



Australian vegetable growing farms: an economic survey, 2007-08

Sarah Crooks

ABARE research report 09.15

September 2009

abare.gov.au

© Commonwealth of Australia 2009

This work is copyright. The *Copyright Act 1968* permits fair dealing for study, research, news reporting, criticism or review. Selected passages, tables or diagrams may be reproduced for such purposes provided acknowledgment of the source is included. Major extracts or the entire document may not be reproduced by any process without the written permission of the Executive Director, ABARE.

ISSN 1447-8358

ISBN 978-1-921448-59-1

Crooks, S 2009, *Australian vegetable growing farms: an economic survey, 2007-08*, ABARE report to Horticulture Australia Ltd, Canberra, September.

Australian Bureau of Agricultural and Resource Economics

Postal address GPO Box 1563 Canberra ACT 2601 Australia

Location 7B London Circuit Canberra ACT 2601

Switchboard +61 2 6272 2000

Facsimile +61 2 6272 2001

ABARE is a professionally independent government economic research agency.

ABARE project 3326

Acknowledgments

ABARE thanks Horticulture Australia Limited (HAL) for funding the survey of vegetable growers conducted in 2009 and Ian James (a vegetable industry economist) and Ravi Hedge of HAL for providing comments on the draft report.

The author is grateful for the assistance provided by ABARE officers who collected and edited the data: Ken Colbert, Mark Neilsen, Paul Phillips, Surya Dharma, Merrilyn Woodhouse, Jason Bakonji, Teresa Laface, Alex Robertson, Chris Conroy, Joy Moloney, Evan Calford, Frank Mills, Gwen Rees, Henry To, Ross Fenwick, John Kemp, John Lisle, Kathrine Bayles, Keely Harris-Adams, Lara Clark, Michael Trevaskis, Neil Thompson, Orion Sanders, Peter Zacker, Philip Reed, Prue Weir, Ray Fossey, Rebecca Petchey, Richard Clingeffer, Rob Ashurst, Robert New, Robert Crawford, Roslyn Joseph, Stuart Brummell and Teena Wilcock.

Many thanks to Milly Lubulwa for her guidance and overall management of the project.

Participation in the survey of vegetable growers was voluntary. The cooperation of vegetable growers responding to the survey is greatly acknowledged. Their assistance was vital to the success of the project.

Foreword

The Australian vegetable production sector is an important source of food, supplying most of the fresh vegetables consumed in Australia and providing inputs for a large proportion of the processed vegetable products consumed in Australia and exported overseas. The gross value of production of the vegetable industry is estimated to have been around \$3.5 billion in 2008-09, contributing around 8 per cent to Australia's gross value of agricultural production.

Information available on the physical and financial characteristics of Australian vegetable farms is limited. To cover this information gap, Horticulture Australia Limited commissioned ABARE to conduct three surveys of vegetable growers to help build a rich database of information for the industry. Horticulture Australia Limited funded this project using the vegetable industry levy which is matched by funds provided by the Australian Government. The survey of vegetable growers was conducted in close cooperation with the industry.

This report presents results from the second of the three ABARE surveys conducted on behalf of Horticulture Australia Limited. The survey was conducted in May 2009 and collected comprehensive data on the physical, financial and socioeconomic characteristics of vegetable farms in 2007-08 and 2008-09.

Additionally, a comparison of results was undertaken using results from the first survey conducted on behalf of Horticulture Australia Limited and a survey conducted by ABARE in 2007 on behalf of the Australian Vegetable Industry Development Group (AVIDG).

The information contained in this report is expected to contribute to policy decisions affecting the future direction and growth of the Australian vegetable growing industry. Survey results will assist with benchmarking to improve the industry's performance and provide information to target industry efforts to improve productivity and profitability.



Phillip Glyde
Executive Director
ABARE
September 2009

Contents

| | |
|--|----|
| Executive summary | 1 |
| 1 Introduction | 3 |
| Background | 3 |
| Australian vegetable production | 4 |
| Employment in the vegetable industry | 4 |
| 2 Profile of vegetable growers | 6 |
| 3 Farm performance to 2008-09 | 8 |
| Farm physical performance | 8 |
| Farm financial performance | 10 |
| Capital and debt | 17 |
| Financial performance by area of vegetable crops sown | 19 |
| Financial performance by equity and farm cash income position | 20 |
| Financial performance of other specialised vegetable growers | 22 |
| Financial performance of farms growing vegetables under protection | 24 |
| 4 Costs of vegetable production | 26 |
| 5 Other issues | 30 |
| Irrigation use | 30 |
| Food safety precautions | 33 |
| Pests and diseases | 34 |
| Vegetable production and selling methods | 34 |
| Education and training | 36 |
| Research and development priorities | 37 |
| Value adding | 37 |
| Socioeconomic and business structure of vegetable farms | 39 |
| Future in vegetable growing | 40 |
| Appendices | 44 |
| A Definitions and methodology | 45 |
| B Appendix tables | 52 |
| References | 74 |

Tables

| | | |
|----|---|----|
| 1 | Gross value of vegetable production, by state, 2006-07 | 4 |
| 2 | Employment in the vegetable growing industry, 2005-06 | 5 |
| 3 | Area operated and area sown to vegetables, 2005-06 to 2007-08 | 6 |
| 4 | Distribution of vegetable farms, by area sown to vegetables, by state, 2007-08 | 7 |
| 5 | Proportion of vegetables produced from each state, 2007-08 | 7 |
| 6 | Vegetable growers' assessment of seasonal conditions, by state, 2007-08 | 8 |
| 7 | Area sown, quantity produced and yield, by vegetable crop, 2006-07 to 2008-09 | 10 |
| 8 | Quantity sold, value of production and price received, by vegetable crop, 2006-07 to 2008-09 | 12 |
| 9 | Financial performance of vegetable growing farms, 2005-06 to 2007-08 | 14 |
| 10 | Financial performance of vegetable farms, by state, 2005-06 to 2007-08 | 15 |
| 11 | Vegetable farms with negative farm cash income, 2005-06 to 2007-08 | 16 |
| 12 | Farm business profit of vegetable farms, 2005-06 and 2006-07 | 16 |
| 13 | Rate of return, excluding capital appreciation, for vegetable farms, 2006-07 to 2007-08 | 16 |
| 14 | Distribution of vegetable growers, by equity ratio and farm cash income, 2007-08 | 20 |
| 15 | Financial performance and debt characteristics, by area sown to vegetables, 2007-08 | 21 |
| 16 | Financial performance and debt characteristics, by equity ratio and farm cash income position, 2007-08 | 22 |
| 17 | Selected estimates for specialist tomato and potato farms, 2007-08 | 23 |
| 18 | Financial performance and debt characteristics of specialist tomato and potato farms, 2006-07 and 2007-08 | 23 |
| 19 | Selected estimates for farms that used protection, 2007-08 | 24 |
| 20 | Financial performance and debt characteristics for farms that used protection, 2007-08 | 25 |
| 21 | Financial performance and debt characteristics of specialist tomato and potato farms, 2006-07 and 2007-08 | 26 |
| 22 | Components of costs of production for vegetable growers, 2007-08 | 27 |
| 23 | Cost of potato production per tonne for vegetable growers, 2007-08 | 28 |
| 24 | Cost of potato production per tonne, by area of vegetables sown and quantity of potatoes harvested, 2007-08 | 28 |
| 25 | Vegetable farms using irrigation water, by state, 2006-07 and 2007-08 | 30 |
| 26 | Area irrigated, crop yield and water applied, by vegetable crop, 2007-08 | 31 |
| 27 | Source of irrigation water, by state, 2007-08 | 31 |
| 28 | Source of additional irrigation water, by state, 2007-08 | 32 |
| 29 | Food safety precautions undertaken by vegetable growers, by state, 2007-08 | 33 |

| | | |
|----|--|----|
| 30 | Safety precautions undertaken by vegetable growers, by area of vegetables sown, 2007-08 | 33 |
| 31 | Pests and disease monitoring, by state, 2007-08 | 34 |
| 32 | Vegetable production methods, 2007-08 | 35 |
| 33 | Vegetable selling methods, 2007-08 | 35 |
| 34 | Relationship with main buyer, 2007-08 | 36 |
| 35 | Education and training undertaken by vegetable growers, by state, 2007-08 | 36 |
| 36 | Perceived research and development priorities, by state, 2007-08 | 38 |
| 37 | Level of value adding, by state, 2007-08 | 39 |
| 38 | Socioeconomic and business characteristics of vegetable farms, 2007-08 | 39 |
| 39 | Intentions of vegetable growers in five years, 2007-08 | 40 |
| 40 | Age of operator and area operated, by intention in five years, 2007-08 | 40 |
| 41 | Method of vegetable production expansion in the next 3 to 5 years, 2007-08 | 41 |
| 42 | Management practices to improve vegetable farm productivity, 2007-08 | 42 |
| 43 | Management practices to improve vegetable farm productivity, by area of vegetables sown, 2007-08 | 42 |
| 44 | Constraints to changing vegetable crop mix, 2007-08 | 42 |
| 45 | Major growth opportunities for vegetable farms, 2007-08 | 43 |
| 46 | Impediments to developing export markets for vegetable farms, 2007-08 | 43 |
| 47 | Impediments to future business viability of vegetable farms, 2007-08 | 44 |
| 48 | Population and sample numbers for the Australian vegetable industry survey, 2007-08 | 47 |

Figures

| | | |
|---|--|----|
| a | Growers facing adverse seasonal conditions, by vegetable crop, 2006-07 and 2007-08 | 9 |
| b | Total cash receipts, 2007-08 | 11 |
| c | Composition of cash costs of vegetable farms, 2007-08 | 13 |
| d | Total business capital of vegetable farms, 2006-07 and 2007-08 | 17 |
| e | Total farm debt of vegetable farms, 2007-08 | 18 |
| f | Debt servicing ratio of vegetable favrms, 2006-07 and 2007-08 | 18 |
| g | Equity ratio of vegetable farms, 2006-07 and 2007-08 | 19 |
| h | Farms intending to increase irrigation water use, by state, 2007-08 | 32 |
| i | Growers expecting to do more value adding in the future, by state, 2007-08 | 37 |
| j | Intention to expand vegetable produciton area in the next 3 to 5 years, 2007-08 | 41 |

Appendix tables

| | | |
|-----|---|----|
| A1 | Selected physical estimates of vegetable farms, by state, 2007-08 | 52 |
| A2 | Vegetable yields, by state, 2007-08 | 53 |
| A3 | Farm cash receipts of vegetable farms, by state, 2007-08 | 55 |
| A4 | Quantity sold, value of production and price received, by vegetable type, by state, 2007-08 | 56 |
| A5 | Farm cash costs of vegetable farms, by state, 2007-08 | 58 |
| A6 | Financial performance of vegetable farms, by state, 2007-08 | 59 |
| A7 | Area irrigated and irrigated vegetable production, by state, 2007-08 | 60 |
| A8 | Volume of irrigation water used and use per hectare, by state, 2007-08 | 61 |
| A9 | Costs of vegetable production, by state, 2007-08 | 61 |
| A10 | Selected physical estimates of vegetable farms, by area of vegetables sown, 2007-08 | 63 |
| A11 | Vegetable yields, by area of vegetables sown, 2007-08 | 64 |
| A12 | Farm cash receipts of vegetable farms, by area of vegetables sown, 2007-08 | 66 |
| A13 | Quantity sold, value of production and price received, by area of vegetables sown, 2007-08 | 67 |
| A14 | Farm cash costs of vegetable farms, by area of vegetables sown, 2007-08 | 69 |
| A15 | Financial performance of vegetable farms, by area of vegetables sown, 2007-08 | 70 |
| A16 | Area irrigated and irrigated vegetable production, by area of vegetables sown, 2007-08 | 71 |
| A17 | Volume of irrigation water used and use per hectare, by area of vegetables sown, 2007-08 | 72 |
| A18 | Costs of vegetable production, by area of vegetables sown, 2007-08 | 73 |

Map

| | | |
|---|---|---|
| 1 | Vegetable growers' assessment of seasonal conditions, 2007-08 | 9 |
|---|---|---|

Executive summary

This report presents results from the second of three surveys of Australian vegetable growers conducted by ABARE on behalf of Horticulture Australia Limited (HAL). Comprehensive data on the physical, financial and socioeconomic characteristics of vegetable growing farms in 2007-08 and some preliminary data for 2008-09 were collected as part of this survey. A comparison of results from the first survey funded by HAL conducted in 2008 and a survey conducted in 2007 by ABARE, funded by the Australian Government Department of Agriculture, Fisheries and Forestry on behalf of the Australian Vegetable Industry Development Group (AVIDG), was also undertaken.

During 2007-08, there were an estimated 3781 commercial vegetable farms operating in Australia with an estimated value of agricultural output (EVAO) of at least \$40 000. These farms accounted for 73 per cent of all vegetable growing farms. The average area sown to vegetables was 29 hectares a farm in 2007-08. However, half of Australian vegetable growers produced vegetables on areas of less than 9 hectares in 2007-08.

The main results from the report are:

- An estimated 57 per cent of vegetable growers experienced drought or below average seasonal conditions in 2007-08. This proportion was around the same as in the previous financial year. Reflecting continued adverse seasonal conditions for vegetable growing for some parts of Australia, crop yields are estimated to have fallen for tomatoes, onions, carrots and broccoli.
- Total cash receipts for vegetable farms in 2007-08 are estimated to have been \$570 100 a farm on average, of which 83 per cent was from the sale of vegetables. Vegetable receipts are estimated to have fallen by 6 per cent on average between 2006-07 and 2007-08 because of lower vegetable sales even though there was a rise in the average price received for vegetables sold. Despite the fall in vegetable receipts, total cash receipts increased slightly in 2007-08 because of higher receipts from other enterprises.
- Total cash costs were just less than \$404 000 a farm on average in 2007-08, which was an increase of 2 per cent from the previous financial year. The largest share of average cash costs per farm in 2007-08 was accounted for by hired labour.
- Despite the rise in total cash receipts between 2006-07 and 2007-08, average farm cash income is estimated to have fallen by 3 per cent because of higher costs. The average farm cash income for vegetable farms in 2007-08 was \$166 100 a farm.
- The proportion of vegetable farms realising negative farm cash income fell from 17 per cent in 2006-07 to 13 per cent in 2007-08.
- Vegetable farms had an estimated rate of return to capital, excluding capital appreciation, of 4 per cent on average in 2007-08. This was superior, on average, to that of broadacre farms (sheep, beef and grain farms) of 0.8 per cent in 2007-08. Larger farms, with more than 70 hectares of vegetables sown, realised a higher rate of return to capital, excluding capital appreciation, of 9 per cent, on average.

- The equity ratio (business assets as a percentage of total farm capital) of vegetable farms remained high in 2007-08, at 87 per cent, despite higher average debt. Only an estimated 1 per cent of vegetable farms had both an equity ratio of less than 70 per cent and a negative farm cash income.
- Almost all vegetable growers were concerned with pests and diseases. An estimated 91 per cent of growers followed a set pest and disease monitoring program. Additionally, 78 per cent of vegetable growers rated pest and disease management as a high or very high research and development priority in 2007-08.
- At the time of the survey, an estimated 72 per cent of vegetable growers expected to still be engaged in vegetable production in five years time. Additionally, 31 per cent of vegetable growers intended to expand vegetable production in the next three to five years.
- The most common factor highlighted by growers as an impediment to future viability of vegetable farms was increased farm input costs. The majority of vegetable growers also highlighted marketing costs, low vegetable prices and availability of irrigation water as other impediments to future viability. Compared with the previous survey, access to and cost of labour was no longer highlighted by the majority of vegetable growers as an impediment facing future viability.

1 Introduction

Background

In 2006, the Australian Vegetable Industry Development Group (AVIDG) was established to provide an industry-wide perspective on setting directions for the sustainable growth of the industry. An initial task for the AVIDG was to develop an industry-wide strategic plan called Vegvision 2020. In developing this plan, the AVIDG recognised a need for the vegetable industry to better understand the key drivers of physical and financial farm performance for vegetable growers.

To cover this information gap, in 2007 ABARE collected information about production, the financial situation of vegetable growers and issues they faced on behalf of AVIDG and funded by the Australian Government Department of Agriculture, Fisheries and Forestry. Horticulture Australia Limited has funded three further surveys to help build a rich database of information for the industry.

This report presents the results from the second of the three vegetable surveys conducted by ABARE on behalf of HAL. This survey of vegetable enterprises was conducted in May 2009 to collect 2007-08 data and preliminary data for 2008-09. The third survey is to be conducted in 2010.

The survey of vegetable growers was developed in consultation with industry stakeholders about the information needs of the industry. The survey is designed to collect comprehensive production and financial performance data. In addition, the survey collects information on:

- water and chemical usage
- selling points
- sources of information
- future intentions
- constraints
- relationship of growers with main buyers.

The primary aim of this report is to build on the data collected in earlier surveys and compare estimates for 2007-08 to those obtained for 2005-06 and 2006-07. Additionally, some preliminary analysis is performed looking at estimates for vegetable farms in 2008-09.

To improve the efficiency of survey estimates, a new weighting method using Australian Bureau of Statistics population benchmarks was developed for the 2009 vegetable survey (covering the 2007-08 financial year). To ensure estimates are comparable between years,

estimates for 2005-06 and 2006-07 have been revised using the new weighting method. Further information about the new weighting methodology is contained in appendix A.

Australian vegetable production

The Australian vegetable production sector is an important supplier of food to the domestic market, supplying most of the fresh vegetables consumed in Australia and also providing vegetable inputs for a large proportion of the processed vegetable products consumed in Australia and exported overseas.

Over the period 1999-2000 to 2006-07, vegetable growing accounted for an average of around 7 per cent of the gross value of Australia's agricultural production. As shown in table 1, it is estimated that the gross value of vegetable production in Australia was around \$3.1 billion in 2006-07. The gross value of vegetable production in 2008-09 was around \$3.5 billion (ABARE 2009).

The wide range of climate and soils in Australia enables many types of vegetables to be grown in various parts of the country. Potatoes and tomatoes are the major vegetable crops grown in Australia in terms of area sown, value of production and volume of production.

1 Gross value of vegetable production, by state, 2006-07

| | vegetable growing (\$ millions) | % of total vegetable production value |
|----------------------------|---------------------------------|---------------------------------------|
| New South Wales | 429 | 14 |
| Victoria | 704 | 23 |
| Queensland | 1 002 | 32 |
| South Australia | 478 | 15 |
| Western Australia | 268 | 9 |
| Tasmania | 193 | 6 |
| Northern Territory | 29 | 1 |
| ACT and other ^a | 0 | 0 |
| Total | 3 103 | 100 |

^a Includes Territory of Cocos Islands, Jervis Bay Territory, Territory of Christmas Island and persons with no usual address. The GVP value for the ACT and other areas is less than \$1 million.

Source: ABS, cat no. 7503.0.

Employment in the vegetable industry

Vegetable growing in Australia is typically more labour-intensive than other agricultural industries. Data from the Australian Bureau of Statistics indicate that in 2005-06 vegetable production directly employed around 14 660 people in Australia, equivalent to around 0.16 per cent of total Australian employment (table 2). Tasmania had the highest proportion of its workforce employed in the vegetable growing industry in 2005-06.

Given the timing of the census, these statistics may understate actual employment in vegetable growing as many seasonal employees would not be taken into account. Additionally, when employment in vegetable processing and casual employment of people working in other jobs is considered, the regional importance of vegetable growing is increased.

2 Employment in the vegetable growing industry, 2005-06

| | vegetable growing | % of total employment |
|----------------------------|-------------------|-----------------------|
| New South Wales | 2 659 | 0.09 |
| Victoria | 3 174 | 0.14 |
| Queensland | 4 774 | 0.26 |
| South Australia | 1 672 | 0.24 |
| Western Australia | 1 404 | 0.15 |
| Tasmania | 872 | 0.43 |
| Northern Territory | 101 | 0.12 |
| ACT and other ^a | 3 | 0.00 |
| Australia | 14 659 | 0.16 |

^a Includes Territory of Cocos Islands, Jervis Bay Territory, Territory of Christmas Island and persons with no usual address. The percentage for the ACT is less than 0.01.

Source: ABS, cat. no. 6291.0.

2 Profile of vegetable growers

The average area operated by vegetable growers in 2007-08 is estimated to have been 189 hectares a farm, down slightly from the previous year (table 3). The average area sown to vegetables remained at an estimated 29 hectares a farm in 2007-08.

On average, Victorian vegetable farms had the largest area sown to vegetables in 2007-08 at 42 hectares a farm. Vegetable farms in New South Wales had the smallest average area sown to vegetables per farm at 16 hectares in 2007-08.

3 Area operated and area sown to vegetables, 2005-06 to 2007-08 average per farm

| | area operated (ha) | | | area sown to vegetables (ha) | | |
|--------------------|--------------------|---------|---------|------------------------------|---------|---------|
| | 2005-06 | 2006-07 | 2007-08 | 2005-06 | 2006-07 | 2007-08 |
| New South Wales | 245 | 309 | 168 | 19 | 20 | 16 |
| Victoria | 157 | 217 | 205 | 39 | 40 | 42 |
| Queensland | 229 | 127 | 190 | 33 | 34 | 35 |
| South Australia | 480 | 191 | 249 | 34 | 26 | 25 |
| Western Australia | 165 | 63 | 124 | 21 | 19 | 18 |
| Tasmania | 165 | 201 | 203 | 24 | 30 | 29 |
| Northern Territory | 188 | 44 | 49 | 20 | 21 | 20 |
| Australia | 230 | 191 | 189 | 29 | 29 | 29 |

The distribution of vegetable farm size varied considerably between states. It is estimated that the smallest 50 per cent of farms produced vegetables on areas of up to 9 hectares and the smallest 75 per cent on areas of up to 27 hectares in 2007-08 (table 4).

Victorian vegetable farmers produced the highest proportion of vegetables in 2007-08, contributing 25 per cent of Australia's total vegetable production (table 5). A further 21 per cent was produced from vegetable farms in Queensland. Around 26 per cent of Australia's potato production was by vegetable farms in South Australia and Victoria. Vegetable farms in Victoria and Queensland accounted for an estimated 81 per cent of national tomato production in 2007-08. Vegetable farms located in the Northern Territory played only a small role in vegetable production in 2007-08.

4 Distribution of vegetable farms, by area sown to vegetables, by state, 2007-08

value below which specified percentage of farms lie

| | | 25 per cent | 50 per cent | 75 per cent | average |
|--------------------|----|-------------|-------------|-------------|---------|
| New South Wales | ha | 2 | 4 | 22 | 16 |
| Victoria | ha | 5 | 10 | 34 | 42 |
| Queensland | ha | 2 | 22 | 29 | 35 |
| South Australia | ha | 2 | 5 | 15 | 25 |
| Western Australia | ha | 2 | 8 | 20 | 18 |
| Tasmania | ha | 7 | 13 | 28 | 29 |
| Northern Territory | ha | 8 | 18 | 30 | 20 |
| Australia | ha | 3 | 9 | 27 | 29 |

5 Proportion of vegetables produced from each state, 2007-08

percentage

| | NSW | Vic | Qld | SA | WA | Tas | NT | Australia |
|------------------|-----|-----|-----|----|----|-----|----|-----------|
| Potatoes | 6 | 26 | 11 | 26 | 10 | 22 | 0 | 100 |
| Pumpkins | 33 | 1 | 38 | 10 | 11 | 3 | 5 | 100 |
| Green peas | 8 | 24 | 12 | 0 | 0 | 56 | 0 | 100 |
| Beans | 2 | 23 | 49 | 0 | 0 | 25 | 0 | 100 |
| Tomatoes | 15 | 38 | 43 | 0 | 4 | 0 | 0 | 100 |
| Onions | 4 | 6 | 26 | 23 | 14 | 27 | 0 | 100 |
| Carrots | 2 | 36 | 3 | 19 | 11 | 29 | 0 | 100 |
| Cauliflowers | 17 | 16 | 20 | 3 | 22 | 22 | 0 | 100 |
| Lettuce | 27 | 7 | 42 | 9 | 15 | 0 | 0 | 100 |
| Broccoli | 3 | 56 | 15 | 1 | 18 | 7 | 0 | 100 |
| Cabbage | 27 | 46 | 15 | 6 | 6 | 1 | 0 | 100 |
| Other vegetables | 20 | 16 | 48 | 6 | 6 | 2 | 3 | 100 |
| All vegetables | 11 | 25 | 21 | 17 | 10 | 16 | 0 | 100 |

Note: Figures may not add up to 100 per cent because of rounding.

3 Farm performance to 2008-09

Farm physical performance

In 2007-08, an estimated 57 per cent of vegetable growers experienced drought or below average seasonal conditions, which is a similar proportion to that observed in 2006-07 (table 6 and map 1). A high proportion of South Australian growers indicated that they encountered adverse seasonal conditions in 2007-08, with more than 90 per cent experiencing drought or below average seasonal conditions. Additionally, 87 per cent of Victorian growers indicated they had encountered adverse seasonal conditions in 2007-08. All of the vegetable growers surveyed in the Northern Territory reported that they experienced average seasonal conditions in 2007-08.

6 Vegetable growers' assessment of seasonal conditions, by state, 2007-08

percentage of farms

| | | drought | below average | average | above average |
|--------------------|---|---------|---------------|---------|---------------|
| New South Wales | % | 16 | 23 | 52 | 9 |
| Victoria | % | 25 | 62 | 11 | 2 |
| Queensland | % | 13 | 24 | 52 | 10 |
| South Australia | % | 32 | 60 | 8 | 0 |
| Western Australia | % | 2 | 22 | 50 | 26 |
| Tasmania | % | 7 | 69 | 24 | 0 |
| Northern Territory | % | 0 | 0 | 100 | 0 |
| Australia | % | 17 | 40 | 36 | 8 |

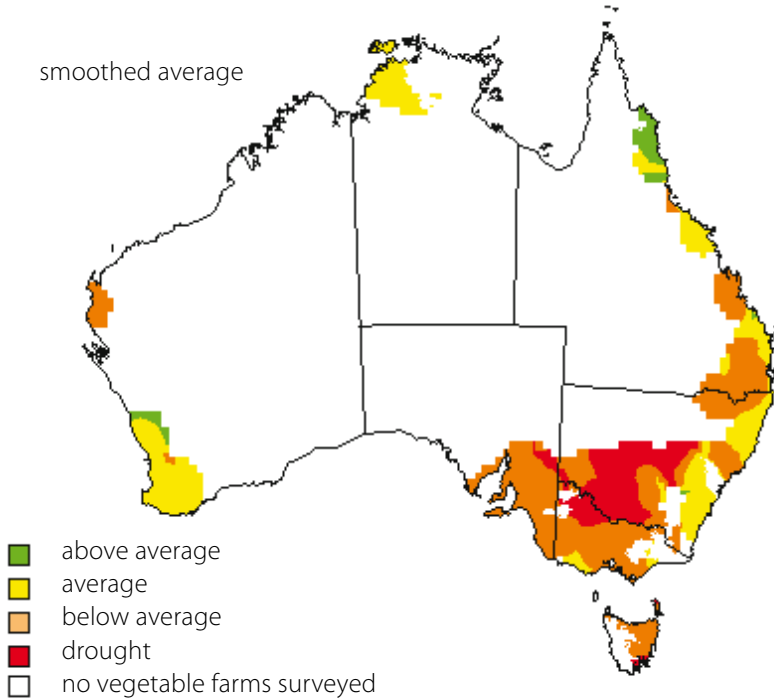
Note: Figures may not add up to 100 per cent because of rounding.

A high proportion of vegetable farms that grew pumpkins encountered adverse seasonal conditions in 2007-08, with an estimated 70 per cent experiencing drought or below average seasonal conditions compared with only 37 per cent of vegetable farms that grew lettuces (figure a). However, seasonal conditions for farms that grew pumpkins were better in 2007-08 than in 2006-07.

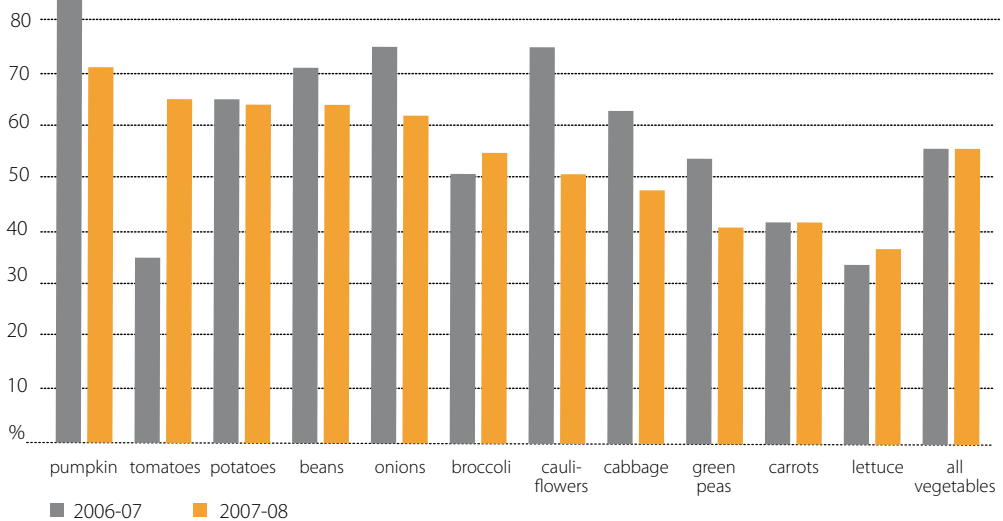
Average yields for tomatoes, onions, carrots and broccoli are estimated to have been lower in 2007-08 than in 2006-07 (table 7). However, average yields are estimated to have risen for potatoes, pumpkins, cauliflowers, lettuce and cabbage. Overall, there was a fall in the average vegetable yield per farm, with an 11 per cent reduction in the average quantity of vegetables produced.

During 2008-09, the average total quantity of vegetables produced and the average crop yield per farm for a number of vegetables is expected to have increased. For the vegetables which had a fall in yield in 2008-09, the fall is estimated to be small with the exception of other vegetables. Results for 2008-09 remain preliminary.

map 1 Vegetable growers' assessment of seasonal conditions, 2007-08



a Growers facing adverse seasonal conditions, by vegetable crop, 2006-07 and 2007-08 percentage of farms that grew the vegetable



7 Area sown, quantity produced and yield, by vegetable crop, 2006-07 to 2008-09 average per farm

| | area sown (ha) | | | quantity produced (t) | | | crop yield (t/ha) | | |
|------------------|----------------|-------------|--------------------------|-----------------------|-------------|--------------------------|-------------------|-------------|--------------------------|
| | 2006 -07 | 2007 -08 | 2008 -09 ^s | 2006 -07 | 2007 -08 | 2008 -09 ^s | 2006 -07 | 2007 -08 | 2008 -09 ^s |
| Potatoes | 10 | 8 | 8 | 357 | 336 | 328 | 35 | 41 | 40 |
| Pumpkins | 1 | 1 | 1 | 17 | 17 | 21 | 14 | 18 | 21 |
| Green peas | 1 | 1 | 1 | 4 | 3 | 6 | 3 | 3 | 5 |
| Beans | 1 | 3 | 2 | 9 | 19 | 14 | 7 | 7 | 6 |
| Tomatoes | 2 | 1 | 1 | 146 | 56 | 77 | 70 | 44 | 55 |
| Onions | 1 | 1 | 1 | 78 | 49 | 59 | 53 | 45 | 50 |
| Carrots | 1 | 2 | 2 | 63 | 98 | 94 | 62 | 51 | 51 |
| Cauliflowers | 1 | 1 | 1 | 14 | 17 | 17 | 23 | 26 | 26 |
| Lettuce | 1 | 1 | 1 | 38 | 42 | 40 | 26 | 32 | 30 |
| Broccoli | 1 | 2 | 1 | 10 | 16 | 15 | 10 | 9 | 10 |
| Cabbage | 1 | 1 | 1 | 25 | 44 | 44 | 39 | 58 | 57 |
| Other vegetables | 7 | 7 | 17 | 136 | 98 | 96 | 20 | 14 | 6 |
| All vegetables | 29 | 29 | 38 | 897 | 796 | 810 | 31 | 28 | 21 |

^s ABARE provisional (preliminary) estimates.

Farm financial performance

box 1 Major financial performance indicators

Total cash receipts: total revenues received by the business during the financial year.

Total cash costs: payments made by the business for materials and services and for permanent and casual hired labour (excluding owner manager, partner and family labour).

Farm cash income: *total cash receipts – total cash costs*

Farm business profit: *farm cash income + changes in trading stocks – depreciation – imputed labour costs*

Profit at full equity: return produced by all the resources used in the business.

farm business profit + rent + interest + finance lease payments – depreciation on leased items

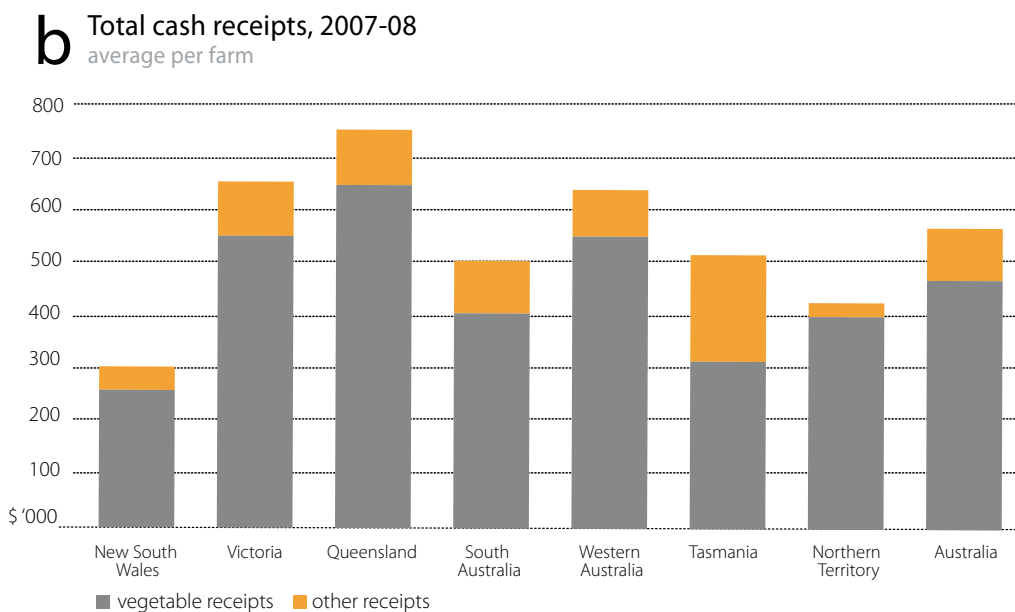
Rate of return: return to all capital used $\frac{\text{profit at full equity}}{\text{total opening capital}} \times 100$

Farm cash receipts

Total cash receipts for Australian vegetable farms were \$570 100 a farm on average in 2007-08, of which 83 per cent was from the sale of vegetables (figure b). The remainder was largely from the sale of crops other than vegetables. While receipts from the sale of vegetables are estimated to have fallen by 6 per cent on average, there was an increase in receipts from the sale of beef cattle, sheep, wool and grains, resulting in total cash receipts rising marginally in 2007-08.

Vegetable farms in Queensland had the highest average total cash receipts at \$753 400 a farm, while vegetable farms in New South Wales had the lowest average cash receipts.

Vegetable farms in Tasmania had the lowest average proportion of their cash receipts coming from vegetable sales in 2007-08 at 61 per cent of total cash receipts, while farms in the Northern Territory had 94 per cent of cash receipts from vegetable sales.



Between 2006-07 and 2007-08, there was a decline in the average quantity of vegetables sold (table 8). The decline in vegetable sales was driven by a reduction in the average quantities of potatoes, pumpkins, green peas, beans, tomatoes and onions sold. A rise in the price received for a number of vegetables failed to offset the fall in production, with average receipts from the sale of vegetables falling between 2006-07 and 2007-08. Receipts for vegetables are estimated to have fallen further in 2008-09 because of lower prices received for vegetables.

Farm cash costs

Total cash costs averaged \$404 000 a farm in 2007-08, which was an increase of 2 per cent from the previous year (table 9 and figure c). On average, the largest share of cash expenditure per farm was on hired labour (19 per cent), fertiliser (11 per cent), contracts paid (10 per cent), seed (7 per cent), interest (7 per cent) and fuel, oil and grease (7 per cent).

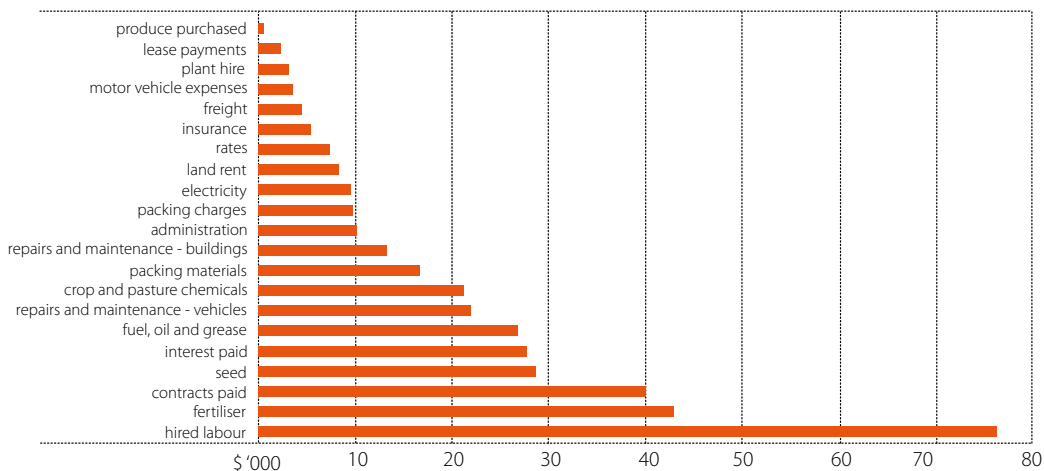
A detailed breakdown of cash costs in 2007-08 for vegetable growers by state is in Appendix table 5.4.5.

8 Quantity sold, value of production and price received, by vegetable crop, 2006-07 to 2008-09
average per farm

| | quantity sold (t) | | | price received a (\$/t) | | | value of production a b (\$) | | | | | |
|------------------|-------------------|---------|---------|-------------------------|---------|---------|------------------------------|-----------|---------|---------|---------|-----------|
| | 2005-06 | 2006-07 | 2007-08 | 2008-09 s | 2005-06 | 2006-07 | 2007-08 | 2008-09 s | 2005-06 | 2006-07 | 2007-08 | 2008-09 s |
| Potatoes | 376 | 364 | 328 | 318 | 351 | 362 | 350 | 343 | 131 966 | 131 947 | 114 752 | 108 958 |
| Pumpkins | 13 | 18 | 17 | 21 | 354 | 388 | 422 | 471 | 4 611 | 6 826 | 7 195 | 9 941 |
| Green peas | 4 | 4 | 3 | 6 | 850 | 2 852 | 1 937 | 1 014 | 3 286 | 11 603 | 6 466 | 6 018 |
| Beans | 7 | 8 | 19 | 14 | 760 | 924 | 865 | 886 | 5 156 | 7 526 | 16 490 | 12 620 |
| Tomatoes | 135 | 147 | 56 | 72 | 311 | 571 | 1 108 | 827 | 41 987 | 83 922 | 62 094 | 59 565 |
| Onions | 75 | 70 | 48 | 55 | 395 | 362 | 555 | 436 | 29 579 | 25 234 | 26 410 | 23 870 |
| Carrots | 45 | 62 | 84 | 95 | 400 | 282 | 430 | 439 | 17 894 | 17 398 | 36 306 | 41 530 |
| Cauliflowers | 15 | 14 | 17 | 17 | 545 | 734 | 779 | 649 | 8 072 | 10 161 | 13 147 | 11 295 |
| Lettuce | | 39 | 42 | 40 | | 1 135 | 941 | 790 | | 43 903 | 39 133 | 31 347 |
| Broccoli | | 10 | 19 | 17 | | 1 437 | 1 161 | 1 265 | | 13 750 | 21 634 | 21 461 |
| Cabbage | | 25 | 44 | 44 | | 519 | 274 | 172 | | 13 128 | 12 082 | 7 572 |
| Other vegetables | 183 | 133 | 102 | 981 | 753 | 1 006 | 1 188 | 118 | 138 174 | 133 465 | 120 751 | 115 554 |
| All vegetables | 853 | 971 | 779 | 1 799 | 447 | 514 | 612 | 250 | 380 725 | 498 863 | 476 460 | 449 749 |

a In 2007-08 dollars. b Includes revenue received from the sale of vegetables grown in the financial year plus receipts carried over to the following financial year.
Note: Individual data on lettuce, cabbage and broccoli are unavailable for 2005-06.

C Composition of cash costs of vegetable farms, 2007-08 average per farm



Farm cash income

Farm cash income (total cash receipts minus total cash costs) was on average \$166 100 a vegetable farm in 2007-08, down by only 3 per cent from the previous financial year (table 9). Farm cash income fell because of higher average total cash costs and despite a small rise in average total cash receipts. However, the proportion of vegetable farms realising a negative farm cash income fell from 17 per cent in 2006-07 to 13 per cent in 2007-08.

Vegetable farms in Western Australia had the highest average farm cash income at \$216 600 a farm, while vegetable farms in Tasmania had an average farm cash income of around \$109 500 a farm (table 10). However, because of cash receipts rising more than cash costs, average farm cash income for vegetable farms in Tasmania was higher in 2007-08 than in 2006-07. Total cash receipts were higher on average because of a 39 per cent increase in vegetable receipts combined with higher beef cattle and sheep receipts. Additionally, the estimated proportion of Tasmanian vegetable farms experiencing negative farm cash income fell from 44 per cent in 2006-07 to 19 per cent in 2007-08 (table 11).

Farm business profit

In line with farm cash income, the average farm business profit of vegetable farms was lower in 2007-08 than in 2006-07 for all states except Victoria, Western Australia and Tasmania (table 12). Farm business profit is calculated as farm cash income plus change in the value of trading stocks minus depreciation and the value of family and partner labour inputs to the farm. During 2007-08, average farm business profit is estimated to have been \$74 900 per vegetable farm.

Return on capital

The average rate of return to capital, excluding capital appreciation, is estimated to have been 4 per cent in 2007-08 slightly down from an average of 4.2 per cent achieved in 2006-07 (table 13).

9 Financial performance of vegetable growing farms, 2005-06 to 2007-08

| | 2005-06 | 2006-07 | 2007-08 |
|--|------------------|---------------|---------------|
| Cash receipts | | | |
| Vegetable cash receipts | \$ 369 825 (8) | 503 140 (10) | 471 419 (6) |
| Other cash receipts | \$ 61 307 (14) | 66 409 (10) | 98 670 (14) |
| Total cash receipts | \$ 431 133 (8) | 569 549 (9) | 570 089 (7) |
| % of cash receipts from vegetables | % 86 (2) | 88 (1) | 83 (2) |
| Cash costs | | | |
| Hired labour | \$ 53 472 (12) | 75 795 (14) | 76 251 (11) |
| Fertiliser | \$ 26 957 (9) | 35 179 (8) | 42 899 (7) |
| Contracts paid | \$ 19 661 (22) | 38 541 (21) | 40 005 (15) |
| Seed | \$ 24 933 (11) | 29 728 (11) | 28 612 (8) |
| Fuel, oil and grease | \$ 23 607 (10) | 27 569 (7) | 26 784 (8) |
| Crop and pasture chemicals | \$ 20 196 (10) | 20 211 (12) | 21 203 (9) |
| Repairs and maintenance – vehicles | \$ 16 470 (9) | 19 884 (9) | 21 903 (9) |
| Interest paid | \$ 13 872 (14) | 18 992 (11) | 27 736 (10) |
| Repairs and maintenance – buildings | \$ 8 043 (14) | 14 298 (12) | 13 267 (10) |
| Electricity | \$ 7 172 (8) | 9 055 (8) | 9 573 (9) |
| Administration | \$ 7 829 (17) | 9 008 (6) | 10 187 (11) |
| Land rent | \$ 6 160 (21) | 8 733 (18) | 8 330 (12) |
| Packing materials | \$ 15 484 (17) | 28 948 (21) | 16 708 (15) |
| Packing charges | \$ 9 637 (39) | 11 176 (38) | 9 754 (30) |
| Rates | \$ 4 712 (9) | 6 892 (10) | 7 390 (10) |
| Freight | \$ 15 803 (15) | 12 388 (29) | 4 501 (33) |
| Total cash costs | \$ 303 084 (8) | 397 555 (9) | 403 992 (7) |
| Farm financial performance | | | |
| Farm cash income | \$ 128 049 (10) | 171 994 (10) | 166 097 (8) |
| Farms with negative farm cash income | % 18 (19) | 17 (25) | 13 (31) |
| Farm business profit | \$ 46 043 (26) | 82 292 (19) | 74 889 (17) |
| Farms with negative farm business profit | % 54 (9) | 59 (5) | 56 (8) |
| Rate of return ^d | | | |
| – excluding capital appreciation | % 2.5 (19) | 4.2 (15) | 4.0 (13) |
| – including capital appreciation | % 9.8 (25) | 7.7 (58) | 4.1 (34) |
| Farm capital at 30 June ^a | \$ 2 750 649 (9) | 2 606 899 (6) | 2 872 202 (7) |
| Farm debt at 30 June ^b | \$ 164 985 (15) | 262 522 (10) | 378 346 (11) |
| Equity ratio ^{b c} | % 94 (1) | 90 (1) | 87 (2) |

^a Excludes leased plant and equipment. ^b Average per debt responding farm. ^c Equity expressed as a percentage of farm capital.

^d Rate of return to farm capital at 1 July.

Note: Figures in parentheses are standard errors (RSEs) expressed as a percentage of the estimate provided. A guide on how to use RSEs is in appendix A.

Vegetable farms in the Northern Territory and Western Australia realised the highest rate of return on average in 2007-08, while vegetable farms in New South Wales and Tasmania had the lowest average rates of return to capital. On average, the performance of vegetable growers in 2007-08 was better than that of broadacre farms which achieved an average rate of return, excluding capital appreciation, of 0.8 per cent.

10 Financial performance of vegetable farms, by state, 2005-06 to 2007-08

average per farm

| | total cash receipts ^a | | | total cash costs ^a | | | farm cash income ^a | | |
|--------------------|----------------------------------|---------|---------|-------------------------------|---------|---------|-------------------------------|---------|---------|
| | 2005-06 | 2006-07 | 2007-08 | 2005-06 | 2006-07 | 2007-08 | 2005-06 | 2006-07 | 2007-08 |
| New South Wales | 259 101 | 289 304 | 304 008 | 162 870 | 179 402 | 184 801 | 96 231 | 109 902 | 119 207 |
| Victoria | 549 765 | 630 047 | 654 517 | 379 177 | 466 193 | 472 952 | 170 589 | 163 854 | 181 565 |
| Queensland | 525 264 | 903 941 | 753 398 | 391 491 | 627 137 | 552 352 | 133 773 | 276 804 | 201 046 |
| South Australia | 523 769 | 491 884 | 505 955 | 391 238 | 319 621 | 353 321 | 132 531 | 172 263 | 152 634 |
| Western Australia | 467 368 | 540 511 | 640 938 | 234 530 | 342 138 | 424 301 | 232 838 | 198 373 | 216 637 |
| Tasmania | 235 955 | 331 606 | 518 494 | 218 034 | 312 053 | 409 041 | 17 921 | 19 554 | 109 453 |
| Northern Territory | 470 227 | 345 398 | 428 488 | 398 037 | 170 170 | 248 652 | 72 191 | 175 228 | 179 836 |
| Australia | 431 133 | 569 549 | 570 089 | 303 084 | 397 555 | 403 992 | 128 049 | 171 994 | 166 097 |

^a in 2007-08 dollars.

11 Vegetable farms with negative farm cash income, 2005-06 to 2007-08

average per farm

| | % with negative farm cash income | | |
|--------------------|----------------------------------|---------|---------|
| | 2005-06 | 2006-07 | 2007-08 |
| New South Wales | 8 | 16 | 2 |
| Victoria | 15 | 14 | 23 |
| Queensland | 16 | 14 | 10 |
| South Australia | 28 | 15 | 21 |
| Western Australia | 5 | 4 | 11 |
| Tasmania | 43 | 44 | 19 |
| Northern Territory | 60 | 11 | 0 |
| Australia | 18 | 17 | 13 |

12 Farm business profit of vegetable farms, 2005-06 and 2006-07

average per farm

| | farm business profit a (\$) | | |
|--------------------|-----------------------------|---------|---------|
| | 2005-06 | 2006-07 | 2007-08 |
| New South Wales | 25 692 | 33 697 | 29 151 |
| Victoria | 78 308 | 51 516 | 79 607 |
| Queensland | 45 125 | 183 126 | 109 678 |
| South Australia | 52 572 | 94 698 | 67 309 |
| Western Australia | 153 194 | 102 585 | 122 685 |
| Tasmania | -57 381 | -54 993 | 31 961 |
| Northern Territory | -16 214 | 112 584 | 91 808 |
| Australia | 46 043 | 82 292 | 74 889 |

a In 2007-08 dollars.

13 Rate of return, excluding capital appreciation, for vegetable farms, 2006-07 to 2007-08

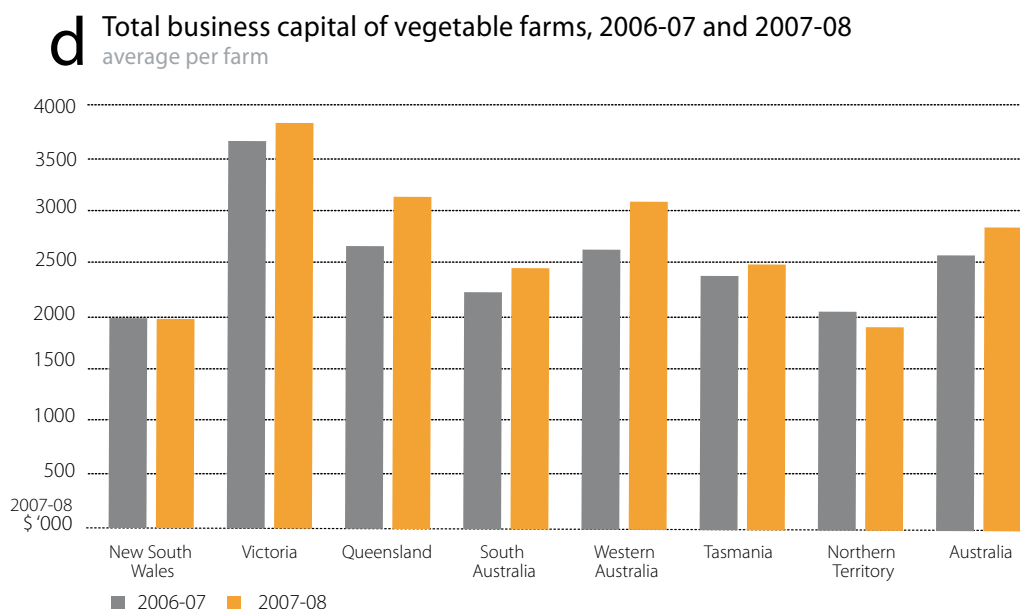
average per farm

| | rate of return, excluding capital appreciation (%) | | |
|--------------------|--|---------|---------|
| | 2005-06 | 2006-07 | 2007-08 |
| New South Wales | 1.4 | 1.9 | 2.4 |
| Victoria | 3.4 | 2.4 | 3.6 |
| Queensland | 2.8 | 9.4 | 4.9 |
| South Australia | 3.9 | 5.5 | 4.2 |
| Western Australia | 4.7 | 4.4 | 5.0 |
| Tasmania | -1.5 | -0.9 | 3.3 |
| Northern Territory | -0.1 | 9.6 | 5.8 |
| Australia | 2.5 | 4.2 | 4.0 |

Capital and debt

The total capital value of vegetable farms is estimated to have been almost \$2.9 million per farm on average in 2007-08, with vegetable farms in Victoria, Western Australia and Queensland having the highest average capital values per farm (figure d). The value of capital employed by the vegetable business is the market value of all the assets used including leased items but excluding machinery and equipment either hired or used by contractors. Market valuations were provided by the owner manager of surveyed farms. Capital also includes the market value of land and fixed improvements used by the vegetable business.

During 2007-08, vegetable growers on average invested an estimated \$49 800 a farm in additional capital. New investment, providing it is well directed, is an important means of boosting farm productivity and future incomes.

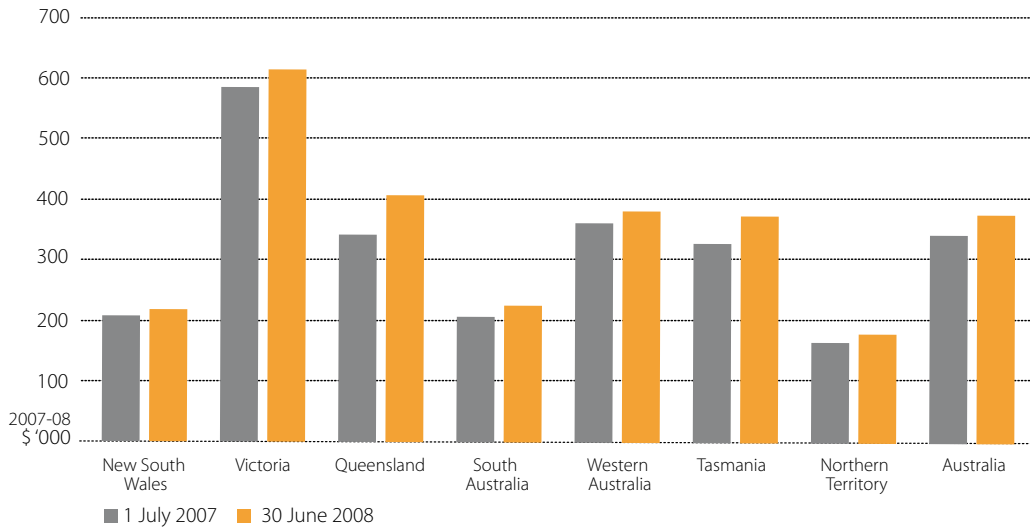


Vegetable growers on average had debt of \$378 300 a farm at 30 June 2008, which was up by almost 10 per cent from average debt at 1 July 2007 (figure e). The largest proportional increase was for vegetable farms in Queensland where debt grew by 19 per cent in the year.

On average, half of all debt was made up of land purchase debt at 30 June 2008 and a further 28 per cent was working capital debt. The composition of farm debt was similar to that of 2006-07.

The debt servicing ratio is the ratio of interest payments to total cash receipts and is a measure of the ability of farmers to service debt from their revenue stream. The average debt servicing

e Total farm debt of vegetable farms, 2007-08
average per debt responding farm



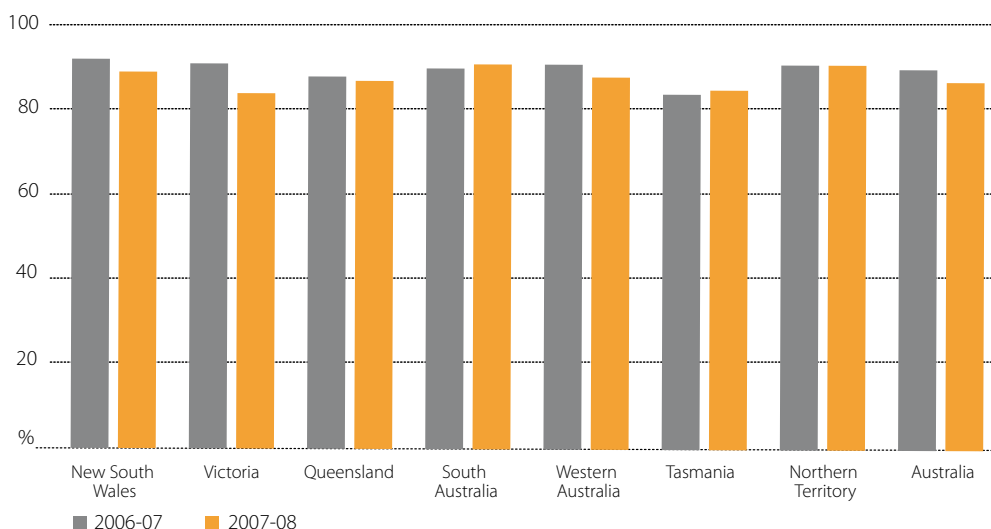
ratio of vegetable farms in 2007-08 was just less than 5 per cent. This was 3 per cent higher than the previous year because of the higher average farm debt (figure f). While the average debt servicing ratio has risen in the past year, it still remains at a reasonable level, indicating that the average vegetable farm is likely to be able to meet its debt servicing requirements. Tasmanian vegetable farms experienced a fall in the average debt servicing ratio because of a rise in cash receipts of more than 50 per cent.

f Debt servicing ratio of vegetable farms, 2006-07 and 2007-08
average per debt responding farm



The equity position of Australian vegetable farms can be gauged using the equity ratio, which is an indicator of leverage undertaken by the farm. The equity ratio is measured as total business assets as a percentage of total farm capital. The equity ratio of vegetable farms is estimated to have fallen in 2007-08 reflecting higher debt on average. Despite this fall, vegetable growers are still generally in a strong equity position with an average equity ratio of 87 per cent (figure g). Vegetable farms in Victoria had the lowest equity ratio in 2007-08 at 84 per cent on average.

g Equity ratio of vegetable farms, 2006-07 and 2007-08
average per debt responding farm



Vegetable growers who have low equity (those with an equity ratio of less than 70 per cent) and negative farm cash incomes are the most likely to have difficulty funding future investments (table 14). During 2007-08, only 1 per cent of vegetable farms had both a negative farm cash income and an equity ratio of less than 70 per cent. An estimated 75 per cent of vegetable farms were operating with high equity and positive farm cash income. Results for 2007-08 are similar to those for 2006-07.

Financial performance by area of vegetable crops sown

There was evidence of economies of size in the Australian vegetable growing industry in 2007-08, with financial performance rising on average as the area sown to vegetables increased (table 15). The average rate of return to capital for vegetable farms sowing less than 5 hectares of vegetables was -1.1 per cent compared with 9.2 per cent on average for those sowing more than 70 hectares of vegetables.

14 Distribution of vegetable growers, by equity ratio and farm cash income, 2006-07 and 2007-08

| | farms with low equity a | | farms with high equity b | |
|--------------------|--------------------------------|---------------------------|---------------------------------|---------------------------|
| | negative cash income % | positive cash income % | negative cash income % | positive cash income % |
| 2007-08 | | | | |
| New South Wales | 1 | 19 | 1 | 79 |
| Victoria | 1 | 12 | 21 | 65 |
| Queensland | 1 | 7 | 9 | 83 |
| South Australia | 1 | 10 | 20 | 69 |
| Western Australia | 1 | 14 | 10 | 75 |
| Tasmania | 4 | 10 | 15 | 71 |
| Northern Territory | 0 | 0 | 0 | 100 |
| Australia | 1 | 12 | 12 | 75 |
| 2006-07 | | | | |
| New South Wales | 0 | 5 | 15 | 80 |
| Victoria | 0 | 12 | 15 | 73 |
| Queensland | 0 | 6 | 14 | 80 |
| South Australia | 4 | 7 | 10 | 79 |
| Western Australia | 2 | 13 | 2 | 83 |
| Tasmania | 13 | 1 | 32 | 55 |
| Northern Territory | 9 | 8 | 2 | 75 |
| Australia | 2 | 7 | 15 | 77 |

a Farms with an equity ratio of less than 70 per cent are defined as having low farm equity. **b** Farms with an equity ratio of more than 70 per cent are defined as having high farm equity.

Note: Percentages are per debt responding farm.

Farm business debt grew by 19 per cent in 2007-08 for vegetable farms sowing more than 70 hectares of vegetables. However, with high cash receipts, they were able to maintain a reasonable debt servicing ratio reflecting their ability to meet interest payments.

An estimated 9 per cent of vegetable farms had an area sown to vegetables of more than 70 hectares in 2007-08, which is a similar proportion to that in 2006-07. However, 39 per cent of vegetable farms sowed less than 5 hectares of vegetables in 2007-08, which was up from 34 per cent in 2006-07. A lower proportion of vegetable farms sowed 5 to 70 hectares of vegetables in 2007-08 than in 2006-07.

Financial performance by equity and farm cash income position

Vegetable growers operating with low equity and a negative farm cash income may struggle to improve their viability in the future.

During 2006-07, vegetable farms with low equity (those with an equity ratio of less than 70 per cent) and negative farm cash income had an average farm cash income of -\$155 000 a

15 Financial performance and debt characteristics, by area sown to vegetables, 2006-07 and 2007-08

average per farm

| | | area sown to vegetables | | | |
|--|----|-------------------------|---------------------|----------------------|--------------------------|
| | | less than 5 hectares | 5 to 20 hectares | 20 to 70 hectares | more than 70 hectares |
| 2007-08 | | | | | |
| Proportion of growers: | % | 39 | 26 | 27 | 9 |
| Total cash receipts | \$ | 122 630 | 245 778 | 656 475 | 3 295 915 |
| Total cash costs | \$ | 85 367 | 166 304 | 438 638 | 2 449 030 |
| Farm cash income | \$ | 37 263 | 79 474 | 217 836 | 846 886 |
| Farm business profit | \$ | - 19 372 | 5 282 | 102 690 | 623 088 |
| Proportion of receipts from vegetables | % | 84 | 70 | 79 | 88 |
| Rate of return excluding capital appreciation | % | -1.1 | 1.1 | 3.2 | 9.2 |
| Equity ratio a | % | 89 | 91 | 92 | 76 |
| Farm business debt a | \$ | 105 960 | 162 878 | 369 708 | 2 321 391 |
| Debt servicing ratio a | % | 7 | 5 | 4 | 5 |
| Change in debt during the year a | % | 0 | -4 | 4 | 19 |
| 2006-07 | | | | | |
| Proportion of growers: | % | 34 | 26 | 32 | 8 |
| Total cash receipts | \$ | 158 117 | 209 186 | 564 313 | 3 362 915 |
| Total cash costs | \$ | 90 334 | 143 371 | 379 016 | 2 478 489 |
| Farm cash income | \$ | 67 783 | 65 815 | 185 297 | 884 426 |
| Farm business profit | \$ | 12 494 | - 7 712 | 77 475 | 688 609 |
| Proportion of receipts from vegetables | % | 90 | 86 | 80 | 94 |
| Rate of return excluding capital appreciation | % | 1.7 | 0.2 | 3.0 | 11.1 |
| Equity ratio a | % | 93 | 91 | 93 | 80 |
| Farm business debt a | \$ | 88 471 | 112 133 | 269 404 | 1 574 428 |
| Debt servicing ratio a | % | 4 | 4 | 4 | 2 |
| Change in debt during the year a | % | 18 | 3 | -2 | 14 |

a Average per debt responding farm.

farm and an average equity ratio of 52 per cent (table 16). Additionally, this group of vegetable growers had a debt servicing ratio of 19 per cent compared with 3 per cent for vegetable growers who had high equity and positive farm cash income. This highlights the additional burden faced by vegetable growers with low equity and negative farm cash income.

Vegetable growers who had low equity and positive farm cash income had much higher receipts, costs and farm cash income than the average vegetable farm. If a high farm cash income can be maintained, these farms should be able to fund future investment and pay off their debt.

16 Financial performance and debt characteristics, by equity ratio and farm cash income position, 2007-08 average per farm

| | | low equity ^a | | high equity ^b | |
|---|-------|-------------------------|----------------------|--------------------------|----------------------|
| | | negative cash income | positive cash income | negative cash income | positive cash income |
| Proportion of vegetable farms | % | 1 | 12 | 12 | 75 |
| Total area operated | ha | 231 | 267 | 131 | 184 |
| Area cropped to vegetables | ha | 55 | 70 | 9 | 24 |
| Age of operator/owner | years | 45 | 48 | 48 | 56 |
| Total cash receipts | \$ | 747 829 | 1 159 779 | 156 142 | 524 795 |
| Total cash costs | \$ | 902 791 | 896 433 | 183 748 | 337 484 |
| Farm cash income | \$ | - 154 961 | 263 346 | - 27 605 | 187 311 |
| Farm business profit | \$ | - 272 327 | 133 928 | - 88 104 | 98 358 |
| Rate of return excl. capital appreciation | % | -2.9 | 8.1 | -3.0 | 4.4 |
| Equity ratio ^c | % | 52 | 50 | 89 | 94 |
| Farm business debt ^c | \$ | 1 729 747 | 1 560 143 | 291 996 | 168 312 |
| Debt servicing ratio ^c | % | 19 | 9 | 9 | 3 |
| Change in debt during the year ^c | % | 42 | 14 | 12 | -1 |

^a Farms with an equity ratio of less than 70 per cent are defined as having low farm equity. ^b Farms with an equity ratio of more than 70 per cent are defined as having high farm equity. ^c Average per debt responding farm.

Financial performance of other specialised vegetable growers

Table 17 shows selected estimates for specialist potato and tomato growers. Specialist producers have been defined as those vegetable farms growing either potatoes or tomatoes, but not both.

Specialist potato growers operated from a larger area of land and grew a larger area of vegetables on average than tomato specialist growers. Specialist potato growers were also more diverse in the other vegetable crops that they sowed.

On average, specialist potato growers had a farm cash income of around \$16 800 more per farm than specialist tomato growers in 2007-08 (table 18). However, the average rate of return to capital (excluding capital appreciation) of 3.2 per cent for specialist potato growers was lower than for both specialist tomato growers and other vegetable farms.

Specialist tomato growers had a 17 per cent average increase in their debt in 2007-08 compared with only 5 per cent for specialist potato growers and 11 per cent for other vegetable growers. However, their farm business debt overall was lower than for specialist potato growers and their high average farm cash receipts allowed them to maintain a low debt servicing ratio of around 3 per cent.

17 Selected estimates for specialist tomato and potato farms, 2007-08

average per farm

| | | specialist potato growers a | specialist tomato growers a | remaining vegetable farms |
|-----------------------------------|----|--------------------------------|--------------------------------|------------------------------|
| Proportion of vegetable farms | % | 34 | 13 | 53 |
| Total area operated | ha | 253 | 194 | 148 |
| Area cropped to vegetables | | | | |
| Potatoes | ha | 24 | 0 | 0 |
| Pumpkins | ha | 1 | 0 | 1 |
| Green peas | ha | 1 | 0 | 1 |
| Beans | ha | 1 | 0 | 5 |
| Tomatoes | ha | 0 | 10 | 0 |
| Onions | ha | 1 | 0 | 1 |
| Carrots | ha | 1 | 0 | 3 |
| Cauliflowers | ha | 1 | 0 | 1 |
| Lettuce | ha | 0 | 0 | 2 |
| Broccoli | ha | 1 | 0 | 3 |
| Cabbage | ha | 0 | 0 | 1 |
| Other vegetables | ha | 1 | 2 | 12 |
| All vegetables | ha | 32 | 12 | 31 |

a Specialist producers have been defined as those vegetable farms growing either potatoes or tomatoes, but not both.

18 Financial performance and debt characteristics of specialist tomato and potato farms, 2006-07 and 2007-08

average per farm

| | | specialist potato growers a | specialist tomato growers a | remaining vegetable farms |
|--|----|--------------------------------|--------------------------------|------------------------------|
| 2007-08 | | | | |
| Total cash receipts | \$ | 563 337 | 597 377 | 567 539 |
| Total cash costs | \$ | 399 591 | 450 423 | 395 191 |
| Farm cash income | \$ | 163 746 | 146 954 | 172 348 |
| Farm business profit | \$ | 68 758 | 55 824 | 83 500 |
| Rate of return excluding capital appreciation | % | 3.2 | 4.6 | 4.4 |
| Equity ratio b | % | 90 | 84 | 85 |
| Farm business debt b | \$ | 341 293 | 294 599 | 422 644 |
| Debt servicing ratio b | % | 5 | 3 | 5 |
| Change in debt during the year b | % | 5 | 17 | 11 |
| 2006-07 | | | | |
| Total cash receipts | \$ | 557 114 | 738 026 | 529 136 |
| Total cash costs | \$ | 397 912 | 551 985 | 351 121 |
| Farm cash income | \$ | 159 201 | 186 040 | 178 014 |
| Farm business profit | \$ | 61 809 | 105 480 | 91 723 |
| Rate of return excluding capital appreciation | % | 3.0 | 7.0 | 4.8 |
| Equity ratio b | % | 90 | 86 | 89.317 |
| Farm business debt b | \$ | 308 416 | 272 696 | 221 664 |
| Debt servicing ratio b | % | 4 | 2 | 2.9 |
| Change in debt during the year b | % | 5 | 23 | 5 |

a Specialist producers have been defined as those vegetable farms growing either potatoes or tomatoes, but not both. b Average per debt responding farm.

Financial performance of farms growing vegetables under protection

Vegetable growers were asked whether they produced vegetables under protection such as glass, poly, plastic or shade cloth. An estimated 16 per cent of vegetable growers produced vegetables under such protection in 2007-08.

Reflecting the nature of producing vegetables under protection, these farms operated a much smaller land size on average and had a smaller area cropped to vegetables (table 19).

19 Selected estimates for farms that used protection, 2007-08

average per farm

| | | grow under protection | did not grow under protection |
|-------------------------|-------|--------------------------|----------------------------------|
| Total area operated | ha | 9 | 212 |
| Area sown to vegetables | ha | 1 | 32 |
| Age of operator/owner | years | 54 | 54 |

An estimated 68 per cent of vegetable farms that grew cucumbers used protection for vegetable growing in 2007-08. Additionally, an estimated 51 per cent of vegetable farms that grew tomatoes used protection for vegetable growing in 2007-08.

Average farm cash income for growers who used protection is estimated to have been lower than those who did not use protection in 2007-08 (table 20). Additionally, growers using protection had an estimated rate of return (excluding capital appreciation) of 1.1 per cent, on average, compared with 4.1 per cent for growers who didn't use protection for vegetable growing.

Vegetable growers using protection were less diverse in their business, with an average of 96 per cent of their receipts coming from the sale of vegetables in 2006-07 compared with 82 per cent on average for growers not using protection.

On average, vegetable growers using protection had a higher rise in debt than growers not using protection in 2007-08. However, their high cash receipts allowed them to maintain a reasonable debt servicing ratio at 5 per cent of total cash receipts, on average. Additionally, they maintained a high average equity ratio of 87 per cent indicating that most are likely to access additional debt if required.

20 Financial performance and debt characteristics for farms that used protection, 2007-08 average per farm

| | | grow under protection a | did not grow under protection |
|---|----|-----------------------------------|----------------------------------|
| Total cash receipts | \$ | 184 273 | 618 089 |
| Total cash costs | \$ | 126 151 | 438 558 |
| Farm cash income | \$ | 58 121 | 179 531 |
| Farm business profit | \$ | -3 104 | 84 593 |
| Proportion of receipts from vegetables | % | 96 | 82 |
| Rate of return excluding capital appreciation | % | 1.1 | 4.1 |
| Equity ratio b | % | 84 | 87 |
| Farm business debt b | \$ | 178 317 | 404 076 |
| Debt servicing ratio b | % | 7 | 5 |
| Change in debt during the year b | % | 2 | 10 |

a Growers that earned at least 50 per cent of receipts from vegetables grown under protection. **b** Average per debt responding farm.

4 Costs of vegetable production

To provide an indication of the cost of producing vegetables, growers participating in the survey were asked to apportion each of their major cost components to the production of various vegetable outputs as well as non-vegetable outputs.

During 2007-08, it is estimated that the average cost of producing a tonne of potatoes was \$240 (table 21). This estimate takes into account the value of family and partner labour inputs into the business. On average, the value of family and partner labour as a proportion of total costs of production was around 6 per cent.

21 Cost of production per tonne for vegetable producers, 2007-08

average per farm

| | cash cost per tonne (excludes imputed labour cost) (\$/t) | cash cost per tonne including imputed labour costs ^a (\$/t) |
|--------------|--|---|
| Potatoes | 225 | 240 |
| Pumpkins | 620 | 661 |
| Beans | 531 | 549 |
| Tomatoes | 716 | 764 |
| Onions | 347 | 361 |
| Carrots | 208 | 213 |
| Cauliflowers | 664 | 727 |
| Lettuce | 601 | 629 |
| Broccoli | 1 074 | 1 113 |
| Cabbage | 214 | 242 |

^a Imputed labour is the value of family and partner labour inputs into the business.

For the production of most vegetables, the greatest cost components was hired labour (table 22).

There was variation in the costs associated with producing potatoes across states (table 23). The cost of production of potatoes was highest in New South Wales, estimated at \$409 per tonne. The cost of production of potatoes was lowest in South Australia at \$183 per tonne. A detailed breakdown of the costs associated with other vegetable production can be found in Appendix tables A9 and A18. Costs of production estimates are only provided where there are sufficient sample farms to enable accurate estimation.

Table 24 provides a preliminary look at the relationship between enterprise size, in terms of area of vegetables sown and quantity of potatoes produced, and average cost of potato production.

22 Components of costs of production for vegetable growers, 2007-08

average per farm (\$/t)

| | potatoes | pumpkins | beans | tomatoes | onions | carrots | cauliflowers | lettuce | broccoli | cabbage |
|-------------------------|------------|------------|------------|------------|------------|------------|--------------|------------|--------------|------------|
| Administration | 5 | 18 | 11 | 21 | 9 | 4 | 18 | 18 | 28 | 6 |
| Fuel, oil and grease | 25 | 41 | 38 | 34 | 27 | 21 | 44 | 28 | 57 | 13 |
| Hired labour | 31 | 106 | 126 | 156 | 62 | 46 | 109 | 168 | 227 | 42 |
| Contracts paid | 16 | 35 | 56 | 169 | 34 | 8 | 117 | 73 | 120 | 19 |
| Electricity | 6 | 13 | 15 | 11 | 10 | 11 | 15 | 14 | 21 | 6 |
| Packing materials | 0 | 2 | 0 | 3 | 1 | 0 | 7 | 6 | 4 | 0 |
| Fertiliser | 39 | 92 | 63 | 56 | 37 | 22 | 67 | 39 | 108 | 25 |
| Repairs and maintenance | 22 | 67 | 56 | 60 | 36 | 16 | 42 | 39 | 64 | 20 |
| Freight | 2 | 2 | 1 | 20 | 5 | 6 | 3 | 3 | 15 | 2 |
| Seed | 25 | 37 | 26 | 35 | 18 | 14 | 62 | 56 | 130 | 24 |
| Spray and chemicals | 14 | 38 | 30 | 41 | 27 | 12 | 39 | 25 | 44 | 16 |
| Imputed labour cost | 15 | 41 | 19 | 48 | 13 | 5 | 64 | 28 | 39 | 27 |
| Other costs | 40 | 170 | 108 | 110 | 82 | 48 | 142 | 132 | 256 | 41 |
| Total | 240 | 661 | 549 | 764 | 361 | 213 | 727 | 629 | 1 113 | 242 |

23 Cost of potato production per tonne for vegetable growers, 2007-08

average per farm

| | cash cost per tonne (excludes imputed labour cost) (\$/t) | cash cost per tonne including imputed labour costs ^a (\$/t) |
|-------------------|--|---|
| New South Wales | 372 | 409 |
| Victoria | 182 | 205 |
| Queensland | 353 | 374 |
| South Australia | 179 | 183 |
| Western Australia | 285 | 302 |
| Tasmania | 217 | 225 |
| Australia | 225 | 240 |

^a Imputed labour is the value of family and partner labour inputs into the business.

24 Cost of potato production per tonne, by area of vegetables sown and quantity of potatoes harvested, 2007-08

average per farm

| | cash cost per tonne (excludes imputed labour cost) (\$/t) | cash cost per tonne including imputed labour costs ^a (\$/t) |
|---------------------------------------|--|---|
| Area of vegetables sown | | |
| Less than 5 hectares | 377 | 489 |
| 5 – 20 hectares | 330 | 366 |
| 20 – 70 hectares | 257 | 274 |
| More than 70 hectares | 191 | 198 |
| Quantity of potatoes harvested | | |
| Less than 100 tonnes | 771 | 937 |
| 100 – 250 tonnes | 380 | 493 |
| 250 – 1000 tonnes | 284 | 300 |
| More than 1000 tonnes | 206 | 215 |

^a Imputed labour is the value of family and partner labour inputs into the business.

The estimated cost of producing a tonne of potatoes fell as the area sown to vegetables increased. For vegetable growers who had less than 5 hectares of vegetables sown, it cost an average of \$490 to produce a tonne of potatoes compared with around \$200 for growers who sowed more than 70 hectares of vegetables. Similarly, there was a reduction in the average cost of producing a tonne of potatoes as the quantity of potatoes harvested increased.

To properly assess the existence of economies of size, more robust statistical techniques would have to be undertaken. However, preliminary analysis of the survey data suggests that costs of production fall as the size of the farm's vegetable enterprise increases.

Costs of production data were also collected in a survey of vegetable growers conducted in 2006 covering the 2004-05 financial year, allowing an analysis of how costs of production have changed over time. The survey conducted in 2006 only collected costs of production data on a selection of vegetables (carrots, cauliflowers, potatoes, tomatoes, onions and green peas).

For all vegetables collected in both surveys, the average cost of production increased between 2004-05 and 2007-08. Across the selection of vegetables, production costs rose by an average of 30 per cent over the three years. The largest increases in costs were for fuel, fertiliser, hired labour, contracts paid and electricity.

5 Other issues

To gauge some of the issues faced by vegetable growers, a number of supplementary questions were added to the core questionnaire. Information was sought on irrigation water use, food safety precautions, pests and diseases, vegetable production and selling methods, education and training, research and development priorities, value adding, socioeconomic and business structure of farms, and future intentions and constraints.

Irrigation use

Irrigation water is an important input to vegetable production with 91 per cent of vegetable growers using irrigation water in 2007-08 (table 25). Compared with other states, a lower proportion of vegetable farms in New South Wales used irrigation water (79 per cent of farms). All vegetable farms surveyed in the Northern Territory indicated that they had used irrigation water in 2007-08. Additionally, almost all vegetable farmers in Queensland, South Australia, Western Australia and Tasmania indicated that they used irrigation water for vegetable production in 2006-07 and 2007-08.

All crops relied heavily on irrigation water, with at least 77 per cent of farmers using irrigation for each vegetable type. All farmers surveyed who grew tomatoes used irrigation water in 2007-08.

25 Vegetable farms using irrigation water, by state, 2006-07 and 2007-08 percentage of farms

| | 2006-07 | 2007-08 |
|--------------------|---------|---------|
| New South Wales | 70 | 79 |
| Victoria | 87 | 83 |
| Queensland | 96 | 98 |
| South Australia | 100 | 96 |
| Western Australia | 97 | 96 |
| Tasmania | 100 | 99 |
| Northern Territory | 100 | 100 |
| Australia | 90 | 91 |

During 2007-08, an average of 27 hectares of vegetable crops was irrigated per farm (table 26). The average yield from irrigated crops was 28 tonnes a hectare, which was higher than the average yield for vegetable farms not using irrigation water at 21 tonnes a hectare. The average water used was 83 megalitres a farm that irrigated vegetable crops in 2007-08, which was equivalent to 3 megalitres per hectare of vegetable crops, on average.

26 Area irrigated, crop yield and water applied, by vegetable crop, 2007-08

average per farm ^a

| | area irrigated (ha) | production (t) | crop yield (t/ha) | water applied (mL) | water per ha (mL/ha) |
|------------------|------------------------|-------------------|----------------------|-----------------------|-------------------------|
| Potatoes | 7 | 294 | 41 | 28 | 4 |
| Pumpkins | 1 | 18 | 17 | 4 | 3 |
| Green peas | 1 | 3 | 5 | 1 | 1 |
| Beans | 3 | 21 | 7 | 3 | 1 |
| Tomatoes | 1 | 62 | 44 | 5 | 4 |
| Onions | 1 | 54 | 46 | 6 | 5 |
| Carrots | 1 | 70 | 54 | 4 | 3 |
| Cauliflowers | 1 | 18 | 28 | 3 | 5 |
| Lettuce | 1 | 46 | 32 | 3 | 2 |
| Broccoli | 2 | 17 | 9 | 5 | 3 |
| Cabbage | 1 | 45 | 59 | 2 | 3 |
| Other vegetables | 7 | 101 | 15 | 18 | 3 |
| All vegetables | 27 | 748 | 28 | 83 | 3 |

^a Farms that irrigated vegetable crops in 2007-08.

During 2007-08, an estimated 41 per cent of irrigation water used by vegetable farms was sourced from groundwater bores and 27 per cent from an irrigation scheme (table 27). The source of irrigation water varied according to state, with 40 per cent of irrigation water for vegetable crops in New South Wales sourced from an irrigation scheme. On average, 58 per cent of irrigation water used by vegetable farms in Tasmania came from farm storage dams compared with a 15 per cent national average.

27 Source of irrigation water, by state, 2007-08

average per farm

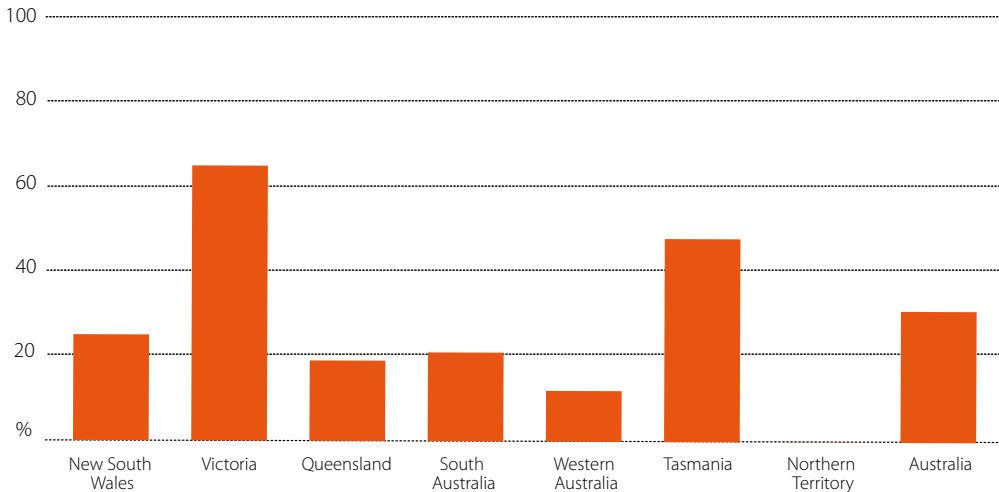
| | NSW % | Vic % | Qld % | SA % | WA % | Tas % | NT % | Australia % |
|-----------------------------|----------|----------|----------|---------|---------|----------|---------|----------------|
| Irrigation scheme | 40 | 32 | 43 | 15 | 3 | 4 | 0 | 27 |
| Groundwater bore | 8 | 46 | 39 | 74 | 67 | 1 | 100 | 41 |
| Diversion from river/stream | 37 | 5 | 9 | 0 | 3 | 9 | 0 | 9 |
| Town water (mains supply) | 1 | 0 | 0 | 0 | 1 | 7 | 0 | 1 |
| Farm storage dam | 6 | 8 | 7 | 2 | 27 | 58 | 0 | 15 |
| Treated or reclaimed water | 2 | 6 | 0 | 6 | 0 | 0 | 0 | 3 |
| Other | 7 | 3 | 2 | 3 | 0 | 21 | 0 | 5 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

A higher percentage of vegetable growers in Victoria and Tasmania indicated that they intend to increase irrigation water use in the future (65 per cent and 48 per cent of growers, respectively) (figure h). No vegetable growers surveyed in the Northern Territory were intending to increase irrigation water use.

A greater proportion of larger vegetable farms (with more than 70 hectares of vegetables sown) were intending to increase irrigation water use in the future, with 44 per cent of those with more than 70 hectares of vegetable crops sown expressing the intention compared with the national average of 31 per cent.

h Farms intending to increase irrigation water use, by state, 2007-08

percentage of growers



The majority of additional water for irrigation use is likely to come from increased on-farm storage and purchase of additional water entitlements (table 28). An estimated 40 per cent of Victorian vegetable growers expected to source additional irrigation water for vegetable crops from increased on-farm storage.

28 Source of additional irrigation water, by state, 2007-08

percentage of farms

| | NSW | Vic | Qld | SA | WA | Tas | NT | Australia |
|--------------------------|-----|-----|-----|----|----|-----|----|-----------|
| | % | % | % | % | % | % | % | % |
| Increase on-farm storage | 12 | 40 | 12 | 3 | 5 | 31 | 0 | 17 |
| Increase water reuse | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Purchase entitlements | 3 | 8 | 4 | 13 | 7 | 19 | 0 | 7 |
| Access treated water | 5 | 5 | 0 | 5 | 0 | 0 | 0 | 3 |
| Undisclosed | 5 | 17 | 2 | 0 | 0 | 10 | 0 | 6 |

Food safety precautions

An estimated 43 per cent of Australian vegetable farms in 2007-08 undertook a food safety assessment of their water source (table 29). A lower proportion of vegetable growers in New South Wales conducted a risk assessment of their farms' water source (23 per cent). Around three-quarters of vegetable growers tested produce for chemical residues. However, the proportion of vegetable growers who tested crops for chemical residue varied between states, with only an estimated 41 per cent of vegetable farms in New South Wales conducting such a test while 85 per cent of Queensland vegetable farms conducted a test. Only 34 per cent of vegetable growers in Victoria have a food safety program in place, compared with 60 per cent of Australian vegetable farms nationally. An estimated 45 per cent of vegetable growers participated in or were considering an environmental management plan.

29 Food safety precautions undertaken by vegetable growers, by state, 2007-08

| | percentage of farms | | | | | | | |
|---|---------------------|----------|----------|---------|---------|----------|---------|----------------|
| | NSW % | Vic % | Qld % | SA % | WA % | Tas % | NT % | Australia % |
| Conducted a food safety assessment of the farms water source | 23 | 25 | 56 | 43 | 72 | 54 | 44 | 43 |
| Test produce for chemical residues | 41 | 55 | 85 | 74 | 83 | 77 | 52 | 67 |
| Have a food safety program in place | 41 | 34 | 80 | 64 | 91 | 66 | 48 | 60 |
| Have participated in or are considering an environmental management program | 56 | 45 | 41 | 38 | 50 | 37 | 14 | 45 |

A greater proportion of large vegetable farms, with more than 70 hectares of vegetables sown, undertook food safety precautions compared with other growers (table 30). An estimated 96 per cent of larger vegetable farms are estimated to have tested produce for chemical residues, compared with 55 per cent of smaller vegetable farms, with less than 5 hectares of vegetables sown.

30 Safety precautions undertaken by vegetable growers, by area of vegetables sown, 2007-08

| | area sown to vegetables | | | |
|---|-------------------------|---------------------|----------------------|--------------------------|
| | less than 5 hectares | 5 to 20 hectares | 20 to 70 hectares | more than 70 hectares |
| Conducted a food safety assessment of the farms water source | 32 | 41 | 55 | 61 |
| Test produce for chemical residues | 55 | 53 | 89 | 96 |
| Have a food safety program in place | 52 | 50 | 74 | 88 |
| Have participated in or considering an environmental management program | 39 | 44 | 48 | 63 |

31 Pests and disease monitoring, by state, 2007-08

percentage of farms

| | |
|-----------|-----|
| NSW | 100 |
| Vic | 73 |
| Qld | 99 |
| SA | 80 |
| WA | 98 |
| Tas | 98 |
| NT | 100 |
| Australia | 91 |

Pests and diseases

The majority of vegetable growers were concerned with pests and diseases, with an estimated 91 per cent of vegetable growers following a set pest and disease monitoring program (table 31). Most vegetable growers conducted their pest and disease monitoring routinely, although a lower proportion of vegetable growers in New South Wales and Northern Territory conducted pest and disease monitoring than vegetable growers in other states. A greater proportion of larger vegetable farms, with more than 70 hectares of vegetables sown, undertook pest and disease monitoring.

In the event of an exotic pest or disease outbreak, 81 per cent of vegetable growers surveyed in the 2008 survey (covering the 2006-07 financial year), supported a grower's levy that would be matched by government funding to meet the costs of eradication. The majority of vegetable growers also supported using an industry levy and joint government funding to compensate growers for lost income if crops were to be destroyed as part of the eradication effort. These questions were not part of the survey of vegetable growers conducted in 2009 (covering the 2007-08 financial year).

Vegetable production and selling methods

An estimated 16 per cent of vegetable growers produced vegetables under protection such as glass, plastic or shade cloth in 2007-08 (table 32). For those growing vegetables under protection, an average of 68 per cent of their vegetable revenue came from the sale of vegetables grown under protection.

Only 8 per cent of vegetable growers produced vegetables hydroponically in 2007-08 and on average 96 per cent of their vegetable revenue came from vegetables grown hydroponically.

Farms growing vegetables under protection or using hydroponics had a smaller average area of vegetable crops sown.

More than 60 per cent of vegetable growers in Australia sold vegetables to the fresh vegetable market in their local capital city through wholesale and almost half of vegetable revenue was received through that outlet (table 33). Selling direct to a processor was another highly used outlet (23 per cent of vegetable growers) as well as interstate (22 per cent of vegetable growers).

32 Vegetable production methods, 2007-08

percentage of farms / average per farm

| | NSW | Vic | Qld | SA | WA | Tas | NT | Australia |
|--|-----|-----|-----|----|-----|-----|----|-----------|
| | % | % | % | % | % | % | % | % |
| Proportion of growers producing vegetables under protection | 30 | 1 | 3 | 48 | 21 | 5 | 0 | 16 |
| Share of vegetable revenue produced under protection | 17 | 1 | 2 | 39 | 14 | 3 | 0 | 11 |
| Share of vegetable revenue produced under protection for those who used protection | 58 | 100 | 58 | 80 | 68 | 67 | | 68 |
| Proportion of growers producing vegetables using hydroponics | 10 | 1 | 12 | 4 | 14 | 3 | 0 | 8 |
| Share of vegetable revenue produced using hydroponics | 10 | 1 | 11 | 4 | 14 | 3 | 0 | 7 |
| Share of vegetable revenue produced using hydroponics for farmers who used hydroponics | 100 | 100 | 92 | 90 | 100 | 100 | | 96 |

33 Vegetable selling methods, 2007-08

percentage of farms

| | NSW | Vic | Qld | SA | WA | Tas | NT | Australia |
|--|-----|-----|-----|-----|-----|-----|-----|-----------|
| | % | % | % | % | % | % | % | % |
| Proportion of growers selling | | | | | | | | |
| For export | 1 | 5 | 1 | 3 | 12 | 8 | 0 | 4 |
| Direct to food services | 8 | 1 | 2 | 2 | 2 | 0 | 0 | 3 |
| Interstate | 14 | 17 | 34 | 35 | 7 | 13 | 61 | 22 |
| Local capital wholesale | 77 | 63 | 62 | 65 | 81 | 4 | 25 | 61 |
| Local market | 25 | 24 | 20 | 2 | 25 | 10 | 24 | 19 |
| Direct to processor | 10 | 17 | 19 | 17 | 13 | 92 | 0 | 23 |
| Direct to retail | 23 | 20 | 5 | 4 | 34 | 8 | 30 | 15 |
| Proportion of vegetable revenue received from selling | | | | | | | | |
| For export | 0 | 3 | 0 | 0 | 2 | 1 | 0 | 1 |
| Direct to food services | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Interstate | 7 | 7 | 19 | 24 | 2 | 2 | 58 | 11 |
| Local capital wholesale | 55 | 52 | 51 | 57 | 66 | 1 | 17 | 49 |
| Local market | 14 | 9 | 11 | 1 | 13 | 5 | 2 | 9 |
| Direct to processor | 6 | 14 | 15 | 15 | 11 | 86 | 0 | 20 |
| Direct to retail | 17 | 14 | 2 | 2 | 6 | 4 | 23 | 9 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

A greater proportion of larger vegetable farms, with more than 70 hectares sown to vegetables, sold vegetables for export, direct to processors or interstate than other growers. At the same time, a lower proportion sold at the local market.

Nationally, 79 per cent of vegetable growers rated their relationship with their main buyer as good or excellent in 2007-08 (table 34). A higher proportion of vegetable growers in Victoria and Queensland rated their relationship with their main buyer as poor in 2007-08, at around 20 per cent of growers.

34 Relationship with main buyer, 2007-08

percentage of farms

| | NSW | Vic | Qld | SA | WA | Tas | NT | Australia |
|--------------|-----|-----|-----|----|----|-----|----|-----------|
| | % | % | % | % | % | % | % | % |
| Excellent | 18 | 25 | 37 | 33 | 27 | 17 | 26 | 27 |
| Good | 66 | 49 | 42 | 52 | 40 | 68 | 59 | 52 |
| Satisfactory | 14 | 6 | 2 | 11 | 25 | 8 | 15 | 10 |
| Poor | 1 | 20 | 19 | 4 | 8 | 7 | 0 | 11 |

Education and training

As part of the survey, vegetable growers were asked whether they had participated in various courses or training activities to improve their farm management and technical skills in the two years from 1 July 2006 to 30 June 2008. An estimated 68 per cent of vegetable growers attended field days to improve their farm management and technical skills (table 35). Additionally, around 44 per cent of vegetable growers attended workshops and more than one-third attended conferences. Only 5 per cent of vegetable growers attended a TAFE course in the two years prior to June 2008 and 1 per cent attended university.

35 Education and training undertaken by vegetable growers, by state,

2007-08 percentage of growers

| | NSW | Vic | Qld | SA | WA | Tas | NT | Australia |
|-------------|-----|-----|-----|----|----|-----|----|-----------|
| | % | % | % | % | % | % | % | % |
| Conferences | 9 | 48 | 33 | 40 | 41 | 53 | 11 | 35 |
| Field days | 58 | 83 | 54 | 78 | 59 | 91 | 34 | 68 |
| TAFE | 3 | 3 | 4 | 14 | 6 | 4 | 13 | 5 |
| University | 0 | 0 | 1 | 1 | 0 | 3 | 0 | 1 |
| Workshops | 33 | 52 | 30 | 52 | 54 | 65 | 35 | 44 |
| Other | 3 | 1 | 3 | 8 | 8 | 4 | 0 | 4 |

Research and development priorities

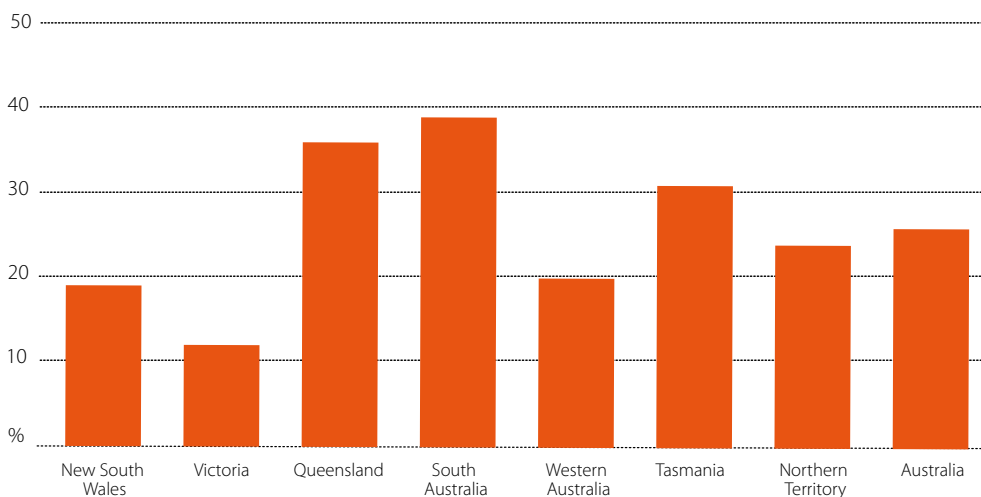
Pest and disease management was the research and development priority most commonly believed to be important for vegetable growers in 2007-08, with around 78 per cent indicating it was a high or very high priority (table 36). Higher yielding varieties and farm productivity were also perceived as important priorities for a high proportion of vegetable growers. Only 27 per cent of vegetable growers perceived chilling and storage technology as being a high priority. Research and development priorities were similar to those reported the previous year.

Value adding

During 2007-08, an estimated 67 per cent of vegetable growers engaged in some level of value adding. However, only 18 per cent of growers regarded the extent of their value adding to be high or very high (table 37). The proportion of vegetable growers undertaking value adding varied by state, with only around half of vegetable growers in Tasmania undertaking value adding in 2007-08, compared with 87 per cent of vegetable growers in New South Wales.

Just less than 25 per cent of vegetable growers are expecting to do more value adding in the future (figure i).

i Growers expecting to do more value adding in the future, by state, 2007-08
percentage of growers



36

Perceived research and development priorities, by state, 2007-08

percentage of farms

| | NSW | Vic | Qld | SA | WA | Tas | NT | Australia |
|---|-----|-----|-----|----|----|-----|----|-----------|
| | % | % | % | % | % | % | % | % |
| Pest and disease management | | | | | | | | |
| Very high | 50 | 25 | 42 | 44 | 32 | 35 | 56 | 39 |
| High | 40 | 36 | 36 | 38 | 40 | 51 | 44 | 39 |
| Medium | 9 | 36 | 22 | 1 | 5 | 14 | 0 | 17 |
| Low | 0 | 3 | 0 | 17 | 15 | 0 | 0 | 4 |
| None | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 1 |
| Higher yielding varieties | | | | | | | | |
| Very high | 21 | 11 | 34 | 31 | 32 | 41 | 11 | 27 |
| High | 58 | 41 | 24 | 39 | 36 | 51 | 56 | 41 |
| Medium | 20 | 32 | 29 | 17 | 17 | 7 | 11 | 22 |
| Low | 1 | 16 | 8 | 13 | 15 | 0 | 22 | 9 |
| None | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 1 |
| Farm productivity | | | | | | | | |
| Very high | 34 | 14 | 22 | 35 | 24 | 29 | 4 | 25 |
| High | 45 | 19 | 50 | 50 | 55 | 52 | 67 | 44 |
| Medium | 21 | 31 | 26 | 9 | 13 | 19 | 23 | 22 |
| Low | 1 | 18 | 1 | 6 | 8 | 0 | 6 | 6 |
| None | 0 | 18 | 1 | 0 | 0 | 0 | 0 | 4 |
| Marketing and market development | | | | | | | | |
| Very high | 15 | 14 | 14 | 36 | 20 | 19 | 0 | 18 |
| High | 41 | 16 | 35 | 19 | 47 | 37 | 34 | 32 |
| Medium | 39 | 52 | 44 | 27 | 9 | 31 | 25 | 37 |
| Low | 4 | 17 | 6 | 13 | 14 | 9 | 35 | 10 |
| None | 0 | 1 | 2 | 5 | 10 | 5 | 6 | 3 |
| Chilling/storage technology | | | | | | | | |
| Very high | 11 | 4 | 13 | 7 | 13 | 4 | 4 | 9 |
| High | 17 | 20 | 20 | 12 | 13 | 20 | 13 | 18 |
| Medium | 29 | 23 | 38 | 13 | 33 | 41 | 24 | 30 |
| Low | 39 | 34 | 28 | 44 | 31 | 21 | 59 | 33 |
| None | 3 | 19 | 2 | 24 | 10 | 14 | 0 | 10 |
| Environmental sustainability | | | | | | | | |
| Very high | 22 | 19 | 19 | 24 | 20 | 20 | 4 | 20 |
| High | 39 | 29 | 33 | 32 | 26 | 59 | 41 | 36 |
| Medium | 24 | 29 | 37 | 25 | 37 | 16 | 26 | 29 |
| Low | 15 | 20 | 11 | 8 | 14 | 5 | 21 | 13 |
| None | 0 | 3 | 0 | 11 | 2 | 0 | 8 | 2 |
| Consumer research | | | | | | | | |
| Very high | 15 | 10 | 17 | 12 | 19 | 11 | 0 | 14 |
| High | 24 | 21 | 17 | 30 | 28 | 26 | 17 | 23 |
| Medium | 26 | 62 | 53 | 27 | 13 | 23 | 31 | 38 |
| Low | 28 | 6 | 7 | 26 | 27 | 33 | 31 | 19 |
| None | 7 | 1 | 7 | 5 | 13 | 6 | 21 | 6 |

37 Level of value adding, by state, 2007-08

percentage of farms

| | NSW | Vic | Qld | SA | WA | Tas | NT | Australia |
|-----------|-----|-----|-----|----|----|-----|----|-----------|
| | % | % | % | % | % | % | % | % |
| Very high | 1 | 9 | 8 | 6 | 9 | 2 | 0 | 6 |
| High | 10 | 6 | 11 | 10 | 34 | 4 | 13 | 12 |
| Medium | 10 | 14 | 17 | 14 | 10 | 13 | 14 | 13 |
| Low | 66 | 34 | 24 | 27 | 29 | 30 | 51 | 36 |
| None | 13 | 38 | 40 | 42 | 18 | 51 | 22 | 33 |

Socioeconomic and business structure of vegetable farms

During 2007-08, an estimated 73 per cent of vegetable farms were operated as a partnership, 23 per cent were operated as sole operators and 4 per cent as a company (table 38).

The average age of owner/operators of Australian vegetable farms was estimated to be around 54 years in 2007-08 and the majority had an education of year 12 or less. An estimated 11 per cent had obtained a TAFE qualification and 13 per cent had obtained a university degree.

An estimated 18 per cent of vegetable growers received income from off-farm sources and the level of income received from off-farm sources was on average \$7100 a farm in 2007-08. Off-

38 Socioeconomic and business characteristics of vegetable farms, 2007-08

percentage of farms

| | NSW | Vic | Qld | SA | WA | Tas | NT | Australia |
|---|-------|-------|-------|-------|-------|--------|-------|-----------|
| | % | % | % | % | % | % | % | % |
| Business structure | | | | | | | | |
| Sole operator | 11 | 20 | 35 | 28 | 15 | 27 | 30 | 23 |
| Partnership | 88 | 77 | 58 | 67 | 79 | 70 | 70 | 73 |
| Company | 1 | 2 | 7 | 5 | 7 | 2 | 0 | 4 |
| Highest educational attainment of owner/operator | | | | | | | | |
| No school | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Primary school | 19 | 0 | 7 | 5 | 0 | 0 | 11 | 6 |
| Year 10 or less | 35 | 42 | 58 | 42 | 44 | 26 | 57 | 43 |
| Year 11 or 12 | 23 | 47 | 15 | 23 | 25 | 27 | 11 | 26 |
| TAFE | 4 | 5 | 4 | 15 | 18 | 36 | 17 | 11 |
| Degree | 18 | 5 | 16 | 15 | 11 | 11 | 4 | 13 |
| Unknown | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 |
| Average per farm | | | | | | | | |
| Age of operator/owner (years) | 51 | 50 | 58 | 55 | 52 | 54 | 46 | 54 |
| Age of spouse (years) | 43 | 42 | 45 | 43 | 39 | 48 | 45 | 43 |
| Off-farm income (\$) | 7 332 | 1 289 | 7 502 | 6 656 | 5 921 | 19 216 | 5 331 | 7 145 |

farm income data were collected for the owner/operator and spouse only. It includes income from wages, other businesses, investment and government assistance to the farm.

Future in vegetable growing

At the time of the survey, 72 per cent of vegetable growers expected to still be engaged in vegetable production in five years' time, with 11 per cent expecting to focus on other agricultural production and 16 per cent expecting to leave agriculture (table 39).

39 Intentions of vegetable growers in five years, 2007-08

percentage of farms

| | NSW % | Vic % | Qld % | SA % | WA % | Tas % | NT % | Australia % |
|-------------------------------|----------|----------|----------|---------|---------|----------|---------|----------------|
| Vegetable production | 62 | 70 | 80 | 72 | 76 | 73 | 75 | 72 |
| Other agricultural production | 24 | 13 | 6 | 6 | 4 | 10 | 0 | 11 |
| Leave agriculture | 13 | 17 | 14 | 22 | 20 | 17 | 25 | 16 |

Those who indicated that they intended to leave agriculture in five years' time were older on average (61 years) and operated a smaller holding of land (125 hectares a farm) in 2007-08 (table 40). Those who were intending to be more focused on other agricultural production operated from a much larger holding of land than the average vegetable farm.

40 Age of operator and area operated, by intention in five years, 2007-08

average per farm

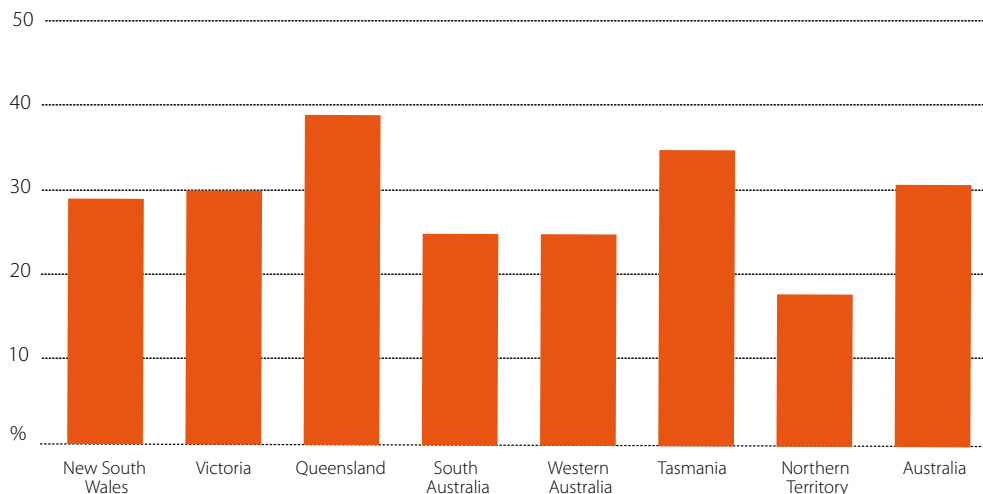
| | age of operator/manager | area operated | area sown to vegetables |
|-------------------------------|-------------------------|---------------|-------------------------|
| Vegetable production | 52 | 179 | 33 |
| Other agricultural production | 51 | 345 | 18 |
| Leave agriculture | 61 | 125 | 12 |
| Total | 54 | 189 | 29 |

During 2007-08, an estimated 31 per cent of vegetable growers intended to expand vegetable production in the next three to five years (figure j). A higher proportion of vegetable growers in Queensland were expecting to expand vegetable production in the next three to five years, while a low proportion of growers in the Northern Territory were expecting to expand vegetable production.

Of those who intend to expand vegetable production in the next three to five years, the most common method of expansion was to use existing land more intensively (56 per cent), followed by additional vegetable areas on existing farm land (table 41).

j Intention to expand vegetable production area in the next 3 to 5 years, 2007-08

percentage of farms



41 Method of vegetable production expansion in the next 3 to 5 years, 2007-08

percentage of farms expecting to expand area of vegetables in the next three to five years

| | NSW % | Vic % | Qld % | SA % | WA % | Tas % | NT % | Australia % |
|---|----------|----------|----------|---------|---------|----------|---------|----------------|
| Use existing land more intensively | 33 | 51 | 80 | 36 | 68 | 49 | 20 | 56 |
| Additional vegetable area using existing farm | 20 | 48 | 19 | 55 | 24 | 51 | 59 | 33 |
| Purchase more land | 27 | 49 | 18 | 15 | 35 | 49 | 80 | 31 |
| Lease more land | 28 | 19 | 14 | 65 | 15 | 51 | 0 | 27 |
| Sharefarming arrangement | 0 | 0 | 0 | 0 | 7 | 29 | 0 | 4 |

Vegetable growers were asked what management practices would improve the productivity of their farm business (table 42). The production of higher yielding varieties was the most common response (54 per cent), followed by expanding technology use (41 per cent) and expanding mechanisation (38 per cent). Few vegetable growers believed that improved financial management would improve farm productivity. An estimated 20 per cent believed they were already as productive as possible.

Around 31 per cent of growers operating vegetable farms with less than 5 hectares of vegetables sown believed there was nothing they could do to improve farm productivity (table 43). Additionally, 12 per cent of growers with small vegetable farms believed that increasing the scale of operations would improve farm productivity. The most common way growers with small vegetable farms believed they could increase productivity was through higher yielding varieties.

42 Management practices to improve vegetable farm productivity, 2007-08

percentage of growers

| | NSW | Vic | Qld | SA | WA | Tas | NT | Australia |
|---|-----|-----|-----|----|----|-----|----|-----------|
| | % | % | % | % | % | % | % | % |
| Expand mechanisation | 28 | 52 | 37 | 44 | 32 | 32 | 34 | 38 |
| Introduce or expand technology use | 35 | 39 | 41 | 38 | 40 | 64 | 41 | 41 |
| Increase scale of operation | 24 | 19 | 24 | 30 | 18 | 46 | 28 | 26 |
| Improve financial management | 2 | 7 | 24 | 13 | 23 | 22 | 0 | 14 |
| Higher yielding varieties | 51 | 30 | 54 | 73 | 74 | 62 | 20 | 54 |
| Introduce genetically modified vegetables | 9 | 11 | 9 | 27 | 18 | 38 | 13 | 16 |
| Nothing | 30 | 31 | 9 | 13 | 21 | 6 | 44 | 20 |
| Other | 12 | 3 | 8 | 4 | 17 | 11 | 12 | 9 |

43 Management practices to improve vegetable farm productivity, by area of vegetables sown, 2007-08

percentage of growers

| | area sown to vegetables | | | |
|---|-------------------------|------------------|-------------------|-----------------------|
| | less than 5 hectares | 5 to 20 hectares | 20 to 70 hectares | more than 70 hectares |
| Expand mechanisation | 26 | 41 | 42 | 68 |
| Introduce or expand technology use | 14 | 54 | 57 | 75 |
| Increase scale of operation | 12 | 33 | 30 | 48 |
| Improve financial management | 15 | 7 | 17 | 24 |
| Introduce genetically modified vegetables | 9 | 27 | 12 | 24 |
| Higher yielding varieties | 45 | 54 | 62 | 68 |
| Nothing | 31 | 14 | 12 | 10 |
| Other | 8 | 6 | 12 | 5 |

While a high proportion of vegetable growers indicated that a move to higher yielding varieties would improve farm productivity, an estimated 78 per cent of vegetable growers indicated they faced one or more constraints to changing their crop mix. An estimated 43 per cent indicated that water availability was a constraint and 21 per cent viewed climate suitability as a constraint (table 44).

44 Constraints to changing vegetable crop mix, 2007-08

percentage of farms

| | NSW | Vic | Qld | SA | WA | Tas | NT | Australia |
|-------------------------|-----|-----|-----|----|----|-----|----|-----------|
| | % | % | % | % | % | % | % | % |
| Soil type or topography | 4 | 4 | 17 | 4 | 10 | 19 | 0 | 9 |
| Climate suitability | 21 | 18 | 33 | 4 | 13 | 21 | 44 | 21 |
| Water availability | 20 | 83 | 51 | 35 | 21 | 34 | 0 | 43 |
| Knowledge or experience | | | | | | | | |
| – growing | 18 | 11 | 13 | 13 | 20 | 12 | 8 | 14 |
| – marketing products | 15 | 2 | 12 | 10 | 12 | 2 | 11 | 9 |

The production of high quality vegetables, selling direct to retail and the production of niche products were the strategies that were most commonly agreed to be opportunities for growth (table 45). Only 6 per cent of vegetable growers saw hydroponics as an opportunity to expand their vegetable growing business.

45 Major growth opportunities for vegetable farms, 2007-08

percentage of farms

| | NSW | Vic | Qld | SA | WA | Tas | NT | Australia |
|--------------------------------|-----|-----|-----|----|----|-----|----|-----------|
| | % | % | % | % | % | % | % | % |
| Exports | 4 | 37 | 17 | 20 | 22 | 18 | 0 | 19 |
| Selling direct to retail | 49 | 63 | 28 | 32 | 31 | 31 | 10 | 40 |
| Direct to food services sector | 9 | 5 | 13 | 23 | 29 | 19 | 6 | 14 |
| Niche products | 20 | 11 | 25 | 34 | 43 | 49 | 21 | 27 |
| High quality produce | 60 | 39 | 60 | 71 | 60 | 59 | 70 | 57 |
| Value adding on farm | 12 | 14 | 29 | 22 | 57 | 25 | 17 | 24 |
| Under protective cropping | 16 | 0 | 6 | 21 | 27 | 7 | 4 | 11 |
| Hydroponics | 9 | 0 | 10 | 4 | 9 | 5 | 0 | 6 |
| Other | 6 | 2 | 9 | 10 | 14 | 6 | 12 | 7 |

An estimated 19 per cent of vegetable growers saw export markets as a viable outlet for expanding their vegetable growing business. However, a number of impediments were highlighted (table 46). Almost two-thirds of vegetable growers believed that the development of export markets was too difficult or time-consuming. Inadequate prices for exported vegetables, shipping costs and insufficient farm infrastructure were also commonly agreed to be impediments to developing export markets.

46 Impediments to developing export markets for vegetable farms, 2007-08

percentage of farms

| | NSW | Vic | Qld | SA | WA | Tas | NT | Australia |
|-------------------------------|-----|-----|-----|----|----|-----|----|-----------|
| | % | % | % | % | % | % | % | % |
| No local agents | 33 | 11 | 17 | 3 | 11 | 15 | 18 | 16 |
| Prices not high enough | 29 | 53 | 34 | 59 | 58 | 56 | 43 | 45 |
| Shipping costs too high | 18 | 26 | 21 | 32 | 25 | 29 | 17 | 24 |
| Transport not available | 10 | 9 | 9 | 2 | 6 | 0 | 6 | 7 |
| Infrastructure on farm needed | 41 | 15 | 11 | 24 | 26 | 38 | 35 | 24 |
| Too hard/time-consuming | 47 | 60 | 79 | 55 | 56 | 84 | 51 | 63 |

Increased farm input costs was the factor most commonly agreed to be an impediment to the future viability of vegetable farms in all states (table 47). An estimated 86 per cent of vegetable growers viewed input costs (such as water, fuel and fertiliser) as an impediment, including all farms surveyed in Tasmania and the Northern Territory. Other impediments which

47 Impediments to future business viability of vegetable farms, 2007-08

percentage of farms

| | NSW | Vic | Qld | SA | WA | Tas | NT | Australia |
|-----------------------------------|-----|-----|-----|----|----|-----|-----|-----------|
| | % | % | % | % | % | % | % | % |
| Increased farm input costs | 86 | 80 | 95 | 89 | 60 | 100 | 100 | 86 |
| Increased marketing costs | 75 | 52 | 67 | 65 | 22 | 60 | 53 | 60 |
| Low prices because of imports | 46 | 74 | 48 | 60 | 62 | 81 | 78 | 59 |
| Low prices for other reasons | 76 | 33 | 36 | 60 | 71 | 66 | 87 | 54 |
| Availability of irrigation water | 45 | 77 | 67 | 52 | 29 | 72 | 0 | 58 |
| Quality of irrigation water | 0 | 12 | 17 | 4 | 33 | 3 | 0 | 11 |
| Environmental sustainability | 24 | 5 | 21 | 10 | 16 | 34 | 39 | 18 |
| Urban expansion | 23 | 25 | 28 | 28 | 29 | 7 | 4 | 24 |
| Closure of local processing plant | 5 | 9 | 0 | 2 | 13 | 26 | 0 | 7 |
| Access/cost of labour | 16 | 21 | 23 | 33 | 39 | 37 | 24 | 26 |
| Other | 2 | 5 | 13 | 9 | 35 | 2 | 0 | 10 |

were reported by the majority of vegetable growers included increased marketing costs, low vegetable prices and irrigation water availability.

Access to and cost of labour, which were listed as separate response options, was no longer viewed by the majority of vegetable growers as an impediment to the future viability of vegetable production, with 26 per cent of vegetable growers indicating it was an impediment compared with 61 per cent the previous financial year.

A Definitions and methodology

Definitions

Area of land at business premises: Includes all land operated by the vegetable business, whether owned or rented by the business.

Capital: The value of capital employed by the vegetable business is the market value of all the assets used including leased items but excluding machinery and equipment either hired or used by contractors. Market valuations were provided by the owner manager of surveyed farms. The valuation also includes the market value of land and fixed improvements used by the surveyed vegetable business.

Debt: Estimated as all debts attributable to the vegetable business, excluding personal debt and underwritten loans. Information collected at the survey interview was supplemented by information in the business accounts.

Depreciation: Estimated by applying the diminishing value depreciation method to the market value of capital items as at 30 June. Capital items are categorised into several groups and relevant depreciation rates are applied. The capital groups include vehicles, handling, harvesting and packing equipment, cultivation and sowing equipment, computers, electronic and communications equipment, other plant and equipment and buildings on the business premises.

Equity ratio: Calculated as vegetable business equity as a percentage of total owned capital at 30 June.

Farm business profit: Farm cash income plus buildup in trading stocks, less depreciation, less the imputed value of the owner manager, partner(s) and family labour.

Farm cash income: The difference between total cash receipts and total cash costs.

Fixed improvements: Fixed assets including machinery, plant and packing sheds as well as other specialist industry buildings.

Hired labour: Excludes the owner manager, partners and family labour, and work undertaken by contractors. Expenditure on contract services appears as a cash cost.

Imputed labour cost: Payments for owner manager and family labour may bear little relationship to the actual work input. An estimate of the labour input of the owner manager, partners and their families is calculated in work-weeks and a value is imputed at the relevant Federal Pastoral Industry Award rates.

Labour: Measured in work-weeks, as estimated by the owner manager. It includes all work on the business by the owner manager, partners, family, sharefarmers, hired permanent and casual workers, but excludes work done by contractors.

Non-farm income: Collected for the owner manager and spouse only, including income from wages, other businesses, investment, government assistance to the farm household and other social welfare payments.

Owner manager: The primary decision-maker for the vegetable business. This person is identified by discussion between interviewer and interviewee as (one of) the key decision-maker(s) in the business. This person is usually responsible for the day-to-day operation of the business and may own or have a share in the vegetable business.

Profit at full equity: Farm business profit plus interest, rent and finance lease payments, less depreciation on leased items. It is the return produced by all the resources used in the business.

Rate of return: Computed by expressing profit at full equity as a percentage of the total opening capital of the vegetable business. Rate of return represents the ability of the business to generate a return to all capital used by the business, including that which is borrowed or leased.

Total cash costs: Payments made by the vegetable business for materials and services and for permanent and casual hired labour (excluding owner manager, partner and other family labour). It includes the value of any lease payments on capital, produce purchased for resale, rent and interest. Capital and household expenditures are excluded from total cash costs. Handling and marketing expenses include commission, levies etc. for business produce sold. Administration costs include accountancy fees, banking and legal expenses, postage, stationery, subscriptions and telephone. Other cash costs include stores, electricity, advisory services, motor vehicle expenses, travelling expenses and insurance. While 'other cash costs' may comprise a relatively large proportion of total cash costs, individually the components are relatively small overall and, as such, have not been listed.

Total cash receipts: Total of revenues received by the vegetable business in the financial year, including revenues from the sale of vegetables. It includes revenue received from royalties, rebates, refunds, plant hire, contracts, insurance claims and compensation, and government assistance payments to the business.

Methodology

Target population

The survey of vegetable enterprises was designed and the sample selected on the basis of a frame (population list) drawn from the Australian Business Register (ABR) and maintained by the Australian Bureau of Statistics (ABS). The ABR-based frame provided to ABARE consists of

agricultural establishments categorised by statistical local area, major industry and a size of operations variable. The size variable is an indicator of the extent of agricultural activity. The estimates published in this report cover establishments that make a significant contribution to the total value of agricultural output (i.e. commercial farms). Businesses excluded from the survey will be the smallest units.

The vegetable growing industry definition is based on the Australian and New Zealand Standard Industrial Classification (ANZSIC). This classification is consistent with an international standard that is applied comprehensively across Australian industry, permitting comparisons between industries, both within Australia and internationally. Farms assigned to a particular ANZSIC have a high proportion of their total output characterised by that class. Further information on ANZSIC and the vegetable growing industry is provided in Australian and New Zealand Standard Industrial Classification (ABS 2006, cat. no. 1292.0).

For the purpose of this survey, vegetable farms in the sample were selected from units classified in ANZSIC 0122 (Vegetable growing, under cover) and 0123 (Vegetable growing, outdoors). These classes consist of units mainly engaged in growing vegetables, with primary activities including: capsicums, cucumbers, herbs, lettuces, tomatoes, asparagus, beans, carrots, garlic, zucchinis, onions, peas and potatoes.

Survey design and sample weighting

The population was stratified by operation size, using operation size and state. The size of each stratum was determined using the Dalenius-Hodges method (Lehtonen and Pahkinen 2004). The sample allocation to each stratum is a compromise between allocating a higher proportion of the sample to strata with high variability in the size variable and an allocation proportional to the population of the stratum.

In 2007-08, there were an estimated 3781 commercial vegetable farms in Australia (table 48). These farms account for 73 per cent of all vegetable growing farms (ABS, cat. no. 7121.0). Results are based on 288 vegetable establishments which responded to the survey.

48 Population and sample numbers for the Australian vegetable industry survey, 2007-08

| | number of growers | realised sample |
|--------------------|-------------------|-----------------|
| New South Wales | 783 | 39 |
| Victoria | 739 | 45 |
| Queensland | 942 | 68 |
| South Australia | 492 | 48 |
| Western Australia | 408 | 38 |
| Tasmania | 389 | 37 |
| Northern Territory | 28 | 13 |
| Australia | 3 781 | 288 |

Queensland, New South Wales and Victoria had the largest numbers of commercial vegetable farms, accounting for almost two-thirds of vegetable farms across Australia.

The estimates presented in this report are calculated by appropriately weighting the data collected from each sample farm and then using the weighted data to calculate population estimates. Generally, larger farms have smaller weights and smaller farms have larger weights, reflecting the strategy of sampling a higher fraction of the larger farms than of smaller farms (the former having greater variability of key characteristics and accounting for a much larger proportion of total output) and the relatively lower number of large farms.

Methodology change

To improve the efficiency of survey estimates, a new weighting method using ABS population benchmarks was developed for the 2009 vegetable survey (covering the 2007-08 financial year). Use of ABS population benchmarks ensures estimates of areas of vegetables planted and the number of vegetable farms matches known state totals. This weighting method provides more robust and reliable estimates than the method used in previous years, which used ABS sample frame populations by state and EVAO. Prior to the 2009 survey, these population benchmarks were not available to ABARE.

To ensure estimates are comparable between years, estimates for 2005-06 and 2006-07 have been revised using the new weighting method. As a consequence, estimates for 2005-06 and 2006-07 as presented in this report are different to those in previous reports published by ABARE. However, apart from a few exceptions, the magnitude of changes between 2005-06 and 2006-07 are similar and the direction of changes are the same.

Survey questionnaire

The survey of vegetable growing enterprises was conducted in May 2009 and covered the following topics:

Pre-interview questions, to:

- determine eligibility and stratification level
- establish business structure and activities
- confirm address and location
- check availability of financial and production data.

Production details:

- vegetable related production for the survey year (2006-07 financial year)
- details of each type of product including quantity produced, sales, transfers, and stocks on hand.

Labour:

- family and hired labour
- workers' status in the operation, hours worked and wages paid
- questions about operator and spouses education, off-farm work and government assistance.

Assets:

- type and value of liquid assets (owned by or available to the business), land, vehicles, plant and equipment, and buildings and other structural improvements used in the business.

Liabilities:

- details of farm debt.

Income and expenses:

- all costs and income associated with the vegetable business.

Supplementary survey questions covering a range of issues, including:

- irrigation water and chemical usage.
- pests and diseases.
- farm sale outlets.
- sources of information.
- future intentions.
- constraints.
- relationship of growers with main buyers.

The questionnaire used in 2009 is similar to that used in the 2007 and 2008 surveys.

Reliability of estimates

The reliability of the estimates of population characteristics presented in this report depends on the design of the sample and the accuracy of the measurement of characteristics for the individual sample businesses.

Sampling errors

Only a subset of vegetable businesses in each state is surveyed. The data collected from each sample business are weighted to calculate population estimates. Estimates derived from these

businesses are likely to be different from those that would have been obtained if information had been collected from a census of all businesses. Any such differences are called 'sampling errors'.

The size of the sampling error is most influenced by the survey design and the estimation procedures, as well as the sample size and the variability of businesses in the population. The larger the sample size, the lower the sampling error is likely to be. Hence, national estimates are likely to have lower sampling errors than state estimates.

To give a guide to the reliability of the survey estimates, sampling errors have been calculated for the estimates. These estimated errors, expressed as percentages of the survey estimates and termed 'relative standard errors', are given next to each estimate in parentheses.

Comparing estimates

When comparing estimates between two groups, it is important to recognise that the differences are also subject to sampling error. As a rule of thumb, a conservative estimate of the standard error of the difference can be constructed by adding the squares of the estimated standard errors of the component estimates and then taking the square root of the result. An example is given below.

Suppose the estimates of total cash receipts were \$100 000 in Victoria and \$125 000 in Tasmania –a difference of \$25 000 –and the relative standard error is given as 6 per cent for each estimate. The standard error of the difference can be estimated as:

$$\sqrt{(0.06 \times \$100\,000)^2 + (0.06 \times \$125\,000)^2} = 9605$$

so a 95 per cent confidence interval for the difference is:

$$\$25\,000 \pm 1.96 \times 9605 = (\$6174, \$43\,826)$$

Hence if a large number (towards infinity) of different samples are taken, in approximately 95 per cent of the time, the difference between the two estimates will be between \$6174 and \$43 826. Also, since zero is not in this confidence interval, it is possible to say that the difference between the estimates is statistically significantly different from zero at the 95 per cent confidence level.

Data quality

ABARE's survey system is designed to produce data of a quality suitable for research and analysis at the unit level. This involves a set of quality controls, with procedures being tailored to the specific requirements of individual surveys. The key to the success of the system is employing specialist highly experienced survey officers and statisticians to guide the design and operation of the data collection and estimation process.

With voluntary surveys, the first critical control point is maximising the response rate of the selected survey sample. Having staff with appropriate interpersonal skills is essential. Nevertheless, low response rates can be unavoidable in some surveys. Problems of data quality arising from this source are reduced by the use of procedures to guide the selection of replacement businesses, and the use of statistical modelling in the estimation process.

Data quality is also enhanced by checks against available external data sources and by internal consistency checks. The first of these checks takes place at the time of collection. With expert survey staff and training in the specific survey topic, much of the checking for internal consistency of data is done as part of the interview. After the collection of the survey information, further automated and manual checks against the full set of collected data are made. Extreme observations are also identified and, if necessary, checked by a second contact with the survey respondent.

Appendix tables

A1 Selected physical estimates of vegetable farms, by state, 2007-08

average per farm

| | NSW | Vic | Qld | SA | WA | Tas | NT | Australia |
|--|----------|----------|----------|----------|----------|----------|---------|-----------|
| Population | 783 | 739 | 942 | 492 | 408 | 389 | 28 | 3 781 |
| Sample | 39 | 45 | 68 | 48 | 38 | 37 | 13 | 288 |
| Total area operated | 168 (85) | 205 (26) | 190 (27) | 249 (23) | 124 (21) | 203 (21) | 49 (28) | 189 (19) |
| Seasonal conditions for vegetable growing | | | | | | | | |
| Above average | 9 (68) | 2 (74) | 10 (32) | 0 | 26 (30) | 0 | 0 | 8 (23) |
| Average | 52 (23) | 11 (46) | 52 (20) | 8 (73) | 50 (21) | 24 (24) | 100 | 36 (11) |
| Below average | 23 (45) | 62 (25) | 24 (39) | 60 (17) | 22 (46) | 69 (9) | 0 | 40 (12) |
| Drought | 16 (62) | 25 (60) | 13 (51) | 32 (31) | 2 (96) | 7 (48) | 0 | 17 (25) |
| Flood | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Age of operator/owner | 51 (7) | 50 (8) | 58 (5) | 55 (3) | 52 (4) | 54 (4) | 46 (5) | 54 (2) |
| Educational attainment of operator/owner | | | | | | | | |
| Primary school completed | 19 (53) | 0 | 7 (73) | 5 (62) | 0 | 0 | 11 (81) | 6 (39) |
| Year 10 or less | 35 (30) | 42 (35) | 58 (17) | 42 (26) | 44 (29) | 26 (40) | 57 (24) | 43 (11) |
| Year 11 or 12 | 23 (46) | 47 (31) | 15 (54) | 23 (38) | 25 (37) | 27 (31) | 11 (82) | 26 (17) |
| Trade apprenticeship/technical | 4 (89) | 5 (45) | 4 (55) | 15 (50) | 18 (45) | 36 (31) | 17 (64) | 11 (19) |
| University education | 18 (48) | 5 (61) | 16 (50) | 15 (44) | 11 (72) | 11 (51) | 4 (88) | 13 (24) |
| Business structure | | | | | | | | |
| Sole operator | 11 (55) | 20 (63) | 35 (23) | 28 (37) | 15 (6) | 27 (39) | 30 (38) | 23 (17) |
| Partnership | 88 (7) | 77 (17) | 58 (15) | 67 (16) | 79 (4) | 71 (15) | 70 (16) | 73 (6) |
| Company | 1 (114) | 2 (66) | 7 (48) | 5 (41) | 7 (41) | 2 (94) | 0 | 4 (26) |

Note: Figures in parentheses are standard errors (RSEs) expressed as a percentage of the estimate provided. A guide on how to use RSEs is in appendix A.

A2 Vegetable yields, by state, 2007-08

average per farm

| | NSW | Vic | Qld | SA | WA | Tas | NT | Australia |
|--------------------|------|----------|----------|----------|----------|----------|----------|-----------|
| Potatoes | | | | | | | | |
| Area sown | ha | 11 (24) | 5 (32) | 16 (24) | 7 (28) | 13 (13) | na | 8 (12) |
| Quantity harvested | t | 441 (69) | 143 (34) | 670 (26) | 308 (30) | 725 (14) | na | 336 (12) |
| Yield | t/ha | 40 (6) | 29 (10) | 42 (9) | 47 (7) | 57 (3) | na | 41 (4) |
| Pumpkins | | | | | | | | |
| Area sown | ha | na | 2 (51) | na | 0 (46) | na | 4 (35) | 1 (35) |
| Quantity harvested | t | na | 26 (35) | na | 17 (50) | na | 112 (38) | 17 (37) |
| Yield | t/ha | na | 12 (33) | na | 45 (12) | na | 32 (18) | 18 (26) |
| Green peas | | | | | | | | |
| Area sown | ha | na | na | na | na | 3 (31) | na | 1 (53) |
| Quantity harvested | t | na | na | na | na | 18 (32) | na | 3 (30) |
| Yield | t/ha | na | na | na | na | 6 (5) | na | 3 (33) |
| Beans | | | | | | | | |
| Area sown | ha | na | 6 (59) | na | na | 3 (33) | na | 3 (37) |
| Quantity harvested | t | na | 38 (60) | na | na | 47 (49) | na | 19 (34) |
| Yield | t/ha | na | 6 (7) | na | na | 17 (23) | na | 7 (18) |
| Tomatoes | | | | | | | | |
| Area sown | ha | 1 (75) | 3 (30) | 0 (62) | 1 (78) | na | na | 1 (25) |
| Quantity harvested | t | 41 (91) | 96 (32) | 2 (55) | 18 (57) | na | na | 56 (29) |
| Yield | t/ha | 58 (39) | 38 (17) | 13 (74) | 36 (43) | na | na | 44 (14) |
| Onions | | | | | | | | |
| Area sown | ha | na | 1 (55) | 2 (39) | 1 (43) | 3 (29) | na | 1 (23) |
| Quantity harvested | t | na | 51 (68) | 88 (43) | 64 (47) | 129 (27) | na | 49 (23) |
| Yield | t/ha | na | 35 (21) | 57 (13) | 64 (10) | 47 (21) | na | 45 (9) |
| Carrots | | | | | | | | |
| Area sown | ha | na | na | 2 (48) | 2 (51) | 3 (23) | na | 2 (39) |
| Quantity harvested | t | na | na | 144 (47) | 101 (56) | 278 (29) | na | 98 (39) |
| Yield | t/ha | na | na | 66 (12) | 63 (11) | 87 (17) | na | 51 (11) |

continued...

A2 Vegetable yields, by state, 2007-08

average per farm *continued*

| | NSW | Vic | Qld | SA | WA | Tas | NT | Australia |
|-------------------------|--------------|------------|----------|------------|----------|------------|----------|-----------|
| Cauliflowers | | | | | | | | |
| Area sown | ha 1 (51) | 0 (65) | 0 (47) | 0 (64) | 1 (46) | 1 (34) | na | 1 (21) |
| Quantity harvested | t 14 (56) | 14 (62) | 13 (51) | 4 (63) | 35 (48) | 35 (39) | na | 17 (22) |
| Yield | t/ha 16 (21) | 39 (6) | 39 (11) | 16 (35) | 27 (15) | 25 (9) | na | 26 (9) |
| Lettuce | | | | | | | | |
| Area sown | ha 3 (57) | na | 2 (29) | 1 (48) | 2 (56) | na | na | 1 (27) |
| Quantity harvested | t 54 (66) | na | 70 (27) | 28 (53) | 58 (61) | na | na | 42 (24) |
| Yield | t/ha 20 (12) | na | 41 (8) | 37 (20) | 38 (13) | na | na | 32 (9) |
| Broccoli | | | | | | | | |
| Area sown | ha na | 5 (33) | 1 (57) | na | 2 (44) | 1 (38) | na | 2 (23) |
| Quantity harvested | t na | 46 (30) | 10 (52) | na | 27 (43) | 12 (39) | na | 16 (21) |
| Yield | t/ha na | 9 (27) | 8 (16) | na | 12 (13) | 12 (8) | na | 9 (16) |
| Cabbage | | | | | | | | |
| Area sown | ha 1 (58) | 2 (71) | na | 0 (44) | 0 (63) | na | na | 1 (36) |
| Quantity harvested | t 57 (77) | 103 (76) | na | 22 (47) | 22 (69) | na | na | 44 (42) |
| Yield | t/ha 50 (24) | 65 (6) | na | 56 (10) | 68 (11) | na | na | 58 (8) |
| Other vegetables | | | | | | | | |
| Area sown | ha 4 (38) | 8 (22) | 14 (22) | 2 (29) | 2 (23) | 2 (62) | 17 (19) | 7 (14) |
| Quantity harvested | t 96 (37) | 80 (20) | 186 (25) | 44 (23) | 55 (33) | 16 (48) | 350 (30) | 98 (15) |
| Yield | t/ha 21 (14) | 10 (15) | 13 (20) | 22 (15) | 23 (22) | 9 (61) | 21 (18) | 14 (11) |
| All vegetables | | | | | | | | |
| Area sown | ha 16 (23) | 42 (15) | 35 (15) | 25 (13) | 18 (12) | 29 (14) | 20 (20) | 29 (7) |
| Quantity harvested | t 406 (25) | 1 032 (19) | 673 (12) | 1 017 (14) | 705 (15) | 1 270 (13) | 462 (31) | 796 (7) |
| Yield | t/ha 26 (12) | 25 (16) | 19 (13) | 41 (7) | 39 (8) | 44 (9) | 23 (17) | 28 (6) |

na Not available because of insufficient sample points.

Note: Figures in parentheses are standard errors (RSEs) expressed as a percentage of the estimate provided. A guide on how to use RSEs is in appendix A.

A3 Farm cash receipts of vegetable farms, by state, 2007-08

average per farm

| | NSW | Vic | Qld | SA | WA | Tas | NT | Australia |
|------------------------------------|-----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Cash receipts | | | | | | | | |
| Potatoes | \$ 62 011 (57) | 123 552 (26) | 68 500 (33) | 193 385 (23) | 131 946 (27) | 195 873 (15) | 0 | 113 596 (12) |
| Pumpkins | \$ 8 571 (100) | 300 (64) | 13 681 (40) | 6 753 (83) | 9 879 (58) | 1 632 (59) | 70 787 (32) | 7 883 (31) |
| Green peas | \$ 4 767 (107) | 15 031 (90) | 6 641 (86) | 0 | 0 | 7 485 (32) | 0 | 6 349 (50) |
| Beans | \$ 5 526 (106) | 16 256 (37) | 43 219 (75) | 0 | 1 756 (110) | 12 237 (31) | 0 | 16 537 (50) |
| Tomatoes | \$ 27 597 (42) | 33 040 (55) | 184 079 (29) | 6 549 (52) | 26 271 (52) | 97 (110) | 0 | 61 730 (23) |
| Onions | \$ 7 096 (97) | 13 105 (66) | 24 331 (55) | 40 635 (48) | 42 780 (50) | 20 895 (26) | 0 | 22 144 (24) |
| Carrots | \$ 1 858 (150) | 96 189 (94) | 13 810 (86) | 30 128 (46) | 68 148 (60) | 25 956 (23) | 0 | 36 570 (51) |
| Cauliflowers | \$ 6 922 (49) | 19 461 (53) | 6 700 (45) | 6 044 (63) | 30 772 (43) | 21 745 (43) | 0 | 13 249 (22) |
| Lettuce | \$ 35 644 (66) | 10 290 (57) | 83 754 (28) | 17 346 (46) | 59 830 (53) | 0 | 0 | 38 971 (22) |
| Broccoli | \$ 2 443 (243) | 52 258 (34) | 18 618 (58) | 7 209 (83) | 47 354 (34) | 8 384 (40) | 0 | 22 269 (22) |
| Cabbage | \$ 15 952 (62) | 14 693 (50) | 8 332 (78) | 13 295 (57) | 15 675 (58) | 3 862 (92) | 0 | 12 070 (27) |
| Other vegetables | \$ 81 334 (34) | 157 675 (44) | 177 022 (17) | 85 460 (25) | 118 269 (29) | 18 738 (66) | 331 372 (21) | 120 051 (14) |
| Other cash receipts | \$ 44 288 (120) | 102 666 (19) | 104 711 (20) | 99 152 (20) | 88 257 (23) | 201 591 (14) | 26 329 (35) | 98 670 (14) |
| Total cash receipts | \$ 304 008 (37) | 654 517 (16) | 753 398 (9) | 505 955 (9) | 640 938 (12) | 518 494 (10) | 428 488 (20) | 570 089 (7) |
| % of cash receipts from vegetables | % 85 (15) | 84 (4) | 86 (3) | 80 (5) | 86 (3) | 61 (7) | 94 (2) | 83 (2) |

Note: Figures in parentheses are standard errors (RSEs) expressed as a percentage of the estimate provided. A guide on how to use RSEs is in appendix A.

A4 Quantity sold, value of production ^a and price received, by vegetable type, by state, 2007-08
average per farm

| | NSW | Vic | Qld | SA | WA | Tas | NT | Australia |
|---------------------|----------------|--------------|--------------|--------------|--------------|--------------|-------------|--------------|
| Potatoes | | | | | | | | |
| Quantity sold | t 90 (71) | 435 (25) | 143 (34) | 651 (26) | 291 (29) | 710 (14) | na | 328 (12) |
| Value of production | \$ 60 142 (59) | 129 150 (26) | 68 500 (33) | 192 610 (23) | 133 482 (27) | 199 606 (15) | na | 114 752 (12) |
| Price received | \$/t 668 (34) | 297 (7) | 480 (17) | 296 (6) | 458 (7) | 281 (3) | na | 350 (5) |
| Pumpkins | | | | | | | | |
| Quantity sold | t 29 (99) | na | 26 (35) | na | 19 (47) | na | 105 (37) | 17 (38) |
| Value of production | \$ 7 892 (80) | na | 13 683 (40) | na | 9 879 (58) | na | 70 787 (32) | 7 195 (28) |
| Price received | \$/t 273 (35) | na | 519 (20) | na | 529 (41) | na | 671 (19) | 422 (22) |
| Green peas | | | | | | | | |
| Quantity sold | t na | na | na | na | na | 18 (32) | na | 3 (30) |
| Value of production | \$ na | na | na | na | na | 7 485 (32) | na | 6 466 (50) |
| Price received | \$/t na | na | na | na | na | 418 (6) | na | 1 937 (30) |
| Beans | | | | | | | | |
| Quantity sold | t na | 22 (41) | 38 (60) | na | na | 47 (49) | na | 19 (34) |
| Value of production | \$ na | 16 256 (37) | 43 211 (75) | na | na | 12 237 (31) | na | 16 490 (50) |
| Price received | \$/t na | 733 (24) | 1 141 (24) | na | na | 263 (32) | na | 865 (26) |
| Tomatoes | | | | | | | | |
| Quantity sold | t 41 (91) | 109 (57) | 96 (32) | 2 (55) | 19 (56) | na | na | 56 (29) |
| Value of production | \$ 27 597 (42) | 33 040 (55) | 185 540 (29) | 6 549 (52) | 26 271 (52) | na | na | 62 094 (23) |
| Price received | \$/t 668 (77) | 304 (40) | 1 926 (11) | 3 527 (58) | 1 417 (26) | na | na | 1 108 (24) |
| Onions | | | | | | | | |
| Quantity sold | t na | na | 51 (68) | 88 (41) | 61 (49) | 116 (28) | na | 48 (24) |
| Value of production | \$ na | na | 40 777 (67) | 42 725 (46) | 42 780 (50) | 19 889 (26) | na | 26 410 (30) |
| Price received | \$/t na | na | 794 (8) | 484 (12) | 698 (21) | 171 (14) | na | 555 (11) |
| Carrots | | | | | | | | |
| Quantity sold | t na | na | na | 144 (47) | 104 (55) | 187 (25) | na | 84 (39) |
| Value of production | \$ na | na | na | 30 185 (46) | 68 148 (60) | 23 315 (25) | na | 36 306 (51) |
| Price received | \$/t na | na | na | 209 (14) | 658 (16) | 124 (17) | na | 430 (17) |

continued...

A4 Quantity sold, value of production ^a and price received, by vegetable type, by state, 2007-08

average per farm *continued*

| | NSW | Vic | Qld | SA | WA | Tas | NT | Australia |
|-------------------------|-----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Cauliflowers | | | | | | | | |
| Quantity sold | t 14 (56) | 14 (62) | 13 (51) | 4 (63) | 35 (48) | 35 (39) | na | 17 (22) |
| Value of production | \$ 6 922 (49) | 18 892 (54) | 6 700 (45) | 6 044 (63) | 30 772 (43) | 21 844 (43) | na | 13 147 (22) |
| Price received | \$ / t 512 (15) | 1 337 (27) | 502 (20) | 1 410 (24) | 875 (13) | 616 (14) | na | 779 (11) |
| Lettuce | | | | | | | | |
| Quantity sold | t 54 (66) | na | 70 (27) | 27 (53) | 58 (60) | na | na | 42 (24) |
| Value of production | \$ 35 644 (66) | na | 84 337 (27) | 17 470 (46) | 59 830 (53) | na | na | 39 133 (22) |
| Price received | \$ / t 655 (48) | na | 1 200 (12) | 647 (30) | 1 026 (14) | na | na | 941 (14) |
| Broccoli | | | | | | | | |
| Quantity sold | t na | 46 (30) | 10 (52) | na | 50 (42) | 12 (39) | na | 19 (21) |
| Value of production | \$ na | 52 258 (34) | 16 071 (54) | na | 47 354 (34) | 8 384 (40) | na | 21 634 (21) |
| Price received | \$ / t na | 1 137 (8) | 1 674 (9) | na | 952 (37) | 728 (13) | na | 1 161 (12) |
| Cabbage | | | | | | | | |
| Quantity sold | t 57 (77) | 103 (76) | na | 22 (47) | 23 (69) | na | na | 44 (42) |
| Value of production | \$ 15 952 (62) | 14 693 (50) | na | 13 295 (57) | 15 675 (58) | na | na | 12 082 (27) |
| Price received | \$ / t 282 (23) | 142 (41) | na | 615 (43) | 692 (35) | na | na | 274 (27) |
| Other vegetables | | | | | | | | |
| Quantity sold | t 96 (37) | 101 (25) | 186 (25) | 45 (22) | 56 (32) | 13 (53) | 336 (29) | 102 (15) |
| Value of production | \$ 81 334 (34) | 157 675 (44) | 179 037 (17) | 86 459 (25) | 117 856 (29) | 19 832 (63) | 331 372 (21) | 120 751 (14) |
| Price received | \$ / t 850 (28) | 1 561 (39) | 961 (20) | 1 927 (24) | 2 119 (23) | 1 554 (66) | 988 (26) | 1 188 (15) |
| All vegetables | | | | | | | | |
| Quantity sold | t 403 (25) | 1 025 (18) | 672 (12) | 993 (14) | 715 (16) | 1 146 (13) | 441 (29) | 779 (7) |
| Value of production | \$ 257 172 (25) | 556 880 (18) | 667 157 (10) | 405 084 (11) | 553 390 (13) | 318 183 (13) | 402 159 (20) | 476 460 (7) |
| Price received | \$ / t 639 (18) | 544 (16) | 992 (9) | 408 (10) | 774 (10) | 278 (7) | 912 (23) | 612 (6) |

na Not available because of insufficient sample points.

^a Includes revenue received from the sale of vegetables in 2007-08 and those figures received in the following financial year. Figures in parentheses are standard errors (RSEs) expressed as a percentage of the estimate provided. A guide on how to use RSEs is in appendix A.

A5 Farm cash costs of vegetable farms, by state, 2007-08

average per farm

| | NSW | Vic | Qld | SA | WA | Tas | NT | Australia |
|-----------------------------------|-----------------|--------------|--------------|-------------|--------------|--------------|--------------|-------------|
| Hired labour | \$ 25 416 (84) | 95 866 (24) | 129 317 (13) | 51 329 (15) | 83 773 (23) | 39 774 (30) | 30 078 (34) | 76 251 (11) |
| Fertiliser | \$ 22 468 (39) | 48 188 (18) | 43 767 (12) | 44 613 (12) | 55 054 (17) | 57 341 (10) | 37 915 (25) | 42 899 (7) |
| Contracts paid | \$ 12 411 (156) | 45 100 (25) | 69 032 (20) | 30 193 (21) | 8 919 (26) | 61 410 (17) | 29 094 (41) | 40 005 (15) |
| Seed | \$ 8 991 (45) | 32 164 (12) | 31 939 (12) | 37 552 (14) | 38 807 (36) | 32 500 (14) | 12 172 (30) | 28 612 (8) |
| Fuel, oil and grease | \$ 13 644 (50) | 36 410 (18) | 28 097 (10) | 34 572 (15) | 26 600 (14) | 22 981 (12) | 14 744 (16) | 26 784 (8) |
| Crop and pasture chemicals | \$ 9 509 (57) | 19 798 (20) | 26 279 (13) | 25 103 (15) | 20 596 (23) | 31 366 (14) | 13 910 (16) | 21 203 (9) |
| Repairs –motor vehicles and plant | \$ 13 955 (53) | 17 403 (16) | 32 443 (13) | 18 739 (16) | 26 487 (15) | 20 314 (13) | 19 287 (27) | 21 903 (9) |
| Interest | \$ 17 420 (48) | 47 719 (19) | 27 141 (17) | 19 393 (17) | 21 574 (22) | 30 054 (19) | 13 090 (35) | 27 736 (10) |
| Repairs –buildings and structures | \$ 8 843 (29) | 16 930 (29) | 17 510 (16) | 13 681 (14) | 6 975 (22) | 11 278 (27) | 9 603 (28) | 13 267 (10) |
| Electricity | \$ 4 089 (41) | 12 213 (26) | 11 047 (12) | 8 115 (12) | 10 258 (17) | 13 106 (13) | 10 210 (18) | 9 573 (9) |
| Administration | \$ 6 364 (63) | 8 950 (13) | 15 201 (16) | 6 897 (10) | 12 883 (19) | 9 574 (13) | 8 217 (20) | 10 187 (11) |
| Land rent expense | \$ 3 964 (52) | 6 023 (30) | 13 085 (20) | 9 584 (23) | 4 586 (53) | 12 882 (31) | 687 (79) | 8 330 (12) |
| Insurance | \$ 3 614 (54) | 5 360 (16) | 6 030 (12) | 4 438 (14) | 8 096 (21) | 6 412 (9) | 4 155 (27) | 5 439 (9) |
| Rates | \$ 6 812 (39) | 12 308 (18) | 5 626 (12) | 6 669 (12) | 6 185 (23) | 6 005 (12) | 2 559 (50) | 7 390 (10) |
| Lease payments | \$ 1 235 (51) | 1 965 (44) | 4 804 (29) | 2 793 (78) | 1 267 (56) | 62 (91) | 0 | 2 343 (22) |
| Produce purchased | \$ 779 (690) | 588 (110) | 402 (65) | 1 665 (109) | 0 | 0 | 0 | 593 (193) |
| Motor vehicle expense | \$ 2 243 (35) | 6 308 (57) | 3 108 (17) | 3 931 (19) | 3 161 (21) | 2 134 (23) | 1 196 (23) | 3 553 (21) |
| Plant hire expense | \$ 1 800 (234) | 1 560 (31) | 5 766 (31) | 1 606 (51) | 3 220 (39) | 4 485 (53) | 1 143 (39) | 3 140 (33) |
| Packing materials | \$ 12 632 (45) | 11 985 (49) | 31 167 (20) | 9 316 (33) | 22 965 (42) | 994 (76) | 25 784 (23) | 16 708 (15) |
| Packing charges | \$ 149 (150) | 11 765 (88) | 19 834 (41) | 6 543 (32) | 14 442 (45) | 706 (101) | 0 | 9 754 (30) |
| Freight | \$ 1 646 (328) | 5 486 (50) | 5 649 (54) | 2 398 (25) | 7 188 (29) | 5 718 (54) | 622 (56) | 4 501 (33) |
| Other cash costs | \$ 6 818 (55) | 28 861 (26) | 25 107 (21) | 14 189 (21) | 41 265 (30) | 39 944 (20) | 14 187 (58) | 23 819 (11) |
| Total cash costs | \$ 184 801 (55) | 472 952 (14) | 552 352 (9) | 353 321 (9) | 424 301 (16) | 409 041 (11) | 248 652 (19) | 403 992 (7) |

Note: Figures in parentheses are standard errors (RSEs) expressed as a percentage of the estimate provided. A guide on how to use RSEs is in appendix A.

A6 Financial performance of vegetable farms, by state, 2007-08

average per farm

| | NSW | Vic | Qld | SA | WA | Tas | NT | Australia |
|---|-------------------|----------------|----------------|---------------|----------------|----------------|----------------|---------------|
| Total cash receipts | \$ 304 008 (37) | 654 517 (16) | 753 398 (9) | 505 955 (9) | 640 938 (12) | 518 494 (10) | 428 488 (20) | 570 089 (7) |
| Total cash costs | \$ 184 801 (55) | 472 952 (14) | 552 352 (9) | 353 321 (9) | 424 301 (16) | 409 041 (11) | 248 652 (19) | 403 992 (7) |
| Farm cash income | \$ 119 207 (21) | 181 565 (26) | 201 046 (12) | 152 634 (13) | 216 637 (23) | 109 453 (15) | 179 836 (22) | 166 097 (8) |
| % of farms with negative farm cash income | % 2 (213) | 23 (69) | 10 (72) | 21 (46) | 11 (71) | 19 (45) | 0 | 13 (31) |
| Buildup in trading stocks | \$ -4 696 (127) | -2 323 (200) | 666 (386) | -1 175 (100) | 105 (95) | 122 (213) | 0 | -1 390 (120) |
| Depreciation | \$ 21 336 (40) | 48 220 (16) | 35 142 (9) | 31 307 (9) | 30 830 (12) | 34 266 (11) | 19 269 (22) | 33 666 (8) |
| Operator and family imputed labour | \$ 64 024 (11) | 51 415 (14) | 56 893 (6) | 52 843 (7) | 63 228 (16) | 43 348 (7) | 68 759 (9) | 56 152 (4) |
| Farm business profit | \$ 29 151 (86) | 79 607 (54) | 109 678 (21) | 67 309 (29) | 122 685 (40) | 31 961 (48) | 91 808 (43) | 74 889 (17) |
| % of farms with negative farm business profit | % 64 (16) | 61 (21) | 52 (16) | 59 (12) | 46 (25) | 46 (24) | 37 (31) | 56 (8) |
| Profit at full equity | | | | | | | | |
| - excl capital app. | % 51 323 (51) | 134 561 (33) | 152 403 (16) | 98 925 (20) | 149 793 (32) | 74 618 (23) | 105 585 (40) | 112 394 (12) |
| - inc capital app. | % -9 208 (547) | 175 031 (27) | 112 381 (92) | 158 396 (21) | 205 934 (36) | 270 602 (29) | 85 557 (53) | 116 610 (31) |
| Rate of return | | | | | | | | |
| - excl capital app. | % 2 (52) | 4 (33) | 5 (24) | 4 (20) | 5 (37) | 3 (20) | 6 (30) | 4 (13) |
| - inc capital app. | % 0 (534) | 5 (27) | 4 (103) | 7 (22) | 7 (44) | 12 (26) | 5 (42) | 4 (34) |
| Change in farm debt during the year | % 5 (181) | 5 (79) | 19 (57) | 9 (76) | 5 (139) | 14 (68) | 8 (74) | 10 (37) |
| Total farm debt at 30 June | \$ 218 563 (50) | 615 946 (22) | 408 455 (22) | 226 429 (21) | 383 087 (23) | 375 465 (19) | 180 753 (36) | 378 346 (11) |
| Total farm capital at 30 June | \$ 1 977 886 (25) | 3 835 355 (15) | 3 140 888 (16) | 2 470 835 (9) | 3 103 391 (12) | 2 513 910 (10) | 1 924 875 (20) | 2 872 202 (7) |
| Farm equity ratio | % 89 (5) | 84 (4) | 87 (3) | 91 (2) | 88 (3) | 85 (3) | 91 (2) | 87 (2) |
| Debt servicing ratio | % 6 (30) | 7 (18) | 4 (15) | 4 (18) | 3 (21) | 6 (16) | 3 (26) | 5 (9) |

Note: Figures in parentheses are standard errors (RSEs) expressed as a percentage of the estimate provided. A guide on how to use RSEs is in appendix A.

A7 Area irrigated and irrigated vegetable production, by state, 2007-08

average per farm

Area irrigated

| | NSW | Vic | Qld | SA | WA | Tas | NT | Australia |
|------------------|---------|---------|---------|--------|---------|---------|---------|-----------|
| Potatoes | 3 (62) | 13 (23) | 4 (31) | 6 (30) | 6 (29) | 13 (13) | 0 | 7 (12) |
| Pumpkins | 1 (73) | 0 (65) | 2 (51) | 2 (64) | 0 (47) | 0 (60) | 4 (35) | 1 (33) |
| Green peas | 1 (68) | 0 (86) | 0 | 0 | 0 | 3 (31) | 0 | 1 (29) |
| Beans | 0 (111) | 5 (50) | 6 (60) | 0 | 0 (112) | 3 (33) | 0 | 3 (37) |
| Tomatoes | 1 (75) | 3 (57) | 3 (30) | 0 (62) | 1 (79) | 0 (110) | 0 | 1 (26) |
| Onions | 0 (104) | 0 (70) | 1 (61) | 2 (38) | 1 (43) | 3 (30) | 0 | 1 (23) |
| Carrots | 0 (151) | 1 (85) | 1 (62) | 2 (45) | 2 (51) | 3 (22) | 0 | 1 (24) |
| Cauliflowers | 1 (67) | 0 (60) | 0 (48) | 0 (64) | 1 (46) | 1 (34) | 0 | 1 (22) |
| Lettuce | 3 (43) | 0 (54) | 2 (29) | 1 (48) | 2 (56) | 0 | 0 | 1 (22) |
| Broccoli | 0 (137) | 6 (30) | 1 (57) | 0 (69) | 2 (44) | 1 (38) | 0 | 2 (22) |
| Cabbage | 1 (73) | 2 (75) | 0 (77) | 0 (41) | 0 (63) | 0 (88) | 0 | 1 (40) |
| Other vegetables | 4 (44) | 8 (22) | 14 (22) | 2 (29) | 2 (24) | 1 (41) | 17 (19) | 7 (14) |
| All vegetables | 16 (17) | 39 (18) | 35 (15) | 16 (9) | 18 (12) | 28 (15) | 20 (20) | 27 (8) |

Production

| | | | | | | | | |
|------------------|----------|------------|----------|----------|----------|------------|----------|----------|
| Potatoes | 101 (52) | 524 (24) | 124 (34) | 240 (31) | 301 (31) | 730 (14) | 0 | 294 (11) |
| Pumpkins | 29 (68) | 1 (65) | 27 (35) | 14 (64) | 18 (50) | 5 (61) | 112 (38) | 18 (26) |
| Green peas | 2 (73) | 0 | 2 (81) | 0 | 0 | 18 (32) | 0 | 3 (28) |
| Beans | 3 (112) | 24 (39) | 39 (60) | 0 | 0 (112) | 47 (49) | 0 | 21 (34) |
| Tomatoes | 52 (91) | 131 (58) | 99 (32) | 2 (55) | 19 (57) | 0 (110) | 0 | 62 (30) |
| Onions | 11 (113) | 18 (74) | 50 (71) | 91 (41) | 67 (47) | 130 (27) | 0 | 54 (23) |
| Carrots | 9 (151) | 9 (79) | 10 (60) | 150 (44) | 105 (56) | 280 (28) | 0 | 70 (21) |
| Cauliflowers | 13 (65) | 15 (58) | 14 (52) | 4 (63) | 37 (48) | 36 (39) | 0 | 18 (22) |
| Lettuce | 68 (48) | 19 (60) | 72 (27) | 29 (53) | 60 (61) | 0 | 0 | 46 (21) |
| Broccoli | 3 (134) | 50 (25) | 10 (52) | 1 (69) | 28 (43) | 12 (39) | 0 | 17 (18) |
| Cabbage | 53 (100) | 123 (78) | 27 (84) | 22 (44) | 24 (69) | 4 (94) | 0 | 45 (46) |
| Other vegetables | 92 (36) | 93 (18) | 190 (25) | 45 (23) | 57 (33) | 13 (55) | 350 (30) | 101 (14) |
| All vegetables | 437 (19) | 1 009 (16) | 663 (12) | 599 (12) | 715 (15) | 1 274 (13) | 462 (31) | 748 (6) |

Note: Figures in parentheses are standard errors (RSEs) expressed as a percentage of the estimate provided. A guide on how to use RSEs is in appendix A.

A8 Volume of irrigation water used and use per hectare, by state, 2007-08

average per farm

| | NSW | Vic. | Qld | SA | WA | Tas | NT | Australia |
|---|-----------------|----------|---------|---------|---------|---------|----------|-----------|
| Volume of irrigation water applied | | | | | | | | |
| Potatoes | ML 10 (63) | 50 (23) | 13 (34) | 39 (29) | 19 (36) | 58 (17) | 0 | 28 (12) |
| Pumpkins | ML 4 (75) | 0 (77) | 2 (49) | 13 (68) | 2 (47) | 1 (61) | 22 (38) | 4 (38) |
| Green peas | ML 0 (92) | 0 | 0 (89) | 0 | 0 | 5 (51) | 0 | 1 (45) |
| Beans | ML 0 (108) | 6 (32) | 6 (60) | 0 | 0 (112) | 6 (30) | 0 | 3 (31) |
| Tomatoes | ML 5 (100) | 13 (54) | 6 (25) | 1 (49) | 3 (70) | 0 | 0 | 5 (30) |
| Onions | ML 2 (104) | 4 (70) | 4 (61) | 13 (40) | 4 (52) | 10 (35) | 0 | 6 (23) |
| Carrots | ML 1 (151) | 4 (77) | 1 (68) | 9 (39) | 3 (58) | 10 (24) | 0 | 4 (22) |
| Cauliflowers | ML 0 (53) | 5 (62) | 2 (63) | 2 (64) | 7 (50) | 4 (53) | 0 | 3 (27) |
| Lettuce | ML 6 (66) | 2 (59) | 4 (33) | 4 (48) | 3 (49) | 0 | 0 | 3 (26) |
| Broccoli | ML 0 (85) | 14 (25) | 3 (62) | 1 (67) | 14 (54) | 3 (42) | 0 | 5 (22) |
| Cabbage | ML 3 (110) | 4 (66) | 1 (82) | 3 (38) | 4 (68) | 0 (85) | 0 | 2 (36) |
| Other vegetables | ML 15 (51) | 26 (28) | 22 (21) | 12 (23) | 20 (27) | 1 (40) | 104 (20) | 18 (13) |
| All vegetables | ML 46 (33) | 127 (15) | 65 (11) | 96 (10) | 81 (23) | 97 (18) | 126 (20) | 83 (7) |
| Irrigation water per hectare | | | | | | | | |
| Potatoes | ML / ha 3 (40) | 4 (8) | 3 (19) | 6 (6) | 3 (32) | 4 (8) | | 4 (6) |
| Pumpkins | ML / ha 5 (11) | 2 (46) | 1 (62) | 8 (16) | 6 (24) | 3 (9) | 6 (12) | 3 (35) |
| Green peas | ML / ha 0 (84) | | 0 (109) | | | 2 (34) | | 1 (38) |
| Beans | ML / ha 0 (4) | 1 (36) | 1 (33) | | | 17 | 2 (18) | 1 (21) |
| Tomatoes | ML / ha 5 (45) | 5 (18) | 2 (13) | 4 (37) | 6 (12) | 0 | | 4 (15) |
| Onions | ML / ha 6 (4) | 9 (41) | 3 (9) | 8 (5) | 4 (57) | 3 (12) | | 5 (13) |
| Carrots | ML / ha 5 | 2 (14) | 2 (48) | 4 (15) | 2 (50) | 3 (9) | | 3 (11) |
| Cauliflowers | ML / ha 1 (56) | 13 (51) | 6 (48) | 7 (6) | 5 (29) | 3 (33) | | 5 (23) |
| Lettuce | ML / ha 2 (70) | 4 (30) | 2 (18) | 5 (22) | 2 (39) | | | 2 (27) |
| Broccoli | ML / ha 0 (124) | 2 (29) | 2 (16) | 5 (9) | 6 (34) | 3 (13) | | 3 (21) |
| Cabbage | ML / ha 3 (46) | 2 (14) | 3 (13) | 6 (14) | 11 (12) | 1 (7) | | 3 (18) |
| Other vegetables | ML / ha 4 (29) | 3 (26) | 2 (19) | 6 (16) | 8 (16) | 1 (37) | 6 (13) | 3 (13) |
| All vegetables | ML / ha 3 (26) | 3 (9) | 2 (14) | 6 (7) | 4 (20) | 3 (9) | 6 (11) | 3 (6) |

Note: Figures in parentheses are standard errors (RSEs) expressed as a percentage of the estimate provided. A guide on how to use RSEs is in appendix A.

A9 Costs of vegetable production, by state, 2007-08

average per farm, in dollars per tonnes produced

| | NSW | Vic | Qld | SA | WA | Tas | NT | Australia |
|--------------------------|-----------|----------|-----------|----------|-----------|----------|----------|-----------|
| Potatoes | 372 (26) | 182 (9) | 353 (17) | 179 (7) | 285 (8) | 217 (6) | | 225 (6) |
| Including imputed labour | 409 (23) | 205 (9) | 374 (16) | 183 (7) | 302 (7) | 225 (6) | | 240 (6) |
| Pumpkins | 355 (67) | 600 (12) | 1034 (30) | 533 (14) | 469 (41) | | 247 (11) | 620 (27) |
| Including imputed labour | 381 (68) | 649 (7) | 1067 (29) | 636 (20) | 526 (41) | | 305 (9) | 661 (27) |
| Green beans | | 377 (41) | 665 (16) | | | 389 (38) | | 531 (17) |
| Including imputed labour | | 377 (41) | 683 (14) | | | 410 (38) | | 549 (16) |
| Tomatoes | 466 (78) | 341 (36) | 1171 (9) | | 602 (36) | | | 716 (21) |
| Including imputed labour | 598 (77) | 354 (36) | 1184 (9) | | 991 (5) | | | 764 (20) |
| Onions | | 382 (41) | 444 (26) | 295 (16) | 477 (12) | 154 (17) | | 347 (11) |
| Including imputed labour | | 384 (41) | 466 (26) | 304 (16) | 491 (12) | 160 (17) | | 361 (11) |
| Carrots | | 257 (4) | 148 (13) | 250 (10) | 74 (25) | | | 208 (14) |
| Including imputed labour | | 260 (4) | 154 (14) | 259 (9) | 77 (24) | | | 213 (13) |
| Cauliflowers | 409 (168) | 742 (13) | 988 (35) | | 609 (12) | 407 (11) | | 664 (20) |
| Including imputed labour | 664 (97) | 755 (14) | 1001 (34) | | 639 (12) | 424 (12) | | 727 (18) |
| Lettuce | 203 (141) | 437 (14) | 925 (12) | 631 (15) | 637 (32) | | | 601 (21) |
| Including imputed labour | 232 (123) | 466 (12) | 960 (12) | 654 (15) | 655 (32) | | | 629 (20) |
| Broccoli | | 822 (45) | 1221 (14) | | 1442 (11) | 932 (25) | | 1074 (27) |
| Including imputed labour | | 845 (45) | 1262 (14) | | 1520 (10) | 951 (25) | | 1113 (27) |
| Cabbage | 146 (29) | 85 (82) | 301 (89) | 477 (19) | 872 (3) | | | 214 (41) |
| Including imputed labour | 207 (48) | 91 (82) | 328 (88) | 512 (23) | 895 (5) | | | 242 (41) |

Note: Figures in parentheses are standard errors (RSEs) expressed as a percentage of the estimate provided. A guide on how to use RSEs is in appendix A.

A10 Selected physical estimates of vegetable farms, by area of vegetables sown, 2007-08

average per farm

| | | area sown to vegetables | | | | | all farms |
|--|-------|-------------------------|---------------------|----------------------|--------------------------|----------|-----------|
| | | less than 5 hectares | 5 to 20 hectares | 20 to 70 hectares | more than 70 hectares | | |
| Population | no. | 1 464 | 980 | 1 012 | 325 | 3 781 | |
| Sample | no. | 59 | 58 | 106 | 65 | 288 | |
| Total area operated | ha | 83 (35) | 102 (67) | 227 (15) | 815 (20) | 189 (14) | |
| Age of operator/owner | years | 53 (5) | 50 (5) | 58 (4) | 53 (3) | 54 (3) | |
| Seasonal conditions for vegetable growing | | | | | | | |
| Above average | % | 11 (36) | 4 (42) | 6 (49) | 10 (35) | 8 (23) | |
| Average | % | 30 (23) | 39 (22) | 41 (20) | 33 (17) | 36 (12) | |
| Below average | % | 38 (29) | 48 (23) | 36 (17) | 42 (13) | 40 (13) | |
| Drought | % | 21 (44) | 9 (58) | 18 (30) | 14 (33) | 17 (25) | |
| Flood | % | 0 | 0 | 0 | 0 | 0 | |
| Educational attainment of operator/owner | | | | | | | |
| Primary school completed | % | 8 (60) | 3 (110) | 9 (64) | 2 (51) | 6 (39) | |
| Year 10 or less | % | 34 (23) | 53 (17) | 48 (15) | 37 (17) | 43 (10) | |
| Year 11 or 12 | % | 34 (22) | 23 (30) | 18 (21) | 26 (20) | 26 (14) | |
| Trade apprenticeship/technical | % | 8 (47) | 10 (35) | 15 (21) | 13 (35) | 11 (18) | |
| University education | % | 16 (40) | 12 (53) | 10 (40) | 16 (30) | 13 (24) | |
| Business structure | | | | | | | |
| Sole operator | % | 31 (21) | 33 (23) | 7 (59) | 9 (38) | 23 (15) | |
| Partnership | % | 69 (9) | 66 (12) | 86 (6) | 68 (7) | 73 (5) | |
| Company | % | 0 | 1 (92) | 7 (49) | 20 (22) | 4 (27) | |

Note: Figures in parentheses are standard errors (RSEs) expressed as a percentage of the estimate provided. A guide on how to use RSEs is in appendix A.

A11

Vegetable yields, by area of vegetables sown, 2007-08

average per farm

| | | area sown to vegetables | | | | | all farms |
|--------------------|------|-------------------------|---------------------|----------------------|--------------------------|---------|-----------|
| | | less than 5 hectares | 5 to 20 hectares | 20 to 70 hectares | more than 70 hectares | | |
| Potatoes | | | | | | | |
| Area sown | ha | 1 (48) | 2 (20) | 10 (16) | 52 (14) | 8 (10) | |
| Quantity harvested | t | 27 (42) | 94 (24) | 418 (13) | 2 208 (14) | 336 (9) | |
| Yield | t/ha | 33 (18) | 40 (11) | 40 (7) | 43 (5) | 41 (4) | |
| Pumpkins | | | | | | | |
| Area sown | ha | na | 1 (57) | 2 (45) | 3 (31) | 1 (30) | |
| Quantity harvested | t | na | 13 (46) | 31 (42) | 55 (35) | 17 (25) | |
| Yield | t/ha | na | 24 (27) | 13 (34) | 22 (12) | 18 (22) | |
| Green peas | | | | | | | |
| Area sown | ha | na | na | na | 11 (23) | 1 (21) | |
| Quantity harvested | t | na | na | na | 29 (22) | 3 (20) | |
| Yield | t/ha | na | na | na | 3 (16) | 3 (14) | |
| Beans | | | | | | | |
| Area sown | ha | na | 1 (72) | 2 (70) | 21 (48) | 3 (37) | |
| Quantity harvested | t | na | 8 (60) | 14 (56) | 154 (45) | 19 (34) | |
| Yield | t/ha | na | 8 (19) | 7 (21) | 7 (25) | 7 (18) | |
| Tomatoes | | | | | | | |
| Area sown | ha | 0 (50) | na | 1 (61) | 10 (37) | 1 (28) | |
| Quantity harvested | t | 10 (40) | na | 57 (59) | 413 (47) | 56 (34) | |
| Yield | t/ha | 35 (52) | na | 53 (14) | 43 (22) | 44 (15) | |
| Onions | | | | | | | |
| Area sown | ha | na | 0 (54) | 2 (26) | 7 (35) | 1 (22) | |
| Quantity harvested | t | na | 11 (56) | 61 (26) | 345 (36) | 49 (23) | |
| Yield | t/ha | na | 46 (19) | 40 (15) | 48 (12) | 45 (9) | |
| Carrots | | | | | | | |
| Area sown | ha | na | na | 2 (24) | 17 (51) | 2 (39) | |
| Quantity harvested | t | na | na | 113 (23) | 784 (55) | 98 (38) | |
| Yield | t/ha | na | na | 66 (14) | 46 (15) | 51 (11) | |

continued...

A11

Vegetable yields, by area of vegetables sown, 2007-08

average per farm *continued*

| | | area sown to vegetables | | | | | all farms |
|-------------------------|------|-------------------------|---------------------|----------------------|--------------------------|---------|-----------|
| | | less than 5 hectares | 5 to 20 hectares | 20 to 70 hectares | more than 70 hectares | | |
| Cauliflowers | | | | | | | |
| Area sown | ha | na | 1 (51) | 1 (33) | 2 (28) | 1 (21) | |
| Quantity harvested | t | na | 15 (65) | 25 (36) | 73 (31) | 17 (24) | |
| Yield | t/ha | na | 21 (29) | 26 (14) | 31 (8) | 26 (9) | |
| Lettuce | | | | | | | |
| Area sown | ha | 0 (54) | na | 3 (31) | 5 (31) | 1 (22) | |
| Quantity harvested | t | 4 (57) | na | 82 (29) | 204 (31) | 42 (20) | |
| Yield | t/ha | 69 (26) | na | 27 (11) | 38 (8) | 32 (8) | |
| Broccoli | | | | | | | |
| Area sown | ha | na | 0 (63) | 2 (41) | 15 (29) | 2 (23) | |
| Quantity harvested | t | na | 6 (75) | 18 (39) | 116 (24) | 16 (20) | |
| Yield | t/ha | na | 13 (24) | 12 (29) | 8 (20) | 9 (16) | |
| Cabbage | | | | | | | |
| Area sown | ha | na | 0 (64) | 1 (51) | 4 (65) | 1 (37) | |
| Quantity harvested | t | na | 20 (59) | 64 (65) | 252 (71) | 44 (43) | |
| Yield | t/ha | na | 53 (9) | 55 (16) | 63 (8) | 58 (8) | |
| Other vegetables | | | | | | | |
| Area sown | ha | 1 (33) | 4 (15) | 8 (20) | 36 (22) | 7 (12) | |
| Quantity harvested | t | 25 (19) | 52 (24) | 136 (24) | 444 (21) | 98 (13) | |
| Yield | t/ha | 25 (33) | 12 (20) | 17 (21) | 12 (15) | 14 (11) | |
| All vegetables | | | | | | | |
| Area sown | ha | 2 (8) | 11 (7) | 34 (3) | 183 (10) | 29 (6) | |
| Quantity harvested | t | 69 (16) | 227 (12) | 1022 (7) | 5077 (10) | 796 (6) | |
| Yield | t/ha | 31 (14) | 22 (10) | 30 (6) | 28 (10) | 28 (6) | |

na Not available because of insufficient sample points.

Note: Figures in parentheses are standard errors (RSEs) expressed as a percentage of the estimate provided. A guide on how to use RSEs is in appendix A.

A12 Farm cash receipts of vegetable farms, by area of vegetables sown, 2007-08

average per farm

| | | area sown to vegetables | | | | all farms |
|---------------------------------------|----|-------------------------|---------------------|----------------------|--------------------------|--------------|
| | | less than 5 hectares | 5 to 20 hectares | 20 to 70 hectares | more than 70 hectares | |
| Cash receipts | | | | | | |
| Potatoes | \$ | 12 536 (35) | 38 087 (39) | 144 857 (16) | 699 459 (14) | 113 596 (10) |
| Pumpkins | \$ | 1 516 (75) | 6 558 (50) | 10 956 (38) | 31 005 (44) | 7 883 (24) |
| Green peas | \$ | 0 | 1 832 (87) | 2 901 (78) | 59 331 (33) | 6 349 (29) |
| Beans | \$ | 24 (94) | 7 511 (72) | 6 290 (52) | 150 099 (63) | 16 537 (50) |
| Tomatoes | \$ | 19 096 (36) | 7 806 (72) | 41 225 (87) | 480 381 (32) | 61 730 (27) |
| Onions | \$ | 2 152 (133) | 3 969 (60) | 27 331 (35) | 150 915 (35) | 22 144 (24) |
| Carrots | \$ | 0 | 0 | 26 848 (29) | 341 967 (63) | 36 570 (51) |
| Cauliflowers | \$ | 295 (112) | 11 769 (74) | 15 935 (31) | 67 729 (33) | 13 249 (24) |
| Lettuce | \$ | 11 523 (54) | 6 602 (94) | 62 936 (26) | 185 667 (35) | 38 971 (20) |
| Broccoli | \$ | 306 (79) | 7 795 (67) | 22 530 (40) | 164 092 (26) | 22 269 (21) |
| Cabbage | \$ | 652 (80) | 8 358 (70) | 22 102 (47) | 43 481 (41) | 12 070 (29) |
| Other vegetables | \$ | 54 865 (17) | 71 585 (29) | 135 512 (18) | 511 875 (33) | 120 051 (14) |
| Other cash receipts | \$ | 19 664 (31) | 73 906 (13) | 137 051 (15) | 409 915 (14) | 98 670 (8) |
| Total cash receipts | \$ | 122 630 (11) | 245 778 (13) | 656 475 (8) | 3 295 915 (8) | 570 089 (5) |
| % of cash receipts from vegetables | % | 84 (5) | 70 (7) | 79 (4) | 88 (2) | 83 (2) |

Note: Figures in parentheses are standard errors (RSEs) expressed as a percentage of the estimate provided. A guide on how to use RSEs is in appendix A.

A13 Quantity sold, value of production ^a and price received, by area of vegetables sown, 2007-08

average per farm

| | area sown to vegetables | | | | | all farms |
|---------------------|-------------------------|---------------------|----------------------|--------------------------|--------------|--------------|
| | less than 5 hectares | 5 to 20 hectares | 20 to 70 hectares | more than 70 hectares | | |
| Potatoes | | | | | | |
| Quantity sold | t | 24 (41) | 90 (24) | 404 (13) | 2 185 (14) | 328 (9) |
| Value of production | \$ | 12 536 (35) | 39 313 (38) | 146 988 (15) | 702 574 (14) | 114 752 (10) |
| Price received | \$/t | 527 (23) | 424 (29) | 359 (8) | 320 (6) | 346 (5) |
| Pumpkins | | | | | | |
| Quantity sold | t | na | 10 (48) | 30 (42) | 55 (35) | 17 (25) |
| Value of production | \$ | na | 6 939 (47) | 8 016 (39) | 31 005 (44) | 7 195 (24) |
| Price received | \$/t | na | 636 (19) | 359 (22) | 564 (18) | 462 (14) |
| Green peas | | | | | | |
| Quantity sold | t | na | na | na | 29 (22) | 3 (20) |
| Value of production | \$ | na | na | na | 60 684 (34) | 6 466 (30) |
| Price received | \$/t | na | na | na | 2 078 (21) | 1 902 (19) |
| Beans | | | | | | |
| Quantity sold | t | na | 8 (60) | 14 (57) | 154 (45) | 19 (34) |
| Value of production | \$ | na | 7 339 (73) | 6 282 (53) | 150 099 (63) | 16 490 (50) |
| Price received | \$/t | na | 992 (51) | 439 (8) | 972 (29) | 867 (26) |
| Tomatoes | | | | | | |
| Quantity sold | t | 10 (39) | na | 57 (59) | 413 (47) | 56 (34) |
| Value of production | \$ | 19 096 (36) | na | 41 225 (87) | 484 618 (32) | 62 094 (27) |
| Price received | \$/t | 1 962 (18) | na | 724 (52) | 1 162 (39) | 1 102 (27) |
| Onions | | | | | | |
| Quantity sold | t | na | 9 (59) | 61 (27) | 333 (36) | 48 (24) |
| Value of production | \$ | na | 3 969 (60) | 28 125 (34) | 198 084 (44) | 26 410 (30) |
| Price received | \$/t | na | 426 (33) | 448 (19) | 453 (13) | 465 (11) |
| Carrots | | | | | | |
| Quantity sold | t | na | na | 98 (25) | 679 (55) | 84 (39) |
| Value of production | \$ | na | na | 25 834 (30) | 342 053 (63) | 36 306 (51) |
| Price received | \$/t | na | na | 275 (18) | 504 (16) | 433 (17) |

continued...

A13 Quantity sold, value of production ^a and price received, by area of vegetables sown, 2007-08

average per farm *continued*

| | area sown to vegetables | | | | | all farms |
|-------------------------|-------------------------|---------------------|----------------------|--------------------------|----------------|--------------|
| | less than 5 hectares | 5 to 20 hectares | 20 to 70 hectares | more than 70 hectares | | |
| Cauliflowers | | | | | | |
| Quantity sold | t | na | 15 (65) | 25 (36) | 73 (31) | 17 (24) |
| Value of production | \$ | na | 11 769 (74) | 16 284 (31) | 65 463 (34) | 13 147 (25) |
| Price received | \$/t | na | 790 (22) | 640 (17) | 927 (18) | 785 (12) |
| Lettuce | | | | | | |
| Quantity sold | t | 4 (55) | na | 82 (29) | 204 (31) | 42 (20) |
| Value of production | \$ | 11 527 (54) | na | 62 996 (26) | 187 339 (35) | 39 133 (20) |
| Price received | \$/t | 2 867 (19) | na | 771 (14) | 910 (10) | 937 (10) |
| Broccoli | | | | | | |
| Quantity sold | t | na | 6 (75) | 18 (39) | 145 (24) | 19 (20) |
| Value of production | \$ | na | 7 795 (67) | 22 516 (40) | 156 750 (25) | 21 634 (20) |
| Price received | \$/t | na | 1 375 (20) | 1 284 (15) | 1 135 (19) | 1 195 (13) |
| Cabbage | | | | | | |
| Quantity sold | t | na | 20 (59) | 64 (65) | 252 (71) | 44 (43) |
| Value of production | \$ | na | 8 358 (70) | 22 149 (47) | 43 481 (41) | 12 082 (29) |
| Price received | \$/t | na | 424 (50) | 346 (26) | 172 (42) | 274 (28) |
| Other vegetables | | | | | | |
| Quantity sold | t | 25 (18) | 52 (24) | 135 (24) | 491 (21) | 102 (13) |
| Value of production | \$ | 55 209 (16) | 71 846 (29) | 135 678 (18) | 517 162 (33) | 120 751 (14) |
| Price received | \$/t | 2 160 (20) | 1 375 (20) | 1 004 (24) | 1 043 (29) | 1 181 (14) |
| All vegetables | | | | | | |
| Quantity sold | t | 68 (15) | 219 (13) | 989 (7) | 5 013 (9) | 779 (6) |
| Value of production | \$ | 103 314 (12) | 173 568 (18) | 518 996 (9) | 2 939 311 (10) | 476 460 (6) |
| Price received | \$/t | 1 515 (16) | 784 (15) | 525 (9) | 576 (8) | 605 (6) |

na Not available because of insufficient sample points.

^a Includes revenue received from the sale of vegetables grown in the financial year plus receipts carried over to the following financial year.

Figures in parentheses are standard errors (RSEs) expressed as a percentage of the estimate provided. A guide on how to use RSEs is in appendix A.

A14 Farm cash costs of vegetable farms, by area of vegetables sown, 2007-08

average per farm

| | area sown to vegetables | | | | all farms |
|--------------------------------------|-------------------------|---------------------|----------------------|--------------------------|-------------|
| | less than 5 hectares | 5 to 20 hectares | 20 to 70 hectares | more than 70 hectares | |
| Hired labour | \$ 10 306 (32) | 24 209 (28) | 74 073 (21) | 537 218 (13) | 76 251 (10) |
| Fertiliser | \$ 9 398 (26) | 16 226 (15) | 48 087 (11) | 258 183 (9) | 42 899 (6) |
| Contracts paid | \$ 4 934 (46) | 13 496 (54) | 44 903 (19) | 262 773 (15) | 40 005 (12) |
| Seed | \$ 6 703 (16) | 10 810 (23) | 27 111 (12) | 185 723 (11) | 28 612 (8) |
| Fuel, oil and grease | \$ 4 815 (16) | 11 228 (16) | 34 093 (10) | 149 958 (10) | 26 784 (6) |
| Crop and pasture chemicals | \$ 3 883 (22) | 7 320 (18) | 24 080 (14) | 132 178 (10) | 21 203 (7) |
| Repairs –motor vehicles and plant | \$ 4 981 (19) | 10 050 (16) | 27 620 (11) | 116 115 (9) | 21 903 (6) |
| Interest | \$ 8 004 (20) | 12 094 (25) | 27 956 (13) | 163 162 (14) | 27 736 (9) |
| Repairs –buildings and structures | \$ 5 793 (23) | 5 667 (25) | 13 005 (14) | 70 692 (19) | 13 267 (11) |
| Electricity | \$ 2 875 (25) | 4 315 (10) | 10 285 (8) | 53 401 (14) | 9 573 (8) |
| Administration | \$ 3 838 (11) | 6 714 (15) | 11 424 (8) | 45 432 (14) | 10 187 (7) |
| Land rent expense | \$ 857 (57) | 2 983 (50) | 8 298 (22) | 58 231 (15) | 8 330 (12) |
| Insurance | \$ 1 980 (14) | 3 227 (18) | 7 084 (9) | 22 580 (13) | 5 439 (7) |
| Rates | \$ 3 613 (16) | 4 170 (25) | 10 099 (13) | 25 683 (12) | 7 390 (8) |
| Lease payments | \$ 277 (49) | 532 (78) | 4 092 (34) | 11 670 (37) | 2 343 (23) |
| Produce purchased | \$ 560 (109) | 78 (140) | 603 (102) | 2 269 (72) | 593 (54) |
| Motor vehicle expense | \$ 1 782 (23) | 1 658 (28) | 3 873 (11) | 16 255 (50) | 3 553 (21) |
| Plant hire expense | \$ 619 (68) | 738 (41) | 4 118 (38) | 18 702 (23) | 3 140 (18) |
| Packing materials | \$ 3 411 (33) | 9 429 (20) | 18 422 (35) | 93 261 (24) | 16 708 (16) |
| Packing charges | \$ 1 157 (35) | 3 934 (54) | 6 561 (31) | 75 999 (45) | 9 754 (31) |
| Freight | \$ 339 (44) | 1 561 (30) | 4 470 (27) | 32 219 (34) | 4 501 (22) |
| Other cash costs | \$ 5 242 (40) | 15 865 (26) | 28 381 (17) | 117 327 (16) | 23 819 (10) |
| Total cash costs | \$ 85 367 (12) | 166 304 (16) | 438 638 (10) | 2 449 030 (8) | 403 992 (5) |

Note: Figures in parentheses are standard errors (RSEs) expressed as a percentage of the estimate provided. A guide on how to use RSEs is in appendix A.

A15 Financial performance of vegetable farms, by area of vegetables sown, 2007-08

average per farm

| | area sown to vegetables | | | | all farms |
|-------------------------------------|-------------------------|---------------------|----------------------|--------------------------|---------------|
| | less than 5 hectares | 5 to 20 hectares | 20 to 70 hectares | more than 70 hectares | |
| Total cash receipts | \$ 122 630 (11) | 245 778 (13) | 656 475 (8) | 3 295 915 (8) | 570 089 (5) |
| Total cash costs | \$ 85 367 (12) | 166 304 (16) | 438 638 (10) | 2 449 030 (8) | 403 992 (5) |
| Farm cash income | \$ 37 263 (18) | 79 474 (13) | 217 836 (10) | 846 886 (15) | 166 097 (8) |
| Proportion of farms with | | | | | |
| negative farm cash income | % 22 (46) | 8 (59) | 8 (25) | 7 (56) | 13 (31) |
| Buildup in trading stocks | \$ - 348 (100) | -1 117 (71) | -3 432 (118) | - 548 (715) | -1 390 (83) |
| Depreciation | \$ 9 885 (8) | 20 525 (15) | 43 392 (6) | 150 196 (11) | 33 666 (5) |
| Operator and family imputed labour | \$ 46 402 (9) | 52 550 (9) | 68 323 (7) | 73 054 (5) | 56 152 (4) |
| Farm business profit | \$ -19 372 (31) | 5 282 (181) | 102 690 (20) | 623 088 (19) | 74 889 (16) |
| Proportion of farms with | | | | | |
| negative farm business profit | % 70 (10) | 64 (13) | 37 (18) | 26 (21) | 56 (7) |
| Profit at full equity | | | | | |
| excl capital appreciation | \$ -10 390 (60) | 20 668 (47) | 141 756 (15) | 850 997 (14) | 112 394 (11) |
| inc capital appreciation | \$ 5 880 (256) | 39 894 (191) | 83 472 (117) | 950 267 (14) | 116 610 (30) |
| Rate of return | | | | | |
| excl capital appreciation | % -1 (62) | 1 (56) | 3 (20) | 9 (14) | 4 (13) |
| inc capital appreciation | % 1 (255) | 2 (196) | 2 (125) | 10 (14) | 4 (33) |
| Change in farm debt during the year | % 0 (1307) | - 4 (97) | 4 (132) | 19 (33) | 10 (35) |
| Total farm debt at 30 June | \$ 105 960 (21) | 162 878 (24) | 369 708 (17) | 2 321 391 (17) | 378 346 (10) |
| Total farm capital at 30 June | \$ 998 654 (8) | 1 824 399 (34) | 4 455 872 (12) | 9 679 666 (7) | 2 872 202 (8) |
| Farm equity ratio | % 89 (3) | 91 (4) | 92 (1) | 76 (4) | 87 (2) |
| Debt servicing ratio | % 7 (20) | 5 (24) | 4 (13) | 5 (13) | 5 (8) |

Note: Figures in parentheses are standard errors (RSEs) expressed as a percentage of the estimate provided. A guide on how to use RSEs is in appendix A.

A16 Area irrigated and irrigated vegetable production, by area of vegetables sown, 2007-08

average per farm

| | area sown to vegetables | | | | | all farms |
|-----------------------|-------------------------|---------------------|----------------------|--------------------------|----------|-----------|
| | less than 5 hectares | 5 to 20 hectares | 20 to 70 hectares | more than 70 hectares | | |
| Area irrigated | | | | | | |
| Potatoes | 1 (49) | 3 (29) | 10 (15) | 43 (14) | 7 (9) | |
| Pumpkins | 0 (85) | 1 (69) | 2 (46) | 3 (31) | 1 (31) | |
| Green peas | 0 (52) | 0 (52) | 0 (63) | 4 (33) | 1 (26) | |
| Beans | 0 (94) | 1 (69) | 2 (72) | 25 (49) | 3 (38) | |
| Tomatoes | 0 (50) | 0 (82) | 1 (61) | 12 (37) | 1 (28) | |
| Onions | 0 (133) | 0 (54) | 1 (26) | 9 (35) | 1 (23) | |
| Carrots | 0 (112) | 0 (107) | 2 (24) | 10 (34) | 1 (23) | |
| Cauliflowers | 0 (58) | 0 (77) | 1 (33) | 3 (28) | 1 (29) | |
| Lettuce | 0 (56) | 1 (53) | 2 (41) | 7 (31) | 1 (22) | |
| Broccoli | 0 (85) | 0 (110) | 1 (51) | 5 (68) | 1 (41) | |
| Cabbage | 1 (36) | 3 (23) | 8 (20) | 42 (22) | 7 (13) | |
| Other vegetables | 2 (9) | 10 (8) | 34 (3) | 178 (13) | 27 (7) | |
| Production | | | | | | |
| Potatoes | 27 (44) | 112 (26) | 403 (13) | 1 830 (13) | 294 (9) | |
| Pumpkins | 3 (107) | 12 (53) | 32 (42) | 67 (35) | 18 (26) | |
| Green peas | 0 (94) | 2 (69) | 2 (58) | 24 (29) | 3 (24) | |
| Beans | 0 (39) | 10 (58) | 15 (58) | 180 (46) | 21 (35) | |
| Tomatoes | 1 (133) | 7 (71) | 59 (59) | 500 (43) | 62 (32) | |
| Onions | 0 (112) | 0 (56) | 61 (26) | 418 (36) | 54 (24) | |
| Carrots | 0 (58) | 0 (79) | 117 (23) | 472 (34) | 70 (21) | |
| Cauliflowers | 4 (56) | 16 (145) | 26 (36) | 85 (32) | 18 (35) | |
| Lettuce | 0 (99) | 3 (79) | 85 (29) | 247 (31) | 46 (21) | |
| Broccoli | 0 (20) | 7 (55) | 18 (39) | 128 (22) | 17 (19) | |
| Cabbage | 24 (27) | 10 (85) | 66 (65) | 301 (73) | 45 (47) | |
| Other vegetables | 69 (17) | 44 (27) | 140 (25) | 533 (21) | 101 (13) | |
| All vegetables | | 239 (14) | 1 024 (7) | 4 785 (8) | 748 (5) | |

Note: Figures in parentheses are standard errors (RSEs) expressed as a percentage of the estimate provided. A guide on how to use RSEs is in appendix A.

A17 Volume of irrigation water used and use per hectare, by area of vegetables sown, 2007-08
average per farm

| | area sown to vegetables | | | | | all farms |
|---|-------------------------|---------------------|----------------------|--------------------------|---------|-----------|
| | less than 5 hectares | 5 to 20 hectares | 20 to 70 hectares | more than 70 hectares | | |
| Volume of irrigation water applied | | | | | | |
| Potatoes | 2 (50) | 13 (28) | 44 (16) | 157 (15) | 28 (10) | |
| Pumpkins | 0 (67) | 3 (63) | 8 (55) | 7 (37) | 4 (38) | |
| Green peas | 0 | 0 (99) | 0 | 7 (46) | 1 (40) | |
| Beans | 0 (94) | 1 (54) | 4 (74) | 25 (33) | 3 (32) | |
| Tomatoes | 1 (34) | 1 (75) | 6 (46) | 39 (46) | 5 (30) | |
| Onions | 0 (133) | 1 (65) | 7 (32) | 43 (32) | 6 (23) | |
| Carrots | 0 | 0 | 7 (25) | 25 (34) | 4 (21) | |
| Cauliflowers | 0 (112) | 2 (185) | 3 (34) | 22 (42) | 3 (38) | |
| Lettuce | 0 (60) | 0 (89) | 7 (44) | 13 (33) | 3 (29) | |
| Broccoli | 0 (85) | 2 (77) | 4 (33) | 47 (29) | 5 (22) | |
| Cabbage | 0 (65) | 1 (87) | 4 (60) | 13 (56) | 2 (38) | |
| Other vegetables | 6 (32) | 11 (28) | 17 (23) | 102 (23) | 18 (13) | |
| All vegetables | 9 (19) | 36 (14) | 112 (10) | 501 (10) | 83 (6) | |
| Irrigation water per hectare | | | | | | |
| Potatoes | 2 (44) | 5 (13) | 4 (9) | 4 (9) | 4 (6) | |
| Pumpkins | 2 (31) | 6 (12) | 3 (52) | 2 (15) | 3 (34) | |
| Green peas | | 1 (40) | 0 (56) | 2 (39) | 1 (35) | |
| Beans | 1 | 1 (35) | 2 (6) | 1 (24) | 1 (21) | |
| Tomatoes | 3 (51) | 6 (10) | 5 (29) | 3 (22) | 4 (15) | |
| Onions | 18 | 3 (25) | 5 (16) | 5 (19) | 5 (13) | |
| Carrots | | | 4 (15) | 2 (12) | 3 (11) | |
| Cauliflowers | 1 | 3 (94) | 3 (23) | 8 (31) | 5 (23) | |
| Lettuce | 8 (31) | 5 (33) | 2 (48) | 2 (16) | 2 (30) | |
| Broccoli | 7 (55) | 3 (63) | 3 (35) | 3 (28) | 3 (22) | |
| Cabbage | 5 (98) | 4 (53) | 3 (17) | 3 (31) | 3 (19) | |
| Other vegetables | 7 (15) | 4 (17) | 2 (27) | 2 (21) | 3 (13) | |
| All vegetables | 4 (22) | 4 (12) | 3 (9) | 3 (10) | 3 (6) | |

Note: Figures in parentheses are standard errors (RSEs) expressed as a percentage of the estimate provided. A guide on how to use RSEs is in appendix A.

A18

Costs of vegetable production, by area of vegetables sown, 2007-08

average per farm

| | area sown to vegetables (\$/t) | | | | | all farms |
|--------------------------|--------------------------------|---------------------|----------------------|--------------------------|------------|-----------|
| | less than 5 hectares | 5 to 20 hectares | 20 to 70 hectares | more than 70 hectares | | |
| Potatoes | 377 (32) | 330 (18) | 257 (7) | 191 (5) | 225 (5) | |
| Including imputed labour | 489 (21) | 366 (18) | 274 (6) | 198 (5) | 240 (5) | |
| Pumpkins | na | 478 (26) | 287 (21) | na | 620 (21) | |
| Including imputed labour | na | 539 (24) | 323 (23) | na | 661 (20) | |
| Green beans | na | 633 (29) | 391 (15) | 550 (22) | 531 (17) | |
| Including imputed labour | na | 674 (29) | 445 (13) | 551 (22) | 549 (16) | |
| Tomatoes | 1 337 (28) | na | 489 (45) | 756 (33) | 716 (23) | |
| Including imputed labour | 1 659 (27) | na | 512 (43) | 765 (32) | 764 (23) | |
| Onions | na | 260 (22) | 385 (17) | 319 (11) | 347 (9) | |
| Including imputed labour | na | 274 (22) | 411 (16) | 325 (11) | 361 (9) | |
| Carrots | na | na | 154 (17) | 229 (14) | 208 (14) | |
| Including imputed labour | na | na | 163 (17) | 233 (14) | 213 (13) | |
| Cauliflowers | na | 614 (21) | 610 (19) | 762 (22) | 664 (13) | |
| Including imputed labour | na | 694 (16) | 708 (17) | 773 (22) | 727 (11) | |
| Lettuce | 1 452 (27) | na | 408 (31) | 731 (15) | 601 (16) | |
| Including imputed labour | 1 774 (25) | na | 436 (29) | 737 (15) | 629 (16) | |
| Broccoli | na | na | 1 040 (14) | 1 105 (32) | 1 074 (21) | |
| Including imputed labour | na | na | 1 092 (14) | 1 118 (32) | 1 113 (21) | |
| Cabbage | na | 294 (65) | 254 (49) | 148 (84) | 214 (43) | |
| Including imputed labour | na | 332 (58) | 307 (55) | 149 (84) | 242 (43) | |

Note: Figures in parentheses are standard errors (RSEs) expressed as a percentage of the estimate provided. A guide on how to use RSEs is in appendix A.

References

ABARE 2009, *Australian commodities*, June quarter, 09.2, Canberra, June.

ABARE 2009, *Australian farm survey results 2006-07 to 2008-09*, Canberra, April.

Crooks, S 2009, *Australian vegetable growing farms – an economic survey, 2006-07*, ABARE eReport 09.3, Canberra, January.

Ashton, D 2007, *Australian vegetable growing industry – an economic survey, 2005-06*, ABARE eReport 07.17, Canberra, October.

Apted, S, Berry, P, Short, C, Topp, V, Mazur, K and Mellor, T 2006, *International competitiveness of the Australian vegetable production sector*, ABARE eReport 06.5, Canberra, April.

Lehton, R and Pahkinen, E 2004, *Practical Methods for design and analysis of complex surveys 2nd edition*, John Wiley and sons, West Sussex.

RESEARCH FUNDING ABARE relies on financial support from external organisations to complete its research program. As at the date of this publication, the following organisations had provided financial support for ABARE's research program in 2008-09 and in 2009-10. We gratefully acknowledge this assistance.

02.09

| | |
|--|---|
| AusAid | European commission |
| Australian Fisheries Management Authority | Fisheries Research and Development Corporation |
| Australian Government Department of Climate Change | Fisheries Resources Research Fund |
| Australian Government Department of the Environment, Water , Heritage and the Arts | Forest and Wood Products Australia |
| Australian Government Department of Resources, Energy and Tourism | Grains Research and Development Corporation |
| CRC Plant Biosecurity | Grape and Wine Research and Development Corporation |
| CSIRO (Commonwealth Scientific and Industrial Research Organisation) | Horticulture Australia |
| Dairy Australia | International Food Policy Research Institute |
| Department of Primary Industries, Victoria | Land and Water Australia |
| DN Harris and Associates | Meat and Livestock Australia |
| | National Australia Bank |
| | OECD |
| | Rural Industries Research and Development Corporation |
| | The Treasury |