

**A discussion paper on industry issues drawn from data collected by ABARES in 2012 from Australian vegetable growing farms.**

**Ian James**

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## Background

Each year the Australian Bureau of Agriculture and Resource Economics and Sciences conducts a survey of Australian vegetable growers on behalf of Horticulture Australia Limited. The survey aims to ascertain conditions in the vegetable industry and in particular financial performance and management practices. The latest survey was conducted between February and August 2012 and collected comprehensive data on vegetable growers operations in the previous financial year 2010-11. Some provisional projections were made for 2011 -12. The purpose of this paper is to open up discussion on a number of issues that data collected in the survey revealed. 2010-11 was something of an exceptional year for the Australian vegetable industry with dramatic climatic conditions impacting on key vegetable production areas. This aside there are lessons to be drawn from the data.

### Financial performance in 2010-11

The vegetable industry's financial performance improved significantly in 2010-11. Average farm cash income rose for the first time in three years. Cash income was up 14% across the industry from \$142,090 in 2009-10 to \$161,600. Incomes rose in all states except Tasmania where growers were hit by a combination of falling receipts, rising costs and poor seasonal conditions. Western Australian growers outperformed with a rise in average cash income of 41%. As with 2009-10, South Australian growers had the highest cash income in 2010-11 with an average of \$257,000. Although returns improved the average cash income of growers in New South Wales continued to lag the national average.

### Financial performance of vegetable farms by state 2009-10 and 2010-11

Geography	Cash receipts		Cash costs		Cash income	
	2009-10	2010-11	2009-10	2010-11	2009-10	2010-11
New South Wales	366 920	343 900	297 250	254 300	69 680	89 500
Victoria	755 910	916 200	571 190	725 600	184 720	190 600
Queensland	909 550	799 000	783 130	644 900	126 420	154 100
South Australia	800 630	987 000	605 030	730 000	195 600	257 000
Western Australia	916 350	1 414 600	756 320	1 189 700	160 030	224 900
Tasmania	614 810	554 600	474 600	454 500	140 210	100 000
<b>Australia</b>	<b>707 670</b>	<b>792 200</b>	<b>565 580</b>	<b>630 600</b>	<b>142 090</b>	<b>161 900</b>

*Source:* ABARES Australian vegetable growing farms: An economic survey 2010-11 and 2011-12, page 12

These figures tell a good story of improving financial health for the Australian vegetable industry when viewed from an industry wide perspective. But the story is not the same for all growers. A more in depth analysis of the data reveals some significant issues.

Average cash receipts from vegetable farms across Australia increased by 12% in 2010-11 to \$792,000. This increase was due to higher prices received. The production of most crops declined due to the devastating impacts of storms and flooding in key production areas in the largest vegetable growing state, Queensland and to a lesser extent in other states. The

immediate impact of these disasters was to reduce supply and boost prices. In the December quarter of 2010 vegetable prices Australia-wide, as measured by the Consumer Price Index, rose 11.3% and in the March quarter of 2011 they rose 16% with even higher price rises in Brisbane. The response from growers was to plant more vegetables leading to surpluses and consequent significant price decreases. Retail prices fell sharply in the June quarter of 2011 and fell continuously until the June quarter of 2012.

The impact on grower incomes was significant. Growers with vegetables to supply at the end of 2010 gained the benefit of the higher prices. Other growers either lost their production or incurred higher costs to expand production in response to the initial price hike and delivered vegetables into a market where prices were falling. Averaged across the country and given the importance of areas in Queensland to vegetable supplies the net result was lower production and higher returns.

There are some salutary lessons for vegetable growers from the above events. Vegetable growers are adept at responding directly to market signals. Vegetable production can, unlike for broad acre crops and livestock production, respond in a relatively short timeframe to price movements in the market. This is good for consumers and indeed for supporters of unfettered markets. For vegetable growers their ability to respond to market price signals harms their income. Undersupply and high prices cause decisions to be made that leads to oversupply and low prices. A more measured response is required to price signals. While collusion is outlawed by competition laws vegetable growers would benefit by a more macro view towards markets that took account of the likely industry-wide response to price signals from the marketplace.

### **Cash costs on vegetable farms**

Total cash costs rose by 11% in 2010-11. Rising cash costs have been a feature of the annual vegetable farm surveys for a number of years but in 2010-11 the rise appears more aligned with an expansion in the area planted rather than rising per unit costs. Key variable costs associated with the level of production such as seed, fertiliser, chemicals and contract labour were significantly higher in 2010-11 than the previous financial year.

Decreasing cash costs remains a top priority for vegetable growers to sustain long-term profitability. But concentrating on total costs of production tells us little about the production efficiency of vegetable growers. The latest survey shows that growers in New South Wales had the lowest total cash costs of production and Western Australia growers the highest. This is not a reflection of the relevant cost efficiency of vegetable growers but more the different structural characteristics of vegetable farms in different states. In New South Wales, vegetable farms, which are concentrated in the Sydney basin where land is scarce and expensive, are in general much smaller than in other states.

A more appropriate measure of efficiency and potential cost competitiveness would concentrate on unit cost. But using this measure could also lead to the wrong conclusion being drawn. The ABARES data shows that while growers in New South Wales had the lowest total costs of production, Tasmanian growers had the lowest cash costs per tonne of

production. A raw interpretation of the data would suggest that Tasmanian growers had costs under better control than growers in New South Wales. But this doesn't allow for structural differences in vegetable farms and the vegetables they produce.

Tasmanian vegetable farms are in stark contrast to vegetable farms in the Sydney basin. Tasmanian growers largely produce crops which are more conducive to mechanisation and hence require less labour input – a high cost in Australia. They also produce mainly for the processing sector and consequently on-farm handling is lowered, reducing labour costs. In contrast, in New South Wales most produce is produced on smaller farms which are less conducive to mechanisation and where capital for machinery is less readily available. A wide variety of produce is sold fresh into the Sydney market with a large percentage of labour intensive harvested and sorted crops.

### **Uneconomic operations**

The data shows that for 2010-11, 17% of vegetable growers failed to produce a positive cash income. While adverse seasonal conditions are given as an explanation this figure has been around this level for a number of years. Vegetable growers can move in and out of negative farm cash flows from year to year but the persistently high level of growers in this situation (one in six on a yearly basis) is a cause for concern. The figures indicate inadequate returns to sustain the existing number of growers under existing structures. When account is taken of the contribution of their own / family labour and non-cash costs, the situation is even worse. Over half of vegetable growers fail to achieve a positive return on their endeavours.

These growers create a long tail that adds to market supplies and restrain prices for other growers. There are some rational reasons why growers remain in the industry while not achieving an adequate rate of return. Some relate to lifestyle issues and others relate to investment decisions where the possibility of capital appreciation or the potential for subdivision, particularly in peri-urban areas, remain at the forefront of growers' minds.

The survey data shows that production is concentrated on a small number of farms. Around 12% of vegetable farms have an estimated value of agricultural operations in excess of \$1 million and these contribute 58% to overall vegetable production. In contrast, there are a large number of farms where the overall contribution to production is relative minor. 36% of vegetable farms have an estimated value of operations less than \$50,000 and they contribute around 2% of the value of vegetable operations.

There are signs that the industry is slowly restructuring towards a more sustainable model. The number of farms where vegetable growing is the principal activity has consistently declined since the collection of data was substantially revised in 2005-06. The data from the farm surveys conducted by ABARES for the six years to 2010-11 show that the average rate of decline in the number of vegetable farms has been 6% Australia-wide, with some variation between the states. The decline in numbers has been most dramatic in Tasmania. Accompanying this trend has been an expansion in the average area planted per farm with Western Australia growers, and to a lesser extent South Australian growers, leading the charge.

## Contrasts between better and poorer performing vegetable growers

In order to move away from the concept of an industry average, in the more recent surveys, ABARES has been asked to contrast the performance of better growers as measured by rate of return on capital compared to others in the industry. In the latest survey the contrast in the characteristics of better and lesser performing growers especially in relation to their financial performance is stark.

The top 25% of growers operated larger farms and planted larger areas of vegetables than the bottom 25%, although the percentage of hectares planted with vegetables was similar. Growers in between tended to have a smaller percentage of their total farm holding planted with vegetables which may indicate a desire for diversity into other agriculture pursuits in order to protect incomes. The better performing growers were more conscious of issues such as food safety programs, testing for chemical residues and environmental management programs. They were also less likely to sell their produce in local markets, preferring to supply vegetables interstate or to the state capital wholesale market.

### Selected characteristics of vegetable farms by rate of return to capital, 2010-11

Characteristic	Average per farm- % of farms	Bottom 25%	Middle 50%	Top 25%
Total area operated	hectares	86	189	389
Area sown to vegetables	hectares	19	26	79
Have a food safety program in place	per cent	53	65	75
Have a pest and disease monitoring program in place	per cent	96	99	100
Conducted a food safety assessment of the farms water source	per cent	38	40	56
Have participated in or are considering an environmental management program	per cent	30	32	43

*Source:* ABARES Australian vegetable growing farms: An economic survey 2010-11 and 2011-12, page 26

It was in the financial performance where the differences were greatest. The table below shows the contrast. The rate of return to capital of the better performing farms was over 10% while for the poorer performing farms it was negative 6%. The bottom 25% of farms averaged negative cash income and even worse business profits (allowing for depreciation, stock changes and own and family labour). These farms relied more on off-farm income to sustain themselves. In contrast the top 25% of farms had strong cash flows and were likely to generate a strong business profit.

### Financial performance of vegetable farms by rate of return to capital, 2010-11

Financial measure	Average per farm- % of farms	Bottom 25%	Middle 50%	Top 25%
Total cash receipts	dollars	230 300	542 600	1 840 000

Total cash costs	dollars	259 100	469 700	1 314 900
Farm cash income	dollars	-28 900	72 900	525 100
Farms with negative cash income	per cent	43	13	1
Farm business profit	dollars	-130 100	-27 700	374 900
Farms with negative farm business profit	per cent	100	65	3
Proportion of receipts from vegetables	per cent	76	79	88
Rate of return to capital	per cent	-6.0	0.6	10.1
Total off farm income	dollars	27 300	24 800	12 000

*Source:* ABARES Australian vegetable growing farms: An economic survey 2010-11 and 2011-12, page 25

The data for the latest year confirms that of previous years. There is a marked contrast between the management practices and the financial returns experienced by better and poorer performing vegetable growers. The vegetable growing industry has some high performing businesses that other growers could do well to benchmark off.

### **Impediments to future business viability**

While there are marked differences in the financial performance and attitudes of vegetable growers to managing their business, growers have more universal agreement on the major factors threatening the viability of their farms. The survey divided farms up on the basis of rates of return but there was little difference in the responses of growers whether or not they were in the bottom 25% or top 25%. Increased farm input costs were seen by most growers as the major threat to future viability while low prices were seen as the second major threat. These responses indicate that vegetable growers are fearful of the classic business problem of the cost/price squeeze where they have little control over prices or costs.

### **Does scale have an impact?**

The data collected in the latest survey supports the view that scale of production impacts on financial performance. In 2010-11 the rate of return on capital for growers with less than twenty hectares was zero. For growers with between 20 hectares and 70 hectares of vegetables the rate of return was 3.3% but for growers with more than 70 hectares of vegetables the rate of return was 5.1%.

This data confirms that of previous surveys. Growers with less than 5 hectares under vegetables have at best very low rates of return (less than 2%) or at worse negative rates of return. For growers with 5 to 20 hectares under production, rates of return have remained positive but varied between zero and 1.5%. Growers with operations between 20 and 70 hectares have achieved rates of return between 2% and 4%. Growers with more than 70 hectares under production have performed best in financial terms with the rate of return ranging above 10% but always consistently above 5%.

This data may be impacted by structural characteristics of farms covered in the survey e.g. undercover vegetable producers typically have smaller scale operations than field producers,

with high capital expenditure relative to farm size. While size is not everything in determining rates of return on capital—it helps.

### **Cost of production of different vegetables**

The cost of production of most vegetables measured in the survey of 2010-11 rose compared to 2009-10 as crucial vegetable growing regions experienced adverse climatic conditions. Average costs of production were up sharply for tomatoes to \$843 per tonne, cabbages were up 63% to \$805 per tonne, pumpkins up 46% to \$694 per tonne, carrots up 32% to \$261 per tonne, beans up 23% to \$1332 per tonne and onions up 21% to \$370 per tonne. The cost of broccoli production, which is mainly grown in areas which were not as adversely impacted by the adverse climatic conditions, was flat.

Despite the rise in costs carrot growers continued to have the lowest average cost of production of \$261 per tonne in 2010-11. Potatoes had the second lowest cost of production in 2010-11 followed by onions, the same ranking as in 2009-10 and 2008-09. It is no coincidence that these three vegetables led by carrots are Australia’s leading fresh vegetable exports.

### **Cost of production per tonne for different vegetables 2007-08 to 2010-11**

*Average per farm (Australian dollars)*

<b>Vegetable</b>	<b>2007-08</b>	<b>2008-09</b>	<b>2009-10</b>	<b>2010-11</b>
Potatoes	227	270	255	278
Pumpkins	680	665	476	694
Beans	538	1362	1081	1332
Tomatoes	735	374	313	843
Onions	333	354	305	370
Carrots	203	237	197	261
Cauliflowers	664	618	662	682
Lettuce	620	731	1094	950
Broccoli	1034	1302	1344	1339
Cabbage	207	337	494	805

*Source: ABARES – Australian Vegetable Growing Farms – an Economic Survey (various years)*

Broccoli with an average cost of \$1339 per tonne in 2010-11 had the highest cost of production among the main vegetables, a similar story to 2009-10. Beans had a similar cost at \$1332 per tonne.

The data confirms that on average the cost of producing root crops is lower probably because of the greater use of machinery, particularly in harvesting. Costs are higher for above ground vegetables due to higher labour input. In order to remain competitive in both the domestic and export market root vegetable crops will need to be cost competitive with other advanced nations with similar degrees of mechanisation while above ground vegetables will need to be conscious of the cost of labour input to ward off the possibility of the import of fresh produce from low labour cost countries.

## Use of new technology

In 2010-11 the data reveals a widespread knowledge of the capabilities of new technology to assist vegetable growers in the running of the business. Application of new technology is however variable. 72% of vegetable growers used a computer to assist the operation of their farm but computer use was limited and mainly used to conduct financial affairs and seek weather information. 16% used a global positioning system (GPS) to assist crop production.

Scepticism about the delivery of industry issues through electronic means is well founded. Only 10% of growers used computers to access media releases, 12% education resources and 23% industry links.

Larger growers as expected are more likely to use computers and GPS than smaller growers. 93% of growers on farms with vegetable plantings in excess of 70 hectares used computers compared to 40% of farms with plantings less than five hectares. These larger farmers were also more likely to use GPS. 44% used GPS in crop production compared to zero for the smaller farmers. As the table below shows on all measures of use of technology there is a huge gap between the larger and smaller growers.

### Use of technology on vegetable farms, by area of vegetables sown, 2010-11

Percentage of growers	< 5 hectares	> 70 hectares
Using a computer in business	40	93
Using GPS for crop production	0	44
<b>Using internet for:</b>		
Education resources	9	23
Financial affairs	25	71
Industry links	8	39
Market information	16	53
Media releases	6	23
Weather information	16	68
Purchasing farm inputs	9	35

*Source:* ABARES Australian vegetable growing farms: An economic survey 2010-11 and 2011-12, page 42

The data confirms the wide dichotomy in the vegetable industry with larger growers using sophisticated aids to assist the running of their business and having the financial capacity to undertake the necessary capital investments to implement them.

### The take up of export opportunities

There has been a great deal of emphasis in the last part of 2012 on the opportunities available to Australian agriculture because of rising world demand for food and in particular expanding exports of Australian produce as living standards rise in Asia. The Australian government has delivered a white paper on 'Australia in the Asian Century' and is in the final stages of putting together a 'National Food Plan.' The Australia and New Zealand Banking Group has commissioned research and released a number of reports the most recent being 'Greener Pastures: The Global Soft Commodity Opportunity for Australia and New Zealand'.



Exports of Australian vegetables are low. In 2010-11 fresh vegetable exports as a percentage of the gross value of vegetable production were just under 5% and vegetable exports in total just under 8%. These are extremely low figures compared to most other agricultural commodities produced in Australia and highlight the enormity of the task in raising the level of exports of Australian vegetables. The opportunities for Australia in expanding into Asia are in higher protein agricultural produce and broad acre crops where Asia's domestic industries face pressure on scarce land resources and changing taste preferences associated with rising incomes.

Much of the emphasis in recent reports has concentrated on the growth of the packaged and prepared food segment into urban supermarkets. Given that there are already significant import pressures in the domestic vegetable processing sector it is difficult to envisage much growth for vegetable growers in this regard.

The opportunities for vegetable growers appear more aligned with the development of niche vegetable markets either by providing high quality innovative product or through taking advantage of counter seasonal trading opportunities. Despite the decimation of key product markets in Asia in the early part of this century by Chinese competition, it is important to remember that Singapore was the major export destination for Australian fresh vegetables in 2011-12 and that asparagus growers continue to supply a niche market in Japan.

Does the latest farm survey by ABARES provide any insight into the possible expansion of sales of Australian vegetables into Asia?

In 2010-11 while 12% of vegetable growers saw export markets as a major growth opportunity only 4% actually sold produce to export markets. Tasmanian and Western Australian growers were more likely to be favourably disposed to export. Both these states already have large grower companies that concentrate on the export market. The culture of export is strong in the West and the lack of a large capital city market and the pressures being felt in the processing sector may explain the enthusiasm to develop export markets in Tasmania. Queensland growers were the most sceptical about the prospects for export.

As the table below shows there was wide disparity between answers from growers in different states as to where the major growth opportunities were but overall vegetable growers saw better opportunities in producing high quality produce to sell on domestic markets than in exporting.

#### **Major growth opportunities for vegetable farms, by state, 2010-11**

<b>Percentage of farms</b>	<b>NSW</b>	<b>Vic</b>	<b>Qld</b>	<b>SA</b>	<b>WA</b>	<b>Tas</b>	<b>Australia</b>
<b>Exports</b>	<b>10</b>	<b>11</b>	<b>4</b>	<b>9</b>	<b>21</b>	<b>28</b>	<b>12</b>
<b>Selling direct to retail</b>	<b>35</b>	<b>30</b>	<b>8</b>	<b>19</b>	<b>58</b>	<b>20</b>	<b>26</b>
<b>Direct to food services sector</b>	<b>10</b>	<b>21</b>	<b>7</b>	<b>23</b>	<b>50</b>	<b>6</b>	<b>17</b>
<b>Niche products</b>	<b>12</b>	<b>11</b>	<b>18</b>	<b>15</b>	<b>31</b>	<b>37</b>	<b>18</b>
<b>High quality produce</b>	<b>29</b>	<b>36</b>	<b>74</b>	<b>61</b>	<b>41</b>	<b>83</b>	<b>53</b>
<b>Value adding on farm</b>	<b>5</b>	<b>6</b>	<b>4</b>	<b>12</b>	<b>11</b>	<b>11</b>	<b>7</b>

<b>Under protective cropping</b>	<b>18</b>	<b>9</b>	<b>2</b>	<b>7</b>	<b>6</b>	<b>8</b>	<b>8</b>
<b>Hydroponics</b>	<b>13</b>	<b>0</b>	<b>3</b>	<b>18</b>	<b>0</b>	<b>2</b>	<b>6</b>

*Source:* ABARES Australian vegetable growing farms: An economic survey 2010-11 and 2011-12, page 45

When asked the reason for the apparent lack of interest in export markets 80% of growers gave the principle reason that exports were too hard or time consuming. The other reason given was that prices were not high enough. These responses are consistent with the previous year's survey.

The data for 2010-11 and for previous years suggest that in general there is little enthusiasm for exporting amongst Australian vegetable growers. This may well be due to sound business judgements by Australian vegetable growers. Peter Silcock the Chief Executive Officer of Horticulture New Zealand told a recent Horticulture Australia Limited export forum that most other Southern Hemisphere countries get much more from their exports than they do domestically, which was not the case in Australia.

It would appear that rates of return on exports are less lucrative than supplying domestic markets. In order to boost returns costs will need to be driven down or innovative products developed which can attract a premium in international markets. Export markets are time consuming and are often difficult. Success requires a great deal of patience, expenditure, marketing, development of distribution channels and innovative product in response to the demands of the export market.

There are some great export success stories in the Australian vegetable industry but the mindset that these vegetable growing enterprises show is currently not apparent across the broader industry.