

**Tasmanian Agricultural Productivity Group  
& Tasmanian Farmers & Graziers Association**

# **The Contribution of Agriculture to the Tasmanian Economy**

**September 2005  
(Updated July 2007)**



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This report was commissioned by the Tasmanian Farmers and Graziers Association (TFGA) and the Tasmanian Agricultural Productivity Group (TAPG) with the support of the National Association for Crop Production and Animal Health (AVCARE). The project was undertaken by Davey and Maynard.

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## Key Points

- The evidence outlined in this report highlights the case for viewing agriculture's contribution to the state economy in a much broader sense than is normally the case.
- Agriculture is an important contributor to the Tasmanian economy both in its own right and because of other industries that depend on it. In particular, the manufacturing and service sectors that utilise farm outputs are very significant contributors to gross state product and employment.
- In recent years the direct or farm-gate contribution of agriculture has been around 5% of gross state product, and 5-6% of total state employment\*.
- When agriculture and its related input and output sectors are combined, the contribution of the "farm dependent economy" increases to almost 16% of gross state product, and 20% of state employment.
- Agriculture is a more significant contributor to the Tasmanian economy than it is in any other state. Tasmania's 16% of gross state product from the farm dependent economy compares to a range of 10% to 15% for other states and an Australian average of 12%.
- Two thirds of Tasmania's farm dependent economy contribution to gross state product occurs beyond the farm gate - in the farm output sector. The manufacturing and service sectors each contribute around half of the value added beyond the farm gate.
- Direct farm output in Tasmania in 2005-06 was valued at around \$946 million – up from \$903 million the previous year. The main increases in recent years have come from livestock slaughterings and milk.
- Despite its ups and downs, farm output has increased at a compound rate of 4.4% per annum over the past 21 years. This represents an increase in real terms over the period.
- According to ABS figures, direct farm employment in agriculture in 2006-07 fell to around 8,900 people – down 2,800 over the previous year. While there has been a downward trend over time the marked reduction in 2006-07 is likely to have been at least partly influenced by the drought in that year. Another 7,600 people were employed in agricultural processing and manufacturing industries in 2006-07 and this has been relatively stable in recent years.
- The importance of the downstream benefits of agriculture in Tasmania is highlighted by a recent DPIW analysis of the state's food industry (including seafood) which showed the following value chain:

Farm-gate and beach-point value	\$ 984 million
Packed or processed value	\$2,103 million
Total food revenue (net of imports)	\$3,109 million
	= 3.2 times farm-gate value

\* Note: The proportion of direct employment in agriculture in Tasmania in 2006-07 in fact fell to around 4% of total state employment. However, this may in part at least be a drought-induced aberration.

## 1. OVERVIEW

Agriculture is an important contributor to the Tasmanian economy but its contribution is often underestimated because of a focus on its direct or farm-level impact only.

Agriculture's total contribution to income and employment in the state is significantly expanded when account is taken of the inputs it purchases from other sectors and the contribution to downstream industries that are dependent on its outputs.

Inputs purchased from other sectors include such things as fertilisers, chemicals, contracting services and transport.

Outputs from agriculture are value-added in both the manufacturing and service industries. The food manufacturing and service industries in Tasmania are particularly dependent on output from the agricultural sector. Examples include vegetable processing, meat processing and packing, manufacture of dairy products, production of beer and wine, chocolate manufacture, food retailing and restaurants, cafes and hotels.

This report has collated information from a number of sources to provide an overview of agriculture's direct and indirect contribution to the state economy.

### Data Sources

The three main sources of information used in this report were:

- (1) Australian Bureau of Statistics (ABS) – Tasmanian agriculture's direct contribution to the state economy in terms of output and employment.
- (2) Department of Primary Industries, Water & Environment (DPIWE) – the value of Tasmania's food industry.
- (3) Australian Farm Institute & Econtech Pty Ltd – the value of Tasmania's Farm Dependent Economy (FDE).

### Farm Output

Over the past 21 years agriculture's value of production, which is essentially a farm-gate measure of output, has increased at a compound rate of around 4.4% per annum. This represents a slight increase in real terms over the period.

In general terms there has been a steady increase over time but with two major peaks. In the late 1980's higher than normal value of production was associated with high wool prices (before the demise of the reserve price scheme). More recently there was a peak in the early 2000's associated with high income earned from livestock, milk and poppies. The gross value of agricultural production fell somewhat after 2001-02 but recovered in 2005-06 to a record \$946million<sup>1</sup>.

Over the past five years (to 2005-06) agriculture has directly contributed an average of 4.7% of Tasmania's gross state product. The most important components of agriculture's value of

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<sup>1</sup> ABS, 7503.0 and 7501.0

production during that period were sale of livestock for meat (21-29%), milk (21-24%) and vegetables (around 17-21%).

## **Farm Employment**

Since 2001-02 agriculture has directly generated an average of 5.3% of total state employment. Direct farm employment declined from around 13,100 people in 2001-02 to 11,700 people in 2005-06. A substantial further reduction to 8,900 people was experienced in 2006-07 – ie down 2,800 people or 24% compared to the previous year. This latest fall may in part be a drought-induced aberration.

As well as the 8,700 people directly employed in agriculture in 2006-07, a further 1,000 were employed in services to agriculture and 7,600 in agricultural manufacturing and processing.

## **Tasmania's Food Industry**

The downstream benefits of agriculture in Tasmania have been highlighted by recent DPIW work on the value of Tasmania's food industry<sup>2</sup>. Including seafood, total farm-gate and beach-point production value in 2004-05 was around \$984 million. After packing and/or processing this value increased to \$2,103 million (2.1 times farm-gate value). Total food revenue net of imports was estimated at around \$3,110 million (3.2 times farm-gate value). Around 89 per cent of total state food revenue of \$3,482 million came from Tasmanian product as distinct from overseas or interstate imports.

The DPIW report highlighted a number of key points in relation to Tasmania's food industry:

- (1) The sector is highly diversified – there are more than 70 major product groupings
- (2) Net overseas exports = \$409 million.
- (3) Net interstate trade = \$813 million (almost 2 times overseas exports).
- (4) Food retail & food service sales within Tasmania = \$1,888 million.
- (5) Tasmania sells 58% of food produced interstate and overseas.
- (6) Tasmania produces a large net surplus of food.

## **Tasmania's Farm Dependent Economy**

A 2005 report by the Australian Farm Institute<sup>3</sup> assessed the total value of agriculture's contribution to the Australian economy including its interaction with other sectors of the economy. That total contribution was defined as the farm dependent economy (FDE) including agriculture and the farm-input and farm-output sectors.

For Australia as a whole it was found that the FDE contributed 12.1% of national gross domestic product and 17.2% of total employment.

Information provided in that report and obtained directly from Econtech Pty Ltd, which undertook the research on behalf of the Australian Farm Institute, has shown that Tasmania's FDE is 30% more important to the Tasmanian economy than it is to the nation as a whole.

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<sup>2</sup> Tasmanian Food Industry Score Card 2004-05, H.Griffiths, DPIW July 2007.

<sup>3</sup> Australian Farm Institute, Australia's Farm-Dependent Economy: Analysis of the Role of Agriculture in the Australian Economy, Research Report, March 2005.

Tasmania's FDE has contributed an average of 15.8% of its gross state product over the past five years. This is 3.3 times its direct contribution of 4.8%.

It is possible that the assessed FDE contribution to total gross state product may itself underestimate the true value because of ABS reporting criteria which may allocate some Tasmanian factory output to mainland states due to the location of company headquarters on the mainland. More research is required to ascertain whether this is in fact the case.

Two thirds of Tasmania's FDE contribution to gross state product occurs beyond the farm gate - in the farm output sector. The manufacturing and service sectors each contribute around half of the value added beyond the farm gate.

While total employment in the direct agriculture sector has fallen somewhat in recent years, this has been offset by an increase in the farm-output sector. Total FDE employment has fluctuated between 40,000 and 44,000 over the past five years (ie to 2003-04). That is around 20% of total state employment. This compares to a 17.2% contribution by the FDE nationally.

Slightly more than two thirds of farm dependent economy employment occurs beyond the farm gate – in the farm output sector. Within the farm output sector (ex farm-gate) 70% of employment is in the service sector and 30% is in manufacturing.

## 2. BACKGROUND

Agriculture occupies around 24% of Tasmania's total land area of around 6.8 million hectares. This compares to around 50% in conservation and natural environment and 22% in forestry.

**Table 1: Land Use in Tasmania**

Land Use	Area	
	Total ( <sup>'000</sup> ha)	Per cent (%)
Conservation and Natural Environment	3,440	50%
Forestry		
Production Forestry	1,286	19%
Plantation Forestry	<u>214</u>	<u>3%</u>
	1,501	22%
Agriculture		
Grazing Natural Vegetation	277	4%
Grazing Modified Pastures	1,224	18%
Irrigated Modified Pasture	57	1%
Cropping	75	1%
Perennial Horticulture	6	0%
Other	<u>0.5</u>	<u>0%</u>
	1,639	24%
Intensive Uses	89	1%
Water	174	3%
Total	6,843	100%

Source: From Drenan A, Land Use Mapping at Catchment Scale, Tasmanian Report, DPIWE, March 2003

### 2.1 Agricultural Enterprises in Tasmania

Agriculture in Tasmania is a particularly diverse industry with a wide range of crop and livestock products produced.

Crops include cereals for grain, vegetables, poppies, apples, stone fruit, grapes, and pyrethrum as well as cereals and pasture cut for hay.

Livestock enterprises include beef cattle, dairying, sheep, pigs and poultry with the main products being livestock sales for slaughter, milk, wool and eggs.



Table 2 outlines the area and production of major crops grown in Tasmania in 2003-04 and 2004-05<sup>4</sup>.

Low value cereals and hay crops occupy a large proportion of total crop area with the output of the hay crops largely used on-farm.

Vegetables are a very important industry in the state and occupy a total of around 17,000 hectares. Potatoes – mainly for processing dominate both area and value.

Poppy area in 2004-05 was around 13,000 hectares, down from a high of around 20,000 hectares in 2000 to 2002. Since 2004-05 the area has fallen further before increasing in 2007-08 to perhaps 15,000 hectares.

Stone fruit and grapes are high value enterprises that have grown in area recent years and are expected to become relatively more important over time.

**Table 2: Crop Area & Production**

Crop	2003-04		2004-05	
	Hectares	Tonnes	Hectares	Tonnes
Cereals	23,000	69,000	21,000	73,000
Grapes	1,205	7,860	1,270	6,135
Legumes	2,000	3,000	2,000	3,000
Pasture Seed	3,000	3,000	5,000	3,000
Pasture & Cereal Cut for Hay	46,000	215,000	54,000	231,000
Pome Fruit				
Apples		37,255		45,510
Pears		730		785
Poppies*	12,000			13,000
Stone Fruit				
Apricots		690		720
Cherries		920		1,245
Nectarines		90		90
Peaches		75		75
Vegetables				
Beans	1,660	12,475	1,810	14,180
Broccoli	785	7,360	935	8,035
Carrots	885	52,615	755	52,830
Cauliflowers	310	6,085	340	6,185
Green Peas	5,110	28,535	4,770	26,490
Lettuces	260	2,700	90	1,610
Onions	1,265	64,745	1,290	72,475
Potatoes	6,760	327,600	6,715	320,825

\* Not published in this ABS report. Figures provided are industry estimates.

Area down from a high of around 20,000 hectares in 2000 to 2002.

Source: ABS, Agricultural Commodities Australia 7121.0

<sup>4</sup> ABS, Agricultural Commodities, Australia, 7121.0 (2005-06 statistics are expected to be available in November 2007)

Industry sources suggest that at least some of ABS production figures underestimate the true level of output. In the case of vegetables, for example, it appears that the ABS estimates for broccoli, beans, peas and potatoes in 2003-04 are well below their true value:

	Industry Estimate	(ABS)
Broccoli	9,700 t	( 4,360 t)
Beans	16,700 t	( 12,475 t)
Carrots	52,000 t	( 52,615 t)
Onions	65,000 t	( 64,745 t)
Peas	32,600 t	( 28,535 t)
Potatoes	415,000 t	(327,600 t)

Tasmania's livestock enterprises are summarised in Table 3.

**Table 3: Livestock Numbers & Production**

		2003-04	2004-05
<b>Livestock Numbers</b>			
Dairy Cattle	('000)	189	191
Beef Cattle	('000)	496	498
Sheep	('000)	3,183	3,105
Pigs	('000)	14	12
Poultry	('000)	343	298
<b>Livestock Slaughterings</b>			
Cattle	('000)	205	204
Calves	('000)	47	44
Sheep	('000)	346	326
Lambs	('000)	419	443
Pigs	('000)	44	46
Poultry	('000)	np	np
<b>Livestock Products</b>			
Meat	('000 t)	73	76
Wool	('000 t)	15	13
Milk	(ML)	590	600
Eggs	('000 doz)	4,791	5,356

Source: ABS, Agricultural Commodities Australia, 7121.0

## 2.2 Measuring the Value of Agriculture

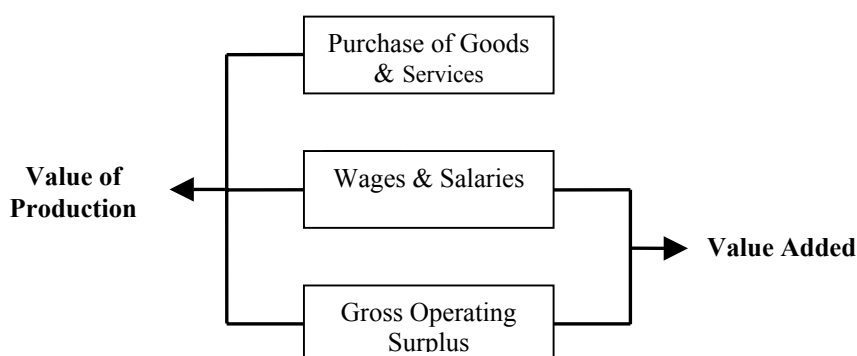
The value of agriculture's contribution to the overall state economy is commonly expressed in terms of the following criteria:

- (1) Value of Production
- (2) Value Added
- (3) Employment Generated

Value of production is a measure of the value of the output of a sector. It is effectively made up of the cost of inputs (goods and services and labour) plus profit (gross operating surplus) (see Figure 1).

Value added is the value of production less the cost of inputs (goods & services) from other sectors. As such it is a better measure for comparing the contribution of the various sectors that contribute to total state product. If the value of production of each sector along a value-adding chain was used for comparison purposes there would be double counting - because the output from one sector is often the input for another.

**Figure 1: Value of Production & Value Added**



Value of production in agriculture is normally measured as **gross value of agricultural production (GVAP)**. This is the value placed on production at wholesale prices realised in the market place. Essentially it is the farm gate value plus any marketing costs such as transport and commission. In Tasmania these tend to be relatively low so that local value (farm gate) is not very different to GVAP (factory door etc).

Value added for the agriculture sector is referred to as **gross agricultural value added (GAVA)**. This is the value of production less the cost of inputs such as fertiliser, contracting, transport and storage used in production. Because the cost of output from other sectors is taken out this is a more valid measure of agriculture's contribution to the state economy. Likewise manufacturing based on agricultural inputs would deduct the cost of those agricultural (and other) inputs to estimate its contribution to the states economy.

To fully assess agriculture's contribution to the state economy it is necessary to go beyond the farm-gate. Agriculture in Tasmania has a large indirect contribution to the state's economy because of the inputs it buys from other sectors, and the degree to which the manufacturing, processing and service industries are dependent on it for their inputs.

## **2.3 Sources of Information**

This report summarises information from three main sources to provide an overview of agriculture's overall contribution to the state economy:

- (1) Australian Bureau of Statistics (ABS) – Tasmanian agriculture's direct contribution to the state economy.
- (2) Department of Primary Industries & Water (DPIW) – Tasmanian Food Industry Scorecard
- (3) Australian Farm Institute & Econtech Pty Ltd – the value of Tasmania's Farm Dependent Economy (FDE).

### 3. AGRICULTURE'S DIRECT CONTRIBUTION

This section reviews agriculture's direct contribution of to the State's economy in terms of:

- (1) Value of production
- (2) Value added
- (3) Employment generated

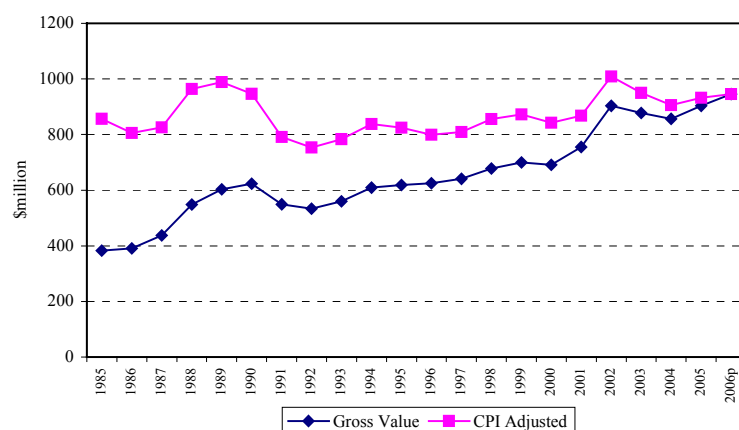
#### 3.1 Value of Production

Value of production for agriculture is normally referred to as gross value of production, which is the value placed on production prior to direct sale or packaging or processing. Essentially this is the farm gate value plus any marketing costs. In 2005-06, the gross value of agricultural production in Tasmania was \$946 million<sup>5</sup>.

In the past 21 years the gross value of agricultural production has increased at a compound rate of around 4.4% per annum (Figure 2). This has resulted in a 10% increase over the period in real (inflation adjusted) terms.

Agriculture as an industry is prone to substantial variation as a result of fluctuations in weather and market conditions. This is mitigated somewhat in Tasmania because of its relatively stable climate and the broad range of crop and livestock products that make up the overall output. Over the past 21 years there have been two substantial peaks in output. Apart from these peaks there has been a relatively consistent increase in output over the period.

**Figure 2: Gross Value of Agricultural Production**  
1985-2006



Source: ABS, Value of Agricultural Commodities, 7503.0 and 7501.0  
CPI adjusted figures are in 2005-06 dollars

The peak in the late 1980's was associated with high production and prices for wool. Output fell dramatically with the demise of the Reserve Price Scheme.

<sup>5</sup> ABS, 7501.0, 2005-06 (preliminary).

The peak in the early 2000's was due to high milk and poppy values on top of steadily increasing livestock sale values. The fall in 2002-03 and 2003-04 was mainly associated with a reduction in milk price, and poppy area and price.

In the past five years, Tasmania's gross value of agricultural production has increased from around \$903 million in 2001-02 to almost \$946 million in 2005-06 – despite a reduction in 2002-03 and 2003-04 (Table 4).

**Table 4: Gross Value of Agricultural Production**

2002 to 2006

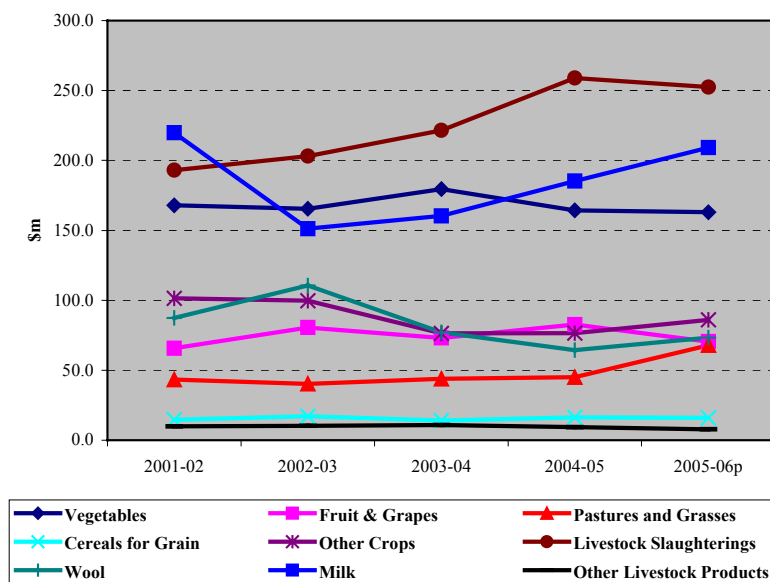
Sector	2001-02	2002-03	2003-04	2004-05	2005-06p
	\$m	\$m	\$m	\$m	\$m
Crops					
Vegetables	168.0	165.4	179.5	164.3	163.0
Fruit & Grapes	65.8	80.6	73.1	82.7	70.4
Pastures and Grasses	43.3	40.3	43.8	45.1	67.8
Cereals for Grain	14.7	17.1	14.1	16.4	15.9
<u>Other Crops</u>	<u>101.5</u>	<u>99.7</u>	<u>76.3</u>	<u>76.6</u>	<u>86.0</u>
Total Crops	393.3	403.1	386.8	385.1	403.1
Livestock Slaughterings	193.0	203.1	221.6	258.9	252.5
Livestock Products					
Wool	87.4	110.5	77.2	64.5	73.3
Milk	219.8	151.3	160.4	185.2	209.1
<u>Other Livestock Products</u>	<u>9.9</u>	<u>10.2</u>	<u>10.9</u>	<u>9.4</u>	<u>7.7</u>
Total Livestock Products	317.1	272.0	248.5	259.1	290.1
<b>Total Gross Value</b>	<b>903.4</b>	<b>878.2</b>	<b>856.9</b>	<b>903.1</b>	<b>945.7</b>

Source: ABS, Value of Agricultural Commodities (7503.0), Principal Agricultural Commodities Produced 2005-06p (7501.0)

The increase over the five-year period is largely attributable to the increase in the value of livestock slaughterings.

Figure 3 (over) shows trends in output for various commodities over the past five years.

**Figure 3: Gross Value of Agricultural Production by Commodity**  
2002 - 2006



Source: ABS, Value of Agricultural Commodities (7503.0), Principal Agricultural Commodities Produced 2005-06p (7501.0)

The most consistent trend in the past five years has been the steadily increasing value of the livestock industry – although this levelled off in 2005-06.

High milk prices in 2001-02 coincided with good seasonal conditions and low grain prices and resulted in a record dairy value of production in that year. Milk prices fell in 2002-03 and 2003-04 but have increased again since then. There is again strong growth potential with record prices announced for 2007-08.

The increase in “Other Crop” value in the early 2000’s was mainly a result of very high poppy production and prices. Both area planted and price have fallen since then although the impact has been mitigated somewhat by gains in output per hectare. High stocks associated with world oversupply are the main reason behind the current reduction in poppy output. Higher area and prices have been announced for 2007-08.

Fruit and grapes have shown some increase over the past five years. Because of market advantages associated with Tasmania’s climate there appears to be good prospects in particular for continued increase in the output of cherries apricots, and grapes.

Crops make up around 45% and livestock 55% of the total value of agricultural production in Tasmania (Table 5 & Figure 4)

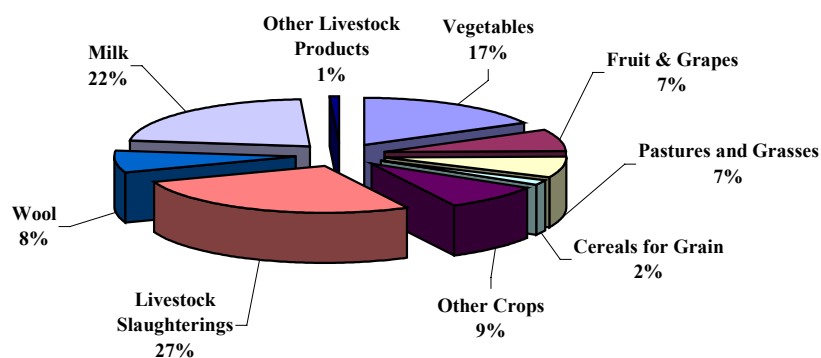
Within “Crops”, the vegetable industry is the major contributor at around 17-21% of the total value of agricultural production in the state. Livestock slaughtering and milk are the major contributors within the livestock industry. In 2005-06 livestock slaughtering made up 27% of the total gross value of production and milk made up 22%.

**Table 5: Gross Value of Agricultural Production – Per Cent of Total**  
2001-02 to 2005-06

Sector	2001-02	2002-03	2003-04	2004-05	2005-06p
<b>Crops</b>					
Vegetables	19%	19%	21%	18%	17%
Fruit & Grapes	7%	9%	9%	9%	7%
Pastures and Grasses	5%	5%	5%	5%	7%
Cereals for Grain	2%	2%	2%	2%	2%
<u>Other Crops</u>	<u>11%</u>	<u>11%</u>	<u>9%</u>	<u>8%</u>	<u>9%</u>
Total Crops	44%	46%	45%	43%	43%
<b>Livestock Slaughterings</b>	21%	23%	26%	29%	27%
<b>Livestock Products</b>					
Wool	10%	13%	9%	7%	8%
Milk	24%	17%	19%	21%	22%
<u>Other Livestock Products</u>	<u>1%</u>	<u>1%</u>	<u>1%</u>	<u>1%</u>	<u>1%</u>
Total Livestock Products	35%	31%	29%	29%	31%
<b>Total Gross Value</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Source: ABS Value of Agricultural Commodities Produced 7503.0

**Figure 4: Gross Value of Agricultural Production – Per Cent of Total**  
2005-06





### 3.2 Value Added

Gross agricultural value added (GAVA) is calculated by deducting the costs of inputs other than labour from gross value of agricultural production (GVAP). GAVA makes up around 75 to 80% of GVAP.

In recent years the direct contribution of value adding by the agricultural sector to total state gross product has varied between 4.3% and 5.6% (Table 6). The high of 5.6% occurred in 2001-02 on the back of record livestock, milk and poppy sales.

**Table 6: Gross Agricultural Value Added & Gross State Product**  
2001-02 to 2005-06

	2001-02	2002-03	2003-04	2004-05	2005-06
	\$m	\$m	\$m	\$m	\$m
Gross Agricultural Value Added (GAVA)	711	670	642	707	740
Gross State Product (GSP)	12,597	13,474	14,835	16,054	17,193
GAVA as % GSP	5.6%	5.0%	4.3%	4.4%	4.3%

Source: ABS, Australian National Accounts: State Accounts 5220.0 See Appendix 2

In 2005-06, the industry classification “agriculture, forestry and fishing” ranked fourth at 6.7% in terms of contribution to gross state product (GSP)<sup>6,7</sup>. Industries above it were manufacturing (14.5%), health & community services (9.7%), and ownership of dwellings (7.3%).

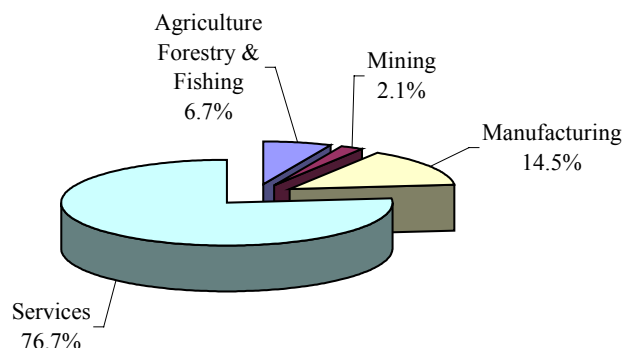
Agriculture makes up the major part of the agriculture, forestry and fishing sector (80% of the 5.7% sector total in 2003-04). As discussed later agriculture’s full contribution to the state economy is greater than its direct value-added contribution because of its importance in buying outputs from, and providing inputs to other sectors.

The direct contribution of agriculture forestry & fishing to total GSP is compared to mining, manufacture and the combined “service” sectors in Figure 5.

<sup>6</sup> Based on Factor Incomes = Sum of compensation of employees, gross operating surplus and gross mixed income. (Similar to Value added)

<sup>7</sup> ABS, Australian National Accounts: State Accounts, 5220.0 See Appendix 1

**Figure 5: Industry Contributions to Gross State Product**  
2005-06



Source: ABS, Australian National Accounts: State Accounts 5220.0 See Appendix 1

Tasmania's agriculture, forestry and fishing sector 6.7% contribution to GSP compares to an Australian average of 3% (See Appendix 1). The other states range from 2% (NSW & NT), 3% (Vic & WA), 4% (Qld) to 5% (SA).

### 3.3 Employment

In the past 5 years direct employment in agriculture has declined from around 13,000 to just under 9,000 people (Table 7, Figure 6). At the same time the agricultural output has continued to grow (Figure 2). The sharp reduction in employment in 2006-07 is probably at least partly associated with the recent drought, and may therefore recover somewhat over time.

In addition to the 8,900 people directly employed in agriculture in 2006-07 there were 1,000 people employed in services to agriculture and a further 7,600 people in manufacturing industries dependent on agriculture<sup>8</sup>.

<sup>8</sup> See Table 7, Food, Beverage & Tobacco Manufacturing plus Textile, Clothing, Footware & Leather Manufacturing.

**Table 7: Tasmanian Employment**

2002-2007

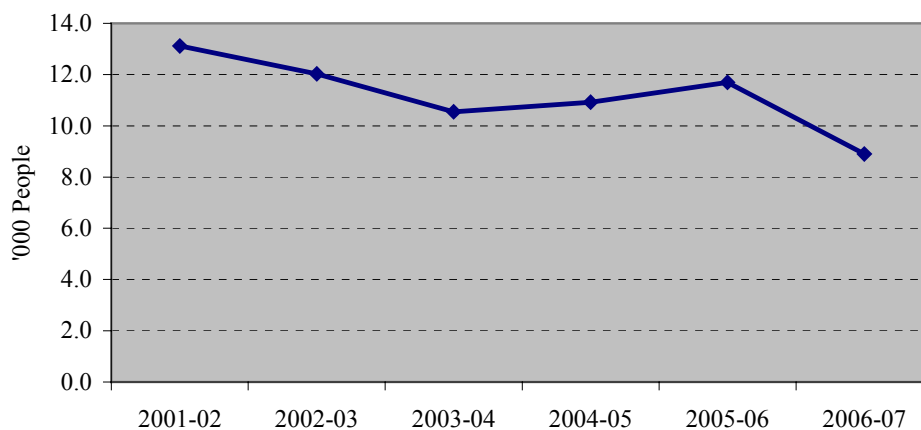
('000 People)

Sector	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
<b>Agriculture, Forestry &amp; Fishing</b>						
Agriculture	13.1	12.0	10.6	10.9	11.7	8.9
Services to Agriculture	1.2	0.9	1.0	0.8	0.8	1.0
Forestry & Logging	2.4	2.2	3.4	3.7	2.5	3.3
Commercial Fishing	<u>1.2</u>	<u>1.3</u>	<u>1.8</u>	<u>1.3</u>	<u>1.7</u>	<u>1.2</u>
Total Agriculture Forestry & Fishing	17.9	16.5	16.8	16.7	16.7	14.3
<b>Mining</b>	1.6	1.9	2.0	2.1	2.4	2.5
<b>Manufacturing</b>						
Food, Beverage & Tobacco Mfg	5.9	6.2	4.9	6.3	6.2	6.3
Textile, Clothing, Footware & Leather Mfg	1.5	1.8	1.7	1.5	1.4	1.3
Other Manufacturing	<u>13.8</u>	<u>14.0</u>	<u>15.8</u>	<u>15.7</u>	<u>15.2</u>	<u>14.3</u>
Total Manufacturing	21.2	22.0	22.3	23.5	22.8	21.9
<b>Services</b>	156.8	161.0	168.0	173.3	180.5	184.4
<b>Total</b>	197.6	201.4	209.1	215.5	222.2	223.2

Source: ABS Employment by Industry, See Appendix 3

**Figure 6: Direct Employment in Agriculture**

2002-2007



Source: ABS Employment by Industry, See Appendix 3

As a per cent of total state employment agriculture's share has fallen over the past five years from 6.6% to 4.0% (Table 8).

**Table 8: Tasmanian Employment – Per Cent of Total**  
2002-07

Sector	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
<b>Agriculture, Forestry &amp; Fishing</b>						
Agriculture	6.6	6.0	5.0	5.1	5.3	4.0
Services to Agriculture	0.6	0.5	0.5	0.3	0.4	0.4
Forestry & Logging	1.2	1.1	1.6	1.7	1.1	1.5
Commercial Fishing	<u>0.6</u>	<u>0.6</u>	<u>0.9</u>	<u>0.6</u>	<u>0.7</u>	<u>0.5</u>
Total Agriculture Forestry & Fishing	9.1	8.2	8.0	7.7	7.5	6.4
<b>Mining</b>	0.8	0.9	1.0	1.0	1.1	1.1
<b>Manufacturing</b>						
Food, Beverage & Tobacco Mfg	3.0	3.1	2.3	2.9	2.8	2.8
Textile, Clothing, Footware & Leather Mfg	0.8	0.9	0.8	0.7	0.6	0.6
Other Manufacturing	<u>7.0</u>	<u>6.9</u>	<u>7.6</u>	<u>7.3</u>	<u>6.9</u>	<u>6.4</u>
Total Manufacturing	10.7	10.9	10.7	10.9	10.2	9.8
<b>Services</b>	79.4	80.0	80.3	80.4	81.2	82.6
<b>Total</b>	100.0	100.0	100.0	100.0	100.0	100.0

Source: ABS Employment by Industry, supplied directly, See Appendix 3

## 4. TASMANIA'S FOOD INDUSTRY

The Tasmanian Department of Primary Industries & Water (DPIW) has recently undertaken research in an attempt to assess the full value of Tasmania's food industry<sup>9</sup>. That work has highlighted the downstream benefits of Tasmania's agricultural and fisheries industries to the overall state economy.

As distinct from agriculture per se, the DPIW assessment has excluded non-food agricultural commodities such as wool, poppies etc, but includes seafood. It therefore differs somewhat in its coverage from the assessment in Section 3.

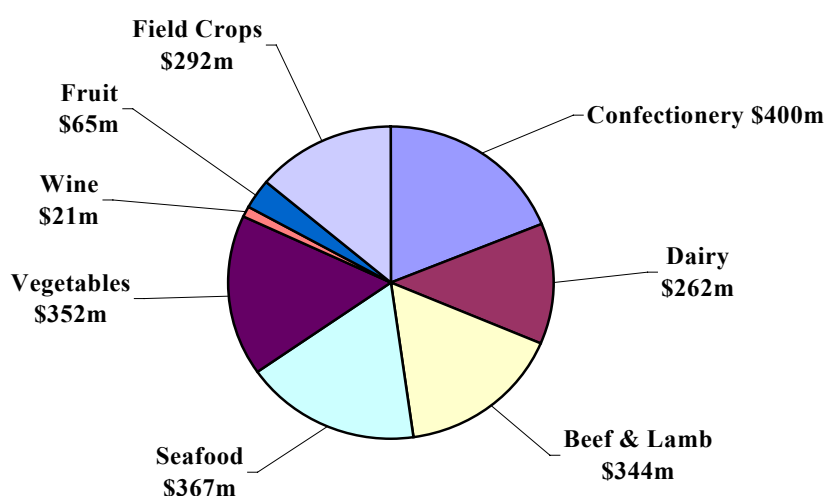
In general terms the analysis has shown a more than three-fold increase in value down the food industry value chain:

Farm-gate and beach-point production value	\$ 984 million
Packed or processed value	\$2,103 million
Total food revenue (net of imports)	\$3,110 million

The components of the \$2,103 million value after packing or processing are outlined in Figure 7.

**Figure 7: Processed & Packed Food Value**

2004-05



Source: Tasmanian Food Industry Score Card 2004-05, H Griffiths, DPIW, Jul 2007

The analysis highlights several value-added commodities not always associated with agriculture's contribution to the state economy - in particular, the \$400 million confectionery value (chocolate ex milk) in addition to the more normal cheese and milk powder value included under the \$262 million dairy value. Also, the Field Crops total of \$292 million includes the value of beverages produced (beer ex barley and hops).

<sup>9</sup> Tasmanian Food Industry Score Card 2004-05, H.Griffiths, DPIW (Jul 2007)

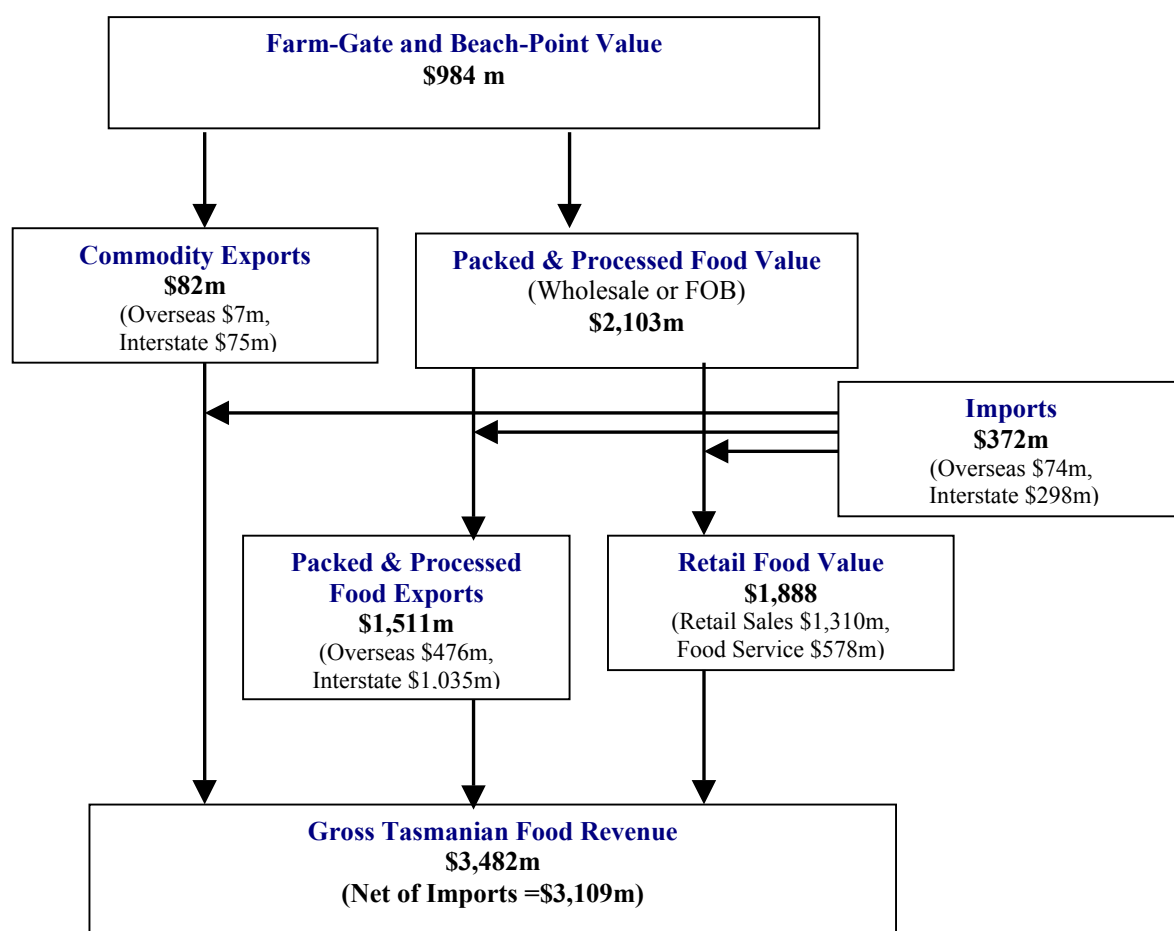
The DPIW report highlighted a number of key points in relation to Tasmania’s food industry:

- (1) The sector is highly diversified – there are more than 70 major product groupings
- (2) Net overseas exports = \$409 million
- (3) Net interstate trade = \$813 million (almost 2 times overseas exports)
- (4) Food retail & food service sales in Tasmania = \$1,888 million
- (5) Tasmania sells 58% of food produced interstate and overseas
- (6) Tasmania produces a large net surplus of food.

Figure 8 outlines the full food industry chain stemming from the \$984 million farm-gate and beach-point value. Gross Tasmanian food revenue at the end of the chain is \$3,482 million. With \$372 million (11%) coming from imports, the net value of Tasmania’s food sector is \$3,110 million.

**Figure 8: Tasmania’s Food Industry Value Chain**

2004-05



Source: Tasmanian Food Industry Score Card, 2004-05, H.Griffiths, DPIW, Jul 2007

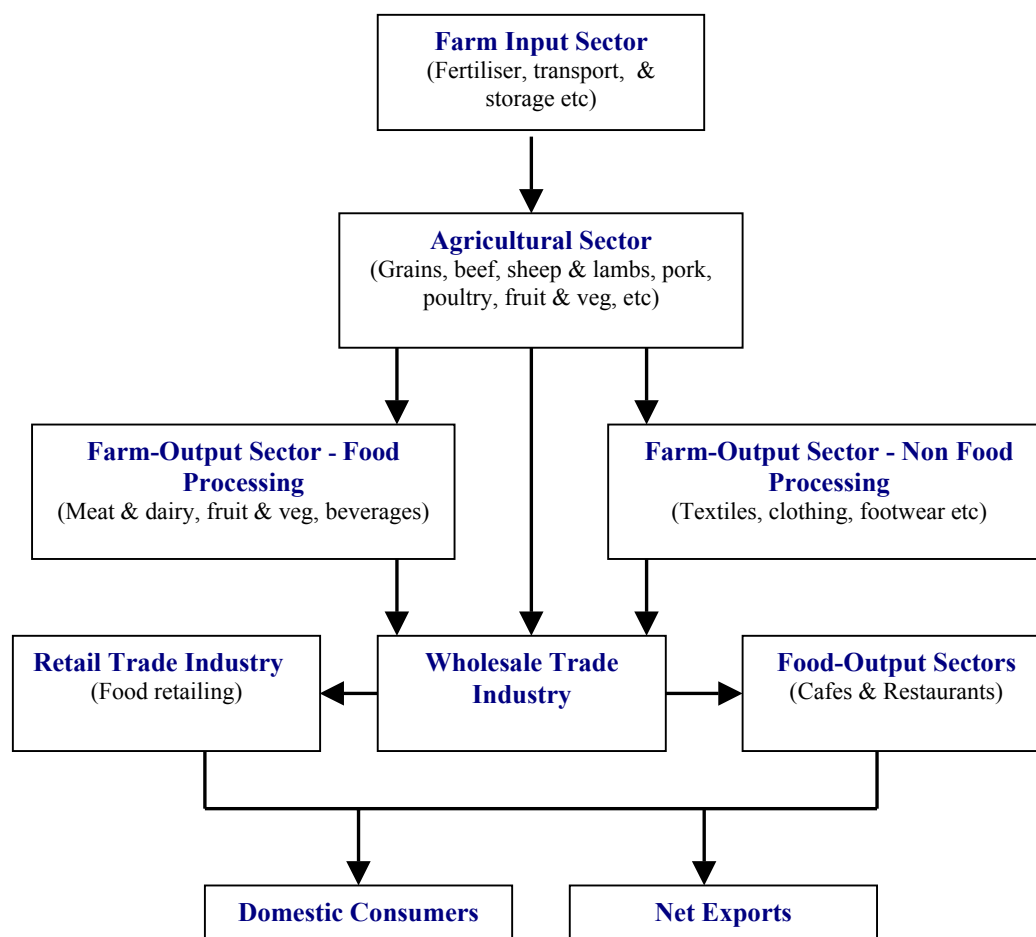
## 5. THE FARM DEPENDENT ECONOMY

The direct contribution of agriculture to gross state product and employment does not fully reflect agriculture's contribution to the state economy. The agricultural sector buys inputs from other sectors, and very importantly provides outputs that support a range of both small and large industries in the state - particularly in the manufacturing sector and the food retailing and accommodation, cafe and restaurant sectors.

The full importance of the agricultural sector in Tasmania can be better measured by including the value of all the economic activities supporting farm production and all the value-added activities that occur to farm outputs post farm-gate.

The Australian Farm Institute has recently described the combination of agriculture plus the farm-input and farm-output sectors as the Farm Dependent Economy (FDE)<sup>10</sup>. The components of the FDE described in that report are outlined below (Figure 9).

**Figure 9: Components of the Farm Dependent Economy (FDE)**



The description of Tasmania's FDE in this section comes from the Australian Farm Institute report and additional information supplied by Econtech Pty Ltd, which undertook that

<sup>10</sup> Australian Farm Institute, Australia's Farm-Dependent Economy: Analysis of the Role of Agriculture in the Australian Economy, Research Report, March 2005.

research on behalf of the Australian Farm Institute. Econtech used their definition of the FDE together with the latest input-output data published by the Australian Bureau of Statistics (ABS) to construct an input-output farm model.

For Australia as a whole the report concluded that the FDE contributed an average of 12.1% of national GDP for the six years up to and including 2003-04. FDE employment was 17.2% of the national total. Unfortunately there has been no update of these figures beyond the 2003-04 year.

## 5.1 Farm Dependent Economy (FDE) Value Added

In terms of value-added, Tasmania's FDE is around 30% more important to the state economy than it is for Australia as a whole.

Compared to the national average of a 12.1% contribution to GDP, Tasmania's FDE contribution has averaged 15.8% over the past five years (Table 9). There has been steady growth over that period with increased growth in the farm-output sector more than offsetting some reduction in agriculture itself over the past two years. Total FDE contribution is between three and four times that of agriculture on its own.

**Table 9: Farm Dependent Economy Share of Tasmania's Gross State Product**  
2000-2004

(\$million)

Sector	1999-00	2000-01	2001-02	2002-03	2003-04
Farm-Input Sector	87	104	123	91	118
Agricultural Sector	541	661	778	588	719
<b>Farm-Output Sector</b>	<b>1,528</b>	<b>1,415</b>	<b>1,470</b>	<b>1,546</b>	<b>1,765</b>
Total FDE	2,155	2,180	2,371	2,225	2,601
Tasmania	13,333	13,745	14,439	14,941	16,638
FDE Share of Tasmania	16.2%	15.9%	16.4%	14.9%	15.6%
Total FDE:Agriculture	4.0	3.3	3.0	3.8	3.6

Source: Australian Farm Institute, Australia's Farm Dependent Economy, March 2005, plus additional data from Econtech Pty Ltd

Agriculture is a more significant contributor to the Tasmanian economy than it is in any other state. Tasmania's 15.8% of gross state product from the farm dependent economy compares to a range of 9.8% to 14.8% for other states<sup>11</sup>.

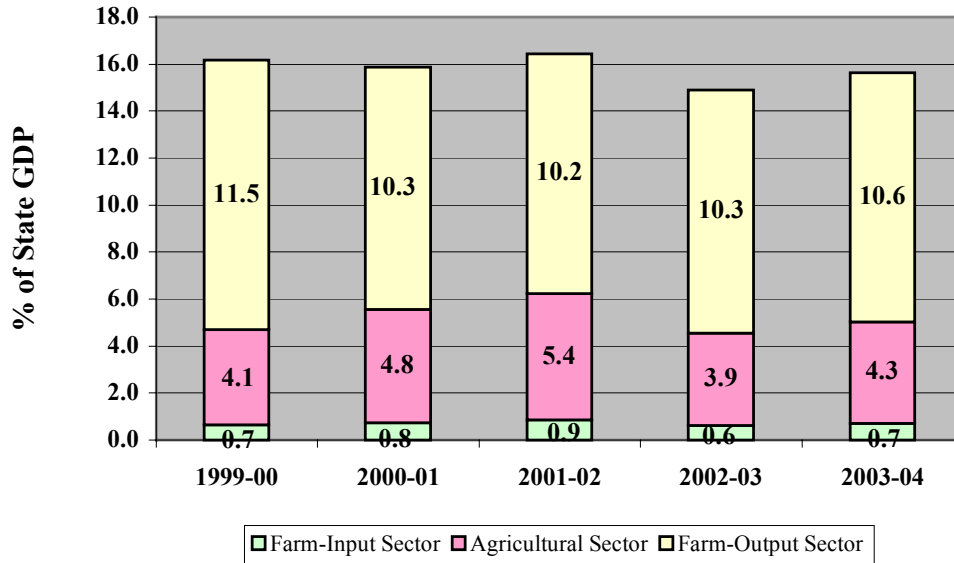
It is also possible that the Tasmanian FDE assessment shown here may itself underestimate the true value because of ABS reporting criteria which may allocate some Tasmanian manufacturing output to mainland states due to the location of company headquarters on the mainland. More research is required to ascertain whether this is in fact the case.

<sup>11</sup> Australian Farm Institute, Australia's Farm Dependent Economy, March 2005, p18.



Figure 10 highlights the importance of the farm-output sector in the overall contribution of agriculture to the state's economy. Over the five years, the farm-output sector has contributed an average of 10.6% of GSP. In other words around two thirds of Tasmania's farm dependent economy contribution occurs beyond the farm gate - in the the farm output sector. Within the farm output sector the manufacturing and service sectors contribute roughly half each.

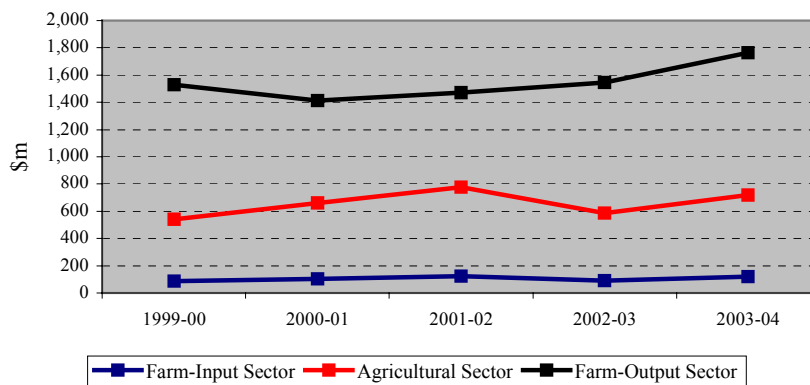
**Figure 10: Contribution Farm Dependent Economy Sectors to Gross State Product**  
2000-2004



Econtech Pty Ltd

Despite some ups and downs in the agriculture sector the farm-output sector has shown consistent growth in recent years Figure 11.

**Figure 11: Farm Dependent Economy Value Added**  
2000-2004

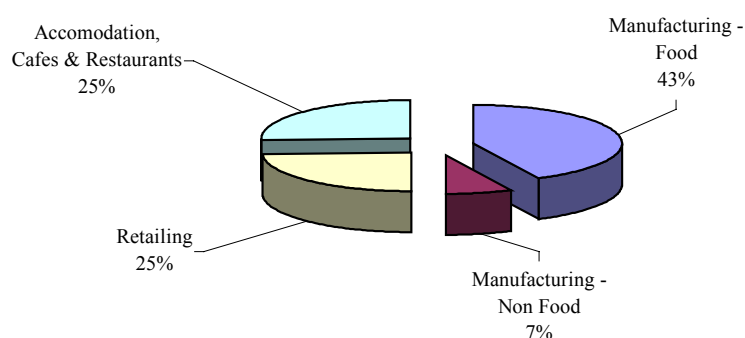


Source: Australian Farm Institute, Australia's Farm Dependent Economy, March 2005, plus additional data from Econtech Pty Ltd

Manufacturing and the service sectors make up around half each of the farm-output sector's contribution to GSP (Figure 12). Food manufacturing is the major contributor to the farm-output sector making up 43 per cent of total value added in the sector.

**Figure 12: Components of Farm-Output Value Added**

1998-99



Source: Australian Farm Institute, Australia's Farm Dependent Economy, March 2005, plus additional data from Econtech Pty Ltd (See Appendix 4)

## 5.2 Farm Dependent Economy (FDE) Employment

Tasmania's FDE contributed an average of almost 20% of total state employment over the five years to 2003-04 (Table 10). This compares to a national average of 17.2 per cent<sup>12</sup>.

The total FDE contribution is between 3.5 and 4 times that of agriculture on its own.

**Table 10: Farm Dependent Economy Share of Total State Employment**

2000-2004

(<sup>000</sup> People)

Sector	1999-00	2000-01	2001-02	2002-03	2003-04
Farm-Input Sector	1.3	1.5	1.7	1.2	1.4
Agricultural Sector	12.5	12.2	11.9	10.8	10.5
<u>Farm-Output Sector</u>	<u>30.0</u>	<u>28.2</u>	<u>27.7</u>	<u>28.5</u>	<u>30.3</u>
Total FDE	43.7	41.8	41.3	40.5	42.2
Tasmanian Total	208	210	207	211	219
FDE Share of Tasmania	21.0%	19.9%	20.0%	19.2%	19.3%
Total FDE:Agriculture	3.5	3.4	3.5	3.7	4.0

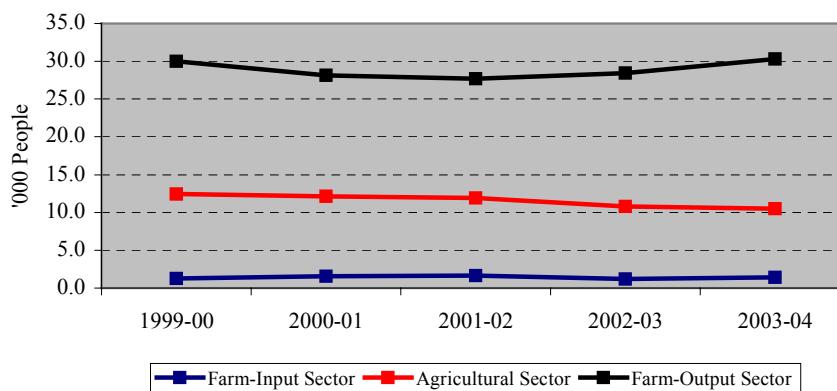
Source: Australian Farm Institute, Australia's Farm Dependent Economy, March 2005, plus additional data from Econtech Pty Ltd

Note: Total state employment figures here are around 10,000 higher each year than those provided by ABS in Table 7

<sup>12</sup> Australian Farm Institute, Australia's Farm Dependent Economy, March 2005

While total employment in the agriculture sector has fallen somewhat in recent years, there have been offsetting increases in employment in the farm-output sector (Figure 13). More recent figures on employment in agriculture in Tasmania are provided above in Table 7.

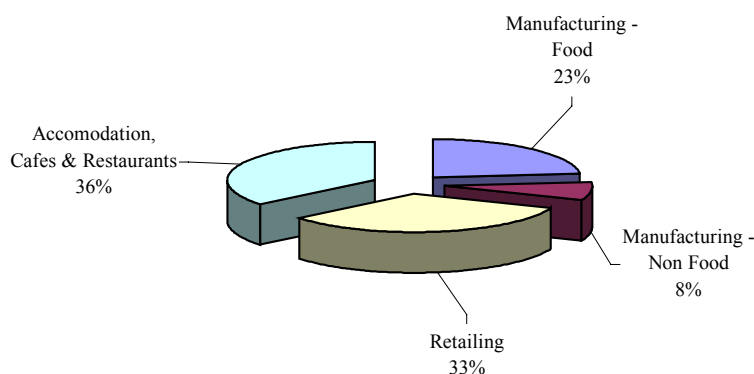
**Figure 13: Farm Dependent Economy Employment**  
2000-2004



Source: Australian Farm Institute, Australia’s Farm Dependent Economy, March 2005, plus additional data from Econtech Pty Ltd

The farm-output sector contributes over two thirds of the total employment in the FDE (Table 10). Within the farm-output sector, the service industries make up almost 70% of total employment, with manufacturing making up the remaining 30%. (Figure 14). Thus, within the farm-output sector the service industries are relatively more important for employment than for value adding where the share was 50:50 manufacturing to services (Figure 12).

**Figure 14: Components of Farm-Output Sector Employment**  
1998-99



Source: Australian Farm Institute, Australia’s Farm Dependent Economy, March 2005, plus additional data from Econtech Pty Ltd (See Appendix 4)

## **APPENDICES**

- 1. INDUSTRY CONTRIBUTION TO TOTAL FACTOR INCOME**
- 2. GROSS AGRICULTURAL PRODUCT AND AGRICULTURAL INCOME**
- 3. TASMANIAN EMPLOYMENT BY SECTOR**
- 4. FARM DEPENDENT ECONOMY CONTRIBUTION TO THE TASMANIAN ECONOMY**

## Appendix 1: Industry Contribution to Total Factor Income

2005-06

(Similar to Share of Gross State Product)

Industry	Percent of Total
	%
Agriculture Forestry & Fishing	6.7
Mining	2.1
Manufacturing	14.5
Services	
Electricity, Gas & Water Supply	4.8
Construction	5.5
Wholesale Trade	3.7
Retail Trade	7.5
Accommodation, Cafes & Restaurants	2.7
Transport & Storage	4.2
Communication Services	2.4
Finance & Insurance	5.9
Property & Business Services	6.0
Government Administration & Defence	5.5
Education	5.5
Health & Community Services	9.7
Cultural & Recreational Services	1.4
Personal & Other Services	2.1
Ownership of Dwellings	7.3
General Government	2.7
	76.7
All Industries	100.0

Source: ABS, Australian National Accounts: State Accounts 5220.0

### Industry Contribution to Total Factor Income by State

Sector	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Aust
	%	%	%	%	%	%	%	%	%
Agriculture, forestry & fishing	2	3	4	5	3	7	2		3
Mining	3	2	12	3	27	2	26		8
Manufacturing	11	14	9	15	8	14	6	2	11
Electricity, gas & water supply	2	3	2	3	3	5	1	2	2
Construction	7	7	8	6	8	5	7	8	7
Wholesale trade	6	6	5	4	4	4	2	2	5
Retail trade	6	6	7	6	5	8	4	5	6
Accommodation, cafes and restaurants	3	2	3	2	1	3	3	2	2
Transport & storage	4	4	5	4	4	4	4	2	4
Communication services	3	3	2	2	2	2	2	3	3
Finance & insurance	11	9	5	6	4	6	2	4	8
Property & business services	15	14	10	10	10	6	8	13	13
Government administration & defence	4	2	4	3	2	5	7	27	4
Education	4	5	4	5	3	5	4	6	5
Health & community services	6	7	6	8	5	10	6	6	7
Cultural & recreational services	2	2	1	1	1	1	2	3	1
Personal & other services	2	2	2	2	2	2	2	3	2
Ownership of dwellings	9	8	8	9	6	7	10	9	8
General government	2	2	2	2	1	3	3	5	2
Total	100	100	100	100	100	100	100	100	100

Source: ABS Australian National Accounts, State Accounts 2005-06, 5220.0 Re-Issue

## Appendix 2: Gross Agricultural Value Added and Agricultural Income

	2001-02	2002-03	2003-04	2004-05	2005-06
	\$m	\$m	\$m	\$m	\$m
Gross Value of Agricultural Production (GVAP)	903	878	857	903	946
GVAP (Adjusted*)	1,120	1,087	1,074	1,131	1,188
less Intermediate Input Costs	<u>-399</u>	<u>-407</u>	<u>-421</u>	<u>-413</u>	<u>-437</u>
Gross Agricultural Value Added at Producer's Prices	721	680	653	718	751
less Taxes less Subsidies on Products	-10	-10	-11	-11	-11
<b>Gross Agricultural Value Added</b>	<b>711</b>	<b>670</b>	<b>642</b>	<b>707</b>	<b>740</b>
less Compensation of employees, consumption of fixed capital, and net property income payable.	-402	-398	-412	-428	-441
less Taxes less subsidies on production	-15	-16	-17	-18	-18
<b>Agricultural Income</b>	<b>294</b>	<b>256</b>	<b>213</b>	<b>261</b>	<b>281</b>

\* Adjusted in national accounts to include an estimate of gross fixed capital expenditure on livestock and an estimate for output for home consumption.

Source: ABS, Australian National Accounts: State Accounts 5220.0

### Appendix 3: Tasmanian Employment by Sector

(‘000 People)

Sector	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
Agriculture, Forestry & Fishing						
Agriculture	13.1	12.0	10.6	10.9	11.7	8.9
Services to Agriculture	1.2	0.9	1.0	0.8	0.8	1.0
Forestry & Logging	2.4	2.2	3.4	3.7	2.5	3.3
Commercial Fishing	<u>1.2</u>	<u>1.3</u>	<u>1.8</u>	<u>1.3</u>	<u>1.7</u>	<u>1.2</u>
Total	17.9	16.5	16.8	16.7	16.7	14.3
Mining	1.6	1.9	2.0	2.1	2.4	2.5
Manufacturing						
Food, Beverage & Tobacco Mfg	5.9	6.2	4.9	6.3	6.2	6.3
Textile, Clothing, Footware & Leather Mfg	1.5	1.8	1.7	1.5	1.4	1.3
All Other Manufacturing	<u>13.8</u>	<u>14.0</u>	<u>15.8</u>	<u>15.7</u>	<u>15.2</u>	<u>14.3</u>
Total	21.2	22.0	22.3	23.5	22.8	21.9
Electricity, Gas & Water Supply	2.1	1.9	2.5	2.5	2.4	2.9
Construction	10.9	12.1	13.2	15.9	15.9	16.5
Wholesale Trade	8.6	9.0	7.9	7.5	9.3	8.6
Retail Trade	31.3	32.2	33.5	32.3	35.6	32.7
Accommodation, Cafes & Restaurants	9.6	9.6	11.9	12.0	11.1	14.4
Transport & Storage	8.1	8.1	9.3	9.1	8.5	9.8
Communication Services	3.1	2.6	2.8	3.4	3.2	2.6
Finance & Insurance	5.5	5.8	5.0	5.2	5.4	5.5
Property & Business Services	15.3	15.2	16.7	17.6	18.8	18.6
Government Administration & Defence	10.9	11.8	12.1	13.3	12.2	14.0
Education	13.9	16.2	16.1	16.7	15.4	17.0
Health & Community Services	23.6	22.9	23.7	23.8	26.7	25.9
Cultural & Recreational Services	5.5	5.4	4.6	5.9	7.2	6.3
Personal & Other Services	8.6	8.3	9.1	8.1	8.9	9.7
Total	197.6	201.4	209.1	215.5	222.2	223.2

ABS Employed Persons (6291.0.55.003) Average of quarterly data provided by ABS



## Appendix 4: Farm Dependent Economy Contribution to the Tasmanian Economy 1998-99

	GDP (\$m)	Employment (persons)
<b>Agricultural Sector:</b>		
Grain, Sheep and Beef Cattle Farming	144	3,909
Dairy Cattle Farming	137	3,178
Poultry Farming	37	451
Horticulture and Fruit Growing	116	2,166
Other Agriculture	88	1,644
Services to Agriculture; Hunting and Trapping	43	925
<b>Sub-Total Agriculture Sector</b>	<b>566</b>	<b>12,273</b>
<b>Farm-Output Sector:</b>		
Meat and Meat Product Manufacturing	89	1,450
Dairy Product Manufacturing	85	674
Fruit and Vegetable Processing	165	1,291
Other food products	206	2,857
Beverages and tobacco products	69	421
Textiles	82	1,467
Clothing and footwear	21	812
Food Retailing	352	9,492
Accommodation, Cafes and Restaurants	365	10,337
<b>Sub-Total Farm-Output Sector</b>	<b>1,434</b>	<b>28,801</b>
<b>Farm-Input Sector:</b>		
Forestry & fishing - used by Agriculture	5	93
Mining - used by Agriculture	0	1
Manufacturing - used by Agriculture:		
<i>Chemicals</i>	7	76
<i>Other Manufacturing</i>	3	54
Trade & Transport Services - used by Agriculture:		
<i>Wholesale trade</i>	6	188
<i>Retail trade</i>	11	295
<i>Transport &amp; storage</i>	14	170
Other Services - used by Agriculture:		
<i>Electricity, gas &amp; water</i>	8	37
<i>Finance &amp; insurance</i>	11	99
<i>Property &amp; business services</i>	6	97
<i>Other services</i>	9	138
<b>Sub-Total Farm-Input Sector</b>	<b>82</b>	<b>1,247</b>
<b>Total Farm-Dependent Economy</b>	<b>2,082</b>	<b>42,321</b>

Econtech Pty Ltd, July 2005