

Irrigation Case Study

10 - 4 - 2014

Sheep and Cattle Breeding Farm

Purpose

The purpose of this case study is to establish the benefit of incorporating irrigated Ruataniwha Plains land into a sheep and beef breeding farm. More particularly the cost benefit of completing the irrigation development utilising water purchased from the Ruataniwha Water Storage Scheme (RWSS).

Executive Summary

To carry out this case study the Bradley Family who own three properties in Central Hawke's Bay have made their farm business available to complete a review. The Bradley Family farm three separate properties, two hill country breeding properties comprising 478 ha plus 112 ha flat land with irrigation potential. In total 590 ha of which 550 ha is deemed to be effective with 5,000 stock units wintered. The properties are farmed together as a sheep and cattle breeding and finishing operation with 78:22 sheep to cattle ratio. The current farming system aims to finish all lambs to 17 kg's with the exception of 400 ewe lambs sold store. Store numbers increase to 1,000 in a 1 in 5 year drought.

The focus of this case study is to understand the financial impact of irrigating the 112 ha finishing property farmed in a system to finish hill country lambs and the overall increase in profitability incorporating the irrigation into the whole farm system, more specifically the marginal return on capital of the investment. The results confirmed improved overall profitability and a marginal return on capital significantly above the anticipated cost of capital.

To establish a framework to determine the value of the irrigation to the whole farm system we first reviewed the current production of the 112 ha and then measured the increase in cash surplus by irrigating 63 ha and then increasing this to 88 ha if permitted. Increasing the irrigated area allowed us to assess the benefits of irrigating the property to its full potential. We then incorporated both irrigation options into the whole farm system to measure the benefits in cash, value and marginal return on capital.

We have involved agronomists (Agricom), independent pastoral consultants (Challenge Consultancy), fertiliser consultants (Ravensdown) and irrigation specialists (Bay Irrigation) to assist assess the productive potential under irrigation.

Nutrient leaching was also a consideration and Ravensdown have assessed both the fertiliser requirements on the irrigation area and modelled nutrient losses using Overseer to ensure the farming system does not create nutrient issues outside the likely thresholds permitted under Plan Change 6.

Site Inspection and Observations

The farm was visited on 8 July 2013 with a focus on the irrigation potential of 112 ha Taylor Road property. It was noted that the soil on the subject property was a mix of Hastings Sandy Loam, Kaiapo Clay Loam and Argyll Gravel. Refer property and soil map appendices.

Pasture specialists Agricom were consulted and recommended Lucerne and Plantain to maximise production and efficiency under take or pay irrigation. They estimated that 300 mm per ha per annum of irrigation would be required to produce 14 tonne dry matter per annum. We were able to gain some confidence in the level of water required to achieve this production having visited another property in the South Island High Country irrigating river shingle. In this case the soil is Tasman sand and stones with very little soil, sown in Tall Fescue and Ryegrass. It was producing 17 tonne under an irrigation rate of 420 mm per annum.

Unlike the South Island property the subject property will only have between 36 and 50% of the lighter soil under irrigation, depending on the extent of the irrigation development. The Taylor road property will also develop a Plantain dominant sward. By utilising pasture species that are considered more productive than grass on lighter soils, 14 tonne under 300 mm irrigation is considered realistic. There is no specific research data for Plantain under irrigation on the Ruataniwha Plains but irrigated plantain is producing 18 tonne dry matter under irrigation in the Manawatu.



Irrigation Case Study

Additional capital is being invested to prevent water wastage and therefore the amount of water required. All things considered we feel that between 250 and 350 mm irrigation will be required to produce the 14 tonne budgeted and on this basis we have adopted 300 mm (3,000 cube/ha) for budget purposes. A sensitivity analysis has been included in this paper considering the implications of both water price and water volume.

Irrigation Infrastructure

To determine the irrigation infrastructure required we consulted with Bay Irrigation. Because of the irregular shape of the property it was decided that 63 ha running parallel to the Tuki Tuki River boundary could be irrigated with a Linear Irrigation System.

The irrigation of an addition 25 ha's using the same irrigator by utilising a pivot system is hypothetical, because to implement this augmentation of the linear irrigation system, a boundary adjustment and land swap with the neighbour would be required. This would



involve squaring off the said 25 ha's by including 7.20 ha's of the neighbour and in return giving the neighbour 6.91 ha's land. This in turn would provide the neighbour a regular shaped irrigable property. The land swap concept is seen as mutually beneficial and in these situations would normally proceed should both parties wish to irrigate or take the opportunity to square off an irregular shaped boundary.

Budget scenarios have been completed for both 63 and 88 ha (+25ha). Irrigation of the balance of the property is not considered worthwhile as the property is dissected by Taylor Road and the additional capital cost of another irrigation system for just a small area was assumed to be marginal at this stage.

The capital and development cost is extrapolated in appendices with cost estimates supplied by Bay Irrigation. The cost of the development is expected to be \$200,000 for the Linear Pivot irrigator (plus \$6,000 to include pivot), 45,000 for a variable rate irrigation system (VRI) and \$65,000 for installing the mainline and purchasing supply hose and hydrants. There is also \$32,000 budgeted for contingencies such as a small amount of fencing and shelter belt removal. The total development cost for the two systems is \$342,541 (63 ha, \$5,437 per ha,) and \$348,541 (88ha, \$3,961 per ha).

The main irrigation site has a seam of light soil through it so a VRI system should be fitted to the irrigator which will allow the different soil types to be irrigated at different rates for more efficient use of water. The VRI system will enable the lighter soils with a lower water holding capacity to be managed more efficiently, keeping the soil moisture in the desired range.

Irrigation Case Study

	A	B	C
MODEL	0 ha	63 ha	88 ha
Total \$	Dryland	Irrigated	Irrigated
Gross Income	521,783	666,506	696,121
Farm Operating Expenses	326,024	391,520	422,250
Economic Farm surplus (EFS)	195,759	274,986	273,871
Interest	6,143	31,331	34,093
	189,616	243,655	239,778
Depreciation - Irrigator	-	12,000	12,000
Taxable Profit	189,616	231,655	227,778
Total Capital Employed	5,355,000	5,697,541	5,703,541
Total Liabilities	-	342,541	348,541
Equity	5,355,000	5,355,000	5,355,000
Marginal Return Irrigation		23.13 %	22.41 %
Return on Capital	3.66%	4.83 %	4.80 %
NPV		\$ 953,004	\$ 896,771
Per Effective Hectare			
Gross Income	949	1,212	1,266
Farm Operating Expenses	593	712	768
EFS	356	500	498
% Of Gross Income			
Farm Operating Expenses	62.48%	58.74 %	60.66 %
Fertiliser	15.13%	12.44 %	12.55 %
Production			
Total Farm Area (Ha)	608	608	608
Effective Farm Area	550	550	550
Irrigated Area	-	63	88
Percentage Irrigated	-	12 %	16 %
Water cost	-	41,958	58,608
% Increase EFS	-	40.47 %	39.90 %
Lambing %	110%	120 %	120 %
Lamb CWT	17.0	19.8	19.8

Irrigation Financial Analysis

Budgets have been completed on Taylor Road as the property is now, and post irrigation development. Production estimates have been made using our knowledge and then cross checking this with work done independently on Farmax. Farmax is a grazing management tool that models pasture supply and feed demand throughout the year and we engaged John Cannon of Challenge Consultancy to undertake this work as they have a strong reputation in this area.

The cost benefit analysis of the irrigation has been reviewed on the Taylor Road property as a stand-alone unit and then looking at the wider economic benefit of the whole farm business when incorporating the sheep and cattle breeding unit. The capital and operational cost of the irrigation has been set-off against the production increase in order to measure the economic benefit of the irrigation.

The following table focuses on the benefit to the whole farm system. Three scenarios are illustrated in the table to measure the benefit of irrigation and help determine the irrigation area required to achieve economic efficiency.

- Whole farm profitability utilising the dry land Taylor runoff and the sheep and cattle breeding property to understand current profitability and the irrigation potential. To provide a clear base case for comparison we have assumed no term debt but included seasonal finance interest.
- Whole farm profitability utilising 63 ha irrigation at Taylor Road to finish all lambs owned at higher weights plus 633 external trade lambs all on the irrigation. The irrigation will also prevent the sale of 400 store lambs each year and a further 600 lambs in a one in five year drought. Ewe fertility also increases with lambing percentage up by 10%.
- As in B above but utilising 88 ha irrigation at Taylor Road to finish all lambs owned at higher weights plus 2,526 external trade lambs all on the irrigation. The economics for this system would likely improve if cash cropping was introduced as an option, the scope was limited to filling the additional feed with more lambs only.

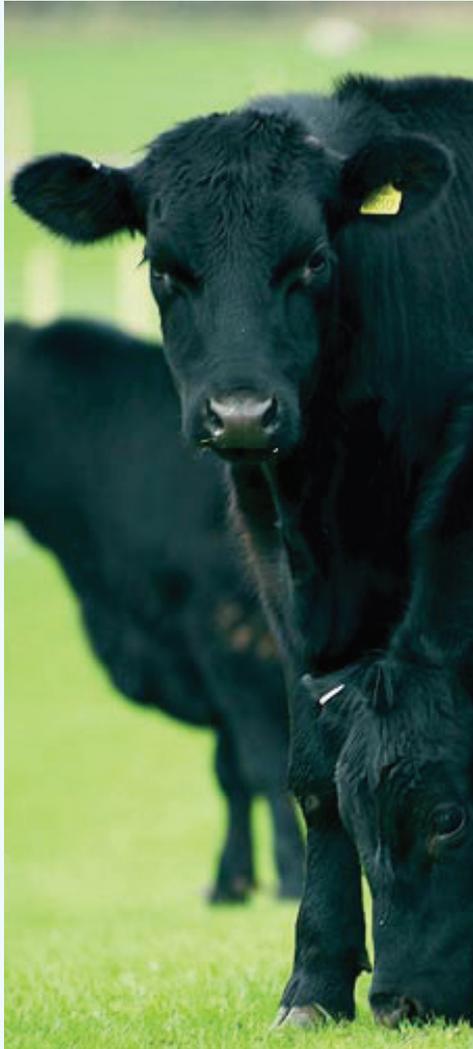
Irrigation Case Study

Key Points – Irrigation Comparison Table

- The return on Capital increases from 3.66% to 4.83 and 4.80% respectively.
- The interest rate used for irrigation development expenditure is 7%. It is assumed there is no existing debt except for seasonal finance.
- On the basis the investment is 100% equity funded the marginal return on capital for the 63 ha development is 23% excluding cost of capital. This reduces to 16% when including the interest cost for the development. For the 88 ha development these same returns are 22% and 14% respectively.
- The water is priced at 17 cents/cubic meter for the first four years incorporating the 6 cent discount on offer then increasing to base price of 23 cents. The average price is 22.2 cents over 30 years (excluding inflationary impacts on water price which is consistent with impacts on other expenditure and commodity prices) which we believe is the useful life of the irrigator. We have added 3 cents per cubic meter for power giving an all up status quo budget price for water of 25.2 cents.
- An increase in lambing percentage of 10% (from 110% to 120%) is budgeted by being able to shift all lambs off the breeding properties. Lambs transferred to Taylor Road will increase from approximately 1000 to 4000. Shifting the lambs off will free up grazing for the ewes and hoggets improving condition and fertility. It will also reduce the impact the 1 in 5 year drought has on ewe fertility and lamb survivability.
- Lamb finishing weights are increased from 17 to 19.8 kg
- The whole farm system incorporating 63 ha property is the most profitable. This would indicate there is increasing economies of scale incorporating irrigation into a breeding farm to a level that permits all own bred lambs to be finished. After this point a change in farming system is required and this could include additional grazing, cropping, expanding the breeding operation or to provide an additional buffer in a drought year.
- A Lamb production lift to 136% would provide maximum efficiency of the 63 ha irrigation. The whole farm system would then be self-contained from own bred lambs, reducing trading risk and capturing the profit from the additional lambs produced.



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Sensitivity of water price and volume

The table below illustrates the change in EFS with changes in water price and volume. This is a consideration if you were to over or under subscribe to water and if the price of the water were to vary above or below the 22.7 cents we have budgeted on. Worst case under this sensitivity scenario a 10% increase in water usage and cost results in a marginal reduction of profit of \$8,580.

This demonstrates that water price risk and sensitivity isn't as high as you might expect.

Purchasing additional water over and above budget does not threaten the benefit from the irrigation. The additional EFS from irrigation is \$79,227 which is enough to irrigate up to 800 mm before the financial benefit is lost.

Note:

- 5% change in water price is equivalent to 1.14 cents/cubic meter of water
- 5% change in water volume is equivalent to 150 cubic meters.
- 22.2 budget water price is the average over the 30 year investment period i.e. 23 cents less the 6 cent discount for the first four years

		Water Usage					
		-10.0%	-5.0%	0.0%	5.0%	10.0%	
			\$38,613	\$40,758	\$42,903	\$45,048	\$47,193
Water Price	-10.0%	\$38,613	\$283,567	\$281,422	\$279,277	\$277,132	\$274,986
	-5.0%	\$40,758	\$281,422	\$279,277	\$277,132	\$274,986	\$272,841
	0.0%	\$42,903	\$279,277	\$277,132	\$274,986	\$272,841	\$270,696
	5.0%	\$45,048	\$277,132	\$274,986	\$272,841	\$270,696	\$268,551
	10.0%	\$47,193	\$274,986	\$272,841	\$270,696	\$268,551	\$266,406

Irrigation Case Study

Investment Case (NPV)

NPV calculation			
Period	(Years)	30	
Option		1	2
		63 ha	88 ha
Discount rate	(per annum)	4%	4%
		\$ 953,004	\$ 896,771

The additional value the irrigation brings to the business based on incremental future cash flow is significant, as illustrated by the table above. The work done with this example is purely hypothetical as the farm is not a contiguous block of land but three separate blocks. It is likely that the value of Taylor Road property would increase by the capital cost of the irrigation if farmed stand alone. A premium over cost would come from sheep and beef farmers keen to exploit the benefits of the irrigation on the wider business and the above analysis would indicate they may pay up to \$190/su premium on this basis (\$953,004/5000su) for an irrigated sheep and cattle farm of this size.

Key Points

- The NPV is of the differential in profit margin between irrigated and non - irrigated as explained in Models A to C.
- A discount rate of 4% is used noting the project is low risk. It could be argued that we should adopt a lower discount rate because the investment reduces business risk significantly and it is difficult to quantify what the risks are, if at all. A lower discount rate would indicate the development is

worth more to the business.

- Because NPV's are cash based depreciation has not been included but instead the cost of the irrigator has been included as repairs and maintenance over the expected life of the machine which is expected to be between 30 and 40 years.
- The NPV period has been set at 30 years, being the lower end of the irrigator expected useful life.
- The irrigation charges included for the first four years are included at a cost of 17 cents per cubic meter with the 6 cent discount and 23 cents thereafter. We have included a contingency of 3 cents for power.



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		Lambs Price \$					
		-10.0%	-5.0%	0.0%	5.0%	10.0%	
Production %	Lambs	\$98	\$104	\$109	\$114	\$120	
	-10.0%	3508	\$194,649	\$213,768	\$232,888	\$252,008	\$271,127
	-5.0%	3703	\$213,768	\$233,950	\$254,132	\$274,314	\$294,496
	0.0%	3898	\$232,888	\$254,132	\$274,986	\$296,620	\$317,864
	5.0%	4093	\$252,008	\$274,314	\$296,620	\$318,927	\$341,233
	10.0%	4288	\$271,127	\$294,496	\$317,864	\$341,233	\$364,601

Sensitivity of lamb production

Lamb price does not materially impact the marginal benefit as the price per kg used is constant pre and post development. No premium has been included for heavier or a more reliable supply of lambs with the irrigation although this is a possibility and irrigation could be used to generate feed to target winter lamb finishing premiums.

The variable that is influenced most by the irrigation is lamb production. A 10% increase in the number of lambs available for sale increases the marginal return on capital from 23 to 35%. Conversely if lamb production was unchanged the marginal return would reduce from 23 to 11%.

Summary & Conclusion

The case study has identified the potential for a significant improvement in profitability of a sheep and cattle breeding operation in Hawkes Bay with the introduction of RWSS irrigation.

A minimum of 10% of the total effective farming area is required to enable all lambs to be finished on the irrigation area. The key benefits of the irrigation are identified as :

1. All lambs can be consistently finished on the irrigation at heavier weights.
2. Ewe and hogget condition and therefore fecundity can be improved utilising the feed made available by moving lambs onto the irrigation freeing up pasture to flush ewes and hoggets

3. The impact of the 1 in 5 year drought is dramatically reduced by not having to sell lambs store on weak markets and maintaining ewes and replacement hoggets in better condition.
4. A reduction in farm management and financial stress by reducing drought risk
5. Increased resilience, confidence and consistency in the farming business

While only 55 ha is required to achieve the objective of finishing all lambs to heavy weights. In this case study a 63 ha area provides the best return on investment. The reason for irrigating the additional land is because the capital cost isn't any greater and the return on capital is high.

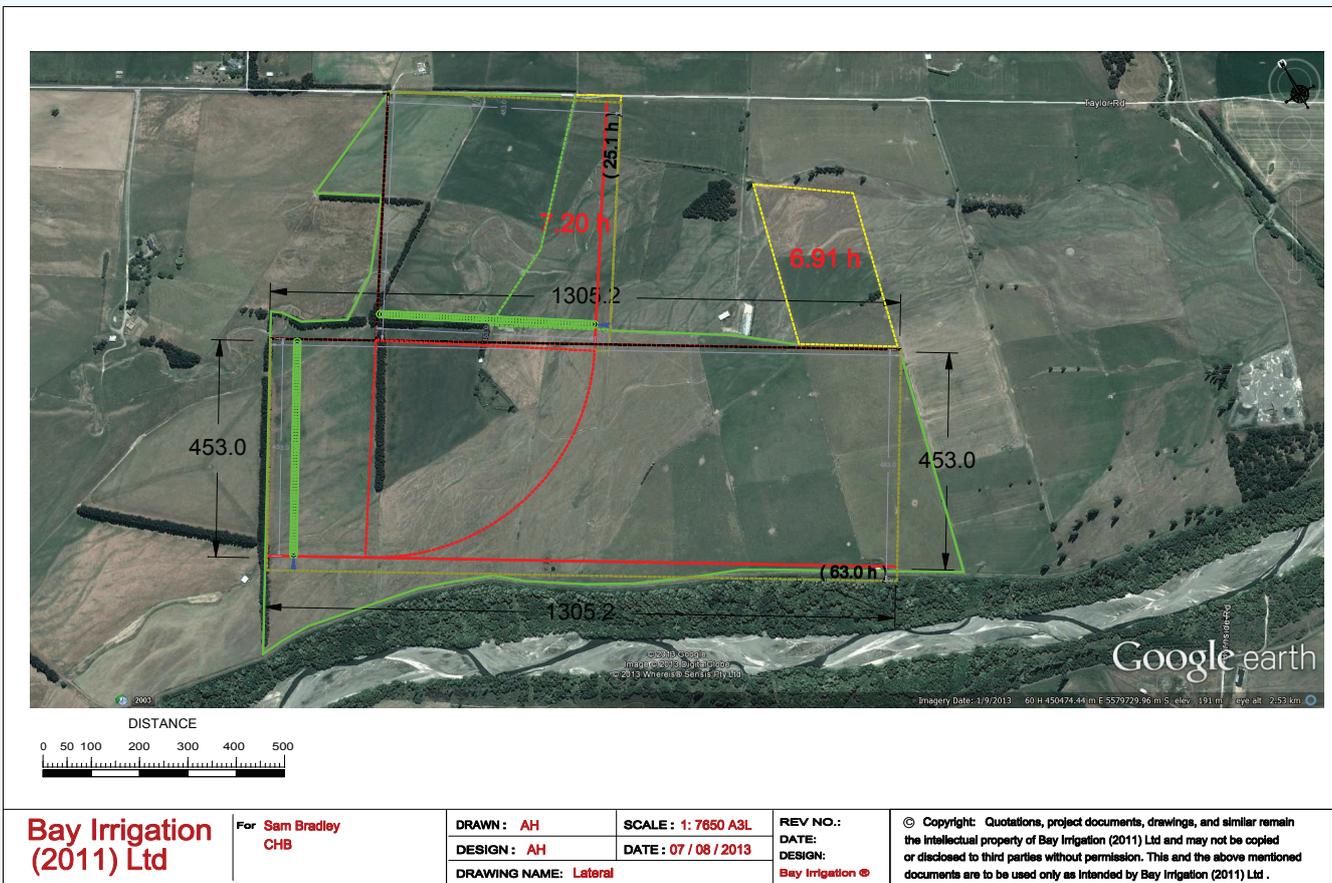
The whole farm system incorporating 63 ha property is the most profitable. This would indicate there is increasing economies of scale incorporating irrigation into a breeding farm to a level that permits all own bred lambs to be finished. After this point a change in farming system can be adopted to increase returns further and this could include different grazing options, cropping, expanding the breeding operation or to provide an additional buffer in a drought year.

The marginal return on capital irrigating the full 88 ha is also high at 22%, trading additional lambs on the 25 ha. We have not modelled the significant benefits in a drought year, which would likely increase returns further by having this land under irrigation.



Hawke's Bay Regional Investment Company Limited
Irrigation Case Study
 Appendices

Development Items	Price	Notes
Linear Irrigator (installed)	\$ 199,845	450 meter 2-Wheel Cart Pivotal Lateral installed
Pivot application	\$ 6,000	To allow linear to pivot and irrigate a further 25 hectares
Variable Rate Irrigation System	\$ 45,477	Price is based on fitting at irrigator installation saving
Mainline 1,560M 225mm PN6	\$ 58,604	Mainline including 7 hydrants all installed
Supply Hose 140M	\$ 6,929	Supply hose between hydrants
Contingencies	\$ 31,686	Fencing, trees/shelter removal and micellaneous
Total	\$ 348,541	



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My Ravensdown Smart Maps
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31 July 2013

0 120 240 480 Metres

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Irrigation Case Study

Breeding 63 ha Irrigation

				\$'s			
CASH FORECAST				FOR YEAR ENDED: Jun-2015			
STOCK UNITS	2014	2015	S.U. RATIO	AREA(HA)	608	Milksolid Price	\$3.90
SHEEP	3867	3867	78%	EFFECTIVE	550	Prodn Istyr	0
CATTLE	1116	1116	22%	Waste	58	Prodn this yr	0
DEER	0	0	0%	TOTAL (HA)	608	Prodn/HA	0
CROP			0%	Cows Milked	0	Prodn/cow	0
TOTAL S.U.	4983	4983		Cows/Ha	0.00	Average Payout	\$0.00
	\$/ha						
WAGES	\$145	\$16.06	\$80,000	STOCK SALES		Price	
ANIMAL HEALTH	\$44.83	\$4.95	\$24,657	5171 Sheep	\$105	\$543,992	
ELECTRICITY	\$4.18	\$0.46	\$2,301	309 Cattle	\$1,149	\$355,112	
WATER - Irrigation	\$76.29	\$8.42	\$41,958	Deer		\$0	
ELECTRICITY - Irrigation	\$10.31	\$1.14	\$5,670				
FEED / GRAZING	\$15	\$1.70	\$8,458	TOTAL			\$899,104
FREIGHT	\$28.73	\$3.17	\$15,800	STOCK PURCHASES		Price	
FERTILISER	\$141.16	\$15.58	\$77,641	645 Sheep	\$93.23	\$60,134	
WEEDS/SEEDS/PESTS	\$5.59	\$0.62	\$3,077	246 Cattle	\$924	\$227,304	
SHED EXPENSES	\$48.78	\$5.38	\$26,828	Deer		\$0	
PASTURE RENEWAL	\$47	\$5.22	\$26,000				
R&M	\$36.36	\$4.01	\$20,000	TOTAL			\$287,438
VEHICLE EXPENSES	\$32.77	\$3.62	\$18,025	NET STOCK SALES			\$611,666
ADMINISTRATION	\$6.43	\$0.71	\$3,536	WOOL INCOME			
ACCOUNTANCY	\$9.35	\$1.03	\$5,142	18280 Total # KG's	\$3.00	\$54,840	
INSURANCE	\$7.74	\$0.85	\$4,255	VELVET INCOME			
RATES	\$39.83	\$4.40	\$21,907	0 Total # KG's	\$0	\$0	
ACC	\$11.39	\$1.26	\$6,265	CROP INCOME			
Farm Working Expenses(FWE)	\$711.85	59%	\$391,520				
EFS			\$274,986	TOTAL			\$0
TERM LOANS		%					\$0
IRRIGATION		7.00	\$23,978				\$0
PRINCIPAL	\$0		\$0				\$0
FAMILY	\$0	0.00	\$0				\$0
OTHER	\$0	0.00	\$0				\$0
LEASE COWS			\$0				
RENT			\$0				
HP			\$0				
SEASONAL							
	26 (% Utilisation)						
BANK	\$400,000	7.00	\$7,353				
	50 (% Utilisation)						
OTHER			\$0				\$7,353
TOTAL DEBT SERVICING (TDS)		5%	\$31,331				
			\$243,655				
DRAWINGS	\$0						
LIFE INSURANCE	\$0						
TAXATION	\$69,497						
TOTAL PERSONAL EXPENDITURE			\$69,497	DAIRY INCOME			
			\$12,000	0 Kg's this year	\$3.30	\$0	
			\$0	0 Kg's Last year	\$0.60	\$0	
			\$0	OTHER INCOME		\$0	
			\$0			\$0	
TOTAL CAPITAL EXPENDITURE			\$12,000	GROSS FARM INCOME (GFI)		\$666,506	
				NON FARM INCOME		\$0	
TOTAL EXPENDITURE			\$504,348	TOTAL INCOME		\$666,506	
SURPLUS / (DEFICIT)		24%	\$162,158				
	(12/5/14)		\$231,655				

DISCLAIMER: This farm budget and cashflow forecast has been prepared by GoodmanRural from records, information and instructions furnished to us by the customer. Neither GoodmanRural nor any of its employees accept any responsibility for the accuracy of the material from which this has been prepared.



Irrigation Case Study

88 ha Irrigation

				\$'s			
CASH FORECAST				FOR YEAR ENDED: Jun-2015			
STOCK UNITS	2014	2015	S.U. RATIO	AREA(HA)	608	Milksolid Price	\$3.90
SHEEP	3867	3867	78%	EFFECTIVE	550	Prodn Istyr	0
CATTLE	1116	1116	22%	Waste	58	Prodn this yr	0
DEER	0	0	0%	TOTAL (HA)	608	Prodn/HA	0
CROP			0%	Cows Milked	0	Prodn/cow	0
TOTAL S.U.	4983	4983		Cows/Ha	0.00	Average Payout	\$0.00
	\$/ha						
WAGES	\$153	\$16.86	\$84,000	STOCK SALES		Price	
ANIMAL HEALTH	\$46.26	\$5.11	\$25,442	7064 Sheep	\$106	\$750,980	
ELECTRICITY	\$4.18	\$0.46	\$2,301	290 Cattle	\$1,101	\$319,324	
WATER - Irrigation	\$106.56	\$11.76	\$58,608	Deer		\$0	
ELECTRICITY - Irrigation	\$14.40	\$1.59	\$7,920				
FEED / GRAZING	\$15	\$1.70	\$8,458	TOTAL		\$1,070,304	
FREIGHT	\$32.73	\$3.61	\$18,000	STOCK PURCHASES		Price	
FERTILISER	\$146.34	\$16.15	\$80,486	2538 Sheep	\$86.12	\$218,578	
WEEDS/SEEDS/PESTS	\$5.59	\$0.62	\$3,077	227 Cattle	\$929	\$210,976	
SHED EXPENSES	\$48.78	\$5.38	\$26,828	Deer		\$0	
PASTURE RENEWAL	\$51	\$5.62	\$28,000				
R&M	\$36.36	\$4.01	\$20,000	TOTAL		\$429,554	
VEHICLE EXPENSES	\$32.77	\$3.62	\$18,025	NET STOCK SALES		\$640,750	
ADMINISTRATION	\$6.43	\$0.71	\$3,536	WOOL INCOME			
ACCOUNTANCY	\$9.35	\$1.03	\$5,142	18457 Total # KG's	\$3.00	\$55,371	
INSURANCE	\$7.74	\$0.85	\$4,255	VELVET INCOME			
RATES	\$39.83	\$4.40	\$21,907	0 Total # KG's	\$0	\$0	
ACC	\$11.39	\$1.26	\$6,265				
Farm Working Expenses(FWE)	\$767.73	61%	\$422,250				
EFS			\$273,871	CROP INCOME			
TERM LOANS	%						
IRRIGATION	7.00	\$24,398				\$0	
PRINCIPAL	\$0	\$0				\$0	
FAMILY	\$0	0.00	\$0			\$0	
OTHER	\$0	0.00	\$0	TOTAL		\$0	
LEASE COWS		\$0					
RENT		\$0					
HP		\$0					
SEASONAL							
	35 (% Utilisation)						
BANK	\$400,000	7.00	\$9,695				
	50 (% Utilisation)						
OTHER		\$0	\$9,695				
TOTAL DEBT SERVICING (TDS)		5%	\$34,093				
			\$239,778				
WAGE OF MANAGEMENT	\$0			DAIRY INCOME			
LIFE INSURANCE	\$0			0 Kg's this year	\$3.30	\$0	
TAXATION	\$68,333			0 Kg's Last year	\$0.60	\$0	
TOTAL PERSONAL EXPENDITURE			\$68,333	OTHER INCOME		\$0	
Irrigator Depreciation			\$12,000			\$0	
			\$0	GROSS FARM INCOME (GFI)		\$696,121	
			\$0	NON FARM INCOME		\$0	
TOTAL CAPITAL EXPENDITURE			\$12,000	TOTAL INCOME		\$696,121	
TOTAL EXPENDITURE			\$536,676				
SURPLUS / (DEFICIT)		23%	\$159,445				
	(12/5/14)		\$227,778				

DISCLAIMER: This farm budget and cashflow forecast has been prepared by GoodmanRural from records, information and instructions furnished to us by the customer. Neither GoodmanRural nor any of its employees accept any responsibility for the accuracy of the material from which this has been prepared.

