

APPENDICES

APPENDIX 1:

PASTORAL MONITORING TEAM

»» PUBLICATION EDITORS

Gillian Mangin, MAF Policy, Hastings
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»» SECTOR CONTROLLERS

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Deer	Deborah Hackell	MAF Policy, Hamilton
Sheep and beef	John Greer	MAF Policy, Christchurch

»» MODEL CONTROLLERS

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South Island deer	Trish Burborough	(03) 951 4716
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COMMENTARY

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APPENDIX 2:

MODEL INFORMATION

»» HOW THE MODELS WERE CREATED

The model farms depicted in this report are representative of their farm type within each region. Each model is created from information drawn from at least 20 farms and a wide cross section of agribusiness representatives.

The aim of each model is to typify an average farm for the region. Budget figures are averaged from the contributing properties and adjusted to represent real farms. Income figures include off-farm income, new borrowing and other cash income. Expenditure figures include costs of management, production, debt leasing, drawings and other land development and capital purchases.

Monitoring is continually being improved to meet the needs of the users of the reports. From time to time the models are revisited, and changes may be made. Bear this in mind when making comparisons between years.

»» CALCULATIONS USED IN THE MODELS

Part of the objective of the MAF models is to show the profitability of the models on a cash-in/cash-out basis for the season, before the introduction of outside funds such as off-farm revenue, introduced funds, or new borrowing. Previously, this bottom line was depicted as the disposable surplus/deficit. This included such expenditure as capital expenditure, principal repayments, and development expenditure, but excluded outside (off the farm) funds. This has been replaced by farm surplus for reinvestment.

› FARM SURPLUS FOR REINVESTMENT

Farm surplus for reinvestment is a financial measure that has been introduced to the farm monitoring programme this year.

The 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 follows:

discretionary cash
less off-farm income and drawings.

› ECONOMIC FARM SURPLUS

The economic farm surplus (EFS) depicted in the model budgets is calculated as follows:

Net cash income
plus change in livestock value
less working expenses (excluding interest, rent and lease costs)
less depreciation
less wages of management (WOM).

› WAGES OF MANAGEMENT

For the deer and sheep and beef models, wages of management are calculated as follows:

\$31 000 allowance for labour input

plus 1% of total capital as managerial reward.

An upper limit for WOM of \$75 000 has been set.

For the dairy models, wages of management are calculated as:

\$38 000 allowance for labour input

plus 1% of total capital as managerial reward.

An upper limit for WOM of \$85 000 has been set.

› DAIRY PAYOUT CALCULATIONS

DEFINITION OF FINANCIAL YEAR

The MAF dairy models work on a 1 July to 30 June financial year. The payout within the year is a combination of the advance payment to 20 June for the current year, plus the deferred payment made in July and August from the preceding season.

PAYMENT IN 2006/07

The deferred payment, on the 2005/06 production, was 50 cents per kilogram of milksolids. The advance payment to 20 June 2007 is calculated as \$3.65 per kilogram of milksolids, made up of \$3.50 commodity milk price, plus 15 cents value added payment. In February 2007, Fonterra paid 23 cents (value added) per kilogram of milksolids on production through to 31 December. Assuming an average of two-thirds of production is achieved by the end of December, the 23 cents per kilogram of milksolids on production to that point would be equivalent to 15 cents per kilogram of milksolids over the whole season.

PAYMENT IN 2007/08

The deferred payment, on the 2006/07 production, was 81 cents per kilogram of milksolids. This gives a total payment for the 2006/07 season of \$4.46 per kilogram of milksolids. The advance payment to 20 June 2008 is calculated as \$5.44 per kilogram of milksolids, made up of \$5.37 commodity milk price, plus 7 cents per kilogram of milksolids value added payment. The value added payment was calculated as noted above, with the 7 cents representing approximately two-thirds of the value added payment of ten cents per kilogram of milksolids scheduled for February 2008 and is equivalent to the proportion of milk produced by 31 December 2007.

The exception to this is Canterbury, which produces approximately 50 percent of production pre- and post-December. For the Canterbury model, the advance value added payment in 2006/07 is 12 cents per kilogram of milksolids, giving a deferred payment of 84 cents per kilogram of milksolids. In 2007/08 the value added advance is equivalent to 5 cents per kilogram of milksolids, giving a total advance to 20 June 2008 of \$5.42 per kilogram of milksolids.

»» MODEL DETAILS

The data collection for the pastoral models is contracted out. The dairy and deer data is collected by Agriculture NZ. The sheep and beef data is supplied by Meat & Wool New Zealand (M&WNZ) from the M&WNZ sheep and beef farm survey.

› DAIRY MODELS

The dairy models represent owner-operated seasonal supply dairy farms throughout New Zealand. Each dairy model is based on a sample of 20 owner-operated dairy farms that supply to Fonterra.

NORTHLAND DAIRY

The Northland model represents about 1200 spring calving dairy herds north of Auckland city. Production varies around 270 to 320 kilograms of milksolids per cow and stocking rates around 2.0 to 2.3 cows per hectare. Surplus calves are sold at four days of age for slaughter (bobby calves) or for beef rearing. Grazing some of the heifer replacements and most of the cows off the farm during winter is common. The model represents an established family partnership employing some casual labour.

WAIKATO/BAY OF PLENTY DAIRY

The Waikato/Bay of Plenty model represents about 5300 dairy farms in the Waikato and Bay of Plenty regions. Some surplus bull calves are sold as four-day-old calves for beef rearing, with the remaining surplus calves sold as bobby calves. The replacement yearling heifers are grazed off the farm for 12 months. The model represents an owner-operator who milks the cows and employs a permanent (single) worker.

LOWER NORTH ISLAND DAIRY

This model represents approximately 3000 seasonal supply dairy farms in the bottom half of the North Island, including the regions of Taranaki, Manawatu, Horowhenua, Wairarapa and Southern Hawkes Bay. Generally, they are well-developed farms, have good soil fertility levels and a modest level of well maintained buildings, plant and equipment. On average, the farms are 105 effective hectares in size, milking 280 cows.

Most of the lower North Island has reliable summer rainfall, especially the Taranaki province, however many farms in the Manawatu and the East Coast are, by New Zealand dairy standards, somewhat drought-prone. Approximately 250 farms, mainly in the south Wairarapa, Hawkes Bay and Manawatu, have irrigation.

The model budget is for an owner-operated farm, with labour employed, and represents an estimated 70 to 80 percent of dairy farms in the region, the other 20 to 30 percent fitting into the share milking or equity partnership categories.

CANTERBURY DAIRY

This model represents approximately 770 dairy farms throughout Canterbury and North Otago. The survey farms range from 300 to 1500 milking cows and supply Fonterra's Clandeboye factory. The surveyed farms represent a similar geographic and size distribution to the statistical population.

The Canterbury area has a mix of border dyke and spray-irrigated properties with a wide range of grazing, feeding and stocking policies. The model farm has a mix of spray and border dyke irrigation, and does not own a run-off. All off-farm winter grazing costs are included in feed costs.

SOUTHLAND DAIRY

The Southland dairy model represents about 860 dairy farms in South Otago and Southland that supply milk to the Fonterra factory at Edendale.

This model has increased significantly in size, stocking rate and production over several years. In 1995, the average farm size was 130 hectares. In 2000/01, it was 182 hectares, made up of 152 hectares milking platform and a 30 hectares leased run-off. The model has been increased in size from the 2001/02 season to a 162 hectares milking platform and a purchased 30 hectares run-off. Many farms in the model have been producing milk for less than six years. The size and production from these farms is still increasing.

WEST COAST SOUTH ISLAND DAIRY COMMENTARY

The West Coast South Island dairy commentary describes the collective dairy industry's perspective of the current (or just completed) season and the outlook for the next season for dairying in this region. The typical West Coast dairy farm milks 310 cows producing around 96 000 kilograms of milksolids on 155 effective hectares, with farm size and cow numbers having gradually increased during the past ten years. The numbers of dairy conversions has now stabilised, with most land easily convertible for dairying, now carrying dairy cows.

> DEER MODELS

Deer farms are commonly of two main types – deer units within a mixed livestock system, and stand-alone deer farms. The majority of deer in New Zealand are farmed on deer units and they are generally smaller than

stand-alone deer farms. The deer farm models in this report are based on stand-alone deer farms and therefore represent an important but minority group (estimated at 28 percent of deer farmers (Deer Industry New Zealand, 2007)) within the deer sector. Comparing the sector using a stand-alone deer farm is important for tracking the deer sector's progress and to better understand developments occurring in this sector.

»» TABLE A2.1: DEER STOCK UNIT CONVERSION RATE

STOCK CLASS	PRE 2004/05 (STOCK UNIT)	2004/05 AND BEYOND (STOCK UNIT)
R1yr hinds	1.2	1.5
R2yr hinds	1.8	2.0
MA hinds	1.9	2.2
R1yr stags	1.4	1.7
R2yr stags	1.8	2.3
R3yr plus stags	2.1	3.0
Breeding stags	2.1	3.5

When looking at the deer model time series, it is important to note that a change was made in 2004/05 to the stock unit conversion rates. The stock unit rates were changed to more accurately reflect those accepted and applied by the deer sector (see Table A2.1).

NORTH ISLAND DEER

The North Island deer farm model represents a small stand-alone deer farm that is big enough to support a family. Theoretically, the model is situated near Rotorua, in the Bay of Plenty.

Weaner hinds and stags are all carried over the winter and sold to slaughter. Half of the breeding hinds are mated to a crossbred stag. The feeding programme aims to get yearling stock to target slaughter weights in late spring when market prices for chilled venison traditionally peak. Each year around 25 selected yearling stags are retained to enter the velveting herd.

SOUTH ISLAND DEER

The South Island deer model represents a family run stand-alone deer farm in Southland and South Otago.

The model is based on running predominantly red hinds in the breeding herd, with hybrids used as terminal sires. The hind herd is characterised by a blending of red deer from the United Kingdom and Eastern Europe.

Progeny from the breeding hinds which are not required as replacements in the breeding or velvet herds are sold for slaughter between 10 and 18 months of age, with final culling of replacements at 20 months.

> SHEEP AND BEEF MODELS

In 2007, MAF entered into an agreement with M&WNZ to use the M&WNZ sheep and beef survey data in the MAF sheep and beef models. The change was seen as an opportunity to reduce respondent burden on farmers and increase the sample of farms that the MAF sheep and beef models were based on. The survey sample increased from 240 farms to 500 farms.

Using a new data source has resulted in changes to some models and the development of new models. The Gisborne large hill country has become the Gisborne hill country model and the Manawatu/Rangitikei intensive model has been split into two models: the eastern lower North Island intensive model and the western lower North Island intensive model. These are described below. In most cases comparisons between 2006/07 and 2005/06 are based upon a re-calculated 2005/06 budget using data provided by M&WNZ. Caution should be taken in comparing figures in this report with data prior to 2005/06.

The sheep and beef models are all based on an owner-operated business.

NORTHLAND SHEEP AND BEEF

The Northland sheep and beef model represents 980 hill country and intensive finishing farms from Auckland north. The cattle to sheep ratio is high with 75 percent of total stock units as cattle.

A breeding flock with 25 to 30 percent ewe hogget replacements is run. Lambs are bought in late in the autumn and finished during the winter period and early spring.

A crossbred breeding herd is run with nearly all homebred cattle wintered. Replacement heifers are bought in. Homebred heifers are either sold as yearlings in the spring store sales, or as prime 12 to 24 month heifers to the local trade market. A few steers are sold as weaners but the majority are wintered over and sold on the spring grass market or carried through to slaughter from 22 to 30 months of age. A number of bull calves are purchased during the spring as weaners.

There has been no significant change made to the model in 2007.

WAIKATO/BAY OF PLENTY INTENSIVE SHEEP AND BEEF

The Waikato/Bay of Plenty intensive sheep and beef model represents 1055 farms from south Auckland, south to Waitomo and Ruapehu, and east to Opotiki district. The model represents a typical finishing beef cattle and sheep farm with rolling to easy contour and volcanic ash soils.

The 2007 model differs from earlier models in that:

- › the model size decreased from 300 to 250 effective hectares;
- › the stocking rate decreased from 12.9 to 11.2 stock units per hectare;
- › the sheep to cattle ratio increased from around 40:60 to 50:50.

The dominant enterprise on the farm is bull beef finishing, combined with steer finishing and dairy grazers. A high performance sheep flock is crossed with a high fertility breed.

CENTRAL NORTH ISLAND HILL COUNTRY

This model represents 2220 farms over a range of hill country across the central area of the North Island. It includes the Waikato, Taranaki, and Manawatu/Wanganui regions.

The 2007 model differs from earlier models in that:

- › the model size increased from 550 to 635 effective hectares;
- › the stocking rate decreased from 10.3 to 8.5 stock units per hectare (resulting in the actual stocking numbers staying about the same);
- › the average debt for the model increased from \$545 to \$970 per hectare.

Stock policies for the model remain as before. The model represents larger-scale units, running breeding ewes and cows, with the vast majority of stock sold prime, and some sold locally on the store market. The area represented generally experiences a moist summer with a long, cool winter.

GISBORNE HILL COUNTRY

The Gisborne hill country model represents 605 hard and easy hill country farms in the Gisborne and Wairoa districts. This model replaces the Gisborne large hill country sheep and beef model, which represented 203 hard hill country farms in the same area.

The main changes between the two models are:

- › the model size has decreased from 1681 to 821 hectares;
- › the farming operation is run by the owner rather than an employed manager.

Similar stock policies operate as before, with a traditional breeding livestock policy with 54 percent sheep stock units (slightly less than the large hill country model). The system is relatively self-contained. Rams, breeding bulls and rising one year bulls are the only stock purchased.

HAWKES BAY/WAIRARAPA HILL COUNTRY

The Hawkes Bay/Wairarapa hill country model represents 1165 hard hill country and hill country farms from Hastings district to South Wairarapa.

The 2007 model differs from earlier models in that:

- › the model size has increased from 557 to 624 hectares;
- › the stocking rate decreased from 10.3 to 9.6 stock units per hectare;
- › the sheep to cattle ratio increased from 67:33 to 73:27.

The model farm breeds its own replacements and ewe hoggets are mated. It winter finishes some lambs and 60 percent of lambs are sold prime. It has a breeding cow herd and it also purchases weaner bulls and steers plus some older bull beef to finish.

EASTERN LOWER NORTH ISLAND INTENSIVE

The eastern lower North Island intensive model represents 805 intensive finishing farms from Hastings district south on the east coast. This is a new model and is one of two models that replace the Manawatu/Rangitikei intensive model.

It has an effective area of 347 hectares and runs 11 to 12 stock units per hectare. The farm has a breeding livestock policy with sheep accounting for 60 percent of the total stock units. The farm is also involved in lamb and cattle purchasing and finishing, including winter finishing. The farm also undertakes a small amount of cash cropping.

WESTERN LOWER NORTH ISLAND INTENSIVE

The western lower North Island intensive model represents 420 intensive finishing farms from New Plymouth south on the west coast. This is a new model and is one of two models that replace the Manawatu/Rangitikei intensive model.

It has an effective area of 208 hectares and runs 11.5 to 12.5 stock units per hectare. Sheep account for 66 percent of total stock units. The farm has a sheep breeding livestock policy and also buys in lambs, equal to a third born on farm, for finishing as hoggets. The farm also has a cattle trading policy (half in bull beef) and sells balage and silage.

SOUTH ISLAND MERINO

This model represents 220 hill and high country merino properties in the South Island. It does not represent lowland merino properties less than 3000 stock units. These farms range in size from 1000 to 45 000 hectares and are normally 30 minutes drive from a rural servicing centre but are a considerable distance from the main centres. Summers are hot and dry and winters are cold. Most properties experience winter snow falls.

The 2007 model differs from earlier models in that:

- › the model size has increased from 6500 to 10 508 hectares;
- › the stocking rate decreased from 1.4 to 0.9 stock units per hectare;
- › the sheep to cattle ratio decreased from 87:13 to 84:16.

CANTERBURY/MARLBOROUGH HILL COUNTRY

This model represents 425 hill country farms in Canterbury and Marlborough excluding Waimate and Mackenzie Districts. Farms have a proportion of land that is in tussock or too steep to be cultivated with two-wheel drive tractors. Typically they run mid-micron breeding sheep and a beef cow herd, and sell some stock store. There is some irrigation on lowland valleys.

The 2007 model differs from earlier models in that:

- › the model size has increased from 1149 to 1397 hectares;
- › the stocking rate decreased from 5.6 to 3.9 stock units per hectare;
- › the sheep to cattle ratio decreased from 71:29 to 64:36.

CANTERBURY/MARLBOROUGH BREEDING AND FINISHING

This model represents 1650 sheep and beef finishing breeding farms in coastal Marlborough and Canterbury. Farms are located on the dry downs and plains, in irrigated areas and in the higher rainfall upper plains. Breeding ewe flocks with lamb finishing predominate, with cattle finishing and/or grazers on many properties. Some farmers also derive income from cash cropping, deer and beef breeding cows.

The 2007 model differs from earlier models in that:

- › the model size has increased from 340 to 378 hectares;
- › the stocking rate decreased from 11.4 to 10 stock units per hectare.

OTAGO DRY HILL COUNTRY

This model represents 400 farms in the Otago, South Canterbury and Mackenzie areas. They range in size from 500 to 4000 hectares and are spread from Waimate to Millers Flat in Central Otago, with the main concentration being in the Middelmarsh and inland Palmerston areas. These properties are predominantly hill, with a small area of valley floor. Some have a small area of irrigated valley floor. These farms are characterised by systems that cope with dry summers and long cold winters.

There has been no significant change made to the model in 2007.

SOUTHLAND/SOUTH OTAGO HILL COUNTRY

This model represents 720 farms in the moderately rolling clay downlands to steeper hill country of South Otago and Southland. The farms have mostly cultivated pastures, with the balance in improved, but steeper hill and tussock blocks.

The typical production system is breeding ewes with some hoggets lambing, and the majority of lambs finished, but some store lambs can be sold each year. There is a herd of breeding cows with the best calves finished. There may also be some trading of cattle.

There has been no significant change made to the model in 2007.

SOUTHLAND/SOUTH OTAGO INTENSIVE

This model represents 1700 intensive sheep and beef farms in Southland and South Otago. The farms are on the plains and downlands with ample summer rainfall. A variety of sheep breeds are run, with the breeding emphasis placed on lambing percentage and lamb growth rates. The cattle finishing enterprise is based on grazing weaner bulls to slaughter at 18 to 20 months of age.

There has been no significant change made to the model in 2007.

APPENDIX 3:

BUDGET PRESENTATION

In 2007, the budget format used in the *Pastoral Monitoring Report* was changed to closely match that used by DairyBase. The Farm Monitoring budgets have continued to be based on a cash in/cash-out basis for the year.

The main changes in the budget tables occur in the allocation of funds section. Changes above the farm profit after tax line are mostly name changes. The exception is cash operating surplus previously called cash farm surplus, which no longer includes the deduction of interest and rent and/or leases. Table A3.1 provides a comparison of the budget table format used in this report with the format used in previous monitoring reports.

There is little change in the expenditure tables between 2007 and previous years. Apart from the addition of sub totals and the table expanding to capture total operating expenses, the main change is the inclusion of the owners' ACC levy in other expenditure in the overhead expenses. Previously this was combined with employees' ACC levy under ACC. Table A3.2 provides a comparison of the expenditure table format used in this report with the format used in previous monitoring reports.

»» TABLE A3.1: BUDGET TABLE FORMATS

2007 FORMAT	FORMAT USED UNTIL 2006
REVENUE	REVENUE
+ Sheep	+ Sheep
+ Wool	+ Wool
+ Cattle	+ Cattle
+ Grazing income	+ Grazing income
+ Other farm income	+ Other farm income
LESS	LESS
- Sheep purchases	- Sheep purchases
- Cattle purchases	- Cattle purchases
= Net cash income	= Gross farm revenue
- Farm working expenses	- Cash farm expenditure
= Cash operating surplus	- Interest
- Interest	- Rent and/or lease
- Rent and/or leases	= Cash farm surplus
+/- Stock value adjustment	+/- Stock value adjustment
- Minus depreciation	- Minus depreciation
= Farm profit before tax	= Net trading profit
- Taxation	- Taxation
= Farm profit after tax	= Net trading profit after tax
	ALLOCATION OF FUNDS
+ Add back depreciation	+ Add back depreciation
+/- Reverse stock value adjustment	+/- Reverse stock value adjustment
+ Income equalisation	- Drawings
+ Off-farm income	- Principal repayments
= Discretionary cash	- Development
	- Capital purchases
	= Disposable surplus/deficit
APPLIED TO	OTHER CASH SOURCES
- Net capital purchases	+ New borrowing
- Development	+ Off-farm income
- Principal repayments	+ Other cash income
- Drawings	= Net cash change
+ New borrowings	
+ Introduced funds	
= Cash surplus/deficit	

»» TABLE A3.2: EXPENDITURE TABLE FORMATS

2007 FORMAT

FARM WORKING EXPENSES

Permanent wages

Casual wages

ACC

Total labour expenses

Animal health

Breeding

Electricity

Feed (hay and silage)

Feed (feed crops)

Feed (grazing)

Feed (other)

Fertiliser

Lime

Cash crop expenses

Freight (not elsewhere deducted)

Regrassing costs

Shearing expense

Weed and pest control

Fuel

Vehicle costs (excluding fuel)

Repairs and maintenance

Total other working expenses

Communication costs (phone and mail)

Accountancy

Legal and consultancy

Other administration

Water charges (irrigation)

Rates

Insurance

Other expenditure

Total overhead expenses

Total farm working expenses

Wages of management

Depreciation

Total farm operating expenses

FORMAT USED UNTIL 2006

FARM WORKING EXPENSES

Permanent wages

Casual wages

ACC

Animal health

Breeding

Electricity

Feed (hay and silage)

Feed (crops)

Feed (grazing)

Feed (other)

Fertiliser

Lime

Farm forestry expenses

Freight (not elsewhere deducted)

Regrassing costs (contractors)

Shearing costs

Weed and pest control

Fuel

Vehicle costs (excluding fuel)

Repairs and maintenance

Communication costs (phone & mail)

Accountancy

Legal and consultancy

Other administration

Rates

Insurance

Water charges

Other expenditure

Cash farm expenditure