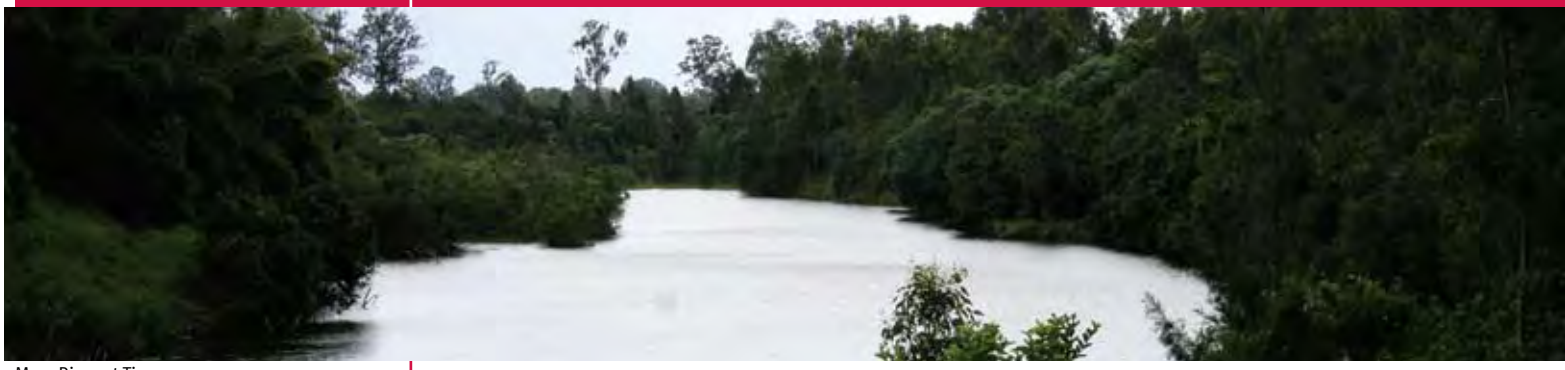
An overview of food and fibre industries for Cooloola, Tiaro and Kilkivan Shires



Mary River at Tiaro

November 2006

Food and Fibre Futures Project

Queensland Government
Department of Primary Industries and Fisheries

An overview of food and fibre industries for Cooloola, Tiaro and Kilkivan Shires

November 2006

Food and Fibre Futures Project

PR08–4019

Produced by: Industry Development and Trade
Department of Primary Industries and Fisheries
GPO Box 46 Brisbane Queensland 4001 Australia

Author: John Switala
Principal Industry Development Officer
Food and Fibre Futures Project
Industry Development and Trade.

Project Manager: Jason Keating
Food and Fibre Futures Project
Industry Development and Trade.

The Department of Primary Industries and Fisheries (DPI&F) seeks to maximise the economic potential of Queensland's primary industries on a sustainable basis.

Contents

List of figures

List of tables

Foreword

Upon the announcement of the proposed Traveston Crossing Dam, substantial concern was raised regarding the impact upon agriculture within the area.

This initial discussion paper seeks to provide a background on agriculture within the region, particularly Cooloola, Tiaro and Kilkivan Shires. Subsequent studies and consultancies may be able to use this paper to improve knowledge of agriculture and the region, and value add on the statistics and information contained here.

The information presented in this publication has been collected from many sources, and has been referenced accordingly to allow further, more detailed investigation if required.

We hope this paper helps understanding of the significance and diversity of agriculture within this region.

Sue Ryan
Assistant Director-General
Industry Development and Trade
Department of Primary Industries and Fisheries

Summary

Census statistics from Australian Bureau of Statistics (ABS) indicates that the Mary River catchment is a significant and diversified food and fibre producing region.

The shire of Cooloola resides around the township of Gympie, and covers most of the land area to be inundated by the proposed Traveston Crossing Dam. The latest statistics from ABS (2000–01) indicate that Cooloola generated $71 million of production (at the farm gate). Cooloola's food and fibre industries are evenly distributed between milk (32%), beef (27%), fruit (20%) and vegetables (15%).

Tiaro and Kilkivan Shires are both downstream from Cooloola Shire and contain a number of farms that draw irrigation supplies from the Mary River.

Kilkivan Shire is a significant food and fibre producing region, with $84 million of food and fibre produce in 2000–01. However, the region is predominantly based on livestock meat industries (88%—predominantly beef, but also pork), milk (5%), cropping (6%—fodder and grain supporting livestock) and fruit (1%).

Tiaro Shire is a significant food and fibre producing region, with $24 million of food and fibre produce in 2000–01. Like Cooloola Shire, Tiaro's food and fibre industries are diversified with livestock meat industries (52%—predominantly beef, but also pork), milk (11%), cropping (22%—predominantly sugarcane) and fruit (15%).

Anecdotal evidence indicates that subsequent to 2000–01, restructuring (as a result of deregulation, markets, and the ongoing cost–price squeeze within the food and fibre sector) within the livestock and cropping industries (particularly dairy) has impacted farming and irrigation practices along the Mary River. The availability of revised food and fibre production statistics for 2005–06 (mid to late 2008) will will help identify changes that have occurred to date.

Introduction

This report is one of several proposed by the Department of Primary Industries and Fisheries (DPI&F) examining agriculture and agribusiness within the Mary River catchments.

The proposed Traveston Crossing Dam, on the Mary River, will inundate approximately 7000 ha of farming land (Stage 3), impacting substantial agricultural production within the region. However, opportunities exist to stimulate food and fibre industry[1] production elsewhere throughout the catchment, particularly as there still is approximately 9000 ML of unsold (supplemented) irrigation water.

This report is a synopsis of published and unpublished data relating to food and fibre industries within the region. Of interest are historical production rates for food and fibre industries, along with emerging trends over more recent years. These trends provide some insights into future opportunities and likely food and fibre activities particularly suited to the Mary River catchments.

Methodology

The geographic scope of analysis for this study has been defined by the availability of reliable statistics for food and fibre industries. The development of Traveston Crossing Dam is located within the Mary River catchments and encroaches upon Cooloola, Noosa and Maroochy Shires (only a handful of properties are affected by the inundation within both Noosa and Maroochy, with most impacts occurring within Cooloola). The smallest geographical context in which reliable food and fibre statistics are available is at the local government area (shire); hence this report presents substantial information for food and fibre production within Cooloola Shire.

Looking at the broader aggregation, Cooloola Shire is one of 21 shires within the Wide Bay–Burnett statistical division. The Wide Bay–Burnett statistical division was responsible for 11% of Queensland's food and fibre production in 2000–01, second only to the Darling Downs statistical division.

This report primarily presents secondary data from published and unpublished sources, particularly the Australian Bureau of Statistics (ABS). The most recent statistics for food and fibre industries are databases from the 2000–01 ABS census. Information from the 2005–06 ABS census will be made available in 2008. In conjunction with 2000–01 census statistics, data from the 1996–97 census are also used in this report for trend analysis.

1 The term 'food and fibre industries' covers the production, harvesting, processing and marketing of food, fibre and lifestyle products and services, including those from fisheries and forestry. It includes all participants in related horizontal and vertical supply chains, the growing knowledge base inherent in these activities, and knowledge-based industries that stem from this knowledge.

Wide Bay–Burnett statistical division

The Wide Bay–Burnett region is a valuable region for food and fibre industries, as indicated in Table 1 below.

Table 1. Significance of agriculture in Queensland (2000–01)

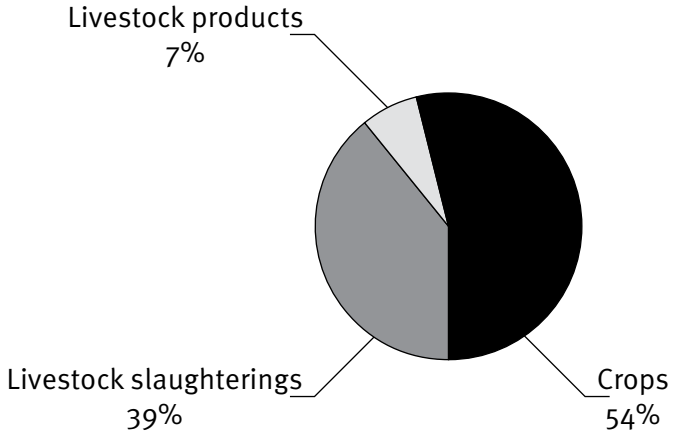
	Wide Bay–Burnett	Queensland
Total value of crops	$434 539 000	$3 391 172 000
Total value of livestock slaughterings	$315 883 000	$3 368 413 000
Total value of livestock products	$55 459 000	$490 291 000
Total value of agriculture	$805 881 000	$7 249 875 000

Source: Unpublished statistics from ABS (AgStats database)

As indicated in Table 1 above, the Wide Bay–Burnett statistical division produced approximately $435 million worth of cropping (vegetables, fruit and broadacre field cropping) and $370 million worth of livestock (beef, dairy and pork) in 2000–01 (latest reliable statistics available). Using the figures presented in Table 1, the Wide Bay–Burnett statistical division produced approximately 11% of total food and fibre production in Queensland in 2000–01.

Figure 1 below provides a graphical overview of the cropping and livestock interface within the Wide Bay–Burnett statistical division.

Figure 1. Agriculture in Wide Bay–Burnett based on value of production (2000–01)

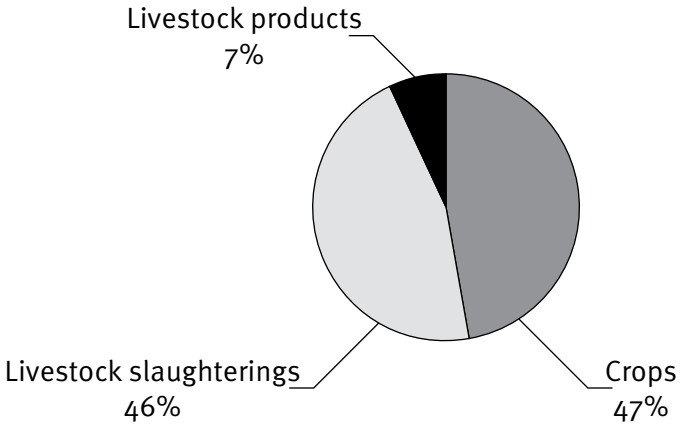


Source: DPI&F calculations using ABS AgStats

The Wide Bay–Burnett statistical division is acknowledged as a major producer of beef and dairy; however, cropping activities (Figure 1) are more economically significant.

Also of interest is the comparison of food and fibre composition between Wide Bay–Burnett statistical division (Figure 1) and Queensland (Figure 2).

Figure 2. Agriculture in Queensland based on value of production (2000–01)



Source: DPI&F calculations using ABS AgStats

DPI&F's *Prospects* publication forecasted Queensland's value of food and fibre production at $10.93 billion for 2005–06. Assuming that food and fibre production in Wide Bay–Burnett grew at the same rate as the rest of the state, then the approximate value of food and fibre production in Wide Bay–Burnett is $1200 million in 2005–06 (an increase of approximately 50% since 2000–01).

As indicated in Table 2 below, Cooloola Shire is a significant area for food and fibre production within the Wide Bay–Burnett statistical division. Cooloola Shire's $71 million of agricultural production in 2000–01 represented 8.8% of Wide Bay–Burnett's total. Other significant agricultural shires are Burnett ($145 million), Kilkivan ($84 million) and Isis ($73 million) (see Table 2).

Applying the same rate of growth between 2000–01 and 2005–06 at the state level (as highlighted by DPI&F publication *Prospects*) to Cooloola Shire, the potential value of food and fibre production in Cooloola has grown from $71 million in 2000–01 (ABS) to approximately $105 million in 2005–06 (DPI&F estimate using this simple methodology).

Table 2. Value of agriculture for each local government area in Wide Bay–Burnett statistical division (2000–01)

Area	Total value of agriculture	% of Wide Bay–Burnett
Bundaberg (C)	$14 638 400	1.8%
Burnett (S)	$145 099 700	18.0%
Hervey Bay (C)	$9 398 900	1.2%
Biggenden (S)	$11 883 100	1.5%
Cooloola (S)	$71 168 600	8.8%
Eidsvold (S)	$17 097 200	2.1%
Gayndah (S)	$41 614 800	5.2%
Isis (S)	$73 137 300	9.1%

Table 2. (cont.)

Area	Total value of agriculture	% of Wide Bay–Burnett
Kilkivan (S)	$84 619 000	10.5%
Kingaroy (S)	$47 400 700	5.9%
Kolan (S)	$25 833 800	3.2%
Maryborough (C)	$6 109 300	0.8%
Miriam Vale (S)	$19 656 600	2.4%
Monto (S)	$45 126 700	5.6%
Mundubbera (S)	$61 364 700	7.6%
Murgon (S)	$25 294 300	3.1%
Nanango (S)	$21 794 700	2.7%
Perry (S)	$4 743 700	0.6%
Tiaro (S)	$24 372 300	3.0%
Wondai (S)	$39 893 500	4.9%
Woocoo (S)	$15 646 400	1.9%
Total	$805 880 700	100%

Source: Unpublished statistics from ABS (AgStats database) and DPI&F calculations

Table 3 on the following page provides an overview of the number of food and fibre businesses within Wide Bay–Burnett region. Of approximately 5100 recorded farmers, there are approximately 2500 involved in beef production. Other key food and fibre industries are sugarcane (710), fruit growing (413) and dairy (348).

Table 3 also shows that many food and fibre business are small operations (part-time operations/ hobby farms). Approximately 1300 of the 5000 food and fibre businesses produced less than $22 500 turnover in 2000–01, while another 1000 produced between $25 000 and $50 000 worth of food and fibre products.

By examining Table 3, some conclusions can be drawn towards those industries with limited potential to gain commercial sizes of production in this region due to physical constrains (land, water and climate), lack of markets, lack of processing/infrastructure or economics/capital. These industries are highlighted in Table 3 as those with a very high proportion of businesses earning less than $22 500[2] (e.g. grape growing, sheep farming, poultry meat, horse farming and other livestock farming).

2 New growth food and fibre industries in the embryonic stage of growth will also fall within this category.

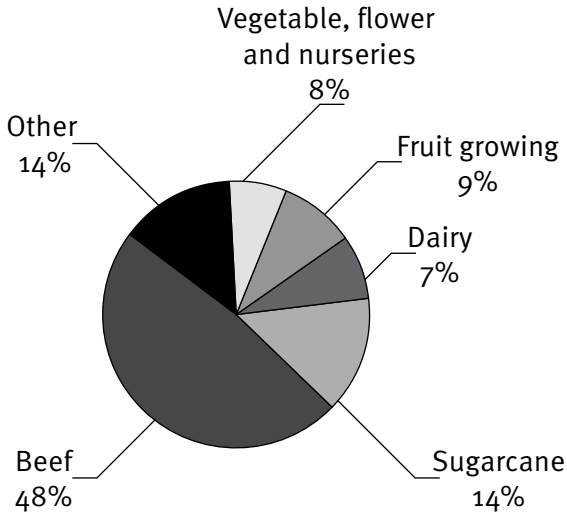
Table 3. Number of agribusinesses in Wide Bay–Burnett by income (2000–01)

ANZSIC	Less than $22 500 pa	$22 500 to less than $50 000 pa	$50 000 to less than $100 000 pa	$100 000 to less than $150 000 pa	$150 000 to less than $200 000 pa	$200 000 to less than $350 000 pa	$350 000 to less than $500 000 pa	$500 000 to less than $1 000 000 pa	$1 000 000 to less than $2 000 000 pa	$2 000 000 or more pa	Total
Plant nurseries	6	6	17	3	9	3	3	1	1	1	50
Cut flower and flower seed growing	4	8	7	5	0	3	0	0	0	0	27
Vegetable growing	42	61	56	27	23	42	17	25	15	6	314
Grape growing	10	12	2	2	0	0	0	0	1	0	27
Stone fruit growing	2	0	2	0	0	0	0	0	1	0	5
Fruit growing (nec)	72	69	82	33	24	50	23	27	23	10	413
Grain growing	13	36	59	37	22	24	6	1	0	0	198
Grain/sheep and grain/beef cattle farming	14	39	53	8	6	7	4	0	0	0	131
Sheep/beef cattle farming	0	0	0	0	1	0	0	0	0	0	1
Sheep farming	4	0	0	0	0	0	0	0	0	0	4
Beef cattle farming	977	649	437	165	80	107	28	13	3	1	2460
Dairy cattle farming	13	25	39	68	59	94	28	18	4	0	348
Poultry farming (meat)	2	0	0	0	0	0	0	0	0	0	2
Poultry farming (eggs)	2	1	1	1	0	1	0	1	0	0	7
Pig farming	4	10	13	15	13	15	19	23	3	4	119
Horse farming	50	19	5	2	0	0	0	0	0	0	76
Deer farming	4	1	0	1	0	0	0	0	0	0	6
Livestock farming (nec)	29	3	1	0	0	0	0	0	0	0	33
Sugarcane growing	32	93	201	155	81	114	37	18	6	2	710
Cotton growing	0	0	0	0	1	2	1	1	2	0	7
Crop and plant growing (nec)	11	13	26	8	4	13	0	1	0	0	76
Other (nec)	5	12	9	2	9	6	8	9	5	1	66
Total agriculture	**1296**	**1057**	**1010**	**532**	**332**	**481**	**174**	**138**	**64**	**25**	**5109**

Source: Unpublished statistics from ABS (AgStats database)
nec—Not elsewhere considered

Based on the figures presented in Table 3 above, Figure 3 shows the proportion of farmers involved in particular food and fibre industries. Beef constitutes the largest proportion; however, as indicated in Table 3 above, approximately 40% of all beef farmers in the Wide Bay–Burnett statistical division produce less than $25 000 worth of production each year. On the other hand, only 4% of all dairy farmers in the region gross less than $25 000 per annum (13 out of 348 diary farmers; see Table 3).

Figure 3. Proportion of farmers in Wide Bay–Burnett (2000–01)



Source: DPI&F calculations using ABS AgStats

Table 4 on the following page highlights key manufacturing and processing industries within the Wide Bay–Burnett region (note that this information is not available at the local government area). Of interest is the significance of some of these processing industries linked to food and fibre industries (meat products, dairy, fruit/vegetable processing and other foods).

The low value for dairy products is attributed to the fact that within the Wide Bay–Burnett region, only a couple of small businesses are involved in dairy processing. Most of the milk produced within the region is processed at the large processing facilities at Brisbane, Booval and Nambour.

Table 4. Output growth for industry in Wide Bay–Burnett ($ million) (1996–97 to 2004–05)

	1996–97	1997–88	1998–89	1999–2000	2000–01	2001–02	2002–03	2003–04	2004–05
Forestry	24.33	29.63	16.4	14.73	31.27	60.76	10.51	7.67	42.01
Sea fishing	6.82	8.37	11.1	12.26	22.27	29.44	23.39	21.83	6.69
Aquaculture	1.21	2.84	6.67	3.24	8.72	8.24	4.38	7.42	10.82
Meat products	34.93	34.94	36.92	30.41	40.38	39.83	38.55	52.51	53.6
Dairy products	1.86	1.84	1.5	1.75	1.82	4.68	2.23	3.27	3.71
Fruit/ vegetable processing	2.51	3.16	2.46	4.44	4.1	4.12	6.89	5.31	5.61
Oil/fats	0.42	9.91	5.64	2.14	0.92	0.66	2.35	3.81	12.85
Flour/cereal prods	0.8	0.63	0.58	0.88	0.38	0.69	0.68	0.45	0.34
Bakery products	6.83	7.77	7.39	6.44	5.13	6.54	8.09	4.44	8.98
Other foods	124.59	144.44	163.76	126.85	134.07	139.77	123.57	142.54	149.67
Beverage/ malt	13.41	18.28	15.88	14.61	13.03	15.96	20.48	21.94	28.05
Tobacco product	0	0	0	0	0	0	0	0	0
Yarns/woven fabric	2.96	0.77	1.76	1.75	4.99	2.95	5.25	1.01	3.35
Textile product	1.06	1.66	1.73	1.94	2.74	2.64	1.44	4.05	2.44
Knitting mills	0	0	0	0	0	0	0	0	0
Leather	5.79	5.23	5.35	5.61	10.08	11.99	9.1	7.14	10.28
Sawmills	50.87	37.96	43.61	55.29	65.53	55.97	68.21	74.41	70.02

Source: Monash Model Industry Forecasts December 2005, Monash University, Melbourne

Cooloola Shire

Traveston Crossing Dam will predominantly be located within Cooloola Shire. Other shires partially affected include Maroochy and Noosa Shires.

The main geographic feature supporting the dam is the Mary River and its catchment, and associated river flats that support a wide array of intensive food and fibre production activities (irrigated and non-irrigated). On the ridges and slopes of the catchments, a wide array of tree crops (fruit and forestry) and animal industries are common.

Cooloola Shire is a significant agricultural area. As indicated in Table 5 below, agricultural production in 2000–01 was valued at over $70 million per annum (latest reliable statistics available relating to agriculture), involving approximately 121 000 hectares of farmland. Cropping activities are valued at approximately $30 million, while livestock (predominantly dairy) is valued at $40 million.

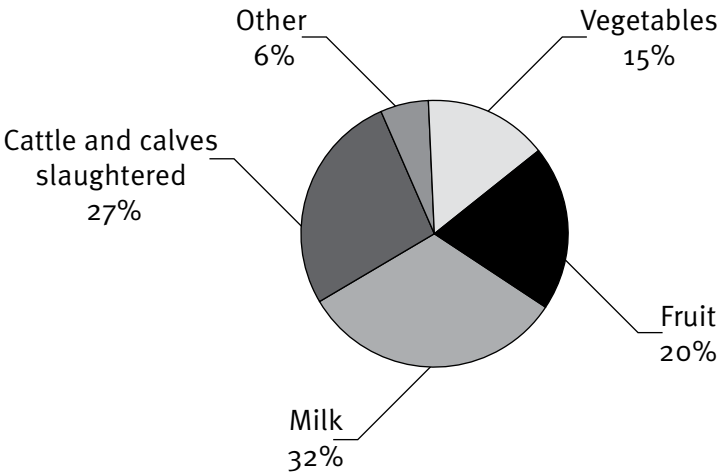
Table 5. Significance of agriculture in Cooloola Shire

	1996–97	2000–01
Total value of fruit	$11 608 000	$14 215 000
Total value of vegetables	$8 259 000	$10 796 000
Total value of other crops	$4 686 000	$3 689 000
Total value of livestock slaughterings	$11 113 000	$19 525 000
Total value of livestock products (mainly milk)	$25 521 000	$22 943 000
Total value of agriculture	**$61 187 000**	**$71 169 000**

Source: DPI&F calculations using ABS AgStats

Figure 4 on the following page illustrates the breakdown in value of food and fibre industries in Cooloola Shire for 2000–01. Livestock products (milk) features heavily (32%) for Cooloola, against 7% (value of livestock products as a proportion of total food and fibre production) for the Wide Bay–Burnett statistical division. Note that dairy farms also produce cattle offspring, which are sold to beef producers, and therefore a significant value of the cattle and calves slaughtered value (27% in Figure 4) can be attributed to dairy farms (thereby increasing the significance of dairying in Cooloola compared to the value stated).

Figure 4. Proportion of food and fibre industries in Cooloola Shire based on value of production (2000–01)



Source: DPI&F calculations using ABS AgStats

Fruit is also significant within Cooloola Shire, representing 20% of all food and fibre production within the shire. A significant vegetable industry also exists, representing 15% of all production.

More detailed insights into food and fibre production within Cooloola Shire are shown in Table 6 below. Cooloola is home to a wide range of cropping and livestock activities, reflecting the suitability of the region to food and fibre production.

Table 6. Key agricultural activities in Cooloola Shire

Commodity	1996–97	2000–01
Pastures cut for hay	$296 000	$211 000
Pasture seed	$30 000	$55 000
Sugarcane	$671 000	$731 000
Nurseries	$924 000	$1 097 000
Cut flowers	$629 000	$1 385 000
Asparagus	$1000	$24 000
French and runner beans	$4 821 000	$5 191 000
Capsicum and chillies and peppers	$98 000	$56 000
Cucumbers	$267 000	$133 000
Marrows and squashes	$418 000	$300 000
Zucchini	$980 000	$494 000
Peas (green)	$328 000	$224 000
Peas (snow)	$648 000	$2 265 000
Tomatoes	$110 000	$268 000

Table 6. (cont.)

Commodity	1996–97	2000–01
Oranges	$93 000	$325 000
Lemons and limes	$36 000	$41 000
Avocados	$1 071 000	$1 220 000
Mangoes	$467 000	$809 000
Nectarines	$91 000	$89 000
Peaches	$135 000	$83 000
Plums	$34 000	$20 000
Macadamia nuts	$2 404 000	$4 611 000
Strawberries	$372 000	$213 000
Bananas	$472 000	$390 000
Papaws/papaya	$573 000	$1 436 000
Pineapples	$5 444 000	$3 748 000
Grapes	$41 000	$14 000
Wool	$10 000	$17 000
Milk	$25 073 000	$22 691 000
Sheep and lambs slaughtered	$2000	$14 000
Cattle and calves slaughtered	$9 636 000	$19 265 000
Pigs slaughtered	$1 462 000	$239 000
Honey and beeswax	$228 000	$56 000

Source: DPI&F calculations using ABS AgStats
Note: Values rounded to nearest $1000 (activities grossing less than $10 000 in 2000–01 have been omitted from this table)

Key industries identified in Table 6 include French and runner beans ($5.2 million), macadamia nuts ($4.6 million), pineapples ($3.7 million), snow peas ($2.3 million), pawpaws ($1.4 million), milk ($23 million) and beef production ($19.3 million) (Table 6).

To gain a greater appreciation of the significance of food and fibre production within Cooloola, shift share analysis (comparing the significance or proportion of a particular industry within one area to another) is presented in Table 7 below. Cooloola is a significant producer of dairy products for Wide Bay–Burnett (42.6%) and for Queensland (9.8%).

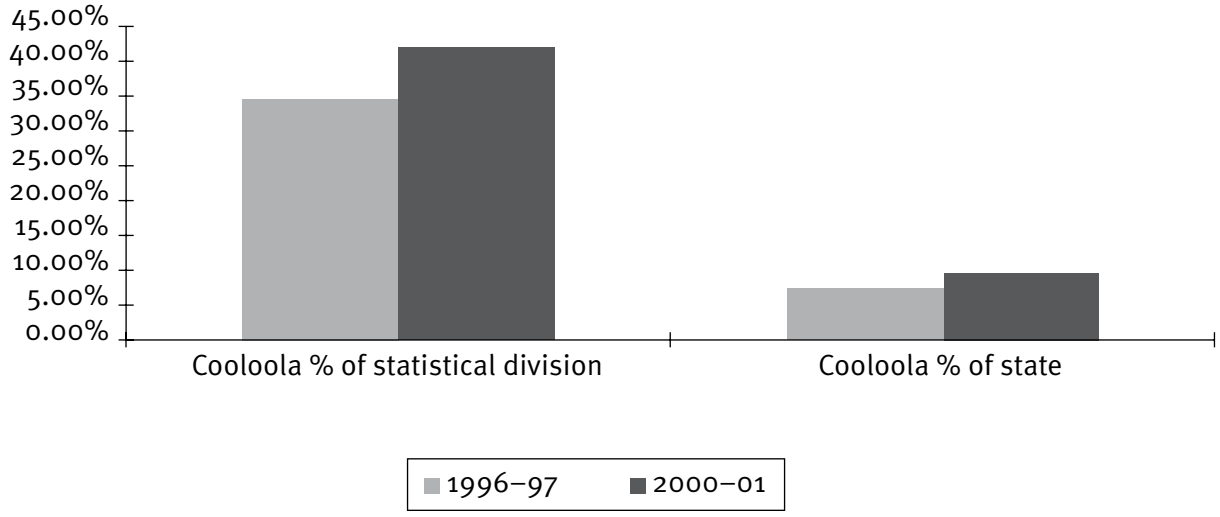
Table 7. Shift share analysis of Cooloola Shire against Wide Bay–Burnett statistical division and state of Queensland

	1996–97	1996–97	2000–01	2000–01
	Cooloola % of statistical division	Cooloola % of state	Cooloola % of statistical division	Cooloola % of state
Beef cattle	8.3%	0.8%	7.3%	0.6%
Dairy cattle	35.2%	7.6%	42.6%	9.8%
Fruit	12.5%	2.6%	11.2%	1.9%
Grain growing	3.5%	0.2%	0.0%	0.0%
Lifestyle horticulture	12.2%	1.1%	15.5%	1.3%
Other crop and plant growing	5.6%	0.6%	1.1%	0.1%
Other livestock farming	15.2%	2.6%	4.8%	0.8%
Pigs	3.0%	0.9%	0.5%	0.1%
Poultry	35.8%	0.1%	0.4%	0.0%
Sheep	24.8%	0.0%	11.6%	0.0%
Sugarcane	0.5%	0.1%	0.7%	0.1%
Vegetables	11.3%	1.8%	8.6%	1.7%
Total value of agriculture	**10.0%**	**1.1%**	**8.9%***	**1.0%**

Source: DPI&F unpublished databases

*Note that this figure is lower than the 11% reported earlier in the report. The figures in Table 6 value food and fibre production in terms of net value-adding, whereas figures used in Table 1 were based on gross turnover values, which are substantially different.

Figure 5. Shift share analysis of the dairy industry (2000–01)



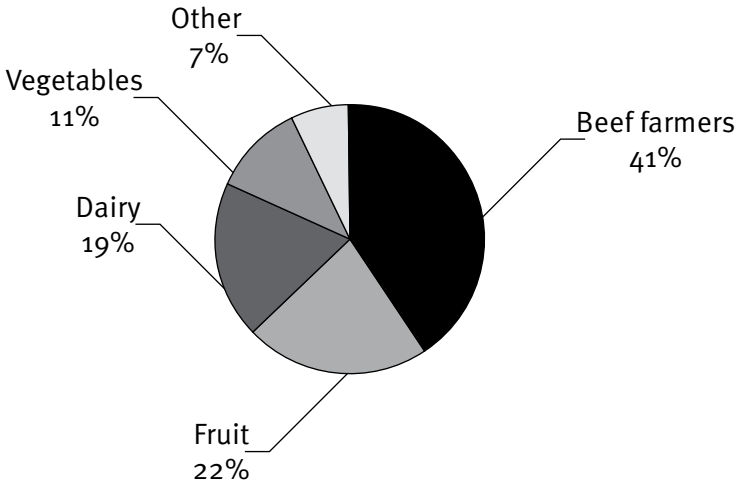
Source: DPI&F calculations using ABS AgStats

As indicated in Table 7 and Figure 5, the significance of the dairy industry in Cooloola, as a proportion of dairying for the entire statistical division and state, expanded between 1996–97 and 2000–01. The increase in Cooloola's share of dairying was driven by increased dairying activity within the shire, and also as a result of reduced dairying activities in areas outside Cooloola Shire (thereby increasing Cooloola's dairying significance).

Note that the Queensland dairy industry declined substantially from 1999 as a result of deregulation in 2000 (removal of quota and fresh market milk price scheme). Anecdotal information indicates that a number of family dairy operations across Queensland have ceased production, resulting in reduced milk production. Actual milk production for Queensland has declined by approximately 30% between 1999–2000 and 2005–06.

Table 8 provides an overview of the number of food and fibre businesses within Cooloola Shire in 2000–01. Of the 620 recorded farmers, there are approximately 256 involved in beef production. Other key food and fibre industries are fruit growing (137), dairy (118), and vegetable growing (68). As indicated earlier, some beef producers are indirectly linked to dairy milk operations (and therefore the actual number of food and fibre businesses engaged within the dairying industry is greater than the 118 listed above).

Figure 6. Breakdown on the number of food and fibre businesses by industry in Cooloola (2000–01)

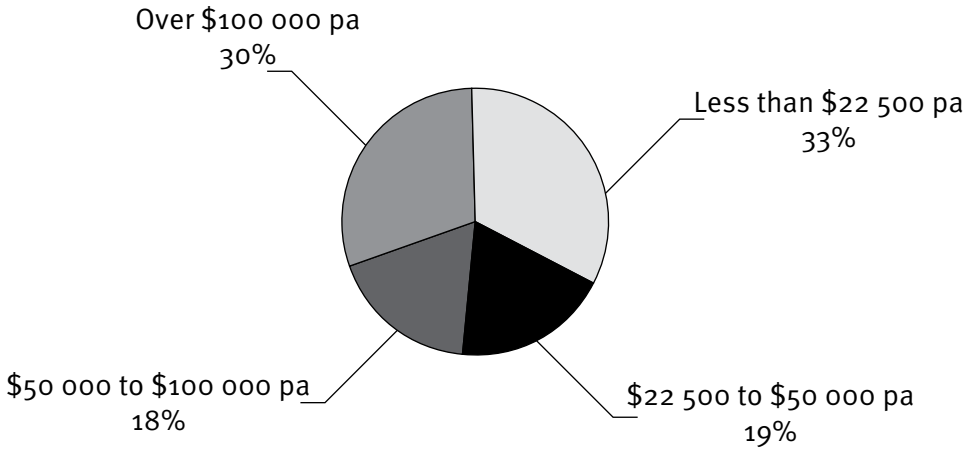


Source: DPI&F calculations using ABS AgStats

Of interest is the fact that 41% of all food and fibre businesses (see Figure 6 above) are involved in beef production, yet it only represents 27% of the total value of production. Of all food and fibre businesses in Cooloola, 19% are involved in dairy (however, dairy is responsible for 32% of the shire's total value of production).

Table 8 also highlights the fact that many food and fibre business are small operations (part-time operations/hobby farms). Approximately 200 of the 620 food and fibre businesses produced less than $22 500 turnover in 2000–01 (33% in Figure 7 below), while another 118 produced between $25 000 and $50 000 worth of food and fibre products (i.e. gross turnover, not income).

Figure 7. Breakdown on the number of food and fibre businesses by value of production in Cooloola (2000–01)



Source: DPI&F calculations using ABS AgStats

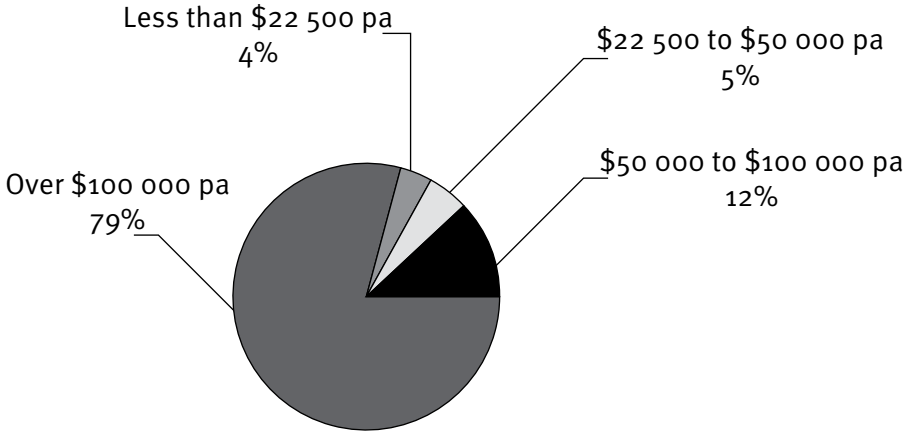
By examining Table 8, some conclusions can be drawn regarding those industries with limited potential to gain significant commercial sizes of production due to physical constrains (availability of land at a relatively low cost, availability of irrigation water at a relatively low cost and climate), lack of markets, lack of supporting processing/infrastructure, poor economics (low profitability) or lack of access to capital. These industries are highlighted in Table 8 as those with a very high proportion of businesses earning less than $22 500 (e.g. sheep farming, poultry meat, horse farming, deer farming, other livestock farming, beef cattle farming and grain growing).

Note that there may be some exceptions supporting food and fibre industries with low values of gross production:

- new farm business in the initial stages of developing production capacity
- new farm business engaged in a food and fibre industry that is in the embryonic stage of growth
- farm business operated on a part time basis (farmer is engaged in off-farm income)
- farm business operated as a lifestyle activity (not necessarily focused on generating income as a primary focus)
- farm business that value-adds to its primary produce (and therefore its production is statistically recorded within confines of 'manufacturing' output for the region, and not necessary associated with farm).

Figure 8 highlights the breakdown of dairy operations within Cooloola. Of all dairy farms, 93 turned over $100 000 worth of production (milk) in 2000–01. Only 4% of dairy farms produced less than $22 500 worth of production.

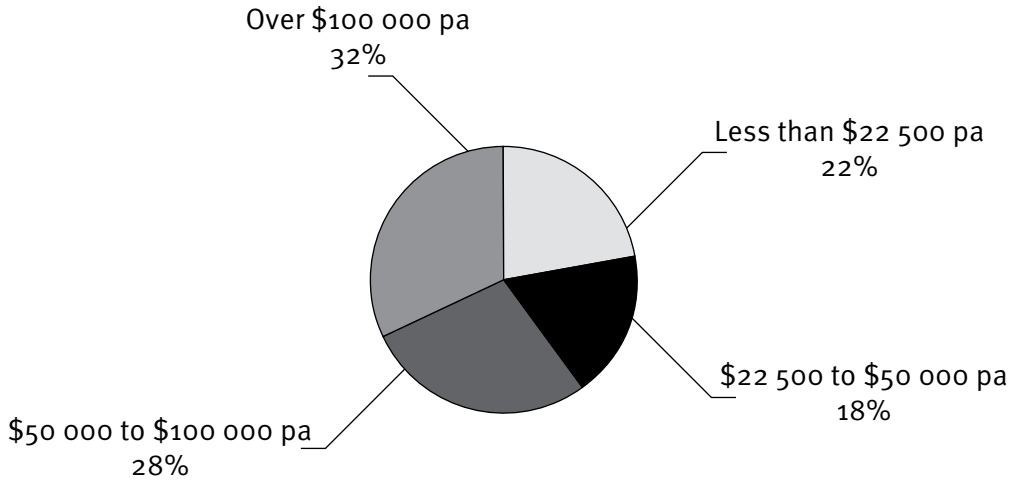
Figure 8. Breakdown on the number of dairy businesses by annual value of production in Cooloola (2000–01)



Source: DPI&F calculations using ABS AgStats

Figure 9 highlights the breakdown of fruit growing operations within Cooloola. In comparison to dairy (see Figure 8 above), the distribution of fruit farms according to value of production is evenly spread across income groups. Only 32% of fruit farms turned over $100 000 worth of production in 2000–01.

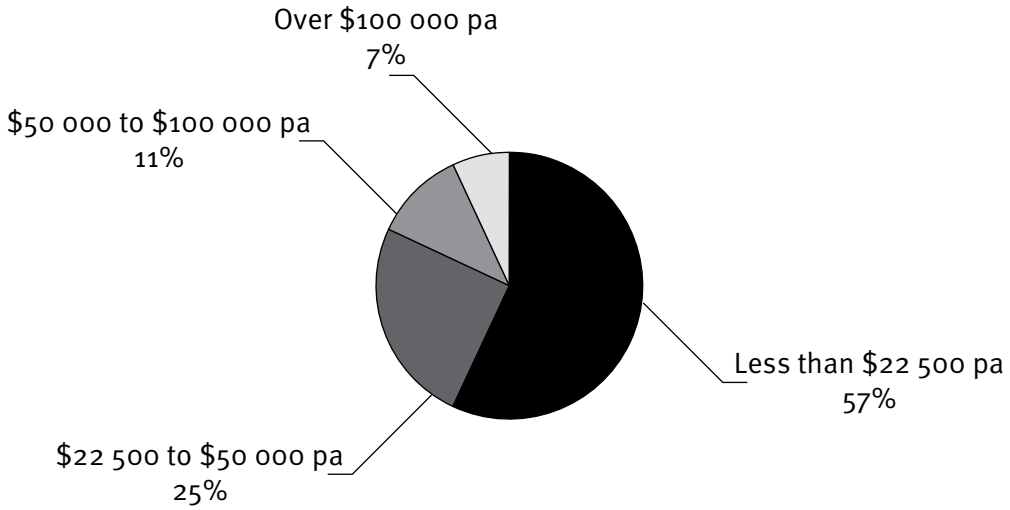
Figure 9. Breakdown on the number of fruit growing businesses by annual value of production in Cooloola (2000–01)



Source: DPI&F calculations using ABS AgStats

Figure 10 highlights the breakdown of cattle/beef operations within Cooloola. In comparison to dairy and fruit production (see Figures 8 and 9 above), the distribution of beef farms is skewed towards small operators.

Figure 10. Breakdown on the number of beef businesses by annual value of production in Cooloola (2000–01)



Source: DPI&F calculations using ABS AgStats

Table 8. Number of agribusinesses operating in Cooloola Shire (2000–01)

ANZSIC	Less than $22 500 pa	$22 500 to less than $50 000 pa	$50 000 to less than $100 000 pa	$100 000 to less than $150 000 pa	$150 000 to less than $200 000 pa	$200 000 to less than $350 000 pa	$350 000 to less than $500 000 pa	$500 000 to less than $1 000 000 pa	$1 000 000 to less than $2 000 000 pa	$2 000 000 or more	Total
Plant nurseries	1	1	3	0	1	0	1	0	0	0	7
Cut flower and flower seed growing	0	2	4	0	0	0	0	0	0	0	6
Vegetable growing	7	16	17	12	3	10	1	1	1	0	68
Grape growing	0	1	0	0	0	0	0	0	0	0	1
Stone fruit growing	1	0	1	0	0	0	0	0	0	0	2
Fruit growing (nec)	30	25	39	9	11	16	2	3	1	1	137
Grain growing	1	0	0	0	0	0	0	0	0	0	1
Sheep farming	1	0	0	0	0	0	0	0	0	0	1
Beef cattle farming	145	63	29	9	4	5	1	0	0	0	256
Dairy cattle farming	5	6	14	13	25	34	9	9	3	0	118
Poultry farming (meat)	2	0	0	0	0	0	0	0	0	0	2
Poultry farming (eggs)	0	0	0	1	0	0	0	0	0	0	1
Pig farming	0	1	0	1	0	0	0	0	0	0	2
Horse farming	5	0	0	0	0	0	0	0	0	0	5
Deer farming	2	0	0	0	0	0	0	0	0	0	2
Livestock farming (nec)	3	0	0	0	0	0	0	0	0	0	3
Sugarcane growing	0	3	0	0	1	1	0	0	0	0	5
Crop and plant growing (nec)	0	0	2	0	0	0	0	0	0	0	2
Other (nec)	0	0	2	0	0	0	1	0	0	0	2
Total agriculture	**203**	**118**	**110**	**45**	**44**	**66**	**15**	**13**	**5**	**1**	**620**

Source: DPI&F calculations using ABS AgStats
nec—Not elsewhere considered

Tiaro Shire

Tiaro Shire adjoins the Mary River downstream from Gympie. A number of food and fibre producers within Tiaro rely on irrigation water supplies from the Mary River catchments.

As with Cooloola Shire, a range of livestock and cropping activities is undertaken in Tiaro (as shown in Table 9 below). Food and fibre production 2000–01 was valued at approximately $24 million per annum (latest reliable statistics available relating to farm gate production), involving 115 000 hectares of farmland. Cropping activities are valued at approximately $9 million, while livestock (predominantly beef and pork) is valued at $15 million.

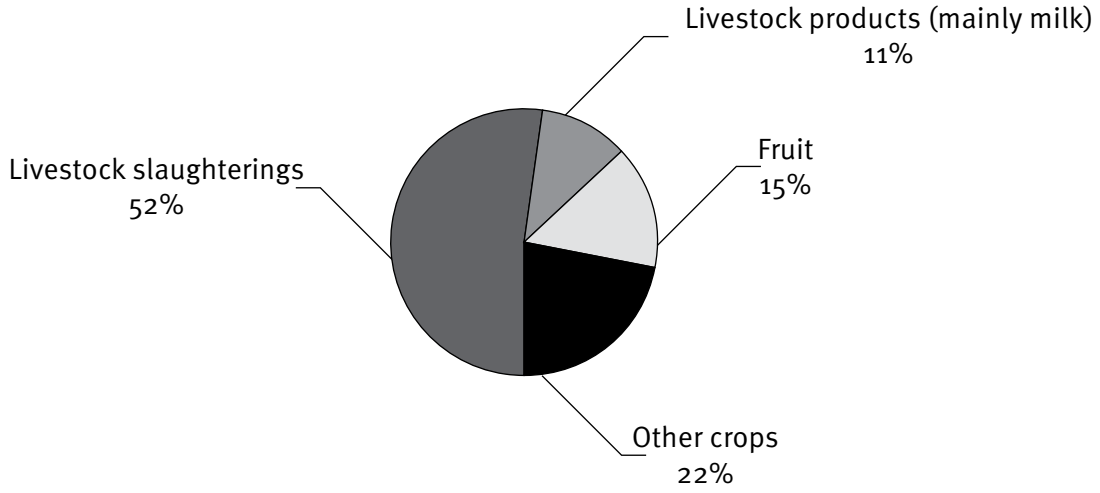
Table 9. Significance of agriculture in Tiaro Shire

	1996–97	2000–01
Total value of fruit	$4 141 000	$3 657 000
Total value of vegetables	$515 000	$841 000
Total value of other crops	$4 264 000	$4 434 000
Total value of livestock slaughterings	$7 894 000	$12 696 000
Total value of livestock products (mainly milk)	$5 553 000	$2 743 000
Total value of agriculture	$22 372 000	$24 372 000

Source: DPI&F calculations using ABS AgStats

As indicated in Figure 11 below, Tiaro Shire's food and fibre industries are diversified (incorporating livestock and cropping activities).

Figure 11. Breakdown of food and fibre industries in Tiaro Shire (2000–01)



Source: DPI&F calculations using ABS AgStats

Table 10 below provides greater insight into food and fibre industries within Tiaro. Total value of agricultural production increased from $22.7 million in 1996–97 to $24.4 million in 2000–01 (an increase of 7.5%).

Key activities during 2000–01 include sugarcane ($3.4 million), nurseries/cut flowers ($0.88 million), beans ($0.45 million), macadamia nuts ($1.8 million), papaws ($1 million), milk ($2.7 million), beef ($8.2 million) and pork ($4.4 million).

Table 10. Key agricultural activities in Tiaro Shire

Commodity	1996–97	2000–01
Pastures cut for hay	$315 000	$96 000
Cereals for grain	$52 000	$42 000
Sugarcane	$3 591 000	$3 408 000
Nurseries, flowers and turf	$567 000	$878 000
French and runner beans	$270 000	$450 000
Cucumbers	$23 000	$11 000
Marrows and squashes	$46 000	$87 000
Zucchini	$34 000	$40 000
Melons (watermelons)	$20 000	$31 000
Peas (snow)	$39 000	$130 000
Avocados	$8000	$248 000
Mangoes	$272 000	$302 000
Macadamia nuts	$1 044 000	$1 813 000
Bananas	$237 000	$89 000
Papaws/papaya	$310 000	$1 078 000
Milk	$5 458 000	$2 689 000
Cattle and calves slaughtered	$4 259 000	$8 277 000
Pigs slaughtered	$3 626 000	$4 418 000
Honey and beeswax	$93 000	$52 000

Source: DPI&F calculation using ABS AgStats database
Note: values rounded to nearest $1000 (activities grossing less than $10 000 in 2000–01 have been omitted from this table)

From Table 10, some noticeable food and fibre trends emerge. Milk production declined from $5.5 million in 1996–97 to $2.7 million in 2000–01, a decline of over 50%.On the other hand, a number of food and fibre industries expanded the value of farm gate production. The value of beef production almost doubled from $4.2 million in 1996–97 to $8.3 million in 2000–01, largely driven by changes in market prices (i.e. record low beef prices in 1996–97 followed by record high beef prices in 2000–01) and also increases in beef production levels (particularly as beef production was most likely to replace displaced dairy production).

Other substantial changes include:

- Macadamia nuts increased 80% to $1.8 million in 2000–01.
- Avocadoes increased exponentially from $7000 to $248 000.
- Papaws increased 230% to $1 million in 2000–01.
- Pork production increased 22% to $4.4 million in 2000–01.

Table 11 below shows that approximately 230 food and fibre businesses operated within Tiaro in 2000–01.

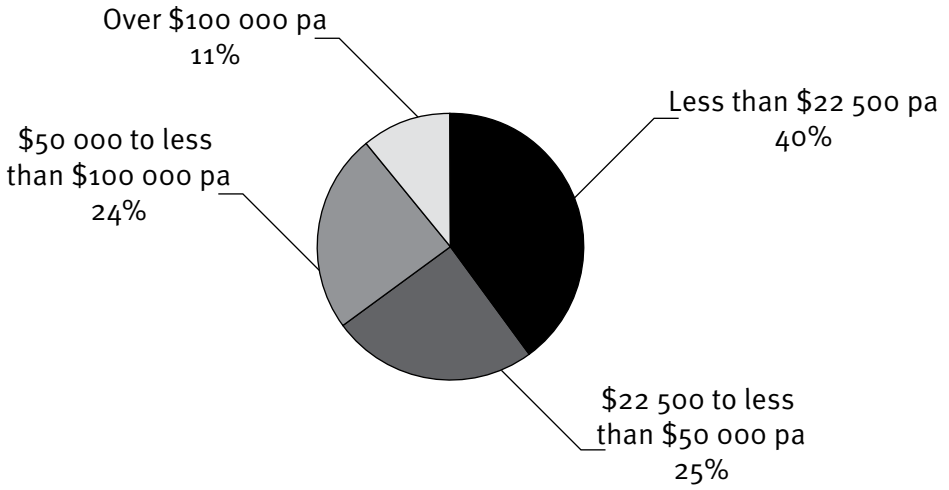
Table 11. Number of agribusinesses operating in Tiaro Shire (2000–01)

ANZSIC	Less than $22 500 pa	$22 500 to less than $50 000 pa	$50 000 to less than $100 000 pa	$100 000 to less than $150 000 pa	$150 000 to less than $200 000 pa	$200 000 to less than $350 000 pa	$350 000 to less than $500 000 pa	$500 000 to less than $1 000 000 pa	$1 000 000 to less than $2 000 000 pa	$2 000 000 or more	Total
Plant nurseries	0	0	1	0	0	0	1	0	0	0	2
Cut flower and flower seed growing	0	1	0	1	0	0	0	0	0	0	2
Vegetable growing	3	3	3	1	1	1	0	0	0	0	12
Fruit growing	8	11	4	2	1	1	0	2	0	0	29
Grain/sheep and grain/beef cattle farming	0	1	0	0	0	0	0	0	0	0	1
Beef cattle farming	57	26	35	9	1	0	0	0	0	0	128
Dairy cattle farming	0	1	1	2	0	9	3	0	0	0	16
Pig farming	0	0	0	0	1	0	1	0	0	1	3
Horse farming	4	3	0	0	0	0	0	0	0	0	7
Livestock farming	3	0	0	0	0	0	0	0	0	0	3
Sugarcane growing	3	3	4	5	1	4	1	3	0	0	24
Crop and plant growing (nec)	2	0	0	0	0	0	0	0	0	0	2
Other (nec)	0	0	0	1	1	0	1	1	0	0	4
Total agriculture	**80**	**49**	**48**	**21**	**6**	**15**	**7**	**6**	**0**	**1**	**233**

Source: DPI&F calculations using ABS AgStats
nec—Not elsewhere considered

Figure 12 below highlights the distribution of food and fibre businesses based on value of production. Within Tiaro, 40% of farms produce less than $22 500 per annum while 11% of farms produce over $100 000 per annum worth of production.

Figure 12. Breakdown of food and fibre industries in Tiaro Shire based on level of income (2000–01)



Source: DPI&F calculations using ABS AgStats

Kilkivan Shire

Kilkivan Shire adjoins the Mary River downstream from Gympie. A number of food and fibre producers within Kilkivan rely on irrigation water supplies from the Mary River catchments.

As with Cooloola Shire, a range of livestock and cropping activities is undertaken in Kilkivan (as shown in Table 12 below). Food and fibre production in 2000–01 was valued at approximately $85 million (latest reliable statistics available relating to farm gate production), involving approximately 274 000 hectares of farmland. Cropping activities were valued at approximately $5 million, while livestock (predominantly beef) was valued at $75 million.

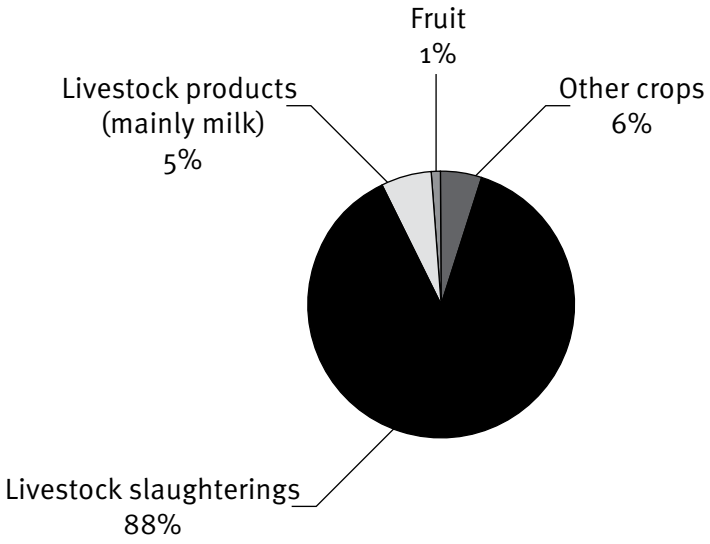
Table 12. Significance of agriculture in Kilkivan Shire

	1996–97	2000–01
Total value of fruit	$620 000	$434 000
Total value of vegetables	$702 000	$547 000
Total value of other crops	$4 571 000	$4 507 000
Total value of livestock slaughterings	$28 969 000	$74 637 000
Total value of livestock products (mainly milk)	$5 188 000	$4 494 000
Total value of agriculture	$40 050 000	$84 619 000

Source: DPI&F calculations using ABS AgStats

As indicated in Figure 13 below, Kilkivan Shire's food and fibre industries are diversified incorporating livestock and cropping activities. However, livestock activities clearly dominate the shire, representing 93% of all output in value terms.

Figure 13. Breakdown of food and fibre industries in Kilkivan Shire (2000–01)



Source: DPI&F calculations using ABS AgStats

Table 13 below provides greater insight into food and fibre industries within Kilkivan.

Of substantial interest is the dramatic change in the total value of agricultural production, which increased from $40 million in 1996–97 to $84.6 million in 2000–01 (an increase of 110%, which was largely driven by the changing value of beef production).

Key activities during 2000–01 include pastures/hay ($2.8 million), cereal grains ($0.5 million), milk ($4.5 million), beef ($73.4 million) and pork ($1.2 million).

Table 13. Key agricultural activities in Kilkivan Shire

Commodity	1996–97	2000–01
Pastures and grasses	$1 674 000	$2 787 000
Wheat for grain	$232 000	$136 000
Barley for grain	$315 000	$58 000
Sorghum for grain	$363 000	$278 000
Cereals for grain	$952 000	$473 000
Cereals cut for hay	$125 000	$306 000
Mung beans	0	$180 000
Soybeans	$276 000	$108 000
Sugarcane	0	$137 000
Crops cut for hay	$205 000	$320 000
Nurseries, flowers and turf	$1 195 000	$281 000
Cucumbers	0	$160 000
Marrows and squashes	$48 000	$248 000
Pumpkins, triambles and trombones etc.	$23 000	$58 000
Mangoes	$41 000	$109 000
Macadamia nuts	$323 000	$309 000
Papaws/papaya	$12 000	$11 000
Milk	$5 185 000	$4 486 000
Cattle and calves slaughtered	$26 641 000	$73 436 000
Pigs slaughtered	$2 328 000	$1 176 000

Source: DPI&F calculation using ABS AgStats database
Note: Values rounded to nearest $1000 (activities grossing less than $10 000 in 2000–01 have been omitted from this table)

From Table 13, some noticeable food and fibre industry trends emerge. As with Tiaro Shire, milk production also declined within Kilkivan from $5.2 million in 1996–97 to $4.5 million in 2000–01—a decline of 13% (compared to a decline of over 50% in Tiaro). Other industries recording substantial declines include cereals for grains (down 50%), nurseries, flowers and turf (declined by over 75% from $1.2 million to $280 000), and pork production (declined by 50%).

More noticeable in Table 13 are some of the expansions, driven largely by value of beef production growing from $26.6 million in 1996–97 to $73.4 million in 2000–01

This growth was most likely a combination of market prices (i.e. record low beef prices in 1996–97 followed by record high beef prices in 2000–01) and associated increased beef production (particularly as beef production was most likely to replace displaced dairy production).

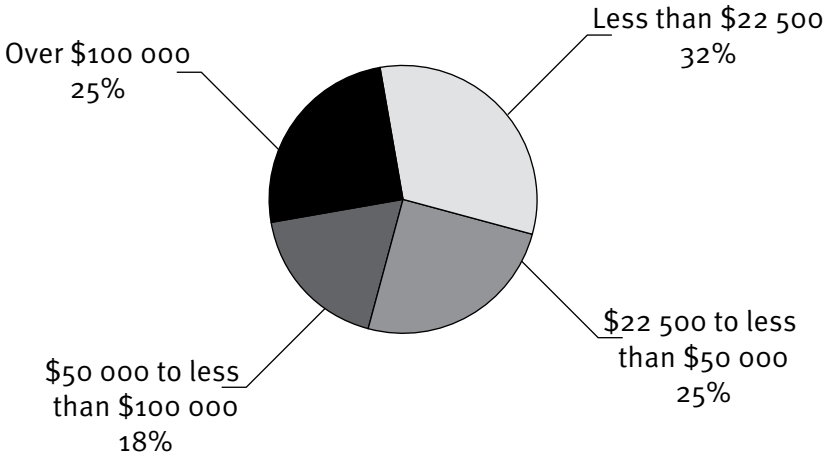
Table 14. Number of agribusinesses operating in Kilkivan Shire (2000–01)

ANZSIC	Less than $22 500 pa	$22 500 to less than $50 000 pa	$50 000 to less than $100 000 pa	$100 000 to less than $150 000 pa	$150 000 to less than $200 000 pa	$200 000 to less than $350 000 pa	$350 000 to less than $500 000 pa	$500 000 to less than $1 000 000 pa	$1 000 000 to less than $2 000 000 pa	$2 000 000 or more	Total
Plant nurseries	0	1	1	0	0	0	0	0	0	0	2
Cut flower and flower seed growing	0	0	0	1	0	0	0	0	0	0	1
Vegetable growing	6	1	3	1	0	1	0	0	0	0	12
Fruit growing	1	4	0	0	1	0	0	0	0	0	6
Grain growing	1	0	0	0	0	0	0	0	0	0	1
Grain/sheep and grain/beef cattle farming	0	1	0	1	0	0	0	0	0	0	2
Beef cattle farming	80	75	46	18	14	11	1	0	0	1	246
Dairy cattle farming	1	1	4	10	8	7	1	0	1	0	33
Pig farming	1	0	0	0	2	0	1	1	0	0	5
Horse farming	14	1	1	1	0	0	0	0	0	0	17
Deer farming	0	1	0	0	0	0	0	0	0	0	1
Livestock farming	2	0	0	0	0	0	0	0	0	0	2
Sugarcane growing	0	0	0	1	0	0	0	0	0	0	1
Crop and plant growing (nec)	2	0	7	3	1	4	0	0	0	0	17
Other (nec)	1	4	1	1	0	0	0	0	0	0	7
Total agriculture	**109**	**88**	**63**	**37**	**26**	**23**	**3**	**1**	**1**	**1**	**352**

Source: DPI&F calculations using ABS AgStats
nec— Not elsewhere considered

Figure 14 below highlights the distribution of food and fibre businesses based on value of production. Within Kilkivan, 32% of farms produce less than $22 500 per annum while 25% of farms produce over $100 000 per annum.

Figure 14. Breakdown of food and fibre industries in Kilkivan Shire based on level of income (2000–01)



Source: DPI&F calculations using ABS AgStats

Overview of Cooloola, Tiaro and Kilkivan Shires

This section seeks to highlight the key differences in food and fibre industries between the relevant three shires examined within this study—Cooloola, Tiaro and Kilkivan.

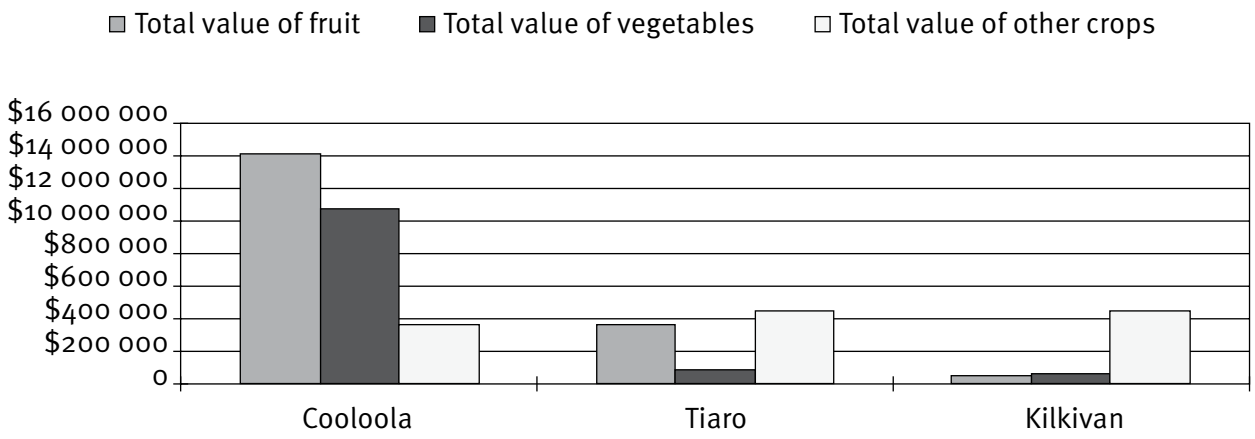
Table 15. Summary of agriculture across all three shires (2000–01)

	Cooloola	Tiaro	Kilkivan
Total area of holding	121 246 ha	115 137 ha	273 594 ha
Total value of fruit	$14 215 000	$3 657 000	$434 000
Total value of vegetables	$10 796 000	$841 000	$547 000
Total value of other crops	$3 689 000	$4 434 000	$4 507 000
Total value of livestock slaughterings	$19 525 000	$12 696 000	$74 637 000
Total value of livestock products	$22 943 000	$2 743 000	$4 494 000
Total value of agriculture	$71 169 000	$24 372 000	$84 619 000

Source: DPI&F calculations using ABS AgStats

In terms of farming land area, Cooloola and Tiaro have similar production areas, while Kilkivan is significantly larger. At a macro level, the value of total agricultural production varies significantly lead by Kilkivan at $85 million, followed closely by Cooloola at $71 million, and then Tiaro at $24 million (2000–01 values). The following graphs seek to graphically present the differences between the major cropping and livestock activities

Figure 15. The significance of cropping industries (2000–01)

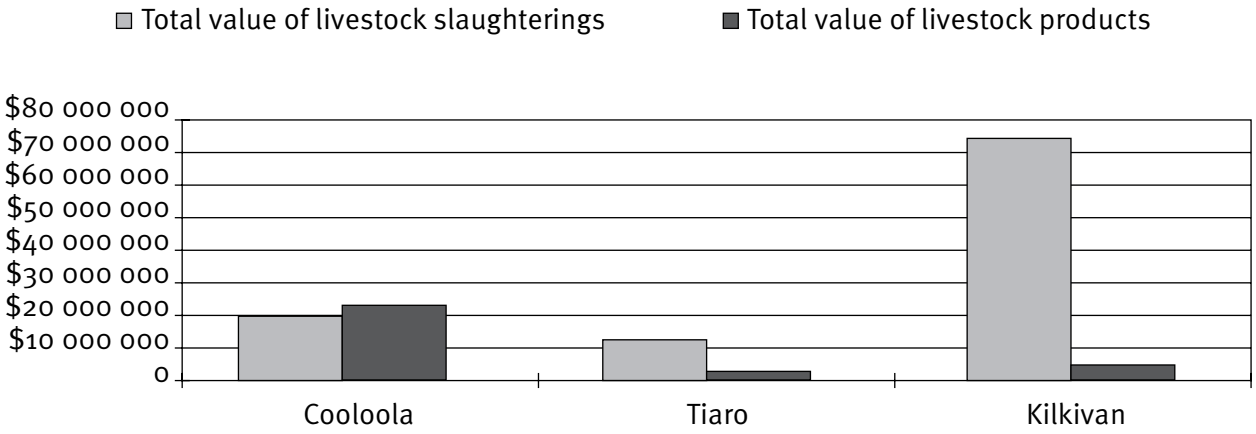


Source: DPI&F calculations using ABS AgStats

As indicated in Figure 15 above, Cooloola has significant fruit and vegetable industries in comparison to Tiaro and Kilkivan. However, the value of other cropping (hay, grain, nurseries, flowers, turf and sugar) is similar in value across all three shires.

Figure 16 below highlights the value of the livestock industries within the three shires. The most noticeable feature is the significance of livestock slaughtering (mainly beef, but also includes pork production) for Kilkivan. Livestock products (primarily milk production) is most significant within Cooloola.

Figure 16. The significance of livestock industries (2000–01)

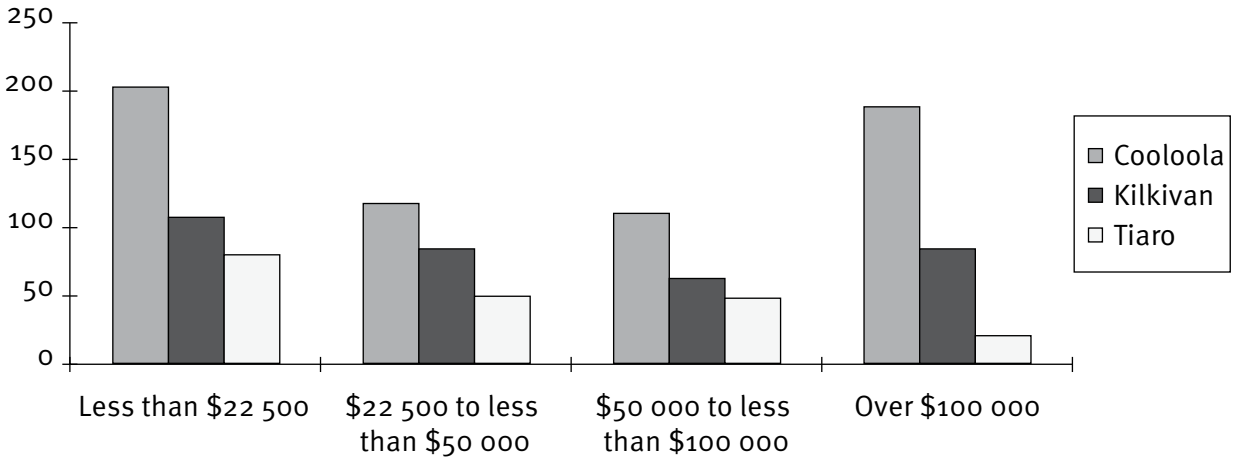


Source: DPI&F calculations using ABS AgStats

Figure 17 below provides an overview of farm numbers for each shire, and the distribution of those farm numbers across annual value of production. Cooloola clearly dominates the number of food and fibre businesses (a total of 618 across all production classes), followed by Kilkivan (352) and Tiaro (233).

Another noticeable feature in Figure 17 is the spread of food and fibre businesses for each of the shires. As value of production increases, the number of food and fibre businesses decreases. On the other hand, Cooloola showed an increase in numbers in the 'over $100 000' class (as did Kilkivan).

Figure 17. Distribution of food and fibre businesses by annual turnover (2000–01)



Source: DPI&F calculations using ABS AgStats

Overview of Queensland's beef, dairy, fruit and vegetable industries

The key industries for Cooloola region are beef, dairy, fruit and vegetables as indicated in Table 6. At the state level, the prospect for each of these is varied.

The Australian dairy industry underwent substantial restructuring in the past six years as a result of deregulation, and anecdotal information indicates that a number of small family dairy operations have ceased production (while on the other hand some other dairies have increased capacity substantially). As indicated below in Table 16, Queensland milk production has been in decline since 1999–2000, as deregulation brought about dramatic declines to farm gate milk prices, continued drought forced feed rations prices higher, and limited irrigation water supplies reduced pasture production. Queensland milk production in 2005–06 has declined by more than 30% since 1999–2000 (in volume terms), and continues to exhibit a declining trend in production.

On the other hand, beef, fruit and vegetables have grown strongly in recent years as indicated below. Fruit production is 86% higher in 2005–06 than in 1996–97. Likewise, vegetable production is 21% higher in volume terms, while beef is 32% higher.

Table 16. Volume of production index for Queensland industries

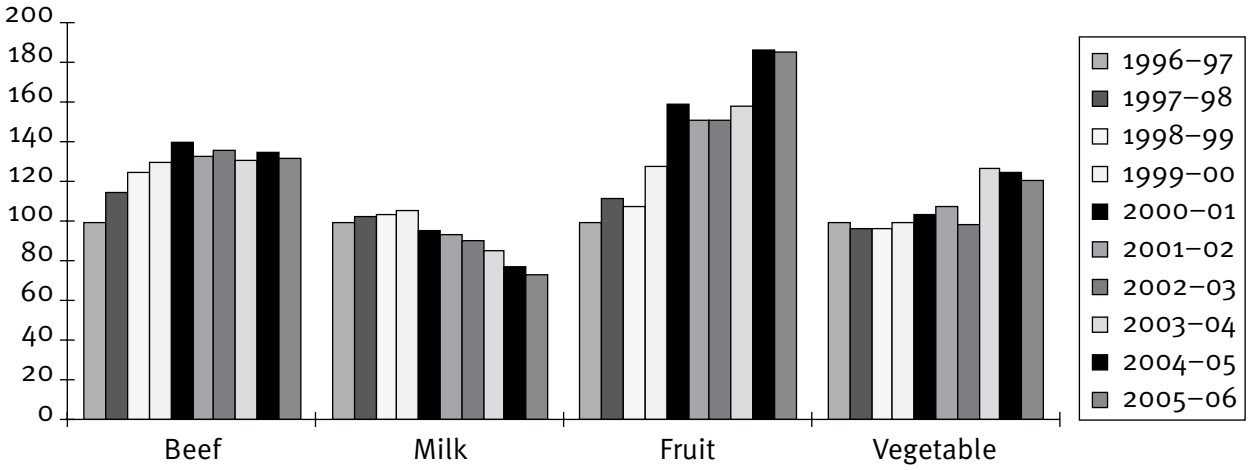
Volume index	1996–97	1997–98	1998–99	1999–2000	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06
Beef	100	115	125	130	140	133	136	131	135	132
Milk	100	103	104	106	95	93	90	85	77	73
Fruit	100	112	108	128	159	151	151	158	187	186
Vegetable	100	96	96	100	104	108	98	127	125	121

Source: DPI&F 2005A

When examining the figures in Table 16 above, the reader should be mindful that overall industry production in volume terms will be dictated by a number of factors other than prices and markets. For example, the ongoing drought in recent years has substantially restricted the beef industry's capacity to respond to ongoing high prices.

Figure 18 provides a graphical presentation of the figures in Table 16 above. For the four industries depicted, a value of 100 is assigned to 1996–97 volume production. The fruit industry has clearly expanded substantially, while the beef and vegetable industry has expanded albeit more marginally. However, the Queensland dairy industry has clearly declined.

Figure 18. Volume matrix for key Queensland industries



Source: DPI&F 2005A

Forecasts for food and fibre industries in Queensland

Monash University, through the use of in-house economic models, annually provides seven-year forecasts for the Australian economy (broken down to key industries and regions/statistical divisions across Australia). This information is made commercially available to paying subscribers within industry and government (the Queensland Government subscribes through the Office of Economic and Statistical Research, Queensland Treasury).

The latest Monash release was the December 2005 modelling simulation (distributed in March 2006). Output from the model depicted a forecast period as that from 2004–05 to 2012–13.

The key forecast average annual growth rate for Queensland is 4.1% per annum up to 2012–13, which is above that forecast for Australia as a whole of 3.24% per annum.

The industry expected to experience the highest output growth is the mining sector growing at an average annual growth rate of 5.6% per annum followed by finance and insurance services at 5.3% per annum. Agriculture, forestry and fishing is forecast to grow at 3.2% per annum, being below the state's average growth rate of 4.1% per annum to 2012–13.

Of particular interest are growth prospects for the Wide Bay–Burnett statistical division. Table 17 on the following page provides forecasts up to 2012–13 as provided by Monash University. While the forecast growth rate for food/beverage processing or manufacturing is relatively low, prospects for the forestry sector are much stronger. Agriculture is also forecast to grow at over 2% per annum within Wide Bay–Burnett.

Table 17. Forecast output growth for Wide Bay–Burnett (2004–05 to 2012–13)

	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13
Agriculture	$668.3m	–0.4%	7.0%	8.6%	2.4%	2.0%	1.5%	2.3%	2.2%
Forestry/ logging	$42.0m	4.4%	6.2%	8.1%	7.1%	5.0%	3.4%	3.7%	3.2%
Food/bev/ tobacco	$262.8m	–5.6%	11.3%	14.6%	–5.0%	–3.4%	–1.2%	0.9%	0.2%
Textile, clothing, footwear and leather products	$22.3m	–1.2%	3.3%	9.5%	7.7%	5.1%	1.8%	3.6%	2.8%
Wood/paper prods	$88.5m	6.6%	8.0%	12.0%	7.5%	5.0%	4.3%	5.7%	3.7%

Source: Monash Model Industry Forecasts December 2005, Monash University, Melbourne

References

Australian Bureau of Statistics agricultural commodities: *AgStats on GSP: 1996–97 to 2000–01*, catalogue number: 7117.0.30.001.

DPI&F (2005) *Prospects for Queensland's primary industries 2004–05 to 2005–06*, September 2005.

Switala, J (2006) Monash Model Queensland Primary Industry Forecasts June 2006, Internal Departmental Discussion Paper.