A COMPARISON OF THE ECONOMICS OF SUGARCANE PRODUCTION IN DIFFERENT WARDS IN THE SOUTH COAST AREA

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Abstract

South Coast growers supply cane to the Umzimkulu and Sezela mills. These mill areas are divided into "Coastal" growers and "Inland" growers. Conditions near the coast have higher temperatures and better rainfall, and thus are better for growing sugarcane, but "Inland" growers tend to grow better quality cane. In the Umzimkulu group, 60 percent of the cane supplied is grown inland and for the Sezela group, 40 percent.

The comparative profitability between different wards in the inland and coastal areas was estimated, based on profit per hectare per annum and taking into account the sucrose produced and general costs of production. Growers in coastal wards a better return per unit of land, so "Coastal" land under cane is expected to carry a higher market related price per hectare.

If accurate information were available over a sufficiently long period, this model could be of assistance in decision making to prospective land purchasers and financial institutions.

Keywords: sugarcane, production costs, profitability

Introduction

South Coast growers supply cane to the Umzimkulu and Sezela mills. These mill areas are divided into "Coastal" growers and "Inland" growers according to climatic conditions and topography.

Conditions along the coast tend to be warmer and have better rainfall than inland, and are thus better suited to growing sugarcane. However, "Inland" growers tend to grow better quality cane which matures over a longer period. For the Umzimkulu mill area, approximately 60 percent of the cane supplied is grown inland and for Sezela, approximately 40 percent.

Both mill areas are divided into wards based on homogenous areas. Sezela has seven wards (four coastal and three inland) and Umzimkulu eight wards (three coastal and five inland).

The profitability of sugarcane production in the different wards was estimated according to the sucrose price, mean variable costs and the assumption that fixed costs are constant in all wards. The relative value of the land can therefore be determined from these data.

Methods

Comparative profitability of the various wards must be estimated for an "average" hectare for each ward over a fixed period of time. In this model a *per annum* basis is used. It is then possible to estimate which area generates the most profit, taking into account sucrose yield and the costs of production over the twelve month period.

Coastal and inland wards differ mainly in respect of the length of the cutting cycle, cane quality and the distance to the mill.

Cutting Cycles

Coastal growers usually cut their cane over a 12 to 16 month cycle, whereas inland growers harvest their cane up to 24 months of age.

Cane quality

Inland growers generally have better quality cane, i.e. they produce more sucrose per ton of cane.

Distance to the Mill

As both mills are situated at the coast, inland growers incur higher transport costs.

As an example, if an inland grower produces cane over a 24 month cycle and cuts 100 tons cane/ha at 13% sucrose, his production over 12 months is 50 tons cane/ha or 6.5 tons sucrose/ha. This can be compared with a coastal grower, who produces 70 tons cane/ha at 12.5% sucrose, yielding 8.75 tons sucrose/ha/annum. There is therefore a positive difference in favour of the coastal grower of 2.25 tons sucrose/ha/annum. Although the inland growers produce better quality cane, coastal growers produce more sucrose per annum.

Results and discussion

Taking into consideration variable costs, including transport, and assuming that fixed costs per hectare are the same, the net profit/ha in each ward can be calculated, as shown in Table 1 (ward names have been omitted because of the sensitive nature of the information). Mean values for coastal and inland wards in the two mill supply areas are shown in Table 2.

The results show that coastal growers can expect a better return per hectare per annum on a fixed area of land over a fixed period of time, justifying a higher market-related value. Some caution is necessary, as data are available from

Table 1. Cane and sucrose yields and profitability of sugarcane production in different wards in the Sezela and Umzimkulu mill supply areas.

Ward	Cane/ha/ann (tons)	Sucrose/ha/ann (tons)	Gross margin (R/ha)	Ha equiv	R/ton cane
Ward 1 (Coastal)	68	8.4	3661	1.00	54
Ward 2 (Coastal)	66	8.0	3583	1.02	54
Ward 3 (Coastal)	64	7.8	3241	1.13	50
Ward 4 (Inland)	58	7.3	3148	1.16	52
Ward 5 (Coastal)	60	7.2	3018	1.21	52
Ward 6 (Coastal)	60	7.1	3012	1.22	50
Ward 7 (Coastal)	60	7.0	2854	1.28	52
Ward 8 (Inland)	53	6.7	2474	1.48	49
Ward 9 (Inland)	52	6.7	2460	1.49	47
Ward 10 (Coastal)	55	6.5	2335	1.57	39
Ward 11 (Inland)	50	6.5	2289	1.60	48
Ward 12 (Inland)	52	6.4	2209	1.66	45
Ward 13 (Inland)	49	6.2	2181	1.68	42
Ward 14 (Inland)	48	6.0	1804	2.03	38
Ward 15 (Inland)	48	5.9	1627	2.25	31

Table 2. Mean yields and comparative profitability of sugarcane production in coastal and inland wards in the Sezela and Umzimkulu mill supply areas.

Area	Cane/ha/ann (tons)	Sucrose/ha/ann (tons)	Gross margin (R/ha)	Mean ha equiv
Coastal	7.4	62	3101	1.20
Inland	6.4	51	2274	1.67

only one season for the Sezela Group and two seasons for the Umzimkulu Group. If data from a longer period were available (perhaps 10 years), this model could be of value to prospective land purchasers and financial institutions.

The usefulness of the model is dependent on growers providing accurate information on areas under cane and area harvested. Some growers have used a GPS mapping system, which is a more accurate method of measuring the area under cane than the old SASA mapping system. As the GPS system does not include loading zones, infield roads and perhaps waterways, the cane areas measured tend to "shrink" by an estimated 10%. It would be more acceptable if all growers were to standardize on GPS in the future.

The following points should be considered when considering the data in Tables 1 and 2.

- Data from only one season are available for the Sezela mill area and two seasons for Umzimkulu.
- Transport costs are based on charges quoted by the Umzimkulu Planters Co-op. Mean distances from farm to mill are used for each ward.
- The sucrose prices used were for the 1998/99 season.
- Capital costs, e.g. planting costs, were not considered.
- Management skills are assumed to be similar in all areas.
- Drought years will tend to favour inland growers as their crop is grown over a longer period, as experienced in the 1992-94 drought, therefore they are at lower risk during seasons with low rainfall.
- Coastal growers are more prone to damage from the eldana borer, but inland growers are more likely to suffer frost and hail damage.
- Coastal growers recover more quickly from unfavourable periods than inland growers, due to better growing conditions.
- Inland farms are generally less steep and therefore more amenable to mechanization.

Conclusions

The model enables a reliable value to be placed on farms in the South Coast region, which are based on their relative profitability per hectare per annum. Farm profitably was found to differ mainly between the coastal and inland areas, but also among wards in both the coastal and inland areas.

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