



Australian Government

**Rural Industries Research and
Development Corporation**

Australian Honeybee Industry Survey 2006–07

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Australian Honeybee Industry Survey 2006–07

by Sarah Crooks

Australian Bureau of Agricultural and Resource Economics

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Foreword

The honeybee industry is important to Australia with an estimated gross value of honey and beeswax production of \$75 million in 2007-08. In common with many other industries, the honeybee industry faces a number of challenges. These include competition in both export and domestic markets and access to native flora. The industry needs to maintain its competitiveness and comparative advantage as a supplier of high quality honey.

Limited information is available on the physical and financial characteristics of honey producing businesses to guide industry decision-making. In addition, little information is available on the demographic and socioeconomic circumstances of people involved in the industry.

This report, commissioned by RIRDC, presents results from a comprehensive survey of Australian honeybee businesses. This is the second survey of this type, with a similar survey conducted in 2002. Survey results will assist benchmarking to improve the industry's performance and provide information to target industry efforts to improve productivity and profitability.

In addition to providing valuable information on honeybee businesses, survey results also enable estimation of the economic value of the industry and the resources used by the industry. This report will assist in developing industry policies and planning, providing a factual basis for further development of the honeybee industry.

This project was funded from industry revenue, matched by funds provided by the Australian Government. The survey of honeybee businesses was conducted in close cooperation with the industry.

This report, an addition to RIRDC's diverse range of over 1800 research publications, forms part of our Honeybees R&D program, which aims to increase profitability by improving hive husbandry and management practices through the provision of production and financial benchmarks.

Most of our publications are available for viewing, downloading or purchasing online through our website:

- downloads at www.rirdc.gov.au/fullreports/index.html
- purchases at www.rirdc.gov.au/eshop

Peter O'Brien
Managing Director
Rural Industries Research and Development Corporation

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Assistance with technical aspects of the project and providing comments on the draft report by Linton Briggs, Des Cannon, Keith Mcilvrde and Bruce White is gratefully acknowledged.

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Executive Summary

What the report is about

This report presents results from a survey of Australian honeybee businesses conducted by ABARE in May to June 2008 which updates earlier results from a survey conducted in 2002. It provides an overview of the current situation of the honeybee industry and presents estimates of production, socioeconomic and financial characteristics of Australian beekeeping businesses during the 2006-07 financial year.

Who is the report targeted at?

The primary audience for this report are Australian beekeepers, industry and government policy makers and other beekeeping-related associations.

Background

ABARE conducted a honeybee survey in 2002, funded by RIRDC, to provide performance benchmarks. This paper aims to update this information with 2006-07 financial year data.

In 2006-07, the Australian honeybee industry was made up of around 10 000 registered beekeepers who operated a total of 572 000 hives. The majority of these beekeepers had just a few hives, but around 1700 beekeepers operated more than 50 hives. These beekeepers account for more than 90 per cent of Australia's total honey production and production of honeybee related products and services.

In operating their business, honeybee businesses face a number of challenges ranging from land clearance to pests and diseases. To be competitive in the global market and maintain profitability it is necessary for beekeepers to be aware of current industry benchmarks.

Aims/objectives

To present estimates of production, socioeconomic and financial characteristics of Australian beekeepers in order to provide industry with performance benchmarks.

Methods used

Data were collected in a telephone survey of registered Australian beekeepers who each operated at least 50 hives during 2006-07. The sample was stratified based on state and number of hives operated and selected randomly within the strata. Each sample point was assigned a weight to ensure estimates remained representative of the industry as a whole.

Results/key findings

Honeybee businesses operated around 304 hives on average and produced 18 300 kilograms of honey on average during 2006-07.

Financial performance

Total cash receipts for honeybee businesses were on average \$71 400 per business in 2006-07, with honey sales accounting for \$54 300 (76 per cent) of this total. Paid pollination services were also an important source of receipts accounting for \$6400 per business on average. The average price received for honey was \$2.80 per kilogram. Tasmanian beekeepers received the highest price for their honey at an average of \$4.20 per kilogram, while South Australian and Western Australian producers received \$2.50 per kilogram on average.

Total cash costs were on average around \$45 900 per business during 2006-07 with the largest items of expenditure being fuel, oil and grease, hired labour, interest and vehicle repairs and maintenance.

Cash operating surplus (total cash receipts minus total cash costs) was on average \$25 500 per business with Tasmanian businesses generating the highest average cash operating surplus at more than \$52 800. Queensland businesses on the other hand recorded the lowest average cash operating surplus at just \$12 200 per business, in 2006-07.

The average capital value of Australian beekeeping businesses was estimated to be \$610 000 with the majority being accounted for by land and fixed improvements. Fixed improvements include honey extraction plant, packing sheds and other buildings at the business premises. Business debt levels were on average \$93 300 per business and equity ratio was 87 per cent on average.

The financial performance of honeybee businesses is estimated to have improved since the last survey in 2000-01, largely because of increases in honey prices and increased revenue from pollination services, despite substantial increases in the businesses operating costs. Average rates of return for 2006-07 were -3 per cent compared with -5 per cent in 2000-01. In 2006-07, rates of return for honeybee businesses were generally low but were higher for larger businesses.

Pollination services and challenges facing the industry

During 2006-07, 28 per cent of honeybee businesses provided pollination services for Australian agricultural producers, with an estimated 76 per cent of these businesses receiving payment for pollination services.

The industry is faced with the challenge of meeting future demand for pollination services. Thirty-six per cent of honeybee businesses indicated they expect to begin or expand pollination services in the future. The main types of crops on which paid pollination services were used in 2006-07 were almonds, cherries, other fruit, pumpkins, apples, lucerne and canola.

An estimated 66 per cent of beekeepers used public land for honey production in the past five years. Over the past five years, 20 per cent of businesses decreased their usage while 14 per cent increased usage.

Drought was the most widespread challenge facing honeybee businesses during 2006-07 with an estimated 87 per cent of beekeepers indicating production was reduced as a result of drought. Most businesses, except those in South Australia reported honey production in 2006-07 to be below normal. Other challenges impacting on production were pesticide use, tree dieback, weed control, conserved area access, land clearance and fire damage.

An estimated 70 per cent of honeybee businesses indicated the existence of wax moths in their stored honeycomb had an impact on production, although it was generally to a small extent, probably because wax moths invade only after a hive has been stored. Producers also said chalkbrood was another honeybee disease impacting on production. Very few beekeepers' production was affected by the honeybee diseases sacbrood and American foulbrood.

Implications for relevant stakeholders for:

Results provide Australian honeybee businesses with industry benchmarks to facilitate a better understanding of the relative performance of honeybee businesses. Estimates provide the basis to improve decision making of both beekeepers and policy makers to ensure that honeybee industry continues to remain viable and competitive in the global market.

Recommendations

That estimates be used to inform and improve decision making by beekeepers and policy makers.

1. Introduction

1.1. Survey objectives

While honey is the main commercial output of the Australian honeybee industry, other products and services add to the income of beekeepers including the production of beeswax, queen and packaged bees and the provision of paid pollination services. However, the importance of the honeybee industry is not just captured by commercial outputs generated by honeybees, but also through the role honeybees play in the pollination of Australia's crops.

The Australian honeybee industry had an estimated gross value of honey and beeswax production (GVP) of \$75 million during 2007-08 and is forecast to rise to \$80 million during 2008-09 (ABARE, 2008).

There are a number of challenges facing the industry, ranging from land clearance and tree die-back to pests and diseases. All of which threaten beekeepers' access to floral resources, reduce honey yields and can dramatically increase costs associated with honey production.

The industry is also facing increased competition from overseas producers. To remain competitive in the global market it is necessary for Australian producers to continually improve their efficiency and reduce production costs.

To ensure adequate levels of honeybees are available to provide pollination services for the agriculture sector the industry must have the potential to grow over the coming years. This is especially important in light of the risk of an infestation of exotic mites into Australia which has the potential to wipe out the feral (unmanaged) honeybee population and untreated managed honeybee colonies (RIRDC paper, *Commercial Beekeeping in Australia*).

ABARE conducted a survey of the honeybee industry in 2002, funded by RIRDC, to provide information on the performance of honeybee businesses in Australia during 2000-01. Results of this survey are in the report, *Honey Industry Survey* and can be found on the RIRDC website (www.rirdc.gov.au).

The primary aim of the report is to update the findings of the 2002 survey to ensure an understanding of the current circumstances of honeybee producers in the Australian honeybee industry. The objective is to generate a consistent set of estimates of production and financial characteristics of honeybee producers in Australia. A comparison of estimates to 2002 survey results also enables an analysis of how circumstances have changed over time.

1.2. Overview of the honeybee industry

1.2.1. Structure of the industry

Beekeepers in all states, apart from Tasmania, are required to register their business. Registration is not compulsory in Tasmania, the Northern Territory and the Australian Capital Territory. The number of beekeepers is known to be low in the Northern Territory and numbers in the Australian Capital Territory are not known exactly.

There are currently close to 10 000 registered beekeepers in Australia operating a total of just less than 572 000 hives. A large proportion of registered beekeepers are located in New South Wales and Queensland with around 31 per cent located in each of these two states (Table A). Tasmania has the lowest number of registered beekeepers accounting for 2 per cent of registered beekeepers, however, it should be noted that registration is not compulsory.

Around 90 per cent of the total number of hives is accounted for by beekeepers operating more than 50 hives. For the purposes of this report, beekeepers with more than 50 hives are considered to be commercial honeybee businesses.

Table A. Numbers of beekeepers and hives, by state, 2006-07

State/territory	Number of beekeepers	% of beekeepers	Number of hives	% of hives	% operating 50 hives or more
New South Wales	3 062	31	236 233	41	22
<i>North</i>	1 623	16	120 252	21	23
<i>South</i>	1 439	15	115 981	20	21
Queensland	3 113	31	127 057	22	12
Western Australia	712	7	26 929	5	13
South Australia	724	7	67 344	12	27
Tasmania ^a	157	2	13 939	2	20
Victoria	2 143	22	99 261	17	16
Northern Territory ^a	7	0	1 205	0	na
Total	9 918	100	571 968	100	17

^aregistration is not compulsory in these states and as such the number of beekeepers is likely to be higher.

Source: state apiary offices

na: not available

1.2.2. Outputs from the industry

While honey is the major commercial output of the honeybee industry there are a number of other products which also add to the income of honeybee businesses. These include production of beeswax, queen and packaged bees and propolis. A number of beekeepers are also paid for providing pollination services to agricultural producers.

1.3. Pollination

Pollination refers to the fertilisation of flora through the transfer of pollen. While this can occur as a result of pollen transfer by native bees, beetles and other insects, honeybees are the most important agent of pollination. Pollination of many crops increases yields and improves quality and is particularly important for tree crops such as almond and stone fruit, as well as the seeds for field crops such as lucerne, clovers and vegetables. Pollination plays a large role in the agricultural sector with an estimated 65 per cent of Australian crops relying on honeybees for pollination (*Valuing honeybee pollination*, 2003).

While some apiarists are paid to provide pollination services, a significant number of apiarists do not receive monetary payment for the service. Some are paid “in-kind” for the services, while others benefit from using the crops as a source of pollen to feed their bees and produce honey. An example of an “in-kind” payment might be receiving vegetables in return for providing pollination services to a vegetable farm.

Section 4 presents more detailed survey results in relation to pollination.

1.4. Challenges facing the honeybee industry

There are a number of challenges and risks facing the honeybee industry which have the potential to impact on the production of honey, the quality of honey produced and prices received for honey including:

- resource base threats (access to flora);
- pests and diseases risks; and
- overseas competition.

1.4.1. Resource base threats

Output depends to a large extent upon the level and quality of inputs. In the case of the honey industry, the major input is the pollen and nectar collected by honeybees from flora. There are a number of threats to the access of beekeepers to suitable flora including:

- a reduction in access to public lands and the conversion of land to conserved area;
- land clearance, which is happening at a higher rate than plantation;
- the death of trees caused by salinity and rising water tables;
- natural circumstances such as flooding, bush fires and drought conditions;
- the use of pesticides harmful to honeybees by producers on crops; and
- the control of weeds which act as a source of pollen.

1.4.2. Pests and diseases

There are a number of pests and diseases impacting on honey production within Australia. The most serious currently facing Australian apiarists are american foulbrood, european foulbrood, chalkbrood, nosema, sacbrood, wax moth and the small hive beetle.

Because of strict quarantine restrictions, the more serious exotic mites have not yet reached Australia. If they were to reach the country, they have the potential to wipe out the entire population of feral honeybees (RIRDC paper, *Commercial beekeeping in Australia*). It is important extensive planning is undertaken to minimize the impact these would have on pollination requirements in the agriculture sector.

1.4.3. Overseas competition

Australian honey is renowned for its quality and is exported widely to more than 38 countries. Movements in exchange rates impact on the competitiveness of Australian honey on world markets. A rise in the Australian dollar relative to the currency of importing countries makes Australian honey exports relatively more expensive and may lead to a decline in demand. In addition, tariffs, quotas and bans in some countries also limit Australian honey producers access to overseas markets.

2. Methodology

2.1. Survey design

The 2008 Australian honeybee industry survey was designed and the sample selected from lists of beekeepers obtained from departmental apiary officers for each state. To be eligible for sample selection, the beekeeper must have operated at least 50 hives during 2006-07. A sample of 150 beekeepers were selected from a total population of 1702 beekeepers who operated 50 hives or more (Table B). To select the sample, the population was stratified based on state and the number of hives operated and the sample selected randomly within the strata. In New South Wales the state was divided into two regions, north and south to enable the presentation of separate survey results for these two areas. Since the survey was voluntary, selections were made in addition to the primary selection to ensure as close to the sample goal of 150 was realised.

Once the sample was selected, information was collected using telephone interviews with supporting financial data being submitted by mail or fax.

Table B. Registered beekeepers and sample numbers, 2006-07

	Population (Number of businesses with 50 hives or more)	Hive numbers	Target sample of businesses	Realised sample
New South Wales	664	216 239	33	30
<i>North</i>	364	107 747	18	15
<i>South</i>	300	108 492	15	15
Queensland	374	105 096	27	27
Victoria	338	86 037	24	24
South Australia	192	62 917	21	17
Western Australia	95	21 990	21	18
Tasmania	32	12 782	18	17
Northern Territory	7	1 205	6	2
Australia	1 702	506 266	150	135

The Australian Bureau of Statistics (ABS) business register was also considered as a source of the sample list for the survey but was not used. This list appeared to have an under-coverage of smaller units and a disproportionate number of the beekeepers on the list were classified to the horticultural industry.

The sampling methodology and questionnaire were cleared by the Commonwealth Statistical Clearing House (SCH). The SCH ensures surveys conducted by the Commonwealth are well designed and place minimum burden on respondents.

After collection, each sample point was assigned a weight to ensure estimates were representative of the full population of beekeepers.

2.2. Survey questionnaire

The 2008 survey of honeybee producers covered the following:

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

- Honeybee related production for the survey year (2006-07 financial year).
- Details of each type of product including quantity, 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

- Type, purpose and value of debts.

Income and expenses

- All costs and income associated with the honeybee business.

Supplementary survey questions

- Covering a range of issues including: public land access, provision of pollination services, challenges facing the industry and the importance of information sources. A copy of the supplementary questionnaire is included at Appendix 10.3.

3. Physical characteristics

Analysis of survey results has been limited to those beekeeping businesses operating at least 50 hives during the 2006-07 financial year. These businesses are considered to be “commercial” honeybee businesses for the purposes of this report. In 2006-07 there were an estimated 1702 honeybee businesses in Australia who operated at least 50 hives.

Results in relation to the physical characteristics of honeybee businesses are presented in section 3. More detailed tabulations are presented in the Appendix tables.

3.1. Size of operations

As at 30 June 2007 honeybee businesses operated an average of 304 hives per business, down slightly from 318 hives operated at the beginning of the year (Table C). The average number of queenbee mating nuclei operated was 78.

The majority of honeybee businesses operated from small holdings of land. On average, honeybee businesses operated from premises of 22 hectares in 2006-07.

Table C. Size of operations of Australian honeybee businesses, 2006-07

<i>Average per honeybee business</i>			
	unit	Estimate	RSE ^a
Area of land at business premises	ha	22	(33)
Hives operated at 1 July 2006	no	318	(5)
Hives operated at 30 June 2007	no	304	(4)
Queenbee mating nuclei operated	no	78	(20)

^aRSE (Relative Standard Error): a measure of the accuracy of survey estimates. For information on how to use this measure see appendix 10.2.

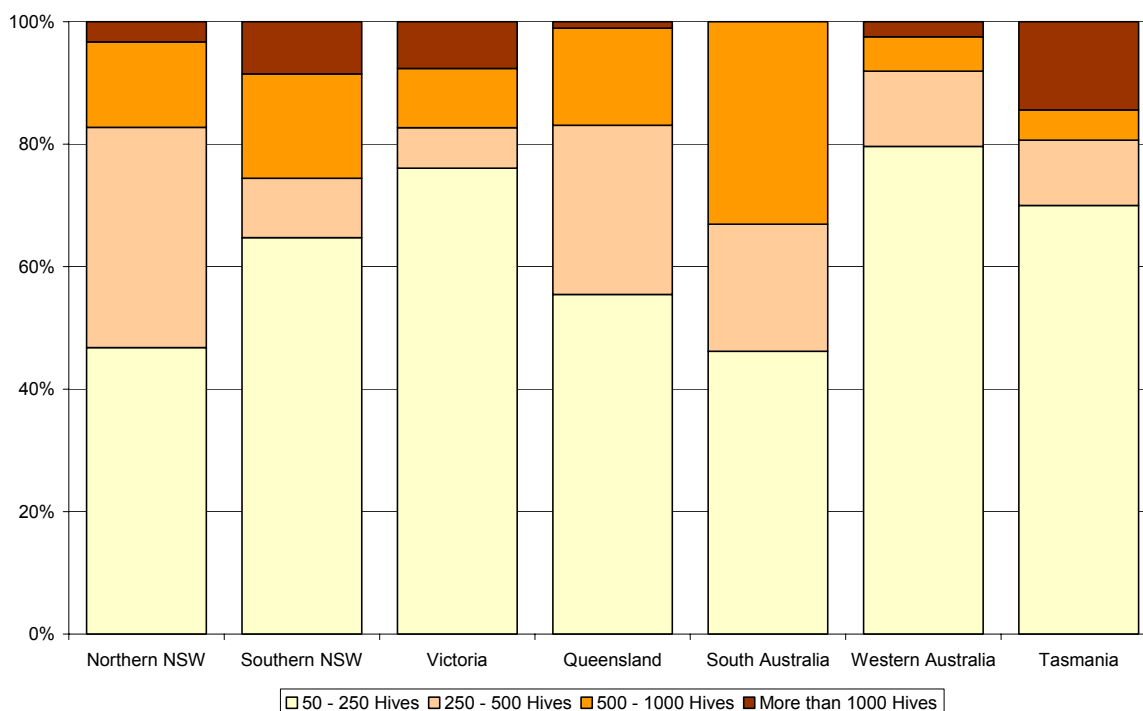
The majority of honeybee businesses were small in 2006-07 with 60 per cent of businesses operating less than 250 hives. However, the majority of honey (83 per cent), was produced by businesses with more than 500 hives (Table D). Only 4 per cent of producers operated more than 1000 hives and these businesses produced almost 24 per cent of total honey produced during 2006-07.

Table D. Size of operations of Australian honeybee businesses, 2006-07

	Number of beekeepers	%	Average number of hives	Average honey sold per business (kg)	Aggregate honey sold (kg)	% of aggregate
50 - 250 Hives	1 023	60	121	5 433	5 557 364	17
250 - 500 Hives	340	20	320	22 291	7 588 643	23
500 - 1 000 Hives	264	16	632	44 848	11 849 211	36
More than 1 000 Hives	74	4	1 592	104 443	7 772 644	24
Total	1 702	100	304	19 252	32 767 862	100

In South Australia and Northern New South Wales the majority of honeybee businesses operated at least 250 hives (Figure 1). However, the majority of honeybee businesses in Victoria, Queensland, Western Australia, Tasmania and southern New South Wales operated less than 250 hives. While around 70 per cent of Tasmanian honeybee businesses operated less than 250 hives, the state also had the highest proportion of honeybee businesses operating in excess of 1000 hives.

Figure 1. Size of operations of Australian honeybee businesses, 2006-07



Tasmanian businesses were the largest, operating around 410 hives per business and selling around 37.4 tonnes of honey on average. However, Tasmanian businesses accounted for only 4 per cent of national honey production (Table E). On average, southern New South Wales honeybee businesses were also relatively large and just under one-quarter of all honey sold during 2006-07 was produced from this region. While Western Australian honeybee businesses operated the smallest number of hives on average, they sold the fourth largest tonnage of honey on average.

Table E. Size of operations of Australian honeybee businesses, 2006-07

	Number of beekeepers	Average number of hives	Average honey sold per business (kg)	% of national honey sold
Tasmania	32	410	37 423	4
Southern NSW	300	367	25 399	23
South Australia	192	330	32 402	19
Northern NSW	364	319	14 499	16
Queensland	374	276	11 823	14
Victoria	338	262	16 485	17
Western Australia	95	236	25 068	7

3.2. Production

In 2006-07, Australian honeybee businesses produced an average of 18 300 kilograms of honey and sold 19 300 kilograms of honey (Table F). Stocks of honey fell from 5800 kilograms on average at 1 July 2006 to 5200 kilograms at 30 June 2007. The reduction in honey stocks was because of low production levels and high domestic and world demand. In addition, some beekeepers purchased honey, possibly to increase the range of floral honey types for sale.

For the honeybee businesses that sold queenbees, there was an average of 551 queenbees sold during 2006-07.

Table F. Honey production, 2006-07

Average per honeybee business

	unit	Estimate	RSE ^b
Opening stock of honey	kg	5 837	(17)
Quantity purchased	kg	493	(74)
Quantity produced	kg	18 295	(7)
Quantity given away	kg	173	(28)
Quantity of honey sold ^a	kg	19 252	(7)
Closing stock of honey	kg	5 200	(18)
Queenbees sold ^c	no	551	(67)

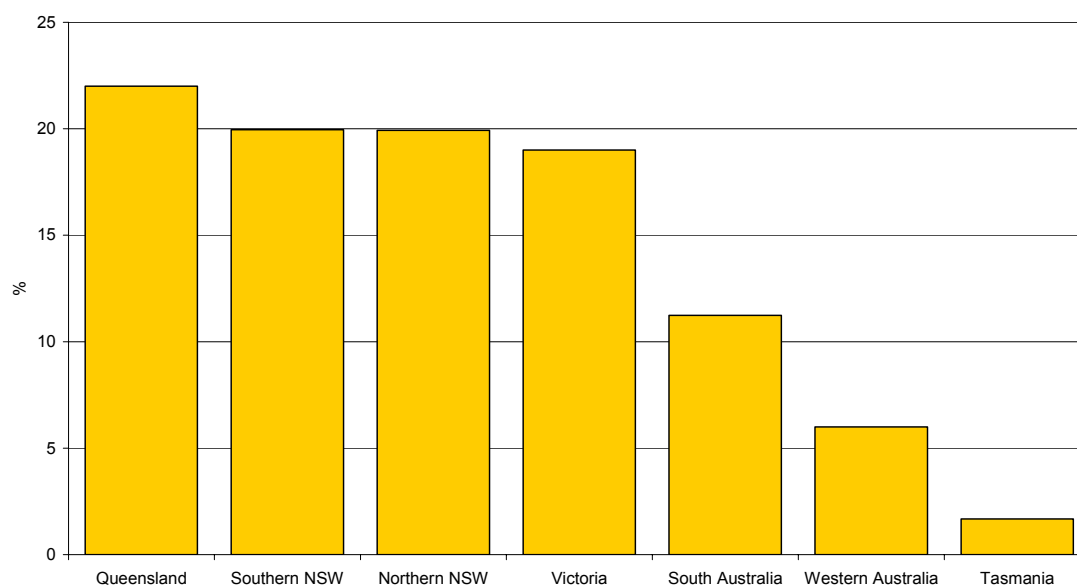
^aquantity sold includes transfers out

^bRSE: Relative Standard Error as a measure of the accuracy of survey estimates. For more information see appendix 10.2

^cestimate based only on those who sold queenbees

Around 40 per cent of honey was produced from floral resources in New South Wales with an equal share from both the southern and northern regions of the state (Figure 2). Less than 5 per cent of honey was derived from Tasmania and around 6 per cent from Western Australian sources.

Figure 2. Share of honey production from regional floral resources, 2006-07



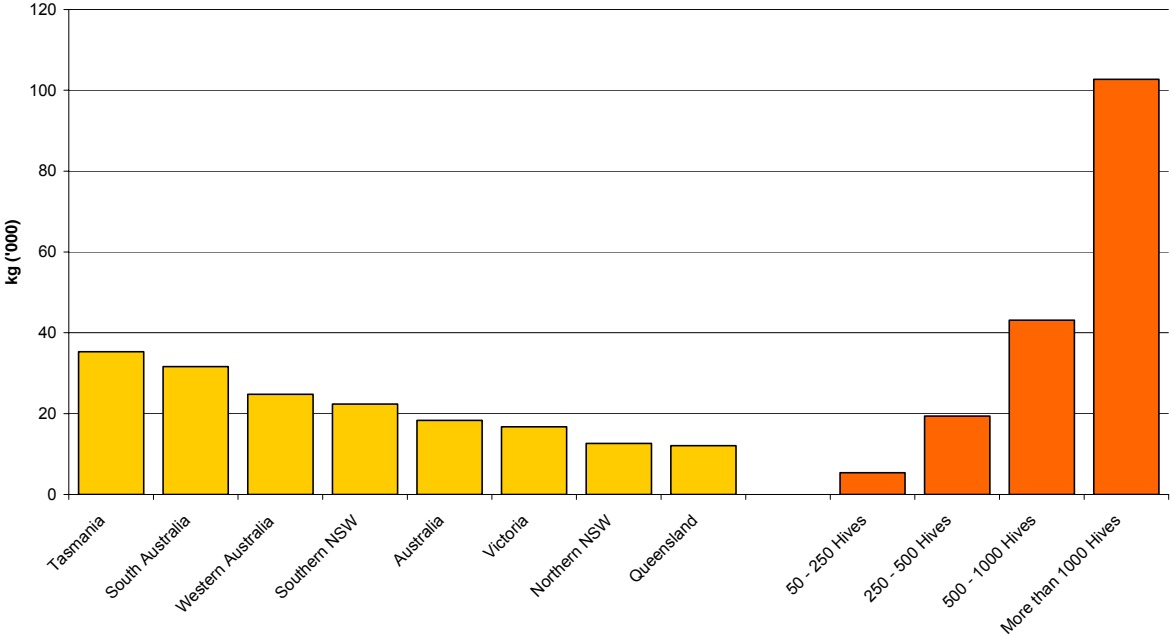
On average, honeybee businesses in Tasmania produced the largest quantity of honey, at around 35 tonnes per business (Figure 3). South Australian businesses also produced a relatively large quantity of honey, 32 tonnes per business on average. On the other hand, Queensland and northern New South Wales honeybee businesses produced a relatively small amount of honey per business, despite not being ranked the smallest business in terms of average number of hives operated.

Small producers operating less than 250 hives produced around 5 tonnes of honey on average compared to 103 tonnes per business for those operating in excess of 1000 hives.

Respondents were asked what their honey production was during a normal year, and the average honey production per business was below normal in all states apart from South Australia during 2006-07 reflecting drought conditions during the year (Appendix table 10.5.2).

Figure 3. Honey production, 2006-07

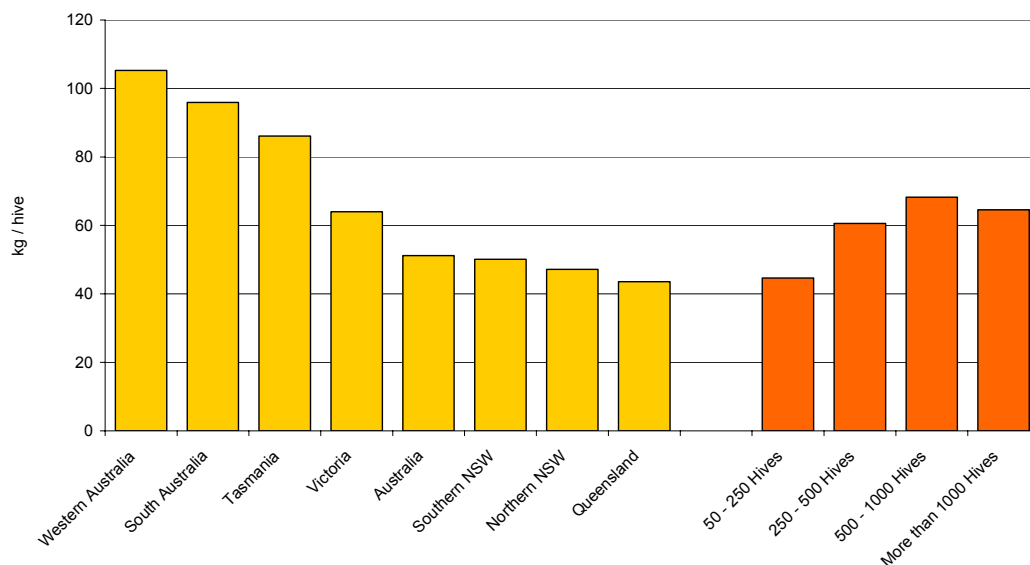
Average per honeybee business



Nationally, an average of 51 kilograms of honey were produced per hive operated (Figure 4). Western Australian and Southern Australian honeybee businesses on average produced 105 and 96 kilograms of honey per hive respectively, while Queensland and northern NSW honeybee businesses had the smallest honey production per hive. Honeybee businesses operating in excess of 500 hives produced more honey per hive than did smaller businesses.

Figure 4. Honey production per hive, 2006-07

Average per honeybee business

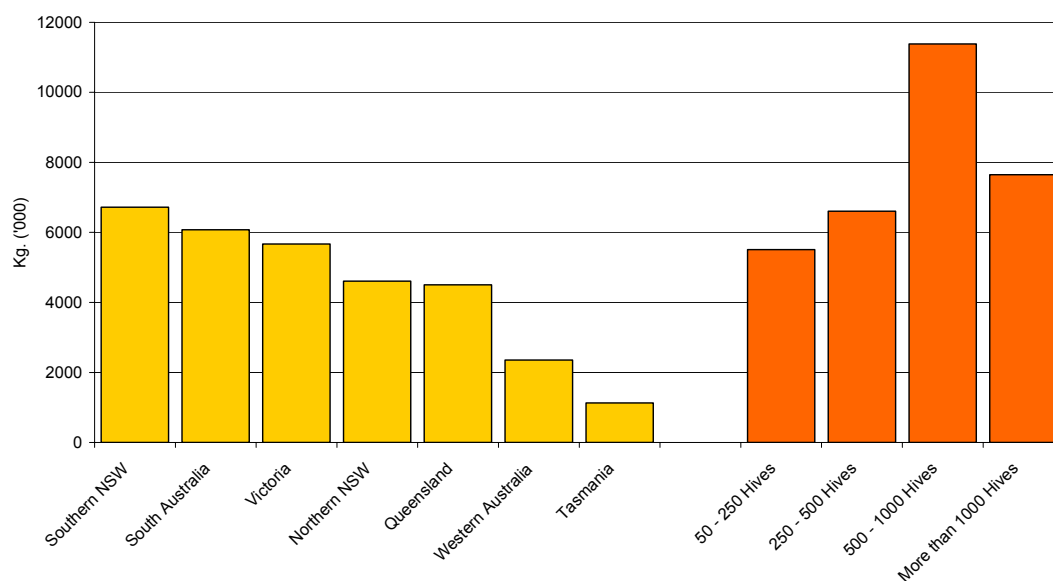


In total, it is estimated that 31 100 tonnes of honey were produced during 2006-07. More than 60 per cent of honey was produced by honeybee businesses operating in excess of 500 hives.

Honeybee businesses often source floral resources from various states, including states other than the one in which their business is located. While 20 per cent of floral resources were sourced in Queensland, only around 15 per cent (4500 tonnes) of total honey production was by businesses located in Queensland (Figure 5). Because of Tasmania's isolation from other Australian states, the share of production sourced from Tasmanian floral resources is in line with the share of total honey production.

Businesses located in southern NSW produced the most honey at around 6700 tonnes in aggregate, while Tasmanian production was the lowest at slightly more than 1100 tonnes.

Figure 5. Aggregate honey production, 2006-07

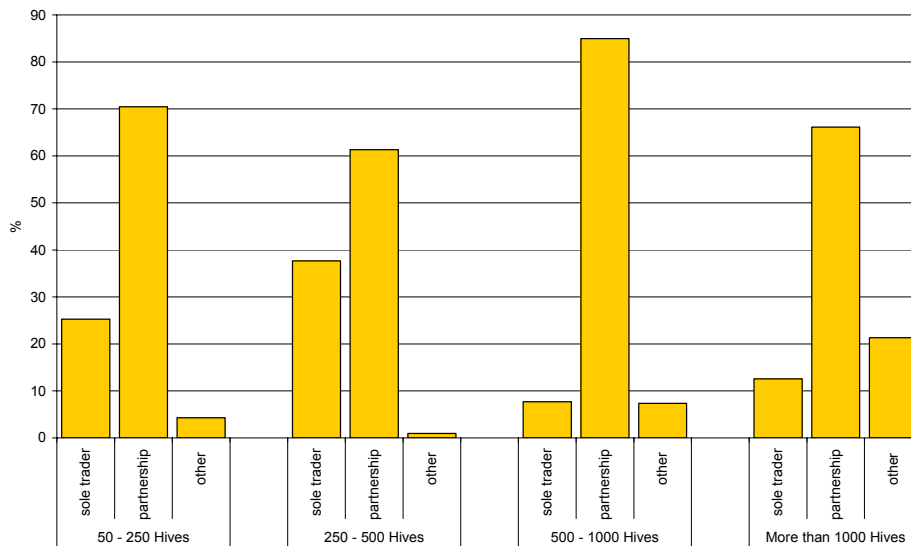


3.3. Socioeconomic and business structure

3.3.1. Business structure

An estimated 71 per cent of honeybee businesses are partnerships with only around 25 per cent operating as sole traders (Figure 6). Other types of businesses, such as family companies and trusts, were only prevalent among the larger honeybee businesses.

Figure 6. Business structure of honey enterprises, 2006-07

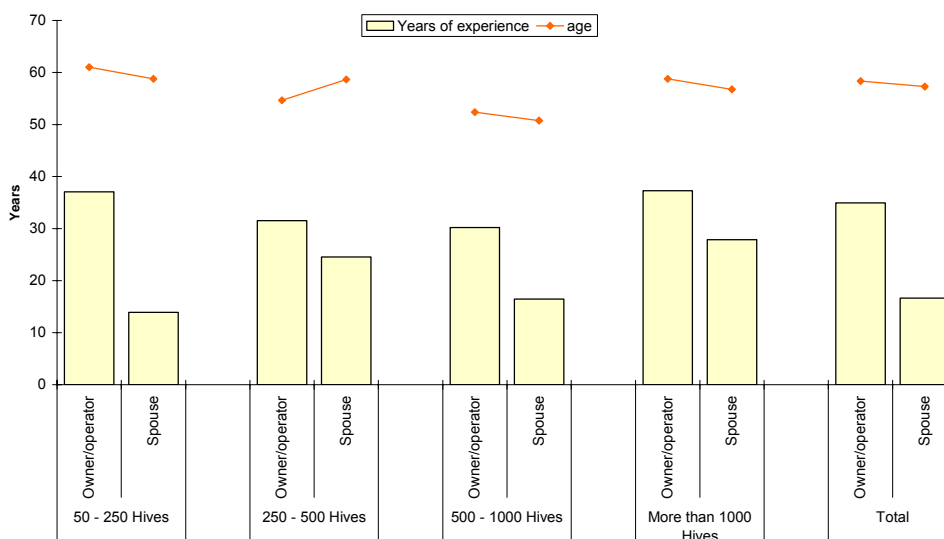


3.3.2. Socioeconomics

The average age of owner/operators of Australian honeybee businesses was estimated to be around 58 years with an average of 35 years of experience in the honeybee industry (Figure 7). The average age of spouses was 57 years with an average of 17 years of experience as beekeepers.

Figure 7. Age and years of experience of honeybee business owner/operators, 2006-07

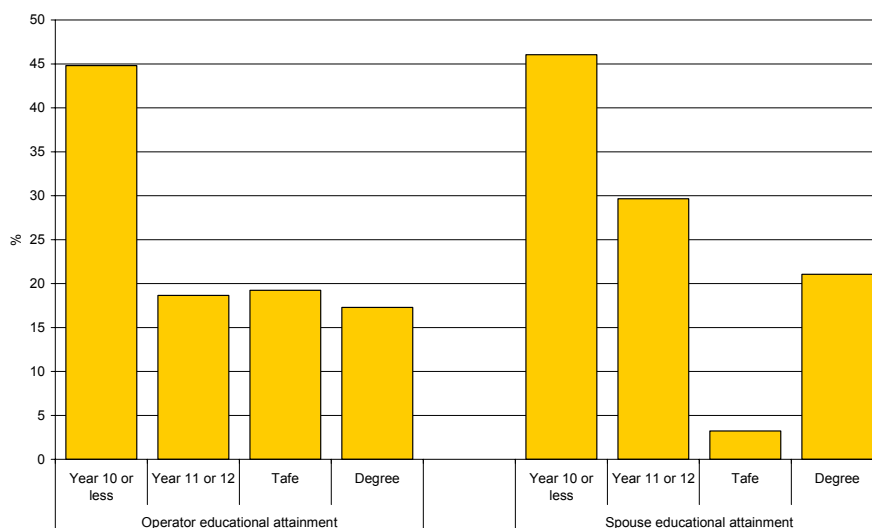
Operator and spouse



A high proportion (around 45 per cent) of owner/operators of honeybee businesses and their spouses had less than Year 11 as their formal educational attainment (Figure 8). This is a significantly higher proportion than for the agricultural sector where only around 30 per cent of owner/operators had less than Year 11 as their formal educational attainment (ABARE, 2008). To some extent the high proportion of owner/operators with formal education of less than Year 11 is a reflection of the age of many operators. Many operators would have completed schooling when the mandatory school-leaving age was less than 17.

Around 17 per cent of owner/operators and 21 per cent of spouses had university degree qualification.

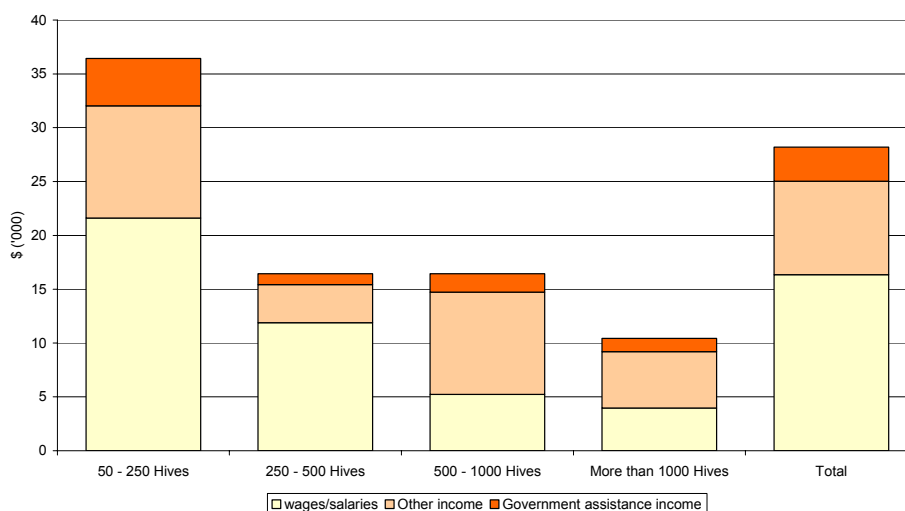
Figure 8. Educational attainment of operators and spouses, 2006-07



Income earned outside the honeybee business by the business operator and their spouse was estimated to be on average \$28 000 in 2006-07 (Figure 9). The majority of this was comprised of wages/salaries and other income including income from other businesses or investments. On average beekeepers received around \$3000 in government sourced payments and allowances including family allowance and child-care assistance. The owner/operator and spouse of businesses operating fewer hives received more income from other sources than those operating larger honeybee businesses.

Figure 9. Non-honeybee business income of owner/operator and spouse, 2006-07

Average per business including operator and spouse income



4. Financial performance

The following sections present results relating to the financial performance of Australian beekeeping businesses during 2006-07. A comparison of financial performance in 2006-07 to that recorded for 2000-01 is undertaken in Section 9 of the report.

4.1. Receipts and costs estimates

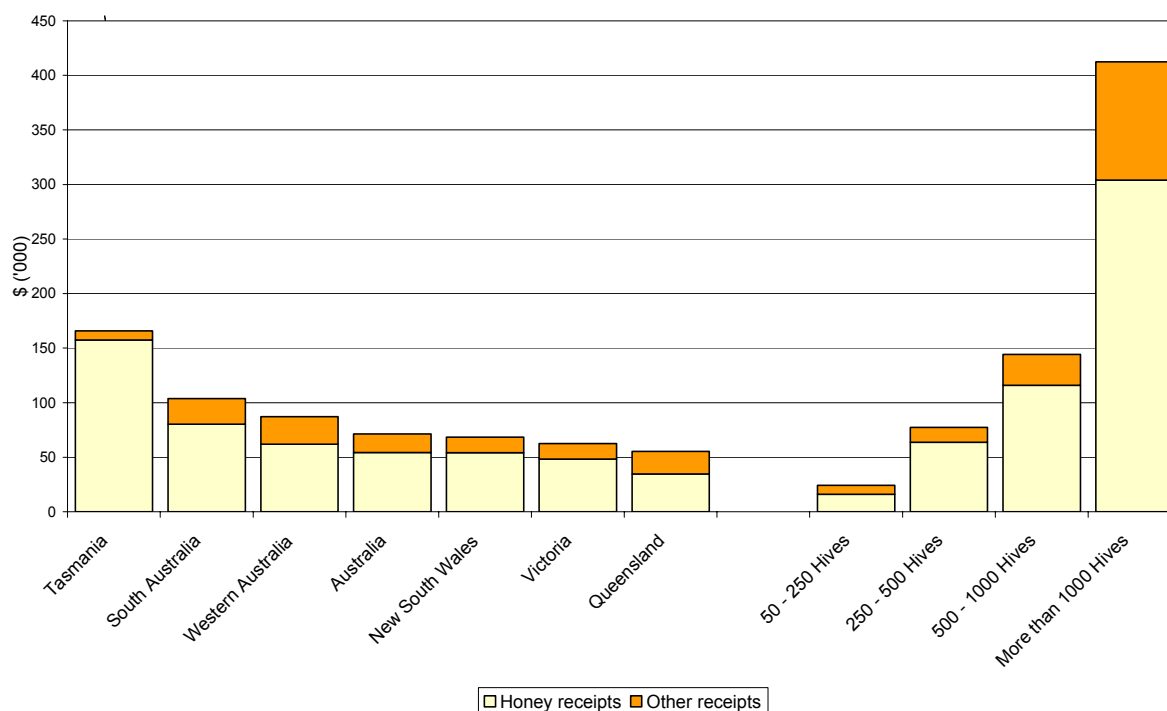
During 2006-07, Australian honeybee businesses received on average an estimated \$71 400 per business in total cash receipts of which \$54 300 were from the sale of honey (Figure 10). Tasmania had the highest average cash receipts at just less than \$166 000 per business and Queensland businesses had the smallest average cash receipts at \$55 400 per business.

Honeybee businesses operating less than 250 hives had a diverse source of business cash receipts, with only around 65 per cent of their receipts coming from honey sales compared to 74 per cent for businesses operating more than 1000 hives.

Other major sources of cash receipts included receipts from the sale of propolis, wax and honeycomb, queenbees and receipts from providing pollination services.

Figure 10. Total cash receipts, 2006-07

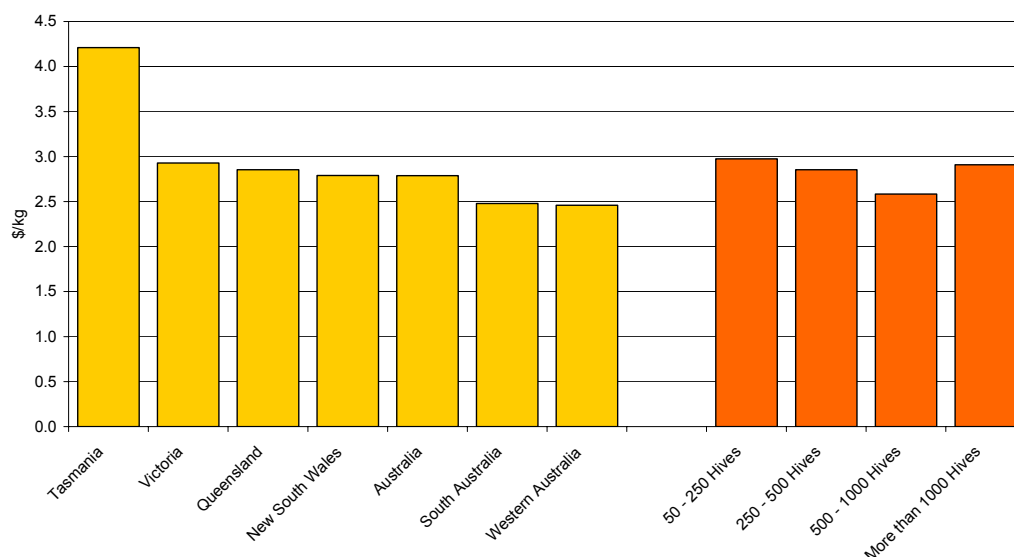
Average per honeybee business



The average price received by honeybee businesses for honey sold during 2006-07 was \$2.80 per kilogram (Figure 11). Tasmanian honeybee businesses received the highest price on average for their honey at \$4.20 per kilogram. This is because of the higher price received for leatherwood honey which accounts for a substantial proportion of Tasmanian production and the high proportion of Tasmanian producers who undertake their own honey packaging. South Australia and Western Australia received the lowest prices, around \$2.50 per kilogram on average.

Figure 11. Average price received per kilogram of honey sold, 2006-07

Average per honeybee business^a

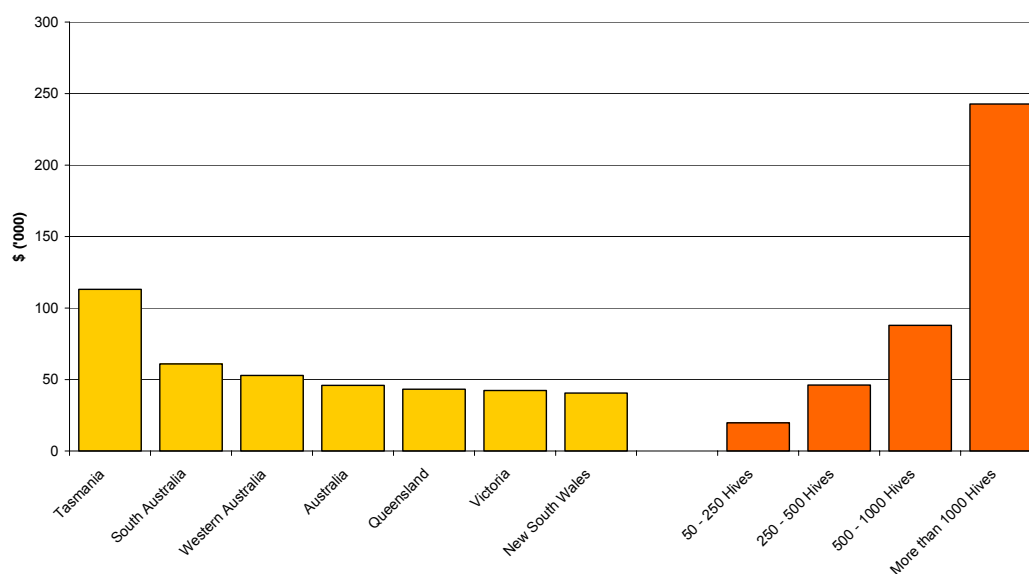


^aincludes producers who sold direct to retail, in markets, and for export as well as to processors/honey packers.

Total cash costs were on average around \$45 900 per business during 2006-07 with Tasmanian beekeepers spending the most at \$113 100 per business (Figure 12). Businesses in New South Wales had the lowest average expenditure at \$40 500 per business.

Figure 12. Total cash costs, 2006-07

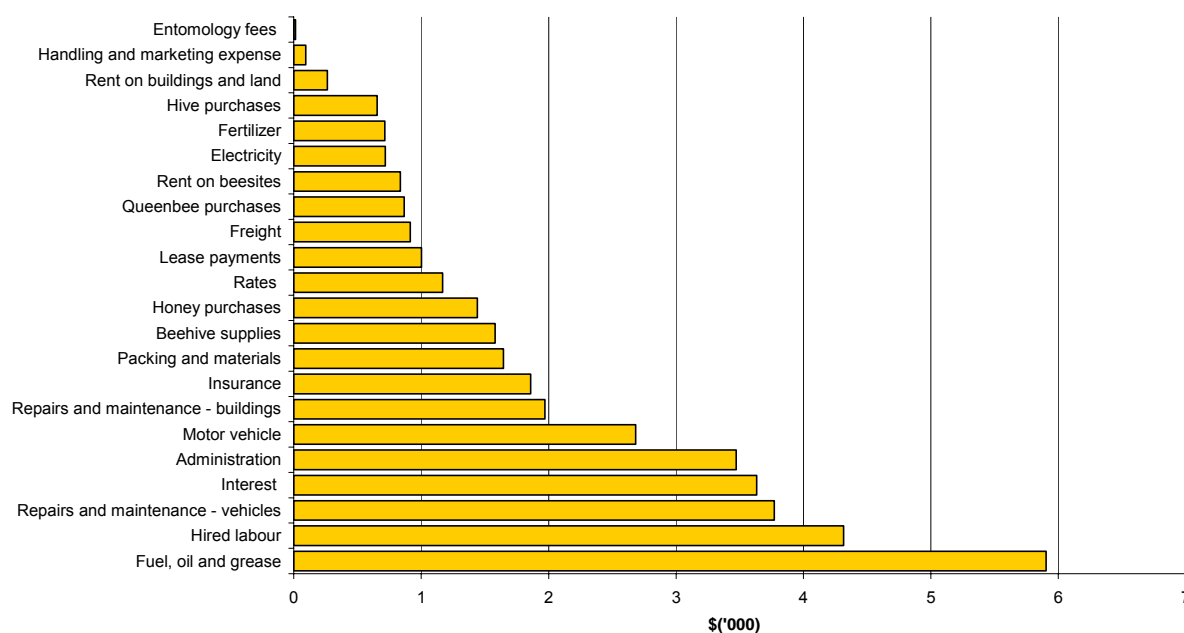
Average per honeybee business



A detailed breakdown of average cash costs is presented in Figure 13. The largest share of average cash expenditure per business was on fuel, oil and grease (\$5900), hired labour (\$4300), vehicle repairs and maintenance (\$3800), interest (\$3600) and administration (\$3500). With the large amount of travel required by honeybee businesses to move hives to floral resources, check hives and perform other functions, the increase in fuel price during 2008 is expected to markedly increase business cash costs.

Composition of cash expenditure varied across states. Tasmanian producers had a much higher expenditure on packing and materials than any other state, accounting for around a third of total costs on average in Tasmania. A detailed breakdown of average costs for each state is provided in Appendix table 10.5.8.

Figure 13. Composition of cash costs for honeybee businesses, 2006-07



Box1 – Definitions (see Appendix 10.1 for more detailed definitions)

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)

Cash operating surplus: *total cash receipts – total cash costs*

Business profit:

cash operating surplus + change in trading stocks – depreciation – imputed labour costs

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

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

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

Other income: owner manager and spouse only

wages off farm + other business income + investment + social welfare payments

4.2. Financial performance

During 2006-07, honeybee businesses generated an average cash operating surplus (total cash receipts less total cash costs) of \$25 500 per business (Table G). Tasmanian businesses had the highest cash operating surplus averaging more than \$52 800 per business while Queensland businesses averaged only \$12 200. In part, the higher average cash operating surplus in Tasmania reflects the larger scale of operations of Tasmanian honeybee businesses.

Only Tasmanian and Western Australian honeybee businesses generated a positive profit at full equity, in 2006-07 (Table G). Profit at full equity is a measure of business profitability that takes account of the value of all unpaid labour inputs by family and partners (imputed labour), the requirement to replace business capital over time and the change in trading stocks. It also adjusts profitability for all businesses as if they fully owned all capital used in the business.

The average rate of return, excluding capital appreciation, was -3.0 per cent in 2006-07. Although South Australia had the second largest average cash operating surplus at \$42 700, South Australian businesses had relatively high imputed labour costs and depreciation costs leading to a -0.4 per cent rate of return.

Larger businesses generated a higher level of average cash operating surplus and generated the highest average rates of return.

Table G. Financial performance, 2006-07

Average per honeybee business

	Total cash receipts (\$)	Total cash costs (\$)	Cash operating surplus (\$)	Profit at full equity (\$)	Rate of return (%)
New South Wales	68 477	40 510	27 966	-26 128	-5.0
Victoria	62 552	42 375	20 178	-11 577	-2.5
Queensland	55 439	43 239	12 200	-23 163	-3.5
South Australia	103 700	61 000	42 700	-3 446	-0.4
Western Australia	87 284	52 908	34 376	99	0.0
Tasmania	165 926	113 120	52 806	8 532	1.3
Australia	71 386	45 860	25 526	-17 971	-3.0
50 - 250 Hives	24 343	19 757	4 587	-24 440	-4.7
250 - 500 Hives	77 375	46 224	31 151	-27 297	-4.4
500 - 1 000 Hives	144 199	87 933	56 266	-778	-0.1
More than 1 000 Hives	412 328	242 654	169 673	49 887	4.8

4.3. Cost of production

Accurate estimation of the unit cost of producing honey requires very detailed cost information with cost items disaggregated according to their contribution to the cost of producing particular outputs such as honey, queenbees, pollination services etc. Alternatively, sophisticated statistical techniques may be employed to partition costs applicable to various outputs.

In the following section, a simple analysis of the unit costs of production from honeybee businesses has been undertaken using the 2006-07 survey data to provide a rough guide to the range of unit production costs. Production cost is presented per hive and per kilogram of honey produced.

To approximate the costs associated with running and producing outputs from a hive, total costs were divided by number of hives. Total costs used in this analysis exclude costs associated with packing so as to compare all businesses on the same basis.

To ensure costs relate only to honey and other bee-related production (i.e. production from hives) only specialist honeybee producers' data were used to estimate the costs of production of honey and honeybee related products.

During 2006-07, the average cost of operating a hive was \$284 (Table H). This estimate takes into account imputed labour and depreciation. Smaller businesses generally had a higher cost of production on average. Tasmanian and Victorian businesses had the highest cost of production per hive at \$313 on average.

Table H. Cost of production per hive for specialist honey producers, 2006-07

Average per honeybee business^a

	Cash cost per hive (excludes imputed labour ^b costs and depreciation) (\$)	Cost per hive including imputed labour ^b costs (\$)	Total cost per hive including imputed labour ^b costs and depreciation (\$)
New South Wales	88	203	261
Queensland	129	226	302
Victoria	152	252	313
South Australia	92	201	264
Western Australia	153	274	340
Tasmania	182	230	313
Australia	114	221	284
50-250 hives	109	279	378
250-500 hives	135	275	336
500-1 000 hives	86	156	201
More than 1 000 hives	140	187	228

^aspecialist honeybee businesses are defined as those businesses whose receipts are entirely derived from honey-related activities such as honey sales, queenbee sales and pollination service provision.

^bimputed labour is the value of family and partner labour inputs to the business.

Calculation of the per kilogram cost of honey production was taken from the survey data by apportioning costs on the basis of the share of business receipts accounted for by honey. The average total cost to produce a kilogram of honey, including family and partner labour and depreciation costs was \$4.90. The average total cost of production was lower for larger producers (Table I).

Table I. Cost of production per kg of honey produced for specialist honey producers, 2006-07

Average per honeybee business^a

	Cash cost per kg of honey (excludes imputed labour ^b costs and depreciation) (\$)	Cost per kg of honey including imputed labour ^b costs (\$)	Total cost per kg of honey including imputed labour ^b costs and depreciation (\$)
New South Wales	2.0	4.9	6.3
Queensland	2.7	5.3	7.3
Victoria	2.3	4.0	5.0
South Australia	0.8	2.0	2.6
Western Australia	1.8	3.5	4.4
Tasmania	1.9	2.4	3.4
Australia	1.8	3.7	4.9
50-250 hives	2.6	6.8	9.2
250-500 hives	1.8	4.3	5.3
500-1 000 hives	1.3	2.4	3.2
More than 1 000 hives	1.8	2.5	3.1

^aspecialist honeybee businesses are defined as those businesses whose receipts are entirely derived from honey-related activities such as honey sales, queenbee sales and pollination service provision.

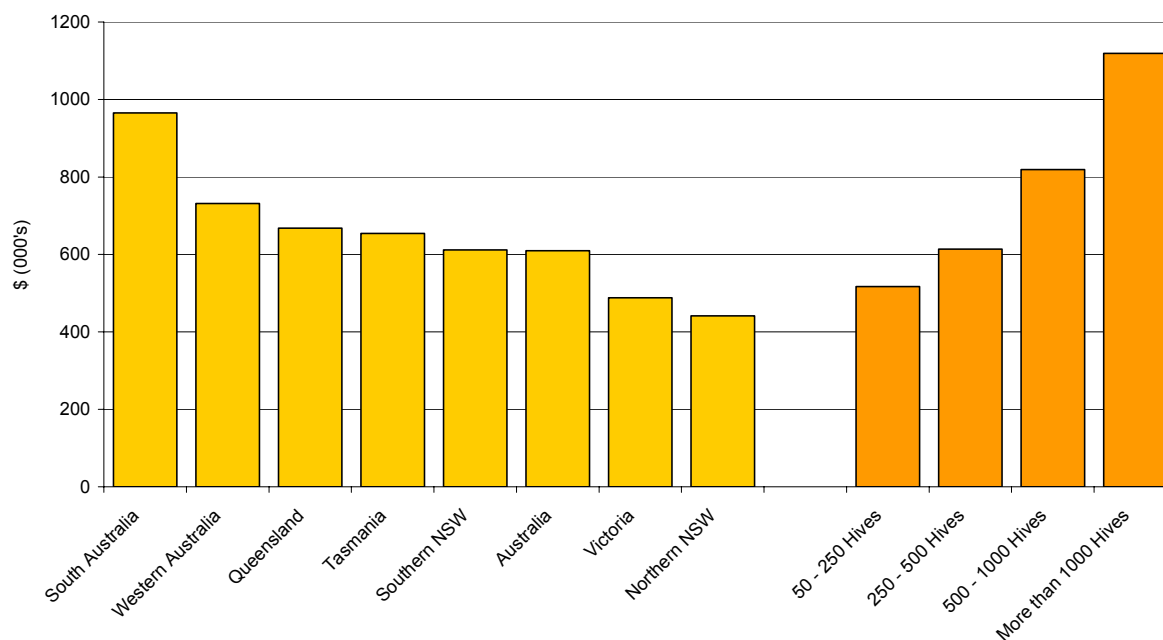
^bimputed labour is the value of family and partner labour inputs to the business.

4.4. Capital and debt

The total capital value of honeybee business was estimated to average \$610 000 per honeybee business at 30 June 2007 (Figure 14). This capital does not include the owner/operators house. South Australian businesses had the highest average capital value at \$966 000. In contrast, northern New South Wales businesses had the lowest capital values, at just \$442 000 on average per business.

Figure 14. Total business capital, 2006-07

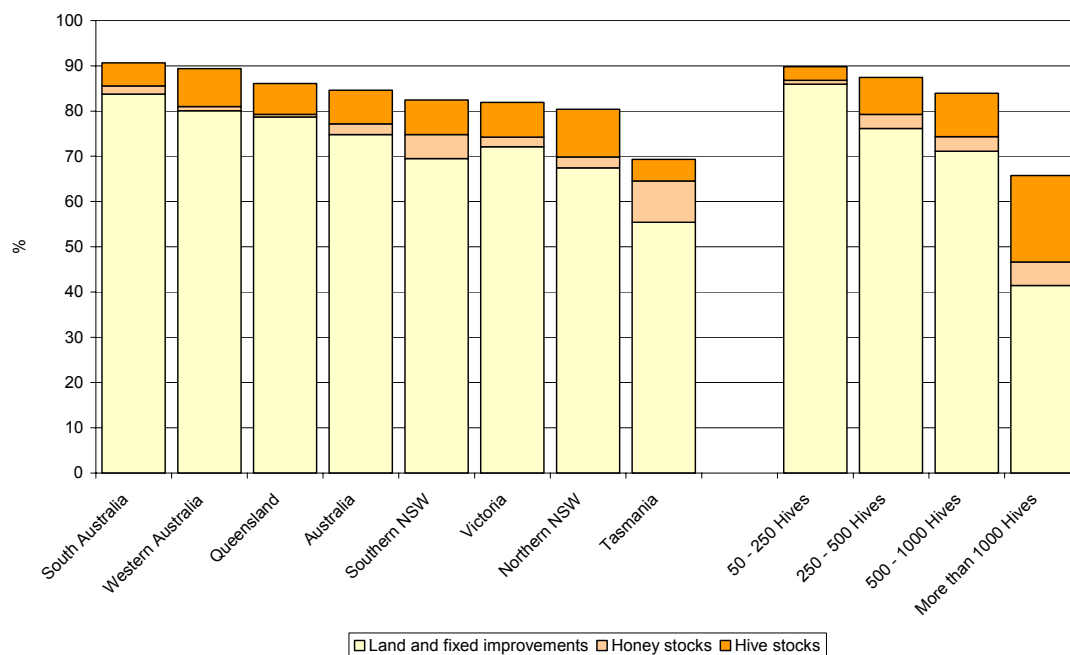
Average per honeybee business



The majority of total capital value is derived from land and fixed improvements in all states and for all business sizes (Figure 15). Fixed improvements include honey extraction plant and packing sheds as well as other buildings. Businesses operating in excess of 1000 hives had a larger proportion of capital value accounted for by hives than smaller businesses. Tasmanian honeybee businesses had a smaller proportion of their total capital value made up of land and fixed improvements and a higher proportion of total capital in the form of honey stocks as well as other plant and equipment, particularly honey packing equipment. This reflects a higher proportion of Tasmanian businesses involved in packing honey.

Figure 15. Composition of capital value, 2006-07

Average per honeybee business

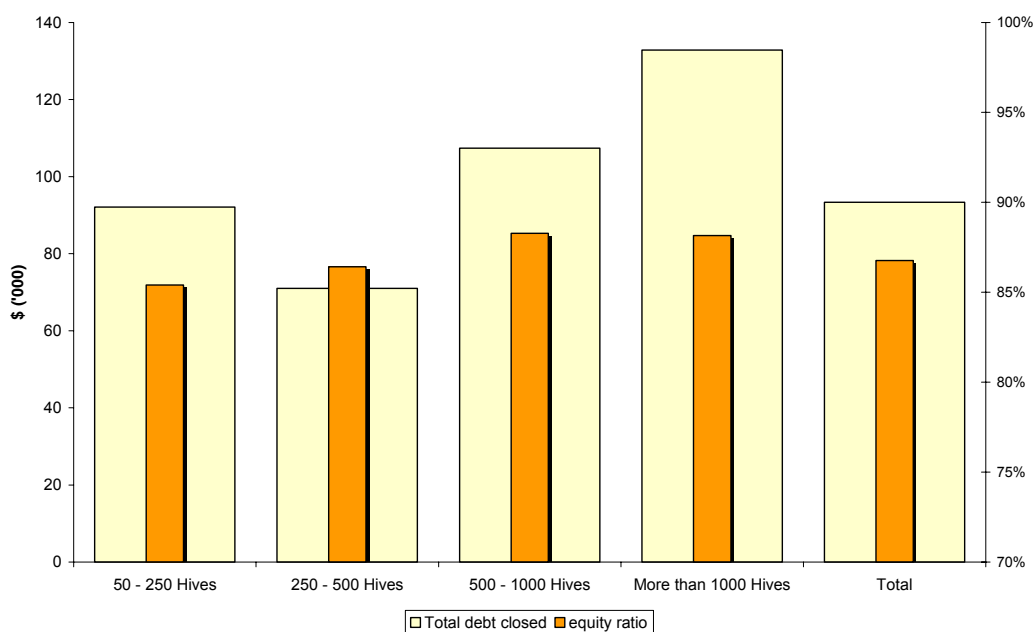


Honeybee businesses on average had debt of \$93 300 per business at 30 June 2007 (Figure 16). The average debt was much higher for those businesses operating in excess of 1000 hives at around \$133 000.

Equity ratios for honeybee businesses were on average around 87 per cent at 30 June 2007. Smaller businesses had a slightly lower equity ratio on average at 85 per cent. Medium and large sized enterprises, operating more than 500 hives, had the highest equity ratios averaging around 88 per cent.

Figure 16. Total business debt and equity ratio, 2006-07

Average per honeybee business



5. Pollination services

Pollination by honeybees plays an important role in Australian agriculture with an estimated 65 per cent of agricultural production relying to some extent on it (*Valuing honeybee pollination*, 2003). Pollination is essential for some crops, while for many others it increases yields and leads to higher quality produce. It is particularly important for crops such as almonds, some stone fruit and seed for crops.

While some pollination occurs as a result of feral honeybees or native bees, some agricultural producers use the services of honeybee businesses through the process of placing hives close to their crops. Some honeybee businesses do not receive payment for providing pollination services because of the mutual benefits where honeybees have access to an abundant floral resource to generate honey. An estimated 28 per cent of honeybee business provided pollination services of some type and more than three-quarters of these businesses received payment for the pollination services during 2006-07 (Table J).

Providing pollination services varies widely both between and within states depending on the types of crops grown. In northern New South Wales only 4 per cent of honeybee businesses are estimated to have provided pollination services in 2006-07, while in South Australia around 52 per cent of honeybee businesses provided pollination services.

All honeybee businesses surveyed in Tasmania, Victoria and Western Australia received payment for providing pollination services. In northern New South Wales, however, only 32 per cent of those providing pollination services received payment.

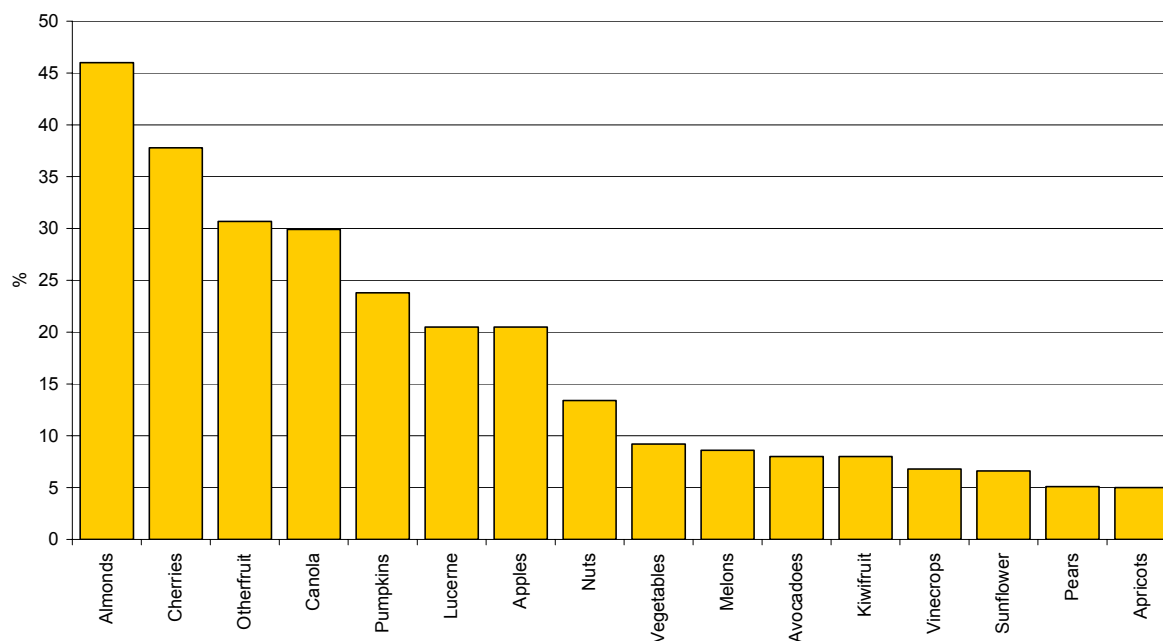
Table J. Pollination service provision, 2006-07

	Proportion of honeybee businesses providing pollination services (%)	Number of businesses providing pollination services	Number of businesses receiving payment for pollination services	Proportion of businesses receiving payment for pollination services (%)
South Australia	52	100	66	66
Tasmania	47	15	15	100
Victoria	39	132	132	100
Queensland	29	107	62	58
Western Australia	35	33	33	100
Southern NSW	26	78	51	65
Northern NSW	4	16	5	32
Total	28	481	363	76

Of those honeybee businesses that provided pollination services, around 46 per cent provided pollination services for almonds and 38 per cent provided pollination services for cherries (Figure 17).

Figure 17. Types of crops receiving pollination services, 2006-07

Proportion of honeybee businesses providing services



Average cash receipts for pollination services were estimated to be \$6400 per business during 2006-07 with producers in southern New South Wales, Victoria and South Australia receiving the largest payments on average (Table K). These estimates include businesses that did not provide pollination services.

Table K. Receipts for pollination services, 2006-07

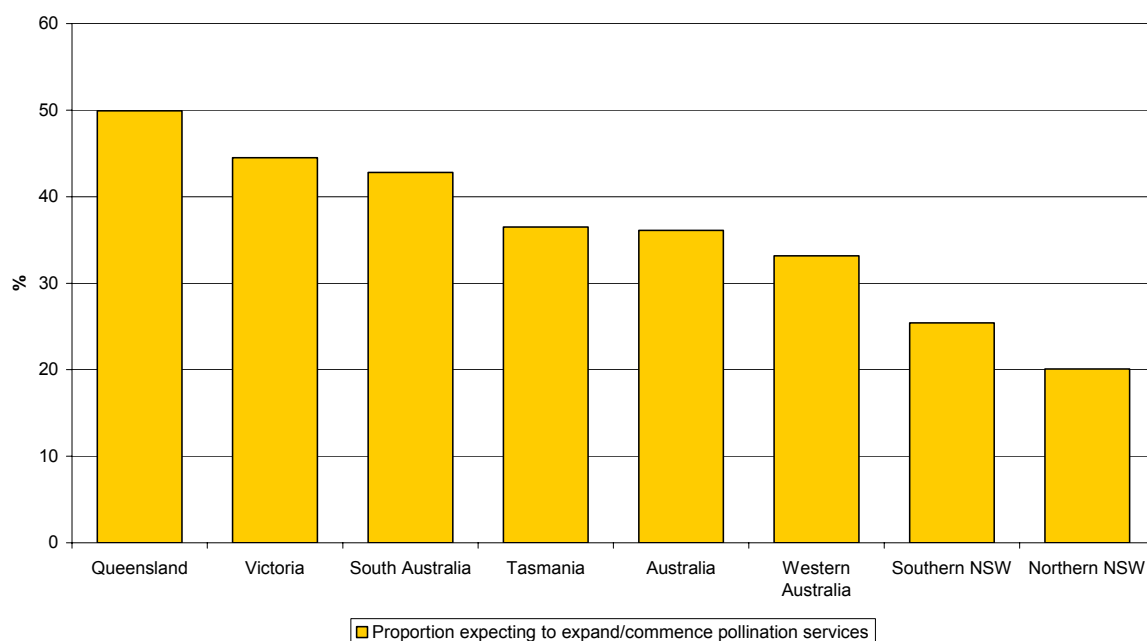
Average per honeybee business

	Receipts (\$)	Number of businesses receiving payment for pollination services
Southern NSW	9 353	51
Queensland	3 392	62
Tasmania	5 583	15
Western Australia	2 021	33
Victoria	9 463	132
South Australia	8 628	66
Northern NSW	4 187	5
Australia	6 415	363

Beekeepers' ability and willingness to expand the provision of pollination services in the future is of particular interest because of concerns that the Varroa mite may find its way to Australia. Infestations of the Varroa mite overseas have resulted in the majority of the feral honeybee population being wiped out. Given that many of Australia's agricultural producers still rely on feral honeybees to pollinate their crops, it is important that should such an event occur, honeybee businesses are able to expand their pollination services as a substitute.

According to the 2006-07 survey, an estimated 36 per cent of Australian producers are expecting to commence or expand pollination services in the future (Figure 18). A higher percentage of honeybee businesses in Queensland, Victoria and South Australia reported they expected to expand pollination services, while the percentage was lower in New South Wales.

Figure 18. Honeybee businesses expecting to expand/commence pollination services, 2006-07



In the next five years, honeybee businesses expecting to expand pollination services, estimated that they would be using around 560 hives to provide pollination services, up from the 400 they expected to use in the next two years (Table L).

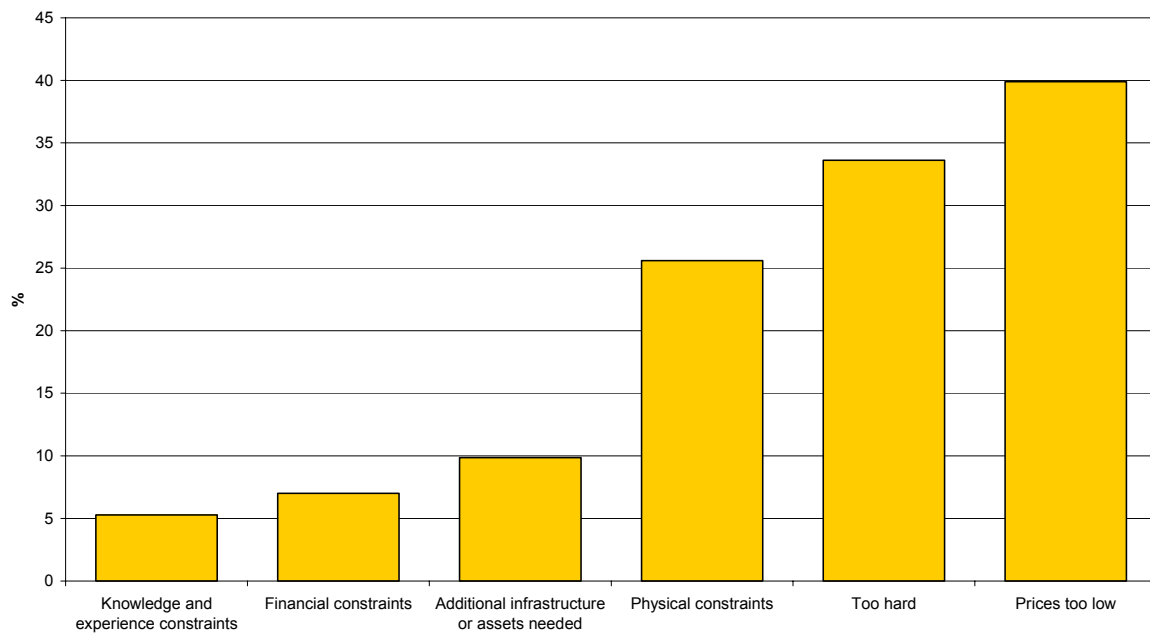
Table L. Expansion of pollination services, 2006-07

<i>Average for businesses expecting to expand pollination services</i>	
	No. of hives
Hives operated at 30 June 2007	422
Expected to be used for pollination services in the next two years	397
Expected to be used for pollination services in the next five years	558

The incentive for honeybee businesses to expand their provision of pollination services is not currently strong. Some 40 per cent of honeybee businesses indicated that low prices paid for pollination was a factor limiting the decision to expand or commence pollination services (Figure 19). Other factors reported to limit honeybee businesses' ability to expand pollination services are physical constraints and the difficulty involved in providing the service.

Figure 19. Factors influencing the decision to expand/commence pollination services, 2006-07

Proportion of honeybee businesses



6. Public land access

An estimated 66 per cent of honeybee businesses used public land for honey production in the past five years ranging from 100 per cent for Tasmanian and northern New South Wales businesses to 22 per cent for South Australian businesses (Figure 20). Over this time, around 20 per cent of businesses decreased their usage of public land, while 14 per cent increased usage and 33 per cent made no change. The low level of public land usage in South Australia is a result of limited availability of public land and favourable conditions for growing crops, such as lucerne. All honeybee businesses with more than 1000 hives reported using public land for honey production in the past five years, compared to only 54 per cent of honeybee businesses operating less than 250 hives (Figure 21). Some honeybee businesses are likely to have hives located on land which is close to public land. As such, use of public land may be higher than reported.

Figure 20. Use of public land for honey production over the past 5 years, by region, 2006-07

Proportion of honeybee businesses

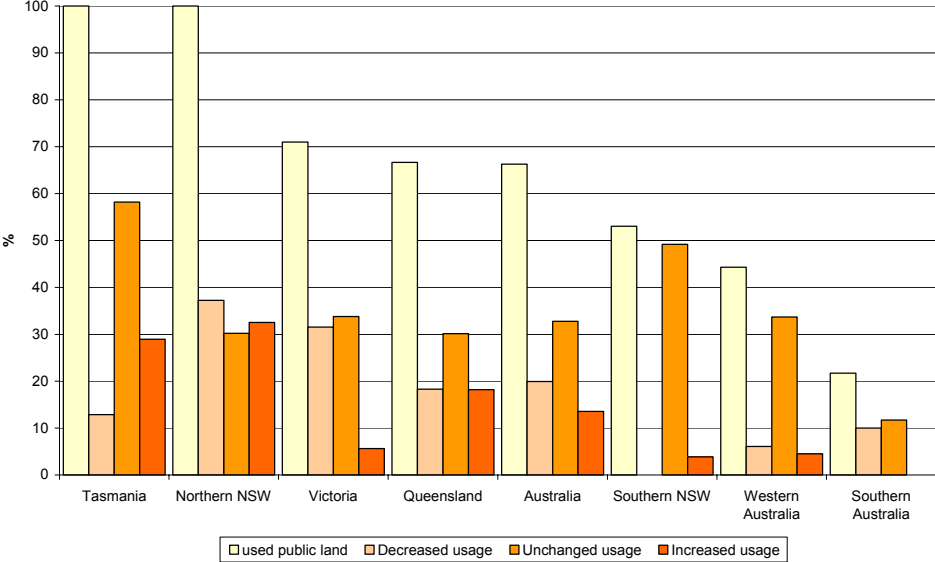
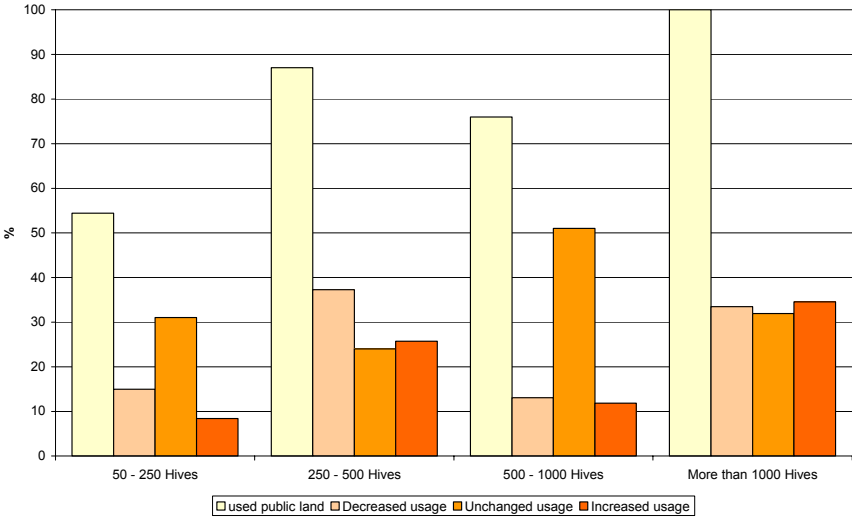


Figure 21. Use of public land for honey production over the past 5 years, by number of hives, 2006-07

Proportion of honeybee businesses



On average, 184 hives per business (61 per cent of total hives operated) were used to derive honey from public land.

During 2006-07, an estimated 37 per cent of honey production in Australia was derived from public land (Figure 22). Reduced access to conserved areas could have a considerable impact on Tasmanian honey production, with around 83 per cent of their honey derived from public land. On the other hand, on average only 12 per cent of South Australian honey production was derived from public land. Overall, larger businesses produced a higher proportion of their honey from public land than smaller businesses (Figure 23).

Figure 22. Proportion of 2006-07 honey production derived from public land, by region

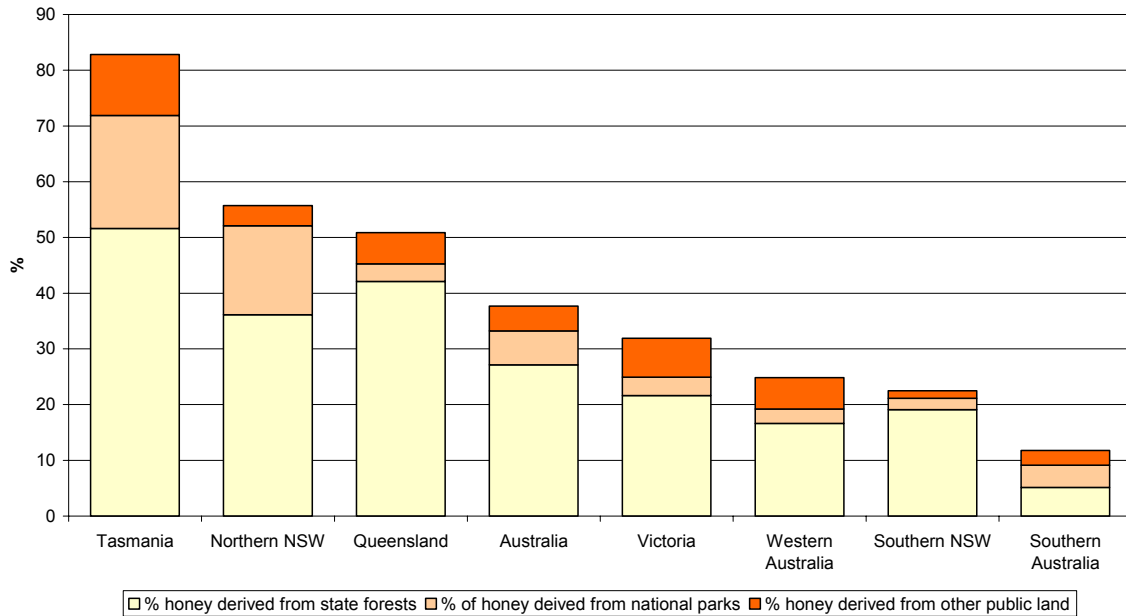
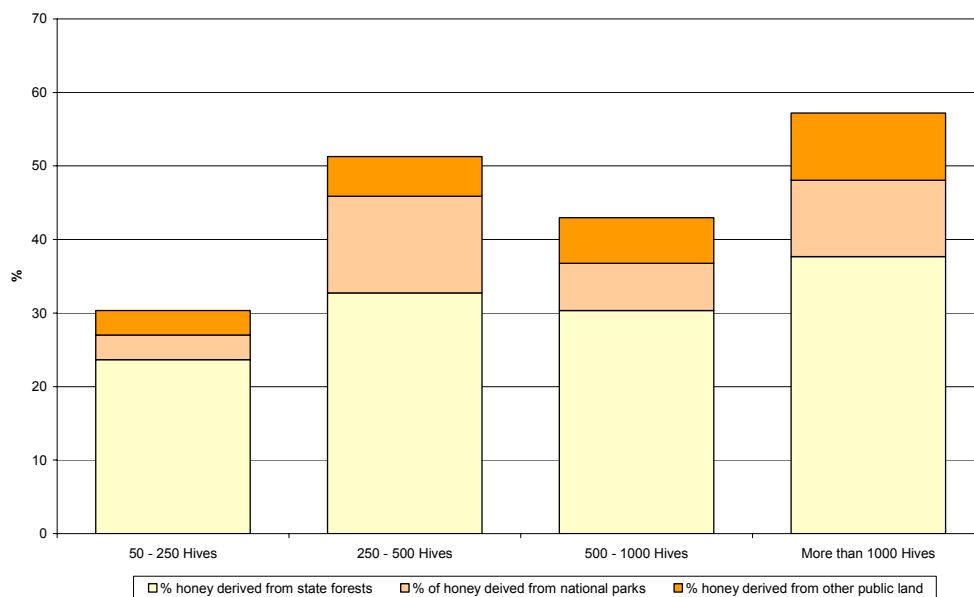


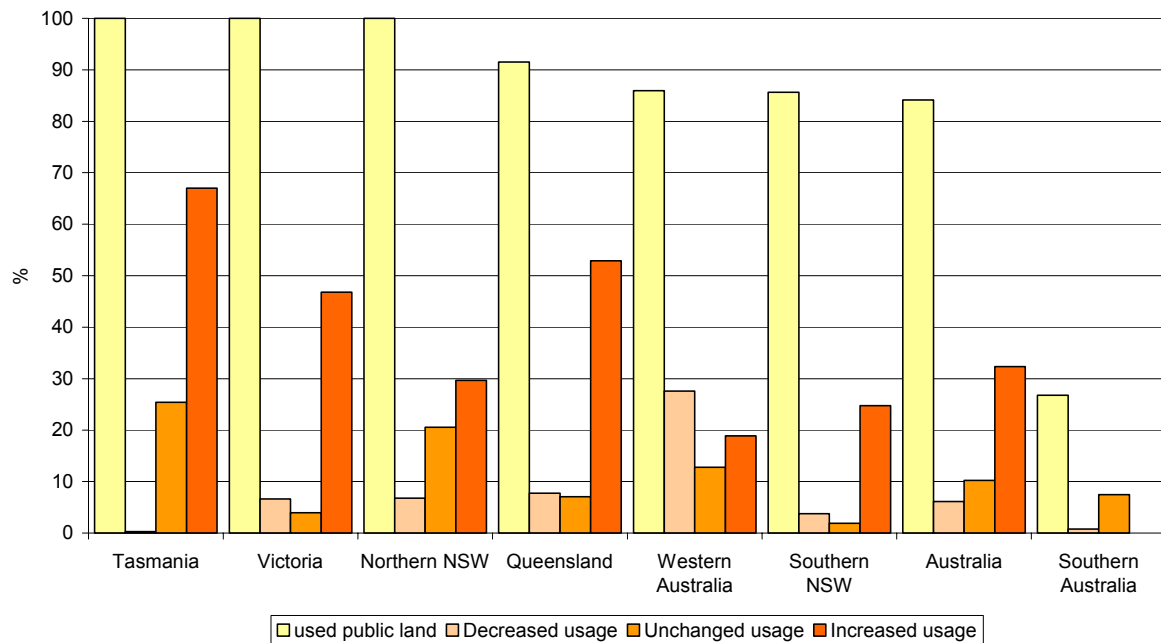
Figure 23. Proportion of 2006-07 honey production derived from public land, by number of hives



Large and medium businesses, operating at least 250 hives, were more likely to access public land and derive a larger proportion of their total honey production from this source. With the exception of South Australia, more than 85 per cent of medium and large honeybee businesses in every state used public land for honey production in the past five years (Figure 24).

Figure 24. Use of public land for honey production over the past 5 years, by region, 2006-07

Proportion of medium and large honeybee businesses



7. Challenges facing the industry

There are a number of challenges facing the honeybee industry which can impact on the quantity and quality of honey produced. These include:

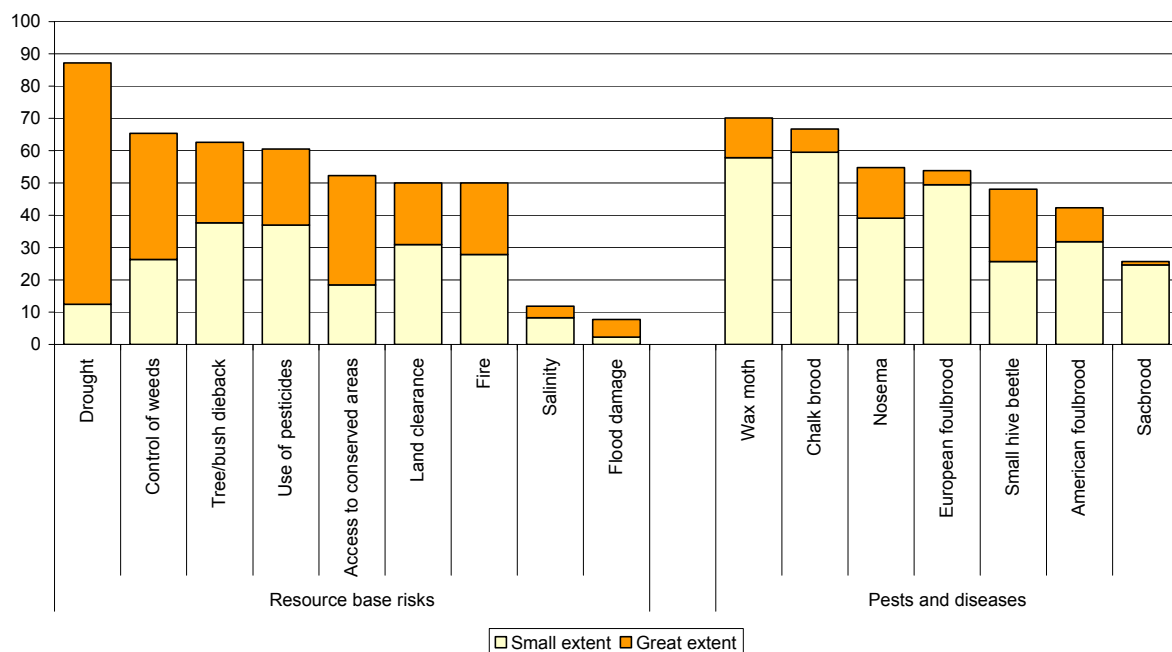
- drought;
- pesticide use;
- tree dieback;
- weed control;
- access to conserved areas;
- land clearance;
- fire;
- salinity;
- flood damage; and
- pests and diseases.

Among these, drought was reported as the most common challenge facing the industry with 87 per cent of beekeepers indicating that production was affected by drought (Figure 25). More than half of beekeepers indicated that pesticide use, tree dieback, weed control, conserved area access, land clearance and fire damage also impacted on production. However, salinity and flood damage on the other hand did not pose a problem for the majority of businesses.

Honeybee business operators indicated wax moth and chalkbrood impacted more on production than other pests and diseases, although the impact was generally to a relatively small extent. Few honeybee businesses were affected by sacbrood. While few honeybee businesses were affected by small hive beetle, around 22 per cent were affected to a large extent.

Figure 25. Challenges facing Australian beekeepers, 2006-07

Proportion of honeybee businesses



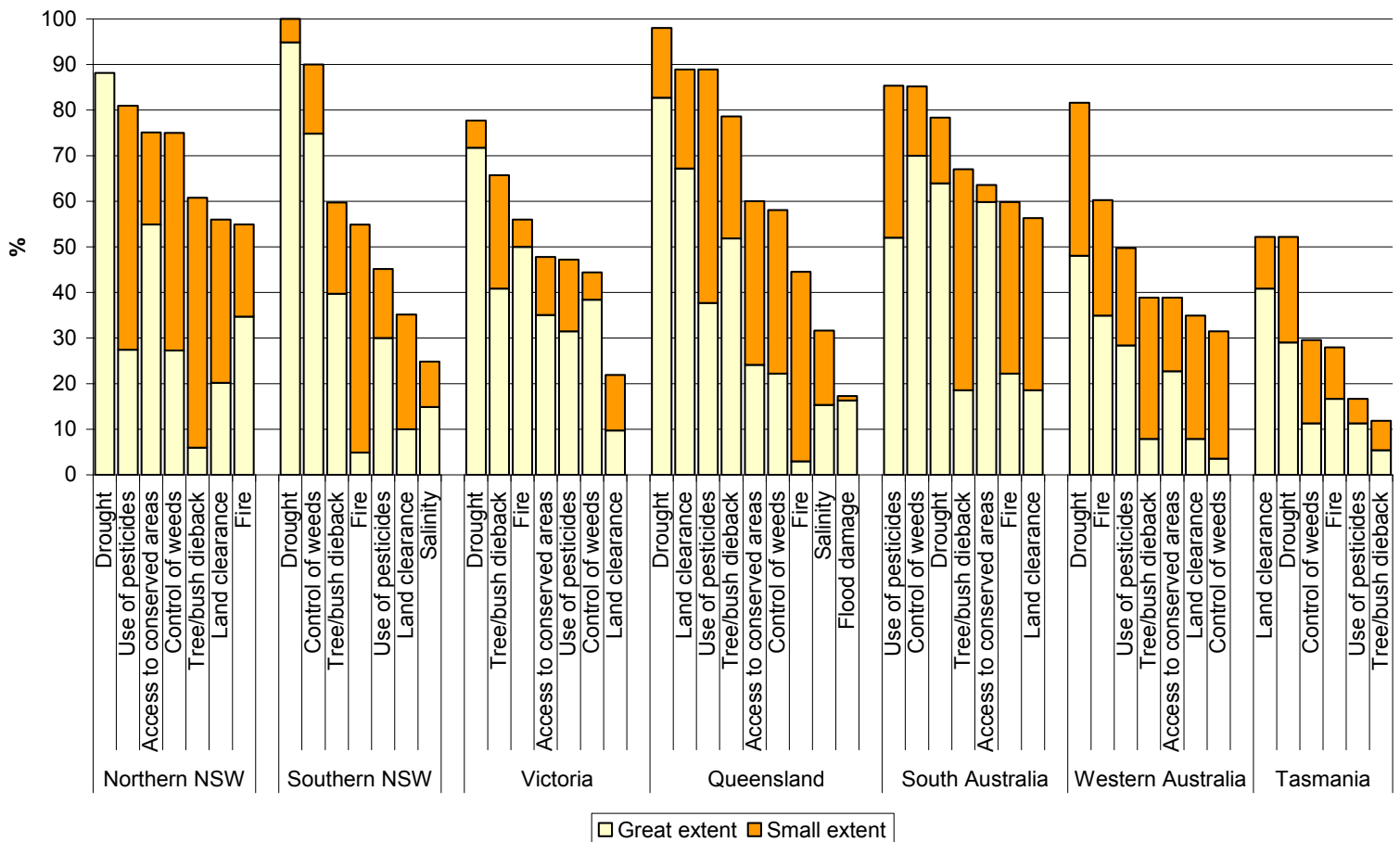
7.1. Floral resource base

The impact of drought on honey and bee-related production varied across states. More than 90 per cent of honeybee businesses in New South Wales and Queensland are estimated to have been affected by drought to some extent. This compares with only around 52 per cent of businesses affected by drought in Tasmania (Figure 26).

Production in Tasmania was relatively unaffected by most of the challenges faced by producers in other states with drought and land clearance being the only factors impacting on the majority of honeybee businesses in this state.

Figure 26. Challenges facing honeybee businesses access to floral resources, by region, 2006-07

Proportion of honeybee businesses



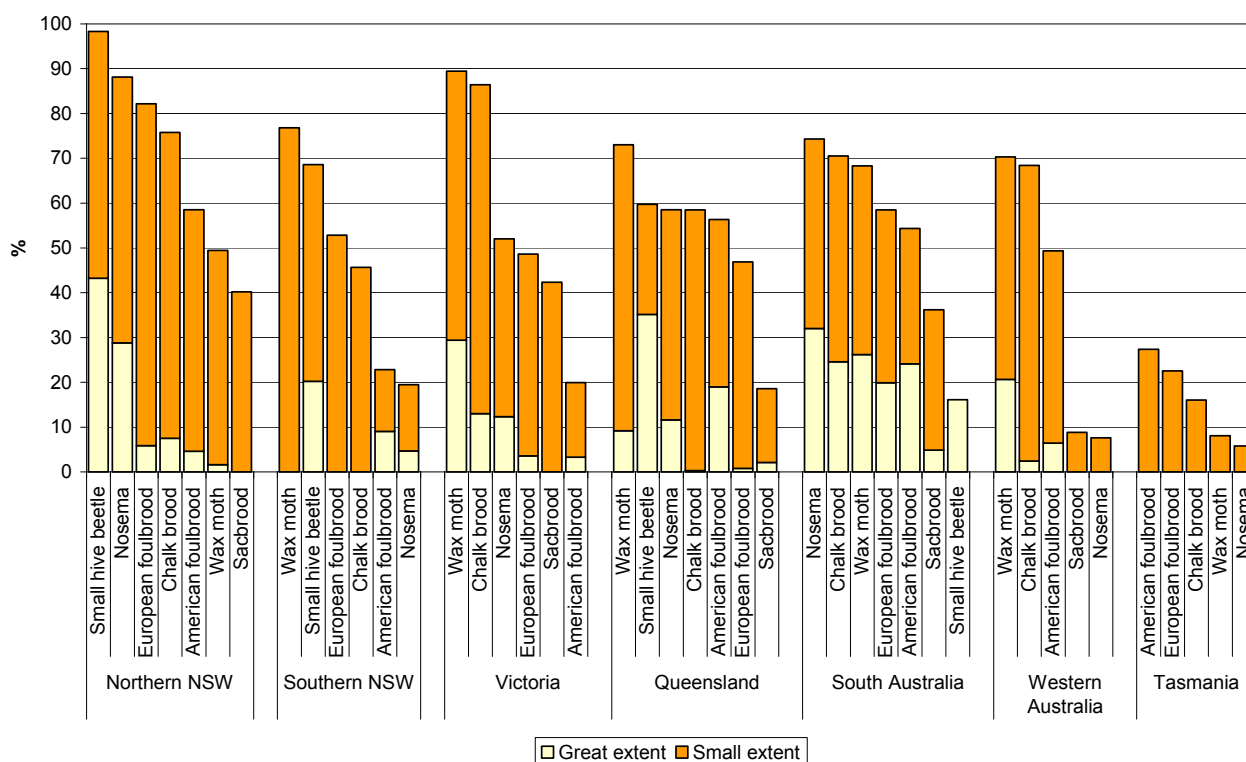
7.2. Pests and diseases

The pests and diseases which impacted on production during 2006-07 are presented in Figure 27. Small hive beetle is estimated to have impacted on honey production for almost 100 per cent of producers in northern New South Wales. It also impacted on production in southern New South Wales, Queensland and South Australia. Nosema and European foulbrood also impacted on a large proportion of producers.

Once again, Tasmanian beekeeping businesses were relatively unaffected by pests and diseases during 2006-07.

Figure 27. Pests and diseases impacting on honey production, by region, 2006-07

Proportion of honeybee businesses

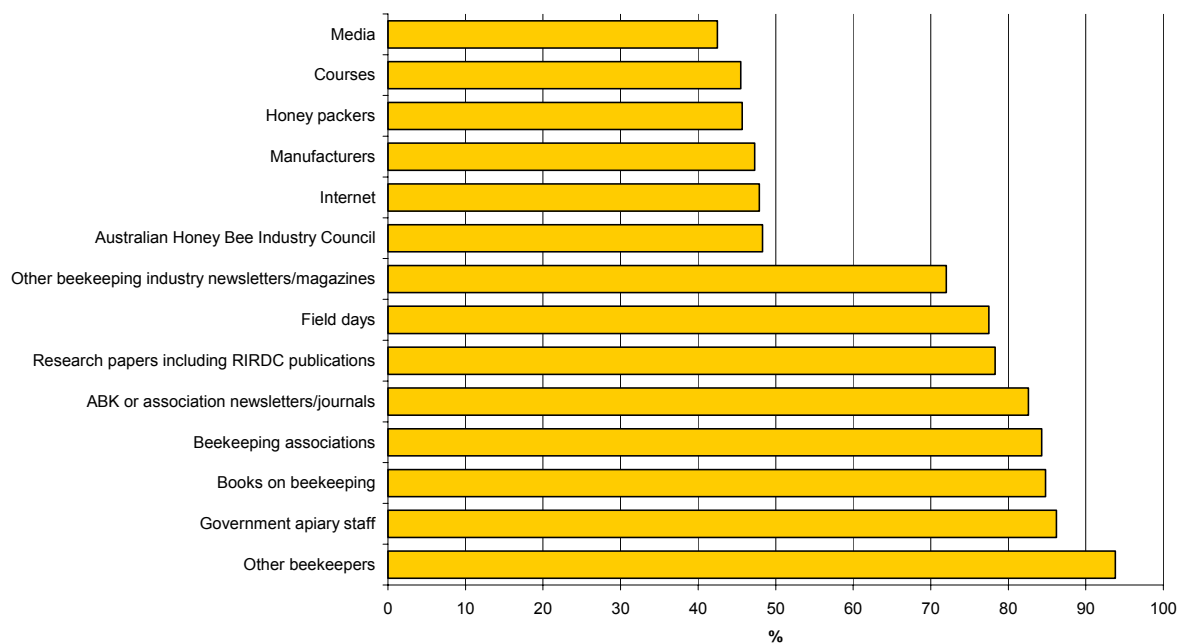


8. Importance and availability of information for beekeepers

The majority of honeybee business operators gather information from a wide range of sources (Figure 28). Around 94 per cent are estimated to have received at least some of their information from other beekeepers. Other key sources of information were government apiary staff (86 per cent), books on beekeeping (85 per cent), beekeeping associations (84 per cent), Australian Beekeeping and other association newsletters and journals (83 per cent) and research papers including RIRDC publications (78 per cent). Only around 43 per cent of honeybee business operators are estimated to have obtained information from the media.

Figure 28. Information sources of beekeepers, 2006-07

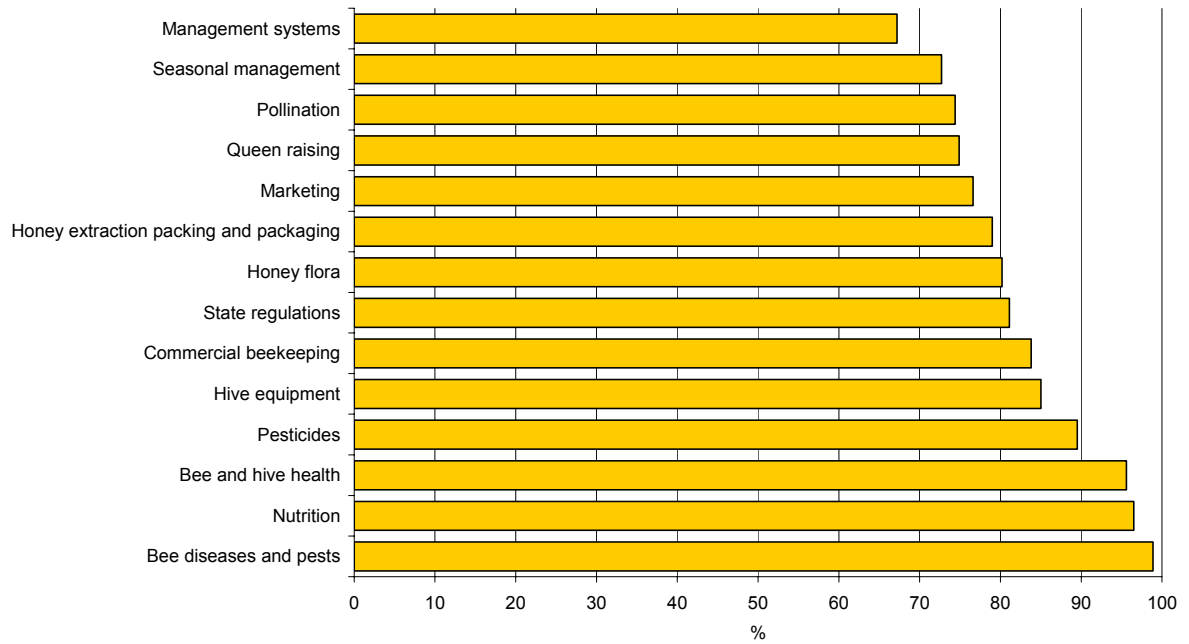
Proportion of honeybee businesses



Topics on which honeybee business operators particularly sought information on were pests and diseases, nutrition, bee and hive health and pesticides (Figure 29).

Figure 29. Importance of information by topic, 2006-07

Proportion of honeybee businesses



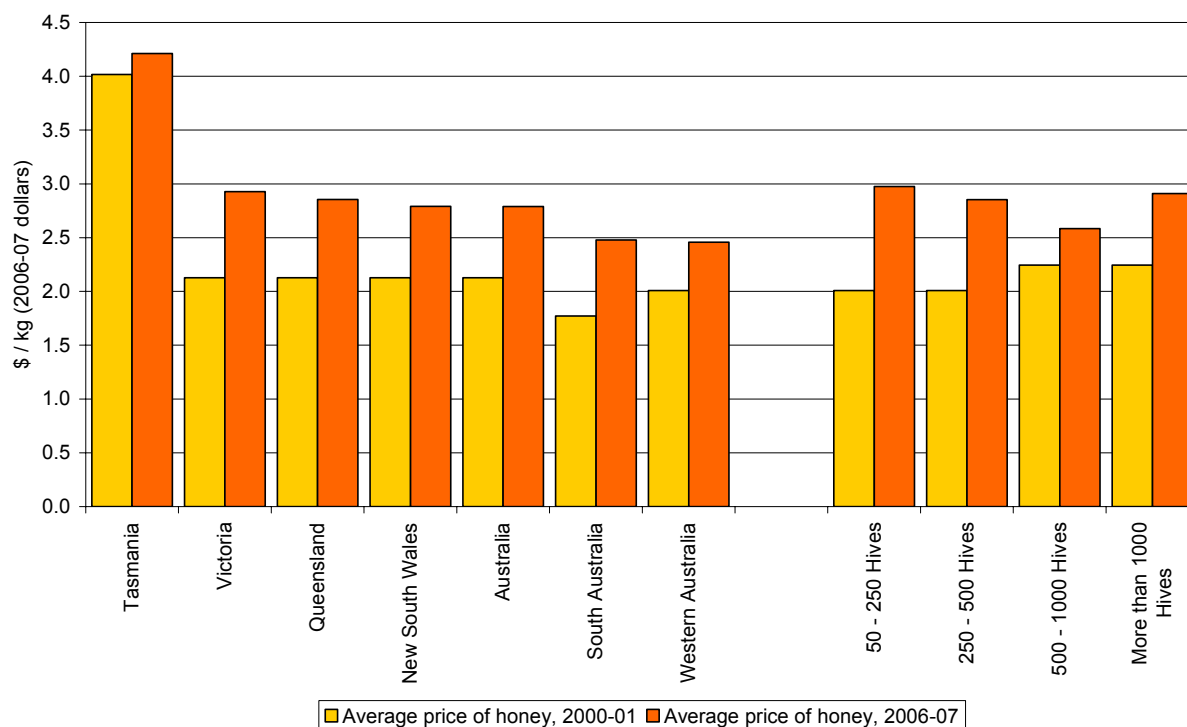
9. Financial performance compared to 2000-01

The financial performance of Australian honeybee businesses improved in 2006-07 relative to that recorded in a similar survey in 2000-01. Higher honey prices, in particular contributed to a rise in the average cash operating surplus per business.

In real terms (adjusted for inflation), the average price of honey received by honeybee businesses increased between 2000-01 and 2006-07 by 70 cents a kilogram largely because of drought induced supply shortages and a fall in overseas production (Figure 30).

Figure 30. Price received per kilogram of honey sold in 2000-01 and 2006-07

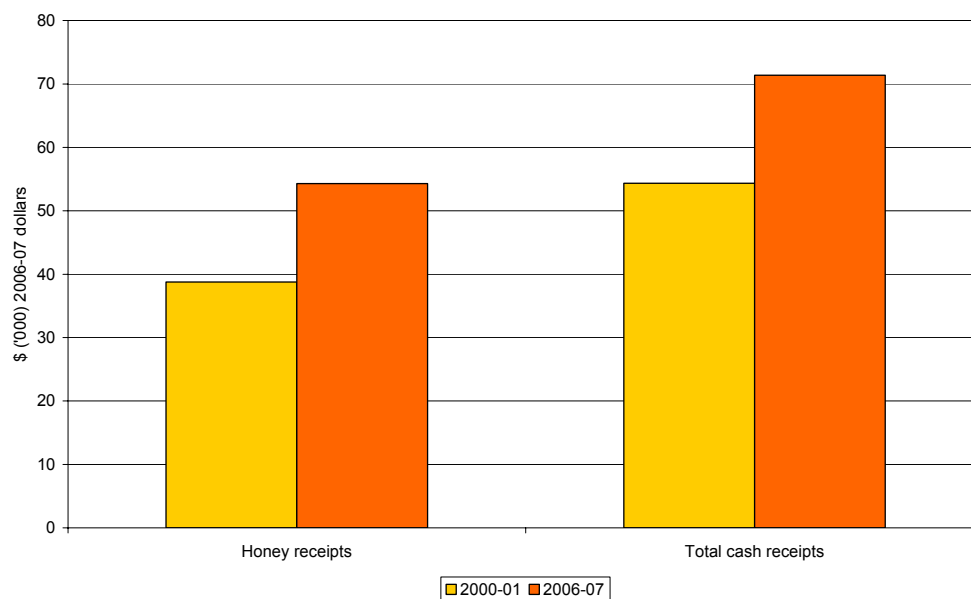
Average per honeybee business in 2006-07 dollars



Because of higher prices received for honey sold, honey receipts increased on average by \$15 500 per business and total cash receipts by \$17 000 per business in real terms between 2000-01 and 2006-07 (Figure 31).

Figure 31. Cash receipts and honey receipts in 2000-01 and 2006-07

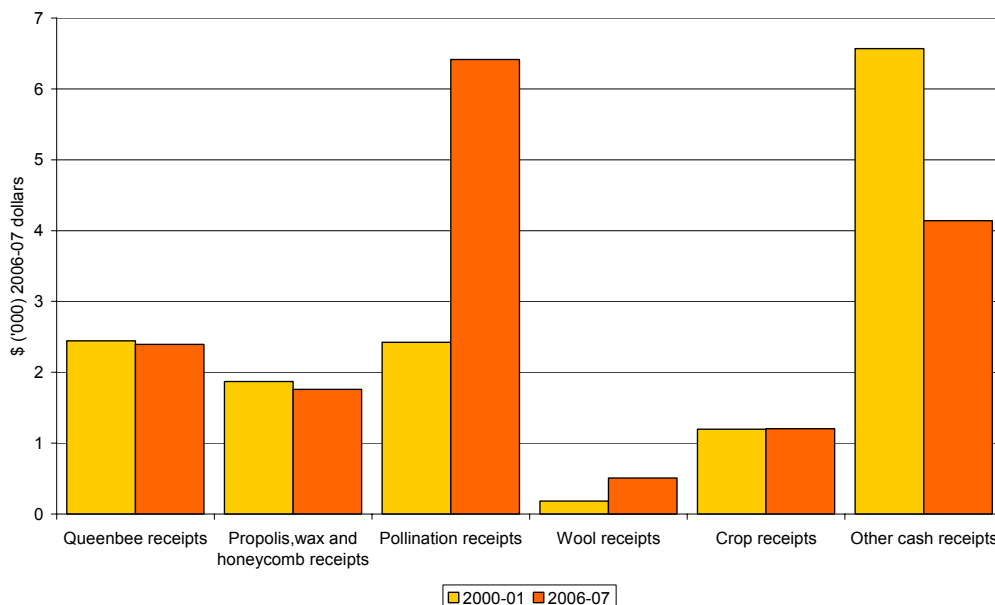
Average per honeybee business in 2006-07 dollars



Receipts from other major items did not change significantly between 2000-01 and 2006-07. The two exceptions were pollination receipts which grew by around \$4000 per business (165 per cent) on average and other cash receipts which fell by around \$2400 (Figure 32).

Figure 32. Cash receipts from other major items in 2000-01 and 2006-07

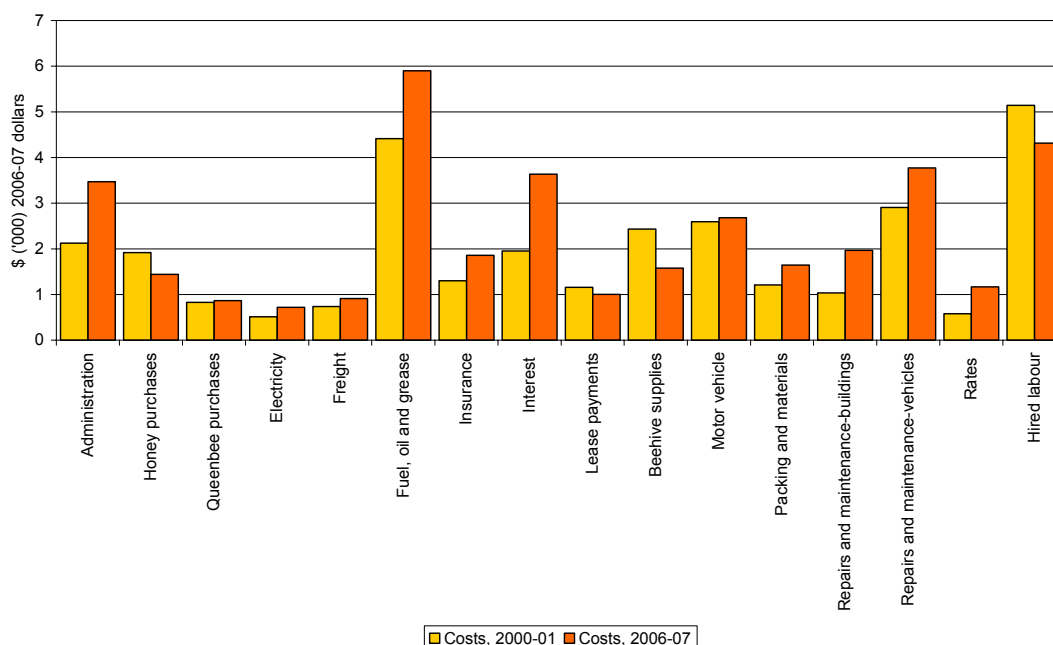
Average per honeybee business in 2006-07 dollars



In real terms, average cash costs per business rose between 2001-02 and 2006-07 by more than \$9700 driven largely by a rise in the costs associated with administration, fuel, oil and grease, interest payments and repairs and maintenance to buildings and vehicles (Figure 33).

Figure 33. Average cash costs in 2000-01 and 2006-07

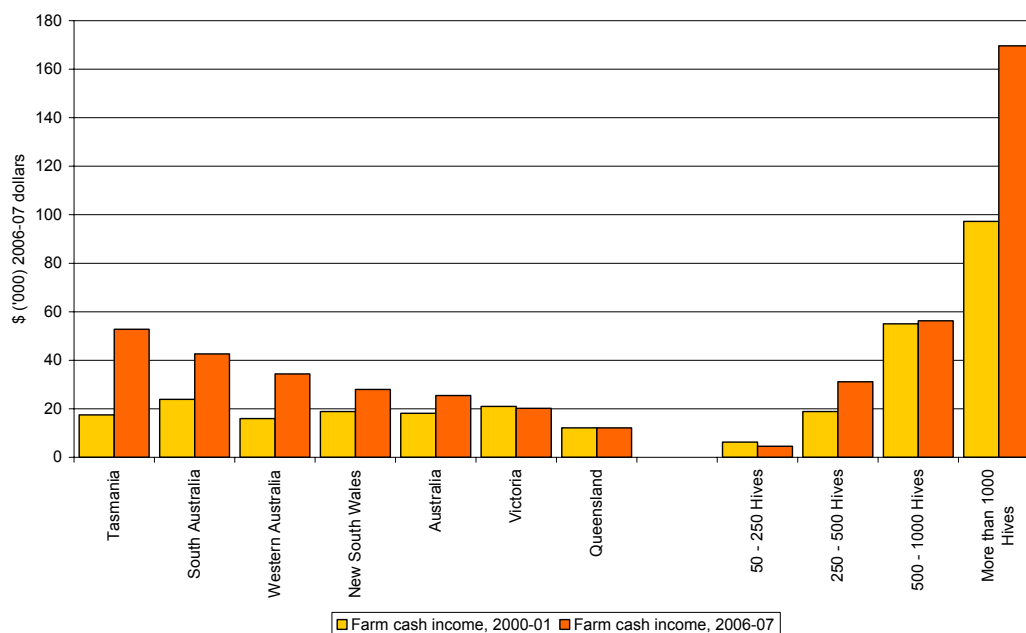
Average per honeybee business in 2006-07 dollars



Increases in costs between 2000-01 and 2006-07 were more than offset by higher receipts from honey and pollination services and honeybee businesses are estimated to have recorded a 40 per cent increase in cash operating surplus (Figure 34).

Figure 34. Average cash operating surplus in 2000-01 and 2006-07

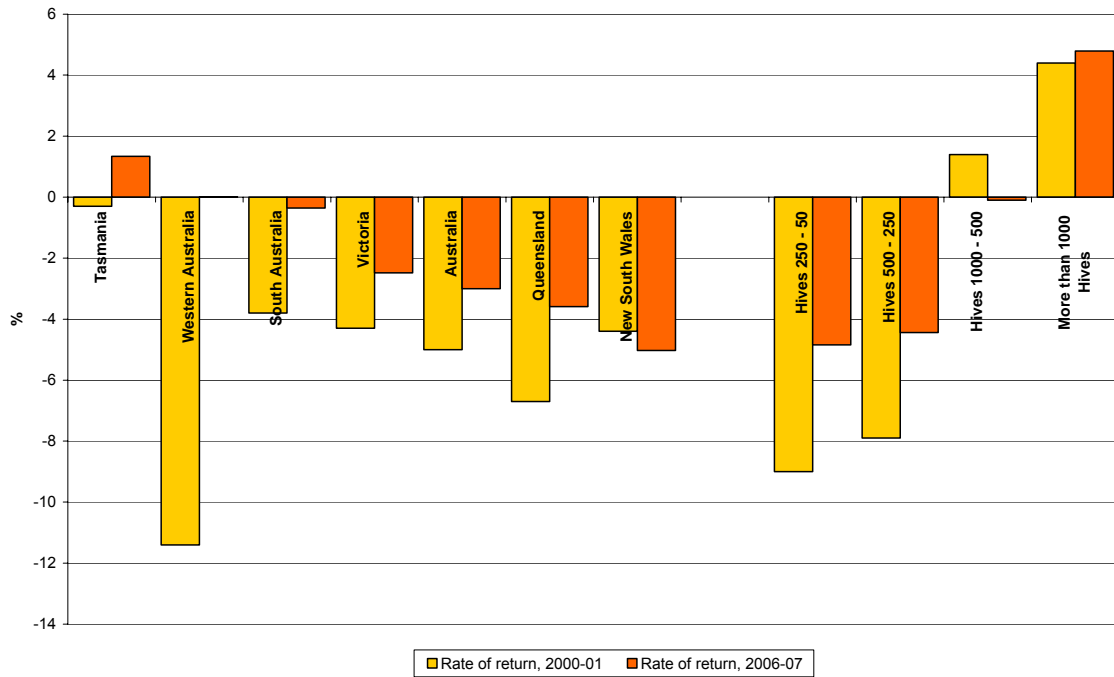
Average per honeybee business in 2006-07 dollars



In line with a rise in average cash operating surplus, there was also an improvement in the average rate of return recorded by honeybee businesses from -5 per cent in 2000-01 to -3 per cent in 2006-07 (Figure 35).

Figure 35. Average rate of return, excluding capital appreciation in 2000-01 and 2006-07

Average per honeybee business



10. Appendices

10.1. Definitions

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

Business profit: Cash operating surplus plus buildup in trading stocks, less depreciation, less the imputed value of the owner manager, partner(s) and family labour.

Capital: The value of capital employed by the honeybee 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 businesses and included the market value of operating hives, honey on hand, stocks of other bee products, quotas and contracts. The value of honey on hand at the end of the financial year was calculated as the closing quantity of honey multiplied by the average price received by the surveyed honeybee business for honey sold during the year. Capital also includes the market value of land and fixed improvements used by the surveyed honeybee business, excluding the value of the owner manager's house. The house value deducted from the total value of land and fixed improvements was the present day replacement cost, depreciated for age.

Cash operating surplus: The difference between total cash receipts and total cash costs.

Debt: Estimated as honeybee business debt. Includes all debts attributable to the honeybee 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 at the 30 June 2001. 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 honeybee business equity as a percentage of total owned capital at 30 June.

Fixed improvements: Fixed assets including machinery, honey extraction 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, hired permanent and casual workers, but excludes work done by contractors.

Non-honeybee business income: Collected for the owner manager and spouse only, including income from wages, other businesses, investment and social welfare payments. The results shown are averages for those businesses for which non-honeybee business income information for both the owner manager and spouse is available.

Owner manager: The primary decision maker for the honeybee 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 honeybee business.

Profit at full equity: Business profit plus interest, rent and finance lease payments. It is the return produced by all the resources used in the beekeeping business.

Rate of return: Computed by expressing profit at full equity as a percentage of the total opening capital of the beekeepers business.

Total cash costs: Payments made by the honeybee business for materials and services and for permanent and casual hired labour (excluding beekeeper, partner and other family labour). It includes the value of any lease payments on capital, produce purchased for resale, rent, interest, bee related purchases. 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 honeybee business during the financial year, including revenues from the sale of honey and bee related products. It includes revenue received from royalties, rebates, refunds, plant hire, contracts, insurance claims and compensation, and government assistance payments.

10.2. 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.

10.2.1. Sampling errors

Only a proportion of businesses in a state are 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. So state estimates are likely to have greater sampling errors than national 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 and italics.

10.2.2. Comparing estimates

When comparing estimates between different states and size groups, it is important to recognise that the differences are subject to sampling error. As a rough rule of thumb, a conservative estimate (an overestimate) 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 the relative standard error of the difference is:

$$\left(\frac{\$9605}{\$25\,000} \right) \times 100 = 38\%$$

10.2.3. 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 modeling 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.

10.3. Supplementary questionnaire

1. What percentage of your 2006-07 honey production was derived from each of the following regions/states:

- Northern NSW (N of E/W line running through Bathurst) - SA
- Southern NSW (S of E/W line running through Bathurst) - WA
- Qld - TAS
- Vic - NT

2. What proportion of honey and other honeybee products was sold through the following outlets in 2006-07 (%)

- Major processors (eg Capilano, Beechworth, Spring Gully or Wescobee)
- Other processors/honey packers
- Direct to retail
- Local markets (inc. farmers markets, etc.)
- Door Sales
- Export

Pollination

If no pollination services in main survey go to Q4

3. What were the main crops you provided pollination services for during 2006-07 and were these services paid for?:

	Yes and paid for	Yes but no payment	No		Yes and paid for	Yes but no payment	No
- Almond	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Kiwi fruit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Apple	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Lemon & Lime	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Apricot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Lettuce (seed)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Asparagus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Lucerne (seed)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Avocado	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Lupin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Bean	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Macadamia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Blueberry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Mandarin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Broccoli (seed)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Mango	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Brussels sprout (seed)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Nectarine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Cabbage (seed)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Onion (seed)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Canola	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Orange	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Carrot (seed)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Peach	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Celery (seed)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Peanut	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Cherries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Pear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Clover (white,red,or other)(seed)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Plum and Prune	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Cotton lint	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Pumpkin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Cucumber	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Strawberry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Grapefruit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	- Watermelon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Others (please list)							

4. Do you expect to expand/commence pollination services in the future?

If Q4=Yes go to Q5 If Q4 = No go to Q7

5. Hives expected to be used in pollination services in next two years

6. Hives expected to be used in pollination services in next five years

7. Are any of the following major impediments to you developing/commencing pollination services?

Knowledge and experience constraints

Physical constraints (eg to far to travel to deliver pollination services)

Financial constraints

Prices not high enough

Additional infrastructure or assets needed (eg transport/storage/packing)

Too hard / too time consuming.

Public land use

8. Have you used public land for honey production over the last 5 years? (*incl. state forests, national parks, stock routes etc. excl. public land operated by private individuals such as pastoral leases in Qld and NSW Western division*)

1 Yes

2 No

9. Over the last 5 years has your use of public lands for honey production

1 decreased

2 remained the same

3 increased

10. What percentage of your 2006-07 honey production was derived from each of the following:

- state forests
- national parks
- other public land

11. How many operating hives contributed to your honey production from public lands during 2006-07?

Information and knowledge base

12. Using the following scale, how importantly do you rate each of the following as a source of information on beekeeping:

- Australian Beekeeping magazines
- other beekeeping industry newsletters/magazines
- media (press, radio, TV)
- internet
- books on beekeeping
- research papers
- field days
- courses
- Department of Agriculture apiary officers
- beekeeping associations
- Australian Honey Bee Industry Council (AHBIC)
- honey packers
- manufacturers
- other beekeepers
- other (please specify)

Code:

1 not at all

2 to a small extent

3 to a great extent

13. Using the same scale from 1 to 3, considering your present knowledge of beekeeping, how importantly do you rate the availability of information on:

- honey flora
- bee diseases and pests
- bee and hive health
- honey extraction, packing and packaging
- management systems
- pollination
- pesticides
- state regulations
- hive equipment
- nutrition
- seasonal management
- commercial beekeeping
- queen raising
- marketing
- other (please specify)

Code:
 1 not at all
 2 to a small extent
 3 to a great extent

Challenges

14. Using the same scale, how great of an impact have the following had on your access to floral resources during 2006-07:

- land clearance
- tree/bush dieback
- flood damage
- salinity
- increased control of weeds commonly used for honey production
- reduced access to conserved areas
- drought
- fire
- the use of pesticides
- others (please specify) _____

Code:
 1 not at all
 2 to a small extent
 3 to a great extent

15. Using the same scale from 1 to 3, how great of an impact have the following diseases/pests had on your honey and honeybee-related production during 2006-07:

- American foulbrood
- European foulbrood
- Chalk brood
- Nosema
- Sacbrood
- Small hive beetle
- Wax moth
- Others (please list) _____

Code:
 1 not at all
 2 to a small extent
 3 to a great extent

Future perspectives:

16. Which of the following best describes what you expect to be doing in 5 years time?

- similar honeybee related production
- increased honeybee related production
- decreased honeybee related production
- diversified into other honeybee related products
- leave industry.

Code:

1 not at all
2 to a small extent
3 to a great extent

17. Using the following scale from 1 to 3, how great of an impact does the following have in determining if you stay in the honeybee industry?:

- prices received for products
- diminished floral resources
- increased bee diseases or pests
- continuing poor seasonal conditions
- age
- availability of labour
- availability of finance
- access to value adding services (eg pollination opportunities, packaged bees etc)
- Continuity of contracts year to year.

10.4. References

ABARE report, *Australian commodities - June quarter 08.2*, June 2008

RIRDC report, *Commercial beekeeping in Australia*, RIRDC pub. no 07/059, April 2007

Jenny Gordon and Lee Davis, *Valuing honeybee pollination*, RIRDC pub. no 03/077, June 2003

V. Rodriguez et. al., *Honey industry survey*, RIRDC pub. no 03/039, May 2003

10.5. Appendix tables

10.5.1. Physical estimates for honeybee businesses, by number of hives, 2006-07

Average per business

		50 - 250 hives		250 - 500 hives		500 - 1000 hives		More than 1000 hives		All businesses	
		Estimate	RSE ^a	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE
Population	<i>no</i>	1 023		340		264		74		1 702	
Sample	<i>no</i>	54		26		35		20		135	
Area of land at business premises	<i>ha</i>	19	(52)	11	(58)	50	(51)	20	(45)	22	(33)
Queenbee mating nucs operated	<i>no</i>	40	(49)	31	(21)	217	(26)	313	(34)	78	(20)
Hives operated at 1 July	<i>no</i>	136	(14)	354	(7)	626	(3)	1 547	(11)	318	(5)
Hives operated at 30 June	<i>no</i>	121	(13)	320	(4)	632	(3)	1 592	(11)	304	(4)
Honey production											
Opening stock of honey	<i>kg</i>	2 041	(23)	7 899	(41)	12 830	(32)	23 760	(29)	5 837	(17)
Honey purchased	<i>kg</i>	33	(88)	0		2 485	(93)	2 006	(66)	493	(74)
Honey produced	<i>kg</i>	5 386	(19)	19 389	(11)	43 084	(10)	102 717	(17)	18 295	(7)
Honey sold during year ^b	<i>kg</i>	5 433	(21)	22 291	(14)	44 848	(9)	104 443	(19)	19 252	(7)
Quantity of honey given away	<i>kg</i>	92	(79)	185	(36)	349	(21)	609	(35)	173	(28)
Closing stock of honey	<i>kg</i>	1 936	(29)	4 812	(40)	13 202	(35)	23 432	(31)	5 200	(18)
Bee related activities											
Queenbees purchased	<i>no</i>	23	(38)	60	(39)	152	(22)	395	(34)	67	(16)
Queenbees sold ^b	<i>no</i>	106	(81)	314	(79)	417	(59)	488	(40)	213	(38)
Packaged bees sold ^b	<i>no</i>	0.1	(91)	5	(82)	8	(95)	162	(72)	9	(56)
Propolis, wax and honeycomb sold ^b	<i>kg</i>	31	(72)	34	(81)	67	(42)	1 709	(88)	111	(61)
Hives purchased	<i>no</i>	0.3	(60)	5	(69)	11	(71)	na		3	(43)
Hives sold ^b	<i>no</i>	17	(47)	2	(95)	5	(95)	na		11	(43)
Conditions for honey production in 2006-07											
Above average	%	4	(65)	11	(25)	7	(60)	6	(31)	6	(28)
Average	%	25	(36)	12	(83)	13	(39)	29	(28)	21	(28)
Below average	%	32	(21)	39	(31)	24	(34)	42	(19)	32	(15)
Drought	%	39	(24)	34	(33)	49	(19)	22	(50)	39	(16)
Not reported	%	0		4	(95)	6	(57)	0		2	(52)
Honey production in a normal year	<i>kg</i>	10 250	(23)	25 690	(18)	50 053	(11)	97 164	(24)	23 318	(9)
Number of hives in a normal year	<i>no</i>	134	(16)	363	(10)	664	(4)	1 559	(11)	324	(5)

^aRefer to section 10.2 for detail on RSE (Relative Standard Error)

^bquantities sold includes transfers out

na – not provided due to insufficient responses

10.5.2 Physical estimates for honeybee businesses, by state, 2006-07

Average per business

		New South Wales		Victoria		Queensland		South Australia		Western Australia		Tasmania	
		Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE
Population	<i>no</i>	664		338		374		192		95		32	
Sample	<i>no</i>	30		24		27		17		18		17	
Area of land at business premises	<i>ha</i>	9	(44)	5	(52)	27	(74)	91	(53)	21	(46)	12	(29)
Queenbee mating nucs operated	<i>no</i>	63	(48)	55	(36)	117	(44)	84	(28)	86	(15)	116	(23)
Hives operated at 1 July	<i>no</i>	362	(17)	263	(19)	295	(17)	336	(8)	232	(13)	408	(16)
Hives operated at 30 June	<i>no</i>	341	(20)	262	(18)	276	(18)	330	(8)	236	(12)	410	(16)
Honey production													
Opening stock of honey	<i>kg</i>	8 327	(34)	4 223	(41)	1 578	(60)	8 448	(50)	2 509	(30)	16 498	(37)
Honey purchased	<i>kg</i>	0		462	(72)	6	(198)	3 419	(113)	65	(91)	586	(49)
Honey produced	<i>kg</i>	17 062	(22)	16 770	(23)	12 039	(20)	31 638	(15)	24 800	(19)	35 327	(24)
Honey sold during year ^a	<i>kg</i>	19 424	(22)	16 485	(25)	11 823	(20)	32 402	(21)	25 068	(20)	37 423	(24)
Quantity of honey given away	<i>kg</i>	210	(22)	154	(26)	204	(69)	17	(94)	240	(19)	25	(42)
Closing stock of honey	<i>kg</i>	5 756	(41)	4 815	(44)	1 596	(66)	11 087	(51)	2 065	(33)	14 963	(39)
Bee related activities													
Queenbees purchased	<i>no</i>	82	(54)	78	(24)	20	(58)	83	(26)	56	(30)	91	(22)
Queenbees sold ^a	<i>no</i>	226	(32)	66	(28)	447	(58)	72	(35)	36	(45)	103	(22)
Packaged bees sold ^a	<i>no</i>	7	(320)	23	(96)	6	(109)	0		19	(75)	0	
Propolis, wax and honeycomb sold ^a	<i>kg</i>	0		365	(97)	159	(37)	0		0		177	(62)
Hives purchased	<i>no</i>	2	(101)	5	(97)	3	(121)	5	(98)	4	(60)	1	(76)
Hives sold ^a	<i>no</i>	12	(67)	9	(102)	17	(71)	10	(84)	1	(91)	2	(76)
Conditions for honey production in 2006-07													
Above average	%	1	(88)	16	(48)	0		5	(97)	6	(50)	43	(17)
Average	%	6	(82)	25	(49)	30	(78)	30	(42)	56	(23)	44	(20)
Below average	%	48	(17)	28	(54)	9	(52)	37	(33)	35	(36)	8	(73)
Drought	%	45	(17)	31	(34)	57	(42)	21	(58)	3	(83)	6	(67)
Not reported	%	0		0		4	(93)	8	(62)	0		0	
Honey production in a normal year	<i>kg</i>	23 726	(21)	20 561	(22)	23 029	(33)	25 289	(29)	30 496	(13)	na	
Number of hives in a normal year	<i>no</i>	343	(20)	278	(18)	330	(29)	330	(8)	255	(12)	410	(16)

^aquantities sold includes transfers out

na – not provided due to insufficient responses

10.5.3. Sources of flora for honeybee businesses, by number of hives, 2006-07

Average per business

		50 - 250 hives		250 - 500 hives		500 - 1000 hives		More than 1000 hives		All businesses	
		Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE
Proportion of honey from:											
Northern NSW	%	13	(26)	44	(10)	19	(16)	12	(15)	20	(11)
Queensland	%	20		29	(6)	23	(13)	6	(17)	22	(3)
South Australia	%	9		12		24	(1)	0		11	(0.4)
Southern NSW	%	23	(14)	4	(92)	22	(10)	45	(10)	20	(11)
Tasmania	%	2		1		1	(92)	4	(44)	2	(7)
Victoria	%	25		7		10	(21)	30	(13)	19	(2)
Western Australia	%	7		3		2	(27)	3	(60)	6	(2)
Proportion of honeybee businesses using public land:											
Used public land in last 5 years	%	54	(20)	87	(6)	76	(7)	100	(36)	66	(10)
Use of public land has:											
Decreased	%	15	(70)	37	(37)	13	(49)	34	(33)	20	(35)
Stayed the same ^a	%	77	(15)	37	(24)	75	(10)	32	(36)	67	(11)
Increased	%	8	(73)	26	(46)	12	(51)	35	(37)	14	(33)
Proportion of honey production from:											
State forests	%	24	(38)	33	(18)	30	(13)	38	(14)	27	(21)
National parks	%	3	(68)	13	(26)	6	(46)	10	(41)	6	(27)
Other public lands	%	3	(67)	5	(45)	6	(29)	9	(52)	4	(33)
Number of hives contributing to honey production from public lands	<i>no</i>	66	(33)	233	(10)	306	(15)	1 148	(15)	184	(9)

^astayed the same includes those who did not use public land at all in the past 5 years

10.5.4. Sources of flora for honeybee businesses, by state, 2006-07

Average per business

		New South Wales		Victoria		Queensland		South Australia		Western Australia		Tasmania	
		Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE
Proportion of honey from:													
Northern NSW	%	49	(12)	0		3	(92)	0		0		5	(62)
Queensland	%	1	(95)	0		97	(3)	0		0		0	
South Australia	%	0		0		0		100		0		0	
Southern NSW	%	49	(12)	4	(49)	0		0		0		0	
Tasmania	%	0		0		0		0		0		95	(3)
Victoria	%	0	(85)	96	(2)	0		0	(95)	0		0	
Western Australia	%	0		0		0		0		100		0	
Proportion of honeybee businesses using public land:													
Used public land in last 5 years	%	79	(14)	71	(14)	67	(35)	22	(52)	44	(29)	100	
Use of public land has:													
Decreased	%	20	(44)	32	(45)	18	(103)	10	(66)	6	(51)	13	(51)
Stayed the same	%	60	(18)	63	(22)	64	(32)	90	(7)	89	(4)	58	(16)
Increased	%	20	(51)	6	(53)	18	(44)	0		5	(65)	29	(29)
Proportion of honey production from:													
State forests	%	28	(31)	22	(44)	42	(38)	5	(106)	17	(39)	52	(16)
National parks	%	10	(38)	3	(75)	3	(149)	4	(90)	3	(51)	20	(31)
Other public lands	%	3	(68)	7	(45)	6	(87)	3	(90)	6	(34)	11	(56)
Number of hives contributing to honey production from public lands	<i>no</i>	231	(23)	165	(27)	212	(30)	13	(89)	144	(25)	265	(26)

*stayed the same includes those who did not use public land at all in the past 5 years

10.5.5. Receipts for honeybee businesses, by number of hives, 2006-07

Average per business

		50 - 250 hives		250 - 500 hives		500 - 1000 hives		More than 1000 hives		All businesses	
		Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE
Honey receipts	\$	15 921	(22)	63 696	(17)	115 884	(10)	303 914	(18)	54 293	(8)
Queenbee receipts	\$	1 522	(98)	2 923	(97)	4 889	(85)	2 741	(140)	2 394	(52)
Propolis, wax and honeycomb receipts	\$	842	(50)	2 219	(27)	3 018	(24)	7 434	(22)	1 760	(18)
operating and spare hives receipts	\$	380	(107)	0		0		0		226	(107)
Pollination receipts	\$	639	(240)	5 164	(21)	13 834	(23)	62 775	(45)	6 415	(26)
Total bee related receipts	\$	19 304	(29)	74 003	(13)	137 625	(10)	376 864	(13)	65 088	(8)
Wool receipts	\$	762	(98)	0		349	(77)	0		507	(88)
Other product receipts	\$	16	(66)	154	(61)	0		1	(60)	41	(49)
Crop receipts	\$	1 877	(68)	36	(95)	512	(83)	0		1 202	(63)
Government assistance/rebates	\$	315	(98)	220	(58)	74	(59)	279	(90)	256	(73)
Interest and dividend receipts	\$	37	(57)	38	(86)	481	(46)	1 032	(68)	152	(32)
Other cash receipts	\$	2 033	(50)	2 924	(51)	5 158	(27)	34 152	(80)	4 139	(34)
Total cash receipts	\$	24 343	(23)	77 375	(13)	144 199	(10)	412 328	(14)	71 386	(7)
Price received for honey	\$/kg	3.0	(10)	2.9	(20)	2.6	(5)	2.9	(6)	2.8	(6)
Value of:											
Honey given away	\$	247	(59)	779	(58)	965	(19)	1 508	(35)	525	(25)
Honey produced in 2006-07	\$	16 027	(17)	61 671	(19)	109 859	(9)	304 677	(16)	53 024	(7)

10.5.6. Receipts for honeybee businesses, by state, 2006-07

Average per business

		New South Wales		Victoria		Queensland		South Australia		Western Australia		Tasmania	
		Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE
Receipts:													
Honey receipts	\$	54 216	(23)	48 274	(25)	34 737	(19)	80 324	(24)	61 897	(16)	157 573	(27)
Queenbee receipts	\$	1 803	(60)	0		7 989	(61)	329	(92)	18	(78)	0	
Propolis, wax and honeycomb receipts	\$	1 904	(64)	306	(69)	2 057	(16)	2 909	(32)	2 446	(48)	2 406	(35)
operating and spare hives receipts	\$	0		1 090	(104)	8	(269)	0		0		194	(76)
Pollination receipts	\$	6 521	(111)	9 463	(34)	3 392	(128)	8 628	(20)	2 021	(40)	5 583	(31)
Total bee related receipts	\$	64 444	(26)	59 132	(24)	48 182	(20)	92 190	(22)	66 383	(15)	165 757	(26)
Wool receipts	\$	116	(115)	44	(95)	0		3 936	(98)	0		0	
Other product receipts	\$	0		0		0		0		716	(53)	0	
Crop receipts	\$	0		36	(90)	350	(109)	4 318	(96)	11 028	(93)	0	
Government assistance/rebates	\$	62	(88)	61	(98)	911	(92)	58	(97)	439	(71)	0	
Interest and dividend receipts	\$	123	(229)	155	(95)	175	(41)	197	(84)	232	(72)	0	
Other cash receipts	\$	3 731	(185)	3 123	(52)	5 821	(57)	3 000	(57)	8 485	(38)	169	(49)
Total cash receipts	\$	68 477	(31)	62 552	(24)	55 439	(16)	103 700	(21)	87 284	(18)	165 926	(26)
Price received for honey	\$/kg	2.8	(11)	2.9	(6)	2.9	(15)	2.5	(11)	2.5	(10)	4.2	(8)
Value of:													
Honey given away	\$	724	(27)	538	(27)	431	(38)	20	(94)	630	(17)	111	(67)
Honey produced in 2006-07	\$	50 444	(22)	51 005	(25)	35 675	(20)	76 182	(16)	60 783	(16)	158 812	(26)

10.5.7. Costs for honeybee businesses, by number of hives, 2006-07

Average per business

		50 - 250 hives		250 - 500 hives		500 - 1000 hives		More than 1000 hives		All businesses	
		Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE
Administration	\$	2 037	(28)	4 693	(22)	5 492	(21)	9 861	(14)	3 473	(13)
Honey related purchase costs:											
Hive purchases	\$	207	(67)	730	(76)	800	(83)	5 752	(80)	654	(41)
Honey purchases	\$	128	(316)	0		6 944	(93)	5 960	(67)	1 440	(74)
Queenbee purchases	\$	401	(55)	739	(36)	1 256	(24)	6 264	(26)	867	(19)
Other costs:											
Handling and marketing expense	\$	90	(98)	117	(97)	95	(86)	54	(0)	95	(62)
Electricity	\$	383	(26)	825	(27)	1 070	(17)	3 459	(18)	719	(12)
Fertilizer	\$	644	(56)	0		963	(70)	4 032	(9)	714	(34)
Freight	\$	212	(44)	915	(50)	1 229	(21)	9 143	(60)	914	(30)
Fuel, oil and grease	\$	2 673	(25)	7 061	(23)	9 537	(16)	30 760	(21)	5 903	(11)
Insurance	\$	707	(37)	1 858	(25)	3 185	(14)	12 489	(29)	1 858	(14)
Interest	\$	1 339	(207)	4 867	(38)	7 442	(26)	15 035	(16)	3 633	(47)
Lease payments	\$	19	(74)	175	(84)	4 669	(46)	4 860	(32)	1 002	(34)
Beehive supplies	\$	609	(26)	2 165	(29)	2 913	(34)	7 117	(29)	1 580	(15)
Motor vehicle	\$	1 420	(20)	2 907	(36)	4 741	(19)	11 177	(44)	2 683	(14)
Packing and materials	\$	830	(24)	2 039	(49)	79	(60)	16 260	(46)	1 645	(25)
Repairs and maintenance - buildings	\$	1 340	(83)	858	(34)	2 676	(30)	12 946	(27)	1 970	(35)
Repairs and maintenance - vehicles	\$	2 365	(88)	5 564	(25)	4 987	(17)	9 988	(18)	3 771	(34)
Rent on buildings and land	\$	1	(78)	924	(59)	170	(57)	1 085	(51)	264	(43)
Rent on beesites	\$	255	(58)	1 183	(33)	1 531	(28)	4 529	(30)	836	(18)
Rates	\$	918	(33)	1 290	(27)	1 613	(16)	2 364	(21)	1 168	(17)
Entomology fees	\$	0		0		0		332	(135)	15	(135)
Hired labour	\$	23	(98)	2 945	(63)	11 012	(25)	44 028	(34)	4 316	(20)
Other cash costs	\$	3 157	(21)	4 369	(25)	15 528	(29)	25 158	(26)	6 340	(14)
Total cash costs	\$	19 757	(37)	46 224	(15)	87 933	(16)	242 654	(18)	45 860	(12)

10.5.8. Costs for honeybee businesses, by state, 2006-07

Average per business

		New South Wales		Victoria		Queensland		South Australia		Western Australia		Tasmania	
		Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE
Administration	\$	3 004	(21)	3 054	(30)	3 210	(18)	5 176	(41)	5 066	(19)	5 906	(24)
Honey related purchase costs:													
Hive purchases	\$	768	(158)	421	(78)	490	(148)	939	(98)	975	(90)	0	
Honey purchases	\$	0		1 421	(72)	23	(269)	9 556	(113)	172	(91)	2 065	(50)
Queenbee purchases	\$	882	(81)	975	(25)	592	(65)	1 134	(25)	623	(32)	1 269	(22)
Other costs:													
Handling and marketing expense	\$	63	(110)	0		80	(99)	464	(98)	0		0	
Electricity	\$	680	(23)	576	(31)	873	(45)	674	(37)	1 042	(31)	846	(29)
Fertilizer	\$	69	(109)	630	(81)	1 790	(106)	1 051	(98)	1 059	(66)	0	
Freight	\$	1 040	(136)	448	(61)	877	(123)	1 039	(26)	182	(44)	4 828	(26)
Fuel, oil and grease	\$	6 700	(28)	4 469	(28)	5 723	(32)	6 232	(15)	6 068	(23)	4 397	(15)
Insurance	\$	2 177	(36)	1 525	(24)	1 197	(24)	1 755	(37)	2 049	(22)	6 317	(34)
Interest	\$	1 868	(29)	4 749	(36)	4 172	(57)	4 215	(68)	8 586	(30)	3 307	(48)
Lease payments	\$	818	(82)	1 560	(58)	1 325	(51)	263	(97)	455	(86)	1 756	(37)
Beehive supplies	\$	1 703	(28)	1 775	(27)	1 279	(46)	1 295	(36)	1 913	(23)	1 266	(56)
Motor vehicle	\$	2 548	(19)	4 084	(34)	1 968	(21)	1 870	(25)	1 507	(30)	7 186	(41)
Packing and materials	\$	1 257	(39)	334	(48)	564	(73)	1 685	(71)	1 045	(41)	36 986	(42)
Repairs and maintenance - buildings	\$	1 609	(44)	4 121	(80)	660	(65)	1 608	(42)	1 941	(28)	3 468	(40)
Repairs and maintenance - vehicles	\$	4 593	(29)	2 388	(30)	4 739	(27)	1 910	(30)	3 677	(30)	2 810	(41)
Rent on buildings and land	\$	434	(51)	72	(82)	196	(96)	0		234	(83)	1 210	(61)
Rent on beesites	\$	929	(33)	1 127	(40)	978	(32)	0		476	(39)	578	(25)
Rates	\$	1 385	(20)	500	(36)	1 050	(35)	1 831	(37)	1 236	(20)	1 051	(26)
Entomology fees	\$	36	(320)	0		3	(238)	0		0		0	
Hired labour	\$	4 223	(55)	3 275	(65)	3 702	(33)	6 114	(47)	3 653	(53)	15 937	(41)
Other cash costs	\$	3 726	(43)	4 869	(29)	7 745	(26)	12 190	(51)	10 948	(19)	11 934	(17)
Total cash costs	\$	40 510	(27)	42 375	(25)	43 239	(21)	61 000	(36)	52 908	(12)	113 120	(30)

10.5.9. Financial performance of honeybee businesses, by number of hives, 2006-07

Average per business

		50 - 250 hives		250 - 500 hives		500 - 1000 hives		More than 1000 hives		All businesses	
		Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE
Total cash receipts	\$	24 343	(23)	77 375	(13)	144 199	(10)	412 328	(14)	71 386	(7)
Total cash costs	\$	19 757	(37)	46 224	(15)	87 933	(16)	242 654	(18)	45 860	(12)
Cash operating surplus	\$	4 587	(86)	31 151	(22)	56 266	(15)	169 673	(11)	25 526	(12)
<i>less: depreciation</i>	\$	11 768	(17)	17 586	(11)	25 990	(10)	66 050	(15)	17 621	(8)
<i>less: imputed labour</i>	\$	19 139	(25)	46 014	(18)	49 029	(10)	81 624	(13)	32 126	(11)
<i>plus: buildup in trading stocks</i>	\$	267	(442)	- 1 998	(112)	4 152	(89)	2 379	(1112)	514	(303)
Business profit	\$	- 26 053	(27)	- 34 447	(33)	- 14 601	(66)	24 378	(125)	- 23 706	(22)
Profit at full equity	\$	- 24 440	(21)	- 27 297	(40)	- 788	(1102)	49 887	(61)	- 17 971	(23)
Total capital at 1 July ^a	\$	514 821	(12)	614 112	(20)	807 062	(17)	1 040 885	(14)	603 049	(8)
Rate of return	\$	-4.7	(30)	-4.4	(43)	-0.1	(1100)	4.8	(72)	-3.0	(26)

^acapital does not include owner/operators house

10.5.10. Financial performance for honeybee businesses, by state, 2006-07

Average per business

	New South Wales		Victoria		Queensland		South Australia		Western Australia		Tasmania	
	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE
Total cash receipts	\$ 68 477	(31)	62 552	(24)	55 439	(16)	103 700	(21)	87 284	(18)	165 926	(26)
Total cash costs	\$ 40 510	(27)	42 375	(25)	43 239	(21)	61 000	(36)	52 908	(12)	113 120	(30)
Cash operating surplus	\$ 27 966	(41)	20 178	(34)	12 200	(43)	42 700	(19)	34 376	(31)	52 806	(30)
<i>less: depreciation</i>	\$ 17 985	(18)	14 699	(24)	17 193	(22)	20 521	(19)	15 770	(15)	35 397	(26)
<i>less: imputed labour</i>	\$ 35 224	(20)	28 962	(21)	28 171	(29)	36 618	(19)	29 579	(20)	19 724	(26)
<i>plus: buildup in trading stocks</i>	\$ -4 933	(101)	4 398	(121)	3 330	(52)	6 515	(59)	1 321	(193)	3 995	(63)
Business profit	\$ -30 177	(31)	-19 085	(54)	-29 834	(45)	-7 924	(131)	-9 652	(121)	1 681	(1108)
Profit at full equity	\$ -26 128	(36)	-11 577	(90)	-23 163	(52)	-3 446	(279)	99	(11351)	8 532	(231)
Total capital at 1 July ^a	\$ 519 475	(17)	466 163	(23)	661 393	(8)	961 156	(25)	724 156	(20)	640 068	(16)
Rate of return	\$ -5.0	(44)	-2.5	(85)	-3.5	(61)	-0.4	(274)	0.0	(11338)	1.3	(241)

^acapital does not include owner/operators house

10.5.11. Capital estimates for honeybee businesses, by number of hives, 2006-07

Average per business

		50 - 250 hives		250 - 500 hives		500 - 1000 hives		More than 1000 hives		All businesses	
		Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE
Total capital at 1 July	\$	514 821	(12)	614 112	(20)	807 062	(17)	1 040 885	(14)	603 049	(8)
Total capital at 30 June	\$	517 147	(12)	613 647	(20)	819 338	(17)	1 119 476	(14)	609 696	(8)
Components of capital value at 30 June:											
Land and fixed improvements	\$	509 880	(13)	506 380	(24)	646 812	(22)	502 589	(17)	530 118	(10)
Honey stocks	\$	4 983	(30)	20 671	(51)	28 970	(41)	63 074	(29)	14 385	(21)
Other bee related product stocks	\$	680	(37)	1 693	(64)	10 086	(63)	30 498	(133)	3 647	(56)
Hive stocks	\$	17 916	(13)	54 170	(6)	86 970	(8)	231 821	(14)	45 240	(5)
Plant and equipment	\$	1 121	(88)	4 361	(83)	19 613	(37)	70 737	(34)	7 684	(23)
Cars, utes etc	\$	14 592	(14)	15 583	(15)	22 056	(16)	48 855	(14)	17 447	(8)
Trucks and forklifts	\$	13 598	(53)	28 735	(17)	42 175	(14)	106 129	(23)	25 107	(19)
Tractors	\$	1 873	(29)	4 743	(32)	4 707	(43)	5 049	(40)	3 026	(18)
Cultivation sowing fertiliser and spraying equipment	\$	336	(59)	531	(97)	676	(56)	1 875	(12)	495	(34)
Harvesting and handling equipment	\$	12 652	(30)	16 552	(19)	20 187	(17)	82 529	(17)	17 657	(14)
Livestock handling equipment	\$	2 096	(80)	0		2 987	(70)	587	(0)	1 749	(60)
Irrigation and water supply equipment	\$	5	(55)	2 017	(109)	79	(92)	0		419	(105)
Computers and other electrical equipment	\$	919	(26)	1 541	(34)	4 009	(69)	1 666	(13)	1 556	(30)
Other plant and equipment	\$	12 649	(29)	7 874	(9)	19 738	(21)	67 317	(43)	15 185	(17)
Total additions	\$	6 186	(49)	4 125	(54)	9 380	(34)	63 409	(27)	8 771	(24)
Total disposals	\$	3	(67)	1 249	(92)	911	(48)	2 479	(58)	501	(49)

^acapital does not include owner/operators house

10.5.12. Capital estimates for honeybee businesses, by state, 2006-07

Average per business

	New South Wales		Victoria		Queensland		South Australia		Western Australia		Tasmania	
	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE
Total capital at 1 July	\$ 519 475	(17)	466 163	(23)	661 393	(8)	961 156	(25)	724 156	(20)	640 068	(16)
Total capital at 30 June	\$ 518 565	(17)	487 932	(21)	668 124	(8)	965 669	(25)	731 548	(19)	654 332	(15)
Components of capital value at 30 June:												
Land and fixed improvements	\$ 355 320	(23)	351 871	(29)	525 888	(13)	808 685	(29)	585 741	(22)	362 600	(16)
Honey stocks	\$ 20 595	(40)	10 408	(45)	3 573	(62)	17 678	(65)	6 750	(29)	59 884	(43)
Other bee related product stocks	\$ 3 862	(269)	1 793	(34)	5 717	(64)	1 958	(39)	5 367	(44)	358	(62)
Hive stocks	\$ 46 536	(23)	37 349	(22)	45 683	(19)	48 765	(15)	61 356	(18)	31 281	(23)
Plant and equipment	\$ 6 392	(45)	22 032	(37)	3 035	(58)	0		2 648	(49)	0	
Cars, utes etc	\$ 15 638	(17)	17 506	(23)	16 631	(16)	21 008	(19)	20 232	(14)	35 849	(23)
Trucks and forklifts	\$ 25 155	(24)	24 005	(48)	25 664	(49)	31 688	(30)	19 908	(26)	8 178	(33)
Tractors	\$ 2 421	(43)	809	(80)	5 952	(46)	3 809	(62)	3 187	(40)	269	(60)
Cultivation sowing fertiliser and spraying equipment	\$ 272	(85)	58	(85)	701	(107)	1 942	(51)	82	(100)	0	
Harvesting and handling equipment	\$ 25 610	(31)	12 641	(21)	10 528	(78)	12 120	(23)	11 780	(41)	40 104	(56)
Livestock handling equipment	\$ 0		213	(104)	7 191	(59)	1 096	(96)	59	(94)	0	
Irrigation and water supply equipment	\$ 0		0		1 834	(178)	0		286	(46)	0	
Computers and other electrical equipment	\$ 694	(40)	940	(19)	1 871	(32)	5 336	(72)	915	(24)	1 717	(18)
Other plant and equipment	\$ 16 070	(36)	8 308	(30)	13 855	(8)	11 584	(38)	13 239	(22)	114 093	(48)
Total additions	\$ 5 083	(45)	21 902	(43)	6 012	(31)	3 799	(97)	6 070	(53)	18 160	(38)
Total disposals	\$ 0		575	(66)	488	(69)	2 095	(97)	242	(79)	1 601	(58)

^acapital does not include owner/operators house

10.5.13. Debt estimates for honeybee businesses, by number of hives, 2006-07

Average per business

		50 - 250 hives		250 - 500 hives		500 - 1000 hives		More than 1000 hives		All businesses	
		Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE
Total business debt	\$	92 130	(45)	70 986	(35)	107 366	(20)	132 822	(26)	93 348	(22)
Loan purpose:											
Land purchase	\$	64 246	(67)	21 369	(61)	20 290	(71)	0		38 888	(51)
Building and structures	\$	1 618	(403)	0		43 716	(56)	17 160	(51)	12 185	(53)
Vehicles and machines	\$	3 254	(108)	10 269	(54)	16 998	(44)	78 887	(51)	13 495	(29)
Working capital	\$	23 012	(42)	32 315	(72)	22 181	(34)	36 775	(53)	26 068	(29)
Other	\$	0		7 033	(54)	4 181	(85)	0		2 712	(47)
Debt sources:											
Hire purchase	\$	0		4 988	(103)	10 832	(47)	58 006	(65)	7 826	(71)
Bank overdraft	\$	22 053	(55)	9 210	(66)	7 027	(55)	10 421	(100)	14 553	(40)
Bank other	\$	59 627	(71)	56 788	(46)	67 321	(34)	48 642	(33)	59 966	(35)
Building society	\$	0		0		3 604	(91)	2 166	(71)	997	(78)
Pastoral or insurance companies	\$	0		0		0		0		0	
Government agency	\$	0		0		10 832	(60)	0		2 542	(60)
Trade creditor	\$	0		0		3 645	(97)	0		855	(97)
Other amounts owing	\$	10 450	(98)	0		4 106	(71)	13 587	(54)	6 609	(71)
Equity ratio	%	85	(7)	86	(6)	88	(3)	88	(2)	87	(3)

10.5.14. Debt estimates for honeybee businesses, by state, 2006-07

Average per business

		New South Wales		Victoria		Queensland		South Australia		Western Australia		Tasmania	
		Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE
Total business debt	\$	25 025	(27)	102 529	(14)	135 015	(41)	272 540	(42)	133 781	(30)	74 558	(42)
Loan purpose:													
Land purchase	\$	0		1 919	(93)	91 710	(54)	145 893	(59)	69 001	(63)	0	
Building and structures	\$	1 075	(240)	7 301	(297)	4 493	(47)	113 449	(153)	16 388	(93)	11 953	(62)
Vehicles and machines	\$	13 120	(38)	34 946	(53)	3 948	(90)	0		5 536	(102)	15 662	(62)
Working capital	\$	10 516	(26)	58 362	(46)	34 864	(69)	0		14 645	(78)	46 943	(51)
Other	\$	314	(110)	0		0		13 198	(96)	28 211	(102)	0	
Debt sources:													
Hire purchase	\$	6 142	(81)	23 440	(73)	3 948	(88)	0		0		0	
Bank overdraft	\$	7 671	(32)	38 218	(68)	12 298	(84)	0		14 645	(78)	25 541	(62)
Bank other	\$	10 897	(41)	31 315	(77)	113 450	(48)	164 159	(98)	110 799	(44)	33 355	(24)
Building society	\$	0		0		123	(125)	12 537	(90)	0		15 662	(62)
Pastoral or insurance companies	\$	0		0		0		0		0		0	
Government agency	\$	314	(110)	7 161	(87)	4 076	(71)	0		0		0	
Trade creditor	\$	0		0		0		13 198	(96)	0		0	
Other amounts owing	\$	0	(81)	2 396	(73)	1 120	(78)	82 647	(86)	8 338	(69)	0	(75)
Equity ratio	%	96	(2)	78	(11)	80	(9)	87	(3)	81	(6)	95	(2)

10.5.15. Socioeconomic and business structures of honeybee businesses, by number of hives, 2006-07

Average per business

		50 - 250 hives		250 - 500 hives		500 - 1000 hives		More than 1000 hives		All businesses	
		Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE
Age of operator/owner	<i>years</i>	61	(4)	55	(6)	52	(3)	59	(5)	58	(4)
Years of apiary experience of operator/owner	<i>years</i>	37	(5)	32	(12)	30	(7)	37	(9)	35	(3)
Age of spouse	<i>years</i>	59	(4)	59	(4)	51	(3)	57	(6)	57	(3)
Years of apiary experience of spouse	<i>years</i>	14	(21)	25	(28)	16	(19)	28	(15)	17	(13)
Educational attainment:											
<i>Operator/owner</i>											
Primary school completed	%	5	(73)	0		5	(65)	3	(60)	4	(58)
Year 10 or less	%	38	(32)	49	(29)	38	(22)	54	(23)	41	(20)
Year 11 or 12	%	18	(62)	23	(53)	17	(35)	23	(43)	19	(38)
Trade apprenticeship/technical	%	21	(35)	14	(41)	19	(38)	19	(68)	19	(25)
University education	%	18	(34)	14	(55)	22	(37)	0		17	(25)
<i>Spouse</i>											
Primary school completed	%	0		10	(103)	0		0		2	(103)
Year 10 or less	%	46	(26)	26	(76)	54	(14)	49	(39)	45	(19)
Year 11 or 12	%	32	(33)	36	(60)	18	(36)	21	(81)	30	(25)
Trade apprenticeship/technical	%	0		0		18	(33)	0		3	(33)
University education	%	22	(28)	27	(42)	10	(49)	31	(50)	21	(21)
Non honeybee business income:											
Wages/salaries	\$	21 608	(21)	11 888	(57)	5 239	(39)	3 980	(57)	16 352	(19)
Other income	\$	10 416	(30)	3 543	(44)	9 491	(55)	5 217	(93)	8 671	(24)
Income from government sources	\$	4 404	(44)	1 008	(89)	1 712	(39)	1 231	(93)	3 168	(38)
Business structure:											
Sole traders	%	25	(28)	38	(35)	8	(56)	13	(65)	25	(21)
Partnership	%	71	(8)	61	(22)	85	(7)	66	(14)	71	(6)
Company	%	3	(112)	0		6	(65)	11	(74)	4	(68)
Other	%	1	(94)	1	(86)	1	(75)	10	(71)	1	(48)
Labour:											
Family and other non hired labour	<i>no</i>	2	(11)	2	(12)	2	(7)	3	(12)	2	(7)
Permanents	<i>no</i>	0		0		0	(35)	0	(40)	0	(27)
Casuals	<i>no</i>	0	(98)	0	(34)	0	(30)	0	(40)	0	(22)
Total	<i>no</i>	2	(11)	2	(15)	3	(6)	4	(12)	2	(7)
Weeks worked - family and other non hired labour	<i>weeks</i>	76	(8)	84	(11)	85	(8)	127	(10)	81	(5)
Weeks worked - permanents	<i>weeks</i>	0		0		8	(41)	41	(41)	3	(29)

10.5.16. Socioeconomic and business structures of honeybee businesses, by state, 2006-07

Average per business

		New South Wales		Victoria		Queensland		South Australia		Western Australia		Tasmania	
		Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE
Age of operator/owner	<i>years</i>	57	(5)	59	(5)	62	(4)	57	(6)	56	(3)	58	(6)
Years of apiary experience of operator/owner	<i>years</i>	38	(5)	31	(11)	40	(6)	22	(20)	31	(12)	27	(17)
Age of spouse	<i>years</i>	57	(6)	54	(4)	62	(4)	59	(3)	53	(3)	57	(5)
Years of apiary experience of spouse	<i>years</i>	12	(21)	20	(14)	29	(15)	6	(40)	9	(28)	12	(34)
Educational attainment:													
Operator/owner													
Primary school completed	%	0		6	(101)	12	(67)	0		3	(86)	0	
Year 10 or less	%	45	(27)	37	(38)	43	(47)	35	(44)	23	(50)	37	(32)
Year 11 or 12	%	21	(51)	19	(48)	16	(98)	11	(68)	27	(42)	29	(24)
Trade apprenticeship/technical	%	8	(77)	38	(40)	17	(49)	24	(50)	27	(29)	34	(37)
University education	%	26	(37)	0	(162)	12	(103)	30	(50)	21	(51)	0	
Spouse													
Primary school completed	%	0		0		8	(249)	0		0		0	
Year 10 or less	%	41	(38)	43	(27)	66	(56)	28	(74)	26	(54)	54	(20)
Year 11 or 12	%	25	(51)	49	(24)	3	(118)	48	(46)	47	(34)	31	(45)
Trade apprenticeship/technical	%	6	(42)	0		0		8	(93)	0		0	
University education	%	28	(34)	8	(79)	23	(115)	16	(78)	26	(54)	15	(59)
Non honeybee business income:													
Wages/salaries	\$	22 178	(25)	13 821	(46)	6 621	(121)	3 447	(70)	51 531	(39)	11 939	(39)
Other income	\$	9 066	(45)	14 157	(42)	1 206	(73)	9 083	(69)	17 649	(42)	14	(67)
Income from government sources	\$	1 228	(80)	4 072	(46)	7 703	(59)	1 059	(74)	1 218	(64)	0	
Business structure:													
Sole traders	%	17	(48)	23	(58)	18	(44)	45	(28)	42	(32)	68	(11)
Partnership	%	81	(10)	66	(13)	80	(10)	51	(24)	40	(33)	32	(24)
Company	%	1	(93)	10	(105)	2	(108)	4	(113)	0		0	
Other	%	1	(100)	0		0		0		19	(53)	0	
Labour:													
Family and other non hired labour	<i>no</i>	2	(7)	3	(20)	2	(12)	2	(14)	2	(10)	1	(20)
Permanents	<i>no</i>	0	(41)	0	(99)	0	(47)	0	(73)	0	(84)	0	(40)
Casuals	<i>no</i>	0	(52)	0	(66)	0	(43)	0	(44)	0	(31)	0	(62)
Total	<i>no</i>	2	(8)	3	(20)	2	(10)	2	(12)	2	(10)	1	(22)
Weeks worked - family and other non hired labour	<i>weeks</i>	89	(9)	84	(12)	77	(9)	76	(13)	66	(16)	48	(21)
Weeks worked - permanents	<i>weeks</i>	4	(68)	2	(99)	3	(41)	3	(83)	0	(84)	15	(51)

10.5.17. Importance of availability of information for honeybee businesses, by number of hives, 2006-07

Average per business

		50 - 250 hives		250 - 500 hives		500 - 1000 hives		More than 1000 hives		All businesses	
		Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE
Honey flora											
Not at all	%	27	(24)	4	(88)	16	(42)	11	(86)	20	(20)
To some extent	%	7	(79)	26	(46)	7	(71)	13	(67)	11	(38)
To a large extent	%	67	(5)	71	(17)	76	(9)	77	(16)	69	(5)
Unknown	%	0		0		0		0		0	
Bee diseases and pests											
Not at all	%	1	(100)	0		0		11	(86)	1	(66)
To some extent	%	10	(68)	5	(92)	3	(97)	0		7	(57)
To a large extent	%	89	(8)	96	(4)	96	(3)	90	(10)	92	(5)
Unknown	%	0		0		0		0		0	
Bee and hive health											
Not at all	%	5	(54)	0		3	(93)	19	(63)	4	(41)
To some extent	%	18	(35)	30	(45)	20	(38)	9	(71)	20	(24)
To a large extent	%	78	(8)	70	(19)	76	(11)	72	(19)	76	(7)
Unknown	%	0		0		0		0		0	
Honey extraction packing and packaging											
Not at all	%	22	(28)	22	(48)	16	(40)	12	(78)	21	(21)
To some extent	%	49	(26)	54	(27)	47	(20)	43	(26)	50	(17)
To a large extent	%	29	(40)	24	(46)	36	(22)	46	(28)	30	(25)
Unknown	%	0	(387)	0		0		0		0	(387)
Management systems											
Not at all	%	39	(19)	22	(54)	24	(31)	12	(78)	32	(16)
To some extent	%	36	(33)	36	(38)	40	(23)	39	(35)	37	(21)
To a large extent	%	26	(41)	38	(35)	35	(22)	49	(30)	31	(23)
Unknown	%	0		5	(92)	0		0		1	(92)
Pollination											
Not at all	%	33	(28)	14	(62)	15	(40)	13	(73)	25	(23)
To some extent	%	28	(48)	23	(50)	25	(32)	13	(64)	26	(33)
To a large extent	%	39	(26)	63	(21)	59	(11)	75	(16)	49	(14)
Unknown	%	0		0		0		0		0	
Pesticides											
Not at all	%	15	(48)	0		7	(78)	11	(86)	10	(42)
To some extent	%	7	(44)	20	(58)	17	(35)	11	(66)	11	(27)
To a large extent	%	78	(10)	81	(14)	75	(11)	78	(15)	78	(7)
Unknown	%	0		0		0		0		0	
State regulations											
Not at all	%	25	(28)	3	(95)	19	(39)	11	(86)	19	(23)
To some extent	%	50	(20)	54	(25)	40	(19)	38	(36)	49	(14)
To a large extent	%	25	(37)	42	(33)	40	(22)	51	(28)	32	(20)

10.5.17. Continued... Importance of availability of information for honeybee businesses, by number of hives, 2006-07

Average per business

Unknown	%	0		0		0		0		0	
Hive equipment											
Not at all	%	16	(44)	4	(84)	21	(35)	30	(42)	15	(30)
To some extent	%	48	(29)	71	(18)	51	(18)	48	(25)	53	(17)
To a large extent	%	36	(34)	25	(51)	27	(28)	22	(50)	32	(25)
Unknown	%	0		0		0		0		0	
Nutrition											
Not at all	%	1	(100)	0		13	(52)	19	(63)	3	(38)
To some extent	%	25	(31)	36	(37)	30	(28)	1		27	(20)
To a large extent	%	74	(10)	65	(20)	56	(13)	80	(15)	70	(8)
Unknown	%	0		0		0		0		0	
Seasonal management											
Not at all	%	35	(25)	9	(62)	20	(36)	28	(43)	27	(20)
To some extent	%	15	(50)	22	(52)	33	(28)	10	(77)	19	(28)
To a large extent	%	50	(14)	69	(19)	46	(17)	62	(21)	53	(9)
Unknown	%	0		0		0		0		0	
Commercial beekeeping											
Not at all	%	16	(42)	11	(92)	22	(34)	21	(44)	16	(29)
To some extent	%	52	(16)	37	(36)	33	(27)	53	(25)	46	(13)
To a large extent	%	33	(23)	52	(24)	44	(17)	26	(38)	38	(14)
Unknown	%	0		0		0		0		0	
Queen raising											
Not at all	%	30	(25)	7	(5)	31	(24)	20	(60)	25	(19)
To some extent	%	22	(49)	36	(36)	33	(26)	36	(36)	27	(26)
To a large extent	%	48	(18)	57	(23)	34	(22)	45	(31)	48	(12)
Unknown	%	0		0		0		0		0	
Marketing											
Not at all	%	22	(33)	25	(49)	23	(33)	19	(49)	22	(23)
To some extent	%	31	(37)	9	(53)	35	(26)	11	(69)	26	(27)
To a large extent	%	47	(19)	63	(20)	40	(20)	70	(17)	50	(12)
Unknown	%	1	(65)	3	(97)	0		0		1	(64)
Other											
Not at all	%	61	(12)	32	(27)	53	(14)	41	(25)	53	(9)
To some extent	%	0		0		0		0		0	
To a large extent	%	0		11	(63)	0		0		2	(63)
Unknown	%	40	(18)	57	(11)	46	(16)	59	(18)	45	(10)

10.5.18. Importance of availability of information for honeybee businesses, by state, 2006-07

Average per business

		New South Wales		Victoria		Queensland		South Australia		Western Australia		Tasmania	
		Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE
Honey flora													
Not at all	%	24	(40)	26	(40)	0		44	(14)	3	(84)	6	(78)
To some extent	%	22	(47)	2	(108)	0		10	(72)	15	(68)	5	(62)
To a large extent	%	54	(10)	72	(15)	100		46	(14)	80	(13)	89	(6)
Unknown	%	0		0		0		0		0		0	
Bee diseases and pests													
Not at all	%	1	(91)	0		0		0		8	(100)	0	
To some extent	%	13	(73)	7	(73)	0		7	(106)	0		0	
To a large extent	%	86	(11)	93	(5)	100		93	(8)	89	(10)	100	
Unknown	%	0		0		0		0		0		0	
Bee and hive health													
Not at all	%	1	(91)	6	(78)	0		15	(71)	15	(68)	0	
To some extent	%	31	(31)	17	(53)	7	(131)	21	(49)	12	(56)	0	
To a large extent	%	68	(14)	77	(12)	93	(10)	63	(22)	70	(16)	100	
Unknown	%	0		0		0		0		0		0	
Honey extraction packing and packaging													
Not at all	%	30	(34)	14	(58)	8	(152)	28	(40)	27	(44)	11	(45)
To some extent	%	50	(29)	56	(27)	46	(43)	55	(23)	38	(34)	29	(21)
To a large extent	%	21	(56)	31	(46)	47	(52)	17	(33)	32	(26)	60	(10)
Unknown	%	0		0		0		0		0		0	
Management systems													
Not at all	%	48	(20)	23	(59)	4	(93)	53	(9)	27	(44)	17	(34)
To some extent	%	31	(42)	48	(20)	45	(45)	30	(23)	21	(51)	29	(26)
To a large extent	%	19	(55)	30	(47)	51	(38)	17	(42)	50	(11)	55	(12)
Unknown	%	2	(91)	0		0		0		0		0	
Pollination													
Not at all	%	40	(36)	16	(56)	0		33	(34)	47	(27)	10	(46)
To some extent	%	32	(48)	21	(65)	20	(80)	27	(49)	22	(53)	11	(41)
To a large extent	%	28	(31)	62	(24)	80	(20)	40	(18)	28	(30)	79	(7)
Unknown	%	0		0		0		0		0		0	
Pesticides													
Not at all	%	10	(77)	17	(72)	0		19	(60)	11	(77)	6	(67)
To some extent	%	6	(112)	16	(54)	7	(64)	18	(42)	32	(39)	28	(27)
To a large extent	%	84	(11)	67	(22)	93	(5)	62	(22)	54	(25)	67	(11)
Unknown	%	0		0		0		0		0		0	
State regulations													
Not at all	%	29	(39)	8	(70)	2	(109)	45	(0)	11	(77)	0	
To some extent	%	35	(42)	43	(36)	82	(13)	45	(15)	59	(22)	34	(25)
To a large extent	%	37	(36)	50	(31)	16	(65)	10	(67)	28	(44)	66	(13)

10.5.18. Continued... Importance of availability of information for honeybee businesses, by state, 2006-07

Average per business

Unknown	%	0	0	0	0	0	0	0	0	0	0	0	
Hive equipment													
Not at all	%	18	(59)	9	(47)	1	(111)	39	(27)	28	(40)	5	(62)
To some extent	%	59	(27)	50	(31)	53	(38)	53	(21)	36	(36)	41	(20)
To a large extent	%	24	(53)	41	(37)	46	(45)	9	(59)	33	(39)	55	(15)
Unknown	%	0		0		0		0		0		0	
Nutrition													
Not at all	%	4	(82)	4	(65)	0		4	(95)	11	(77)	0	
To some extent	%	33	(35)	27	(39)	6	(75)	39	(34)	46	(24)	11	(41)
To a large extent	%	63	(19)	69	(16)	94	(4)	57	(24)	40	(19)	89	(5)
Unknown	%	0		0		0		0		0		0	
Seasonal management													
Not at all	%	46	(31)	5	(61)	4	(105)	54	(12)	22	(50)	0	
To some extent	%	26	(45)	25	(52)	6	(63)	8	(60)	30	(42)	11	(41)
To a large extent	%	27	(37)	71	(18)	91	(6)	37	(20)	45	(27)	89	(5)
Unknown	%	0		0		0		0		0		0	
Commercial beekeeping													
Not at all	%	23	(50)	3	(95)	1	(110)	49	(7)	17	(57)	5	(62)
To some extent	%	43	(28)	58	(26)	49	(34)	24	(35)	51	(23)	58	(14)
To a large extent	%	34	(30)	40	(38)	50	(34)	28	(30)	29	(29)	38	(22)
Unknown	%	0		0		0		0		0		0	
Queen raising													
Not at all	%	23	(47)	53	(21)	2	(109)	37	(26)	18	(59)	0	
To some extent	%	29	(38)	25	(40)	20	(80)	35	(35)	31	(39)	29	(29)
To a large extent	%	48	(13)	23	(45)	79	(20)	28	(30)	49	(13)	71	(12)
Unknown	%	0		0		0		0		0		0	
Marketing													
Not at all	%	31	(36)	17	(50)	2	(108)	49	(7)	16	(61)	0	
To some extent	%	19	(59)	58	(26)	16	(95)	12	(44)	28	(44)	46	(15)
To a large extent	%	50	(12)	25	(50)	81	(19)	34	(21)	54	(25)	54	(13)
Unknown	%	0		0		0		5	(97)	0		0	
Other													
Not at all	%	66	(14)	21	(60)	83	(15)	36	(39)	0		48	(19)
To some extent	%	0		0		0		0		0		0	
To a large extent	%	0		0		7	(179)	5	(97)	4	(78)	0	
Unknown	%	35	(27)	79	(16)	11	(52)	60	(23)	94	(3)	52	(17)

10.5.19. Importance of beekeeping information sources for honeybee businesses, by number of hives, 2006-07

Average per business

		50 - 250 hives		250 - 500 hives		500 - 1000 hives		More than 1000 hives		All businesses	
		Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE
Australian Beekeeper Magazines											
Not at all	%	18	(39)	7	(70)	26	(30)	17	(55)	17	(26)
To some extent	%	39	(24)	44	(28)	38	(24)	56	(23)	41	(15)
To a large extent	%	43	(24)	49	(24)	32	(26)	27	(34)	42	(16)
Unknown	%	0		0		2	(95)	0		0	(95)
Other beekeeping industry newsletters/magazines											
Not at all	%	32	(35)	17	(60)	26	(28)	36	(35)	28	(25)
To some extent	%	19	(54)	44	(30)	51	(17)	42	(28)	30	(23)
To a large extent	%	49	(20)	40	(32)	22	(33)	22	(47)	42	(16)
Unknown	%	0		0		0		0		0	
Media											
Not at all	%	63	(12)	43	(30)	53	(16)	58	(19)	57	(9)
To some extent	%	32	(26)	44	(31)	37	(24)	29	(27)	35	(17)
To a large extent	%	5	(68)	13	(64)	9	(45)	14	(60)	7	(36)
Unknown	%	0		0		0		0		0	
Internet											
Not at all	%	53	(17)	54	(24)	49	(14)	41	(31)	52	(12)
To some extent	%	33	(27)	32	(38)	38	(20)	50	(25)	34	(18)
To a large extent	%	15	(23)	14	(57)	12	(41)	9	(17)	14	(20)
Unknown	%	0		0		0		0		0	
Books on beekeeping											
Not at all	%	12	(52)	17	(26)	16	(46)	47	(26)	15	(27)
To some extent	%	49	(10)	65	(13)	45	(21)	50	(24)	52	(7)
To a large extent	%	39	(18)	19	(44)	38	(24)	3		33	(15)
Unknown	%	0		0		0		0		0	
Research papers including RIRDC publications											
Not at all	%	21	(32)	20	(37)	19	(39)	44	(18)	22	(21)
To some extent	%	32	(20)	11	(47)	38	(20)	8	(33)	27	(15)
To a large extent	%	47	(17)	69	(13)	42	(21)	48	(17)	51	(11)
Unknown	%	0		0		0		0		0	
Field days											
Not at all	%	24	(40)	7	(64)	38	(17)	19	(53)	22	(26)
To some extent	%	38	(22)	61	(18)	14	(37)	46	(31)	39	(14)
To a large extent	%	38	(26)	33	(34)	47	(17)	35	(38)	38	(17)
Unknown	%	0		0		0		0		0	
Courses											
Not at all	%	63	(19)	36	(34)	46	(17)	53	(23)	54	(14)
To some extent	%	13	(66)	40	(30)	12	(39)	40	(31)	20	(30)

10.5.19. Continued... Importance of beekeeping information sources for honeybee businesses, by number of hives, 2006-07

Average per business

To a large extent	%	24	(35)	23	(54)	41	(22)	7	(28)	26	(22)
Unknown	%	0		0		0		0		0	
Government apiary staff											
Not at all	%	14	(42)	4	(76)	24	(30)	18	(64)	14	(28)
To some extent	%	48	(24)	50	(18)	28	(26)	16	(43)	44	(17)
To a large extent	%	38	(28)	46	(18)	47	(21)	66	(20)	42	(16)
Unknown	%	0		0		0		0		0	
Beekeeping associations											
Not at all	%	17	(33)	11	(39)	19	(30)	9	(80)	16	(23)
To some extent	%	24	(37)	55	(26)	40	(23)	34	(21)	33	(19)
To a large extent	%	60	(15)	35	(39)	40	(23)	57	(18)	52	(12)
Unknown	%	0		0		0		0		0	
Australian Honeybee Industry Council											
Not at all	%	61	(22)	31	(40)	44	(19)	48	(24)	52	(16)
To some extent	%	21	(53)	43	(30)	29	(27)	3	(43)	26	(28)
To a large extent	%	19	(47)	26	(46)	27	(26)	49	(24)	23	(26)
Unknown	%	0		0		0		0		0	
Honey packers											
Not at all	%	63	(16)	41	(32)	40	(23)	40	(28)	54	(13)
To some extent	%	23	(40)	35	(33)	35	(23)	24	(32)	27	(23)
To a large extent	%	13	(54)	25	(52)	24	(28)	36	(23)	18	(28)
Unknown	%	0		0		0		0		0	
Manufacturers											
Not at all	%	58	(11)	42	(32)	44	(21)	50	(23)	53	(9)
To some extent	%	28	(30)	42	(30)	36	(23)	44	(26)	33	(18)
To a large extent	%	14	(61)	17	(61)	19	(36)	6	(33)	15	(37)
Unknown	%	0		0		0		0		0	
Other beekeepers											
Not at all	%	5	(108)	3	(92)	12	(53)	3	(70)	6	(62)
To some extent	%	5	(49)	10	(58)	18	(33)	27	(41)	9	(24)
To a large extent	%	90	(7)	87	(7)	69	(12)	62	(16)	85	(5)
Unknown	%	0		0		0		8	(93)	0	(93)
Other											
Not at all	%	60	(12)	39	(15)	53	(14)	31	(37)	54	(8)
To some extent	%	0		0		0		0		0	
To a large extent	%	1	(87)	1	(83)	3	(93)	0		1	(54)
Unknown	%	39	(18)	60	(10)	43	(17)	69	(17)	45	(10)

10.5.20. Importance of beekeeping information sources for honeybee businesses, by state, 2006-07

Average per business

		New South Wales		Victoria		Queensland		South Australia		Western Australia		Tasmania	
		Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE
Australian Beekeeper Magazines													
Not at all	%	17	(56)	19	(52)	2	(86)	33	(41)	44	(30)	0	
To some extent	%	32	(37)	35	(32)	72	(11)	30	(45)	26	(44)	12	(50)
To a large extent	%	51	(29)	46	(22)	25	(33)	37	(35)	27	(46)	88	(7)
Unknown	%	0		0		2	(109)	0		0		0	
Other beekeeping industry newsletters/magazines													
Not at all	%	23	(45)	31	(45)	36	(55)	34	(37)	15	(62)	6	(78)
To some extent	%	24	(33)	29	(37)	42	(51)	36	(27)	26	(44)	11	(51)
To a large extent	%	53	(24)	39	(39)	22	(36)	30	(45)	56	(23)	83	(8)
Unknown	%	0		0		0		0		0		0	
Media													
Not at all	%	56	(21)	68	(16)	60	(19)	40	(31)	61	(22)	58	(15)
To some extent	%	40	(29)	32	(32)	28	(44)	42	(32)	27	(46)	32	(26)
To a large extent	%	4	(86)	0		12	(67)	18	(42)	10	(69)	10	(46)
Unknown	%	0		0		0		0		0		0	
Internet													
Not at all	%	46	(28)	61	(25)	57	(8)	56	(16)	41	(33)	50	(17)
To some extent	%	51	(24)	23	(58)	15	(42)	36	(23)	29	(43)	28	(28)
To a large extent	%	3	(107)	16	(60)	28	(28)	9	(73)	27	(44)	22	(34)
Unknown	%	0		0		0		0		0		0	
Books on beekeeping													
Not at all	%	21	(47)	10	(36)	0		30	(44)	26	(45)	5	(62)
To some extent	%	54	(8)	23	(42)	69	(21)	58	(24)	42	(32)	90	(5)
To a large extent	%	25	(39)	67	(15)	31	(46)	12	(44)	29	(43)	6	(67)
Unknown	%	0		0		0		0		0		0	
Research papers including RIRDC publications													
Not at all	%	23	(45)	28	(38)	5	(183)	41	(30)	28	(44)	0	
To some extent	%	10	(77)	28	(37)	55	(31)	26	(34)	45	(30)	17	(40)
To a large extent	%	67	(19)	45	(16)	40	(34)	33	(39)	25	(34)	83	(8)
Unknown	%	0		0		0		0		0		0	
Field days													
Not at all	%	28	(48)	28	(38)	2	(108)	24	(53)	36	(31)	5	(62)
To some extent	%	36	(32)	36	(42)	55	(23)	36	(38)	16	(45)	65	(14)
To a large extent	%	36	(39)	35	(41)	43	(30)	40	(30)	45	(29)	31	(29)
Unknown	%	0		0		0		0		0		0	
Courses													
Not at all	%	62	(21)	81	(11)	41	(49)	13	(72)	57	(23)	5	(62)
To some extent	%	12	(32)	14	(59)	24	(68)	46	(30)	14	(56)	65	(14)
To a large extent	%	27	(50)	6	(96)	35	(40)	41	(31)	27	(44)	31	(29)

10.5.20. Continued... Importance of beekeeping information sources for honeybee businesses, by state, 2006-07

Average per business

Unknown	%	0	0	0	0	0	0	0	0				
Government apiary staff													
Not at all	%	14	(59)	6	(51)	1	(82)	31	(43)	43	(31)	17	(33)
To some extent	%	46	(35)	29	(51)	50	(34)	57	(25)	33	(38)	52	(18)
To a large extent	%	40	(38)	65	(23)	49	(36)	13	(43)	21	(56)	31	(26)
Unknown	%	0		0		0		0		0		0	
Beekeeping associations													
Not at all	%	9	(74)	30	(34)	2	(100)	34	(37)	28	(44)	0	
To some extent	%	32	(38)	37	(41)	26	(53)	45	(32)	39	(31)	11	(51)
To a large extent	%	59	(23)	33	(45)	72	(19)	21	(34)	30	(42)	89	(6)
Unknown	%	0		0		0		0		0		0	
Australian Honeybee Industry Council													
Not at all	%	52	(32)	65	(15)	47	(41)	51	(11)	39	(34)	6	(78)
To some extent	%	21	(55)	18	(47)	36	(57)	36	(23)	35	(37)	11	(51)
To a large extent	%	27	(49)	17	(41)	17	(46)	14	(52)	24	(49)	83	(8)
Unknown	%	0		0		0		0		0		0	
Honey packers													
Not at all	%	67	(14)	32	(34)	50	(39)	60	(12)	52	(14)	59	(16)
To some extent	%	11	(29)	45	(34)	42	(39)	32	(26)	17	(43)	31	(28)
To a large extent	%	23	(44)	24	(59)	8	(124)	8	(60)	28	(30)	10	(40)
Unknown	%	0		0		0		0		0		0	
Manufacturers													
Not at all	%	52	(14)	40	(37)	59	(19)	60	(12)	63	(13)	59	(16)
To some extent	%	27	(39)	49	(31)	31	(23)	31	(27)	24	(35)	31	(28)
To a large extent	%	21	(61)	11	(76)	10	(99)	9	(59)	11	(64)	10	(40)
Unknown	%	0		0		0		0		0		0	
Other beekeepers													
Not at all	%	10	(91)	0		0		10	(67)	13	(76)	11	(51)
To some extent	%	3	(110)	11	(53)	8	(59)	23	(51)	13	(68)	36	(24)
To a large extent	%	88	(11)	88	(7)	92	(5)	68	(19)	72	(15)	54	(17)
Unknown	%	0		2	(99)	0		0		0		0	
Other													
Not at all	%	64	(15)	20	(61)	90	(6)	36	(39)	0		48	(19)
To some extent	%	0		0		0		0		0		0	
To a large extent	%	0		3	(87)	0		0		15	(67)	0	
Unknown	%	36	(27)	77	(16)	11	(52)	65	(21)	83	(12)	52	(17)

10.5.21. Pollination service provision of honeybee businesses, by number of hives, 2006-07

Average per business

		50 - 250 hives		250 - 500 hives		500 - 1000 hives		More than 1000 hives		All businesses	
		Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE
Honeybee businesses providing pollination services	<i>no</i>	190		129		121		40		481	
Proportion receiving payment for pollination services	%	57	(22)	83	(16)	91	(9)	98	(3)	76	(8)
Proportion providing pollination services to:											
Vegetables	%	0		28	(67)	1	(106)	17	(80)	9	(56)
Pumpkins	%	35	(89)	27	(70)	7	(92)	16	(89)	24	(56)
Onions	%	1	(65)	0		6	(97)	16	(89)	3	(59)
Carrots	%	1	(65)	1	(57)	0		0		1	(44)
Cauliflowers	%	1	(66)	0		0		0		0	(66)
Broccoli	%	0		12	(92)	0		0		3	(92)
Cabbage	%	1	(65)	0		0		0		0	(65)
Clover	%	0		0		0		4	(131)	0	
Melons	%	0		27	(70)	6	(99)	0		9	(61)
Sunflower	%	0		15	(103)	0		32	(63)	7	(67)
Canola	%	31	(91)	24	(63)	34	(47)	37	(52)	30	(42)
Lucerne	%	0		7	(98)	59	(24)	44	(48)	21	(21)
Fababeans seed/seedlngs	%	0		0		0		14	(93)	1	(93)
Pome fruit	%	0		0		7	(94)	0		2	(94)
Apples	%	25	(51)	21	(78)	15	(62)	17	(88)	21	(35)
Pears	%	0		0		20	(54)	0		5	(54)
Nashi fruit	%	0		0		7	(89)	14	(93)	3	(65)
Peaches	%	4	(110)	0		0		0		2	(0)
Apricots	%	4	(110)	0		13	(66)	0		5	(57)
Plums	%	6	(77)	0		8	(81)	0		4	(56)
Cherries	%	79	(49)	1	(57)	13	(68)	34	(47)	38	(41)
Almonds	%	8	(112)	62	(12)	73	(14)	94	(7)	46	(10)
Vine crops	%	17	(81)	0		0		0		7	(81)
Avocados	%	4	(110)	18	(121)	6	(99)	0		8	(80)
Olives	%	0		0		0		14	(93)	1	(93)
Kiwifruit	%	13	(99)	0		7	(89)	14	(93)	8	(66)
Nuts	%	0		18	(121)	32	(64)	5	(135)	13	(59)
Other fruit	%	60	(66)	2	(36)	14	(42)	33	(50)	31	(51)
Undisclosed pollination	%	0		0		2	(62)	0		1	(62)

10.5.22. Pollination service provision of honeybee businesses, by state, 2006-07

Average per business

		New South Wales		Victoria		Queensland		South Australia		Western Australia		Tasmania	
		Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE
Honeybee businesses providing pollination services	<i>no</i>	94		132		107		100		33		15	
Proportion receiving payment for pollination services	%	59	(43)	100		58	(29)	66	(24)	100		100	
Proportion providing pollination services to:													
Vegetables	%	22	(97)	0		18	(112)	0		0		33	(22)
Pumpkins	%	23	(89)	0		87	(54)	0		0		0	
Onions	%	7	(101)	6	(97)	0		0		0		12	(65)
Carrots	%	0		0		0		0		0		23	(45)
Cauliflowers	%	0		0		0		0		0		12	(66)
Broccoli	%	16	(118)	0		0		0		0		0	
Cabbage	%	0		0		0		0		0		12	(65)
Clover	%	0		0		0		0		0		10	(64)
Melons	%	16	(118)	0		24	(92)	0		0		0	
Sunflower	%	7	(101)	5	(99)	18	(112)	0		0		0	
Canola	%	22	(51)	44	(89)	18	(139)	46	(67)	0		10	(64)
Lucerne	%	22	(51)	11	(65)	0		65	(21)	0		0	
Fababeans	%	0		4	(100)	0		0		0		0	
seed/seedlings	%	16	(118)	0		0		0		0		0	
Pome fruit	%	0		0		0		9	(92)	0		0	
Apples	%	0		30	(64)	25	(82)	9	(92)	57	(7)	38	(43)
Pears	%	9	(84)	6	(97)	0		9	(92)	0		0	
Nashifruit	%	9	(84)	4	(100)	0		0		0		0	
Peaches	%	0		0		0		0		23	(110)	0	
Apricots	%	9	(84)	6	(97)	0		0		23	(110)	0	
Plums	%	0		6	(87)	2	(165)	0		31	(84)	0	
Cherries	%	58	(82)	35	(55)	0		55	(70)	58	(48)	50	(28)
Almonds	%	59	(43)	59	(27)	0		87	(32)	0		0	
Vine crops	%	0		23	(85)	0		0		0		17	(71)
Avocados	%	0		0		29	(117)	0		23	(110)	0	
Olives	%	0		4	(100)	0		0		0		0	
Kiwifruit	%	9	(84)	23	(81)	0		0		0		0	
Nuts	%	23	(74)	0		40	(102)	0		0		0	
Other fruit	%	15	(79)	5	(124)	69	(62)	47	(81)	3	(129)	37	(40)
Undisclosed pollination	%	0		0		0		0		8	(116)	0	

10.5.23. Future pollination service provision by honeybee businesses, by number of hives, 2006-07

Average per business

		50 - 250 hives		250 - 500 hives		500 - 1000 hives		More than 1000 hives		All businesses	
		Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE
Proportion expecting to expand or commence pollination services	%	26	(30)	39	(29)	64	(14)	63	(21)	36	(15)
Constraints to expansion of pollination services:											
Knowledge and experience constraints	%	4	(74)	4	(95)	10	(45)	19	(51)	5	(36)
Physical constraints	%	26	(24)	17	(43)	37	(19)	21	(44)	26	(16)
Financial constraints	%	3	(153)	5	(77)	17	(41)	19	(60)	7	(52)
Prices too low	%	35	(14)	60	(22)	31	(19)	44	(22)	40	(10)
Additional infrastructure or assets needed	%	8	(52)	19	(23)	7	(66)	7	(95)	10	(27)
Too hard	%	42	(24)	33	(35)	10	(47)	12	(58)	34	(19)
Proportion facing a constraint to pollination service expansion	%	80	(4)	73	(16)	65	(9)	65		75	(4)
Of those expecting to expand or commence pollination services:											
Hives operated at 30 June 2007	<i>no</i>	134	(11)	316	(10)	632	(5)	1533	(10)	422	(4)
Hives expected to be used for pollination services in next 2 years	<i>no</i>	154	(12)	249	(28)	585	(17)	1467	(18)	397	(10)
Hives expected to be used for pollination services in next 5 years	<i>no</i>	275	(13)	331	(36)	768	(21)	1985	(15)	558	(11)

10.5.24. Future pollination service provision by honeybee businesses, by state, 2006-07

Average per business

		New South Wales		Victoria		Queensland		South Australia		Western Australia		Tasmania	
		Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE
Proportion expecting to expand or commence pollination services	%	23	(47)	45	(34)	50	(51)	43	(32)	33	(35)	37	(25)
Constraints to expansion of pollination services:													
Knowledge and experience constraints	%	2	(61)	7	(98)	10	(52)	4	(113)	10	(94)	0	
Physical constraints	%	28	(30)	0		46	(41)	36	(31)	15	(70)	8	(73)
Financial constraints	%	5	(70)	0		11	(53)	6	(93)	26	(45)	0	
Prices too low	%	52	(14)	0		56	(26)	40	(31)	44	(26)	37	(21)
Additional infrastructure or assets needed	%	2	(122)	0		28	(91)	17	(72)	10	(94)	14	(51)
Too hard	%	24	(53)	13	(65)	63	(41)	36	(37)	47	(26)	71	(11)
Proportion facing a constraint to pollination service expansion	%	84	(1)	20	(48)	97	(4)	96	(4)	87	(11)	88	(7)
Of those expecting to expand or commence pollination services:													
Hives operated at 30 June 2007	<i>no</i>	651	(17)	274	(26)	399	(15)	429	(15)	298	(33)	171	(4)
Hives expected to be used for pollination services in next 2 years	<i>no</i>	633	(16)	341	(26)	323	(17)	340	(17)	89	(31)	146	(7)
Hives expected to be used for pollination services in next 5 years	<i>no</i>	900	(16)	544	(16)	399	(22)	462	(25)	182	(22)	180	(7)

10.5.25. Impact of challenges on honey and honey-related production, by number of hives, 2006-07

Average per business

		50 - 250 hives		250 - 500 hives		500 - 1000 hives		More than 1000 hives		All businesses	
		Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE
Land clearance											
not at all	%	53	(19)	43	(30)	43	(20)	58	(20)	50	(14)
small extent	%	31	(40)	39	(33)	20	(33)	29	(29)	31	(26)
great extent	%	16	(69)	19	(19)	36	(23)	13	(66)	19	(35)
Tree/bush dieback											
not at all	%	35	(30)	53	(26)	30	(30)	28	(41)	37	(19)
small extent	%	41	(29)	37	(34)	30	(29)	23	(11)	38	(21)
great extent	%	25	(43)	10	(70)	39	(23)	49	(23)	25	(27)
Flood damage											
not at all	%	91	(7)	97	(3)	90	(5)	91	(7)	92	(4)
small extent	%	1	(100)	0		9	(51)	9	(75)	2	(40)
great extent	%	8	(81)	4	(96)	0		0		6	(72)
Salinity											
not at all	%	88	(9)	88	(8)	89	(6)	80	(14)	88	(6)
small extent	%	9	(74)	7	(88)	8	(64)	8	(84)	8	(51)
great extent	%	3	(141)	4	(72)	3	(94)	12	(78)	4	(71)
Weed control											
not at all	%	39	(21)	24	(37)	35	(22)	25	(37)	35	(15)
small extent	%	25	(41)	44	(27)	8	(69)	21	(13)	26	(26)
great extent	%	36	(26)	32	(34)	56	(14)	54	(17)	39	(16)
Conserved area access											
not at all	%	62	(12)	29	(42)	20	(38)	29	(41)	48	(11)
small extent	%	13	(56)	32	(37)	26	(25)	11	(70)	19	(27)
great extent	%	25	(40)	39	(32)	53	(16)	61	(21)	34	(20)
Drought											
not at all	%	12	(38)	15	(56)	12	(56)	13	(57)	13	(27)
small extent	%	19	(44)	1	(64)	5	(78)	2	(71)	12	(41)
great extent	%	69	(13)	85	(10)	83	(9)	85	(9)	75	(8)
Fire											
not at all	%	57	(20)	39	(36)	41	(23)	29	(40)	50	(15)
small extent	%	22	(36)	42	(32)	30	(24)	30	(38)	28	(20)
great extent	%	21	(40)	19	(59)	28	(31)	40	(25)	22	(25)
Pesticide use											
not at all	%	44	(15)	28	(30)	39	(23)	33	(36)	39	(11)
small extent	%	39	(9)	35	(40)	28	(27)	47	(27)	37	(10)
great extent	%	17	(36)	37	(35)	32	(26)	20	(48)	24	(20)
American foulbrood											
not at all	%	67	(18)	32	(34)	51	(11)	66	(17)	58	(13)
small extent	%	25	(34)	48	(18)	38	(18)	24	(39)	32	(17)
great extent	%	8	(118)	20	(42)	10	(56)	11	(63)	11	(54)
European foulbrood											
not at all	%	52	(24)	26	(20)	46	(20)	61	(16)	46	(16)
small extent	%	47	(26)	65	(8)	43	(22)	32	(24)	50	(15)

10.5.25. Continued... Impact of challenges on honey and honey-related production, by number of hives, 2006-07

Average per business

great extent	%	1	(101)	9	(49)	10	(61)	8	(84)	4	(34)
Chalkbrood											
not at all	%	30	(40)	41	(30)	30	(23)	55	(18)	33	(23)
small extent	%	63	(20)	50	(25)	67	(11)	33	(23)	60	(14)
great extent	%	7	(59)	9	(83)	3	(94)	12	(56)	7	(42)
Nosema											
not at all	%	51	(18)	40	(34)	31	(22)	33	(34)	45	(14)
small extent	%	34	(32)	47	(29)	49	(19)	37	(38)	39	(18)
great extent	%	15	(54)	13	(40)	19	(37)	30	(40)	16	(32)
Sacbrood											
not at all	%	80	(9)	56	(24)	71	(10)	87	(8)	74	(7)
small extent	%	20	(38)	41	(34)	26	(27)	12	(57)	25	(22)
great extent	%	0		3	(97)	3	(92)	1	(0)	1	(64)
Small hive beetle											
not at all	%	54	(15)	35	(23)	61	(4)	71	(16)	52	(10)
small extent	%	29	(29)	22	(51)	23	(24)	10	(72)	26	(22)
great extent	%	17	(67)	44	(29)	15	(37)	19	(54)	22	(33)
Wax moth											
not at all	%	18	(59)	49	(25)	48	(19)	43	(33)	30	(23)
small extent	%	70	(16)	39	(36)	39	(23)	39	(32)	58	(13)
great extent	%	12	(42)	12	(65)	12	(44)	18	(58)	12	(29)

10.5.26. Impact of challenges on honey and honey-related production, by state, 2006-07

Average per business

		New South Wales		Victoria		Queensland		South Australia		Western Australia		Tasmania	
		Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE	Estimate	RSE
Land clearance													
not at all	%	50	(26)	77	(18)	23	(35)	51	(10)	64	(18)	47	(20)
small extent	%	35	(37)	19	(73)	39	(61)	29	(25)	23	(43)	12	(51)
great extent	%	15	(67)	5	(67)	38	(65)	21	(23)	10	(62)	41	(22)
Tree/bush dieback													
not at all	%	45	(36)	33	(32)	19	(68)	33	(40)	58	(20)	90	(5)
small extent	%	40	(33)	20	(48)	51	(49)	46	(29)	29	(38)	6	(67)
great extent	%	15	(59)	47	(22)	30	(67)	21	(23)	10	(62)	5	(62)
Flood damage													
not at all	%	92	(9)	90	(12)	94	(4)	92	(5)	89	(10)	95	(3)
small extent	%	1	(301)	0		2	(108)	8	(60)	8	(100)	5	(62)
great extent	%	7	(109)	10	(109)	3	(99)	0		0		0	
Salinity													
not at all	%	80	(16)	96	(3)	93	(13)	92	(5)	80	(13)	100	
small extent	%	14	(76)	0		7	(172)	4	(93)	13	(72)	0	
great extent	%	5	(112)	4	(83)	0	(198)	4	(94)	4	(94)	0	
Weed control													
not at all	%	14	(67)	43	(36)	64	(28)	10	(72)	66	(17)	67	(13)
small extent	%	38	(41)	13	(68)	27	(67)	11	(56)	27	(41)	20	(38)
great extent	%	48	(29)	44	(34)	9	(48)	79	(10)	4	(79)	13	(51)
Conserved area access													
not at all	%	34	(34)	54	(21)	62	(29)	43	(22)	59	(20)	95	(4)
small extent	%	25	(42)	13	(60)	22	(76)	4	(93)	16	(61)	0	
great extent	%	41	(35)	33	(33)	16	(41)	53	(19)	22	(36)	6	(67)
Drought													
not at all	%	5	(74)	22	(58)	7	(73)	27	(43)	16	(49)	48	(19)
small extent	%	2	(102)	5	(97)	29	(80)	18	(63)	36	(29)	22	(33)
great extent	%	93	(5)	74	(18)	64	(37)	55		45	(28)	30	(29)
Fire													
not at all	%	45	(32)	52	(30)	61	(23)	47	(21)	32	(39)	72	(11)
small extent	%	33	(37)	14	(64)	32	(44)	32	(26)	24	(47)	12	(51)
great extent	%	22	(50)	34	(43)	7	(64)	21	(50)	41	(31)	17	(38)
Pesticide use													
not at all	%	38	(22)	58	(26)	33	(19)	12	(57)	52	(23)	82	(8)
small extent	%	44	(14)	18	(49)	50	(25)	34	(31)	24	(49)	5	(62)
great extent	%	19	(44)	24	(57)	17	(76)	54	(19)	22	(53)	13	(51)
American foulbrood													
not at all	%	58	(25)	80	(12)	44	(47)	46	(29)	48	(27)	73	(11)
small extent	%	36	(37)	17	(54)	37	(16)	30	(45)	43	(30)	27	(29)
great extent	%	7	(102)	3	(90)	19	(105)	24	(33)	6	(89)	0	
European foulbrood													
not at all	%	31	(40)	51	(22)	53	(46)	42	(34)	97	(2)	78	(10)
small extent	%	66	(20)	45	(25)	46	(54)	39	(34)	0		23	(35)

10.5.26. Continued... Impact of challenges on honey and honey-related production, by state, 2006-07

Average per business

great extent	%	3	(117)	4	(83)	1	(86)	20	(36)	0	0		
Chalkbrood													
not at all	%	38	(35)	14	(49)	42	(58)	30	(44)	29	(43)	84	(8)
small extent	%	58	(23)	73	(18)	58	(41)	46	(30)	66	(18)	16	(41)
great extent	%	4	(106)	13	(87)	0	(238)	25	(50)	3	(86)	0	
Nosema													
not at all	%	43	(8)	48	(30)	42	(49)	26	(49)	90	(6)	94	(5)
small extent	%	39	(28)	40	(23)	47	(45)	42	(28)	8	(60)	6	(78)
great extent	%	18	(58)	12	(91)	12	(50)	32	(41)	0		0	
Sacbrood													
not at all	%	78	(11)	58	(27)	81	(14)	64	(21)	88	(7)	100	
small extent	%	22	(39)	42	(37)	17	(67)	31	(44)	9	(64)	0	
great extent	%	0		0		2	(100)	5	(97)	0		0	
Small hive beetle													
not at all	%	15	(25)	100		40	(50)	84	(7)	97	(2)	100	
small extent	%	52	(27)	0		25	(33)	0		0		0	
great extent	%	33	(41)	0		35	(61)	16	(38)	0		0	
Wax moth													
not at all	%	38	(29)	11	(51)	27	(61)	32	(30)	27	(32)	92	(6)
small extent	%	61	(18)	60	(24)	64	(31)	42	(34)	50	(27)	8	(73)
great extent	%	1	(298)	29	(48)	9	(107)	26	(49)	21	(51)	0	

Australian Honeybee Industry Survey 2006–07

by Sarah Crooks

Australian Bureau of Resource Economics

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The Australian honeybee industry produced an estimated gross value of honey and beeswax of \$75 million in 2007-08. At present the industry faces a number of challenges that include competition in both export and domestic markets and access to native flora. The industry also needs to maintain its competitiveness and comparative advantage as a supplier of high quality honey.

Limited information is available on the physical and financial characteristics of honey producing businesses to guide industry decision-making. In addition, little information is available on the demographic and socioeconomic circumstances of people involved in the industry.

This report presents results from a survey of Australian honeybee businesses conducted by the Australian Bureau of Agricultural and Resource Economics (ABARE) in May to June 2008. The survey updates earlier results from a survey conducted in 2002.

It provides an overview of the current situation of the Australian honeybee industry and presents estimates of production, socioeconomic and

financial characteristics of Australian beekeeping businesses during the 2006–07 financial year.

The primary audiences for this report are Australian beekeepers, industry and government policy makers and other beekeeping-related associations.

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