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**RITSO SOCIETY**

**Land Value Analysis - Irrigated and Dry Land**

**September 2004**



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Property & Infrastructure

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## 1.0 INTRODUCTION

1. We, Crighton Anderson have been commissioned by the Ritso Society to provide an analysis of land values for the greater Canterbury region, which identifies the difference in land value between irrigated land and dry land. We understand the purpose of this analysis is to provide potential investors in the proposed Central Plains irrigation scheme with an indication of the possible increase in asset value should they choose to make the proposed capital investment in the irrigation scheme and on-farm development.
2. This brief report and summary analysis does not extend to any opinion on the affordability of the scheme or associated change in land use.

## 2.0 BASIS OF ANALYSIS

### 2.1 REGIONS & DATA

3. We have researched sales data for the local authority areas set out in Table 1.

#### Sales Research Area

	Local Authority
(i)	Hurunui District
(ii)	Waimakariri District
(iii)	Selwyn District
(iv)	Ashburton District
(v)	Timaru District
(vi)	Waimate District
(vii)	Waitaki District

4. For each of the above regions we sourced sales transaction data from Headway Systems on the basis of the following search criteria.

#### Sales Search Criteria

	Criteria
(i)	Sales date from 1 January 2000 to present.
(ii)	Land area > 50 hectares.
(iii)	Property categories A [arable], D [dairy], and P [pastoral].

5. The sales data obtained on the above search criteria provided a total of 1,878 records [transactions] that required sorting, trimming, and analysis to land value benchmarks on a calendar year basis. The net result is our analysis based on a total 635 records.
6. In addition to the sales data sourced from Headway Systems we have also referred to our own sales information data to assist with the process of analysis, as described in the next section.

## 2.2 PROCESS OF ANALYSIS

7. Trimming the data was required to eliminate those records that were unlikely to represent open market transactions. We eliminated:
  - ▼ Any transactions where the land was not recorded as freehold
  - ▼ Any transactions that had a net sale price to capital value ratio of < 80% or > 300%; and
  - ▼ Any transactions between related parties.
8. We also eliminated sales records for all land other than the plains land, and the very limited sales records for 2004. The collation of the sales records can be delayed for a significant period of time, and is dependent on settlement dates and notification of the transfer to local authorities. For this reason, the volume of 2004 data was not sufficient for analysis purposes.
9. The remaining 635 records were separated into:
  - ▼ Plains dry land [434 sales records]; and
  - ▼ Plains irrigated [201 sales records].
10. The analysed land value for each of the sales records was determined by deducting the value of improvements [sourced from the most recent rating valuation] from the net sale price.
11. For each of the four years analysed, and on a local authority region basis within each of the four years, we have determined the added value of irrigation per hectare as being the difference between the average land value for irrigated land and the average dry land value per hectare. For each year we have assessed the average value across all seven local authority regions on the basis of weighting by the number of transactions within each local authority area.
12. In addition to the analysis described above we have completed the same analysis for the Selwyn and Ashburton Districts only. These areas consistently reflect a greater number of transactions than the other five local authority areas, and are more relevant to the region proposed to be irrigated by the Central Plains irrigation scheme.

### 3.0 RESULTS OF OUR ANALYSIS

#### 3.1 SUMMARY SCHEDULE FOR ALL LOCAL AUTHORITY AREAS

District	Number of Irrigated Property Transactions	Average Irrigated Land Value per hectare	Number of Dry Land Property Transactions	Average Dry Land Value per hectare	Implied Added Value of Irrigation per hectare
<b>2000</b>					
Hurunui	2	\$6,324	2	\$3,835	\$2,489
Waimakariri	3	\$9,446	15	\$5,256	\$4,190
Selwyn	8	\$10,502	10	\$4,960	\$5,542
Ashburton	13	\$10,636	46	\$4,475	\$6,161
Timaru	3	\$8,314	23	\$4,665	\$3,649
Waimate	6	\$7,501	4	\$4,312	\$3,189
Waitaki	8	\$10,196	9	\$4,206	\$5,990
	43	\$9,646	109	\$4,627	\$5,019
<b>2001</b>					
Hurunui	3	\$8,542	5	\$7,112	\$1,430
Waimakariri	5	\$9,604	17	\$5,379	\$4,225
Selwyn	15	\$12,041	7	\$6,208	\$5,833
Ashburton	19	\$11,285	65	\$6,527	\$4,758
Timaru	8	\$8,212	31	\$5,440	\$2,772
Waimate	13	\$9,746	7	\$5,239	\$4,507
Waitaki	5	\$14,049	6	\$6,326	\$7,723
	68	\$10,755	138	\$6,072	\$4,682
	% change	11.5%		31.2%	-6.7%
<b>2002</b>					
Hurunui	3	\$9,469	2	\$4,883	\$4,586
Waimakariri	3	\$12,133	14	\$6,721	\$5,412
Selwyn	4	\$11,725	10	\$6,566	\$5,159
Ashburton	22	\$12,626	44	\$6,762	\$5,864
Timaru	7	\$10,751	18	\$6,200	\$4,551
Waimate	5	\$10,552	11	\$5,418	\$5,134
Waitaki	8	\$12,368	4	\$6,479	\$5,889
	52	\$11,855	103	\$6,448	\$5,406
	% change	10.2%		6.2%	15.5%
<b>2003</b>					
Hurunui	10	\$12,025	11	\$6,788	\$5,237
Waimakariri	5	\$14,065	14	\$8,491	\$5,574
Selwyn	4	\$16,555	6	\$8,906	\$7,649
Ashburton	8	\$14,956	25	\$9,586	\$5,370
Timaru	6	\$12,559	11	\$7,009	\$5,550
Waimate	3	\$10,270	9	\$6,527	\$3,743
Waitaki	2	\$12,689	8	\$6,773	\$5,916
	38	\$13,368	84	\$8,055	\$5,313
	% change	12.8%		24.9%	-1.7%

**3.1.1 Notes on Analysis**

13. From the analysis we summarise the key points as follows:

- ▼ The added value of irrigation per hectare has ranged between \$4,682 and \$5,406 on a weighted average basis across the seven regions analysed for the four years reviewed.
- ▼ The sample size for the Hurunui, Timaru, Waimate and Waitaki Districts is small relative to the other districts considered. These particular districts, considered in isolation, provide the outliers in the analysis on which little or no reliance can be placed [refer section 3.2 for analysis excluding these districts].

**3.2 SUMMARY SCHEDULE FOR SELWYN & ASHBURTON DISTRICTS ONLY**

District	Number of Irrigated Property Transactions	Average Irrigated Land Value per hectare	Number of Dry Land Property Transactions	Average Dry Land Value per hectare	Implied Added Value of Irrigation per hectare
<b>2000</b>					
Selwyn	8	\$10,502	10	\$4,960	\$5,542
Ashburton	13	\$10,636	46	\$4,475	\$6,161
	21	\$10,585	56	\$4,562	\$6,023
<b>2001</b>					
Selwyn	15	\$12,041	7	\$6,208	\$5,833
Ashburton	19	\$11,285	65	\$6,527	\$4,758
	34	\$11,619	72	\$6,496	\$5,123
	% change	9.8%		42.4%	-15.0%
<b>2002</b>					
Selwyn	4	\$11,725	10	\$6,566	\$5,159
Ashburton	22	\$12,626	44	\$6,762	\$5,864
	26	\$12,487	54	\$6,726	\$5,762
	% change	7.5%		3.5%	12.5%
<b>2003</b>					
Selwyn	4	\$16,555	6	\$8,906	\$7,649
Ashburton	8	\$14,956	25	\$9,586	\$5,370
	12	\$15,489	31	\$9,454	\$6,035
	% change	24.0%		40.6%	4.7%

**3.2.1 Notes on Analysis**

14. From the analysis we summarise the key points as follows:

- ▼ The added value of irrigation per hectare has ranged between \$5,123 and \$6,035 on a weighted average basis across the two regions considered.
- ▼ Of particular note is the significant increase in the value of dry land over the period, and the maintenance of the added value of irrigation for the same period.

- ▼ The number of transactions for these two regions over the period of analysis, and the relationship between these two regions and the area proposed to be served by the Central Plains irrigation scheme, suggests to us that this more focussed analysis provides more robust evidence for the purposes of the Ritso Society and information for potential investors in the scheme.

## 4.0 DRY LAND WITH IRRIGATION POTENTIAL

15. We have not analysed any data specifically to determine any premium that might be considered appropriate by the market for dry land that has clear potential for irrigation in the near term. This potential may be realisable through accessing ground water resources or from a proposed irrigation scheme.
16. The difficulty in undertaking any meaningful assessment for irrigation potential is that any relevant transactions are likely to be few in number [a small data set]. To properly analyse any relevant data would require adjustment to the transaction price for the change in the general dry land market in order to isolate the premium for any irrigation potential. This analysis could practically be undertaken on a property by property basis, but it would be difficult to extrapolate such a limited analysis to other regions.
17. From an economic perspective, using the data analysis results tabled above and considering the actual cost to develop the irrigation potential for a typical property, the maximum range for this premium would be determined on the basis of the difference between the added value of irrigation per hectare and the cost of irrigation per hectare. For example, if the added value of irrigation per hectare is \$6,000, the cost of all irrigation and related development is \$4,000, a purchaser could afford to pay a maximum premium of \$2,000 on the current dry land value.

## 5.0 SUMMARY

18. On the basis if the analysis completed, and subject to the inherent limitations of the approach necessarily adopted through the use of the sales records as described, it is our opinion that the added value of irrigation to Plains land similar to that proposed to be irrigated by the Central Plains irrigation scheme [that is the value in excess of dry land on the Plains] can reasonably be based on the historical range determined by analysis of the Selwyn and Ashburton Districts; \$5,000 to \$6,000 per hectare.
19. This clearly must assume the continuation of the economic environment that has prevailed over the period of our analysis, as it affects the various dry land and irrigated land uses.