By snail mail	By email	Or call us
GPO Box 858 Canberra City ACT 2601 Australia	Bill.Binks@agriculture.gov.au	(02) 6272 5425

THANK YOU FOR TAKING THE TIME TO ASSIST WITH THIS STUDY

Appendix B: Wages spreadsheet

INSTRUCTIONS -- Record your information in "Data Entry" sheet

1. Choose **one week** in each of the last 3 financial years, when **both seasonal workers (SW) and Working Holiday Makers (WHM)** did the same work on the the same product (if possible*)

2. Enter total **weekly wage** and **hours worked** for at least **10 workers** (if possible*) in each of the SW and WHM categories

3. Weekly wage is total **gross payments** paid to each worker **using piece rates,** over a **7-day week** (including Saturday and Sunday)

4. If possible, please include up to 5 seasonal workers who had returned from previous years. Indicate workers as either **Returned** or **New.**

MORE DETAILS *

Weekly wages - Do not subtract potential deductions such as travel, insurance, taxes, etc...

Selecting the weeks - if records are available, please select weeks in this way:

a. For **2015-16**, a week in the **middle** of the peak harvest season
b. For **2014-15**, a week towards the **beginning** of the peak harvest season
c. For **2013-14**, a week towards the **end** of the peak harvest season

If these records are **not available**, use one of these options, in this preferred order:

a. Select all weeks from the 2015-16 financial year: a week towards the beginning of the season; a week in the middle of the season and a week towards the end of the season
b. Provide data for a week in the middle of the season in 2015-16, and for two weeks covering the beginning and end of a season in other financial years
c. Provide data over 3 weeks from any three financial years where you have records for both SW and WHM

If SW and WHM did multiple types of work (e.g. picking, packing or pruning):

- Select SW and WHM doing work using piece rates (e.g. fruit picking paid in dollars per bin). As a guide, please select a sample of workers doing the following types of work (this order of preference):

a. Picking
b. Packing

If SW and WHM worked on multiple products (e.g. picking both apples and pears):

- Please select the workers picking similar products where a piece rate is used. As a guide, the preferred order for the products worked on is:

a. Orange
b. Apple
c. Pear

If you employed less than 10 SW or WHM:

- record all worker information (e.g. for all seasonal workers, if you employ 5)
- **or** if less than 10 in the designated week, select a week closest to that week

If you employed larger numbers of SW or WHM

- please provide data for a maximum of 50 SW and WHM workers in total (e.g. 25 SW and 25 WHM)
- select roughly equal numbers of SW and WHM

If there are less than 25 SW or WHM working:

- select all the workers in that category and include more workers in the other category, to get the maximum total of 50

EXAMPLE AND ASSISTANCE

See sheet "Example" for an example of the format of data required.

If you have any questions, please call ABARES on (02) 6272 5425

2015-16

A week in the middle of the peak harvest season

Week Start from (please specify):	dd/mm/yyyy
Product worked on (please specify):	
Type of work (please specify):	

*Note: Seasonal workers refers to workers in the **Seasonal Worker Programme***

Participant ID	Seasonal worker (SW) or Working Holiday Maker (WHM)	New worker or returned worker	Weekly wage	Number of hours worked in the week
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				

2014-15

A week towards the beginning of the peak harvest season

Week Start from (please specify):	dd/mm/yyyy
Product worked on (please specify):	
Type of work (please specify):	

Participant ID	Seasonal worker (SW) or Working Holiday Maker (WHM)	New worker or returned worker	Weekly wage	Number of hours worked in the week
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				

2013-14

A week towards the end of the peak harvest season

Week Start from (please specify):	dd/mm/yyyy
Product worked on (please specify):	
Type of work (please specify):	

Participant ID	Seasonal worker (SW) or Working Holiday Maker (WHM)	New worker or returned worker	Weekly wage	Number of hours worked in the week
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				

Appendix C: Significance test of group mean differences

Welch's t-test was carried out on each pair of comparable group of seasonal workers and working holiday makers to see whether the mean productivity of seasonal workers was statistically different to the mean productivity of working holiday makers. The test is:

$$H_0: \mu_{SW} = \mu_{WHM}$$

$$H_1: \mu_{SW} > \mu_{WHM}$$

where μ_{SW} and μ_{WHM} are the unobserved group mean productivity of seasonal workers and working holiday makers respectively and the test assumes that the population variance in each group can be different. This study is interested in testing the null hypothesis that the two group means are the same, against the alternative hypothesis that seasonal workers have higher mean productivity than working holiday makers (one-sided test).

Table 10 shows the results of Welch's t-test across our sample dataset. In all cases except the berry farm, Welch's t-test rejected the null hypothesis at the 10 per cent significance level.

Table 10 Welch t-test statistics for seasonal workers and working holiday makers

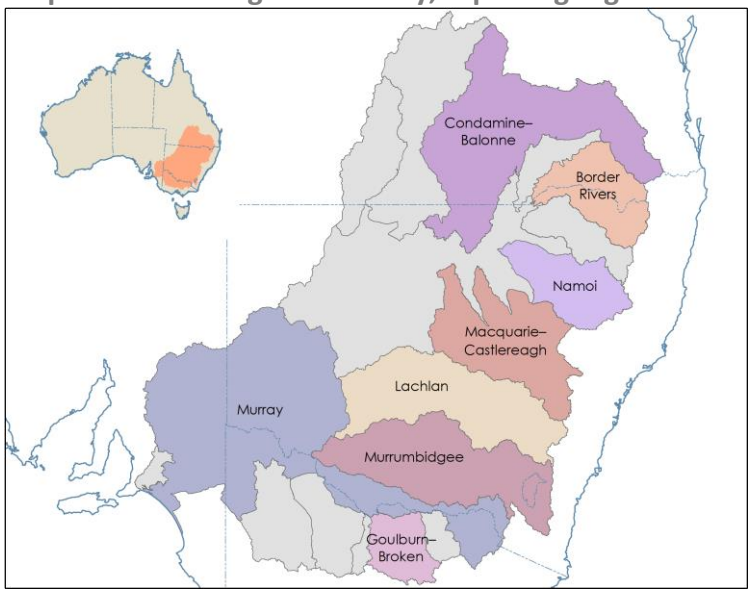
Grower ID	Financial year	Produce	Number of workers		Average productivity ($/hour)		Welch t-test		
			SW	WHM	SW	WHM	Test statistic	Degrees freedom	P-value
	2013–14	Citrus	25	11	24.4	21.7	1.75	15.1	0.05
Grower A	2014–15	Citrus	44	23	25.7	21.6	3.95	53.5	0
	2015–16	Citrus	44	39	26.8	20.4	6.18	75.4	0
Grower B	2015–16	Berries	25	25	23.7	23.4	0.14	41.8	0.45
Grower C	2015–16	Citrus	12	11	32.5	23.7	11.5	16.6	0

Note: SW denotes seasonal workers; WHM denotes working holiday makers
Source: ABARES

Appendix D: ABARES Irrigation Survey

ABARES survey of irrigation farms in the Murray-Darling Basin (henceforth ABARES Irrigation Survey) collects production and financial data of irrigation farms in the main irrigation regions in the Murray-Darling Basin (Map 2). In 2014–15, the survey was representative of 6,173 farms of which 42 per cent were horticulture farms whose main receipts come from vegetables, stone fruit, pome fruit, citrus, wine grapes and other tree crops. In 2014–15 the Basin accounted for 64 per cent of Australia's total area irrigated and 40 per cent of the nation's irrigating agricultural businesses.

Map 2 ABARES Irrigation Survey, reporting regions in the Murray-Darling Basin



Source: ABARES

ABARES Irrigation Survey collects information on farm production and financial performance. In 2016, a supplementary questionnaire was included that asked farmers to describe their current labour use and future labour requirements. The results of the survey included, among other estimates, the size of the seasonal workforce employed on farm (which may have included working holiday makers, seasonal workers and locals). This report uses these data to estimate the relationship between total costs and the size of seasonal workforce, specific to horticulture farms in the Murray–Darling Basin.

A limitation of the data from ABARES Irrigation Survey is the mismatch between the financial years representative of labour use and financial performance. In 2016, ABARES Irrigation Survey collected farm production and financial data for 2014–15, whereas the supplementary questionnaire about growers' current labour use was specific to 2015–16. Therefore, implicit in the construction of production costs for horticulture farms that employed workers, is the assumption that the ratio of employed workers and total costs was relatively similar between 2014–15 and 2015–16.

Estimates of total production costs included the cost of labour, capital and intermediate inputs. Labour costs included wages paid to hired workers and imputed costs of self-employed labour. The cost of capital was measured by the cost of depreciation and foregone interest earnings on

its market value. Intermediate inputs included expenses on materials and services such as seed, fertilisers, chemicals, fuel, contracting services, off-farm packing and insurance. Since farm production costs may be different depending on farm size and, in this study, the focus was on the employment of seasonal workers and working holiday makers, the total number of workers in the seasonal workforce was used as the indicator of farm size. These estimates (Table 11) were then used to estimate the proportion of non-wage labour cost in total production costs for the approved employer growers analysed in this study.

Table 11 Average farm total costs by size of seasonal workforce, horticulture farms in the Murray Darling Basin

Size of seasonal workforce	Average total cost per farm
1 to 45 workers	366,727
46 to 70 workers	1,716,161
71 to 110 workers	5,652,094
> 110 workers	6,530,605

Note: Number of workers related to 2015–16. The average total cost per farm relate to costs incurred for 2014–15 and denominated in 2015–16 dollars by adjusting for farm prices paid using an ABARES annual index.
Source: ABARES Irrigation Survey in 2016

Appendix E: Selected survey results

The tables below present summarised quantifiable data that was collected from selected questions in the grower survey.

Survey results about worker characteristics

Growers gave ratings for each statement on a scale of 0 to 10, where 0 is strongly disagree and 10 is strongly agree (Table 12).

Table 12 Growers' average ratings about the abilities, behaviour and productivity of the majority of workers employed

Statement	Seasonal Workers (n=7)	Working Holiday Makers (n=6)
Workers have good teamwork skills	8.4	5.7
Workers abilities with English impacts my business	3.7	5.3
Workers are physically well matched to the job	8.6	5.8
Workers are mentally/emotionally well matched to the job	8.0	5.8
Workers have relevant on-farm experience	6.4	4.0
Workers returning year to year advantages my business	9.6	8.7
New workers need considerable training to be fully productive	6.6	7.7
Absences or unanticipated departures is a problem for my business	6.2	8.0
Workers are motivated and enthusiastic	8.3	6.0
Workers are reliable	8.4	5.5
After training, workers' overall productivity is high	8.7	6.0

Note: Number of growers who responded was: 7 for seasonal workers; 6 for working holiday makers.
Source: ABARES - survey question 3.4

Survey results about labour access

Growers gave ratings for each statement about the wider effects different labour sources have in their region on a scale of 0 to 10, where 0 is strongly disagree and 10 is strongly agree (Table 13).

Table 13 Growers' average ratings about different labour sources in their region

Statement	Seasonal Workers (n=6)	Working Holiday Makers (n=4)
These workers are critical for farms in this region	9.8	8.3
These workers contribute to the community's economy	8.3	8.3
These workers contribute to cultural diversity of the community	8.7	9.5

Note: Number of growers who responded was: 6 for seasonal workers; 4 for working holiday makers.
Source: ABARES - survey question 4.5

Growers were asked to select their reasons for accessing workers from the different groups (Table 14).

Table 14 Growers' main reasons for accessing seasonal workers and/or working holiday makers (counts of selected reasons)

Statement	Seasonal Workers (n=7)	Working Holiday Makers (n=6)
Supply critical base labour	6	3
Supply critical peak labour	6	4
Planning flexibility	5	4
Immediate availability/reliability	3	6
Managing risk in labour supply assists my long term investment decisions	6	2
Outcomes for workers and home countries	6	0
Heard about positive experiences from other employers	2	0
Had a negative experience with other sources of labour	2	0

Note: Number of growers who responded was 8 (6 of these were in surveys and 2 were based on responses during an interview).
Source: ABARES - survey question 4.1