

## **Case Study 1**

Table 5 reflects the present land holding and land use for case study 1. There are two contiguous properties totaling 271.3 ha with 122 ha of cane land, 81 ha suitable cane land with endangered vegetation and approximately 10 ha of suitable land which could be developed but is peripheral to the endangered vegetation and resultant field sizes and shapes are considered to be uneconomic to develop on their own. Thus there are considered to be 91 ha directly affected by the VMA.

The grower had another cane property some distance away, which was sold at the end of 1999 with the advent of less favourable economic circumstances. The plan was to relieve immediate financial pressure and then develop the uncleared area to benefit from the economies of scale and having a consolidated block of land. Without this additional 91 ha, the remaining 122 ha is not considered viable into the future. The grower has been reluctant to have the property re-valued by the bank for fear that it may jeopardise his borrowing capacity.

**Table 5**  
**Areas Involved**

	ha
Property 1	244.3
Property 2	27.0
Total	271.3

<b>Land use</b>	ha
Existing cane land	122.0
Cleared suitable land	0.0
Not to be cleared suitable land	81.0
Can be cleared suitable land	10.0
Other	58.3
Total	271.3

The major loss to the grower is the marginal profit that could have been generated by developing the 91 ha of land to sugar cane. The marginal profit is based on future expected yields, prices and costs. The assumptions on these take a long term view, which is more optimistic than the actual present situation.

The details of the assumptions and calculations to obtain the average annualised marginal profit over a full crop cycle are shown in Appendix 2. This accounts only for the additional income and costs associated with the 91 ha. Table 6 shows that the annualised area harvested over the cycle to be 76 ha the total cane production to be 7,053 tonnes at 93 t/ha harvested with a CCS of 13.7%.

**Table 6 Average Annual Lost Yield and Area**

Area cane land	91 ha
Area Harvested	76 ha
Tons cane	7,053 t
Tonnes cane/ha harvest	93 t/ha
CCS%	13.70%

This would give an annual additional income of \$192,687 (\$2,117 per ha) and additional costs of \$114,239 (\$1,255 per ha) giving an annual marginal profit of \$78,448 (\$862 per ha) as shown in Table 7. This is the annualised financial loss to the grower because the area cannot be cleared and developed to sugar cane.

**Table 7  
Average Annual Lost Marginal Profit (\$)**

	Total	Per ha	Per ton
Gross income	192,687	2,117	27.32
Total Costs	114,239	1,255	16.20
Lost Marginal Profit	78,448	862	11.12

The capital value of this lost marginal profit is calculated using various methods in Table 8. The objective is to determine the capital sum required to achieve a return equal to the value of the lost margin. By capitalising the \$862 marginal profit at a rate of 6% the gross value would be \$14,368 per ha. From this, the \$3,000 per ha capital costs for clearing is deducted which gives a capital value to the grower of \$11,368 per ha. Thus a lump sum of \$1,034,467 would be the value of the land in the grower's hands if developed to sugar cane.

An alternative method would be the terminal value of an annuity based on the \$862 marginal profit at 6% over a period of time between 10 and 20 years. The value to the grower after deducting the capital cost would be \$8,363 per ha (\$761,007 total) over 10 years and \$28,712 per ha (\$2,612,756 total) over 20 years.

**Table 8  
Capital Value of Lost Marginal Profit**

	Period	Rate	Avg. annual Marginal Profit \$/ha	Gross Value \$/ha	Capital \$/ha	Value to grower \$/ha	Value to grower Total \$
Capitalised value	-	6%	862	14,368	3,000	11,368	1,034,467
Terminal value of annuity	10 years	6%	862	11,363	3,000	8,363	761,007
Terminal value of annuity	20 years	6%	862	31,712	3,000	28,712	2,612,756

However the grower believes that the balance of the land would be an uneconomic unit and as such would have also decreased in value. Added to this the grower does not want the responsibility or cost of the land stewardship obligations for land, which has no apparent direct economic benefit to him.

The impact of the VMA has been to leave the grower with a property that is no longer viable and his livelihood at stake. The grower believes that to offset the impact of the VMA he would require the full value based on the outright sale of the whole farm at the full market value of the land before the effects of the VMA.

As a guideline to the land market values Table 9 shows the market value of the cane land at \$10,031 per ha and undeveloped land at \$2,930 per ha based on the land sales summary in Appendix 5. The total value would be \$1.49 million.

**Table 9**  
**Market Value of Land**

	Area ha	Value \$/ha	Gross payment \$
Existing Area Cane	122.		1,223,83
Potential cane land	0	10,031	4
lost	91	2,930	266,674
<b>Total</b>			<b>1,490,508</b>