

"Achieving Outcomes by Building Capability"

The
**AgriBusiness
Group™**

The Economic Benefit to the Community of the North Otago Irrigation Scheme

**Prepared for: Waitaki Development Board
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July 2010**

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Please Read

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1 Foreward

Waitaki Development Board Ltd Foreword to the Economic Benefit Study

Agriculture continues to provide the back bone of the Waitaki economy and for that reason is a major focus of the Waitaki Development Board Limited.

We have seen rapid intensification of agriculture in the last two decades, driven by community irrigation schemes that were initially developed by the Crown and subsequently sold into farmer ownership in the early 1990's.

Without reliable irrigation water North Otago is one of the most difficult climates in New Zealand in which to farm. Dry land farmers adopt conservative farming systems both in land use and stocking rate. The constant threat of drought significantly impacts on the profitability of businesses throughout the district both on and off farm.

Prior to the widespread introduction of irrigation, North Otago was the most drought declared farming region in New Zealand.

Historical studies on the impact of irrigation identify economic, employment and social impacts as positive outcomes.

As a result of irrigation we expect to see the following benefits:

Economic Impact

We would expect to see the level of expenditure in the local economy increase significantly as a result of:

- construction of the off farm infrastructure to deliver water to the farm gate,
- on farm development for the distribution and application of water
- increased annual farm working expenses as a result of intensification of land use.

With intensification, studies have shown we could expect to see expenditure through the local economy increasing at least two times between traditional livestock and irrigated arable/grazing farms and a five times increase in expenditure between a traditional dry land livestock farm and an intensive irrigated dairy operation.

Employment

We would expect to see an increase of at least one full time equivalent for every 150 to 200 hectares of irrigation developed.

Social Impacts

We would expect to see:

- an increase in the rural population with a significant proportion of that increase being either young single workers or young families under thirty years of age.
- an increase in residents with tertiary qualifications both on farm and those involved in downstream servicing.

These increases in population assist with schooling and provision of health services, where funding tends to be population based.

With the completion of North Otago Irrigation Company Ltd Stage 1 development, the Waitaki Development Board has taken the opportunity to commission a study to determine the benefits accruing to our community as a result of this development.

At the time the scheme was proposed, the community invested in the scheme with the expectation the benefits outlined above would be achievable.

The Result

The Agri Business Group report that follows highlights:

- farmers spent \$62,240,000 in land conversion costs, over and above the cost of the scheme itself.
- revenue from irrigated properties has increased 308% from \$21,140,000 without irrigation to \$65,008,000 with irrigation.
- a 310 % or \$29,030,000 increase in annual farm expenditure flowing into the local economy.
- approximately 76 people directly employed on farm and historical studies would suggest there would be as many positions generated off farm, servicing those properties.

In a district that used to flourish or suffer at the whims of the weather, we now have confidence in a future of growth and a level of economic activity in this district that is sustainable.

The community can have some comfort that the \$10,000,000 loan from the Waitaki District Council that helped to make the North Otago Irrigation Company Limited scheme a reality, is paying significant dividends to the wider community and will continue to do so for many years to come.

Peter Robinson
Chairman
Waitaki Development Board

2 Executive Summary

The purpose of this study was to calculate the returns that have occurred to the Waitaki District as a result of the development of approximately 10,000 Ha of irrigation in the North Otago Irrigation Company (NOIC) area. The results were compiled from a combination of a postal survey, telephone contact, NOIC records and a previous survey carried out at the time of the instigation of the scheme.

Representative models were created for land use with irrigation and land use without the scheme. The difference between the two sets of data (with and without) is given as the returns earned from the irrigation development.

The study identified that:

- With conversion there has been a significant move to dairy farming at approximately 60% of the area with an even spread between the other three main land uses of Sheep and Beef, Arable and Dairy Support.
- Overall the output expressed as Gross Revenue from the scheme area has increased from \$21.14 m without the irrigation scheme to \$65.08 m with the scheme, an **increase in output of \$43.95 m** or just over 300%.
- Overall there has been an **increase in Cash Farm Expenditure of \$29.03 m or 310%**. This increase in expenditure has had a large impact in the local community as studies have shown that a relatively high proportion of farm expenditure occurs in the local town and community.
- The Cash Farm Surplus (or added value) gained from having the irrigation scheme in place **is \$14.91 m per annum**.
- Altogether farmers have **spent approximately \$62.24 m** in land conversion costs over and above the cost of the scheme.
- Using the assumptions made the labour employed in the scheme is approximately double that without the scheme at **approximately 76 extra employees**.

As can be seen from the returns gained from the irrigation scheme the numbers are substantial and are significantly more than those suggested by us as the potential for the scheme at the time of the hearing of the consent. In all cases the returns would not have been possible through any alternative land use or using water from another source.

3 Results of Analysis

The following information reports the results of the investigation into:

- Land Use
- Financial Returns
- Development Costs
- Labour

3.1 Land Use

The land use data was compiled from a combination of the survey, telephone contact, NOIC records and the previous survey carried out at the time of instigation of the scheme four years ago. There would have been some change in land use during that time if the scheme did not go ahead as there has been a change away from the traditional land uses of sheep and beef farming towards dairy support. However the nature of the performance that could have been gained from this change in land use would be muted in terms of the overall financial performance of farms.

Table 1: Land Use (Ha)

	Dairy	Dairy Support	Sheep	Beef	Deer	Arable	Other
Prior to Conversion	2,075	1,211	5,199	179	0	1,241	27
Subsequent to Conversion	5,820	933	1,023	883	60	1193	19

As can be seen from the table there was a reasonable amount of dairy farming in the area prior to the scheme. Some of this was fully or partially irrigated while some of it was dryland. Associated with this dairy land there were some reasonably large properties of dairy support, most of which was dryland. Apart from this it can be seen that the predominant land use was sheep farming.

With conversion there has been a significant move to dairy farming at approximately 60% of the area with an even spread between the other four main land uses. Deer farming is only a small proportion of the total.

It is interesting to note the growth of irrigated land use from less than 7,500 ha to approximately 10,000 ha and the change of land use towards dairy and dairy support since the scheme was first taken up. It is also interesting to note the change of land ownership during this time.

3.2 Financial Returns

The financial returns have been calculated by deducting the expected financial returns from the land without the scheme from those with the scheme.

3.2.1 Output

Output is an expression of the Gross Revenue that can be gained from an enterprise. In the following table it is shown as that which could be gained without the scheme and that which was gained with the scheme. The difference is the amount of output that can be attributed to the scheme.

Table 2: Output Changes (\$m)

	Without	With	Difference
Milksolids	13.35	47.46	34.11
Arable	0.60	3.46	2.86
Sheep	4.24	4.80	0.56
Cattle	1.42	5.67	4.25
Other	0.18	0.83	0.65
Dairy Support	1.35	2.50	1.15
Deer	-	0.36	0.36
Total	21.14	65.08	43.95

The biggest change is obviously the increase in output that comes from the increase in dairy farming at \$34.11 m. This is a combination of the increase in output from the old partially irrigated and dryland dairy farms and the increase from the new areas of dairy farming. The other big increase is the increase in arable income. Although there has been a slight drop in the area of arable land the change in the nature of the land use that occurs from dryland to irrigated arable farming in terms of the volume and type of crops grown shows a significant increase in output.

Overall the output from the scheme area has increased from \$21.14 m before the irrigation scheme to \$65.08 m with the scheme, an increase in output of \$43.95 m.

3.2.2 Cash Farm Expenditure

The change in Cash Farm Expenditure is shown in Table 3 which lists the expenditure without the scheme the expenditure with the scheme and the difference that arises as a result of the scheme being in place.

The big increases are in the areas of livestock purchases, wages, feed, fertiliser and irrigation charges off farm. The only negative change is in the area of shearing costs which have reduced by \$0.25 m.

Overall there has been an increase in Cash Farm Expenditure of \$29.03 m. This increase in expenditure will have large impacts in the local community as studies have shown that a relatively high proportion of farm expenditure occurs in the local town and community.

Table 3: Cash Farm Expenditure (\$m)

FARM WORKING EXPENSES	Without	With	Difference
Livestock Purchases	0.67	2.50	1.84
Wages	1.77	5.13	3.37
Animal Health	0.73	1.72	1.00
Breeding	0.24	0.86	0.62
Shed Expenses	0.11	0.39	0.28
Electricity	0.50	1.92	1.42
Feed	3.45	10.35	6.90
Fertiliser	2.00	4.63	2.62
Freight	0.15	0.34	0.19
Seeds	0.33	0.67	0.33
Shearing	0.31	0.06	-0.25
Weed and Pest	0.33	0.34	0.00
Fuel	0.49	0.76	0.28
Vehicle	0.44	0.78	0.34
Repairs & Maintenance	0.89	2.33	1.44
Rates	0.22	0.46	0.24
Communication	0.10	0.19	0.09
Insurance	0.19	0.42	0.23
Acct, Legal, Consultancy	0.15	0.28	0.13
Administration	0.19	0.49	0.30
Other	0.05	0.21	0.15
Irrigation - Off Farm	-	6.95	6.95
Irrigation - On Farm	0.50	1.08	0.58
	-	-	-
CASH FARM EXPENDITURE	13.81	42.85	29.03

3.2.3 Value Added

Value Added can roughly be equated to Cash Farm Surplus. That is that amount of the income that is available for interest, tax, depreciation, owners reward and reinvestment.

Table 4 : Added Value (\$m)

	Without	With	Difference
CASH FARM SURPLUS	7.32	22.23	14.91

The added value gained from having the irrigation scheme in place is \$14.91 m.

3.3 Development Costs

Conversion of land use systems requires a lot of expenditure on things other than the irrigation system itself. Information was gathered for this from the survey, telephone contact and from the prior survey which also collected data on conversion expenditure. Although the results varied considerably between properties depending on the nature of the property the following were adopted as representative of the costs incurred.

Table 5 : Conversion Costs

	Cost / ha
Dairy	10,915
Dairy Support	2,240
Sheep and Beef	4,390
Arable	2,920

The existing Dairy land was included as requiring the installation of irrigation a small amount of stock water and the increase in cows required. When multiplied by the land use mix adopted for this exercise it came up with the following results.

Table 6 : Conversion Costs (\$m)

Item	Cost
Clean Up	0.39
Irrigation System	21.81
Cow Shed	11.24
Electricity	0.37
Housing	2.56
Other Buildings	0.60
Fencing and Lanes	1.57
Stockwater	0.48
Fertiliser	1.99
Regrassing	3.32
Machinery	1.95
Livestock	15.94
Total	62.24

As can be seen from Table 6 the irrigation system is the highest cost at \$21.81 m with livestock the next most expensive at \$15.94 m with cowsheds next at \$11.24 m. These three items take up approximately 80% of the expenditure.

Altogether farmers have spent approximately \$62.24 m in land conversion costs.

3.4 Labour

One of the most significant changes in land use conversion is the number of labour units employed. As has already been shown the total spent on labour annually has increased from \$1.77 m to \$5.13m that is an increase in \$3.37m spent on labour.

We have assumed that the average payment is \$25,000 per permanent employ without the scheme to reflect the predominantly sheep land use and a with the scheme payment of \$35,000 to reflect the high proportion of dairy positions.

Table 7: Labour Employed

	Without	With	Difference
Labour Employed	71	147	76

Using the assumptions made that means that the labour employed in the scheme is approximately double that without the scheme at approximately 76 extra employees.

In some work we did some years ago in relation to the quality of employment we know that there is a significant increase in some of the measures of employee status such as qualifications, pay and degree of responsibility that accompanies these positions.

4 Methodology

The purpose of this study was to calculate the returns that have occurred to the Waitaki District as a result of the development of approximately 10,000 Ha of irrigation in the North Otago Irrigation Company (NOIC) area.

The methodology for the study was to first carry out a survey of all NOIC members. The survey (appended to this report) was sent out by the Chair of NOIC under a covering letter, which is also appended to this report. The purpose of the survey was to ascertain:

- Land use prior to the scheme,
- Land use subsequent to the scheme,
- Development costs of the transition,
- Subsequent financial performance (revenue and cash farm expenditure).
- Labour employed.

The result of the survey in terms of number of returns and the quality of the information in it was disappointing. Returns were received from 1,850 ha of the possible 10,000 ha in the scheme. Some of the returns were complete while some of the returns were limited in the amount of information that they included.

A telephone survey was then carried out to improve the data that was available. This was carried out to bring the total area covered by the survey to 6,286 ha. There was also further information available to the study including a list of land use of members of the scheme which was supplied by NOIC and reference to a previous study carried out at the beginning of the scheme. This prior study had information on land use before the scheme, land use subsequent to the scheme and the development costs that were expended.

From this information a list of land use before and land use after the scheme was compiled. At the same time the cost of land use conversion was also completed.

Farm financial models (included as appendix 1) were created for each of the farm types included in the survey material. These were based on the MAF Farm Monitoring models. These were compiled for the expected physical and financial returns received in the year 2009/10. These models were created for land use with irrigation and land use without the scheme.

The difference between the two sets of data (with and without) is given as the returns earned from irrigation development.

Appendix 1: Farm financial models.

Irrigated Models

Conversion				Irrigated Dairy Support				SHEEP FINISHING							
Dairy				REVENUE				REVENUE							
			\$ / Ha	Total				\$ / Ha	Total						
REVENUE						REVENUE						REVENUE			
Milk solids	1,337	Price	6.10	8,155	Price	0.18	2,524.50			0.70	Lamb Finishing	701	4.44	3,114	
Cattle net of Purchases			0.35	468						0.30	Ewe Breeding	7.65	90.62	693	
Other			0.08	107						-	Beef Finishing	-	3.34	-	
GROSS FARM REVENUE				8,729	1,745,885	TOTAL REVENUE						GROSS FARM REVENUE			
FARM WORKING EXPENSES						FARM WORKING EXPENSES						FARM WORKING EXPENSES			
Feed Purchased			0.06	80	Livestock Purchases					25.50	SU/Ha		per SU		
800	Wages		0.62	829	Wages		50						1,401	1,401	
62	Animal Health		0.21	281	Animal Health		45						65.00	65	
	Breeding		0.11	147	Breeding		-						31.00	31	
	Shed Expenses		0.05	67	Shed Expenses		-						-	-	
	Electricity		0.23	307	Electricity		10						10.00	10	
	Feed		1.27	1,698	Feed		400						64.00	64	
	Fertiliser		0.50	668	Fertiliser		175						164.00	164	
	Freight		0.03	40	Freight		13						13.00	13	
	Seeds		0.06	80	Seeds		35						35.00	35	
	Shearing		-	-	Shearing		-						45.00	45	
	Weed and Pest		0.02	27	Weed and Pest		31						31.00	31	
	Fuel		0.07	94	Fuel		45						45.00	45	
	Vehicle		0.08	107	Vehicle		38						38.00	38	
	Repairs & Maint		0.27	361	Repairs & Maint		54						54.00	54	
	Rates			64	Rates		21						21.00	21	
	Communication			27	Communication		7						7.00	7	
	Insurance			57	Insurance		12						24.00	24	
	Acct, Legal,Cons			37	Acct, Legal,Cons		14						14.00	14	
	Administration			78	Administration		10						10.00	10	
	Other			18	Other		14						14.00	14	
775	Irrigation	Off Farm		775	Irrigation	Off Farm	775							775	
		On Farm		120		On Farm	120							120	
CASH FARM EXPENDITURE				5,962	1,192,350	CASH FARM EXPENDITURE						CASH FARM EXPENDITURE			
CASH FARM SURPLUS				2,768	553,535	CASH FARM SURPLUS						CASH FARM SURPLUS			

BEEF FINISHING				DEER FINISHING				ARABLE				
REVENUE	\$ / Ha	Total		REVENUE	\$ / Ha	Total		REVENUE	\$ / Ha	Total		
Lamb Finishing				Deer	779	7.28	5,980	55%	Crop	2,898	2,898	
Ewe Breeding				Velvet	-	-	-		Sheep	760	760	
Beef Finishing	1,000.00	3.34	3,340					Grazing	119	119		
								Other	173	173		
GROSS FARM REVENUE		3,340	668,000	GROSS FARM REVENUE		5,980	1,196,000	GROSS FARM REVENUE		3,950	790,000	
FARM WORKING EXPENSES				FARM WORKING EXPENSES				FARM WORKING EXPENSES				
	SU/Ha	per SU			SU/Ha	per SU						
Livestock Purchases		1,136.94	1,137	Livestock Purchases		3,294.00	3,294	Livestock Purchases		505	505	
Wages		20.00	20	Wages		65.00	65	Wages		164	164	
Animal Health		15.00	15	Animal Health		31.00	31	Animal Health		12	12	
Breeding		-	-	Breeding		-	-	Breeding		-	-	
Shed Expenses		-	-	Shed Expenses		-	-	Shed Expenses		-	-	
Electricity		10.00	10	Electricity		10.00	10	Electricity		91	91	
Feed		64.00	64	Feed		64.00	64	Feed		26	26	
Fertiliser		164.00	164	Fertiliser		164.00	164	Fertiliser		339	339	
Freight		13.00	13	Freight		13.00	13	Freight		68	68	
Seeds		35.00	35	Seeds		35.00	35	Seeds		111	111	
Shearing		-	-	Shearing		45.00	45	Shearing		13	13	
Weed and Pest		31.00	31	Weed and Pest		31.00	31	Weed and Pest		101	101	
Fuel		35.00	35	Fuel		45.00	45	Fuel		109	109	
Vehicle		35.00	35	Vehicle		38.00	38	Vehicle		70	70	
Repairs & Maint		35.00	35	Repairs & Maint		54.00	54	Repairs & Maint		101	101	
Rates		21.00	21	Rates		21.00	21	Rates		39	39	
Communication		7.00	7	Communication		7.00	7	Communication		13	13	
Insurance		24.00	24	Insurance		24.00	24	Insurance		44	44	
Acct, Legal,Cons		14.00	14	Acct, Legal,Cons		14.00	14	Acct, Legal,Cons		33	33	
Administration		10.00	10	Administration		10.00	10	Administration		15	15	
Other		14.00	14	Other		14.00	14	Other		62	62	
Irrigation	Off Farm		775	Irrigation	Off Farm		775	Irrigation			775	
	On Farm		120		On Farm		120	Other	Off Farm		120	
									On Farm			
CASH FARM EXPENDITURE		2,579	515,787	CASH FARM EXPENDITURE		4,829	965,800	CASH FARM EXPENDITURE		2,811	562,200	
CASH FARM SURPLUS		761	152,213	CASH FARM SURPLUS		1,151	230,200	CASH FARM SURPLUS		1,139	227,800	

				<u>Dairy Support</u>			
				<u>REVENUE</u>			
	Dairy		\$ / Ha	Total			
REVENUE		per kgMS					
Milksolids	1,055	Price	6.10	6,433	Price	1,116.00	
Cattle net of Purchases			0.35	369			
Other			0.08	84			
GROSS FARM REVENUE			6,886	1,377,236	TOTAL REVENUE	1,116 223,200	
FARM WORKING EXPENSES				FARM WORKING EXPENSES			
Livestock Purchases			0.07	74	Livestock Purchases		
Wages			0.66	696	Wages	50	
Animal Health			0.21	221	Animal Health	45	
Breeding			0.11	116	Breeding		
Shed Expenses			0.05	53	Shed Expenses		
Electricity			0.21	221	Electricity	5	
Feed			1.40	1,476	Feed	200	
Fertiliser			0.54	569	Fertiliser	85	
Freight			0.03	32	Freight	11	
Seeds			0.06	63	Seeds	31	
Shearing			-	-	Shearing		
Weed and Pest			0.02	21	Weed and Pest	16	
Fuel			0.07	74	Fuel	41	
Vehicle			0.09	95	Vehicle	30	
Repairs & Maint			0.29	306	Repairs & Maint	29	
Rates				64	Rates	11	
Communication				27	Communication	5	
Insurance				57	Insurance	9	
Acct, Legal,Cons				37	Acct, Legal,Cons	10	
Administration				78	Administration	4	
Other				18	Other	2	
Irrigation	Off Farm				Irrigation	Off Farm	-
	On Farm			240		On Farm	-
CASH FARM EXPENDITURE			4,539	907,752	CASH FARM EXPENDITURE	583 116,534	
CASH FARM SURPLUS			2,347	469,485	CASH FARM SURPLUS	533 106,666	

REVENUE	SHEEP FINISHING	\$ / Ha	Total
Ewe Breeding	7.67	90.62	695
Cattle	36.47	3.34	122
GROSS FARM REVENUE			816 163,290
FARM WORKING EXPENSES			
	9.02 SU/Ha	per SU	
Livestock Purchases		9.43	85
Wages		4.00	36
Animal Health		3.92	35
Breeding		-	-
Shed Expenses		-	-
Electricity		0.57	5
Feed		2.52	23
Fertiliser		8.40	76
Freight		1.00	9
Seeds		2.11	19
Shearing		5.70	51
Weed and Pest		1.72	16
Fuel		4.50	41
Vehicle		3.28	30
Repairs & Maint		3.20	29
Rates			11
Communication			5
Insurance			9
Acct, Legal,Cons			10
Administration			4
Other			2
Irrigation	Off Farm		
	On Farm		
CASH FARM EXPENDITURE			495 99,013
CASH FARM SURPLUS			321 64,277

REVENUE	ARABLE	\$ / Ha	Total
0.25 Wheat	7.5	350	656
0.25 Barley	6.00	320	480
0.50 Livestock	9.0	90.6	409
GROSS FARM REVENUE			1,545 308,972
FARM WORKING EXPENSES			
Livestock Purchases		45	45
Wages		54	54
Animal Health		18	18
Breeding		-	-
Shed Expenses		-	-
Electricity		7	7
Feed		15	15
Fertiliser		250	250
Freight		18	18
Seeds		50	50
Shearing		26	26
Weed and Pest		150	150
Fuel		54	54
Vehicle		40	40
Repairs & Maint		50	50
Rates			15
Communication			7
Insurance			12
Acct, Legal,Cons			9
Administration			5
Other			3
Irrigation	Off Farm		
	On Farm		
CASH FARM EXPENDITURE			828 165,600
CASH FARM SURPLUS			717 143,372

Appendix 2: Survey Form and Covering Letter

8/06/2010

Dear NOIC Shareholder

NOIC LAND USE QUESTIONNAIRE

The Waitaki Development Board has engaged The AgriBusiness Group to carry out a survey of the NOIC members. The purpose of this survey is to gather information that will prove the value of the investment in irrigation and the increased productivity gained through the NOIC scheme.

Attached is a short (3 page) questionnaire that is designed to find out as much as is possible about your farms financial performance now and in its state pre conversion.

Please fill out the form with the current season (2009/10) in mind.

If there are parts that you have difficulty with then just leave them blank. The most important data is based on your current profitability. If you can fill out as much as you can about that and send that in, then this will have been worthwhile.

As a special incentive to achieve a quick turnaround of the questionnaire we have a prize draw for \$300 from CRT. All responses received in by the 25th of June will be in the draw to win this prize.

So why not do it now and get it out of the way. Then put in the attached envelope and return it to the office.

A McLay
Chairman
North Otago Irrigation Company.

1. Name

Account Number	
Name	
Address	

2. Irrigated Area

Total Area of Farm	
No of Shares	
Area irrigated.	
Dryland Area	

3. Irrigated Land Use

Tick one or apportion across several by %.

Dairy	
Dairy Support	
Sheep	
Beef	
Deer	
Arable	
Other	

4. Irrigated Revenue

Figures are mainly for total farm revenue.

	Cows Milked	Milksolids (Kg)	Other
Dairy			
	Feed Sold	Heifers Grazed	Cows Wintered
Dairy Support			
	Lambs	Cull Ewes / Hgts	Wool
Sheep			
	Beef Revenue		
Beef			
	Deer Revenue	Velvet	
Deer			
	Crop revenue	Straws	Grazing
Arable			
Other			

5. Irrigated Farm Working Expenses
Put in totals for whole farm.

Livestock Purchases	
Wages	
Animal Health	
Breeding	
Shed Expenses	
Electricity	
Feed	
Fertiliser	
Freight	
Seeds	
Shearing	
Weed and Pest	
Fuel	
Vehicle	
Repairs & Maintenance	
Rates	
Communication	
Insurance	
Acct, Legal, Consultancy	
Administration	
Other	
Irrigation - Water Charges	
Cash Farm Expenses	

6. Conversion Expenditure
Details of total cost to convert your farm.

	\$/ farm
Irrigation	
Infrastructure	
Livestock	
Plant and Machinery	
Other	

7. Dryland (Pre irrigation) land use.

Tick one or apportion across several by %.

Dairy	
Dairy Support	
Sheep	
Beef	
Deer	
Arable	
Other	

8. Dryland Performance

Please put in knowledge of prior performance.

	Cows Milked	Milksolids (Kg)	Other
Dairy			
	Feed Sold	Heifers Grazed	Cows Wintered
Dairy Support			
	Lambing %	% Lambs Killed	Average Carcass Wt
Sheep			
	Calving %	Cattle Killed	Traded Cattle
Beef			
	Fawning %	Deer Killed	Average Carcass Wt
Deer			
	Crop revenue	Straws	Grazing
Arable			
Other			

9. Comments

Biography – Stuart Ford

Biography

Stuart Ford is an economist and business consultant with The AgriBusiness Group (a privately owned research and consultancy company) who has concentrated on the primary industries (predominantly land based) in his consultancy career and has training in agricultural commerce, resource economics and agribusiness. His experience includes statistical analysis of economic responses of businesses to changes in market conditions and regulatory controls, particularly in relation to water allocation and water quality impacts. In that capacity he has worked for local and central government, industry organisations and a number of individual businesses on a wide range of research and business consultancy assignments. Stuart has experience of agribusiness management and economics, and has conducted a number of research projects and consultancies relating to land use change under irrigation, the economics of water resource utilisation and allocation as well as assessing socio economic impacts of water use in competitive use scenarios.

The AgriBusiness Group

The AgriBusiness Group was established in 2001 to help build business capability in the primary sector. It comprises a group of people dedicated to working with clients to develop sustainable and resilient businesses that:

- Fulfill the development needs of people, organisations and businesses involved in rural industries.
- Empower clients to position themselves for the future using creative and practical solutions and processes.
- Concentrate on markets in which they can develop competitive advantage.
- Establish industry best practice through the products and services they provide.

Group members have been involved with rural industry for many years bringing wide-ranging skills and expertise.