WATER STRATEGIES

Benefits of Scheme Storage

Waimakariri Irrigation Limited

22 April 2021

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- Water supply and demand data for the analysis was provided by PDP using a daily water-balance model. Water Strategies has not independently verified this model or the resulting data and has relied upon it being accurate for use in deriving dry matter production data using the BASGRA model (The BASic GRAssland model) and for the FARMAX analysis. Water Strategies accepts no responsibility for errors or omissions in, or the currency or sufficiency of, the provided data.

Contents

Summary

This report provides an assessment of the benefits from the proposed Waimakariri Irrigation scheme storage for Waimakariri Irrigation Limited (WIL) shareholders.

A 1 in 5-year drought reliability scenario for the current Waimakariri river minimum flow and an increased minimum flow, was used to analyse the production and economic impacts of the scheme storage on five representative farms. Other potential benefits of scheme storage, including climate change resilience, future land use opportunity and improved environmental management were also assessed. A comparative analysis of the proposed new annual scheme charge was also undertaken.

Under the current minimum flow, the proposed scheme storage provided a positive return on investment for all the five case study farms. For four case studies the scheme storage reduced water supply restrictions by over 50 per cent and resulted in increased productivity and EBITDA. For the fifth case study farm the existing 18-day on-farm storage resulted in limited benefit being realised under a 1 in 5-year scenario but comparable benefits under the 1 in 10-year drought scenario. Despite this, the farm owners recognised the importance of achieving greater than 95 per cent average long-term water supply reliability for their business and were supportive of the scheme storage.

Under an increased minimum flow, the scheme storage created a positive return on investment for all the case study farms.

The benefits of the scheme storage will be realised more frequently under climate change predictions. Spring restrictions from high river flow events, as occurred for two weeks in November and December 2019, are predicted to become more commonplace. Increased temperatures and incidence of drought will also impact upon future water supply reliability.

The scheme storage will provide shareholders with farm diversification and new land use opportunities. A water supply reliability of at least 90 per cent is required for a resilient irrigated arable cropping system, and over 95 per cent to gain supply contracts for seed production, vegetable cropping and permanent horticulture. Under the current Waimakariri river flow regime the scheme storage will underpin a 94 per cent long-term average water supply reliability, and in combination with on-farm storage will achieve greater than 95 per cent reliability.

Scheme storage will support improvements in water use efficiency. Efficient irrigation minimises on-farm operation costs and provides options to help irrigators achieve their future nitrogen loss reduction targets, by reducing in-season drainage and therefore nitrogen leaching. High reliability in combination with modern spray irrigation systems and accurate soil moisture monitoring, are key for water use efficiency.

The increase in annual charge for the scheme storage is comparable with other Canterbury and North Otago irrigation schemes of a similar scale that have undergone modernisation.

Purpose

Water Strategies (WS) has been engaged by Waimakariri Irrigation Limited (WIL) to provide an analysis of the benefits of the proposed scheme storage pond at Wrights Road (scheme storage).

The scope of the analysis was to undertake:

- A cost benefit analysis of the scheme storage impact on farm production and profitability using five representative shareholder case studies including:
    - Dairy
    - Dairy Support
    - Mixed Cropping
- A qualitative analysis of the water storage benefits for:
    - Climate change resilience, including high river flow scenarios and increased temperatures and drought
    - Future farm diversification and land use opportunities
    - Increased water use efficiency and improved nutrient management – specifically nitrogen leaching
- A quantitative analysis of the WIL existing and new scheme annual charges relative to other Canterbury and North Otago irrigation schemes.

In addition, an analysis of shareholder water supply restriction days was also undertaken.

Methodology

Background Data

The daily water supply restrictions, climate and soil water balance data used in this analysis was provided by PDP. The methodology used to derive the restrictions and soil water balance data is detailed in the PDP '*Wrights Road Storage Pond Business Case - Irrigation Supply and Demand Modelling'* report. The PDP irrigation water supply analysis included the current Waimakariri river minimum flow of 41 cubic metres per second (cumecs) and an increased minimum flow of 50 cumecs. Using this data for the WS analysis ensured there was consistency between both the PDP and WS reports.

The water supply charge used in the analysis included the current 2020-21 water supply charge combined with the proposed scheme storage charge. The scheme storage construction, financing, and operation costs were supplied by WIL and are detailed in the financial section of the scheme storage business case.

The financial and production information used in the farm analysis was based on actual data provided by each of the case study farms. An interview was undertaken with each farmer to identify individual responses to water restrictions. These were used to inform the likely on-farm changes to water supply reliability.

Farm Production and Economic Analysis

The daily soil water balance and climate data for both the 1 in 5-year and 1in 10-year scenarios were applied to the BASGRA model (BASic GRAssland model) by Komanawa Solutions Limited.

BASGRA is a mechanistic model for simulating the year-round dynamics of pasture growth. The model simulates the response of the sward to soil conditions, harvesting (mechanical and animal), day length, and the weather including drought, and hot and cold stressors. The BASGRA model has been calibrated for use in New Zealand with perennial ryegrass[1][2]. From this daily pasture production (kg DM/ha/day) data was generated and sense checked.

A farm production and economic analysis was undertaken for each case study farm by WS[3] using the FARMAX[4] model. The daily pasture production data from BASGRA was used in FARMAX to generate the pasture growth curves for each of the case study farms.

FARMAX is a science-backed farm scale decision support tool for pastoral farmers. It enables the testing of the commercial and biological feasibility of different farm system scenarios. FARMAX was used to analyse the commercial impact of the pasture

[1] Identifying causes of low persistence of perennial ryegrass (*Lolium perenne*) dairy pasture using the Basic Grassland model (BASGRA), Woodward, 2020
[2] https://github.com/Komanawa-Solutions-Ltd/BASGRA_NZ_PY
[3] WS is Elite accredited for both Dairy and Red Meat farming systems
[4] Model generation 7.1.2.41

production for each scenario, ensuring any changes made were biologically feasible for the farm system.

For each farm case study farm the FARMAX analysis included:

- The current farm system using actual farm production and financial data.
- Optimising the current farm system using the increased dry matter production provided by the scheme storage 1 in 5-year drought reliability scenario, to determine the increased EBITDA[5]. This was undertaken for both the current and increased minimum flow water supply scenarios.

Optimising included changing farm specific production parameters (both operating expenses and income) to capitalise on the increased production, while ensuring the farm system remained biologically feasible. Examples included:

- Increasing crop yield
- Replacing bought-in feed
- Selling additional baleage
- Increasing stock numbers
- Stock class changes
- Timing of stock sales
- Increasing millk solid production

Under the increased minimum flow scenario, where necessary, the current farm system was adjusted to match the decreased pasture or crop production due to lower water supply reliability, and then optimised accordingly.

Case Study Farms

Table 1 provides an overview of the five case study farms used in the analysis.

Table 1: Case study farms

PDP report reference	**WS report reference**	**Land Use**		**On-farm storage**	**Farm Size**
Farm A	**Dairy Support 1**	Dairy support	Cut and carry to associated dairy farm, unit supports wintering cows	No	162 hectares
Farm B	**Dairy 1**	Dairy self-contained	R1 and R2's grazed off farm; MA milkers wintered on farm	18-days	295 hectares
Farm C	**Dairy 2**	Dairy	Replacements grazed off farm; no stock wintered on the farm	No	285 hectares
Farm D	**Dairy Support 2**	Dairy support	Grazing R1 & R2 heifers - May to May	No	91 hectares
Farm E	**Mixed Cropping**	Mixed cropping	Wintering adult cows; grazing R1 & R2 heifers - May to May; arable cropping	No	200 hectares

[5] Earnings Before Interest, Taxes, Depreciation, and Amortization

Farm Water Supply Restrictions

For the 1 in 5-year drought reliability scenario, the days of water supply restrictions experienced by each case study farm is shown in figure 1. It includes both the current minimum flow and the increased minimum flow analysis.

For the current minimum flow, with no on-farm storage there is an average of 40 days restriction and with scheme storage this drops to an average of 14 days; with 18 days on-farm storage this drops from 5 days to no days on restriction (Dairy 1 in Figure 1 below).

Modelling of the increased minimum flow showed with no on-farm storage there is an average of 55 days restriction and with scheme storage this drops to an average of 27 days; with 18 days on-farm storage (Dairy 1 in Figure 1 below) this drops from 23 days to 1 day on restriction.

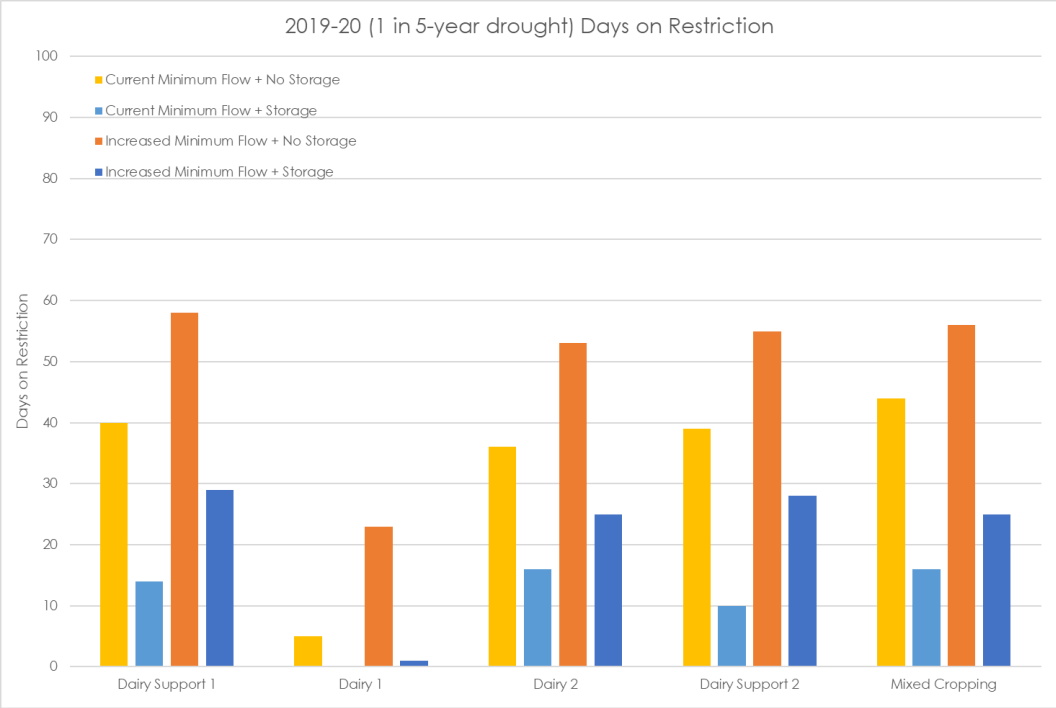

Figure 1 Farm water supply restrictions 1 in 5-year drought scenario

The 1 in 10-year drought reliability scenario days of water supply restrictions experienced by each farm is shown in figure 2.

For the current minimum flow, with no on-farm storage there is an average of 62 days restriction and with scheme storage this drops to an average of 44 days; with 18 days on-farm storage this drops from 32 days to 3 days on restriction (Dairy 1 in Figure 2 below).

Modelling of the increased minimum flow showed with no on-farm storage there is an average of 70 days restriction and with scheme storage this drops to an average of

57 days; with 18 days on-farm storage this drops from 49 days to 32 days on restriction (Dairy 1 in Figure 2 below).

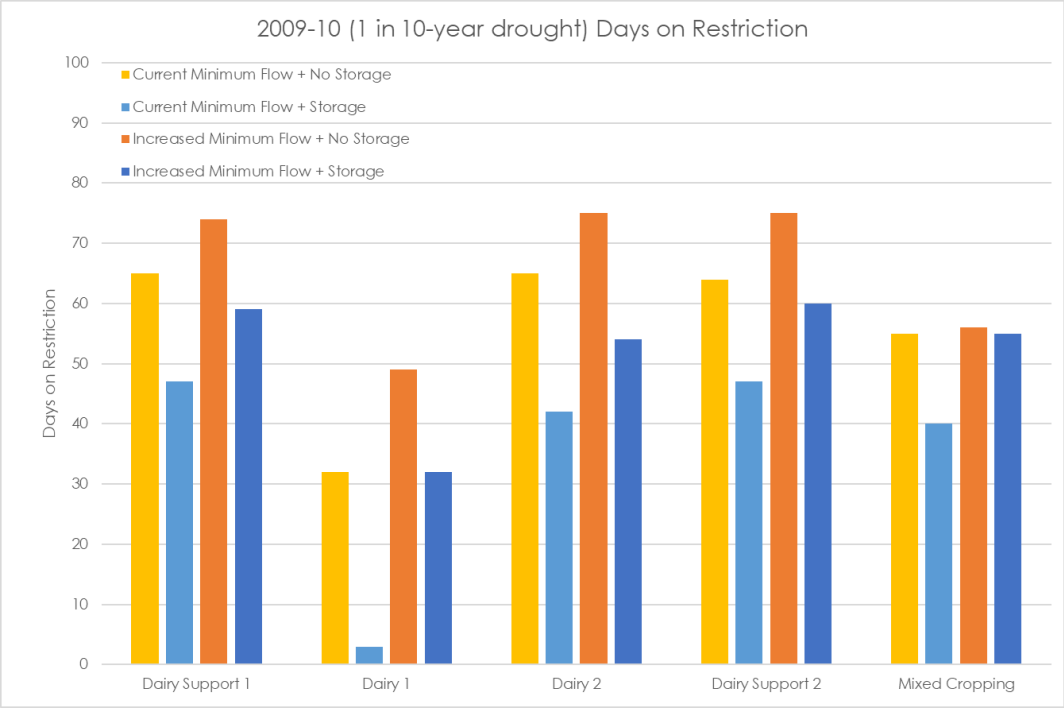

Figure 2 Farm water supply restrictions 1 in 10-year drought scenario

Farm Soil Water Deficit Impacts

The 1 in 5-year drought reliability scenario, days of soil water deficit experienced by each farm is shown in figure 3.

For this dataset, the data provided for the Mixed Cropping farm was assessed as not accurate as no reliable water meter data was available. Therefore, adjustments were made for the farm analysis.

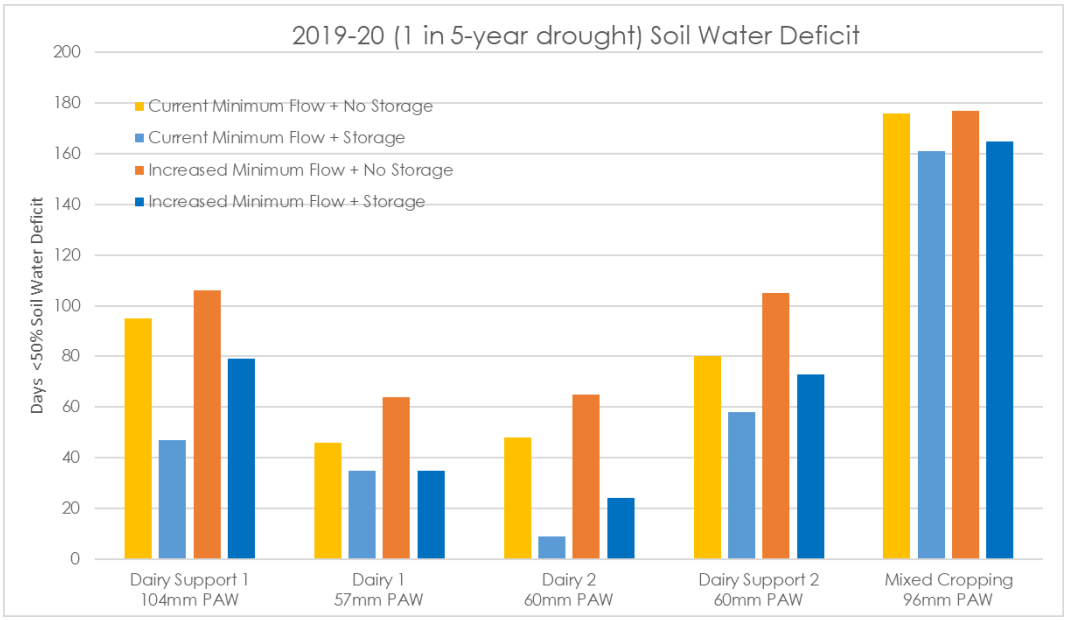

Figure 3 Soil water deficit for case study farms from a 1 in 5-year drought event

The 1 in 10-year drought reliability scenario, days of soil water deficit experienced by each farm is shown in figure 4.

For this dataset, the data provided for the Mixed Cropping farm was assessed as not accurate as no reliable water meter data was available. Therefore, adjustments were made for the farm analysis.

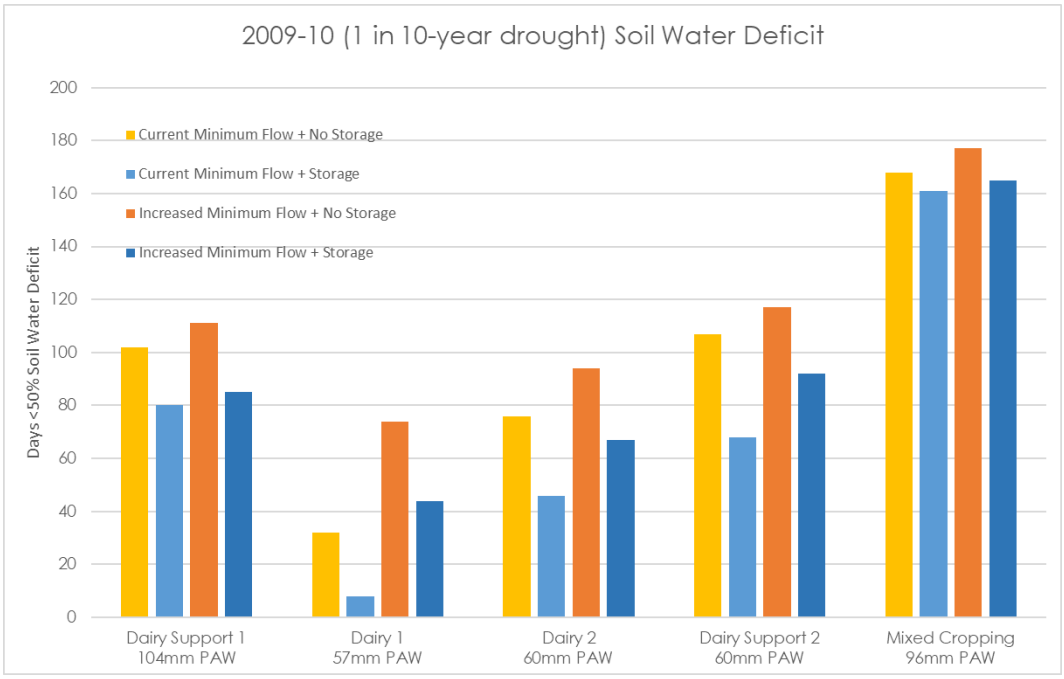

Figure 4 Soil water deficit for case study farms from a 1 in 10-year drought event

Farm Production and Economic Analysis

Scheme Storage Benefits - Current Minimum Flow

Based on a 1 in 5-year drought reliability scenario, the increased water supply reliability provided by the scheme storage creates increased production and a higher EBITDA for all farms. However, for Dairy Farm 1, as it already had 18-days on-farm storage there was only a small gain in production and EBITDA. When the 1 in 10-year drought reliability scenario was analysed there was a much greater gain in production and EBITDA.

A summary of the production benefits and increased EBITDA from the scheme storage based on the current minimum flow is provided in table 2 and the FARMAX outputs in Appendix 2. The EBITDA accounts for the increased production and the increased water charge.

Table 2: Summary of scheme storage economic benefits under the current minimum flow

Farm	Scenario	Pasture Production (tonnes/DM/ha)			EBITDA ($/ha)
		No Scheme Storage	With Scheme Storage	Increased Production	
Mixed Cropping	1 in 5-year	15.3	18.3	3	$369
Dairy Support 1	1 in 5-year	15.8	17.9	2.1	$449
Dairy Support 2	1 in 5-year	15.3	18.3	3	$194
Dairy 1	1 in 5-year	18	18.1	0.1	$4
	1 in 10-year	18.1	18.6	0.5	$209
Dairy 2	1 in 5-year	16.9	18.7	1.8	$820

For the Mixed Cropping farm the scheme storage creates an increased EBITDA of $369 per hectare.

When the farm system is optimised for the Mixed Cropping farm it creates an increased EBITDA of $73,851 or $369 per hectare.

The changes made included:

- Increasing the barley crop yield
- Selling additional baleage to maximise the benefits from the extra pasture grown
- Increasing the number of R1 and R2 animals on-farm for May-May grazing

A water supply reliability report by Macfarlane Rural Business (MRB)[6] in 2011 showed with an increase in reliability from 80% to 95% the crop yield also increased. For examples:

- Wheat yield increases of 1.2 tonnes/ hectare
- Seed crop yield increases of 0.2 tonnes/ hectare
- Potato yield increases of 3 tonnes/ hectare
- Non-dairy pasture production increases of 2.2 tonnes/ hectare

The MRB report was used to help inform the farm system optimisation for the Mixed Cropping farm given the soil water deficit data provided was assessed as not accurate.

For Dairy Support 1 and 2 the scheme storage creates an average increased EBITDA of $322 per hectare.

For the two dairy support farms the dry matter production increased by 2.1 and 3 tonnes per hectare, the equivalent of 9 and 12 bales of baleage. Depending on the farming system the increased feed supply can be sold or used to increase livestock production during late summer and autumn.

When the farm system is optimised for Dairy Support 1, it creates an increased EBITDA of $72,715 or $449 per hectare.

The changes made included:

- Removing a green oat crop to better utilise the extra pasture grown on-farm
- Selling additional baleage to maximise the extra pasture grown

When the farm system is optimised for Dairy Support 2, it creates an increased EBITDA of $17,668 or $194 per hectare.

The changes made included:

- Increasing the stock levels to utilise the increased pasture production
- Selling additional baleage to maximise the extra pasture grown

For Dairy 1 the scheme storage creates an increased EBITDA $4 per hectare for a 1 in 5-year drought reliability scenario and $209 for a 1 in 10-year.

For Dairy 1 the dry matter production for a 1 in 5-year drought reliability scenario remains almost unchanged (0.1 tonne per hectare increase). For the 1 in 10-year scenario it increases to 0.5 tonnes per hectare, the equivalent of 2 bales of baleage.

When the farm system is optimised for Dairy 1, the 1 in 5-year scenario results in an increased EBITDA of $1,154 or $4 per hectare and the 1 in 10-year $61,520 or $209 per hectare.

[6] On farm impact of variation in reliability, 2011, MRB report for Environment Canterbury

The changes made included:

- Cutting additional spring baleage
- Reducing the amount of bought-in supplementary feed

Despite the limited increase in EBITDA for a 1 in 5-year scenario, the farm owners commented they were very supportive of scheme storage as it provided them with increased reliability and therefore certainty. The additional scheme storage in combination with their existing on-farm storage, provided them with a guaranteed water supply in all but the very driest of years, and this meant they could invest in their business with increased confidence.

For Dairy 2 the scheme storage creates an increased EBITDA of $820 per hectare.

For Dairy 2 the dry matter production increased by 1.8 tonnes per hectare, the equivalent of 8 bales of baleage. The increased feed supply can be used to offset the cost of bought-in feed and increase Milk Solids (MS) production during late summer and autumn.

When the farm system is optimised for Dairy 2, it results in an increased EBITDA of $233,572 or $820 per hectare.

The changes made included:

- Culling cows later (none in February and the majority in April and May)
- Shifting the dry off date back by a week
- Removing the additional baleage fed over summer in the current system
- Increasing MS during the summer months to sit above 1.5 kg per cow (the farms trigger to cull or move to once-a-day milking)

Overall, the MS per hectare increased from 1,138 kg to 1,231kg, and per cow from 362 kg to 392 kg.

Scheme Storage Benefits - Increased Minimum Flow

Based on the 1 in 5-year drought reliability scenario, the increased water supply reliability provided by the scheme storage resulted in increased production and a higher EBITDA for all farms

A summary of the production benefits and increased EBITDA from the scheme storage based on the increased minimum flow is provided in table 3 and the FARMAX outputs in Appendix 2.

Table 3: Summary of scheme storage economic benefits under an increased minimum flow regime

Farm	Scenario	Pasture Production (tonnes/DM/ha)			EBITDA ($/ha)
		No Scheme Storage	With Scheme Storage	Increased Production	
Mixed Cropping	1 in 5-year	14.5	17.7	3.2	$288
Dairy Support 1	1 in 5-year	14.3	16.7	2.4	$419
Dairy Support 2	1 in 5-year	14.5	17.7	3.2	$312
Dairy 1	1 in 5-year	17.6	18	0.4	$142
	1 in 10-year	17.1	18.3	1.2	$503
Dairy 2	1 in 5-year	15.6	17.8	2.2	$542

For the Mixed Cropping farm the scheme storage creates an increased EBITDA of $288 per hectare.

When the farm system is optimised for the Mixed Cropping farm it creates an increased EBITDA of $57,576 or $288 per hectare.

The changes included:

- Increasing the barley crop yield
- Selling additional baleage to maximise the benefits from the extra pasture grown

The MRB report was again used to help inform the farm system optimisation given the soil water deficit data provided was assessed as not accurate.

For Dairy Support 1 and 2 the scheme storage creates an average increased EBITDA of $337 per hectare.

For the two dairy support farms the dry matter production increased by 2.4 and 3.2 tonnes per hectare, the equivalent of 10 and 13 bales of baleage. Depending on the farming system the increased feed supply can be sold or used to increase livestock production during late summer and autumn.

When the farm system is optimised for Dairy Support 1, it creates an increased EBITDA of $67,889 or $419 per hectare.

The changes made included:

- Reducing the amount of bought-in supplementary feed
- Removing a green oat crop to better utilise the extra pasture grown on-farm
- Selling additional baleage to maximise the extra pasture grown

For Dairy Support 2 the increased minimum flow regime meant that the new starting point showed a financial loss ($-10,077) due to the decreased stock numbers to match the reduced pasture supply. With the scheme storage the operation was restored to a positive EBITDA for the 1 in 5-year scenario.

When the farm system is optimised for Dairy Support 2, it creates an increased EBITDA of $28,412 or $312 per hectare.

The changes made included:

- Restoring the stock levels to utilise the increased pasture production
- Selling additional baleage to maximise the extra pasture grown

For Dairy 1 the scheme storage creates an increased EBITDA $142 per hectare.

For Dairy 1 the dry matter production increased by 0.4 tonnes per hectare the equivalent of 2 bales of baleage.

When the farm system is optimised for Dairy 1, the 1 in 5-year scenario results in an increased EBITDA of $41,751 or $142 per hectare.

The changes made included:

- Cutting additional spring baleage
- Reducing the amount of bought-in supplementary feed
- Increasing milk solids

For Dairy 2 the scheme storage creates an increased EBITDA of $542 per hectare.

For Dairy 2 the dry matter production increased by 2.2 tonnes per hectare, the equivalent of 9 bales of baleage. The increased feed supply can be used to offset the cost of bought-in feed and increase MS production during late summer and autumn.

When the farm system is optimised for Dairy 2, it results in an increased EBITDA of $154,423 or $542 per hectare.

The changes made included:

- Removing additional baleage that was fed to the cows over summer and utilising the increased pasture production instead (February through April)
- Drying off on 15 May but maintaining the twice a day milking schedule longer, only shifting to once-a-day milking when MS drop below 1.5 kg per cow
- Culling cows later

The Importance of Water Supply Reliability

The PDP report shows that to achieve 95 per cent long term average water supply reliability WIL shareholders require a combination of scheme and on-farm storage.

The scheme storage will provide greatly improved reliability for shareholders, increasing it to almost 94 per cent. This will then allow individual shareholders to decide the level of additional reliability they require for their farming system, noting 95 per cent is widely accepted as the level required to provide business confidence and certainty.

A 2011 analysis by MRB demonstrated that an increase in reliability from 80 to 95 per cent, significantly de-risked pastoral and cropping based farm systems. It resulted in increased irrigator confidence and investment, alongside certainty of production and increased profitability – a change in EBIT of $430 per hectare for existing land use, and $830 per hectare where land use was optimised over time.

These previous findings are consistent with the results from the production and economic analysis in this report.

Climate Change Resilience

High River Flow Events

Scheme storage will help mitigate the increased likelihood of spring water supply restrictions from high river flow events.

In November and December 2019, the scheme intake was impacted for a period of 2 weeks due to a high river flow event. Figure 5 shows the river flows and scheme intake during this period. Scheme storage would have minimised the production impacts for farms without on-farm storage. Climate change predictions are for the monthly mean river flows to increase significantly during spring (up to 50 percent). This has the potential to result in more frequent spring high-flow events.

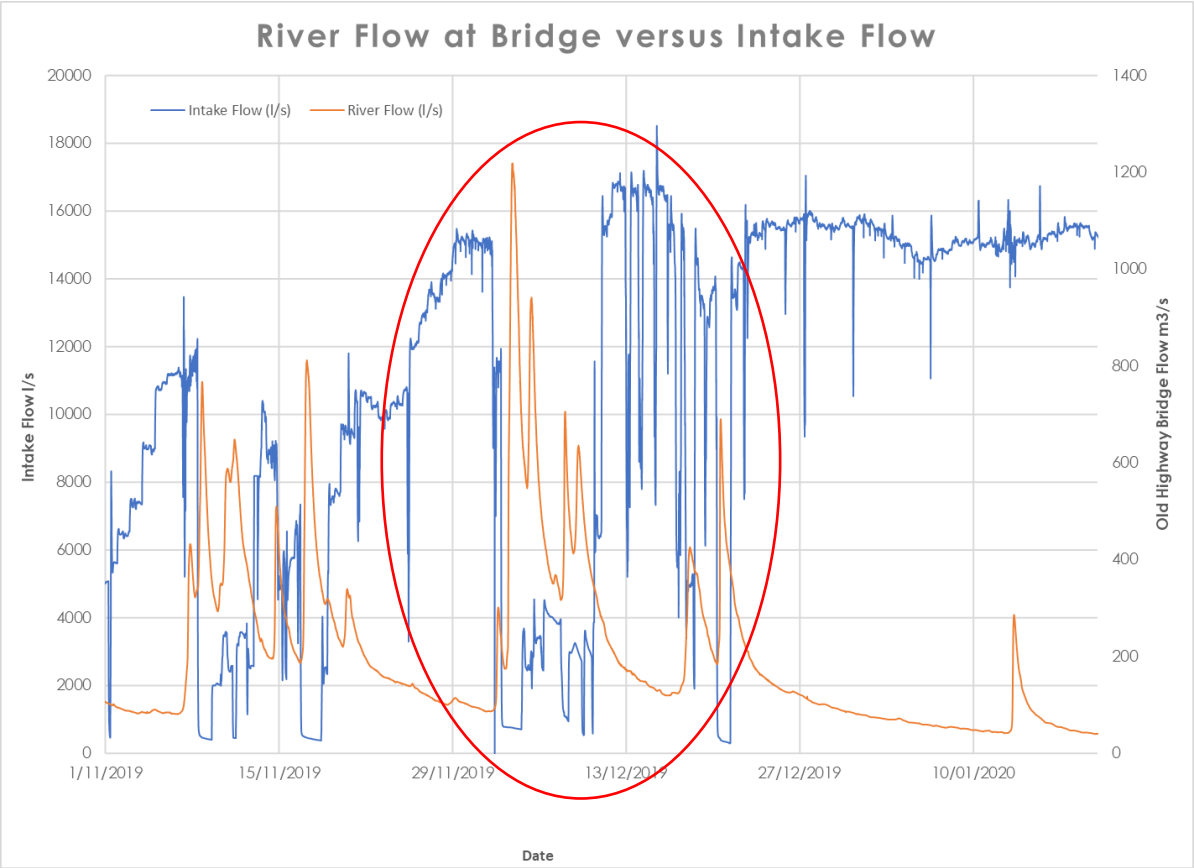

Figure 5: High flow river event impact upon the WIL intake during spring 2019

Increased Temperatures and Drought

The benefits of the scheme storage will be realised more frequently under climate change predictions - increased temperatures and greater likelihood of drought.

An increase in potential evapotranspiration is predicted on the Waimakariri plains of 100-120 mm by 2040 and 220-260 mm by 2090.

In the summer and autumn this will increase plant water demand by up to 10-11 mm and 20-22 mm a month in 2040 and 2090 respectively[7][8][9]. This is at the time when scheme water supply restrictions are most likely.

Climate change predictions are for the existing scheme water take reliability to remain the same or slightly decrease for summer and autumn, i.e., shareholders will continue to face the same level or slightly more scheme water supply restrictions.

Land Use Opportunity

Increased water supply reliability from scheme storage will provide irrigators with farm diversification and new land use opportunities.

Arable and horticultural crops require a reliable water supply at critical growth stages to ensure quality crop production and yields.

A water supply reliability of at least 90 per cent is required for a resilient irrigated arable cropping system, and over 95 per cent for seed production, vegetable cropping and permanent horticulture due to the higher capital and operational costs. Supply contracts for high value cropping and permanent horticulture are only able to be secured if a highly reliable water supply is available.

The water supply reliability data shows for a long-term average reliability scenario the scheme storage will provide almost 94 per cent reliability, and in combination with on-farm storage can provide above 95 per cent reliability.

Water Use Efficiency and Nutrient Management

Scheme storage will support improvements in water use efficiency and help decrease on-farm irrigation operation costs.

Water use efficiency is highly correlated with water supply reliability. High reliability in combination with modern spray irrigation systems and accurate soil moisture monitoring, are key for irrigators to change their irrigation strategy from a 'just in case' to a 'just in time' approach.

This means applying water as and when it is required rather than on a precautionary basis. Increased water use efficiency decreases the depth of water applied, alongside the total number of operating hours and maintenance costs.

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[7] Projected climate and river flow for the Waimakariri catchment for 2040s and 2090s, 2011, NIWA report for Aqualinc Research
[8] Uncertainty of climate change projections for Waimakariri River flows, 2012, NIWA report for Environment Canterbury
[9] Climate change projections for the Canterbury region, 2020, NIWA report for Environment Canterbury

Reducing the depth of water applied by 50 mm per hectare over the irrigation season typically decreases operational costs by $25 hectare for a surface water take[10] and operating hours by 240 per season (approximately 10%)[11].

Scheme storage will enable improved nutrient management and provide an option to help irrigators achieve their future nitrogen loss reduction targets.

Improved nutrient management is closely correlated with water supply reliability. High reliability enables increased water use efficiency, which minimises drainage losses (and therefore nitrogen leaching) from both irrigation and rainfall during the irrigation season. In addition, as plant growth is less impacted by periods of water stress, high reliability results in the nutrients applied being used more effectively.

A study by Aqualinc in 2018[12] demonstrated that an efficient irrigation strategy can on average reduce nitrogen losses by 27%. The strategy required accurate soil moisture monitoring, modern spray irrigation systems with a relatively short return period, and a very reliable irrigation water supply. Scheme storage has the potential to support irrigators achieve the likely future nutrient reductions required in the Waimakariri zone (20% by 2030 and 30% by 2040 for dairy properties and 5% and 10% for others).

Scheme Annual Charge

The increased annual charge for the scheme storage is consistent with other irrigation schemes of a similar scale that have undergone modernisation and will provide WIL shareholders with a similar level of reliability.

The WIL annual water charge including the scheme storage is estimated at $290 per hectare. Table 4 shows this is within the range of other comparable irrigation scheme annual charges ($58 - $349). The annual charges for the three recently built pressure piped irrigation schemes range from $809 to $1,082 per hectare.

The WIL annual water charge consists of the current annual charge of $135 per hectare plus an estimated additional scheme storage annual charge of $155. A detailed break-down of these costs can be found in the financial documentation for the scheme storage.

[10] Pumping cost of $0.05 per m^3
[11] Irrigation system capacity 5 mm/day and 500 mm seasonal application depth
[12] Reducing nutrient losses through improving irrigation efficiency, 2018, Aqualinc report for the Fertiliser Association

Table 4: Canterbury and North Otago Irrigation Scheme Annual Charges 2020/21 Season

Scheme	Reliability	Pressure Pipe or Open Channel	Storage	Annual Charge
1	90%	Pressure Pipe	No	$279
1 + Storage	95%	Pressure Pipe	Yes	$349 (estimated)
2	95%	Pressure Pipe	Yes	$895
3	95%	Pressure Pipe	Yes	$1,082
4	95%	Pressure Pipe	No	$291
5	95%	Pressure Pipe	No	$163
6	95%	Open Channel	Yes	$81
7	95%	Open Channel	Yes	$252
8	95%	Open Channel	No	$69
9	95%	Pressure Pipe	No	$809
10	95%	Open Channel	No	$58
WIL[13]	***85%***	***Open Channel***	***No***	***$135***
WIL + Storage[14]	***94%***	***Open Channel***	***Yes***	***$290***

[13] Without on-farm storage
[14] Scheme storage only

Appendix 1: Cost of Scheme Storage

Table 5 shows the water charges used in the FARMAX modelling for each farm.

The existing charges relate to the current WIL annual charges, and the Additional Charge to the proposed scheme storage.

Table 5: Irrigation water supply charges

	Shares	Annual Cost		Monthly Cost	
		Existing Charge	Additional Charge	Existing Charge	Additional Charge
Dairy Support 1	1002	$19,258	$21,824	$1,605	$1,819
Dairy 1	2081	$39,997	$45.324	$3,333	$3,777
Dairy 2	837	$16,087	$18,230	$1,341	$1,519
Dairy Support 2	385	$7,400	$8,385	$617	$699
Mixed Cropping	678	$13,031	$14,767	$1,086	$1,231

Appendix 2: FARMAX Analysis

FARMAX Analysis – Current Minimum Flow

Table 6: Mixed Cropping – Current

			$ Total	$/Farm ha	$/SU
Revenue	Sheep	Sales - Purchases	8,120	41	2.9
		Wool	1,399	7	0.5
		Total	**9,519**	**48**	**3.4**
	Beef	Contract Grazing	373,611	1,868	134.7
		Total	**373,611**	**1,868**	**134.7**
	Crop & Feed	Cash Crops	31,971	160	11.5
		Surplus Feeds	64,930	325	23.4
		Capital Value Change	24	0	0.0
		Total	**96,925**	**485**	**34.9**
	Total Revenue		**480,056**	**2,400**	**173.0**
Expenses	Wages	Wages	20,000	100	7.2
		Management Wage	52,000	260	18.7
	Stock	Animal Health	1,000	5	0.4
		Shearing	400	2	0.1
	Feed/Crop/Grazing	Conservation	20,000	100	7.2
		Cash Crops	13,000	65	4.7
		Forage Crops	40,000	200	14.4
		Purchased Feeds	19,000	95	6.8
	Fertiliser	Fertiliser (Excl. N & Lime)	48,000	240	17.3
		Lime	2,500	12	0.9
	Other Farm Working	Irrigation Charges	56,501	283	20.4
		Weed & Pest Control	14,100	70	5.1
		Fuel	19,500	97	7.0
		Repairs & Maintenance	35,700	178	12.9
		Freight & Cartage	7,500	37	2.7
		Electricity	17,800	89	6.4
	Standing Charges	Administration Expenses	13,000	65	4.7
		Insurance	15,000	75	5.4
		ACC Levies	1,000	5	0.4
		Rates	3,750	19	1.4
	Total Farm Working Expense		**399,751**	**1,999**	**144.1**
	Depreciation		0	0	0.0
	Total Farm Expenses		**399,751**	**1,999**	**144.1**
Economic Farm Surplus (EFS)			**80,305**	**402**	**28.9**
Farm Profit before Tax			**80,305**	**402**	**28.9**

Table 7: Mixed Cropping – Optimised

			$ Total	$/Farm ha	$/SU
Revenue	Sheep	Sales - Purchases	8,120	41	2.3
		Wool	1,399	7	0.4
		Total	**9,519**	**48**	**2.7**
	Beef	Contract Grazing	439,011	2,195	126.8
		Total	**439,011**	**2,195**	**126.8**
	Crop & Feed	Cash Crops	39,964	200	11.5
		Surplus Feeds	80,195	401	23.2
		Capital Value Change	-16	0	0.0
		Total	**120,143**	**601**	**34.7**
	Total Revenue		**568,674**	**2,843**	**164.2**
Expenses	Wages	Wages	20,000	100	5.8
		Management Wage	52,000	260	15.0
	Stock	Animal Health	1,000	5	0.3
		Shearing	400	2	0.1
	Feed/Crop/Grazing	Conservation	20,000	100	5.8
		Cash Crops	13,000	65	3.8
		Forage Crops	40,000	200	11.6
		Purchased Feeds	19,000	95	5.5
	Fertiliser	Fertiliser (Excl. N & Lime)	48,000	240	13.9
		Lime	2,500	12	0.7
	Other Farm Working	Irrigation Charges	56,501	283	16.3
		Weed & Pest Control	14,100	70	4.1
		Fuel	19,500	97	5.6
		Repairs & Maintenance	35,700	178	10.3
		Freight & Cartage	7,500	37	2.2
		Electricity	17,800	89	5.1
		Other Expenses	14,767	74	4.3
	Standing Charges	Administration Expenses	13,000	65	3.8
		Insurance	15,000	75	4.3
		ACC Levies	1,000	5	0.3
		Rates	3,750	19	1.1
	Total Farm Working Expense		**414,518**	**2,073**	**119.7**
	Depreciation		0	0	0.0
	Total Farm Expenses		**414,518**	**2,073**	**119.7**
Economic Farm Surplus (EFS)			**154,156**	**771**	**44.5**
Farm Profit before Tax			**154,156**	**771**	**44.5**

Table 8: Dairy Support 1 - Current

			$ Total	$/Farm ha	$/SU
Revenue	Beef	Contract Grazing	323,122	1,995	197.8
		Total	**323,122**	**1,995**	**197.8**
	Crop & Feed	Cash Crops	125,580	775	76.9
		Total	**125,580**	**775**	**76.9**
	Total Revenue		**448,702**	**2,770**	**274.6**
Expenses	Stock	Animal Health	2,531	16	1.5
	Feed/Crop/Grazing	Conservation	36,500	225	22.3
		Cash Crops	83,720	517	51.2
		Forage Crops	45,250	279	27.7
		Regrassing	72,000	444	44.1
	Fertiliser	Fertiliser (Excl. N & Lime)	26,650	165	16.3
		Nitrogen	29,558	182	18.1
	Other Farm Working	Irrigation Charges	19,258	119	11.8
		Fuel	2,250	14	1.4
		Repairs & Maintenance	12,350	76	7.6
		Electricity	33,350	206	20.4
	Standing Charges	Administration Expenses	3,850	24	2.4
		Insurance	8,537	53	5.2
		Rates	9,290	57	5.7
	Total Farm Working Expense		**385,093**	**2,377**	**235.7**
	Depreciation		0	0	0.0
	Total Farm Expenses		**385,093**	**2,377**	**235.7**
Economic Farm Surplus (EFS)			**63,609**	**393**	**38.9**
Farm Profit before Tax			**63,609**	**393**	**38.9**

Table 9: Dairy Support 1 – Optimised

			$ Total	$/Farm ha	$/SU
Revenue	Beef	Contract Grazing	323,122	1,995	250.5
		Total	**323,122**	**1,995**	**250.5**
	Crop & Feed	Cash Crops	37,704	233	29.2
		Surplus Feeds	39,900	246	30.9
		Capital Value Change	31	0	0.0
		Total	**77,635**	**479**	**60.2**
	Total Revenue		**400,757**	**2,474**	**310.7**
Expenses	Stock	Animal Health	2,531	16	2.0
	Feed/Crop/Grazing	Conservation	36,500	225	28.3
		Cash Crops	25,136	155	19.5
		Forage Crops	30,000	185	23.3
	Fertiliser	Fertiliser (Excl. N & Lime)	30,000	185	23.3
		Nitrogen	29,558	182	22.9
	Other Farm Working	Irrigation Charges	19,258	119	14.9
		Fuel	2,250	14	1.7
		Repairs & Maintenance	12,350	76	9.6
		Electricity	33,350	206	25.9
		Other Expenses	21,824	135	16.9
	Standing Charges	Administration Expenses	3,850	24	3.0
		Insurance	8,537	53	6.6
		Rates	9,290	57	7.2
	Total Farm Working Expense		**264,434**	**1,632**	**205.0**
	Depreciation		0	0	0.0
	Total Farm Expenses		**264,434**	**1,632**	**205.0**
Economic Farm Surplus (EFS)			**136,324**	**842**	**105.7**
Farm Profit before Tax			**136,324**	**842**	**105.7**

Table 10: Dairy Support 2 - Current

			$ Total	$/Farm ha	$/SU
Revenue	Beef	Sales - Purchases	34,336	377	19.7
		Contract Grazing	218,943	2,406	125.5
		Total	**253,279**	**2,783**	**145.2**
	Total Revenue		**253,279**	**2,783**	**145.2**
Expenses	Wages	Wages	40,000	440	22.9
		Management Wage	1,273	14	0.7
	Stock	Animal Health	1,500	16	0.9
	Feed/Crop/Grazing	Conservation	29,540	325	16.9
		Forage Crops	24,810	273	14.2
		Purchased Feeds	2,960	33	1.7
		Regrassing	31,200	343	17.9
	Fertiliser	Fertiliser (Excl. N & Lime)	7,962	87	4.6
		Nitrogen	7,599	84	4.4
		Lime	519	6	0.3
	Other Farm Working	Irrigation Charges	7,400	81	4.2
		Weed & Pest Control	3,286	36	1.9
		Vehicle Expenses	10,000	110	5.7
		Fuel	9,604	106	5.5
		Repairs & Maintenance	8,723	96	5.0
		Freight & Cartage	3,209	35	1.8
		Electricity	34,751	382	19.9
	Standing Charges	Administration Expenses	2,745	30	1.6
		Insurance	8,521	94	4.9
		ACC Levies	569	6	0.3
		Rates	3,902	43	2.2
	Total Farm Working Expense		**240,072**	**2,638**	**137.7**
	Depreciation		0	0	0.0
	Total Farm Expenses		**240,072**	**2,638**	**137.7**
Economic Farm Surplus (EFS)			**13,207**	**145**	**7.6**
Farm Profit before Tax			**13,207**	**145**	**7.6**

Table 11: Dairy Support 2 – Optimised

			$ Total	$/Farm ha	$/SU
Revenue	Beef	Sales - Purchases	34,243	376	19.7
		Contract Grazing	218,943	2,406	125.8
		Total	**253,186**	**2,782**	**145.5**
	Crop & Feed	Surplus Feeds	17,600	193	10.1
		Capital Value Change	0	0	0.0
		Total	**17,600**	**193**	**10.1**
	Total Revenue		**270,786**	**2,976**	**155.6**
Expenses	Wages	Wages	40,000	440	23.0
		Management Wage	1,270	14	0.7
	Stock	Animal Health	1,497	16	0.9
	Feed/Crop/Grazing	Conservation	21,000	231	12.1
		Forage Crops	24,810	273	14.3
		Purchased Feeds	2,960	33	1.7
		Regrassing	31,200	343	17.9
	Fertiliser	Fertiliser (Excl. N & Lime)	7,962	87	4.6
		Nitrogen	7,599	84	4.4
		Lime	519	6	0.3
	Other Farm Working	Irrigation Charges	7,400	81	4.3
		Weed & Pest Control	3,286	36	1.9
		Vehicle Expenses	10,000	110	5.7
		Fuel	9,604	106	5.5
		Repairs & Maintenance	8,723	96	5.0
		Freight & Cartage	3,209	35	1.8
		Electricity	34,751	382	20.0
		Other Expenses	8,385	92	4.8
	Standing Charges	Administration Expenses	2,745	30	1.6
		Insurance	8,521	94	4.9
		ACC Levies	569	6	0.3
		Rates	3,902	43	2.2
	Total Farm Working Expense		**239,911**	**2,636**	**137.9**
	Depreciation		0	0	0.0
	Total Farm Expenses		**239,911**	**2,636**	**137.9**
Economic Farm Surplus (EFS)			**30,875**	**339**	**17.7**
Farm Profit before Tax			**30,875**	**339**	**17.7**

Table 12: Dairy 1 – Current (1 in 5-year)

			$ Total	$/Farm ha	$/cow	$/kg MS
Revenue	Stock	Net Milk Sales - this season	2,326,887	7,888	2,909	7.15
		Net Milk Sales - last season	0	0	0	0.00
		Net Milk Sales - dividend	0	0	0	0.00
		Net Livestock Sales	121,542	412	152	0.37
		Contract Grazing	0	0	0	0.00
		Change in Livestock Value	0	0	0	0.00
		Total	**2,448,429**	**8,300**	**3,061**	**7.52**
	Crop & Feed	Surplus Feeds	6,281	21	8	0.02
		Capital Value Change	2,670	9	3	0.01
		Total	8,951	30	11	0.03
	Total Revenue		**2,457,380**	**8,330**	**3,072**	**7.55**
Expenses	Wages	Wages	230,400	781	288	0.71
		Management Wage	32,176	109	40	0.10
	Stock	Animal Health	64,209	218	80	0.20
		Breeding	24,274	82	30	0.07
		Farm Dairy	11,726	40	15	0.04
		Electricity	30,000	102	38	0.09
	Feed/Crop	Pasture Conserved	63,840	216	80	0.20
		Feed Crop	79,100	268	99	0.24
		Bought Feed	78,393	266	98	0.24
		Calf Feed	4,422	15	6	0.01
	Grazing	Grazing	159,163	540	199	0.49
		Run-Off Lease	22,258	75	28	0.07
		Owned Run-Off Adj.	19,526	66	24	0.06
	Other Farm Working	Fertiliser (Excl. N)	260,000	881	325	0.80
		Irrigation	105,000	356	131	0.32
		Regrassing	13,200	45	17	0.04
		Weed & Pest Control	30,000	102	38	0.09
		Vehicle Expenses	27,488	93	34	0.08
		Fuel	22,742	77	28	0.07
		R&M Land/Buildings	38,350	130	48	0.12
		R&M Plant/Equipment	60,437	205	76	0.19
		Freight & Cartage	28,397	96	35	0.09
	Overheads	Administration Expenses	44,250	150	55	0.14
		Insurance	28,258	96	35	0.09
		ACC Levies	8,823	30	11	0.03
		Rates	26,895	91	34	0.08
	Total Farm Working Expenses		**1,513,327**	**5,130**	**1,892**	**4.65**
	Depreciation		0	0	0	0.00
	Total Farm Expenses		**1,513,327**	**5,130**	**1,892**	**4.65**
Economic Farm Surplus (EFS)			**944,053**	**3,200**	**1,180**	**2.90**
Farm Profit before Tax			**944,053**	**3,200**	**1,180**	**2.90**

Table 13: Dairy1 – Optimised (1 in 5-year)

			$ Total	$/Farm ha	$/cow	$/kg MS
Revenue	Stock	Net Milk Sales - this season	2,295,244	7,780	2,869	7.15
		Net Milk Sales - last season	0	0	0	0.00
		Net Milk Sales - dividend	0	0	0	0.00
		Net Livestock Sales	118,925	403	149	0.37
		Contract Grazing	0	0	0	0.00
		Change in Livestock Value	0	0	0	0.00
		Total	**2,414,169**	**8,184**	**3,018**	**7.52**
	Crop & Feed	Surplus Feeds	50,465	171	63	0.16
		Capital Value Change	80	0	0	0.00
		Total	50,545	171	63	0.16
	Total Revenue		**2,464,715**	**8,355**	**3,081**	**7.68**
Expenses	Wages	Wages	230,400	781	288	0.72
		Management Wage	32,176	109	40	0.10
	Stock	Animal Health	64,811	220	81	0.20
		Breeding	24,274	82	30	0.08
		Farm Dairy	11,922	40	15	0.04
		Electricity	30,000	102	38	0.09
	Feed/Crop	Pasture Conserved	26,400	89	33	0.08
		Feed Crop	79,100	268	99	0.25
		Bought Feed	76,160	258	95	0.24
		Calf Feed	4,422	15	6	0.01
	Grazing	Grazing	159,163	540	199	0.50
		Run-Off Lease	22,258	75	28	0.07
		Owned Run-Off Adj.	19,261	65	24	0.06
	Other Farm Working	Fertiliser (Excl. N)	260,000	881	325	0.81
		Irrigation	105,000	356	131	0.33
		Regrassing	13,200	45	17	0.04
		Weed & Pest Control	30,000	102	38	0.09
		Vehicle Expenses	27,488	93	34	0.09
		Fuel	22,742	77	28	0.07
		R&M Land/Buildings	38,350	130	48	0.12
		R&M Plant/Equipment	60,437	205	76	0.19
		Freight & Cartage	28,397	96	35	0.09
		Other Expenses	45,325	154	57	0.14
	Overheads	Administration Expenses	44,250	150	55	0.14
		Insurance	28,258	96	35	0.09
		ACC Levies	8,823	30	11	0.03
		Rates	26,895	91	34	0.08
	Total Farm Working Expenses		**1,519,512**	**5,151**	**1,899**	**4.73**
	Depreciation		0	0	0	0.00
	Total Farm Expenses		**1,519,512**	**5,151**	**1,899**	**4.73**
Economic Farm Surplus (EFS)			**945,203**	**3,204**	**1,182**	**2.94**
Farm Profit before Tax			**945,203**	**3,204**	**1,182**	**2.94**

Table 14: Dairy1 – Current (1 in 10-year)

			$ Total	$/Farm ha	$/cow	$/kg MS
Revenue	Stock	Net Milk Sales - this season	2,361,488	8,005	2,952	7.15
		Net Milk Sales - last season	0	0	0	0.00
		Net Milk Sales - dividend	0	0	0	0.00
		Net Livestock Sales	123,891	420	155	0.38
		Contract Grazing	0	0	0	0.00
		Change in Livestock Value	-26,532	-90	-33	-0.08
		Total	**2,458,846**	**8,335**	**3,074**	**7.44**
	Crop & Feed	Surplus Feeds	6,281	21	8	0.02
		Capital Value Change	2,670	9	3	0.01
		Total	8,951	30	11	0.03
	Total Revenue		**2,467,797**	**8,365**	**3,085**	**7.47**
Expenses	Wages	Wages	230,400	781	288	0.70
		Management Wage	32,176	109	40	0.10
	Stock	Animal Health	63,327	215	79	0.19
		Breeding	24,274	82	30	0.07
		Farm Dairy	11,726	40	15	0.04
		Electricity	30,000	102	38	0.09
	Feed/Crop	Pasture Conserved	63,840	216	80	0.19
		Feed Crop	79,100	268	99	0.24
		Bought Feed	78,393	266	98	0.24
		Calf Feed	3,639	12	5	0.01
	Grazing	Grazing	154,766	525	193	0.47
		Run-Off Lease	22,258	75	28	0.07
		Owned Run-Off Adj.	19,817	67	25	0.06
	Other Farm Working	Fertiliser (Excl. N)	260,000	881	325	0.79
		Irrigation	105,000	356	131	0.32
		Regrassing	13,200	45	17	0.04
		Weed & Pest Control	30,000	102	38	0.09
		Vehicle Expenses	27,488	93	34	0.08
		Fuel	22,742	77	28	0.07
		R&M Land/Buildings	38,350	130	48	0.12
		R&M Plant/Equipment	60,437	205	76	0.18
		Freight & Cartage	28,397	96	35	0.09
	Overheads	Administration Expenses	44,250	150	55	0.13
		Insurance	28,258	96	35	0.09
		ACC Levies	8,823	30	11	0.03
		Rates	26,895	91	34	0.08
	Total Farm Working Expenses		**1,507,556**	**5,110**	**1,884**	**4.56**
	Depreciation		0	0	0	0.00
	Total Farm Expenses		**1,507,556**	**5,110**	**1,884**	**4.56**
Economic Farm Surplus (EFS)			**960,242**	**3,255**	**1,200**	**2.91**
Farm Profit before Tax			**960,242**	**3,255**	**1,200**	**2.91**

Table 15: Dairy 1 – Optimised (1 in 10-year)

			$ Total	$/Farm ha	$/cow	$/kg MS
Revenue	Stock	Net Milk Sales - this season	2,367,690	8,026	2,960	7.15
		Net Milk Sales - last season	0	0	0	0.00
		Net Milk Sales - dividend	0	0	0	0.00
		Net Livestock Sales	123,072	417	154	0.37
		Contract Grazing	0	0	0	0.00
		Change in Livestock Value	0	0	0	0.00
		Total	**2,490,762**	**8,443**	**3,113**	**7.52**
	Crop & Feed	Surplus Feeds	51,725	175	65	0.16
		Capital Value Change	62	0	0	0.00
		Total	51,788	176	65	0.16
	Total Revenue		**2,542,549**	**8,619**	**3,178**	**7.68**
Expenses	Wages	Wages	230,400	781	288	0.70
		Management Wage	32,176	109	40	0.10
	Stock	Animal Health	64,816	220	81	0.20
		Breeding	24,274	82	30	0.07
		Farm Dairy	11,925	40	15	0.04
		Electricity	30,000	102	38	0.09
	Feed/Crop	Pasture Conserved	27,060	92	34	0.08
		Feed Crop	79,100	268	99	0.24
		Bought Feed	76,160	258	95	0.23
		Calf Feed	4,422	15	6	0.01
	Grazing	Grazing	159,163	540	199	0.48
		Run-Off Lease	22,258	75	28	0.07
		Owned Run-Off Adj.	19,869	67	25	0.06
	Other Farm Working	Fertiliser (Excl. N)	260,000	881	325	0.79
		Irrigation	105,000	356	131	0.32
		Regrassing	13,200	45	17	0.04
		Weed & Pest Control	30,000	102	38	0.09
		Vehicle Expenses	27,488	93	34	0.08
		Fuel	22,742	77	28	0.07
		R&M Land/Buildings	38,350	130	48	0.12
		R&M Plant/Equipment	60,437	205	76	0.18
		Freight & Cartage	28,397	96	35	0.09
		Other Expenses	45,325	154	57	0.14
	Overheads	Administration Expenses	44,250	150	55	0.13
		Insurance	28,258	96	35	0.09
		ACC Levies	8,823	30	11	0.03
		Rates	26,895	91	34	0.08
	Total Farm Working Expenses		**1,520,788**	**5,155**	**1,901**	**4.59**
	Depreciation		0	0	0	0.00
	Total Farm Expenses		**1,520,788**	**5,155**	**1,901**	**4.59**
Economic Farm Surplus (EFS)			**1,021,762**	**3,464**	**1,277**	**3.09**
Farm Profit before Tax			**1,021,762**	**3,464**	**1,277**	**3.09**

Table 16: Dairy 2 - Current

			$ Total	$/Farm ha	$/cow	$/kg MS
Revenue	Stock	Net Milk Sales - this season	2,318,831	8,136	2,611	7.15
		Net Milk Sales - last season	0	0	0	0.00
		Net Milk Sales - dividend	0	0	0	0.00
		Net Livestock Sales	152,935	537	172	0.47
		Contract Grazing	0	0	0	0.00
		Change in Livestock Value	0	0	0	0.00
		Total	**2,471,766**	**8,673**	**2,784**	**7.62**
	Crop & Feed	Capital Value Change	45	0	0	0.00
		Total	45	0	0	0.00
	Total Revenue		**2,471,811**	**8,673**	**2,784**	**7.62**
Expenses	Wages	Wages	301,272	1,057	339	0.93
		Management Wage	35,715	125	40	0.11
	Stock	Animal Health	71,532	251	81	0.22
		Breeding	21,704	76	24	0.07
		Farm Dairy	12,443	44	14	0.04
		Electricity	36,861	129	42	0.11
	Feed/Crop	Bought Feed	51,680	181	58	0.16
		Calf Feed	5,058	18	6	0.02
	Grazing	Grazing	374,391	1,314	422	1.15
	Other Farm Working	Fertiliser (Excl. N)	150,235	527	169	0.46
		Irrigation	77,100	271	87	0.24
		Weed & Pest Control	9,054	32	10	0.03
		Vehicle Expenses	26,556	93	30	0.08
		Fuel	21,971	77	25	0.07
		R&M Land/Buildings	78,221	274	88	0.24
		R&M Plant/Equipment	58,388	205	66	0.18
		Freight & Cartage	27,434	96	31	0.08
	Overheads	Administration Expenses	64,105	225	72	0.20
		Insurance	27,300	96	31	0.08
		ACC Levies	8,524	30	10	0.03
		Rates	25,983	91	29	0.08
	Total Farm Working Expenses		**1,485,527**	**5,212**	**1,673**	**4.58**
	Depreciation		0	0	0	0.00
	Total Farm Expenses		**1,485,527**	**5,212**	**1,673**	**4.58**
Economic Farm Surplus (EFS)			**986,284**	**3,461**	**1,111**	**3.04**
Farm Profit before Tax			**986,284**	**3,461**	**1,111**	**3.04**

Table 17: Dairy 2 – Optimised

			$ Total	$/Farm ha	$/cow	$/kg MS
Revenue	Stock	Net Milk Sales - this season	2,508,586	8,802	2,825	7.15
		Net Milk Sales - last season	0	0	0	0.00
		Net Milk Sales - dividend	0	0	0	0.00
		Net Livestock Sales	157,495	553	177	0.45
		Contract Grazing	0	0	0	0.00
		Change in Livestock Value	0	0	0	0.00
		Total	**2,666,081**	**9,355**	**3,002**	**7.60**
	Crop & Feed	Capital Value Change	21	0	0	0.00
		Total	21	0	0	0.00
	Total Revenue		**2,666,102**	**9,355**	**3,002**	**7.60**
Expenses	Wages	Wages	301,272	1,057	339	0.86
		Management Wage	35,715	125	40	0.10
	Stock	Animal Health	73,448	258	83	0.21
		Breeding	21,704	76	24	0.06
		Farm Dairy	13,416	47	15	0.04
		Electricity	36,861	129	42	0.11
	Feed/Crop	Bought Feed	9,680	34	11	0.03
		Calf Feed	5,058	18	6	0.01
	Grazing	Grazing	355,989	1,249	401	1.01
	Other Farm Working	Fertiliser (Excl. N)	150,235	527	169	0.43
		Irrigation	77,100	271	87	0.22
		Weed & Pest Control	9,054	32	10	0.03
		Vehicle Expenses	26,556	93	30	0.08
		Fuel	21,971	77	25	0.06
		R&M Land/Buildings	78,221	274	88	0.22
		R&M Plant/Equipment	58,388	205	66	0.17
		Freight & Cartage	27,434	96	31	0.08
		Other Expenses	18,230	64	21	0.05
	Overheads	Administration Expenses	64,105	225	72	0.18
		Insurance	27,300	96	31	0.08
		ACC Levies	8,524	30	10	0.02
		Rates	25,983	91	29	0.07
	Total Farm Working Expenses		**1,446,246**	**5,075**	**1,629**	**4.12**
	Depreciation		0	0	0	0.00
	Total Farm Expenses		**1,446,246**	**5,075**	**1,629**	**4.12**
Economic Farm Surplus (EFS)			**1,219,856**	**4,280**	**1,374**	**3.48**
Farm Profit before Tax			**1,219,856**	**4,280**	**1,374**	**3.48**

FARMAX Analysis – Increased Minimum Flow

Table 18: Mixed Cropping – Current

			$ Total	$/Farm ha	$/SU
Revenue	Sheep	Sales - Purchases	8,120	41	3.2
		Wool	1,399	7	0.5
		Total	**9,519**	**48**	**3.7**
	Beef	Contract Grazing	353,991	1,770	137.9
		Total	**353,991**	**1,770**	**137.9**
	Crop & Feed	Cash Crops	31,971	160	12.5
		Surplus Feeds	64,930	325	25.3
		Capital Value Change	24	0	0.0
		Total	**96,925**	**485**	**37.7**
	Total Revenue		**460,436**	**2,302**	**179.3**
Expenses	Wages	Wages	20,000	100	7.8
		Management Wage	52,000	260	20.3
	Stock	Animal Health	1,000	5	0.4
		Shearing	400	2	0.2
	Feed/Crop/Grazing	Conservation	20,000	100	7.8
		Cash Crops	13,000	65	5.1
		Forage Crops	40,000	200	15.6
		Purchased Feeds	19,000	95	7.4
	Fertiliser	Fertiliser (Excl. N & Lime)	48,000	240	18.7
		Lime	2,500	12	1.0
	Other Farm Working	Irrigation Charges	56,501	283	22.0
		Weed & Pest Control	14,100	70	5.5
		Fuel	19,500	97	7.6
		Repairs & Maintenance	35,700	178	13.9
		Freight & Cartage	7,500	37	2.9
		Electricity	17,800	89	6.9
	Standing Charges	Administration Expenses	13,000	65	5.1
		Insurance	15,000	75	5.8
		ACC Levies	1,000	5	0.4
		Rates	3,750	19	1.5
	Total Farm Working Expense		**399,751**	**1,999**	**155.7**
	Depreciation		0	0	0.0
	Total Farm Expenses		**399,751**	**1,999**	**155.7**
Economic Farm Surplus (EFS)			**60,685**	**303**	**23.6**
Farm Profit before Tax			**60,685**	**303**	**23.6**

Table 19: Mixed Cropping – Optimised

			$ Total	$/Farm ha	$/SU
Revenue	Sheep	Sales - Purchases	8,120	41	3.0
		Wool	1,399	7	0.5
		Total	**9,519**	**48**	**3.5**
	Beef	Contract Grazing	370,341	1,852	135.2
		Total	**370,341**	**1,852**	**135.2**
	Crop & Feed	Cash Crops	39,964	200	14.6
		Surplus Feeds	112,875	564	41.2
		Capital Value Change	79	0	0.0
		Total	**152,918**	**765**	**55.8**
	Total Revenue		**532,779**	**2,664**	**194.5**
Expenses	Wages	Wages	20,000	100	7.3
		Management Wage	52,000	260	19.0
	Stock	Animal Health	1,000	5	0.4
		Shearing	400	2	0.1
	Feed/Crop/Grazing	Conservation	20,000	100	7.3
		Cash Crops	13,000	65	4.7
		Forage Crops	40,000	200	14.6
		Purchased Feeds	19,000	95	6.9
	Fertiliser	Fertiliser (Excl. N & Lime)	48,000	240	17.5
		Lime	2,500	12	0.9
	Other Farm Working	Irrigation Charges	56,501	283	20.6
		Weed & Pest Control	14,100	70	5.1
		Fuel	19,500	97	7.1
		Repairs & Maintenance	35,700	178	13.0
		Freight & Cartage	7,500	37	2.7
		Electricity	17,800	89	6.5
		Other Expenses	14,767	74	5.4
	Standing Charges	Administration Expenses	13,000	65	4.7
		Insurance	15,000	75	5.5
		ACC Levies	1,000	5	0.4
		Rates	3,750	19	1.4
	Total Farm Working Expense		**414,518**	**2,073**	**151.3**
	Depreciation		0	0	0.0
	Total Farm Expenses		**414,518**	**2,073**	**151.3**
Economic Farm Surplus (EFS)			**118,261**	**591**	**43.2**
Farm Profit before Tax			**118,261**	**591**	**43.2**

Table 20: Dairy Support 1 – Current

			$ Total	$/Farm ha	$/SU
Revenue	Beef	Contract Grazing	323,122	1,995	197.8
		Total	**323,122**	**1,995**	**197.8**
	Crop & Feed	Cash Crops	125,580	775	76.9
		Total	**125,580**	**775**	**76.9**
	Total Revenue		**448,702**	**2,770**	**274.6**
Expenses	Stock	Animal Health	2,531	16	1.5
	Feed/Crop/Grazing	Conservation	36,500	225	22.3
		Cash Crops	83,720	517	51.2
		Forage Crops	45,250	279	27.7
		Regrassing	72,000	444	44.1
	Fertiliser	Fertiliser (Excl. N & Lime)	26,650	165	16.3
		Nitrogen	29,558	182	18.1
	Other Farm Working	Irrigation Charges	19,258	119	11.8
		Fuel	2,250	14	1.4
		Repairs & Maintenance	12,350	76	7.6
		Electricity	33,350	206	20.4
	Standing Charges	Administration Expenses	3,850	24	2.4
		Insurance	8,537	53	5.2
		Rates	9,290	57	5.7
	Total Farm Working Expense		**385,093**	**2,377**	**235.7**
	Depreciation		0	0	0.0
	Total Farm Expenses		**385,093**	**2,377**	**235.7**
Economic Farm Surplus (EFS)			**63,609**	**393**	**38.9**
Farm Profit before Tax			**63,609**	**393**	**38.9**

Table 21: Dairy Support 1 – Optimised

			$ Total	$/Farm ha	$/SU
Revenue	Beef	Contract Grazing	249,504	1,540	187.5
		Total	**249,504**	**1,540**	**187.5**
	Crop & Feed	Cash Crops	215,415	1,330	161.9
		Surplus Feeds	28,560	176	21.5
		Capital Value Change	30,644	189	23.0
		Total	**274,618**	**1,695**	**206.4**
	Total Revenue		**524,122**	**3,235**	**393.8**
Expenses	Stock	Animal Health	2,119	13	1.6
	Feed/Crop/Grazing	Conservation	36,500	225	27.4
		Cash Crops	143,739	887	108.0
		Forage Crops	30,000	185	22.5
	Fertiliser	Fertiliser (Excl. N & Lime)	40,000	247	30.1
		Nitrogen	29,558	182	22.2
	Other Farm Working	Irrigation Charges	19,258	119	14.5
		Fuel	2,250	14	1.7
		Repairs & Maintenance	12,350	76	9.3
		Electricity	33,350	206	25.1
		Other Expenses	21,824	135	16.4
	Standing Charges	Administration Expenses	3,850	24	2.9
		Insurance	8,537	53	6.4
		Rates	9,290	57	7.0
	Total Farm Working Expense		**392,625**	**2,424**	**295.0**
	Depreciation		0	0	0.0
	Total Farm Expenses		**392,625**	**2,424**	**295.0**
Economic Farm Surplus (EFS)			**131,498**	**812**	**98.8**
Farm Profit before Tax			**131,498**	**812**	**98.8**

Table 22: Dairy Support 2 – Current

			$ Total	$/Farm ha	$/SU
Revenue	Beef	Sales - Purchases	34,336	377	21.3
		Contract Grazing	197,049	2,165	122.3
		Total	**231,385**	**2,543**	**143.6**
	Crop & Feed	Capital Value Change	18,360	202	11.4
		Total	**18,360**	**202**	**11.4**
	Total Revenue		**249,745**	**2,744**	**154.9**
Expenses	Wages	Wages	40,000	440	24.8
		Management Wage	1,177	13	0.7
	Stock	Animal Health	1,386	15	0.9
	Feed/Crop/Grazing	Conservation	46,540	511	28.9
		Forage Crops	24,810	273	15.4
		Purchased Feeds	5,920	65	3.7
		Regrassing	31,200	343	19.4
	Fertiliser	Fertiliser (Excl. N & Lime)	7,962	87	4.9
		Nitrogen	7,599	84	4.7
		Lime	519	6	0.3
	Other Farm Working	Irrigation Charges	7,400	81	4.6
		Weed & Pest Control	3,286	36	2.0
		Vehicle Expenses	10,000	110	6.2
		Fuel	9,604	106	6.0
		Repairs & Maintenance	8,723	96	5.4
		Freight & Cartage	3,209	35	2.0
		Electricity	34,751	382	21.6
	Standing Charges	Administration Expenses	2,745	30	1.7
		Insurance	8,521	94	5.3
		ACC Levies	569	6	0.4
		Rates	3,902	43	2.4
	Total Farm Working Expense		**259,822**	**2,855**	**161.2**
	Depreciation		0	0	0.0
	Total Farm Expenses		**259,822**	**2,855**	**161.2**
Economic Farm Surplus (EFS)			**-10,077**	**-111**	**-6.3**
Farm Profit before Tax			**-10,077**	**-111**	**-6.3**

Table 23: Dairy Support 2 – Optimised

			$ Total	$/Farm ha	$/SU
Revenue	Beef	Sales - Purchases	34,243	376	19.7
		Contract Grazing	218,943	2,406	125.8
		Total	**253,186**	**2,782**	**145.5**
	Crop & Feed	Surplus Feeds	20,460	225	11.8
		Capital Value Change	2,960	33	1.7
		Total	**23,420**	**257**	**13.5**
	Total Revenue		**276,605**	**3,040**	**159.0**
Expenses	Wages	Wages	40,000	440	23.0
		Management Wage	1,270	14	0.7
	Stock	Animal Health	1,497	16	0.9
	Feed/Crop/Grazing	Conservation	36,400	400	20.9
		Forage Crops	24,810	273	14.3
		Purchased Feeds	5,920	65	3.4
		Regrassing	31,200	343	17.9
	Fertiliser	Fertiliser (Excl. N & Lime)	7,962	87	4.6
		Nitrogen	7,599	84	4.4
		Lime	519	6	0.3
	Other Farm Working	Irrigation Charges	7,400	81	4.3
		Weed & Pest Control	3,286	36	1.9
		Vehicle Expenses	10,000	110	5.7
		Fuel	9,604	106	5.5
		Repairs & Maintenance	8,723	96	5.0
		Freight & Cartage	3,209	35	1.8
		Electricity	34,751	382	20.0
		Other Expenses	8,385	92	4.8
	Standing Charges	Administration Expenses	2,745	30	1.6
		Insurance	8,521	94	4.9
		ACC Levies	569	6	0.3
		Rates	3,902	43	2.2
	Total Farm Working Expense		**258,271**	**2,838**	**148.4**
	Depreciation		0	0	0.0
	Total Farm Expenses		**258,271**	**2,838**	**148.4**
Economic Farm Surplus (EFS)			**18,335**	**201**	**10.5**
Farm Profit before Tax			**18,335**	**201**	**10.5**

Table 24: Dairy 1 – Current (1 in 5-year)

			$ Total	$/Farm ha	$/cow	$/kg MS
Revenue	Stock	Net Milk Sales - this season	2,290,503	7,764	2,863	7.15
		Net Milk Sales - last season	0	0	0	0.00
		Net Milk Sales - dividend	0	0	0	0.00
		Net Livestock Sales	120,243	408	150	0.38
		Contract Grazing	0	0	0	0.00
		Change in Livestock Value	0	0	0	0.00
		Total	**2,410,746**	**8,172**	**3,013**	**7.53**
	Crop & Feed	Surplus Feeds	65	0	0	0.00
		Capital Value Change	1,250	4	2	0.00
		Total	1,316	4	2	0.00
	Total Revenue		**2,412,062**	**8,176**	**3,015**	**7.53**
Expenses	Wages	Wages	230,400	781	288	0.72
		Management Wage	32,176	109	40	0.10
	Stock	Animal Health	64,209	218	80	0.20
		Breeding	24,274	82	30	0.08
		Farm Dairy	11,726	40	15	0.04
		Electricity	30,000	102	38	0.09
	Feed/Crop	Pasture Conserved	52,290	177	65	0.16
		Feed Crop	79,100	268	99	0.25
		Bought Feed	78,241	265	98	0.24
		Calf Feed	4,422	15	6	0.01
	Grazing	Grazing	165,251	560	207	0.52
		Run-Off Lease	22,258	75	28	0.07
		Owned Run-Off Adj.	19,221	65	24	0.06
	Other Farm Working	Fertiliser (Excl. N)	260,000	881	325	0.81
		Irrigation	105,000	356	131	0.33
		Regrassing	13,200	45	17	0.04
		Weed & Pest Control	30,000	102	38	0.09
		Vehicle Expenses	27,488	93	34	0.09
		Fuel	22,742	77	28	0.07
		R&M Land/Buildings	38,350	130	48	0.12
		R&M Plant/Equipment	60,437	205	76	0.19
		Freight & Cartage	28,397	96	35	0.09
	Overheads	Administration Expenses	44,250	150	55	0.14
		Insurance	28,258	96	35	0.09
		ACC Levies	8,823	30	11	0.03
		Rates	26,895	91	34	0.08
	Total Farm Working Expenses		**1,507,407**	**5,110**	**1,884**	**4.71**
	Depreciation		0	0	0	0.00
	Total Farm Expenses		**1,507,407**	**5,110**	**1,884**	**4.71**
Economic Farm Surplus (EFS)			**904,655**	**3,067**	**1,131**	**2.82**
Farm Profit before Tax			**904,655**	**3,067**	**1,131**	**2.82**

Table 25: Dairy 1 – Optimised (1 in 5-year)

			$ Total	$/Farm ha	$/cow	$/kg MS
Revenue	Stock	Net Milk Sales - this season	2,313,749	7,843	2,892	7.15
		Net Milk Sales - last season	0	0	0	0.00
		Net Milk Sales - dividend	0	0	0	0.00
		Net Livestock Sales	120,271	408	150	0.37
		Contract Grazing	0	0	0	0.00
		Change in Livestock Value	0	0	0	0.00
		Total	**2,434,020**	**8,251**	**3,043**	**7.52**
	Crop & Feed	Surplus Feeds	8,465	29	11	0.03
		Capital Value Change	1,002	3	1	0.00
		Total	9,468	32	12	0.03
	Total Revenue		**2,443,488**	**8,283**	**3,054**	**7.55**
Expenses	Wages	Wages	230,400	781	288	0.71
		Management Wage	32,176	109	40	0.10
	Stock	Animal Health	64,369	218	80	0.20
		Breeding	24,274	82	30	0.08
		Farm Dairy	11,778	40	15	0.04
		Electricity	30,000	102	38	0.09
	Feed/Crop	Pasture Conserved	4,400	15	6	0.01
		Feed Crop	79,100	268	99	0.24
		Bought Feed	76,160	258	95	0.24
		Calf Feed	4,422	15	6	0.01
	Grazing	Grazing	159,163	540	199	0.49
		Run-Off Lease	22,258	75	28	0.07
		Owned Run-Off Adj.	19,416	66	24	0.06
	Other Farm Working	Fertiliser (Excl. N)	260,000	881	325	0.80
		Irrigation	105,000	356	131	0.32
		Regrassing	13,200	45	17	0.04
		Weed & Pest Control	30,000	102	38	0.09
		Vehicle Expenses	27,488	93	34	0.08
		Fuel	22,742	77	28	0.07
		R&M Land/Buildings	38,350	130	48	0.12
		R&M Plant/Equipment	60,437	205	76	0.19
		Freight & Cartage	28,397	96	35	0.09
		Other Expenses	45,325	154	57	0.14
	Overheads	Administration Expenses	44,250	150	55	0.14
		Insurance	28,258	96	35	0.09
		ACC Levies	8,823	30	11	0.03
		Rates	26,895	91	34	0.08
	Total Farm Working Expenses		**1,497,081**	**5,075**	**1,871**	**4.63**
	Depreciation		0	0	0	0.00
	Total Farm Expenses		**1,497,081**	**5,075**	**1,871**	**4.63**
Economic Farm Surplus (EFS)			**946,406**	**3,208**	**1,183**	**2.92**
Farm Profit before Tax			**946,406**	**3,208**	**1,183**	**2.92**

Table 26: Dairy 1 – Current (1 in 10-year)

			$ Total	$/Farm ha	$/cow	$/kg MS
Revenue	Stock	Net Milk Sales - this season	2,343,750	7,945	2,930	7.15
		Net Milk Sales - last season	0	0	0	0.00
		Net Milk Sales - dividend	0	0	0	0.00
		Net Livestock Sales	122,387	415	153	0.37
		Contract Grazing	0	0	0	0.00
		Change in Livestock Value	0	0	0	0.00
		Total	**2,466,138**	**8,360**	**3,083**	**7.52**
	Crop & Feed	Surplus Feeds	6,281	21	8	0.02
		Capital Value Change	2,670	9	3	0.01
		Total	8,951	30	11	0.03
	Total Revenue		**2,475,089**	**8,390**	**3,094**	**7.55**
Expenses	Wages	Wages	230,400	781	288	0.70
		Management Wage	32,176	109	40	0.10
	Stock	Animal Health	64,209	218	80	0.20
		Breeding	24,274	82	30	0.07
		Farm Dairy	11,726	40	15	0.04
		Electricity	30,000	102	38	0.09
	Feed/Crop	Pasture Conserved	63,840	216	80	0.19
		Feed Crop	79,100	268	99	0.24
		Bought Feed	78,393	266	98	0.24
		Calf Feed	4,422	15	6	0.01
	Grazing	Grazing	159,163	540	199	0.49
		Run-Off Lease	22,258	75	28	0.07
		Owned Run-Off Adj.	19,668	67	25	0.06
	Other Farm Working	Fertiliser (Excl. N)	260,000	881	325	0.79
		Irrigation	105,000	356	131	0.32
		Regrassing	13,200	45	17	0.04
		Weed & Pest Control	30,000	102	38	0.09
		Vehicle Expenses	27,488	93	34	0.08
		Fuel	22,742	77	28	0.07
		R&M Land/Buildings	38,350	130	48	0.12
		R&M Plant/Equipment	60,437	205	76	0.18
		Freight & Cartage	28,397	96	35	0.09
	Overheads	Administration Expenses	44,250	150	55	0.13
		Insurance	28,258	96	35	0.09
		ACC Levies	8,823	30	11	0.03
		Rates	26,895	91	34	0.08
	Total Farm Working Expenses		**1,513,468**	**5,130**	**1,892**	**4.62**
	Depreciation		132,750	450	166	0.40
	Total Farm Expenses		**1,646,218**	**5,580**	**2,058**	**5.02**
Economic Farm Surplus (EFS)			**828,871**	**2,810**	**1,036**	**2.53**
Farm Profit before Tax			**828,871**	**2,810**	**1,036**	**2.53**

Table 27: Dairy 1 – Optimised (1 in 10-year)

			$ Total	$/Farm ha	$/cow	$/kg MS
Revenue	Stock	Net Milk Sales - this season	2,407,988	8,163	3,010	7.15
		Net Milk Sales - last season	0	0	0	0.00
		Net Milk Sales - dividend	0	0	0	0.00
		Net Livestock Sales	123,275	418	154	0.37
		Contract Grazing	0	0	0	0.00
		Change in Livestock Value	0	0	0	0.00
		Total	**2,531,264**	**8,581**	**3,164**	**7.52**
	Crop & Feed	Surplus Feeds	6,281	21	8	0.02
		Capital Value Change	-92	0	0	0.00
		Total	6,190	21	8	0.02
	Total Revenue		**2,537,453**	**8,602**	**3,172**	**7.53**
Expenses	Wages	Wages	230,400	781	288	0.68
		Management Wage	32,176	109	40	0.10
	Stock	Animal Health	64,811	220	81	0.19
		Breeding	24,274	82	30	0.07
		Farm Dairy	11,922	40	15	0.04
		Electricity	30,000	102	38	0.09
	Feed/Crop	Pasture Conserved	63,840	216	80	0.19
		Feed Crop	79,100	268	99	0.23
		Bought Feed	78,393	266	98	0.23
		Calf Feed	4,422	15	6	0.01
	Grazing	Grazing	159,163	540	199	0.47
		Run-Off Lease	22,258	75	28	0.07
		Owned Run-Off Adj.	20,207	68	25	0.06
	Other Farm Working	Fertiliser (Excl. N)	260,000	881	325	0.77
		Irrigation	105,000	356	131	0.31
		Regrassing	13,200	45	17	0.04
		Weed & Pest Control	30,000	102	38	0.09
		Vehicle Expenses	27,488	93	34	0.08
		Fuel	22,742	77	28	0.07
		R&M Land/Buildings	38,350	130	48	0.11
		R&M Plant/Equipment	60,437	205	76	0.18
		Freight & Cartage	28,397	96	35	0.08
		Other Expenses	45,325	154	57	0.13
	Overheads	Administration Expenses	44,250	150	55	0.13
		Insurance	28,258	96	35	0.08
		ACC Levies	8,823	30	11	0.03
		Rates	26,895	91	34	0.08
	Total Farm Working Expenses		**1,560,130**	**5,289**	**1,950**	**4.63**
	Depreciation		0	0	0	0.00
	Total Farm Expenses		**1,560,130**	**5,289**	**1,950**	**4.63**
Economic Farm Surplus (EFS)			**977,323**	**3,313**	**1,222**	**2.90**
Farm Profit before Tax			**977,323**	**3,313**	**1,222**	**2.90**

Table 28: Dairy 2 – Current

			$ Total	$/Farm ha	$/cow	$/kg MS
Revenue	Stock	Net Milk Sales - this season	2,318,831	8,136	2,611	7.15
		Net Milk Sales - last season	0	0	0	0.00
		Net Milk Sales - dividend	0	0	0	0.00
		Net Livestock Sales	152,935	537	172	0.47
		Contract Grazing	0	0	0	0.00
		Change in Livestock Value	0	0	0	0.00
		Total	**2,471,766**	**8,673**	**2,784**	**7.62**
	Crop & Feed	Capital Value Change	45	0	0	0.00
		Total	45	0	0	0.00
	Total Revenue		**2,471,811**	**8,673**	**2,784**	**7.62**
Expenses	Wages	Wages	301,272	1,057	339	0.93
		Management Wage	35,715	125	40	0.11
	Stock	Animal Health	71,532	251	81	0.22
		Breeding	21,704	76	24	0.07
		Farm Dairy	12,443	44	14	0.04
		Electricity	36,861	129	42	0.11
	Feed/Crop	Bought Feed	51,680	181	58	0.16
		Calf Feed	5,058	18	6	0.02
	Grazing	Grazing	374,391	1,314	422	1.15
	Other Farm Working	Fertiliser (Excl. N)	150,235	527	169	0.46
		Irrigation	77,100	271	87	0.24
		Weed & Pest Control	9,054	32	10	0.03
		Vehicle Expenses	26,556	93	30	0.08
		Fuel	21,971	77	25	0.07
		R&M Land/Buildings	78,221	274	88	0.24
		R&M Plant/Equipment	58,388	205	66	0.18
		Freight & Cartage	27,434	96	31	0.08
	Overheads	Administration Expenses	64,105	225	72	0.20
		Insurance	27,300	96	31	0.08
		ACC Levies	8,524	30	10	0.03
		Rates	25,983	91	29	0.08
	Total Farm Working Expenses		**1,485,527**	**5,212**	**1,673**	**4.58**
	Depreciation		0	0	0	0.00
	Total Farm Expenses		**1,485,527**	**5,212**	**1,673**	**4.58**
Economic Farm Surplus (EFS)			**986,284**	**3,461**	**1,111**	**3.04**
Farm Profit before Tax			**986,284**	**3,461**	**1,111**	**3.04**

Table 29: Dairy 2 – Optimised

			$ Total	$/Farm ha	$/cow	$/kg MS
Revenue	Stock	Net Milk Sales - this season	2,447,891	8,589	2,757	7.15
		Net Milk Sales - last season	0	0	0	0.00
		Net Milk Sales - dividend	0	0	0	0.00
		Net Livestock Sales	154,963	544	175	0.45
		Contract Grazing	0	0	0	0.00
		Change in Livestock Value	0	0	0	0.00
		Total	**2,602,855**	**9,133**	**2,931**	**7.60**
	Crop & Feed	Capital Value Change	22	0	0	0.00
		Total	22	0	0	0.00
	Total Revenue		**2,602,877**	**9,133**	**2,931**	**7.60**
Expenses	Wages	Wages	301,272	1,057	339	0.88
		Management Wage	35,715	125	40	0.10
	Stock	Animal Health	73,334	257	83	0.21
		Breeding	21,704	76	24	0.06
		Farm Dairy	13,064	46	15	0.04
		Electricity	36,861	129	42	0.11
	Feed/Crop	Bought Feed	9,680	34	11	0.03
		Calf Feed	5,058	18	6	0.01
	Grazing	Grazing	372,379	1,307	419	1.09
	Other Farm Working	Fertiliser (Excl. N)	150,235	527	169	0.44
		Irrigation	77,100	271	87	0.23
		Weed & Pest Control	9,054	32	10	0.03
		Vehicle Expenses	26,556	93	30	0.08
		Fuel	21,971	77	25	0.06
		R&M Land/Buildings	78,221	274	88	0.23
		R&M Plant/Equipment	58,388	205	66	0.17
		Freight & Cartage	27,434	96	31	0.08
		Other Expenses	18,230	64	21	0.05
	Overheads	Administration Expenses	64,105	225	72	0.19
		Insurance	27,300	96	31	0.08
		ACC Levies	8,524	30	10	0.02
		Rates	25,983	91	29	0.08
	Total Farm Working Expenses		**1,462,170**	**5,130**	**1,647**	**4.27**
	Depreciation		0	0	0	0.00
	Total Farm Expenses		**1,462,170**	**5,130**	**1,647**	**4.27**
Economic Farm Surplus (EFS)			**1,140,707**	**4,002**	**1,285**	**3.33**
Farm Profit before Tax			**1,140,707**	**4,002**	**1,285**	**3.33**