Manuherikia Budget Descriptions

Capital Cost Background

With reference to the MCWSG Project Information Pack and the MCWSG Expression of Interest Form (EOI) released July 2016, Compass Agribusiness Management have updated the on-farm budget models to reflect the proposed capital cost of water per hectare and the on going annual charge.

As the MCWSG Expression of Interest form outlines, these costs change based on location and whether the irrigator is an existing or a new irrigator.

The establishment of 5 zones as per the EOI, helps outline the capital cost per hectare and annual charge per hectare for different users.

The purpose of updating the on-farm budget models, the charges applied are based on Zone 3, the 'Omakau Main Race' costings to outline examples of how this water charges effects the economics of different farming systems.

The charges applicable to this zone are outlined in Table 1 below.

Table 1

Water Costs From EOI - Zone 3	
	Zone 3
	Omakau Main Race
Existing Irrigator - Capital Cost $/ha	$1,900
Annual Charge - Initial $/ha	$300
Annual Charge - Full Uptake $/ha	$140
New Irrigator - Capital Cost	$2,800
Annual Charge - Initial $/ha	$420
Annual Charge - Full Uptake $/ha	$190

As outlined in the table above, there are two annual charges for both existing and new irrigators which are based initial and full update of the water shares. For the purpose of our budget models, *the initial annual charge* is used to help assess economic performance over different farming systems.

Commodity & Conversion Price Updates

Commodity Price Update

Since inception of the budget models, there has been movement in the commodity prices within most farming systems and it is prudent to update these to reflect these changes.

The updated commodity prices are based on information from;

1. *Beef & Lamb* – 5 year average prices for:
    a. finished and trade lamb margin $/hd
    b. wool price greasy $/kg
    c. culls ewes $/hd
2. *Fonterra* – 7 year average milk price
3. *Foundation of Arable Research* – 5 year average prices for barley and wheat.

Please find below in Table 2, a summary of the key pricing assumptions used in updating these models.

Table 2

Price and Cost Assumptions		Per Unit
Dairy	Milk Solids	$6.05
Dairy Support	Calves	$7.00
	R1yrs	$11.50
	R2yrs	$15.00
	Dairy Cow Wintering	$28.00
Arable	Wheat	$400.00
	Barley	$365.00
	Straw	$120.00
	Small Seeds - Ryegrass	$2,200.00
Sheep	Prime Lamb	$5.05
	Cull Ewes	$75.00
	Traded Lamb Margin	$18.00
	Wool	$3.70

The updated commodity prices reflect a lower return to the farmer than previously modelled. By using an average return over a time period with in our models, it does not reflect any upside opportunities that may exist in current market sectors.

Conversion Price Update

Within the conversion models, the installation of on farm irrigation conversion has been increased to $5,500 per hectare due to product inflation and the strengthened USD over the last 12 months. This is an increase of $1000 per hectare from the previous modelling.

Farm Systems Budgets

Financial analysis has been based on a farming system with and effective area of 400ha.

This is analysing the farming systems under existing flood irrigation compared to their potential under more efficient forms of irrigation, such as spray.

The irrigation and infrastructure costs which are incurred through the change in farming systems have also been considered.

Four different existing farming systems have been modelled to determine current profitability of the systems. These are:

1. Inefficiently irrigated mixed arable,
2. Inefficiently irrigated sheep breeding and finishing
3. Inefficiently irrigated dairy support,
4. Dryland half-bred sheep

The new farm model systems under spray irrigation are:

1. Efficiently irrigated mixed arable,
2. Efficiently irrigated sheep breeding and finishing
3. Efficiently irrigated dairy support,
4. Efficiently irrigated dairy

The models are based on an *existing irrigator's capital cost and annual charge* for water and we have included a summary table on page 15 that outlines how the model performance is affected when new *irrigator's capital and annual charges applied.*

Due to farm layout, contour and existing infrastructure, each individual farm will have varying capital costs.

The Farm Surplus outlined in the models is before tax and any existing debt servicing requirements as these are unique costs for each individual farmer.

Debt servicing costs for conversion to spray irrigation and the capital requirement for water shares has been included within the models.

Not included are the individual farm models for mixed arable but the results from these models are still summarised.

While efforts have been made to make these models as usable as possible, users should seek their own advice on how individual farms can benefit from the potential changes.

Farm Models for Existing Systems

Existing Flood Irrigated Sheep Farm

- This farm is a flat to undulating property which utilises wild flood and boarder dyke forms of irrigation.
- A sheep breeding system is operated which finishes all its own lambs to 17.5KgCW.
- The farm is stocked at an average of 9 sheep per ha (10.4 SU/ha) grazing Romney ewes which lamb at 130% survival to sale (STS).

		SHEEP BREEDING		$ / Ha	Total
REVENUE		Price	Weight		
Lamb	3,540.00	5.05	17.5	782.12	312,848
Cull Ewes	426.0	75.00		79.88	31,950
Wool	15,180	3.70		140.42	56,166
					-
					-
GROSS FARM REVENUE			**96**	**1,002.41**	**400,964**
less Livestock purchases				$21	$8,400
NET FARM INCOME			**94.2**	**981**	**392,564**
FARM WORKING EXPENSES					
10.42	SU/Ha		per SU	per ha	
Wages			4.00	42	16,672
Animal Health			3.90	41	16,255.59
Breeding			0.40	4	1,667
Shed Expenses				-	-
Electricity			1.80	19	7,503
Feed			3.20	33	13,338
Fertiliser			11.00	115	45,849
Freight			1.17	12	4,877
Seeds			1.70	18	7,086
Shearing			4.00	42	16,672
Weed and Pest			2.88	30	12,004
Fuel			3.55	37	14,797
Vehicle			2.37	25	9,878
Repairs & Maint			5.20	54	21,674
Rates			2.40	25	10,000
Communication			0.48	5	2,000
Insurance			1.25	13	5,200
Acct, Legal,Cons			1.06	11	4,400
Administration			0.77	8	3,200
Depreciation			4.75	49	19,798
Other			0.19	2	800
Irrigation	Off Farm		5.76	60	24,000
	On Farm		4.80	50	20,000
FARM EXPENDITURE			**67**	**694**	**277,672**
FARM SURPLUS			**28**	**287**	**114,892**

Existing Flood Irrigated Dairy Support

- This dairy support property operates on a similar land class to the existing flood irrigated sheep farm outlined on page 3.
- Every year, 680 calves are taken on in December and grazed right through for 18 months before leaving as in-calf heifers, before their second winter.
- The calves are initially grazed at $7/hd/week until the end of April, they then go onto an $11.5/hd/week grazing contract for the next 12 months and then increase to $15/hd/week for the 4 weeks of the following May.
- The following table shows the profit on a *per hectare basis*.

DAIRY SUPPORT					
REVENUE			**$/hd/wk**	**Weeks**	**$ Per Ha**
Calves		1.7	$7.00	18	**214**
R1yrs		1.7	$11.50	52	**1,017**
R2 yrs		1.7	$15.00	4	**102**
TOTAL REVENUE					**1,333**
FARM WORKING EXPENSES					
				per ha	
Livestock Purchases					
Wages				150	60,000
Animal Health				1	400
Breeding					-
Shed Expenses					-
Electricity				19	7,503
Feed					
Fertiliser				200	80,000
Freight				11	4,400
Seeds				31	12,400
Shearing					-
Weed and Pest				18	7,200
Fuel				33	13,200
Vehicle				25	9,878
Repairs & Maint				50	20,000
Rates				30	12,000
Communication				5	2,000
Insurance				11	4,400
Acct, Legal,Cons				11	4,400
Administration				8	3,200
Depreciation				49	19,798
Other				2	800
Irrigation	Off Farm			60	24,000
	On Farm			50	20,000
FARM EXPENDITURE					**764**
FARM SURPLUS					**569**

Existing Dryland Sheep Farm

- The farm system outlined below is based on the farm having no irrigation, so the whole property is dryland.
- A half bred sheep system which produces store lambs and mid micron wool.
- The farm is stocked at 4.4 sheep per hectare with the ewes lambing at 100%. Lambs are sold for $65/hd and wool is sold for $10/kg.

	HALF BRED SHEEP DRYLAND		$/SU	$ / Ha	Total
REVENUE	Number	Price			
Lamb	1,168	65.00	45.6	190	75,920
Cull Ewes	214	80.00	10.3	43	17,114
Wool	7,388	10.00	44.4	185	73,876
			-	-	-
			-	-	-
GROSS FARM REVENUE				**417**	**166,910**
less Livestock purchases				$3.7	$1,460
NET FARM INCOME			**99.4**	**414**	**165,450**
FARM WORKING EXPENSES					
4.2	SU/Ha		per SU	per ha	
Wages			4.00	17	6,655
Animal Health			3.90	16	6,488
Breeding			0.40	2	665
Shed Expenses				-	-
Electricity			1.80	7	2,995
Feed			3.20	13	5,324
Fertiliser			5.00	21	8,319
Freight			1.17	5	1,947
Seeds			1.70	7	2,828
Shearing			4.00	17	6,655
Weed and Pest			2.88	12	4,791
Fuel			3.55	15	5,906
Vehicle			2.37	10	3,943
Repairs & Maint			5.20	22	8,651
Rates			6.01	25	10,000
Communication			1.20	5	2,000
Insurance			3.13	13	5,200
Acct, Legal,Cons			2.64	11	4,400
Administration			3.00	8	3,200
Depreciation			4.75	20	7,903
Other			0.48	2	800
Irrigation	Off Farm		-		-
	On Farm		-		-
FARM EXPENDITURE			**60**	**247**	**98,670**
FARM SURPLUS			**40**	**167**	**66,780**

Farm Models for New Farm Systems

Efficiently Spray Irrigated Sheep Farm Model – Existing Irrigator Charges

- This model is an example of a farm system which could be operated on a 400ha property if it was developed to utilise efficient forms of spray irrigation.
- It is based on a sheep breeding and finishing system in which the lambs bred on the property are finished to 19KgCW and sold for $5.05/KgCW.
- The farm is stocked at 17.1 sheep per ha with the ewes lambing at 140% STS. Half of the hoggets are mated which lamb at 90%. An extra 4000 trade lambs are finished on the excess summer pasture with a margin calculated per head of $18.

		SHEEP BREEDING & FINISHING		$ / Ha	Total
REVENUE	Number	Price	Weight (Kgs)		
Breed Lambs	7353	$5.05	19.00	1,764	705,520
Traded Lambs	4000	$18.00		180	72,000
Cull Ewes	836	$75.00		157	62,730
Ewe Wool	5700	$3.70	4.50	237	94,905
Hoggets Wool	1140	$3.70	2.80	30	11,810
Lambs Wool (half shorn)	5677	$4.20	1.5	89	35,762
GROSS FARM REVENUE				**2,457**	**982,728**
less purchases			1.0	20	7,980
NET FARM INCOME			123	**2,437**	**974,748**
FARM WORKING EXPENSES					
19.8	SU/Ha		per SU	per ha	
Wages			9.00	178	71,290
Animal Health			4.00	79	31,684
Breeding			0.40	8	3,168
Shed Expenses				-	-
Electricity			3.50	69	27,724
Feed			5.00	99	39,606
Fertiliser			12.62	250	100,000
Freight			0.76	15	6,000
Seeds			2.80	55	22,179
Shearing			4.00	79	31,684
Weed and Pest			1.50	30	11,882
Fuel			3.00	59	23,763
Vehicle			2.40	48	19,011
Repairs & Maint			3.20	63	25,348
Rates			2.02	40	16,000
Communication			0.25	5	2,000
Insurance			0.76	15	6,000
Acct, Legal,Cons			0.56	11	4,400
Administration			0.56	11	4,400
Other			0.20	4	1,600
Total			**57**	**1,119**	**447,739**
Depreciation			5.05	100	40,000
Total			**62**	**1,219**	**487,739**
Irrigation	Off Farm		15	300	120,000
	On Farm		10	200	80,000
FARM EXPENDITURE			**87**	**1,719**	**687,739**
				$/ha	**Total**
FARM SURPLUS				**718**	**287,009**

- The farm surplus shown under this model is **$718** per hectare and is **before** debt servicing costs to convert the 400ha property from flood irrigation to spray irrigation, for an *existing water user*.
- Table 3 below outlines the potential conversion costs, cost to purchase water shares and required debt servicing at a capital cost of 6%.

Table 3

Item	$ / ha	Total
Clean Up	150	60,000
Irrigation System	5,500	2,200,000
Cow Shed	0	0
Electricity	250	100,000
Housing	0	0
Other Buildings	100	40,000
Fencing and Lanes	200	80,000
Stockwater	150	60,000
Fertiliser	200	80,000
Regrassing	300	120,000
Machinery	150	60,000
Livestock	810	324000
Gross Total	**7,810**	**3,124,000**
Water Shares	1900	760,000
Total	**9,710**	**3,884,000**
Debt Servicing Cost	583	233,040

- The adjusted Farm Surplus with debt servicing costs of the conversion included, is outlined in Table 4

Table 4

				$/ha	Total
FARM SURPLUS				**718**	**287,009**
less Debt Servicing				583	233,040
FARM SURPLUS after debt servicing				**135**	**53,969.02**

Efficiently Spray Irrigated Dairy Support Farm Model – Existing Irrigator Charges

- A dairy support system model operated on a 400ha property developed to utilise efficient spray irrigation from an existing flood irrigation.
- The farm is based on 80% of the land being utilised to raise young dairy heifers and the remaining 20% used to winter dairy cows.
- In December 1024 dairy calves are taken on and grazed for 18 months. The calves are initially grazed at $7/hd/week until the end of April, then $11.50/hd/week for the next 12 months and finally increase to $15/hd/week for 4 weeks of the following May.
- The winter dairy cow policy involves taking on 1,620 MA cows for 9 weeks over the winter and grazing them at a rate of $28/week.

IRRIGATED DAIRY SUPPORT					
	REVENUE				
	No./ha	**Price**	**Weeks**	**Total Price/ha**	**Total**
Calves	3.20	$7.00	18	**323**	129,024
R1yrs	3.20	$11.50	52	**1,531**	612,352
R2yrs	3.20	$15.00	4	**154**	61,440
Dairy Cow Wintering	20.24	$28.00	9	**1,020**	408,000
TOTAL REVENUE				**3,027**	**1,210,816**
FARM WORKING EXPENSES					
				per ha	total
Wages				180	72,000
Animal Health				1	400
Breeding					-
Shed Expenses					-
Electricity				70	28,000
Feed				200	80,000
Fertiliser				250	100,000
Freight				15	6,000
Seeds				54	21,600
Winter Crop				220	88,000
Weed and Pest				35	14,000
Fuel				62	24,800
Vehicle				45	18,000
Repairs & Maint				60	24,000
Rates				40	16,000
Communication				5	2,000
Insurance				15	6,000
Acct, Legal,Cons				11	4,400
Administration				11	4,400
Other				4	1,600
Total				**1278**	**511200**
Depreciation				100	40,000
Total		**46%**		**1378**	**551,200**
Irrigation	Off Farm			300	120,000
	On Farm			200	80,000
FARM EXPENDITURE				**1,878**	**751,200**
				$/ha	**Total**
FARM SURPLUS				**1,149**	**459,616**

- The farm surplus shown under this model is **$1149** per hectare and is **before** debt servicing costs to convert the 400ha property from flood irrigation to spray irrigation, for an *existing water user*.
- Table 5 below outlines the potential conversion costs, cost to purchase of water shares as an existing water user, and required debt servicing at a capital cost of 6%.

Table 5

CONVERSION COST		
Item	**$ / ha**	**Total**
Clean Up	350	140,000
Irrigation System	5,500	2,200,000
Cow Shed		0
Electricity	300	120,000
Housing		0
Other Buildings	150	60,000
Fencing and Lanes	200	80,000
Stockwater	350	140,000
Fertiliser	200	80,000
Regrassing	300	120,000
Machinery	250	100,000
Livestock		0
Gross Total	**7600**	**3,040,000**
Water Shares	1900	760,000
Total	**9,500**	**3,800,000**
Debt Serv. Cost on Conv.	570	228,000

- The adjusted Farm Surplus with debt servicing costs of the conversion included, is outlined in Table 6

Table 6

				$/ha	**Total**
FARM SURPLUS				**1,149**	**459,616**
less Debt Servicing				570	228,000
NET FARM SURPLUS AFTER DEBT SERVICING				**579**	231,616

Efficiently Spray Irrigated Dairy Farm Model – Existing Irrigator Charges

- This model is an example of a dairy system which could be operated on a 400ha property if it was developed to utilise efficient forms of spray irrigation.
- The farm is based on a stocking rate of 3.2 cows per ha producing 1315MS/ha.
- All young stock are grazed off farm and the cows are wintered off the property. The average milk price of $6.05/KgMS is used and farm working expenses accumulate to $4.48/KgMS including depreciation.

DAIRY FARMING SYSTEM					
				$ / Ha	**Total**
REVENUE		Price	per kgMS		
Milksolids			$6.05	7,957	3,182,619
Cattle net of Purchases			0.35	460	184,118
Other			0.02	26	10,521
GROSS FARM REVENUE			**6.42**	**8,443**	**3,377,259**
Livestock Purchases			0.02	26	10,521
NET FARM REVENUE			**6.40**	**8,417**	**3,366,737**
FARM WORKING EXPENSES					
			per MS	per ha	Over 400ha
Wages			0.75	986	394,540
Animal Health			0.20	263	105,211
Breeding			0.10	132	52,605
Shed Expenses			0.05	66	26,303
Electricity			0.18	237	94,689
Feed/Grazing			1.33	1749	699,650
Fertiliser			0.50	658	263,026
Freight			0.05	66	26,303
Seeds			0.05	66	26,303
Shearing				0	-
Weed and Pest			0.03	39	15,782
Fuel			0.08	105	42,084
Vehicle			0.08	105	42,084
Repairs & Maint			0.15	197	78,908
Rates			0.04	53	21,042
Communication			0.02	26	10,521
Insurance			0.06	79	31,563
Acct, Legal,Cons			0.05	66	26,303
Administration			0.05	66	26,303
Other			0.06	79	31,563
Total			**3.83**	**5037**	**2,014,782**
Depreciation			0.27	350	140,000
Total		64%	**4.10**	**5387**	**2,154,782**
Irrigation		Off Farm	0.23	300	120,000
		On Farm	0.15	200	80,000
FARM EXPENDITURE		70%	**4.48**	**5887**	**2,354,782**
			MS	**$/ha**	
FARM SURPLUS			**1.92**	**2530**	**1,011,956**

- Table 7 show the potential costs which would be incurred if the property was converted from a flood irrigated sheep breeding to spray irrigated dairy unit, for an *existing water user*
- Debt servicing at a capital cost of 6%.

Table 7

CONVERSION COSTS going from Sheep to Dairy			
Item		**MS**	**$ / ha**
Clean Up		0.38	500
Irrigation System		4.18	5,500
Cow Shed		3.04	4,000
Electricity		0.53	700
Housing		0.61	800
Other Buildings		0.06	75
Fencing and Lanes		0.38	500
Stockwater		0.30	400
Fertiliser		0.23	300
Regrassing		0.42	550
Machinery		0.57	750
Livestock		3.92	5,874
Gross Total		**15.17**	**19949**
Plus Water Shares (1 for 1 ha)		1.44	1900
Total		**16.61**	**21,849**
Debt Serv. Cost on Conv.		0.91	1197
Debt Serv. Cost on Water Sh		0.09	114
Total Debt Servicing		**1.00**	**1311**

- The adjusted Farm Surplus with debt servicing costs of the conversion from sheep to dairy included, is outlined in table 8 below.

Table 8

			MS	**$/ha**
FARM SURPLUS			**1.92**	**2530**
less Debt Servicing			1.00	1311
NET FARM SURPLUS AFTER DEBT SERVICING			**0.93**	**1219**

- Table 9 shows the potential costs which would be incurred if the property was converted from a flood irrigated dairy support farm to spray irrigated dairy unit, for an *existing water user*
- Debt servicing at a capital cost of 6%.

Table 9

CONVERSION COSTS going from Dairy Support to Dairy			
Item	**MS**	**$ / ha**	
Clean Up	0.38	500	200,000
Irrigation System	4.18	5,500	2,200,000
Cow Shed	3.04	4,000	1,600,000
Electricity	0.53	700	280,000
Housing	0.61	800	320,000
Other Buildings	0.06	75	30,000
Fencing and Lanes	0.38	500	200,000
Stockwater	0.30	400	160,000
Fertiliser	0.23	300	120,000
Regrassing	0.42	550	220,000
Machinery	0.57	750	300,000
Livestock	3.92	7,354	2,941,440
Gross Total	**16.29**	**21429**	**8,571,440**
Plus Water Shares (1 for 1 ha)	1.44	1900	760,000
Total	**17.74**	**23,329**	**9,331,440**
Debt Serv. Cost on Conv.	0.98	1286	514,286
Debt Serv. Cost on Water Sh	0.09	114	45,600
Total Debt Servicing	**1.06**	**1400**	**559,886**

- The adjusted Farm Surplus with debt servicing costs of the conversion from dairy support to dairy is outlined in table 10 below.

Table 10

			MS	**$/ha**
FARM SURPLUS			**1.92**	**2530**
less Debt Servicing			1.06	1400
NET FARM SURPLUS AFTER DEBT SERVICING			**0.86**	**1130**

Livestock costs do vary between the two models due to the sell down of the capital ewe flock would offset the total capital requirement.

Model Performance Summary Tables

- The results for the on farm budgets above have been summarised in the table below for an existing irrigator.
- Table 11 shows the farm surplus for systems in their existing farm model moving to a spray irrigated model. The table displays the marginal return on capital before any debt servicing, under different conversion scenarios.
- Marginal return is the increase in farm surplus from the new system before any debt servicing, as each individual irrigator would have differing costs of capital.
- Marginal capital is the amount of capital required, per hectare, to be invested to convert to the new farming system.

Table 11

Existing Farm					
	Mixed Arable	**Sheep Breeding**	**Dairy Support**	**Dryland Halfbred**	
Area	400ha	400ha	400ha	400ha	
Income	$1,597	$981	$1,333	$414	
Expenses	$1,252	$694	$764	$247	
Farm Surplus $ per HA	**$345**	**$287**	**$569**	**$167**	
New Farms Systems under Spray Irrigation					
Existing System - moving to New System	*Dairy Support*	*Sheep Breeding*	*Mixed Arable*	*Sheep Breeding*	*Dairy Support*
New System	**Dairy**	**Dairy**	**Mixed Arable**	**Sheep Breed & Finish**	**Dairy Support**
	$ Per Ha	$ Per Ha	$ Per Ha	$ Per Ha	$ Per Ha
Income	$8,417	$8,417	$3,472	$2,437	$3,027
Expenses	$5,387	$5,387	$2,055	$1,219	$1,378
Trading Surplus	$3,030	$3,030	$1,417	$1,218	$1,649
On Farm Irrigation	$200	$200	$200	$200	$200
Off Farm Irrigation	$300	$300	$300	$300	$300
Farm Surplus	**$2,530**	**$2,530**	**$917**	**$718**	**$1,149**
Conversion Debt Servicing	$1,400	$1,311	$569	$583	$570
Farm Surplus after Debt Servicing	**$1,130**	**$1,219**	**$348**	**$135**	**$579**
Conversion Costs	$21,429	$19,949	$7,578	$7,810	$7,600
Water Share Capital	$1,900	$1,900	$1,900	$1,900	$1,900
Total Marginal Capital	**$23,329**	**$21,849**	**$9,478**	**$9,710**	**$9,500**
Debt Servicing on Conversion Costs (6%)	$1,285.72	$1,196.92	$454.65	$468.60	$456
Debt Servicing on Water Shares (6%)	$114	$114	$114	$114	$114
Total Debt Servicing	**$1,400**	**$1,311**	**$569**	**$583**	**$570**
Marginal Returns for Existing Irrigators moving from Existing to a New Spray System					
	Dairy Support	*Sheep Breeding*	*Mixed Arable*	*Sheep Breeding*	*Dairy Support*
	Dairy	**Dairy**	**Mixed Arable**	**Sheep Breed & Finish**	**Dairy Support**
Existing Irrigator Users					
Annual Charge = $300/ha, Capital Cost = $1,900/ha					
Marginal Return	$1,961	$2,243	$571	$430	$580
Marginal Return on Capital (before debt servicing)	**8.4%**	**10.3%**	**6.0%**	**4.4%**	**6.1%**

- All farm models currently presented, outline the performance results for an existing irrigator with the applicable charges.
- In table 12 below, it outlines the performance results when the models have a *new irrigator's capital and annual charge* applied to the model.
- Please note the assumption that any *new irrigator* is converting from and dryland halfbred sheep system when establishing marginal returns and required marginal capital.

Table 12

Existing Farm				
	Dryland Sheep			
Area	400ha			
Income	$414			
Expenses	$247			
Farm Surplus	$167			
New Farms Systems under Spray Irrigation				
Existing System - moving to New System	*Dryland Halfbred Sheep*			
New System	**Dairy**	**Mixed Arable**	**Sheep Breed & Finish**	**Dairy Support**
	$ Per Ha	$ Per Ha	$ Per Ha	$ Per Ha
Income	$8,417	$3,472	$2,437	$3,027
Expenses	$5,387	$2,055	$1,219	$1,378
Trading Surplus	$3,030	$1,417	$1,218	$1,649
On Farm Irrigation	$200	$200	$200	$200
Off Farm Irrigation	$420	$420	$420	$420
Farm Surplus	**$2,410**	**$797**	**$598**	**$1,029**
Conversion Debt Servicing	$1,454	$623	$697	$624
Farm Surplus after Debt Servicing	**$956**	**$174**	**-$100**	**$405**
Conversion Costs	$21,429	$7,578	$8,822	$7,600
Water Share Capital	$2,800	$2,800	$2,800	$2,800
Total Marginal Capital	**$24,229**	**$10,378**	**$11,622**	**$10,400**
Debt Servicing on Conversion Costs (6%)	$1,285.72	$455	$529.32	$456
Debt Servicing on Water Shares (6%)	$168	$168	$168	$168
Total Debt Servicing	$1,454	$623	$697	$624
Marginal Returns for New Irrigators moving from Dryland Sheep to a New Spray System				
Existing System - moving to	*Dryland Halfbred Sheep*			
New System	**Dairy**	**Mixed Arable**	**Sheep Breed & Finish**	**Dairy Support**
New Irrigator User				
Annual Charge = $420/ha, Capital Cost = $2800/ha				
Marginal Return	$2,243	$630	$431	$862
Marginal Return on Capital (before debt servicing)	**9.3%**	**6.1%**	**3.7%**	**8.3%**