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Horticulture Innovation Australia

Australian vegetable-growing farms

An economic survey, 2015–16 and 2016–17

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Industry overview

The Australian vegetable–growing sector is an important source of food. It supplies most of the fresh vegetables consumed in Australia and provides inputs for the processed vegetable products consumed in Australia or exported.

Around 4 per cent of all Australian farms grew vegetables for human consumption in 2015–16 (ABS 2017a). Vegetable growing is the fifth–highest value agricultural industry in Australia, accounting for around 6 per cent of the gross value of agricultural production ($3.6 billion) in 2015–16. Vegetable exports contributed about 1 per cent ($340 million) of agricultural export income in 2015–16.

The results below are for farms included in the Australian vegetable-growing industry survey conducted annually by ABARES since 2007.

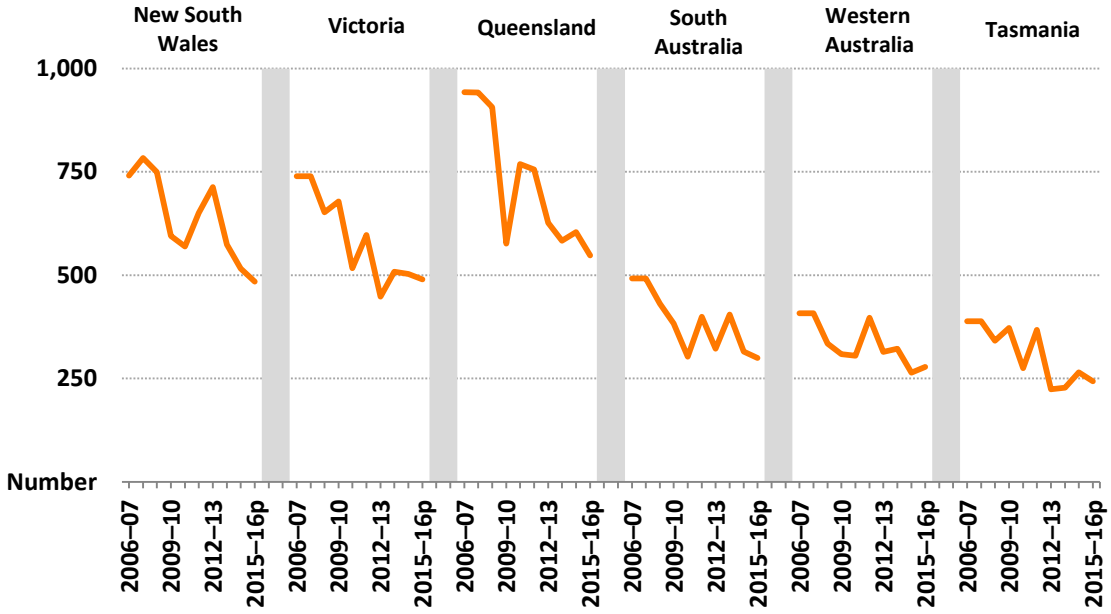
1 Physical characteristics

In 2015–16 an estimated 2,300 Australian farms were classified as vegetable-growing farm businesses. Around 23 per cent of these farms were in Queensland, 21 per cent in Victoria, 21 per cent in New South Wales, 13 per cent in South Australia, 12 per cent in Western Australia and 10 per cent in Tasmania. The total number of farms growing vegetables tends to vary from year to year, partly because opportunistic growers participate when prices and/or seasonal conditions are suitable.

From 2006–07 to 2015–16 the total number of Australian vegetable-growing farms fell by 37 per cent. Most of this decline was in Queensland, New South Wales and Victoria (Figure 1). The change in the number of vegetable-growing farms was largely a result of a decline in the number of small vegetable-growing farms planting less than 20 hectares.

Figure 1 Number of vegetable-growing farms, by state, 2006–07 to 2015–16

average per farm



p Preliminary estimate.
Source: ABARES Australian vegetable-growing farms survey

In 2015–16 around 63 per cent of farms planted less than 20 hectares of vegetables. These farms accounted for only 11 per cent of total vegetable production. An estimated 13 per cent of farms planted more than 70 hectares of vegetables and accounted for 63 per cent of total vegetable production in 2015–16 (Table 1).

Table 1 Proportion of farms and production, vegetable-growing farms, by size, 2015–16

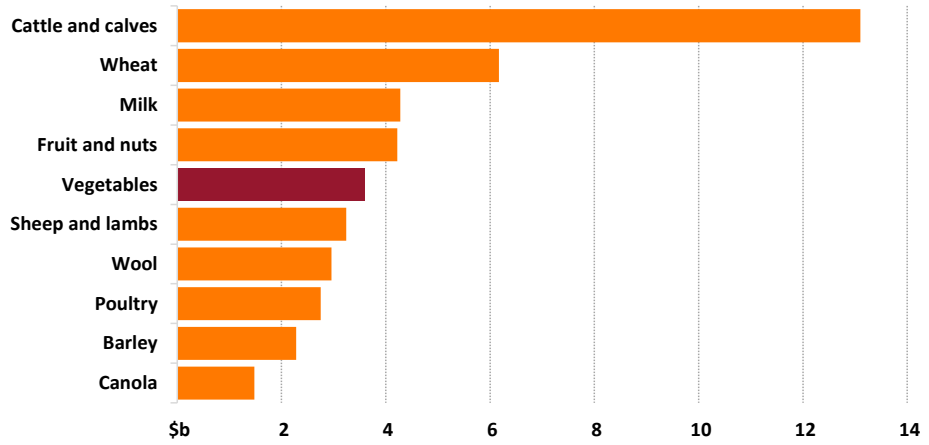
Selected physical characteristics	Units	Less than 5 hectares	5–20 hectares	20–70 hectares	More than 70 hectares	Australia
Area planted to vegetables **a**	ha	3	13	38	227	44
Proportion of farms	%	32	31	24	13	100
Proportion of production	%	2	9	27	63	100

a Average per farm.
Source: ABARES Australian vegetable-growing farms survey

Gross value of production

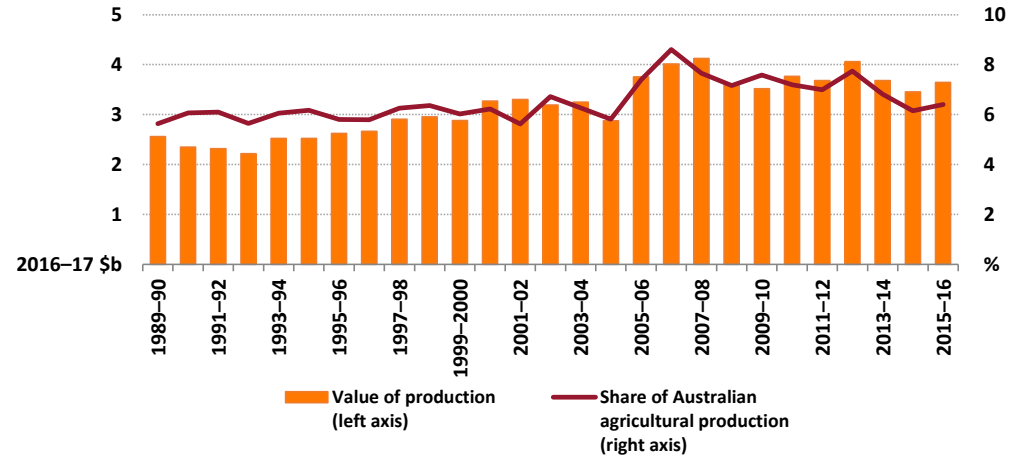
Vegetable growing is the fifth-highest value agricultural industry in Australia (Figure 2), accounting for around 6 per cent of the gross value of agricultural production ($3.6 billion) in 2015–16 (Figure 3). Vegetable exports contributed about 1 per cent ($340 million) of agricultural export income in 2015–16 (ABARES 2016).

Figure 2 Top 10 Australian agricultural industries, by gross value of production, 2015–16



Source: ABS (2017b)

Figure 3 Gross value of Australian vegetable production, 1989–90 to 2015–16

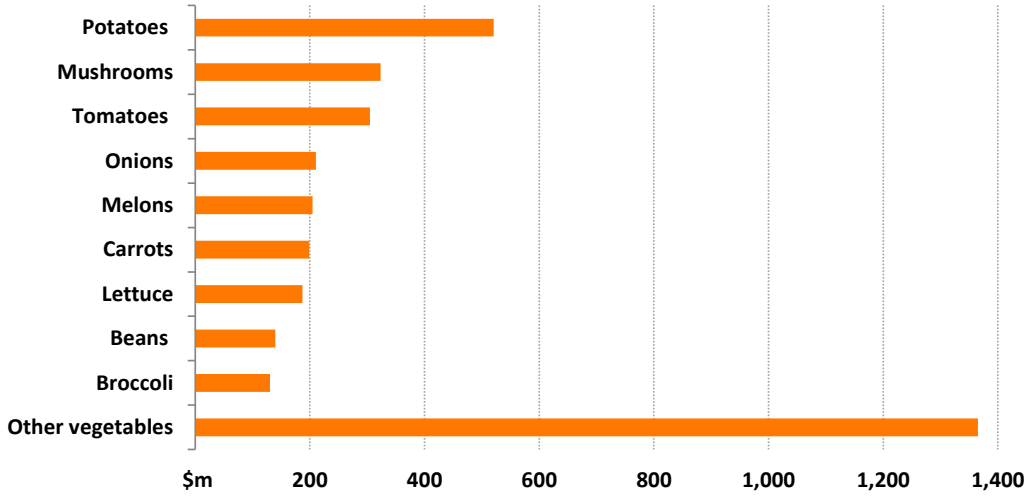


Source: ABS (2017b); ABARES (2016)

The gross value of vegetable production increased from 1989–90 to 2007–08 before fluctuating around an average of $3.7 billion (in 2016–17 dollars) in the eight years to 2015–16. Structural adjustment was a key factor contributing to the increased gross value of vegetable production in the 1990s and 2000s. Increases in average farm size and ongoing capital investment in new technologies during these decades contributed to increased output.

Australian growers produce a range of vegetables. More than 35 individual commodities contributed to total industry production. Potatoes had the highest gross value of production, contributing $520 million (Figure 4) or 15 per cent of the total value of vegetables, followed by mushrooms ($323 million), tomatoes ($305 million), onions ($211 million) and melons ($205 million). The next largest crops by value of production were carrots, lettuce, beans and broccoli.

Figure 4 Gross value of Australian vegetable production, by commodity, 2015–16



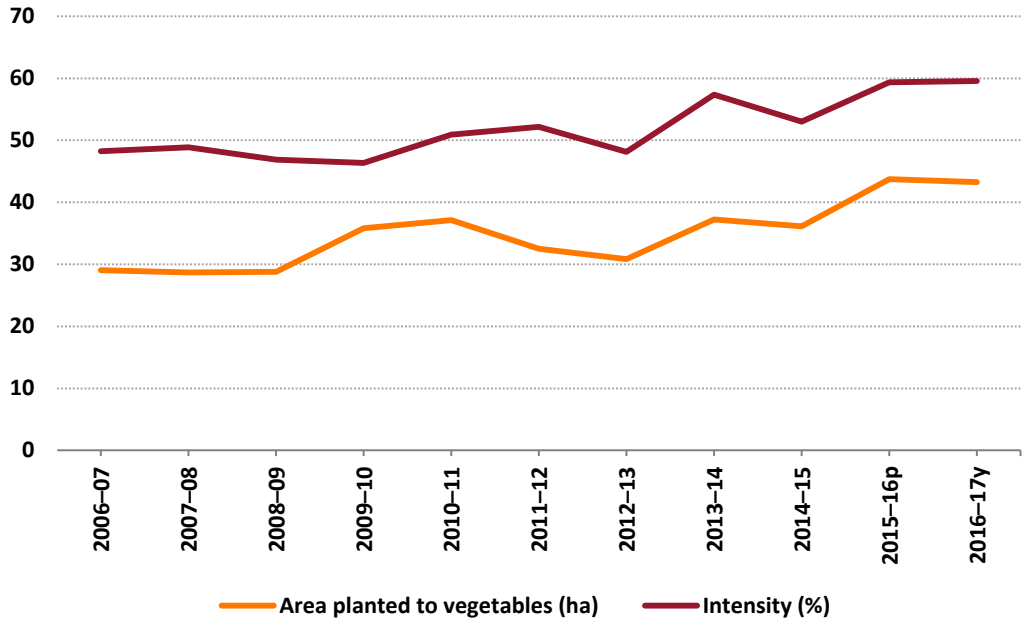
Source: ABS (2017b)

Crop area

From 2006–07 to 2016–17 average area planted to vegetables increased (Figure 5). The intensity of vegetable production (area planted to vegetables as a proportion of total area planted to crops) also increased. The change in vegetable crop area was largely a result of increased plantings of a range of more intensive vegetable crops such as Asian greens and other specialty vegetables (Figure 6).

Figure 5 Area planted to vegetables and intensity of vegetable production, vegetable-growing farms, Australia, 2006–07 to 2016–17

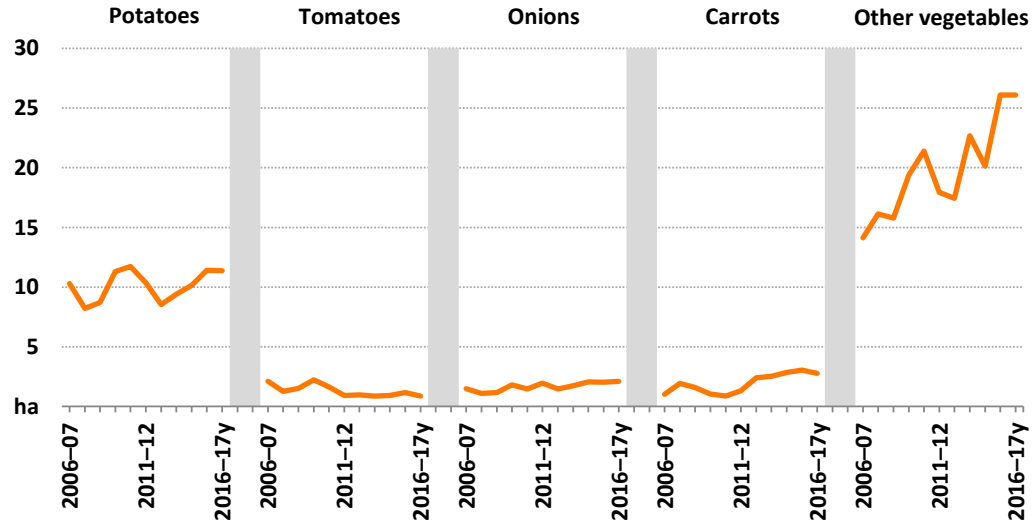
average per farm



p Preliminary estimate. **y** Provisional estimate.
Source: ABARES Australian vegetable-growing farms survey

Figure 6 Area planted to vegetables, vegetable-growing farms, Australia, 2006–07 to 2016–17

average per farm

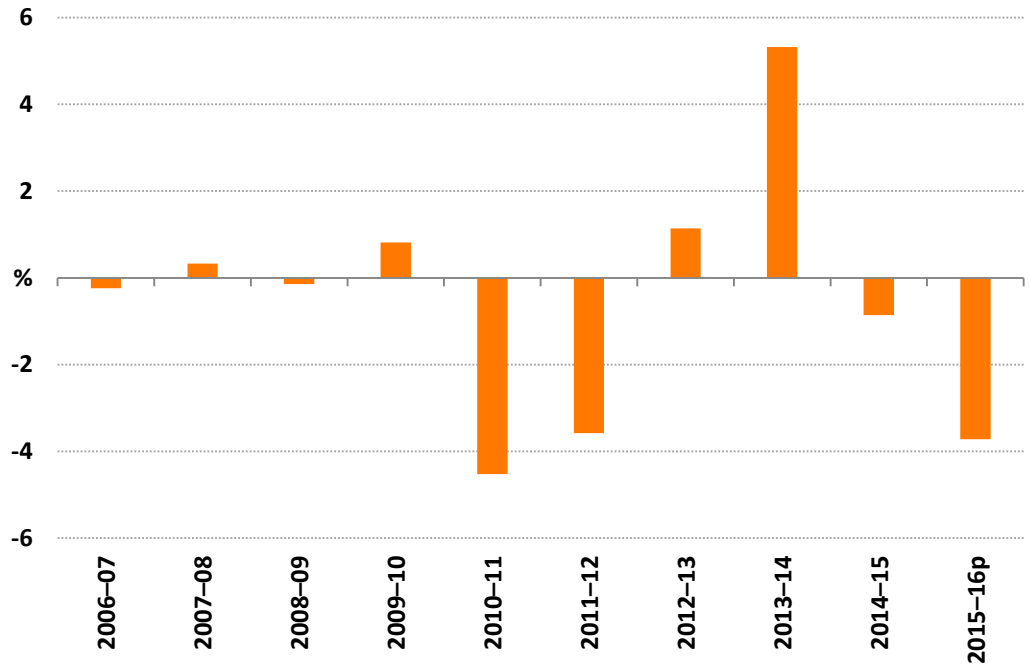


y Provisional estimate.
Source: ABARES Australian vegetable-growing farms survey

Despite increases in the average area planted to vegetables over time per farm, the survey results show the total area planted to vegetables on individual farms tends to vary little from year to year. To measure this variation, the average ratio of area planted to vegetables each year

to the mean for all years was estimated for each farm surveyed from 2006–07 to 2015–16 (Figure 7). Across all years, on average, the ratio of area planted varied from the mean by less than 1 per cent. However, annual variation ranged from 5 per cent below the mean to 5 per cent above the mean depending on the year. From 2006–07 to 2009–10 the ratio of area planted to vegetables varied little relative to the mean. In 2010–11, 2011–12 and 2015–16 the variation was more than 3 per cent below the mean and in 2013–14 it was around 5 per cent above the mean.

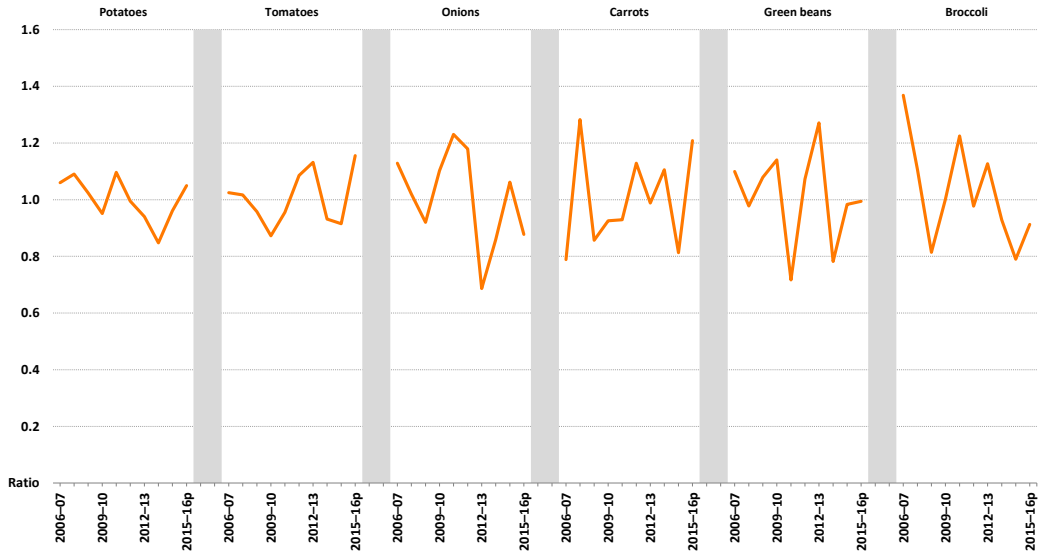
Figure 7 Variation in area planted to vegetables, vegetable-growing farms, Australia, 2006–07 to 2015–16



p Preliminary estimate.
Source: ABARES Australian vegetable-growing farms survey

The variation in area planted was much greater for some individual vegetable crops than others. For example, potatoes and tomatoes had the least variation and onions, carrots, green beans and broccoli had the greatest variation (Figure 8).

Figure 8 Variation in area planted, by crop, vegetable-growing farms, Australia, 2006–07 to 2015–16



p Preliminary estimate.
Note: Figure shows the ratio of area planted to the mean for 2006–07 to 2015–16.
Source: ABARES Australian vegetable-growing farms survey

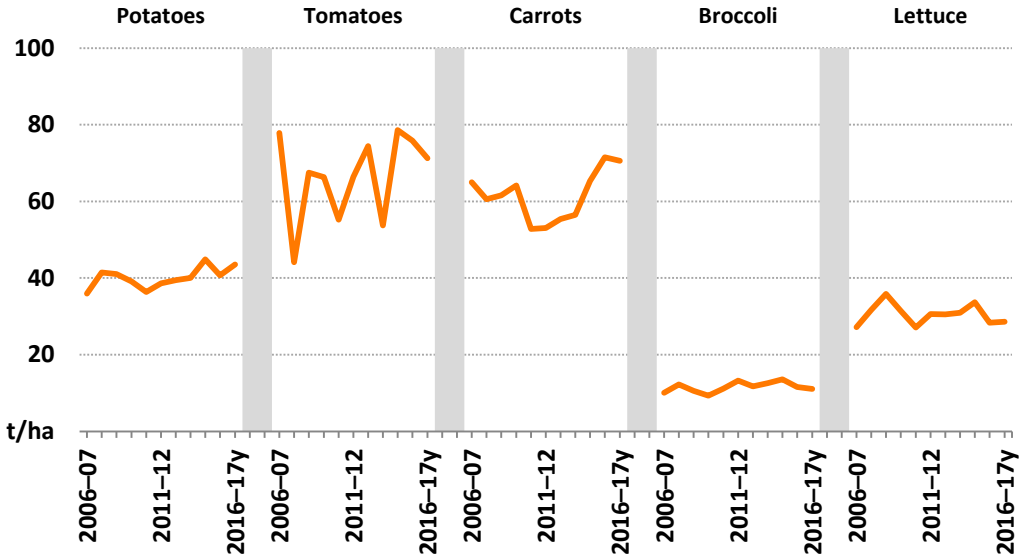
When making crop planting decisions, vegetable growers substitute individual crops depending on expected returns or the suitability of seasonal conditions for growing particular crops. Most crops are positively correlated at the farm level—an increase in area of one crop coincides with increases in the area of other crops. However, the survey results show strong negative correlations for broccoli (capsicum); brussels sprouts (lettuce, capsicum and Asian vegetables); capsicum (Asian vegetables); carrots (lettuce); cauliflower (brussels sprouts); green beans (onions, cabbage and capsicum); green peas (onions, carrots, broccoli, cabbage, lettuce and Asian vegetables); lettuce (capsicum); onions (carrots, cucumber, lettuce and Asian vegetables); pumpkins (green peas, green beans, brussels sprouts and cucumber); and tomatoes (onions and brussels sprouts).

Crop yields

Average crop yields for most vegetables are estimated to have declined in 2015–16, but yields varied across individual vegetables (Figure 9). In 2016–17 average yields are projected to decline further for most of the main vegetables, reflecting production losses due to heavy rains and flood damage in Queensland and South Australia.

Figure 9 Yields of selected vegetables, vegetable-growing farms, Australia, 2006–07 to 2016–17

average per farm



y Provisional estimate.

Source: ABARES Australian vegetable-growing farms survey

Trends in physical characteristics, by state

Queensland and Victoria are the two largest vegetable-growing states, together accounting for 55 per cent of the total value of vegetable production in 2015–16 (Table 2). The proportion of total area planted to vegetables fluctuates from year to year. In 2015–16 Western Australian vegetable growers had, on average, 75 per cent of their total cropping area planted to vegetables, followed by Victoria with 70 per cent. From 2006–07 to 2015–16 the proportion of total cropping area planted to vegetables trended upwards in all states except Western Australia and Tasmania (Figure 10).

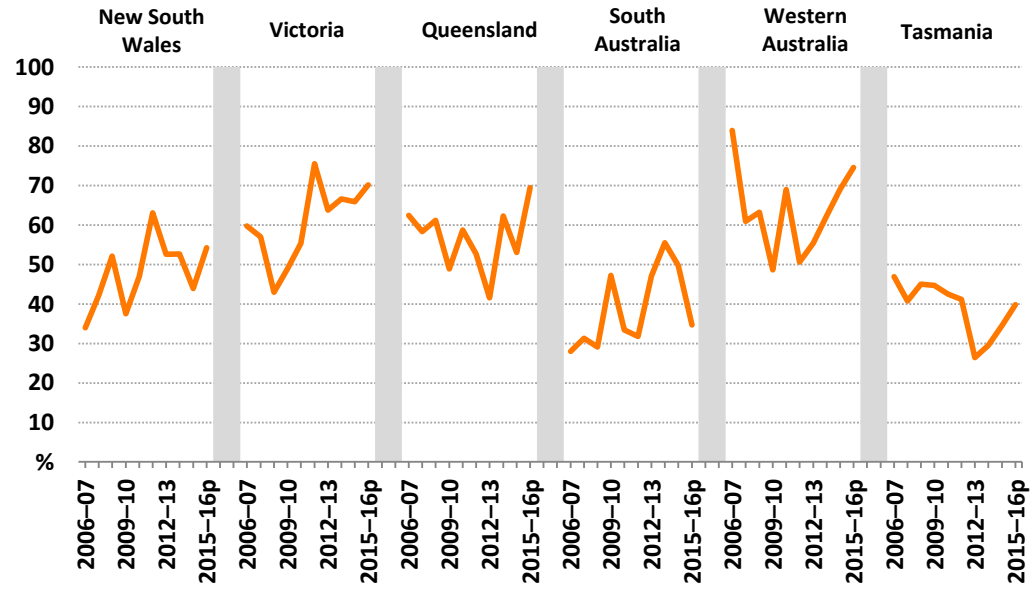
Table 2 Selected farm physical characteristics, vegetable-growing farms, by state, 2015–16

average per farm

Selected physical characteristics	Units	NSW	Vic.	Qld	SA	WA	Tas.	Australia
Share of farms	%	21	21	23	13	12	10	100
Share of vegetable production	%	9	31	24	15	10	11	100
Area planted to vegetables	ha	22	65	59	34	39	30	44
Total area of crops	ha	40	92	84	97	52	75	74
Total area operated	ha	106	227	412	234	186	269	246

Source: ABARES Australian vegetable-growing farms survey

Figure 10 Area planted to vegetables, vegetable-growing farms, by state, 2006–07 to 2015–16



p Preliminary estimate.
Source: ABARES Australian vegetable-growing farms survey

New South Wales

In 2015–16 New South Wales had an estimated 480 vegetable-growing farms, accounting for around 21 per cent of Australian vegetable-growing farms. Most farms were in Greater Sydney, the Murrumbidgee Irrigation Area and the Far North Coast. The average area of NSW vegetable-growing farms was around 106 hectares, with 22 hectares planted to vegetables. Vegetable production accounted for 3 per cent of the gross value of agricultural production in New South Wales (ABS 2017b).

Victoria

In 2015–16 Victoria had an estimated 490 vegetable-growing farms, accounting for around 21 per cent of Australian vegetable-growing farms. Most farms were located around Melbourne, the Gippsland region and the irrigated regions along the Murray River. The average area of Victorian vegetable-growing farms was around 227 hectares, with 65 hectares planted to vegetables. Vegetable production accounted for 7 per cent of the gross value of agricultural production in Victoria (ABS 2017b).

Queensland

In 2015–16 Queensland had an estimated 550 vegetable-growing farms, accounting for around 23 per cent of Australian vegetable-growing farms. Most farms were in the Darling Downs, around Bundaberg, Bowen and in the Burdekin delta. The average area of Queensland vegetable-growing farms was around 412 hectares, with 59 hectares planted to vegetables. Vegetable production accounted for 8 per cent of the gross value of agricultural production in Queensland (ABS 2017b).

South Australia

In 2015–16 South Australia had an estimated 300 vegetable-growing farms, accounting for around 13 per cent of Australian vegetable-growing farms. Most farms were in the Mallee, the Riverland and the Adelaide Plains. The average area of SA vegetable-growing farms was around 234 hectares, with 34 hectares planted to vegetables. Vegetable production accounted for 8 per cent of the gross value of agricultural production in South Australia (ABS 2017b).

Western Australia

In 2015–16 Western Australia had an estimated 280 vegetable-growing farms, accounting for around 12 per cent of Australian vegetable-growing farms. Most farms were located along the coast near Perth and around Carnarvon along the Gascoyne River. The average area of WA vegetable-growing farms was around 186 hectares, with 39 hectares planted to vegetables. Vegetable production accounted for 5 per cent of the gross value of agricultural production in Western Australia (ABS 2017b).

Tasmania

In 2015–16 Tasmania had an estimated 240 vegetable-growing farms, accounting for around 10 per cent of Australian vegetable-growing farms. Most farms were located in the north of the state, along the coastal fringe and the northern midlands. The average area of Tasmanian vegetable-growing farms was around 269 hectares, with 30 hectares planted to vegetables. Vegetable production accounted for 15 per cent of the gross value of agricultural production in Tasmania (ABS 2017b).

Vegetable-growing environment

In 2015–16 an estimated 88 per cent of Australian vegetable-growing farms had exclusively outdoor vegetable operations (Table 3). Some farms used hydroponics (5 per cent) or under-cover systems such as glass or shade cloth (10 per cent). Under-cover systems often generate higher yields for a range of vegetable crops, giving farmers more control over output quality and ensuring a more reliable supply. However, farms using these systems require higher receipts to cover the increased input costs.

Table 3 Vegetable growing environment, Australian vegetable-growing farms, 2015–16

proportion of farms

Growing environment	Units	Less than 5 hectares	5–20 hectares	20–70 hectares	More than 70 hectares	Australia
Outdoors only	%	71	92	98	99	88
Hydroponics	%	12	3	1	0	5
Under cover	%	22	8	1	1	10

Note: Percentages will not equal 100 because farms can be in multiple categories.
Source: ABARES Australian vegetable-growing farms survey

Recent changes in vegetable prices and production

Changes in the quantity of vegetables produced and prices received have a strong influence on changes in farm cash incomes in the vegetable-growing industry each year.

Australian vegetable-growing farms mostly produce for the domestic market (Table 4). As a result, changes in vegetable prices tend to vary inversely with domestic production, with little direct influence from developments in export markets.

Table 4 Markets for vegetables, Australian vegetable-growing farms, 2014–15 and 2015–16

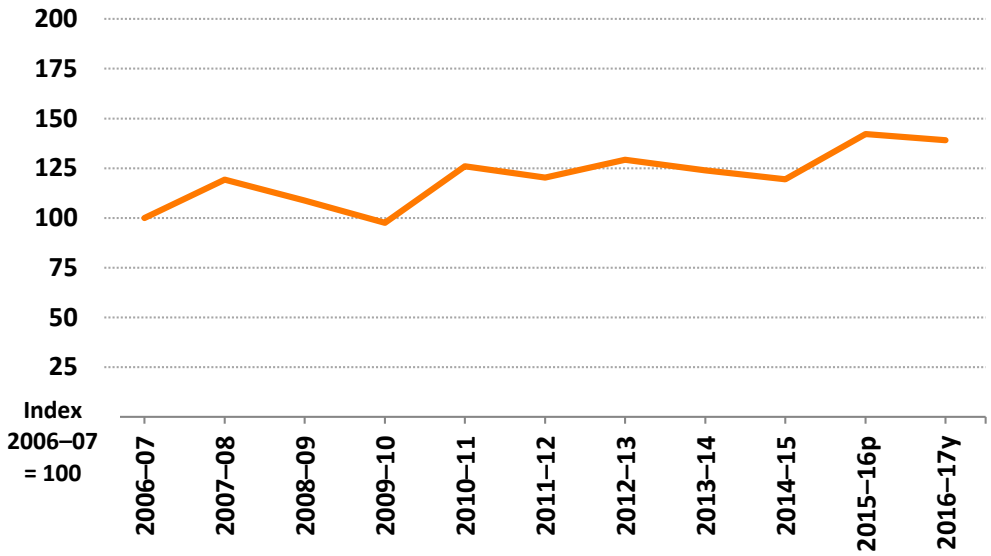
percentage of farms

Vegetables sold	2014–15		2015–16p	
For export	2	(40)	1	(60)
Direct to food services	0	(43)	1	(129)
Interstate	14	(13)	12	(19)
State capital wholesale	41	(6)	40	(9)
Local market	12	(18)	13	(23)
Direct to processor	26	(8)	25	(9)
Direct to retail	6	(20)	4	(23)

p Preliminary estimate.
Note: Percentages have been rounded to the nearest whole number. Percentages will not equal 100 because farms can sell vegetables to multiple markets. Figures in parentheses are standard errors expressed as a percentage of the estimate.
Source: ABARES Australian vegetable-growing farms survey

A weighted index of farmgate prices received for the main vegetables produced by Australian vegetable-growing farm businesses increased by 19 per cent in 2015–16 (Figure 11). Vegetable-growing farmers received higher average prices for most vegetables but slightly lower prices for carrots, capsicum and brussels sprouts. The weighted index of farmgate prices received for the main vegetables is projected to decline by 2 per cent in 2016–17. Average farmgate prices for most individual vegetables are projected to have dropped in 2016–17 but are expected to have remained stable for pumpkins, green peas, broccoli and cucumber.

Figure 11 Farmgate price index, vegetable commodities, Australian vegetable-growing farms, 2006–07 to 2016–17



p Preliminary estimate. **y** Provisional estimate.

Source: ABARES Australian vegetable-growing farms survey

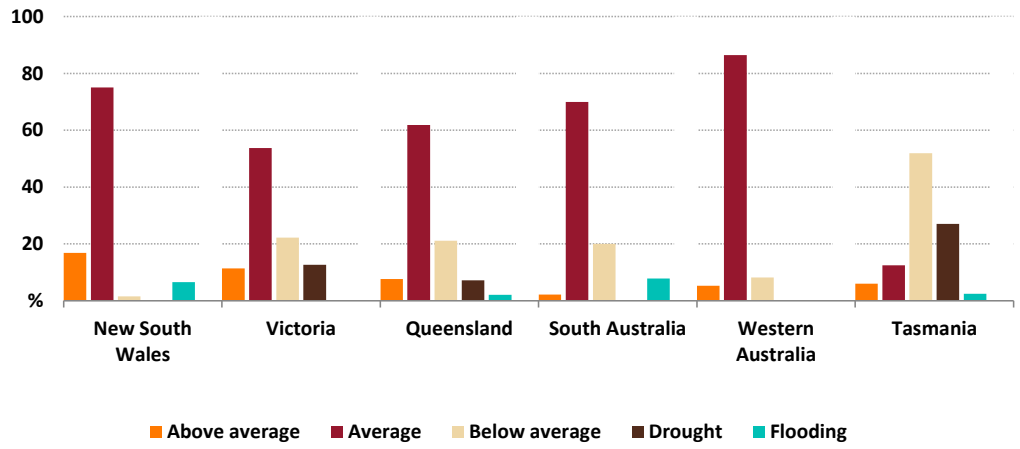
Seasonal conditions

Seasonal conditions have considerable influence on the financial performance of vegetable-growing farms and typically vary across the main vegetable-producing regions in any year.

In 2015–16 most vegetable growers in each state reported average seasonal conditions except for Tasmania (Figure 12), where most vegetable growers reported drought or below average seasonal conditions.

In 2016–17 seasonal conditions were generally favourable in most vegetable-growing regions because of average to above average rainfall. However, extreme weather events led to intense flooding in some regions. Strong wind and floods from Tropical Cyclone Debbie in March 2017, in particular, caused extensive damage to vegetable crops—mostly tomatoes and capsicum—and some damage to infrastructure around Bowen and the Whitsunday region.

Figure 12 Seasonal conditions, Australian vegetable-growing farms, by region, 2015–16



Note: Farmers were asked to report prevailing seasonal conditions during the financial year to indicate the combined effects of rainfall, temperature and evapotranspiration.
Source: ABARES Australian vegetable-growing farms survey

2 Farm financial performance

Summary

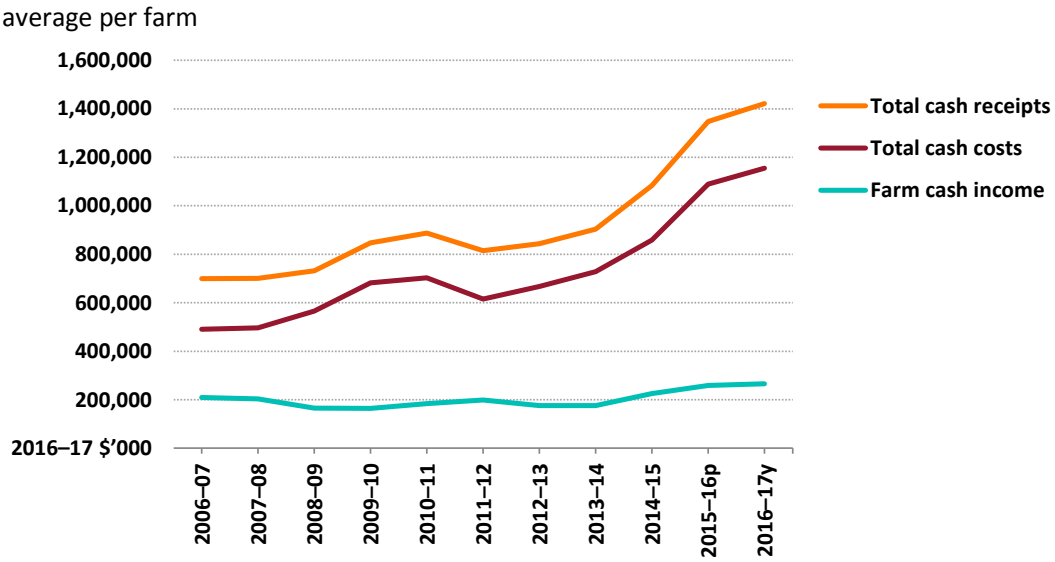
- In 2015–16 average farm cash income of Australian vegetable-growing farms is estimated to have increased to around $254,100 per farm as a result of increased vegetable production per farm and higher prices. Average farm cash income of vegetable-growing farms rose in all states except Victoria and Tasmania.
- In 2016–17 average farm cash income of Australian vegetable-growing farms is projected to be the highest in real terms since ABARES began surveying vegetable-growing farms in 2007. Average farm cash income is projected to increase in all states except Queensland.
- On average, over the 5 years to 2015–16 potato receipts were the largest component of vegetable receipts, contributing around 18 per cent, followed by receipts from tomatoes, carrots, broccoli and lettuce.
- Over the 10 years to 2015–16, the proportion of vegetable-growing farms recording negative farm business profits averaged 60 per cent a year.

Farm cash income and profit

In 2015–16 average farm cash income of Australian vegetable-growing farms increased by an estimated 16 per cent to $254,100 per farm (Table 5). This was a result of both higher total cash receipts from increased vegetable production per farm and higher prices.

In 2016–17 average farm cash income is projected to increase by a further 5 per cent to average $266,000 per farm. In real terms, estimated average farm cash incomes for 2015–16 and 2016–17 will be the highest since ABARES began surveying vegetable-growing farms in 2007 (Figure 13).

Figure 13 Total cash receipts, total cash costs and farm cash income, vegetable-growing farms, Australia, 2006–07 to 2016–17



p Preliminary estimate. **y** Provisional estimate.

Source: ABARES Australian vegetable-growing farms survey

Table 5 Financial performance, vegetable-growing farms, Australia, 2014–15 to 2016–17

average per farm

Financial estimates	Units	2014–15	2015–16p	2016–17y
Vegetable receipts	$	864,660	1,162,700	1,251,000
Total cash receipts	$	1,050,970	1,325,200	1,421,000
% cash receipts from vegetables	%	82	88	88
Total cash costs	$	832,540	1,071,100	1,155,000
Farm cash income	$	218,430	254,100	266,000
Farm business profit	$	83,740	114,300	124,000
Rate of return				
– excluding capital appreciation	%	3.1	3.7	4.0
– including capital appreciation	%	5.3	4.9	na

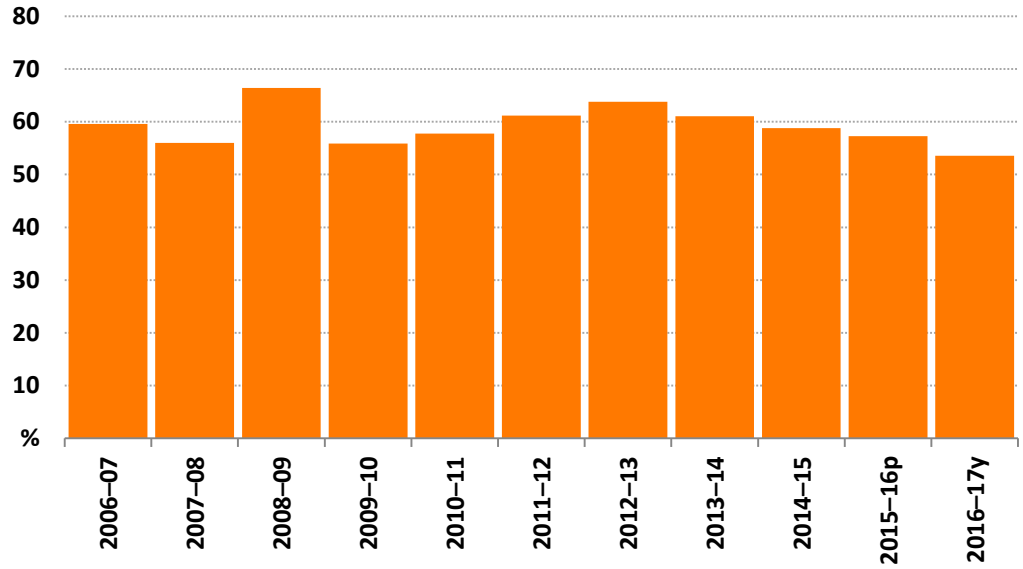
p Preliminary estimate. **y** Provisional estimate. **na** Not available.
Source: ABARES Australian vegetable-growing farms survey

Farm business profit of vegetable-growing farms is projected to average $124,000 per farm in 2016–17, 8 per cent higher than in 2015–16 (Table 5). Farm business profit is a measure of long-term profitability. It accounts for capital depreciation, payments for family labour and changes in inventories of vegetables, livestock, fodder and grain held on a farm. In most years, changes in farm business profit reflect proportional changes in farm cash income.

Many farms occasionally record negative farm business profits as their incomes fluctuate. Negative farm business profit means a farm has not covered the costs of unpaid family labour or set aside funds to replace depreciating farm assets. However, ongoing low or negative profits affect long-term viability because farms have reduced capacity to invest in newer and more efficient technologies. Over the 10 years to 2015–16, the proportion of vegetable-growing farms recording negative farm business profits averaged 60 per cent a year. Improved farm financial performance in 2016–17 is projected to result in a decline in the proportion of farms recording negative farm business profit to 54 per cent (Figure 14).

Figure 14 Proportion of vegetable-growing farms with negative farm business profit, Australia, 2006–07 to 2016–17

percentage of farms



p Preliminary estimate. **y** Provisional estimate.
Source: ABARES Australian vegetable-growing farms survey

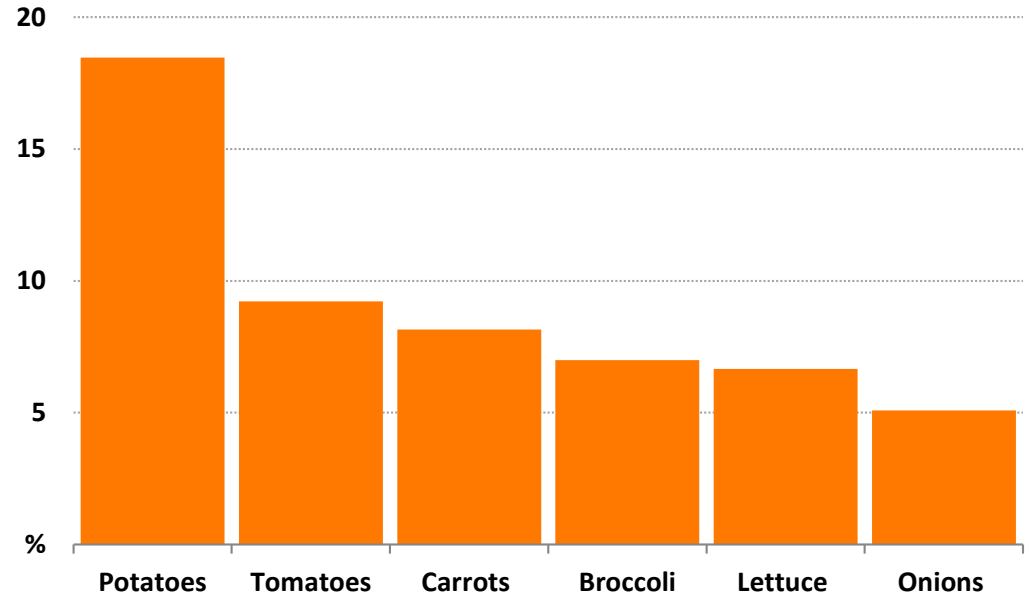
Total cash receipts

In 2015–16 total cash receipts for Australian vegetable-growing farms are estimated to have increased by 26 per cent to average $1,325,200 per farm (Table 5). Total vegetable receipts increased by 34 per cent in 2015–16. This was due to higher vegetable production per farm as a result of an increase in the average area planted to vegetables, and higher farmgate prices. On average, over the 5 years to 2015–16 potato receipts were the largest component of vegetable receipts, contributing around 18 per cent, followed by receipts from tomatoes, carrots, broccoli and lettuce (Figure 15). In 2015–16 cash receipts from the sale of vegetables accounted for an estimated 88 per cent of average farm cash receipts. Sales of lettuce, broccoli, green beans, tomatoes and potatoes contributed most to the increase in total vegetable receipts.

Total cash receipts are projected to increase in 2016–17 by around 7 per cent, mainly driven by higher receipts for potatoes, green peas and onions as a result of increased production per farm and higher prices for potatoes and green peas.

Figure 15 Major components of vegetable receipts, vegetable-growing farms, Australia, 2011–12 to 2015–16

average proportion per farm

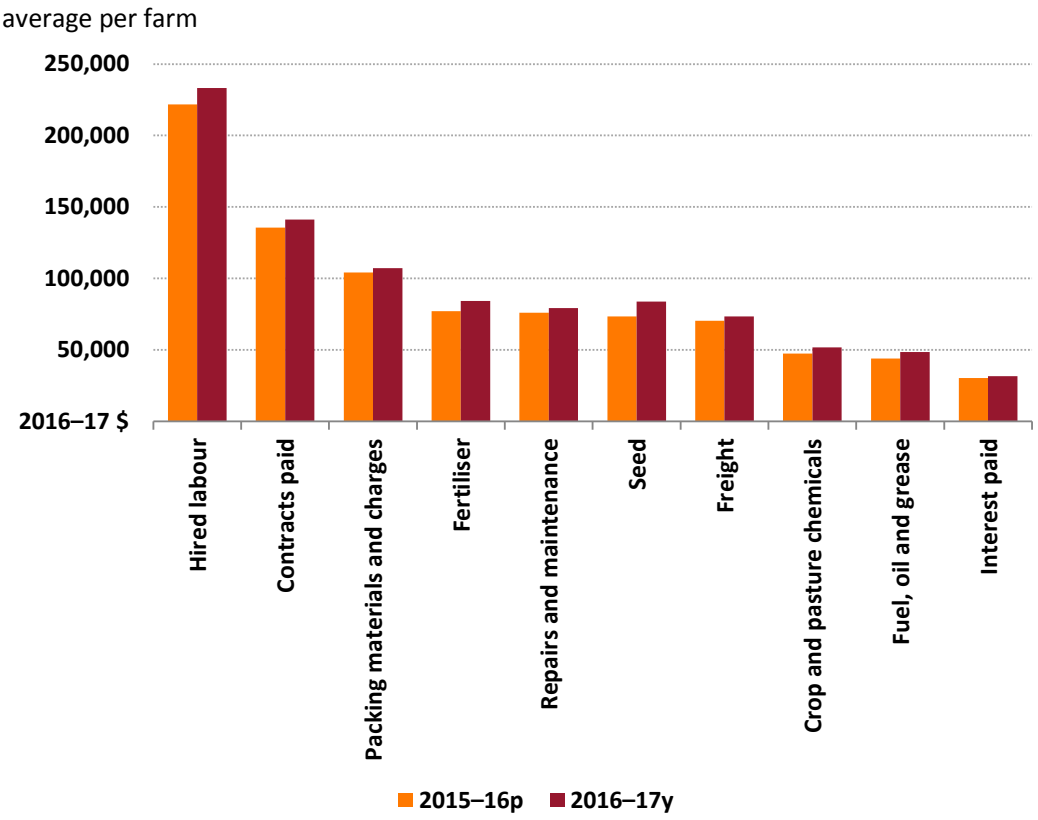


Source: ABARES Australian vegetable-growing farms survey

Total cash costs

In 2015–16 average cash costs rose by 29 per cent to $1,071,100 per farm (Table 5), reflecting increased expenditure required to plant and harvest a larger vegetable crop. The main components of cash costs were hired labour, contracts paid, packing materials and charges, fertiliser, and repairs and maintenance (Figure 16). Average total cash costs in 2016–17 are projected to have risen by around 8 per cent to $1,155,000 per farm, with small increases in all cost categories.

Figure 16 Major components of cash costs, vegetable-growing farms, Australia, 2015–16 to 2016–17



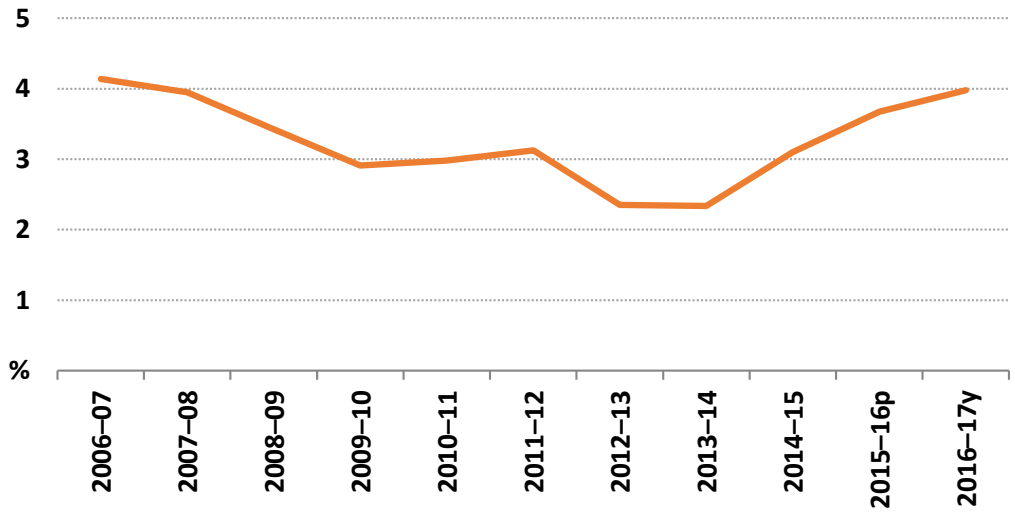
p Preliminary estimate. **y** Provisional estimate.
Source: ABARES Australian vegetable-growing farms survey

Rate of return

The average rate of return (excluding capital appreciation) of Australian vegetable-growing farms increased from 3.1 per cent in 2014–15 to 3.7 per cent in 2015–16, reflecting higher farm cash incomes (Figure 17). The average rate of return is projected to increase further in 2016–17 to around 4.0 per cent.

Figure 17 Rate of return, vegetable-growing farms, Australia, 2006–07 to 2016–17

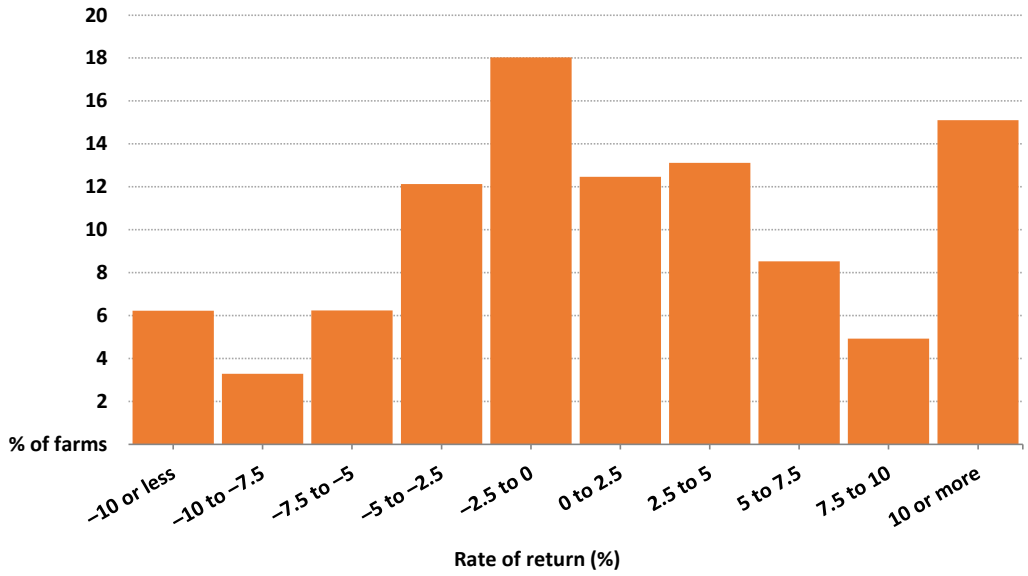
average per farm



p Preliminary estimate. **y** Provisional estimate.
Source: ABARES Australian vegetable-growing farms survey

In 2015–16 the performance of vegetable-growing farms varied widely (Figure 18). Around 46 per cent of vegetable-growing farms recorded a rate of return (excluding capital appreciation) of less than 0, and around 26 per cent had a rate of return of between 0 and 5 per cent. An estimated 29 per cent of vegetable-growing farms had a rate of return (excluding capital appreciation) in excess of 5 per cent.

Figure 18 Distribution of vegetable-growing farms, by rate of return, 2015–16



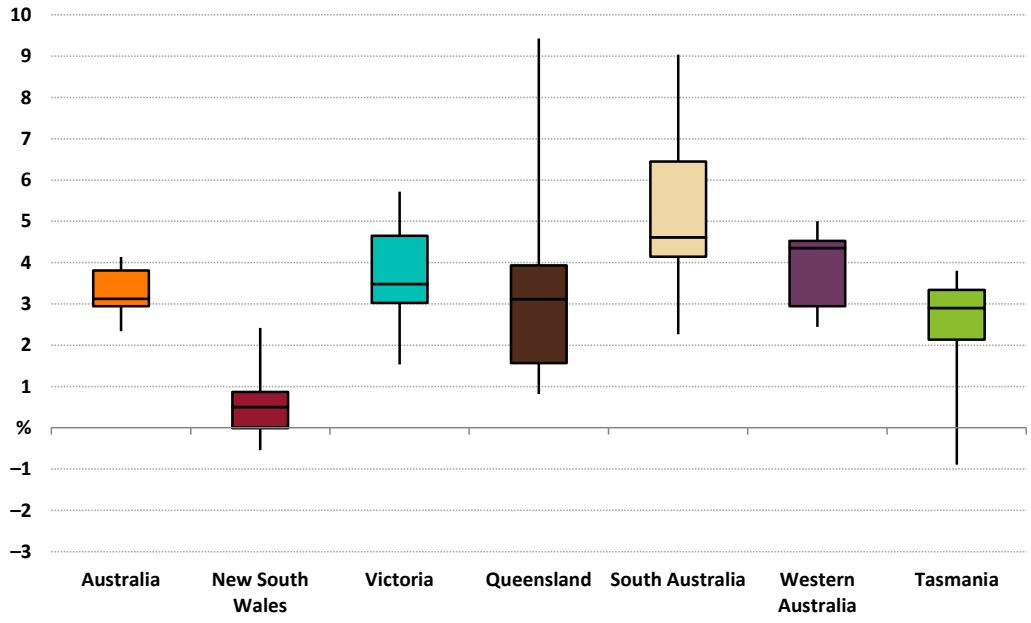
Source: ABARES Australian vegetable-growing farms survey

Top performing vegetable-growing farms that had returns of 10 per cent or more (around 15 per cent of farms) were mostly large farms (by average area planted to vegetables) with high levels of capital investment and intense vegetable-producing operations. Top performing vegetable-growing farms also generated substantially larger farm cash incomes than vegetable-growing farms in general.

In 2015–16 average rates of return (excluding capital appreciation) were positive across all states. South Australia had the highest estimated average rate of return (excluding capital appreciation) at 8.9 per cent, followed by Western Australia at 4.6 per cent.

Between 2006–07 and 2015–16 vegetable-growing farms in Queensland and South Australia recorded the greatest overall variation in rates of return (Figure 19).

Figure 19 Rate of return variability, vegetable-growing farms, by state, 2006–07 to 2015–16



Note: Boxes represent 50 per cent of years. Vertical lines represent the 25 per cent best and worst years. Horizontal line in each box is the median.
Source: ABARES Australian vegetable-growing farms survey

Performance, by state

In 2015–16 average farm cash income of vegetable-growing farms rose in all states except Victoria and Tasmania. In 2016–17 average farm cash income of vegetable-growing farmers is projected to increase in all states except Queensland.

New South Wales

In 2015–16 average farm cash income for NSW vegetable-growing farms increased by an estimated 22 per cent to around $98,800 per farm (Table 6). Total vegetable production per farm declined marginally, mainly as a result of lower yields. However, higher vegetable prices led to an increase in total vegetable receipts. Average total cash costs increased by 13 per cent to around $366,000 per farm, partially offsetting the increase in total cash receipts. Freight,

hired labour, packing materials and charges, repairs and maintenance, and fertiliser costs largely contributed to the increases in total cash costs in 2015–16.

Average farm cash income is projected to increase by around 10 per cent in 2016–17 to $108,000 per farm because of an estimated increase in vegetable production and higher expected prices. Vegetable production is projected to increase because of higher yields for most vegetables.

Table 6 Financial performance, vegetable-growing farms, New South Wales, 2014–15 to 2016–17

average per farm

Financial estimates	Units	2014–15	2015–16p	2016–17y
Vegetable receipts	$	341,890	407,500	445,000
Total cash receipts	$	405,500	464,800	493,000
% cash receipts from vegetables	%	84	88	90
Total cash costs	$	324,190	366,000	385,000
Farm cash income	$	81,310	98,800	108,000
Farm business profit	$	–21,920	7,600	16,000
Rate of return				
– excluding capital appreciation	%	–0.4	0.6	0.9
– including capital appreciation	%	1.6	2.4	na

p Preliminary estimate. **y** Provisional estimate. **na** Not available.
Source: ABARES Australian vegetable-growing farms survey

Victoria

In 2015–16 average farm cash income for Victorian vegetable-growing farms fell by an estimated 7 per cent to average $374,100 per farm (Table 7). Total vegetable production per farm increased as a result of an increase in the average area planted to vegetables. Increased vegetable production and higher vegetable prices led to an increase in average total vegetable receipts. Higher receipts from lettuce, carrots, Asian vegetables, broccoli and green beans mainly contributed to an increase in total vegetable receipts. Average total cash costs increased by 39 per cent to $1,779,800 per farm. In 2015–16 the cost of contracts paid and packing materials and charges largely contributed to increased cash costs.

Average farm cash income is projected to increase in 2016–17 by around 24 per cent to $463,000 per farm. Vegetable receipts are projected to increase as a result of higher expected prices despite a slight decline in projected vegetable production due to lower yields. Average total cash costs are also projected to increase by around 8 per cent.

Table 7 Financial performance, vegetable-growing farms, Victoria, 2014–15 to 2016–17

average per farm

Financial estimates	Units	2014–15	2015–16p	2016–17y
Vegetable receipts	$	1,432,760	1,946,300	2,182,000
Total cash receipts	$	1,683,260	2,153,900	2,391,000
% cash receipts from vegetables	%	85	90	92
Total cash costs	$	1,282,660	1,779,800	1,928,000
Farm cash income	$	400,600	374,100	463,000
Farm business profit	$	227,300	196,900	283,000
Rate of return				
– excluding capital appreciation	%	5.2	4.3	5.7
– including capital appreciation	%	6.9	5.8	na

p Preliminary estimate. **y** Provisional estimate. **na** Not available.
Source: ABARES Australian vegetable-growing farms survey

Queensland

In 2015–16 average farm cash income for Queensland vegetable-growing farms increased by around 65 per cent to average $207,100 per farm (Table 8). Total vegetable production per farm increased as a result of an increase in the average area planted to vegetables and higher yields. Higher receipts from green beans, broccoli, potatoes and onions largely contributed to the increase in vegetable receipts. Average total cash costs increased by 22 per cent to around $1,184,400 per farm, partially offsetting the increase in total cash receipts. Hired labour, packing materials, contracts paid, and crop and pasture chemicals largely contributed to the increases in total cash costs in 2015–16.

Table 8 Financial performance, vegetable-growing farms, Queensland, 2014–15 to 2016–17

average per farm

Financial estimates	Units	2014–15	2015–16p	2016–17y
Vegetable receipts	$	876,060	1,230,900	1,259,000
Total cash receipts	$	1,093,360	1,391,500	1,429,000
% cash receipts from vegetables	%	80	88	89
Total cash costs	$	968,010	1,184,400	1,281,000
Farm cash income	$	125,350	207,100	148,000
Farm business profit	$	–8,160	49,400	–12,000
Rate of return				
– excluding capital appreciation	%	0.8	2.6	1.0
– including capital appreciation	%	2.1	3.8	na

p Preliminary estimate. **y** Provisional estimate. **na** Not available.
Source: ABARES Australian vegetable-growing farms survey

Average farm cash income is projected to decline in 2016–17 to around $148,000 per farm. Vegetable receipts are projected to increase marginally by around 2 per cent, mainly as a result of an increase in potato, onion, broccoli and capsicum receipts. However, the average area

planted and quantities produced for most vegetables are projected to decline because of crop losses from heavy rains and floods in some regions. Average total cash costs are projected to increase by around 8 per cent.

South Australia

In 2015–16 average farm cash income for South Australian vegetables-growing farms increased by an estimated 46 per cent to around $317,100 per farm (Table 9). Total vegetable production per farm rose as a result of an increase in the average area planted to vegetables. Increased vegetable production and higher vegetable prices led to an increase in average total vegetable receipts. The increase in total vegetable receipts was largely a result of higher receipts from tomatoes, cucumbers, potatoes, brussels sprouts and onions. Average total cash costs increased by 35 per cent to around $926,800 per farm, partially offsetting the increase in total cash receipts. Increases in total cash costs in 2015–16 were largely driven by the cost of hired labour, contracts paid, seed, freight, and crop and pasture chemicals.

Average farm cash income is projected to increase in 2016–17 by around 1 per cent to $319,000 per farm. Vegetable production is projected to increase because of higher yields for most vegetables. Average total cash costs are projected to increase by around 6 per cent to $982,600 per farm.

Table 9 Financial performance, vegetable-growing farms, South Australia, 2014–15 to 2016–17

average per farm

Financial estimates	Units	2014–15	2015–16p	2016–17y
Vegetable receipts	$	775,430	1,142,300	1,155,000
Total cash receipts	$	904,360	1,243,800	1,300,000
% cash receipts from vegetables	%	86	92	90
Total cash costs	$	687,240	926,800	982,000
Farm cash income	$	217,120	317,100	319,000
Farm business profit	$	100,920	199,700	200,000
Rate of return				
– excluding capital appreciation	%	4.1	8.9	9.0
– including capital appreciation	%	5.8	9.7	na

p Preliminary estimate. **y** Provisional estimate. **na** Not available.
Source: ABARES Australian vegetable-growing farms survey

Western Australia

In 2015–16 average farm cash income for Western Australian vegetable-growing farms increased by 8 per cent to around $411,500 (Table 10). Total vegetable receipts increased by 21 per cent as a result of increased vegetable prices. Lower vegetable yields led to a slight decline in total vegetable production per farm despite an increase in the average area planted to vegetables. Declines in receipts for potatoes and carrots partially offset increases in other vegetable receipts. Total cash costs increased by 28 per cent, mainly driven by increases in contracts paid, hired labour, seed and fertiliser.

Average farm cash income is projected to increase in 2016–17 by 2 per cent to $418,000 per farm. Total vegetable receipts are projected to increase by around 7 per cent because of the projected increase in total vegetable production. Higher receipts from potatoes, carrots, tomatoes and onions are expected to contribute to the increase in vegetable receipts. Total cash costs are projected to increase by around 9 per cent.

Table 10 Financial performance, vegetable-growing farms, Western Australia, 2014–15 to 2016–17

average per farm

Financial estimates	Units	2014–15	2015–16p	2016–17y
Vegetable receipts	$	1,311,000	1,590,400	1,710,000
Total cash receipts	$	1,447,400	1,773,900	1,899,000
% cash receipts from vegetables	%	91	90	90
Total cash costs	$	1,065,350	1,362,300	1,481,000
Farm cash income	$	382,050	411,500	418,000
Farm business profit	$	232,950	249,000	253,000
Rate of return				
– excluding capital appreciation	%	4.4	4.6	4.7
– including capital appreciation	%	10.2	4.2	na

p Preliminary estimate. **y** Provisional estimate. **na** Not available.
Source: ABARES Australian vegetable-growing farms survey

Tasmania

In 2015–16 average farm cash income for Tasmanian vegetable-growing farms declined by 11 per cent to $169,900 per farm (Table 11). Total vegetable receipts increased by 7 per cent, largely as a result of an increase in the average area planted to potatoes and increased production per farm resulting in higher receipts for potatoes. Carrots and cabbage receipts also contributed to the increase in vegetable receipts. Total cash costs increased by 6 per cent, mainly because of increased expenditure on hired labour, repairs and maintenance, and crop and pasture chemicals.

Average farm cash income is projected to increase in 2016–17 by around 24 per cent. Total vegetable receipts are projected to have increased by around 18 per cent, primarily because of increases in potato and onion receipts. Increases in the cost of fertiliser, seed, hired labour, and crop and pasture chemicals contributed to projected increases in average total cash costs in 2016–17.

Table 11 Financial performance, vegetable-growing farms, Tasmania, 2014–15 to 2016–17

average per farm

Financial estimates	Units	2014–15	2015–16p	2016–17y
Vegetable receipts	$	439,700	468,500	552,000
Total cash receipts	$	790,390	805,100	896,000
% cash receipts from vegetables	%	56	58	63
Total cash costs	$	600,010	635,200	685,000
Farm cash income	$	190,380	169,900	211,000
Farm business profit	$	57,420	47,200	87,000
Rate of return				
– excluding capital appreciation	%	3.4	2.3	3.2
– including capital appreciation	%	4.2	4.8	na

p Preliminary estimate. **y** Provisional estimate. **na** Not available.
Source: ABARES Australian vegetable-growing farms survey

Farms growing vegetables under the National Vegetable Levy

The National Vegetable Levy (NVL) is payable on specific vegetables grown in Australia by producers who either sell the product or use it in the production of other goods. Vegetables subject to the NVL are shown in Table 12. The levy is used to fund Horticulture Innovation Australia—a grower-owned research and development company that invests in horticultural research, development and marketing. The following analysis covers only growers who produced vegetables subject to the NVL.

Table 12 National Vegetable Levy—inclusions and exemptions

Included under NVL	Exempt from NVL a
Carrots	Potatoes
Pumpkins	Onions
Sweet corn	Tomatoes
Peas and beans	Asparagus
Lettuce	Mushrooms
Broccoli	–
Cauliflower	–
Capsicums	–
Other vegetables	–

a Statutory R&D levies apply to mushrooms, onions and potatoes.
Note: The ABARES Australian vegetable-growing farms survey does not collect information on asparagus and mushrooms as individual vegetable commodities.
Source: AUSVEG 2012

Farms paying the NVL accounted for an estimated 73 per cent of vegetable-growing farms in 2016–17 (Table 13). Many of these farms also produced vegetables not covered by the levy.

Table 13 Australian vegetable-growing farms, by area planted to vegetables, 2016–17

Area planted to vegetables	All vegetable-growing farm businesses (no.)	Proportion of farms that pay NVL a
<5 hectares	861	83
5–20 hectares	808	67
20–70 hectares	549	61
>70 hectares	332	79
All farms	2550	73

a Population excludes farms that only grow asparagus, mushrooms, onions, potatoes and tomatoes.
Source: Australian Bureau of Statistics, ABARES Australian vegetable-growing farms survey

In 2016–17 an estimated 84 per cent of NVL-paying vegetable-growing farms had exclusively outdoor vegetable operations. Some farms used hydroponics (6 per cent) or under-cover systems (15 per cent).

NVL-paying farms are on average smaller than the average for all vegetable-growing farms. Around 63 per cent of these farms planted less than 20 hectares of vegetables. The average area operated by NVL-paying farms was estimated to have been around 143 hectares, compared to 246 hectares for the whole population. NVL-paying farms also tend to be more diversified than the average, producing various vegetable crops and running non-vegetable enterprises such as livestock. In comparison, non-NVL farms tend to be larger and specialise in one or two vegetable enterprises.

The average farm cash income of NVL-paying vegetable-growing farms increased by 19 per cent in 2015–16 to an estimated $279,000 (Table 14). This was a result of higher total vegetable receipts from increased vegetable production per farm and greater vegetable prices. Average farm cash income is projected to have increased by a further 2 per cent in 2016–17 to average $286,000 per farm.

Table 14 Financial performance, National Vegetable Levy–paying farms, 2014–15 to 2016–17

average per farm

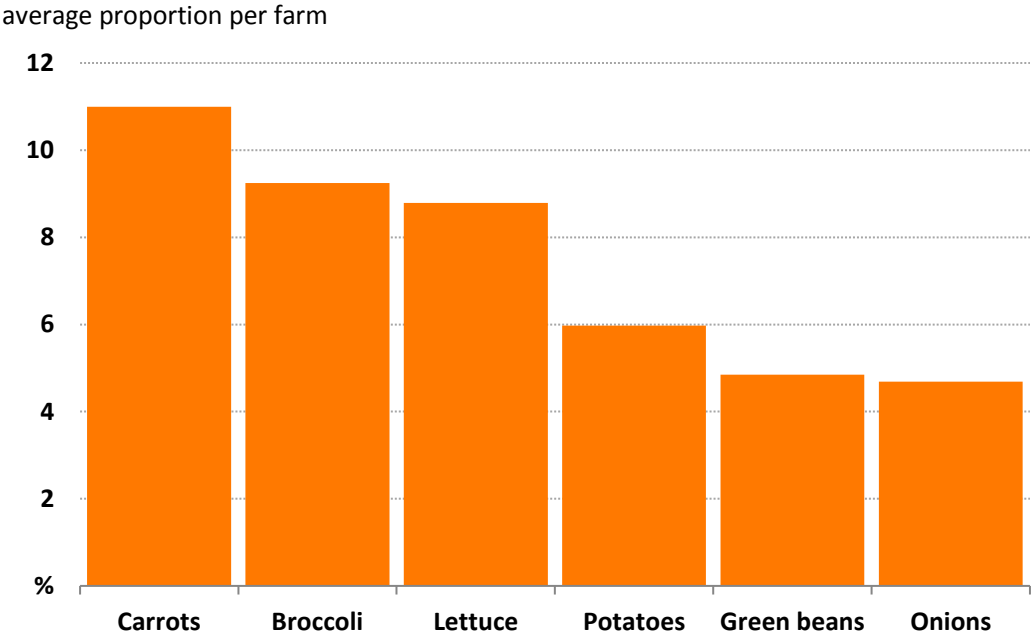
Financial estimates	Units	2014–15	2015–16p	2016–17y
Vegetable cash receipts	$	954,400	1,339,700	1,505,000
Total cash receipts	$	1,120,450	1,493,000	1,663,000
% cash receipts from vegetables	%	90	96	96
Total cash costs	$	885,060	1,214,000	1,377,000
Farm cash income	$	235,390	279,000	286,000
Farm business profit	$	105,370	141,600	144,000
Rate of return				
– excluding capital appreciation	%	4.0	4.8	4.8
– including capital appreciation	%	5.8	6.0	na

p Preliminary estimate. **y** Provisional estimate. **na** Not available.
Note: Population excludes farms that are specialist onion, potato and tomato growers.
Source: ABARES Australian vegetable-growing farms survey

Farm business profit of NVL-paying vegetable growing farms in 2015–16 increased by an estimated 34 per cent to $141,600 per farm (Table 114). Farm business profit is projected to have increased further to average $144,000 per farm in 2016–17.

On average, over the 5 years to 2015–16 carrot receipts were the largest component of vegetable receipts, contributing around 11 per cent, followed by receipts from broccoli, lettuce, potatoes, green beans and onions (Figure 20).

Figure 20 Major components of vegetable receipts, NVL-paying vegetable-growing farms, Australia, 2011–12 to 2015–16



Source: ABARES Australian vegetable-growing farms survey

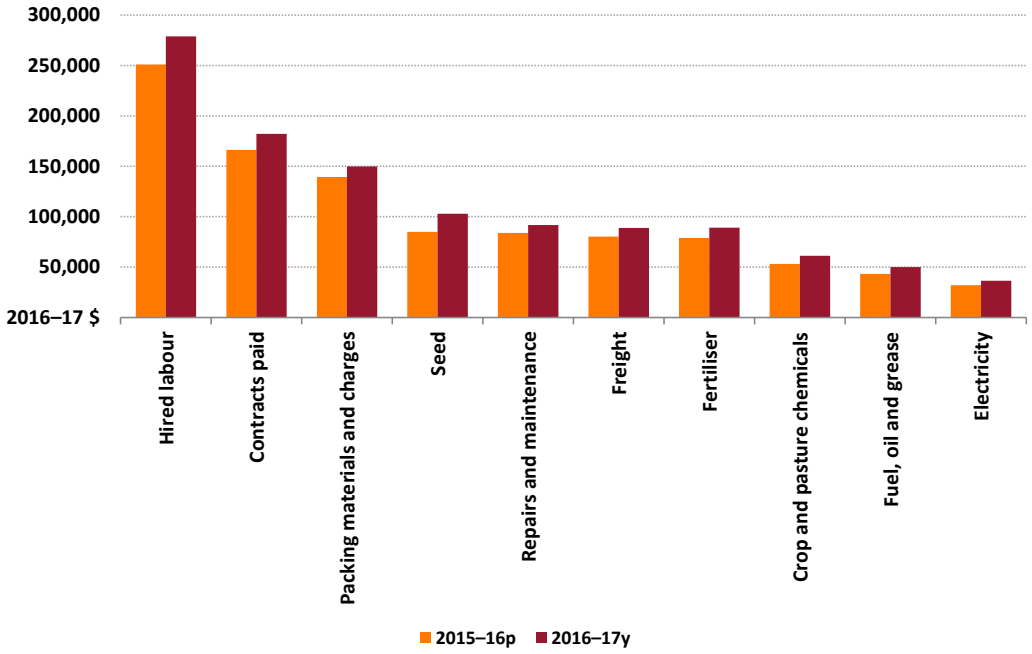
Total cash receipts for NVL-paying vegetable-growing farms are estimated to have increased by 33 per cent in 2015–16 to average $1,493,000 per farm (Table 14). Total vegetable receipts increased by 40 per cent as a result of higher vegetable production per farm and higher farmgate prices. Cash receipts from the sale of vegetables accounted for 96 per cent of total cash receipts in 2015–16. Sales of carrots, broccoli and lettuce each contributed 10 per cent to total vegetable receipts in 2015–16. In 2016–17 total vegetable receipts are projected to have increased by 12 per cent.

The average quantity of vegetables produced per NVL-paying farm increased by 20 per cent in 2015–16 to be 67 per cent higher than the average from 2006–07 to 2014–15. This was the result of an increase in average area planted despite lower crop yields for most vegetables. Estimated average farmgate prices increased for most vegetables including pumpkins, green peas, green beans, cabbage, broccoli and lettuce but declined for carrots, brussels sprouts and cucumbers. In 2015–16 the average area of vegetables planted per NVL-paying farm increased by 28 per cent to be around 52 per cent higher than the average from 2006–07 to 2014–15. Green bean, lettuce, broccoli and green pea plantings were the main drivers of the increase in total vegetable plantings in 2015–16.

Average cash costs increased by 37 per cent in 2015–16 to $1,214,000 per farm (Table 14). The largest components were hired labour, contracts paid, packing materials and charges, seed, and repairs and maintenance (Figure 21). Average total cash costs are projected to have increased by 13 per cent in 2016–17.

Figure 21 Major components of cash costs, NVL-paying vegetable-growing farms, Australia, 2015–16 to 2016–17

average per farm

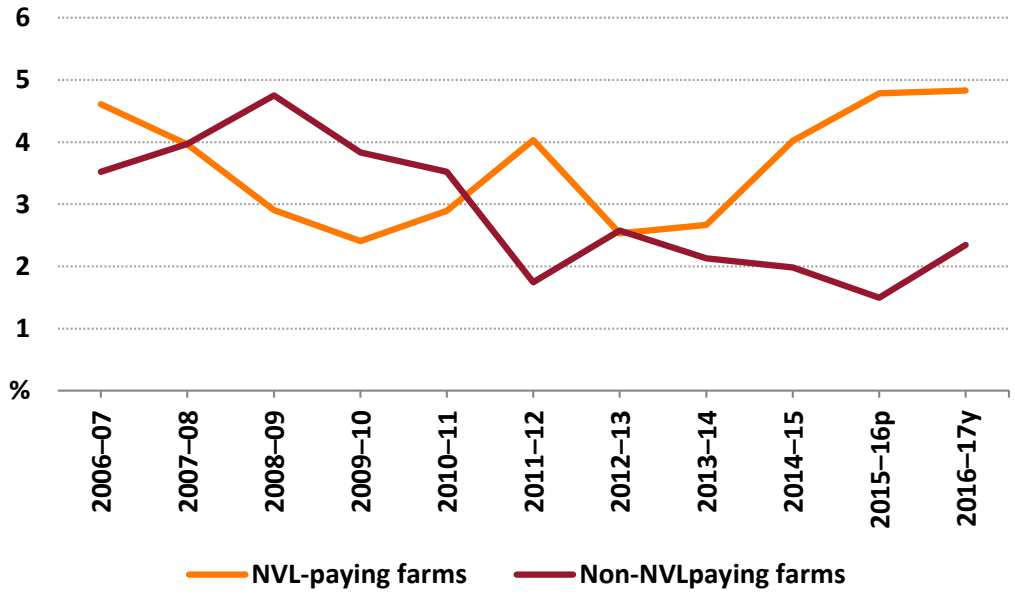


p Preliminary estimate. **y** Provisional estimate.
Source: ABARES Australian vegetable-growing farms survey

On average, NVL-paying farms generated higher rates of return of 4.8 per cent in 2015–16 (Figure 22) compared to the average for non-NVL-paying vegetable-growing farms (of 1.5 per cent).

Figure 22 Rate of return, vegetable-growing farms, Australia, 2006–07 to 2016–17

average per farm



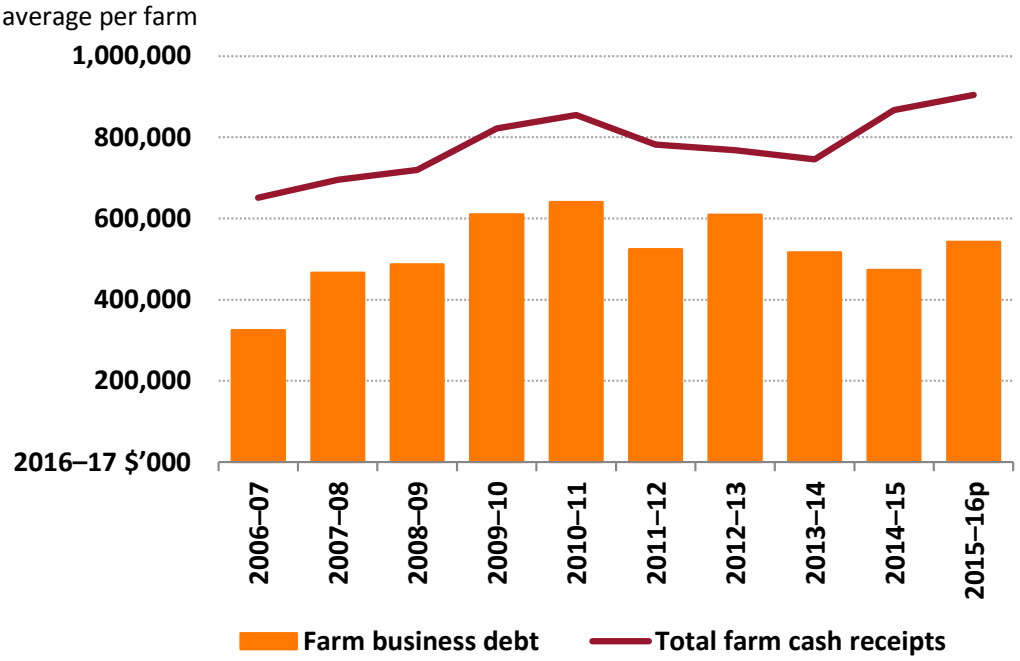
p Preliminary estimate. **y** Provisional estimate.
Source: ABARES Australian vegetable-growing farms survey

3 Farm debt and equity

Trends in average debt per farm

Debt is an important source of funds for investment and ongoing working capital for many vegetable-growing farms. At the national level, from 2006–07 to 2010–11 average debt per farm at 30 June increased (Figure 23) by 97 per cent in real terms, reflecting increases in average farm size. From 2011–12 to 2015–16 average debt per farm remained relatively stable. Any changes from year to year were mainly a result of changes in farm working capital debt and land purchase debt.

Figure 23 Total farm debt at 30 June, vegetable-growing farms, Australia, 2006–07 to 2015–16



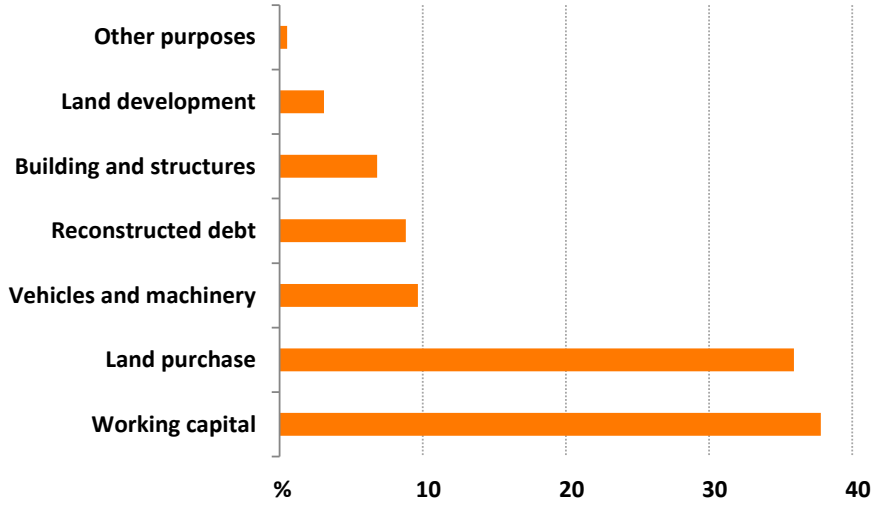
p Preliminary estimate.
Source: ABARES Australian vegetable-growing farms survey

In ABARES farm surveys, debt is recorded by its main purpose. However, because some loans cover a range of purposes, estimates of debt by main purpose provide a guide only.

Over the 3 years to 2015–16 working capital accounted for the largest proportion of total farm debt at 38 per cent on average (Figure 24). A further 36 per cent of debt was for land purchases. The remaining debt was for a range of purposes such as vehicles and machinery purchases, buildings and structures, and land development.

Figure 24 Main purpose of farm debt, vegetable-growing farms, Australia, 2013–14 to 2015–16

average proportion per farm



Source: ABARES Australian vegetable-growing farms survey

Equity ratio

Increases in average total debt of vegetable-growing farms at 30 June have been largely matched by equivalent changes in total farm equity. As a consequence, from 2006–07 and 2015–16 the average equity ratio of vegetable-growing farms fluctuated at around 86 per cent.

In 2015–16 an estimated 57 per cent of vegetable-growing farms had an equity ratio of 90 per cent or more (Table 15), 28 per cent had an equity ratio of 70 to 90 per cent and 14 per cent had an equity ratio of less than 70 per cent. The main difference between the three groups was that vegetable-growing farms with less than 70 per cent equity generated significantly higher receipts per hectare than farms with higher equity ratios.

Table 15 Farm performance, by equity ratio, vegetable-growing farms, Australia, 2015–16

average per farm

Equity ratio	Unit	More than 90%	70 to 90%	Less than 70%
Proportion of farms	%	57	28	14
Total area operated	ha	139	426	197
Total area sown to crops	ha	38	66	100
Total area planted to vegetables	ha	20	45	49
Area planted to vegetables as a proportion of total area planted to crops	%	52	68	49
Vegetable receipts	$	436,900	1,110,300	1,281,800
Total cash receipts	$	533,100	1,303,600	1,496,400
Vegetable receipts as a proportion of total receipts	%	82	85	86
Receipts per hectare operated	$	3,800	3,100	7,600

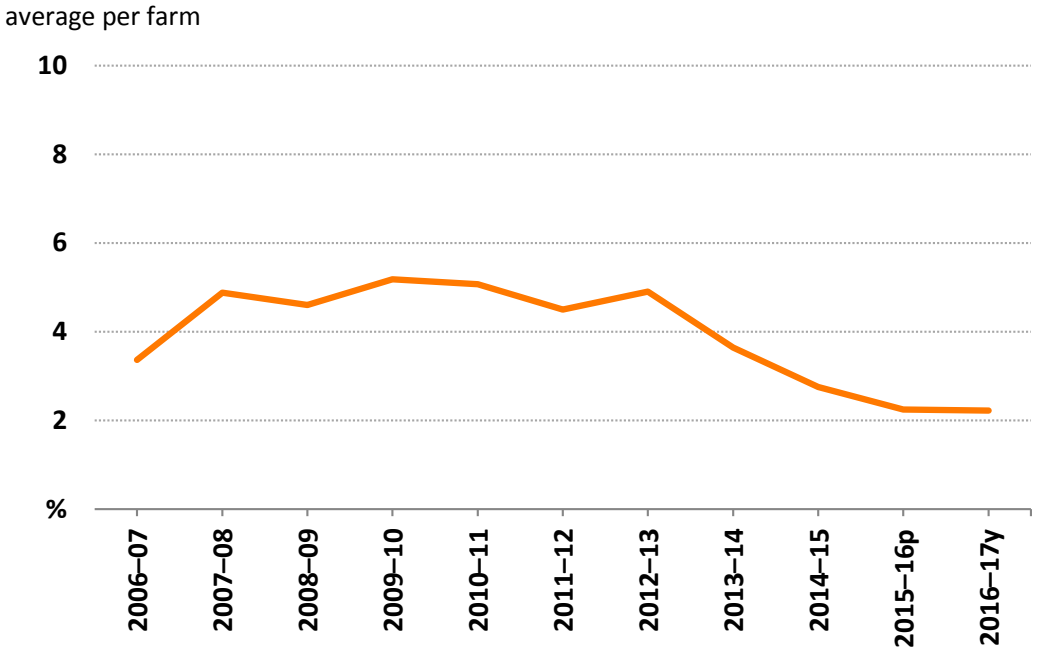
Source: ABARES Australian vegetable-growing farms survey

Debt-servicing capacity

The long-term viability of a farm is affected by its capacity to service debt by making interest payments and paying down the principal. The proportion of farm receipts spent on interest payments is a useful indicator of short-term capacity to service debt.

From 2006–07 to 2012–13 the proportion of farm receipts needed to fund interest payments fluctuated, averaging around 5 per cent (Figure 25). From 2012–13 to 2015–16 the ability of vegetable-growing farms to service their debts improved as a result of higher farm receipts and reduced interest rates. The proportion of receipts needed to pay interest payments is projected to have fallen further in 2016–17 to around 2 per cent.

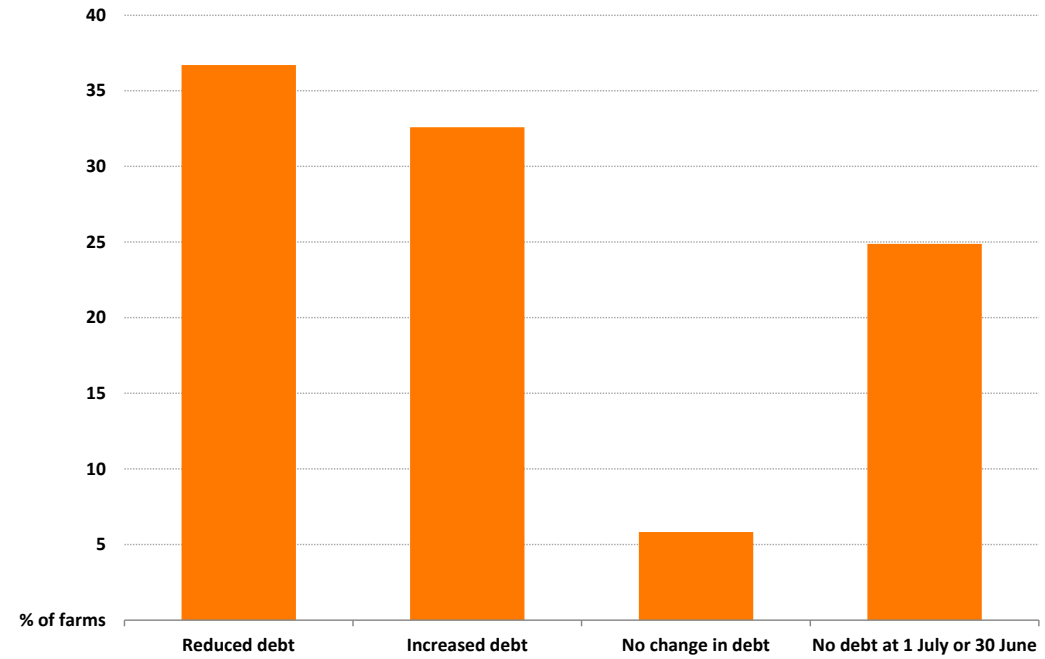
Figure 25 Ratio of interest paid to total cash receipts, vegetable-growing farms, Australia, 2006–07 to 2016–17



p Preliminary estimate. **y** Provisional estimate.
Source: ABARES Australian vegetable-growing farms survey

At the national level, around 37 per cent of vegetable-growing farms reduced their total debt from 1 July 2015 to 30 June 2016 (Figure 26). An estimated 33 per cent of vegetable-growing farms increased their debt and around 6 per cent of farms had no change in debt. The remaining 25 per cent of farms had no debt at 1 July 2015 and 30 June 2016.

Figure 26 Distribution of farms, by change in debt, vegetable-growing farms, Australia, 2015–16



Note: Change in debt from 1 July 2015 to 30 June 2016.
Source: ABARES Australian vegetable-growing farms survey

Distribution of farms, by debt and equity

From 2013–14 to 2015–16 an estimated 56 per cent of vegetable-growing farms held less than $100,000 in debt at 30 June. The proportion of vegetable-growing farms with debt of less than $100,000 fell from 58 per cent in 2006–07 to 48 per cent in 2015–16. Farms with debt of less than $100,000 were mostly small farms with exclusively outdoor operations. On average, these farms generated low rates of return and from 2013–14 to 2015–16 around two-thirds had negative farm business profit (Table 16).

From 2013–14 to 2015–16 an estimated 13 per cent of vegetable-growing farms had debt of more than $1 million at 30 June. Farms with high debt were generally large farms with greater levels of capital investment and higher average rates of return (Table 16). This group included a mix of farms with outdoor operations and highly-intensive indoor operations.

Table 16 Farm performance, by debt group, vegetable-growing farms, Australia, 2013–14 to 2015–16

Performance indicator	Unit	Less than $100,000	$100,000 to 250,000	$250,000 to 500,000	$500,000 to $1m	More than $1m
Proportion of farms	%	56	11	12	8	13
Total cropping area	ha	25	44	41	74	179
Total area planted to vegetables	ha	14	16	25	42	126
Vegetable receipts	$	280,000	394,000	543,000	1,133,000	2,645,000
Total cash receipts	$	336,000	517,000	670,000	1,359,000	3,119,000
Farm cash income	$	104,000	108,000	155,000	271,000	495,000
Total capital	$	2,331,000	2,813,000	3,429,000	5,400,000	9,052,000
Total debt	$	15,000	164,000	361,000	700,000	2,995,000
Proportion of farms with negative farm business profit	%	64	66	58	49	51
Rate of return **a**	%	0.5	0.4	1.8	3.0	4.9
Equity ratio	%	99	94	89	86	68

a Rate of return excluding capital appreciation.

Source: ABARES Australian vegetable-growing farms survey

An estimated 28 per cent of vegetable-growing farms in Australia held no debt at 30 June 2016 (Table 17). A further 21 per cent held less than $100,000 in debt and an estimated 13 per cent of farms had debt in excess of $1 million.

Table 17 Distribution of farms, by farm business debt and equity ratio, vegetable-growing farms, Australia, 30 June 2016

percentage

Equity ratio	No debt	Less than $100,000	$100,000 to less than $250,000	$250,000 to less than $500,000	$500,000 to less than $1m	$1m to less than $2m	More than $2m	Total
More than 90%	28	18	5	4	2	0	0	57
80 to less than 90%	0	2	5	5	5	2	1	20
70 to less than 80%	0	0	0	4	1	1	2	8
60 to less than 70%	0	0	2	2	1	0	2	7
Less than 60%	0	0	1	0	1	1	3	8
Total	28	21	14	15	10	5	8	100

Note: Row and column totals may not sum to 100 due to rounding.

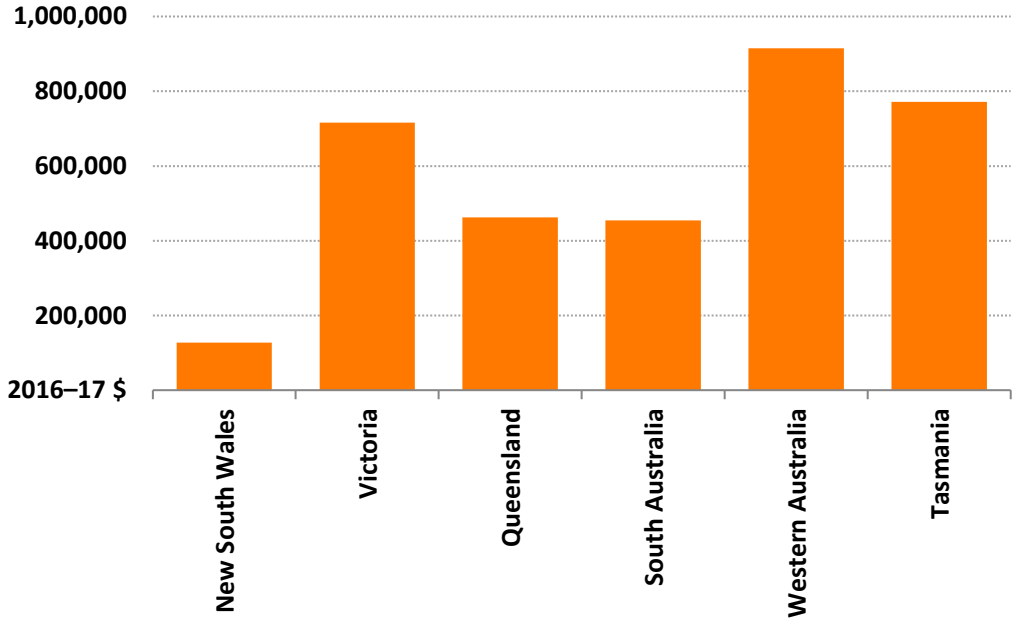
Source: ABARES Australian vegetable-growing farms survey

Debt and equity, by state

Debt and equity of vegetable-growing farms varied significantly by state. In 2015–16 vegetable-growing farms in New South Wales had lower average debt and higher farm equity ratios than other states (Figure 27 and Figure 28). This was mainly a result of New South Wales having a higher proportion of small farms (with less than 5 hectares planted to vegetables) that had little or no debt.

Figure 27 Total farm debt at 30 June, vegetable-growing farms, by state, 2015–16

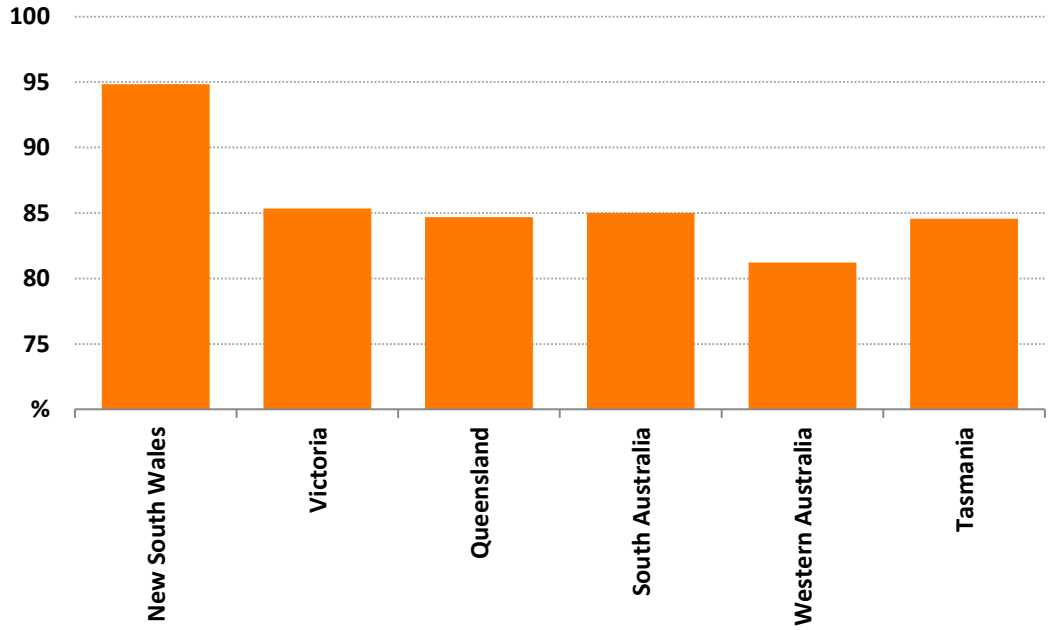
average per farm



Source: ABARES Australian vegetable-growing farms survey

Figure 28 Equity ratio, vegetable-growing farms, by state, 2015–16

average per farm



Source: ABARES Australian vegetable-growing farms survey

The distribution of debt among vegetable-growing farms in each state also varied significantly (Table 18). In New South Wales, around 46 per cent of vegetable-growing farms had no debt at 30 June 2016 and a further 17 per cent held less than $100,000 in debt. Only 2 per cent of farms in New South Wales had debt in excess of $1 million. The proportion of farms with more than $1 million of debt was highest in Western Australia where around 25 per cent of farms had

debts of greater than $1 million at 30 June 2016. This was mainly a result of large on-farm capital investments and intensive vegetable production.

Table 18 Distribution of farms, by farm business debt, vegetable-growing farms, by state, 30 June 2016

percent of farms

State	No debt	Less than $100,000	$100,000 to less than $250,000	$250,000 to less than $500,000	$500,000 to less than $1m	$1m to less than $2m	More than $2m
New South Wales	46	17	26	7	2	0	2
Victoria	23	25	8	13	14	7	9
Queensland	29	18	13	20	7	7	7
South Australia	24	16	22	20	7	3	7
Western Australia	18	27	6	17	7	11	14
Tasmania	14	22	4	15	31	4	10

Note: Row and column totals may not sum to 100 due to rounding.
Source: ABARES Australian vegetable-growing farms survey

4 Farm capital and investment

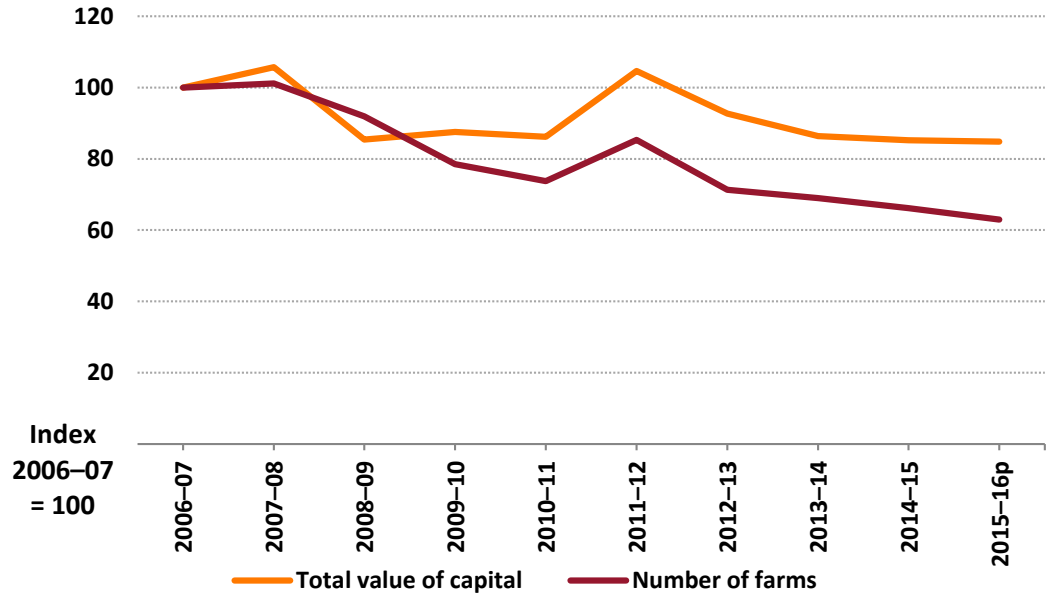
Total farm capital

From 2006–07 to 2015–16 the gross value of Australian vegetable production increased, in real terms, to an estimated $3.6 billion. Over the same period the number of vegetable farms declined by 37 per cent. As a result, the gross value of production per farm increased.

Investment in farm capital is important for the ongoing development of the Australian vegetable-growing industry. New and more efficient technologies are important for farm productivity. Investments in land, fixed improvements, and plant and equipment are key drivers of vegetable grower's capacity to generate farm outputs.

From 2006–07 to 2015–16 the total value of capital for all Australian vegetable-growing farms decreased by around 15 per cent, in real terms (Figure 29). This decline in total capital value can be attributed to the reduction in the total number of vegetable-growing farms—land values per hectare were relatively unchanged. On a per farm basis, average total capital increased by 35 per cent to around $4.5 million per farm, largely as a result of increases in average farm sizes and the value of plant and equipment per farm.

Figure 29 Total value of capital and number of farms, vegetable-growing farms, Australia, 2006–07 to 2015–16

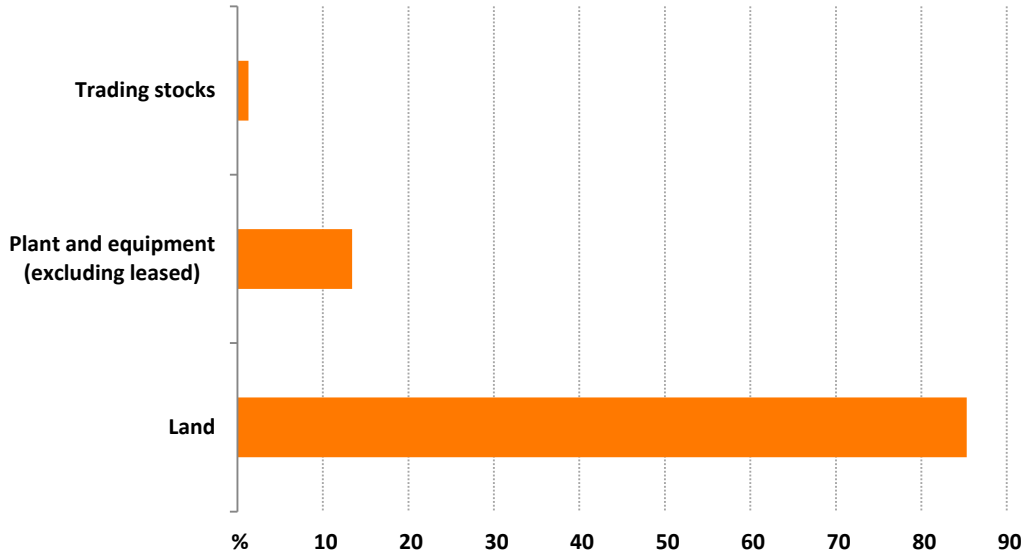


p Preliminary estimate.
Source: ABARES Australian vegetable-growing farms survey

From 2011–12 to 2015–16 land accounted for an average of 85 per cent of total capital per farm (Figure 30). Plant and equipment accounted for 13 per cent of total capital and trading stocks accounted for around 1 per cent.

Figure 30 Components of capital, vegetable-growing farms, Australia, 2011–12 to 2015–16

average per farm



Note: Trading stocks is the value of all inventories including herd, flock, stocks of wool, fruit, vegetables and grains held on the farm at 30 June.
Source: ABARES Australian vegetable-growing farms survey

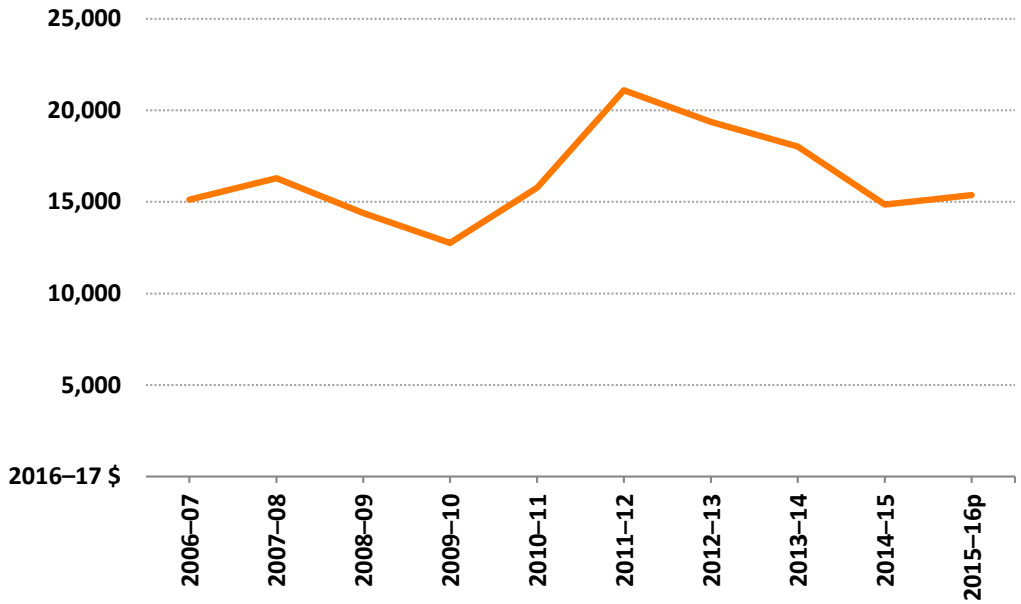
Return on land

ABARES uses two rates of return to farm capital—rate of return excluding capital appreciation and rate of return including capital appreciation. Rate of return is defined as farm profit expressed as a percentage of total capital. Land is the largest component of total farm capital, so it plays a key role in determining changes to total farm rates of return over the medium to longer term.

Due to the location of most Australian vegetable-growing farms, land values per hectare are generally much higher than those of other agricultural producers. From 2006–07 to 2015–16 the average value of land and fixed improvements per hectare for Australian vegetable-growing farms fluctuated, peaking at an average of $21,000 per hectare in 2011–12 before decreasing to around $15,000 per hectare in 2015–16, in real terms (Figure 31). From 2006–07 to 2015–16 the average value of land and fixed improvements per hectare for vegetable-growing farms increased by around 2 per cent, in real terms.

Figure 31 Value of land and fixed improvements per hectare, vegetable-growing farms, Australia, 2006–07 to 2015–16

average per farm



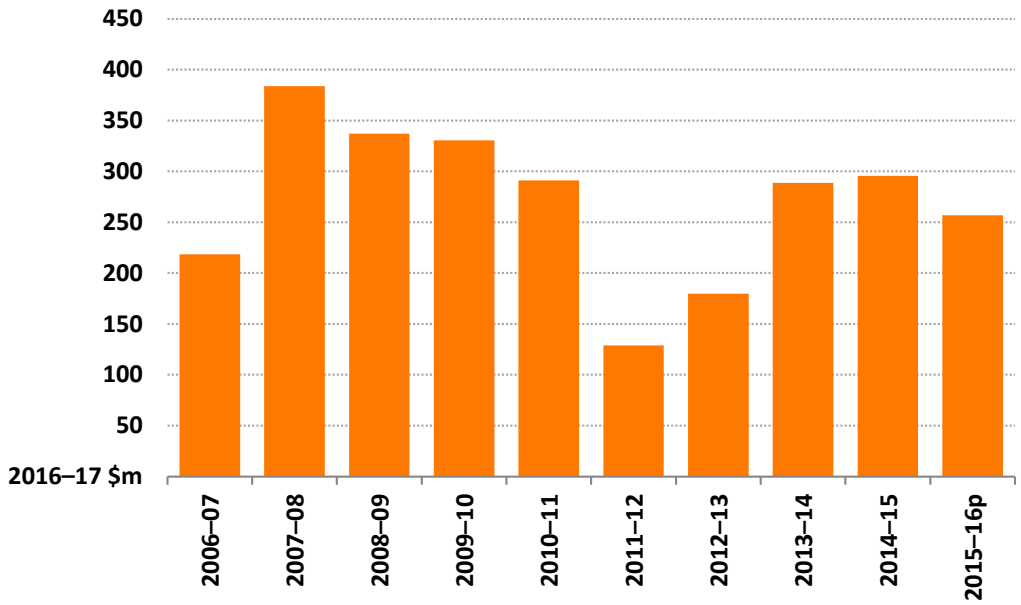
p Preliminary estimate.
Source: ABARES Australian vegetable-growing farms survey

New farm investment

Most farmers make new investments each year to add to the existing capital stock or to replace capital items that have reached the end of their useful life. Farm investments are usually made with longer-term outcomes in mind and based on expected returns over the life of the investment.

In total, Australian vegetable growers made an average of $271 million in new capital investment in land, buildings, structures, plant and livestock each year from 2006–07 to 2015–16, in real terms (Figure 32). In 2015–16 vegetable growers made a total of $257 million in new investment in land, buildings and structures, and plant and livestock.

Figure 32 Aggregate capital additions, vegetable-growing farms, Australia, 2006–07 to 2015–16



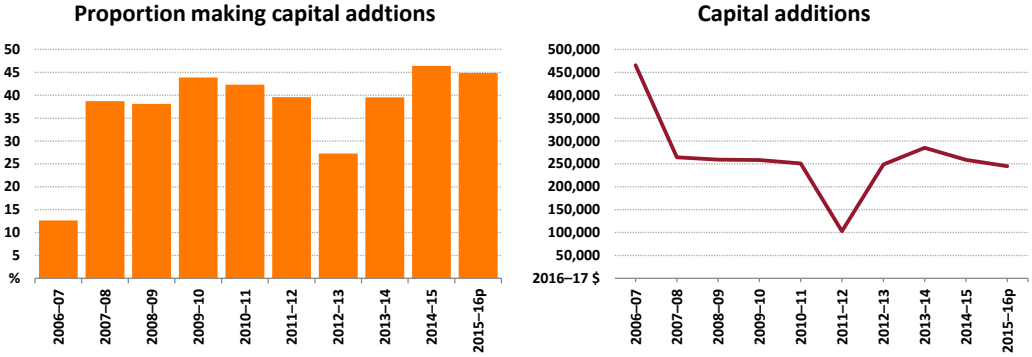
p Preliminary estimate.
Source: ABARES Australian vegetable-growing farms survey

From 2006–07 to 2015–16, on average, each year around 37 per cent of vegetable-growing farms made additions to their total capital (Figure 33). The average value invested each year by those making capital additions was $264,000, in real terms. In 2006–07 a relatively low proportion of vegetable growers surveyed made relatively large capital additions, resulting in a much higher average for that year than subsequent years. In 2011–12 relatively fewer farms surveyed made large capital investments, resulting in a much lower average than in other years.

In 2015–16 an estimated 45 per cent of vegetable-growing farms made capital additions at an average of $245,000 per farm.

Figure 33 Total capital additions, vegetable-growing farms, Australia, 2006–07 to 2015–16

proportion of farms and average per farm



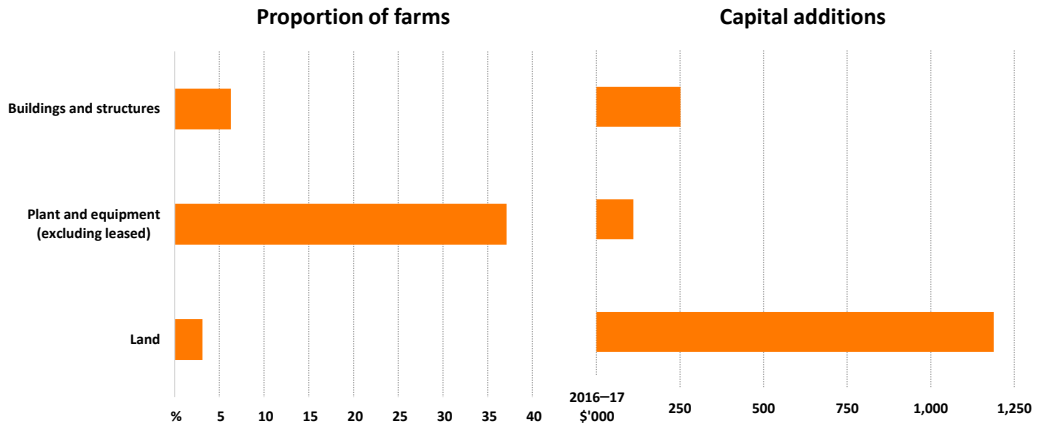
p Preliminary estimate.
Note: Total capital additions is the average of those farms making capital additions.
Source: ABARES Australian vegetable-growing farms survey

Land is the biggest component of capital additions each year. However, from 2011–12 to 2015–16 only 3 per cent of vegetable growers bought land each year, on average (Figure 34). Average expenditure on land for those making purchases was around $1.2 million per farm.

Over the period, around 37 per cent of all vegetable growers made additions to plant and equipment on average each year, at an average of around $110,000 per farm. Around 6 per cent of vegetable growers made additions to buildings and structures. Expenditure on these capital additions averaged around $251,000 per farm.

Figure 34 Components of capital additions, vegetable-growing farms, Australia, 2011–12 to 2015–16

proportion of farms and average per farm in category



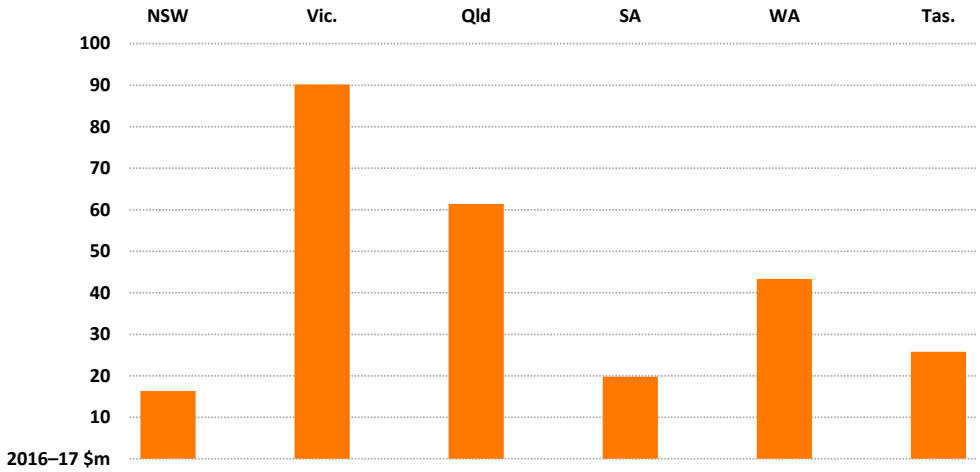
Source: ABARES Australian vegetable-growing farms survey

Farm capital and investment, by state

Since 2006–07 the number of vegetable-growing farms in each state has decreased (Figure 29). From 2006–07 to 2015–16 the number of farms in Queensland, South Australia and Tasmania fell by around 40 per cent in each state.

In 2016–17 Victoria accounted for an estimated 35 per cent ($90 million) of the value of capital additions by all vegetable growers (Figure 35), followed by Queensland ($61 million) and Western Australia ($43 million).

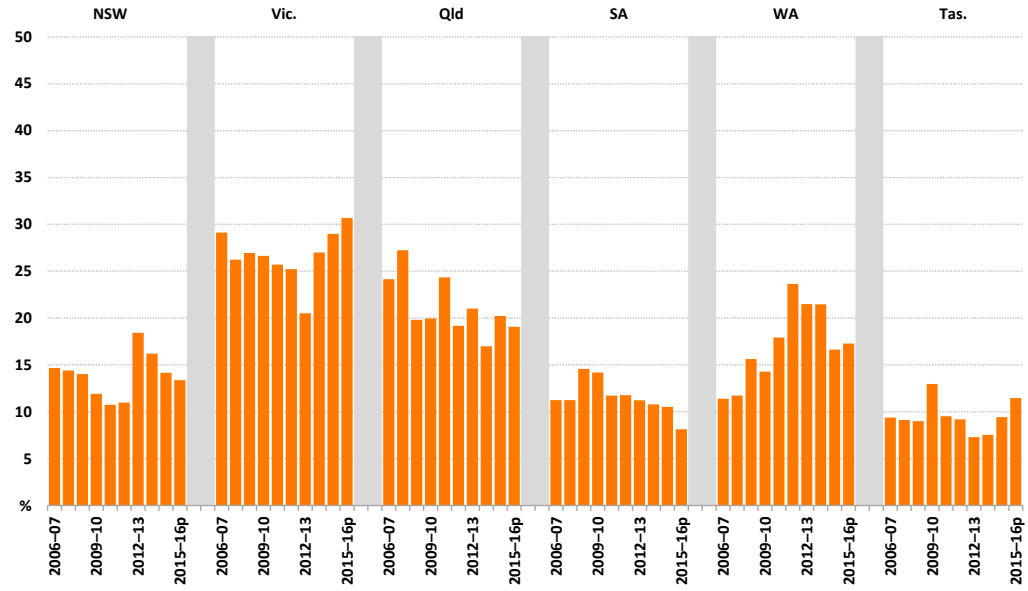
Figure 35 Aggregate capital additions, vegetable-growing farms, by state, 2015–16p



p Preliminary estimate.
Source: ABARES Australian vegetable-growing farms survey

Each state's share of total industry capital fluctuates from year to year. From 2006–07 to 2015–16 the share of total industry capital in Western Australia trended upwards, but trended downwards in Queensland and South Australia (Figure 36). The share of total industry capital in New South Wales, Tasmania and Victoria remained relatively unchanged in 2015–16 when compared with 2006–07.

Figure 36 Proportion of total capital, vegetable-growing farms, by state, 2006–07 to 2015–16



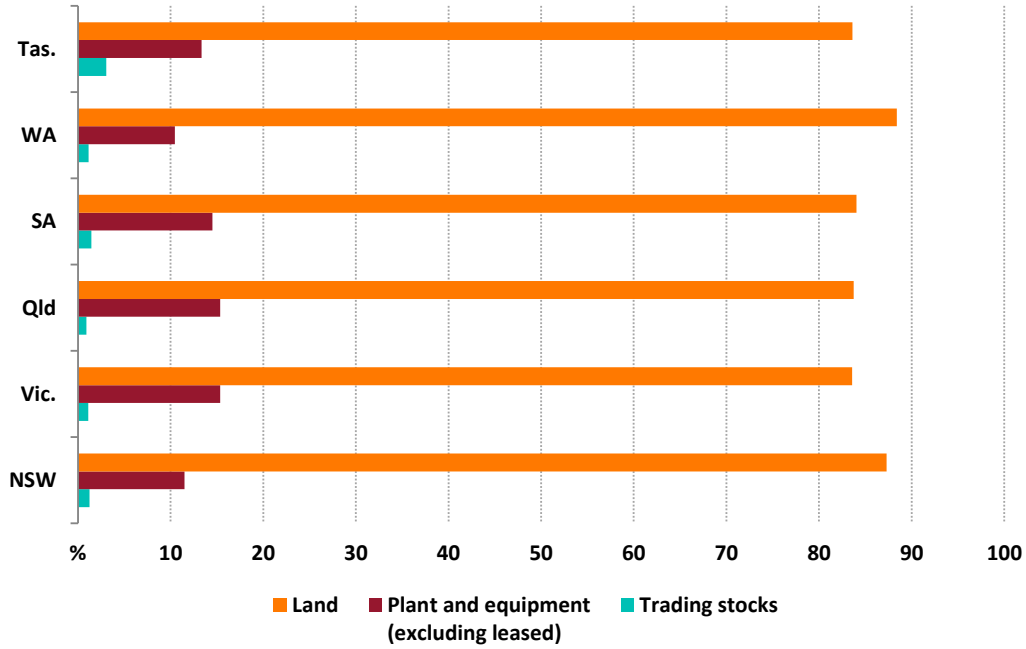
p Preliminary estimate.
Source: ABARES Australian vegetable-growing farms survey

When averaged over the 5 years to 2015–16, land was the primary component of farm capital for vegetable-growing farms in all states, accounting for more than 80 per cent of total capital, on average (Figure 37). Plant and equipment was the next largest, accounting for over 15 per cent of total capital in Victoria and Queensland and more than 10 per cent in all other

states, on average. Livestock and trading stocks accounted for around 1 per cent of total capital in all states except Tasmania, where it accounted for 3 per cent, on average. This was because Tasmania has a higher proportion of vegetable growers who produce livestock or crops other than vegetables.

Figure 37 Components of capital, vegetable-growing farms, by state, 2011–12 to 2015–16

average per farm



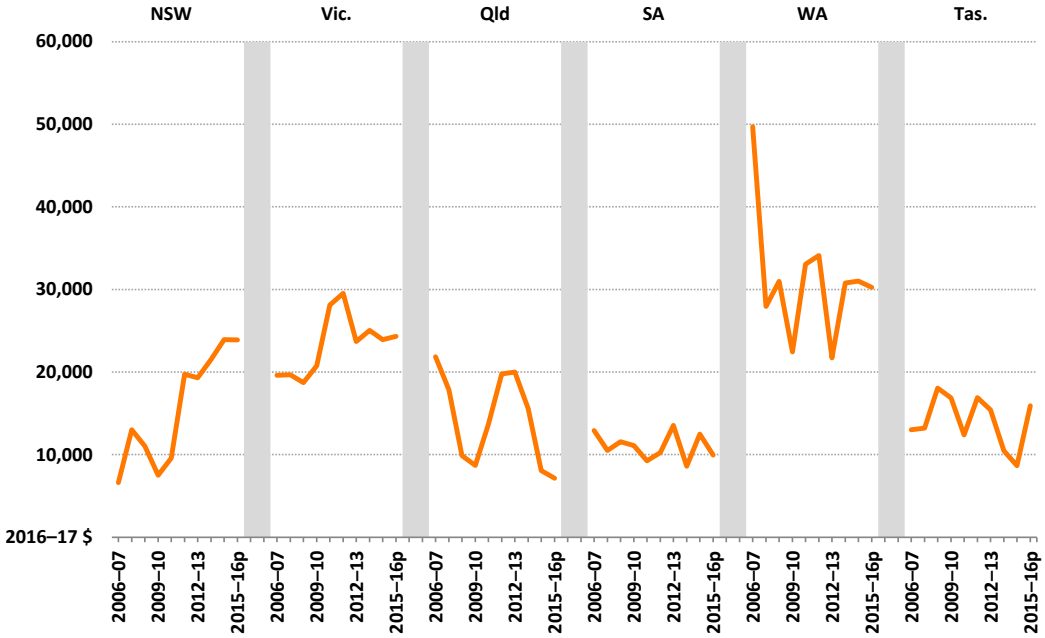
Note: Trading stocks is the value of all inventories including herd, flock, stocks of wool, fruit, vegetables and grains held on the farm at 30 June.
Source: ABARES Australian vegetable-growing farms survey

From 2006–07 to 2015–16 changes in land values per hectare varied by state, with average land value trending upwards in New South Wales and Victoria but falling in Queensland and South Australia (Figure 38).

In 2006–07 a higher proportion of farms surveyed in Western Australia were located around Perth. As a result, average land values for that state were significantly higher in 2006–07 than in subsequent years.

Figure 38 Value of land and fixed improvements per hectare, vegetable-growing farms, by state, 2006–07 to 2015–16

average per farm



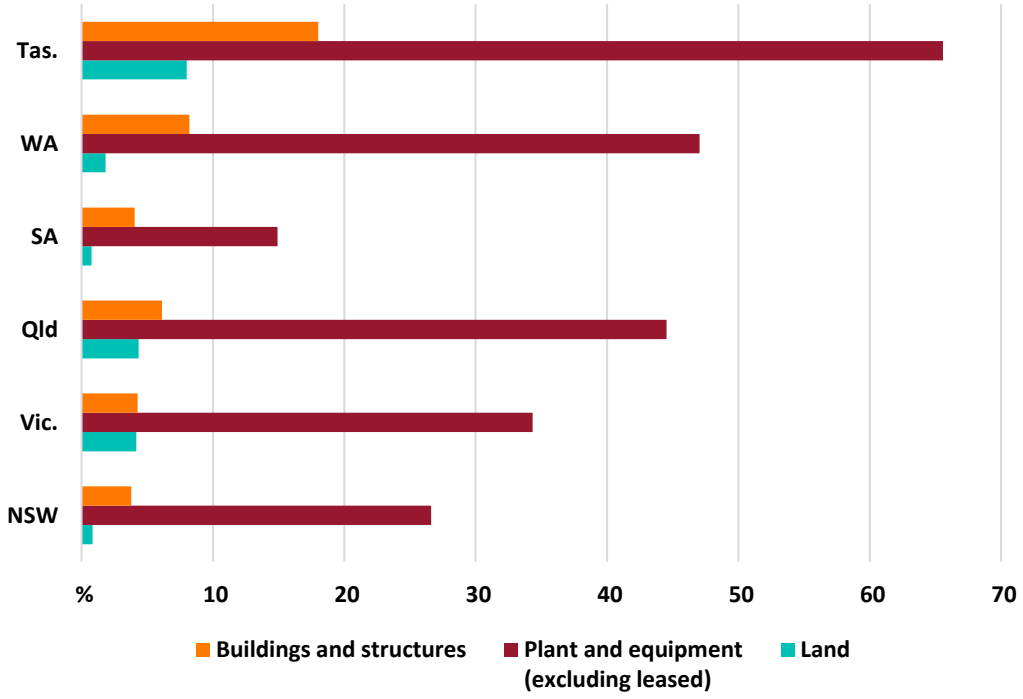
p Preliminary estimate.
Source: ABARES Australian vegetable-growing farms survey

From 2011–12 to 2015–16 the average proportion of vegetable-growing farms making capital additions varied by state. Tasmania had the highest proportion of vegetable growers making capital additions in all three categories—buildings and structures, land, and plant and equipment (excluding leased) (Figure 39).

In all states, plant and equipment additions were the most common additions made by vegetable-growing farms, followed by buildings and structures. In all three categories, South Australian vegetable-growing farms had the lowest proportion of vegetable-growing farms making capital additions.

Figure 39 Components of capital additions, vegetable-growing farms, by state, 2011–12 to 2015–16

proportion of farms



Source: ABARES Australian vegetable-growing farms survey

5 References

ABARES 2016, *Agricultural commodity statistics 2016*, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.

ABS 2017a, *Agricultural commodities, Australia, 2015–16*, cat. no. 7121.0, Australian Bureau of Statistics, Canberra, accessed 10 October 2017.

ABS 2017b, *Value of agricultural commodities produced, Australia, 2015–16*, cat. no. 7503.0, Australian Bureau of Statistics, Canberra, accessed 30 July 2017.

AUSVEG 2012, *Australian vegetable industry strategic investment plan 2012–2017*, Horticulture Australia Limited, March.