

WAIKATO/BAY OF PLENTY INTENSIVE SHEEP AND BEEF

KEY RESULTS FROM MAF'S 2011 SHEEP AND BEEF MONITORING PROGRAMME. Please note that several budget parameters have changed between 2009/10 and 2010/11. Caution should be taken when comparing this year's publication to previous years. Refer to the budget table footnotes for more detail.

KEY POINTS

- Lambing dropped to 110 percent due to drought in autumn 2010 and severe storms at lambing.
- Net cash income increased 33 percent in 2010/11 to \$331 500 as a result of improved cattle and sheep prices.
- Farm working expenses increased 6 percent in 2010/11 to \$142 800 driven by the increases in cost of key expenditure items and fixed costs.
- > Farm profitability improved in 2010/11 to similar levels experienced in the early 2000s.
- Autumn 2011 saw a flurry of fertiliser application before an anticipated price rise but fertiliser application is below maintenance levels for the fourth year in a row.
- Productivity and profitability is predicted to increase substantially in 2011/12 following an excellent autumn 2011 that lifted the condition of all stock.

>>> TABLE 1: KEY PARAMETERS, FINANCIAL RESULTS AND BUDGET FOR THE WAIKATO/BAY OF PLENTY INTENSIVE SHEEP AND BEEF FARM MODEL

YEAR ENDED 30 JUNE	2007/08	2008/09	2009/10 ¹	2010/11	2011/12 BUDGET
Effective area (ha)	300	300	300	300	300
Breeding ewes (head)	1 014	933	917	906	914
Replacement ewe hoggets (head)	336	309	287	279	295
Other sheep (head)	123	114	74	74	16
Grazing heifers (head)	56	56	56	71	72
Rising 1-year cattle (head)	186	177	181	188	168
Rising 2-year cattle (head)	108	103	105	128	130
Opening sheep stock units (ssu)	1 584	1 458	1 263	1 064	1 222
Opening cattle stock units	1 672	1 606	1 634	1 868	1 794
Opening total stock units (su)	3 256	3 064	2 897	2 932	3 016
Stocking rate (stock unit/ha)	10.9	10.2	9.7	9.8	10.1
Ewe lambing (%)	126	111	124	110	118
Average lamb price (\$/head)	57.00	82.00	70.99	100.00	101.00
Average store lamb price (\$/head)	32.00	58.00	62.00	95.00	105.00
Average prime lamb price (\$/head)	59.00	84.00	74.00	101.00	100.00
Average wool price (\$/kg)	2.24	2.23	2.24	3.78	3.44
Total wool produced (kg)	6 869	4 032	6 007	5 036	5 721
Wool production (kg/ssu)	4.3	2.8	4.7	4.7	4.7
Average rising 2-year steer (\$/head)	966	1 044	945	1 200	1 147
Average rising 2-year bull (\$/head)	908	1 030	928	1 141	1 161
Net cash income (\$)	275 616	285 447	249 578	331 487	319 162
Farm working expenses (\$)	151 310	153 659	135 528	142 804	152 895
Farm profit before tax (\$)	50 823	66 526	78 799	121 947	122 507
Farm surplus for reinvestment (\$) ²	4 174	4 157	4 312	80 512	29 301

Notes

- 1 The sample of farms used to compile this model changed between 2008/09 and 2009/10. Caution is advised if comparing data between these two years.
- 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 farm profit after tax plus depreciation plus stock adjustments less drawings.



>>> TABLE 2: WAIKATO/BAY OF PLENTY INTENSIVE SHEEP AND BEEF FARM MODEL BUDGET

	2010/11 2011/12 B						
	WHOLE	PER	PER STOCK	WHOLE	PER	PER STOCK	
	FARM (\$)	HA (\$)	UNIT ¹ (\$)	FARM (\$)	HA (\$)	UNIT ¹ (\$)	
REVENUE	(Ψ)	(Ψ)	(47	(Ψ/	(47	(47	
Sheep	99 464	332	93.47	109 504	365	89.63	
Wool	19 040	63	17.89	19 679	66	16.11	
Cattle	296 664	989	158.81	266 953	890	148.80	
Grazing income (including hay and silage sales)	33 085	110	11.28	35 412	118	11.74	
Other farm income	5 700	19	1.94	4 400	15	1.46	
LESS:							
Sheep purchases	10 916	36	10.26	2 366	8	1.94	
Cattle purchases	111 550	372	59.72	114 420	381	63.78	
Net cash income	331 487	1 105	113.05	319 162	1 064	105.83	
Farm working expenses	142 804	476	48.70	152 895	510	50.70	
Cash operating surplus	188 683	629	64.35	166 267	554	55.13	
Interest	29 812	99	10.17	26 818	89	8.89	
Rent and/or leases	9 000	30	3.07	8 400	28	2.79	
Stock value adjustment	-12 752	-43	-4.35	5 688	19	1.89	
Minus depreciation	15 171	51	5.17	14 230	47	4.72	
Farm profit before tax	121 947	406	41.59	122 507	408	40.62	
Income equalisation	0	0	0.00	0	0	0.00	
Taxation	5 959	20	2.03	37 093	124	12.30	
Farm profit after tax	115 988	387	39.56	85 414	285	28.32	
•							
ALLOCATION OF FUNDS							
Add back depreciation	15 171	51	5.17	14 230	47	4.72	
Reverse stock value adjustment	12 752	43	4.35	-5 688	-19	-1.89	
Drawings	63 400	211	21.62	64 654	216	21.44	
Farm surplus for reinvestment ²	80 512	268	27.46	29 301	98	9.72	
REINVESTMENT							
Net capital purchases	6 500	22	2.22	6 937	23	2.30	
Development	0	0	0.00	0	0	0.00	
Principal repayments	0	0	0.00	0	0	0.00	
Farm cash surplus/deficit	74 012	247	25.24	22 365	75	7.42	
OTHER CASH SOURCES							
Off-farm income	16 000	53	5.46	16 000	53	5.31	
New borrowings	0	0	0.00	0	0	0.00	
Introduced funds	0	0	0.00	0	0	0.00	
Net cash position	90 012	300	30.70	38 365	128	12.72	
ASSETS AND LIABILITIES							
Farm, forest and building (opening)	3 026 286	10 088	1 032.12	2 865 900	9 553	950.30	
Plant and machinery (opening)	81 981	273	27.96	76 184	254	25.26	
Stock valuation (opening)	403 780	1 346	137.71	391 028	1 303	129.66	
Other produce on hand (opening)	0	0	0.00	0	0	0.00	
Total farm assets (opening)	3 512 047	11 707	1 197.79	3 333 112	11 110	1 105.22	
Total assets (opening)	3 802 554	12 675	1 296.87	3 628 619	12 095	1 203.20	
Total liabilities (opening)	490 246	1 634	167.20	465 246	1 551	154.27	

Notes

Please note that several budget parameters have changed between 2009/10 and 2010/11. These changes have been made to better reflect the financial position of the farm. New and adjusted definitions include farm surplus for reinvestment, farm cash surplus/deficit and net cash position. Caution should be taken when comparing this year's data to previous years.

¹ Sheep stock units are used in the per stock calculation for sheep and wool income and sheep purchases. Cattle stock units are used for cattle income and purchases. The remainder of the time total stock units are used.

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 farm profit after tax plus depreciation plus stock adjustments less drawings.

>>> TABLE 3: WAIKATO/BAY OF PLENTY INTENSIVE SHEEP AND BEEF FARM MODEL EXPENDITURE

		2010/11 2011/12					
	WHOLE FARM	PER HA	PER STOCK UNIT	WHOLE FARM	PER HA	PER STOCK	
	(\$)	(\$)	(\$)	(\$)	(\$)	(\$	
FARM WORKING EXPENSES							
Permanent wages	0	0	0.00	0	0	0.00	
Casual wages	12 022	40	4.10	12 365	41	4.10	
ACC	427	1	0.15	434	1	0.14	
Total labour expenses	12 448	41	4.25	12 799	43	4.24	
Animal health	8 324	28	2.84	8 578	29	2.8	
Breeding	593	2	0.20	611	2	0.20	
Electricity	3 870	13	1.32	4 222	14	1.40	
Feed (hay and silage)	11 347	38	3.87	11 701	39	3.88	
Feed (feed crops)	0	0	0.00	0	0	0.00	
Feed (grazing)	0	0	0.00	0	0	0.00	
Feed (other)	0	0	0.00	0	0	0.00	
Fertiliser	34 943	116	11.92	37 701	126	12.50	
Lime	6 800	23	2.32	4 050	14	1.34	
Cash crop expenses ¹	0	0	0.00	0	0	0.00	
Freight (not elsewhere deducted)	2 785	9	0.95	3 136	10	1.04	
Regrassing costs	3 196	11	1.09	3 559	12	1.13	
Shearing expenses ²	8 768	29	8.24	9 286	31	7.60	
Weed and pest control	3 750	13	1.28	3 900	13	1.29	
Fuel	6 069	20	2.07	6 665	22	2.2	
Vehicle costs (excluding fuel)	4 838	16	1.65	5 097	17	1.69	
Repairs and maintenance	11 025	37	3.76	12 093	40	4.0	
Total other working expenses	106 309	354	36.26	110 599	369	36.67	
Communication costs (phone and mail)	1 701	6	0.58	1 900	6	0.63	
Accountancy	1 759	6	0.60	2 021	7	0.67	
Legal and consultancy	1 583	5	0.54	1 809	6	0.60	
Other administration	1 437	5	0.49	1 478	5	0.49	
Water charges (irrigation)	0	0	0.00	0	0	0.00	
Rates	9 450	32	3.22	9 921	33	3.29	
Insurance	3 540	12	1.21	3 900	13	1.29	
ACC employer	2 847	9	0.97	6 449	21	2.14	
Other expenditure	1 730	6	0.59	2 021	7	0.67	
Total overhead expenses	24 047	80	8.20	29 498	98	9.78	
Total farm working expenses	142 804	476	48.70	152 895	510	50.70	
CALCULATED RATIOS							
Economic farm surplus (EFS ³)	94 639	315	32.28	93 394	311	30.97	
Farm working expenses/NCI ⁴	43%			48%			
EFS/total farm assets	2.7%			2.8%			
EFS less interest and lease/equity	1.8%			2.0%			
Interest+rent+lease/NCI	11.7%			11.0%			
EFS/NCI	28.5%			29.3%			
Wages of management	66 120	220	22.55	64 331	214	21.33	

Notes

- 1 Includes forestry expenses.
- $2\ \mbox{Shearing}$ expenses per stock unit based on sheep stock units.
- 3 EFS is calculated as follows: net cash income plus change in livestock values less farm working expenses less depreciation less wages of management (WOM). WOM is calculated as follows: \$31 000 allowance for labour input plus 1 percent of opening total farm assets to a maximum of \$75 000.
- 4 Net cash income.

REVENUE INCREASES WITH IMPROVED PRICES

Improved product prices for sheep and cattle increased the cash operating surplus for the Waikato/Bay of Plenty intensive sheep and beef farm model by 65 percent in 2010/11 to \$188 700.

HIGH LAMB PRICE MORE THAN OFFSETS LOW LAMBING

Net sheep returns (sales less purchases) on the model increased 18 percent in 2010/11 to \$88 500 driven by much improved lamb prices in both the prime and store markets. The number of lambs docked decreased to 110 percent following both the autumn drought in 2010 where ewes were on a declining plane of nutrition, and the wet early spring period with storms in September and October increasing the deaths of late-born lambs. This is well down on the 125 to 130 percent usually expected. Lambs weaned at normal weights despite fewer lambs reared per ewe because feed was short for much of the spring. Ewe hogget replacements as at June 2011 were of poorer genetic quality, with the reduced lambing percentage giving lower selection pressure, but were in good condition.

The average return for lamb in the model increased 42 percent in 2010/11 to \$101 per head, well above the historic average for the last 10 to 15 years. The average carcass weight, at 16.5 kilograms, was at normal levels. While the focus of farmers represented by this model is to sell finished lambs, this season has seen a swing back to store lambs. The price for 32 to 34 kilogram store lambs was \$88 per head early in the season but this lifted to well in excess of \$100 per head in the second half of autumn.

Some farms experienced poor lamb growth, lower than normal carcass weights and some stock losses because of poor pasture quality and a longer than usual facial eczema season. Many farmers destocked in December because of drought and found themselves understocked when pasture growth took off in January. Farmers also culled more ewes because of the uncertainty of feed supply and the high ewe prices. Ewes sold for \$80 average in 2010/11 compared with \$55 in 2009/10.

RESURGENCE IN WOOL PRICE

In 2010/11, wool returns were at their strongest level for over a decade, with a lift of 68 percent to \$3.78 per kilogram. Despite the higher wool price, wool revenue dropped by 42 percent to \$19 000; unlike the start of 2009/10 there were no carry-over wool stocks at the start of the year. Wool production remained stable at 4.7 kilograms per sheep stock unit, although there was renewed interest in autumn second shearing this year due to the higher wool price and there being adequate feed to sustain such a practice.

CATTLE WEIGHTS DOWN BUT PRICES UP

Net cattle income (sales less purchases) increased by 68 percent in 2010/11 to \$185 100 as prices for two-year-old cattle lifted by \$210 to \$250 per head. Improved cattle schedule prices have more than compensated for lower carcass weights this year. A large number of cattle sold store or at lighter weights than usual. Cattle went into winter about 30 kilograms lighter than normal because of the autumn 2010 drought. This was followed by a lack of feed in November and December 2010.

Cattle margins returned to a more acceptable level of \$350 to \$400 per head for both steers and bulls. The schedule bottomed in November and has steadily climbed through to autumn. Store prices for cattle rose with favourable feed levels in autumn 2011. Due to the high cost of replacement cattle, many farmers reduced purchases of bull calves and switched from paying a premium for Angus or Hereford calves to buying other breeds and classes of cattle.

INCREASED DAIRY GRAZING

Grazing revenue increased 19 percent to \$33 100 with increased dairy grazing during the year. This reflects a trend throughout the region for farms to either maintain their current grazing stock or to





increase it in a time when capital stock or replacement cattle are too expensive. In addition, many farmers are now grazing weaner dairy calves because of increased demand from dairy farmers. Grazing rates held at \$7.50 per head, per week for rising two-year old heifers and \$5.50 per head per week for weaners.

TOTAL EXPENDITURE LIFTS

Total farm working expenses on the model increased 6 percent in 2010/11 to \$142 800 (\$48.70 per stock unit). For a large part of the year farmers took a cautious approach to expenditure with cash availability constrained as bank were reluctant to increase seasonal finance limits. Early on in the season there was less spent on maintenance and fertiliser but later in the season, when farmers were sure they would have a better year, they increased spending in these areas. Fertiliser expenditure increased 10 percent, lime 13 percent and repairs and maintenance 21 percent.

Fertiliser expenditure lifted in 2010/11 to \$34 900 or \$11.92 per stock unit. Fertiliser prices were expected to lift early in 2011 but this was delayed to June 2011, allowing farmers to catch-up applying some much needed fertiliser. There was high nitrogen use in spring 2010 due to the poor growing season. The lack of fertiliser applied over the last three years will need to be readdressed in the coming years to avoid a drop in stocking rate.

Lime expenditure in the model lifted for a second year to \$6800, while total application dropped to 80 tonnes. The rise in cost was associated with freight and application rates. Lime has managed to maintain its favour with farmers as they focus on lifting on-farm productivity under restricted budgets.

Wage expenses fell 13 percent with less demand for casual labour because of reduced stock numbers and farmers placing higher priority on spending control than on feed conservation. Similarly, animal health spending reduced 13 percent following the increased sale of store stock and despite the challenging autumn with high levels of facial eczema. Farmers took a proactive approach to animal health this season because of the warm wet conditions with better management of parasites. Freight increased by 30 percent with an increase in store animals sold.

There was a 9 percent increase in vehicles and fuel expenditure. Repairs and maintenance was kept to the basics on most farms, with the increase of 21 percent mainly focused on track infrastructure repairs following heavy rainfall events. There was a 31 percent lift in regrassing expense. Poor forage crop performance in spring 2010 required re-sowing, additional chemical interventions and increased contractor rates. Feed costs lifted 9 percent with extra feed harvested, largely after mid-January.

Insurance and rates increased 10 and 5 percent respectively for 2010/11. The increase in insurance is attributed to natural hazards that were experienced this year such as the Christchurch earthquake.

>>> TABLE 4: WAIKATO/BAY OF PLENTY INTENSIVE SHEEP AND BEEF FARM MODEL CASH FARM INCOME

YEAR ENDED 30 JUNE	2007/08	2008/09	2009/10 ¹	2010/11	2011/12
	(\$)	(\$)	(\$)	(\$)	BUDGET (\$)
Sheep sales less purchases	62 746	73 364	71 957	88 548	107 138
Cattle sales less purchases	166 370	172 065	110 391	185 114	152 533
Wool	16 887	8 978	32 640	19 040	19 679
Grazing income (including hay and silage sales)	22 472	23 940	27 690	33 085	35 412
Other income	7 141	7 100	6 900	5 700	4 400
Net cash income	275 616	285 447	249 577	331 487	319 162

Note

¹ The sample of farms used to compile this model changed between 2008/09 and 2009/10. Caution is advised if comparing data between these two years.

LOWER INTEREST RATES

Debt servicing costs decreased 6 percent in 2010/11 to \$29 800 due to reduced interest rates on the term loan and overdraft. Many farmers took advantage of lower floating rates and/or short-term fixed rates. In the later part of the financial year, farmers were ranked on their risk and paid an interest rate according to this, with a few farms with already high debt paying higher rates.

CASH DISPOSAL VERY RESTRAINED

Capital expenditure fell 9 percent to \$6500 with farmers very conscious throughout the year of recent losses and high overdraft levels. Development expenditure on the model remained suspended in 2010/11. Industry commentators suggest that a lot of farm plant and vehicles are past their use-by-date.

NET RESULT RESTORES CONFIDENCE

Net farm profit before tax increased 55 percent in 2010/11 to \$121 900, after allowing for a \$12 800 reduction in stock on hand. Farmers dropped stocking rates as part of their drought risk management strategy and also because of the rising cost of purchasing store stock. Farm surplus for reinvestment has lifted to \$80 500. With very low cash disposal and off-farm income being maintained at \$16 000, a net cash position of \$90 000 was achieved. Some of this will be spent next year but most farmers took advantage of their cash surplus to reduce their overdrafts. Farmers in this class with low debt may incur substantial tax bills.

After three years of difficult climatic conditions and low returns, farmers indicate that things are now more positive with better product prices enabling overdue maintenance and topdressing to be undertaken, as well as restoring stocking rates.

BUDGET FINANCIAL PERFORMANCE OF THE WAIKATO/BAY OF PLENTY SHEEP AND BEEF FARM MODEL IN 2011/12

The cash operating surplus in 2011/12 is budgeted to decrease 12 percent to \$166 267, which is still higher than it has been for most of the past five years, because of a drop in the number of rising two-year-old bulls being sold.

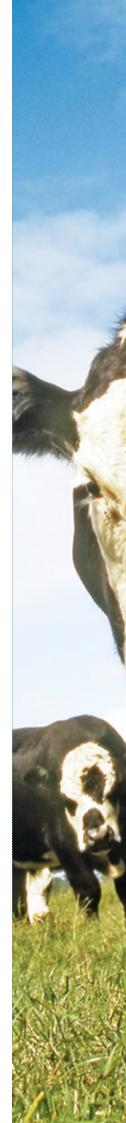
REVENUE EXPECTED TO INCREASE

Sheep returns (sales less purchases) are expected to increase 21 percent to \$107 100 in 2011/12. Ewes are in good condition and more favourable climatic conditions are expected to increase lambing to 118 percent. Ewe hoggets have been mated due to the favourable autumn conditions with an expected 50 percent lambing.

Early scanning results are at similar levels to last year, with increased dries due to the impact of facial eczema in some flocks. There is concern that sub-clinical facial eczema may lead to poorer lambing and a high ewe death rate so farmers are not budgeting for a return to lambing levels of 125 to 130 percent which they achieved in the past. The prime lamb market is expected to hold at the current high values returning \$100 per head. Store stock prices for both lambs and good quality mixed age ewes are expected to remain very strong as demand from farmers rebuilding ewe flocks strengthens further. Fewer wether hoggets have been carried over from 2010/11 and monitored farmers are not planning to purchase trade lambs in 2011/12.

FARMERS CONSERVATIVE ABOUT WOOL PRICES

The wool clip is budgeted to increase by 13 percent with recovery from the drought. Wool prices are expected to drop by 9 percent in 2011/12 as farmers are budgeting conservatively and not expecting the high prices received for greasy wool to be maintained.





CATTLE RETURNS TO FALL AS HERD REBUILT

Net cattle returns (sales less purchases) are budgeted to decrease 17 percent in 2011/12 to \$152 500, driven by a reduced number of rising two-year-old bulls being sold due to a drop in numbers the year before. Prices for 2011/12 are expected to be stable. There will be a slight increase in beef purchases as farmers intend to lift herd numbers. With a favourable autumn in 2011, farmers expect to finish cattle well and to heavier carcass weights with the schedule holding. Trading margins for cattle are expected to hold but there is concern over ability to source a satisfactory supply of replacement animals next autumn.

Grazing income is expected to increase 7 percent in 2011/12 to \$35 400, due to a planned price increase in grazing rates to \$8.00 per head per week for the rising two-year-old heifers and \$6.00 per head per week for weaners.

EXPENDITURE EXPECTED TO INCREASE SLIGHTLY

Farm working expenses on the model farm are budgeted to increase 7 percent in 2011/12 to \$152 900, driven primarily by inflationary pressures on key expenditure items. On a per stock unit basis, farm working expenses are budgeted to increase 4 percent, to \$50.70 per stock unit.

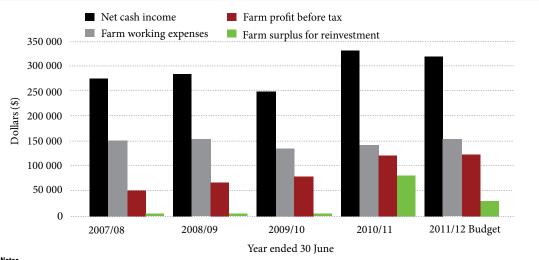
Regrassing expenditure on the model is budgeted to increase 11 percent in 2011/12 to \$3600, driven by the desire to build feed levels to take advantage of the high product prices. Fertiliser costs are expected to increase 8 percent, with farmers aiming to get back to maintenance and capital applications after several years of sub-maintenance levels.

The cost of freight, fuel and electricity on the model are expected to rise with inflation in costs in 2011/12.

INTEREST COSTS FALLING FURTHER

Interest rates are expected to remain at an average of 7.2 percent as most farmers in this class are already on short-term or floating rates. Total interest costs are predicted to fall \$3000 (10 percent) because of the lower average overdraft.

>>> FIGURE 1: WAIKATO/BAY OF PLENTY INTENSIVE SHEEP AND BEEF MODEL PROFITABILITY TRENDS



The sample of farms used to compile this model changed between 2008/09 and 2009/10. Caution is advised if comparing data between these two years. 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 farm profit after tax plus depreciation plus stock adjustments less drawings.

NO INCREASE IN CASH DISPOSAL PLANNED

Farmers are still taking a conservative approach and have planned to hold capital purchases at a very modest \$6900, and have no development scheduled. This may change once they assess the scale of their cash surplus from the 2010/11 year but in June 2011 farmers' main focus is debt reduction. Similarly, drawings are expected to increase 2 percent to \$64 700.

Tax payments are predicted to jump to \$37 100 as a result of high provisional and terminal payments based on the 2010/11 profit. Some farmers may be able to reduce their tax liability by using losses carried forward from previous years.

NET RESULT IMPROVED, BUT REMAINS POOR

Net farm profit before tax is expected to be very similar to 2010/11 at \$122 500. This level of profit is very similar to the levels experienced in 2003/04 and 2004/05. After tax, drawings and allowance for the increase in stock on hand, a farm surplus for reinvestment of \$29 300 is predicted. However, with the very modest capital and development plans, and off-farm income maintained at \$16 000, a sound net cash position of \$38 400 is expected.

INFORMATION ABOUT THE MODEL

The Waikato/Bay of Plenty sheep and beef farm model represents 722 farms bounding the predominately dairying districts of the region. The farm model is a 300 effective hectare operation representing a typical finishing beef cattle and sheep farm with rolling-to-easy hill contour and volcanic ash soil.

The dominant enterprise on the farm is bull beef finishing, combined with steer finishing and dairy grazers, both weaners and rising two-year-old heifers. A high performance sheep flock is crossed with a high-fertility breed. Hogget mating will be undertaken in the 2011 mating season and will be reviewed on an annual basis.

For more information on this model contact John.Greer@maf.govt.nz

PUBLISHER

Ministry of Agriculture and Forestry PO Box 2526, Wellington 6140, New Zealand Tel +64 4 894 0100 or Freephone 0800 008 333 Email: policy.publications@maf.govt.nz

ISBN 978-0-478-38492-5 (Print) ISBN 978-0-478-38493-2 (Online)

Web: www.maf.govt.nz

The report can be downloaded from www.maf.govt.nz

 $\ensuremath{^{\odot}}$ Crown copyright August 2011 – Ministry of Agriculture and Forestry

DISCLAIMER

The information in this report by the Ministry of Agriculture and Forestry is based on the best information available to the the Ministry at the time it was drawn up and all due care was exercised in its preparation. As it is not possible to foresee all uses of this information or to predict all future developments and trends, any subsequent action that relies on the accuracy of the information in this report is the sole commercial decision of the user and is taken at his/her own risk. Accordingly, the Ministry of Agriculture and Forestry disclaims any liability whatsoever for any losses or damages arising out of the use of this information, or in respect of any actions taken.



