Agricultural Statistics for the Clutha District

May 2010

Produced by the Clutha Agricultural Development Board

A summary report from supplied information and data

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Report on Clutha Agriculture Statistics - May 2010 document

The Clutha Agricultural Development Board has attempted in this report to present a picture of the Clutha District from collected agricultural and economic data.

As this is the first year for some time that this has been attempted, we have tried to establish reliable contacts and a process that will enable the Board to update the picture annually.

In this report we have used reliable data from a variety of sources, but as different agencies often use different criteria, use different time scales and have different emphases, it is acknowledged that it is difficult (if not impossible) to give an overall picture at any specific point in time.

Therefore this is a report on the Clutha District's agricultural landscape for the general period June-December 2009.

Feedback please

While we have attempted to reproduce data with the greatest accuracy and while we have begun to get to grips with data and the fluid situation of the place of agriculture at a Clutha District level, there is likely to be errors and omissions that we would like to know about.

Please give us your feedback if you have any comment to make. We propose regular updates of this document and hope that it becomes more and more authoritative over time.

We ARE interested in your comments on this document. Please write to the Clutha Agricultural Development Board or come and discuss related issues with us. Help us make this an authoritative and useful document.

Reasons for this report

A good number of statistics are collected by a variety of agencies to give a national or provincial picture. Data sets for New Zealand, for Otago or for Otago-Southland are reasonably easy to access. It is much more difficult to identify data for a smaller territory such as the Clutha District.

The aim of this task and the report was to delve into the statistics and, as much as possible, come up with data for the Clutha District, which is not otherwise available.

We believe that this data may be of interest to farmers, farming developers, consultants, agribusiness, and district planners. If data is able to be collected regularly, there is the opportunity for analysis and the recognition of trends for planning and development.

This task and report is also an important negotiated aspect of the contract for service between the Clutha Agricultural Development Board and the Clutha District Council. It is important for the Council and its community to have the opportunity to build its profile and stories around the actual agricultural situation in the district.

Sources for the information

The most comprehensive statistics for agriculture occur in the 5 yearly Agricultural Census (undertaken by Statistics New Zealand), and we have included the 2002 and 2007 data for some of our sections in this report where this indicates a trend. A huge advantage of this census is that the data is packaged in territorial districts such as the Clutha District. This makes for a very reliable checking point each five years.

We looked at two initial documents written in the early years of the Clutha Agricultural Development Board. The "Clutha Rural Information Manual" (CADB, May 1997) was an early AgMARDT project for the Board and established a full stocktake of rural life and economy in the district. Also "Clutha, the future is here: Agricultural and rural communities strategic plan" (CADB, November 2000) gives a year 2000 picture with statistics.

Other sources included:

Statistics New Zealand, Agricultural Census and other stock and farm survey information

Ministry of Agriculture and Forestry; Pastoral Monitoring Reports (annual)

Deer Industry NZ

Shand Thomson 2008/9 Farm monitoring data

DairyNZ Statistics

Southern Wood Council 2002 report

BERL Otago Regional and Sub-regional Economic Profile 2008-09

Port Otago Economic Study 2000

Otago Southland Forest Industries profile, for Southern Wood Council and MAF, 2008

Foundation for Arable Research website

Meat & Wool New Zealand Economic Service

Disclaimer

Every effort has been made to see that information in this report is accurate. Neither the Clutha Agricultural Development Board nor any of the contributors to this report accepts any liability for errors of fact or opinion which may be present, nor the consequences of any financial decisions based on the information in this report.

Summary Highlights

- The farmed landscape in Clutha is only 2% more than it was 20 years ago.
- The most significant general land use change in the last 20 years is the nearly 50% increase in plantation forestry.
- There are approximately 1120[1] farms in the Clutha District, and this number has only reduced approximately 5% in the last 10 years.
- Nearly 20% of the region's farmers are dairy farmers; 75% are predominantly sheep farmers.
- In the 7 years to August 2009 there has been a 28% increase in dairy farms.
- Sheep numbers dropped only 0.2% to 2,510,411 in June 2007; we do not have authoritative figures to show the further drop in numbers since then that we know anecdotally.
- In June 2007, Clutha held 6.5% of the nation's sheep numbers and 2.1% of dairy cow numbers.
- The drop in staffing numbers in recent years and throughput at Silver Fern Farms Finegand plant reflects the significant drop in sheep numbers in the lower South Island.
- Clutha dairy farmers are able to run 3.5% more cows/ ha, but the cows produce 5% less milk solids than in Southland.[2]
- Improved venison prices in the last two years have seen more farmers reconsider their involvement with deer, but probably less than 3% of Clutha farmers derive the large majority of their income from deer.
- The gross incomes of dairy farmers in Clutha totals $313.3 million; and for all forms of sheep & beef farming totals $189.5 million. (2007-08 figures)
- The farm surpluses for dairy farmers in Clutha total $98.9 million, and for all sheep & beef farmers $50.39 million. (2007-08 figures)[3]
- Studies to 2002 showed that the proportion of forests grown on farms equates to around 28% of the Otago forest resource.

1 We believe this is the likely number of farming businesses, running or attempting to run as profitable units. The number includes all land divisions over 60ha and 75% of those less than this.
2 This does not necessarily make them less economic when other inputs are considered.
3 It is debateable how much of each sector's income and surpluses is retained in the Clutha District as a contribution to the district economy.

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Farmed Area

The Clutha Rural Information Manual (1990) states there are 641,000 hectares in the Clutha District with 508,648 hectares farmed in 1990. 2009 Statistics NZ shows 519,800 is farmed (81%). This includes forestry and semi bush areas.

Land Use

Land use in 1991 indicated a breakdown of - Pasture 330,000 ha (65%), Tussock 89,500 ha, Cropping (includes winter feed crop) 33,200 ha, and Forestry of 55,900 ha.

Hectares Used and Farms by Land Use by Territorial Authority
At 30 June 2002

Territorial authority	Tussock and danthonia used for grazing		Grassland		Arable crop land, fodder crop land and fallow land		Land in horticulture		Planted production forest	
	Number of farms	Area in hectares	Number of farms	Area in hectares	Number of farms	Area in hectares	Number of farms	Area in hectares	Number of farms	Area in hectares
Clutha District	**210**	**87,461**	**1,200**	**292,659**	**540**	**18,485**	**55**	**590**	**540**	**86,474**
TOTAL South Island	2,900	3,143,184	18,000	3,273,799	6,400	334,974	3,800	36,344	5,500	528,676
TOTAL New Zealand	4,400	3,287,174	55,000	8,255,313	9,700	424,466	14,000	109,577	15,000	1,878,818

Territorial authority	Mature native bush		Native scrub and regenerating native bush		Other land		Total land	
	Number of farms	Area in hectares	Number of farms	Area in hectares	Number of farms	Area in hectares	Number of farms	Area in hectares
Clutha District	**160**	**11,509**	**240**	**13,243**	**760**	**9,145**	**1,400**	**519,567**
TOTAL South Island	2,000	199,565	2,900	348,795	13,000	147,564	23,000	8,012,900
TOTAL New Zealand	9,100	479,440	10,000	822,244	36,000	383,315	70,000	15,640,348

Source: Statistics NZ; Agriculture

There is no comparable table as above for 2007.

The changes between 1991 and 2008 we can identify with some certainty is the increase of Forestry to 82,789 ha (see page 15) with a decrease in cropping to 19,075 ha and 2,000 ha less in Tussock.

Number of Farms

The 2002 Agricultural Census reported Clutha had 1,400 Farms. This has in recent years been the suggested number of Clutha farms. As at June 2007 the number was reported in the Agricultural Census as 1,332. BERL reporting data in 2009 shows farm numbers have dropped from 1,390 in 1999, to 1,323 in 2007, to 1,205 in 2009. This indicates some farm aggregation has been occurring.

It is also worth noting that 15% of the 2007 numbers farmed 19 ha or less and another 11% farmed just 20-59 ha. We believe that a good number of these (arguably 75%) are not stand-alone, productive farming units. We therefore believe that the more appropriate number for farms in the Clutha District to currently be 1,120.

Farms by Size of Farm and Territorial Authority
At 30 June 2007

Territorial authority	Farm size (hectares)						
	1–19	20–39	40–59	60–79	80–99	100–199	200–399
Clutha District	**198**	**81**	**63**	**33**	**33**	**204**	**396**
TOTAL New Zealand	23,685	6,444	4,038	2,991	2,874	8,826	7,509

Territorial authority	Farm size (hectares)						
	400–599	600–799	800–999	1,000 –1,999	2,000 –3,999	4,000 & over	Total
Clutha District	**144**	**69**	**33**	**54**	**15**	**12**	**1,332**
TOTAL New Zealand	2,682	1,302	747	1,272	546	417	63,336

Source: Statistics NZ: Agriculture

Farm Type

The 2007 census identifies farming interests of those on the 1,332 farms. The major listings mention: Sheep farming 1,512, Dairy farming 564, Deer farming 228, Beef farming 150, Forestry 150 and Grain growing 21. 348 others are listed across 14 other types from cut flowers to Services to agriculture.

Farms by Farm Type (ANZSIC) and Territorial Authority
At 30 June 2002

Territorial Authority	Plant nurseries	Cut flower and flower seed growing	Vegetable growing	Grape growing	Apple and pear growing	Stone fruit growing	Kiwifruit growing	Citrus growing	Berry fruit growing	Other fruit growing
Clutha District	**12**	**3**	**6**	**-**	**3**	**-**	**-**	**-**	**-**	**..S**
TOTAL New Zealand	1,400	1,100	2,300	1,200	1,400	330	2,300	430	290	2,000

Territorial Authority	Grain growing	Grain-sheep and grain-beef cattle farming	Sheep-beef cattle farming	Sheep farming	Beef cattle farming	Dairy cattle farming	Poultry farming (meat)	Poultry farming (eggs)	Pig farming	Horse farming
Clutha District	**3**	**..S**	**35**	**820**	**70**	**170**	**-**	**-**	**-**	**15**
TOTAL New Zealand	520	250	2,000	13,000	13,000	14,000	200	180	360	2,300

Territorial Authority	Deer farming	Mixed livestock	Livestock farming	Tobacco and hops growing	Cultivated mushroom growing	Crop and plant growing	Services to agriculture	Forestry	Other	Total
Clutha District	**45**	**12**	**6**	**-**	**-**	**9**	**18**	**110**	**3**	**1,300**
TOTAL New Zealand	2,300	1,100	730	15	20	620	1,600	4,600	360	70,000

Farms by Farm Type (ANZSIC96) and Territorial Authority At 30 June 2007									
Territorial Authority	Dairy cattle farming	Sheep farming	Pig farming	Horse farming	Deer farming	Mixed livestock other	Livestock farming	Plant	Forestry
Clutha District	**564**	**1,512**	**6**	**39**	**228**	**75**	**15**	**15**	**150**

Territorial Authority	Grain growing	Grain-sheep and grain-beef cattle farming	Beef cattle farming	Sheep-beef cattle farming	Fruit growing	Cut flower and flower seed growing	Vegetable growing	Crop and plant growing	Total
Clutha District	**21**	**9**	**150**	**66**	**12**	**6**	**12**	**75**	**3,048**

Source: Statistics NZ; Agriculture Production

The 2007 information shows that many farms are involved in multiple uses. The 2002 data shows the predominant land use for each farm, as the total is 1,300.

From Statistics NZ we know there were 170 dairy farms in the Clutha District in 2002. This had risen to 212 in 2007/8 (Fonterra). In 2009 August there were 217 dairy platforms (Fonterra source, Assure NZ).

There is no reliable information on how many Sheep and Beef farms are involved in dairy support. This is something to look into in the future. There is a mixture of rearing young heifers to maturity and feeding cows over winter between their milking seasons.

Livestock Numbers

Between 2002 and 2007 total dairy cattle have increased 15%, beef cattle have increased 3% with deer decreasing 13% and sheep a very small reduction of 0.2%. This reflects the changes occurring to farm type.

Summary of Livestock Numbers by Territorial Authority At 30 June 2002											
Territorial Authority	Dairy cows & heifers (over 1 year old) in milk or calf	Total dairy cattle	Beef cows and heifers in calf	Total beef cattle	Ewes (2 tooth and over) put to ram	Total sheep	Total deer	Total pigs	Total goats	Total horses	Total other livestock
Clutha District	**72,561**	**96,908**	**33,046**	**93,218**	**1,942,618**	**2,560,818**	**53,400**	**..C**	**2,693**	***817***	***196***
TOTAL New Zealand	3,841,553	5,161,589	1,261,317	4,494,678	26,746,282	39,545,609	1,643,938	341,377	153,084	75,856	21,901

Livestock Numbers by Type and Territorial Authority At 30 June 2007								
Territorial Authority	Total dairy cattle	Total beef cattle	Total sheep	Total deer	Total pigs	Goats	Horses	Alpacas and llamas
Clutha District	**111,662**	**96,166**	**2,510,411**	**46,396**	**1,412**	**1,906**	**570**	**298**
TOTAL New Zealand	5,260,850	4,393,617	38,460,477	1,396,023	366,671	111,981	66,215	9,328

Source: Statistics NZ; Agriculture Production

Nationwide between the same time periods dairy cattle increased 1.9 % (Otago 6.6%). Beef cattle decreased 2.2% (Otago +9.5%) deer decreased 15.3% (Otago -4.4%). Total sheep decreased 2.8% (Otago -1.5%).

Farm performance

Sheep Numbers and Lambs Tailed by Age, Sex and Territorial Authority At 30 June 2002										
Territorial Authority	Ewes (2 tooth and over) put to ram	Ewe hoggets put to ram	Ewe hoggets NOT put to ram	Rams (2 tooth and over)	Ewes (2 tooth and over) NOT put to ram	Wethers (2 tooth and over)	Rams and wether hoggets	Total sheep	Lambs marked and/or tailed from ewe hoggets	Lambs marked and/or tailed from ewes
Clutha District	**1,942,618**	**131,631**	**372,484**	**24,292**	**33,215**	**6,997**	**49,581**	**2,560,818**	**62,701**	**2,468,508**
TOTAL New Zealand	26,746,282	2,376,443	5,679,120	450,868	380,462	821,775	3,090,659	39,545,609	1,139,700	31,507,687

Sheep Numbers and Lambs Tailed by Age, Sex and Territorial Authority At 30 June 2007											
Territorial Authority	Ewes (2 tooth and over) – put to ram	Ewe hoggets put to ram	Ewe hoggets NOT put to ram	Rams (2 tooth and over)	Ewes (2 tooth and over) NOT put to ram	Wethers (2 tooth and over)	Rams and wether hoggets	Total sheep	Lambs marked and/or tailed from ewe hoggets	Lambs marked and/or tailed from ewes	Total lambs marked and/or tailed
Clutha District	**1,878,810**	**181,456**	**335,338**	**22,582**	**5,533**	**18,916**	**67,776**	**2,510,411**	**109,024**	**2,404,590**	**2,513,614**
(Sheep stock units)	**1,878,810**	**127,019**	**234,736**	**18,065**	**5,533**	**151,132**	**47,443**	**2,415,355**			
TOTAL New Zealand	3,841,553	5,161,589	1,261,317	4,494,678	26,746,282	39,545,609	1,643,938	341,377	1,448,090	31,557,361	33,005,451

Source: Statistics NZ; Agriculture Production

Nationwide the countries ewe flock lambing percentage was 123% in 2007 which is a five percent increase on 2002. Clutha District performed at 128% in 2007 compared with 127% in 2002. Additionally 35% of the available ewe hoggets in Clutha were put to the ram and produced a 60% lambing. On some farms only a small percentage may be lambed, on others the total age group of ewe hoggets may have been run with the ram.

The Meat and Wool Economic Service indicated the average lamb over New Zealand in 2007-8 was 16.49kg and provisionally 17.4 in 2008-9. We have no information to suggest the Clutha lambs varied widely from these figures.

Services to Agriculture

The main agricultural industry handling the lamb and cattle farm production is Silver Fern Farms Ltd at Finegand. (Previously named PPCS Ltd) SFF employs up to 950 staff (2009/10) and has a throughput of 1.15 million sheep and 66,000 cattle. Most of the product is sold in consumer-friendly sized portions and is processed on site. In 2000 Finegand plant employed 1,400 staff and ran 6 lamb chains that achieved 2.4 million sheep. Three chains are now run.

Alliance Group in Southland processes a significant proportion of Clutha sheep and beef also.

There is no way of knowing at present what proportion of Clutha lambs travel outside the district for processing.

Dairy Performance

The New Zealand Dairy Statistics of 2007/8 show that there are 156 dairy herds in Clutha, with 77,253 cows run on 27,508 ha. This is an average herd size of 495 cows on 176 ha at 2.82 cows/ha. With similar herd sizes to Southland, Clutha farms (perhaps surprisingly) run 3.5% cows more /ha. Clutha cows produced 175,745 kg milk solids per herd or 1,013 per ha and 358 per cow. This is similar per ha compared to Southland and 5% less per cow, Southland cows doing 378 kg ms.

The Fonterra factory at Stirling has about 78 staff and processes milk from 279 dairy farms. Two million litres of milk are collected each day over the season, August to late May. Excess milk at peak time can be sent further north. Approximately 45,000 tonnes of cheese is produced.

Beef performance

New Zealand average weights for prime beef for 2007-8, 2008-9 were 275 kg, 384 kg respectively.

Bull beef for 2007-8, 2008-9 were 298 kg, 308 kg. The average across all beef grades was 260 kg in 2007-08 and 261 kg in 2008-9.

Deer performance

The improved venison price of 2008/9 has reversed the deer farm trend of declining stock numbers. Fenced deer areas which were being used for sheep have in many cases been brought back into deer production. As this is recent the actual impact on numbers is not yet available.

There are 101 active known deer farmers in Clutha District. Using the South Otago Deer Monitor Farm as a guide, productive and financial performance is not expected to be different from the MAF South Island Deer Pastoral Monitor data. Velvet prices continue to fluctuate widely and are not currently driving the profitability or expansion of deer farming. However, it is noted the MAF example, although a good robust model for the industry, does assume a stand-alone deer farm picture. According to Deer Industry sources, the model may have more of the Southland bias toward velvet.

The reality is that most of these farmers are sheep and beef farmers with some deer. From industry surveys less than 30% would derive 80% of their income from deer.

Organics

There are a small but slowly increasing number of organic style farmers across the Clutha District. Currently 12 farms are registered with a small number in transition to that status. Considerable effort is going into setting up secure marketing links for the future. Most of these farms are sheep and beef enterprises. Product prices being received are reported to be higher than conventional commercial farms. Stocking rates are similar or slightly below average. Interest in the methods of this farming style remains reasonably high as many farmers try non-traditional fertilizer along with their normal practice.

Horticulture/ Floriculture

The level of investment, numbers of enterprises and viability has decreased since 2000. High inputs, a widely fluctuating dollar, distance from the markets and a challenging cooler summer climate has seen a number of floriculture operations cease business. There are few new entrants. In the wings are some nut growers who have developed some large scale plantings (4+ha) within their stock farms. These plantations have been far slower to develop viable nut crops than the 7+ years expected. Three Clutha farmers are looking closely at the hazel nut harvesting needs for the coming season. Most of the trees are now 10 years old.

Pastoral Farm Economics

Two sources of the economic picture of the Clutha District are available. The first is an over view using the annual MAF Farm Monitoring reports. The other is from Shand Thomson Ltd, a Balclutha and Dunedin-based accountancy firm which gathers on-farm data for their clients over the south. The bulk of their clients are in the Clutha District. The MAF statistical tables are used in this report.

On a per farm basis, dairy continues to out perform Sheep and Beef, albeit with fluctuating milk solids prices. The following summarizes the types of farms and their current production and profitability for four farm models.

Table 1: Key parameters, financial results and budget for the Southland/South Otago hill country sheep and beef model farm					
Year ended 30 June	2005/06	2006/07	2007/08R	2008/09	2009/10 budget
Effective area (ha)	723	723	723	723	723
Breeding ewes (head)	4,313	4,310	4,220	3,956	3,977
Replacement ewe hoggets (head)	1,194	1,194	1,096	887	997
Other sheep (head)	75	75	86	86	76
Breeding cows (head)	90	90	107	106	106
Rising 1-year cattle (head)	75	75	80	87	79
Other cattle (head)	3	3	3	4	13
Opening sheep stock units (ssu)	5,206	5,203	5,052	4,642	4,733
Opening cattle stock units	829	817	930	961	974
Opening total stock units (su)	6,035	6,020	5,982	5,603	5,707
Stocking rate (stock unit/ha)	8.3	8.3	8.3	7.7	7.9
Ewe lambing (%)	129	130	131	126	130
Average lamb price ($/head)	51.28	49.83	48.82	82.85	71.49
Average wool price ($/kg)	2.51	2.46	2.36	2.32	2.18
Total wool produced (kg)	28,662	26,162	26,111	24,262	24,284
Wool production (kg/ssu)	5.51	5.03	5.17	5.23	5.13
Average rising 2-year steer ($/head)	750	813	731	856	816
Average cull cow ($/head)	620	539	526	598	532
Net cash income ($)	400,241	383,390	392,091	488,752	463,611
Farm working expenses ($)	239,309	220,958	246,975	260,971	256,821
Farm profit before tax ($)	98,989	80,101	34,482	160,730	143,266
Farm surplus for reinvestment ($)1	5,707	26,228	- 12,042	90,533	31,291

Note

1 Farm surplus for reinvestment represents the cash available from the farming business, after meeting living costs, which is available for investment on farm or for principal repayments. It is calculated as discretionary cash less off-farm income and drawings.

Symbol

R The model parameters have been revised so the data for 2007/08 will not match that published in the Pastoral Monitoring Report 2008.

MAF Farm Monitoring Data

Table 2: Key parameters, financial results and budget for the Southland/South Otago intensive sheep and beef model farm					
Year ended 30 June	2005/06	2006/07	2007/08R	2008/09	2009/10 budget
Effective area (ha)	194	194	194	194	194
Breeding ewes (head)	2,125	2,165	2,090	1,928	1,836
Replacement ewe hoggets (head)	530	530	471	320	450
Other sheep (head)	25	25	25	25	25
Breeding cows (head)	0	0	0	0	0
Rising 1-year cattle (head)	30	30	20	0	0
Other cattle (head)	0	0	0	0	0
Opening sheep stock units (ssu)	2,516	2,556	2,440	2,172	2,171
Opening cattle stock units	135	135	90	90	90
Opening total stock units (su)	2,651	2,691	2,530	2,262	2,261
Stocking rate (stock unit/ha)	13.7	13.9	13.0	11.7	11.7
Ewe lambing (%)	138	136	141	131	139
Average lamb price ($/head)	51.50	52.00	56.04	90.11	77.26
Average wool price ($/kg)	2.46	2.43	2.31	2.30	2.00
Total wool produced (kg)	14,668	14,440	11,950	11,160	11,180
Wool production (kg/ssu)	6	6	5	5	5
Average rising 1-year steer ($/head)	0	0	769	0	0
Average cull cow ($/head)	0	0	0	0	0
Net cash income ($)	195,686	197,326	211,385	244,345	212,335
Farm working expenses ($)	112,668	107,868	122,453	129,451	129,720
Farm profit before tax ($)	47,256	47,003	6,075	58,083	43,950
Farm surplus for reinvestment ($)1	3,605	9,557	- 12,247	15,536	- 23,790

Note: 1 Farm surplus for reinvestment represents the cash available from the farming business, after meeting living costs, which is available for investment on farm or for principal repayments. It is calculated as discretionary cash less off-farm income and drawings.

Symbol: R The model parameters have been revised so the data for 2007/08 will not match that published in the Pastoral Monitoring Report 2008.

MAF Farm Monitoring Data

Table 3: Key parameters, financial results and budget for the Southland dairy model1					
Year ended 30 June	2005/06	2006/07	2007/08R	2008/09	2009/10 budget
Effective area (ha)	178	178	183	183	183
Cows wintered (head)	499	518	549	557	569
Replacement heifers (head)	102	127	127	137	140
Cows milked 15th December (head)	478	490	499	510	516
Stocking rate (cows/ha)	2.7	2.8	2.7	2.8	2.8
Total milk solids (kg)	185,375	196,000	189,000	195,800	201,300
Milk solids per ha (kg/ha)	1,042	1,101	1,033	1,070	1,100
Milk solids per cow milked (kg/cow)	388	400	379	384	390
MS advance to end June ($/kg)	3.60	3.65	6.62	4.15	3.74
MS deferred payment ($)	0.64	0.50	0.81	1.00	1.05
Net cash income ($)	816,300	857,500	1,478,000	1,069,500	1,009,900
Farm working expenses ($)	490,500	553,000	699,000	705,900	616,000
Farm profit before tax ($)	164,600	99,500	466,500	3,400	65,700
Farm surplus for reinvestment2 ($)	67,000	- 6,900	323,500	- 41,200	30,400

Notes

1 Figures may not add to totals due to rounding.

2 Farm surplus for reinvestment is the cash available from the farm business, after meeting living costs, which is available for investment on the farm or for principal repayments. It is calculated as discretionary cash less off-farm income and drawings.

Symbol

R The model parameters have been revised, so the data for 2007/08 will not match that published in Pastoral Monitoring Report 2008.

MAF Farm Monitoring Data

The average nationwide dairy farm finished the 2008/09 year with a cash loss of $58 500, a 141 percent drop on 2007/08. In the absence of off-farm income, new borrowing, and introduced funds, this loss would be $130,600(MAF farm monitoring comment)

Table 4: Key parameters, financial results and budget for the South Island deer model

Year ended 30 June	2005/06	2006/07	2007/08R	2008/09	2009/10 budget
Effective area (ha)	180	180	201	201	201
Opening deer stock units	2,860	2,752	2,848	2,748	2,764
Mixed age breeding hinds (head)	540	540	563	568	568
Rising 2-year hinds (head)	130	130	100	82	94
Rising 1-year hinds and stags (head)	552	564	538	514	538
Rising 2-year stags (head)	65	50	81	78	70
Rising 3-year plus stags (head)	95	104	119	109	100
Stocking rate (stock units/ha)	15.9	15.3	14.2	13.7	13.8
Fawning1					
Farm average (%)	84	84	86	84	87
Mixed age hinds (%)	87	86	87	85	89
2-year-old hinds (%)	72	74	78	75	76
Velvet					
Average price ($/kg)	42	95	75	58	80
Farm average (includes re-growth but excludes yearling velvet) (kg/stag)	3.0	3.4	3.7	3.4	3.5
Mixed age stags (kg/stag)	4.0	4.3	4.7	4.2	4.5
3-year-old stags (kg/stag)	2.9	3.6	3.9	3.6	3.7
2-year old stags (kg/stag)	1.8	2.3	2.7	2.3	2.4
Carcass weights					
2-year-old stags (kg)	65	65	65	65	65
Yearling stags (kg)	56	55	55	57	58
Income					
Net cash income ($)	142,508	183,216	227,602	277,147	293,868
Farm working expenses ($)	78,230	92,254	111,540	138,434	136,778
Farm profit before tax ($)	12,500	51,088	50,855	81,335	107,926
Farm surplus for reinvestment2 ($)	- 15,104	10,952	25,600	24,746	37,393

Note: 1 Farm surplus for reinvestment represents the cash available from the farming business, after meeting living costs, which is available for investment on farm or for principal repayments. It is calculated as discretionary cash less off-farm income and drawings.

Symbol: R The model parameters have been revised so the data for 2007/08 will not match that published in the Pastoral Monitoring Report 2008.

MAF Farm Monitoring Data

Table 5: Animal Numbers and Production Dollars from Clutha Farms: 2007-08 Summary

2007/08	Intensive Sheep	Extensive Sheep & Beef	Dairy	Deer	Beef
Total Animals	1.154m	1.355m	111,662	46,396	96,166
Sheep su equivalent	1.111m	1.304m	*	90,750	514,488
Net Cash Inc/su ($)	65.63	65.17		79.91	61.39
Gross Income ($)	72.9m	85.0m	313.3m	7.25m	31.6m
District Farm Working Expenses ($)	51.98m	55.53m	148.2m	3.63m	***
District Farm Surplus ($)	20.92m	29.47m	98.9m	3.62m	

Source: MAF Farm Monitoring Data - summarised by the Clutha Agricultural Board 2009

**The dairy cow scene was left as a per farm figure as converting to sheep stock was not appropriate.*

**** Cattle expenditure is included in the Sheep and Beef Farms*

This summary Table 5 above indicates the contributions to the Clutha District of the various main agricultural enterprises. The dominant place of dairy is now established. Intensive and extensive sheep & beef operations are still huge contributors to the district. There are also considerable subtleties in how and where farm incomes and surpluses are spent which may be investigated in future reports.

The stock number figures from Statistics NZ and the MAF Farm Monitoring data have been combined to produce Table 5 above. The main figures that we believe are useful indicators are the Net cash income (before expenditure) and the Farm Surplus dollars (before depreciation and tax). The Farm Monitoring data presents two distinct sheep and beef farms: the smaller intensive sheep property and the extensive hill property with significant cattle. Shand Thompson data has been used to indicate the proportions of each type, and a 46/54 split was considered appropriate. Reliable Statistics NZ data from 2002 was used to calculate proportion figures for breeding cows and young rearing stock to find a figure to build an equivalent Sheep Stock unit figure for the financial data.

Arriving at a young cattle rearing number on smaller farms was not possible from Statistics NZ data as they are bought, grown and sold within the reporting period.

The dollar earnings for cattle have been arbitrarily applied to the larger properties. Also, separating earnings form rearing dairy stock or wintering dairy cows has not been possible. These are included in the overall farm earnings primarily of sheep & beef farmers.

Farm Buildings data

Table 6: Clutha District Council permit data
Clutha Farm Building Consents

Year	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008	2008/2009
Woolsheds	6	5	6	5	0	3
Dairy sheds	5	9	3	11	11	14
Calf rear sheds	3	3	2	4	4	3
Wintering dairy sheds	3	2	0	8	1	13
Road underpasses	0	0	0	0	0	4

Source: Clutha District Council

The farm building permits issued by the Clutha District Council show the clear trend toward dairy farming with an increasing number of new facilities being erected. In line with concerns regarding winter soil damage and a trend for dairy farmers to winter at home rather than incur the costs associated with a winter run off arrangement, more seasonal wintering barns have been constructed. The additional advantages of better stock health with less food consumed is helping this trend.

Forestry

Otago and Southland wood supply region (Ha in forestry)

	Age Class of timber (Years)											
Territorial authority	**1-5**	**6-10**	**11-15**	**16-20**	**21-25**	**26-30**	**31-35**	**36-40**	**41-50**	**51-60**	**61-80**	**Total**
Waitaki District	1,105	7,069	5,992	1,505	2,244	874	254	66	113	13	5	19,240
Queenstown-Lakes	3	67	155	138	225	124	6	1	28	0	7	754
Central Otago	550	2,783	1,656	491	465	456	273	161	267	72	81	7,255
Dunedin City	942	1,315	3,011	2,211	4,684	3,046	351	143	35	33	44	15,815
Clutha District	12,652	22,023	22,422	7,974	9,008	6,768	1,009	216	532	83	102	82,789
Southland District	10,376	24,100	25,437	6,049	7,078	4,188	1,032	505	171	56	13	79,005
Gore District	90	2,444	1,070	501	39	195	8	44	15	0	0	4,406
Invercargill City	48	74	179	99	86	133	57	4	7	1	0	688
Region total	25,766	59,875	59,922	18,968	23,829	15,784	2,990	1,140	1,168	258	252	209,952

Source: Ministry of Agriculture and Forestry, 2009

The Clutha District has approximately 39.4% of the commercial forests grown in the Otago - Southland wood supply region. This estimate is based on the 2008 National Exotic Forest Description, produced by the Ministry of Agriculture and Forestry. Table A has a breakdown of the plantation estate, by territorial authority and age class. Of the 82,700 hectares of planted forests in the Clutha District, 72.7% of this estate is in radiata pine and 23.1% is in Douglas fir. The district also has over a 1,000 hectares of eucalypts and 840 hectares of cypresses. The majority of the Douglas fir plantings were established in the past fifteen years. As this resource matures, Clutha (along with Southland) will become one of the principal sources of Douglas fir in New Zealand.

The rotation period for Douglas fir is more extended than radiata pine, with the final harvest normally occurring between year 45 and 50. Larger scale growers may have the potential for commercial thinning during the rotation. The rotation period for radiata pine is generally in the range of 28 to 30 years.

Another important feature of the district's forest estate is the diversity of ownership. Rather than one or two major growers, the district has attracted a number of significant investors, including City Forests, Ernslaw One, Matariki and Wenita Forest Products. In addition to these large scale investors, the district has a substantial number of farm forestry, syndicate and smaller corporate investors. A 2008 industry profile (produced by the Southern Wood Council and MAF), estimated that 37% of the Otago – Southland resource is in holdings of less than 1,000 hectares. Two older studies, (Port Otago - 2000 and MAF - 2002) estimated that the proportion of forests grown on farms equates to around 28% of the Otago forest resource.

The ownership structure of the estate has implications for the silvicultural practices employed and the eventual age of harvesting, due to the different approaches and priorities of farm growers and larger companies. Co-ordinating the farm forestry supply will be one of the major challenges in coming years.

TABLE B: Standing Volume and Area-Weighted Age of the Clutha Resource (as at 1 April 2008)

Otago and Southland wood supply region			
Territorial Authority	**Area (ha)**	**Standing Volume (000 M3)**	**Area-Weighted Average Age (Years)**
Waitaki District	19,240	3,014	13.35
Queenstown-Lakes District	754	251	20.85
Central Otago District	7,255	1,250	16.03
Dunedin City	15,815	4,556	19.33
Clutha District	82,789	13,985	13.54
Southland District	79,005	11,765	12.87
Gore District	4,406	603	12.37
Invercargill City	688	201	18.78
Region total	209,952	35,626	13.81

Source: Ministry of Agriculture and Forestry, 2009

Additional data from the 2008 National Exotic Forest Description (Table B) shows that the Clutha District has approximately 39.3% of the standing volume of timber in the combined Otago – Southland wood supply region.

The annual harvest from the combined wood supply region has been in the 1.4 to 1.5 million cubic metre range for the past five years. Harvest figures are not collected at a territorial authority level but feedback from industry indicates that the Clutha District is contributing a higher percentage than its geographical area would indicate. This reflects the fact that there are a number of established forests in the district, which are in sustained production.

Data from the past five years show that approximately 1.0 to 1.1 million cubic metres of logs are processed locally, for sawn timber, mouldings, veneer or MDF. The remaining volume is chipped or exported directly as logs. A significant proportion of the processed timber is exported to markets across Asia, Australia and North America. An infrastructure issue for the district is the volume of logs that are transported to Gore and Southland for processing.

The 4quarter all grades export average price per m3 for 30 June 2008 was $89. Using this price Clutha District produced export worth $49.2m.

However as the majority of the harvest from Clutha is processed domestically, in some form, the total value derived will be higher than the initial log price.

The forestry sector has faced difficult export conditions over recent years, with the weakening of the North American housing market and volatile exchange and shipping rates. This situation was compounded in 2008 - 09 with the global economic downturn. In many cases private owners have opted to let their trees continue growing. The weakness in demand for processed timber saw one of the district's major processing operations, Blue Mountain Lumber near Tapanui being mothballed. Similar retrenchment has occurred across the country over the past 18 months.

Looking to the future, the establishment of the New Zealand Emissions Trading Scheme (ETS) is likely to provide an encouragement for new forestry planting. Other initiatives, such as the Afforestation Grant Scheme and the Permanent Forest Sink Initiative, are also likely to foster interest in new forestry development.

Cropping

Table: Arable Cereal Cropping

Cereal Crops in Otago 2007

	Tonnes	%	Ha	%	Tonnes/ Ha	$/Tonnes
Barley	31,000	60	5,000	65	6.2	250
Wheat	16,000	31	1,800	23	8.8	300
Oats	4,100	8	900	11	4.5	200
Total	51,100		7,700			

Source: Statistics NZ

As Clutha data on cereal cropping is not collected separately, the data used is from the whole of Otago. Clutha information suggests that there are 30 farms involved in cereal cropping and the businesses use 2 600 ha. This is 34% of the Otago area and using the nominal cereal crop grain prices the gross value to Clutha will be in the region of $4.5 million.

However, it is noted that there is a wide variation from year to year in areas planted and the proportions that go into each crop. Steady demand from dairying is under-pinning values for grain or whole-crop silage, but the advent of cheap imported palm kernel adds to the volatility. Weather around harvest can change a milling wheat into a feed wheat easily so for Clutha District using feed wheat prices is more appropriate. Late in the decade (2009) saw higher prices being paid for wheat ($400/tonne) and an extra 1000 ha was grown on one farm. This changes markedly the differing proportions grown for each crop.

Pressure from the need for more dairy land will tend to hold cropping cereal areas to a low level.

The area of other crops held through to seed production, eg clover, pulses or pasture seed is very small.

Wool

Wool information for the Clutha District is not published. The production figures is likely to follow the trend in sheep stock numbers. All of the wool produced in the district is strong 35 to 39 micron wool destined for the carpet trade. A small proportion of the trade is lamb's wool shorn before the animals are six months old. This may end in the slightly higher priced apparel trade. The support shearing industry is finding it hard to attract younger folk into shearing because of falling sheep numbers.