# *Farm-agribusiness linkages in South Africa: Empowering disadvantaged communities through links with agribusiness*

**Johann Kirsten and Kurt Sartorius**

**Working paper: 2002-11**

**Department of Agricultural Economics,**
**Extension and Rural Development**
**University of Pretoria**
**Pretoria, 0002**
**South Africa**

*FINAL DRAFT*

# Farm-Agribusiness Linkages in South Africa: Empowering disadvantaged communities through links with agribusiness

*By*

**Johann Kirsten and Kurt Sartorius**

**Department of Agricultural Economics, Extension and Rural Development**
**University of Pretoria**
**PRETORIA, SOUTH AFRICA**

*With inputs from*:

**Nick Vink, Department of Agricultural Economics, University of Stellenbosch**

**Deon Scheepers, Department of Agricultural Economics, Extension and Rural Development, University of Pretoria**

*A REPORT PREPARED FOR THE FAO*

*31 August 2002*

*(Revised 4 November 2002)*

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## 1. Introduction

The trend of market-oriented reforms, following multilateral trade liberalisation and especially structural adjustment programmes in developing countries, have led to the increased integration of world markets (Reardon and Barrett, 2000). This has meant that farmers in the developing world are now, more than ever, linked to consumers and corporations of the rich nations. Although most of the changes in agricultural and food markets are taking place in developed countries, they have far reaching implications for agricultural development efforts in developing countries.

The changes in food and agricultural markets (the so-called industrialisation of agriculture) have influenced the need for higher levels of managed co-ordination. This has resulted in the introduction of different forms of vertical integration and alliances, which have become a dominant feature of agricultural supply chains. Allied to these changes is a worldwide increase in consumer demand for differentiated agricultural products that are relatively labour intensive (Rhodes, 1993; Royer, 1995; Pasour, 1998).

These consumer demands, combined with the reality that food safety issues are more likely to be a concern in the case of fresh food products, have led to major concerns for developing countries. Fresh food products, which include fresh meat, seafood, vegetables and fruits, account for half of the value of total food and agricultural exports from developing countries (Unneveher, 2000). The need to control for high perishability and safe handling requires specialised production, packing techniques and refrigerated transport, all of which require large capital investments and also involves investment in research, development, and marketing, which small and medium enterprises cannot easily afford.

However, it is also true that it is often only the well endowed and skilled that has the ability to be part of these co-ordinated marketing chains and alliances. There is, therefore, a danger that the requirements, quality standards and food safety rules of the consumers and corporations (supermarkets) in the developed countries can act as effective barriers to participation in the high value chains by small exporters and, to some extent, small producers. It is only a small number of farmers in developing countries that have the ability and luxury to be part of these lucrative markets and for them the reward is substantial.

Recent studies of the managerial economics of industrialised agriculture have revealed crucial new insights of the economic rationale for higher levels of managed co-ordination as a choice of governance structure. In conjunction with this, the history of vertical co-ordination projects in developing countries has provided many lessons and a reference framework against which future development can be evaluated. All of these could pioneer a new approach to improve our understanding of market access problems facing farmers in developing countries. This new approach, based on the new institutional economic theory, argues, amongst other things, that we now have economic actors engaging in transactions rather than a large number of atomistic firms constituting a 'market'.

There are serious concerns about the ability of small farms and also small agribusiness firms to survive in the medium term under these changing circumstances. The process of industrialisation has created opportunities for smallholders in developing countries to produce horticultural commodities under contract according to certain specifics (Kandiwa, 1999), but has the danger that small farmers will be marginalised and excluded from high value markets (Reardon and Barret, 2000). The challenge is thus to prevent this from happening and to find ways to link small growers in developing countries to these high value markets. It is argued that the major route for continued survival of small-scale farms, would, only be through a reliance on external rather than internal economies of scale through networking/clustering and other forms of alliances. This could be amongst small firms or through establishing links between small firms/growers and larger enterprises who have already overcome the major barriers to market entry. These links are usually

formalized through some form of contract similar to contract farming schemes implemented in the developing world.

It is in this context that this study provides a first understanding of the nature of the linkages between farmers and agribusinesses in South Africa. The focus is especially on farmers from previously disadvantage groups of the South African population who were denied commercial farming opportunities under the apartheid regime. These farmers face a double challenge to enter a very competitive domestic market as well as having to deal with the challenges posed by the process of agricultural industrialisation. The only way empowerment of these farmers could take place is to ensure some form of linkage with agribusiness (including traders, market agents and the traditional range of value adding enterprises in the food chain), which will secure market access for them on a sustainable basis. After discussing the characteristics of the South African agricultural and agribusiness sector the paper presents a number of case studies to illustrate the nature of the linkages farmers from disadvantaged communities have with the commercial agricultural market and various agribusinesses per se.

## 2. Agribusiness and its place and role in the South African economy

### ~~2.1~~ *Overview of policy changes in the agricultural and agro-industry sector*

Until early in 1998 the marketing of most agricultural products in South Africa was extensively regulated by statute. One of the main characteristics of the control that was exercised was isolation from world market forces. Most products were regulated under the 22 marketing schemes introduced from 1931 and especially from the time of the 1937 Marketing Act, although some products, including sugar, wine and ostriches, were regulated by those industry's own institutions under separate legislation.

Beginning two decades ago, the industry faced increasing pressures for deregulation, a process that was accomplished in two phases over this period. The major change in the first phase was the extensive deregulation of state agricultural marketing schemes within the framework of the Marketing Act of 1968. The origins of this change can be

found in the shift in monetary policy in the late 1970s and fiscal strategies in the 1980s, which undermined the complex structure of protection, price support and cross-subsidies on which the system of agricultural support was founded. Yet isolation from the world market, accompanied by the increased isolation of the country in social, cultural, political and intellectual spheres during the 1980s, meant that the deregulation steps that did take place were aimed at the domestic market (Vink and Kassier 1991, Francis and Williams, 1991; Vink, 1993; Kirsten and van Zyl, 1996; Vink, 2000). Further, the market in Africa was not considered to hold any real potential, partly because it was regarded as too small, but mostly because of the anti-apartheid measures that were in place. Foreign trade still largely consisted of managing imports and exports in order to manipulate domestic prices (e.g. maize, wheat), or of monopoly export schemes (e.g. for fruit). The first real steps in opening the agricultural sector to world market influences came with the Marrakech Agreement of the GATT in 1993, when all direct controls over agricultural imports were replaced by tariffs.

The government of national unity, elected in 1994, ushered in new policies across the entire range of state activities. In agriculture, some tended to follow the direction of changes already under way (Hall and Williams, 2000). Major direct policy changes had to wait until after the National Party, and its Minister of Agriculture, Kraai van Niekerk, withdrew from the government in 1996. New policy initiatives included the land reform programme; laws protecting agricultural workers and labour tenants against eviction and extending their rights; liberalization of international trade and agricultural marketing; the Marketing of Agricultural Products Act, No 47 of 1996; a new rural development policy; and institutional restructuring in the public sector. The purpose of the reforms was to correct the injustices of past policy, principally through land reform, to direct agriculture towards a less capital-intensive growth path, and to enhance its international competitiveness. South African agriculture has now taken its place as a fully integrated member of the global trade environment, and its trade patterns have shifted considerably over the past decade.

*The South African Agricultural and Food Sector*

Until the agricultural potential of the SADC region is exploited, South Africa will

produce more, and hence be in a better position to trade in international markets, than its regional neighbours. The structure of output in South African agriculture is shown in Table 1 below. Given that most of the country is unsuited to cultivation, it is no surprise that the largest component of production comes from livestock, with field crop production marginally larger than horticulture. As expected, production per hectare is far higher in the horticultural sector, followed by field crop production.

Field crop sector has been most affected by the process of deregulation. Field crop production has declined from almost half of total output in the three year period centred around 1978/79 to less than a third in the three-year period centred on 1999. In this time animal production increased its share somewhat, while horticultural production increased its share by 10 percentage points.

**Table 1: The value of commercial agricultural production in South Africa (1999)[1]**

| | Gross value of production (R'000) | Number of farms | Number of hectares | Output (tons) | Production (R per ha) | Physical output (t per ha) |
|---|---|---|---|---|---|---|
| Maize | 5,484,468 | | 3,868,000 | 10,613,000 | 1417.91 | 2.74 |
| Tobacco | 437,720 | | 16,000 | 29,700 | 27357.50 | 1.86 |
| Cotton | 144,905 | | 51,000 | 167,692 | 2841.27 | 3.29 |
| Soya beans | 196,179 | | 94,000 | 152,600 | 2087.01 | 1.62 |
| Field crops | 13,666,600.00 | 11,992 | 9,528,309 | | 1434.32 | - |
| Horticulture | 11,714,500.00 | 8,039 | 3,898,486 | | 3004.88 | - |
| Cattle slaughtered | 3,983,215 | | | 495,000 | | - |
| Animal production | 18,938,700.00 | 31,442 | 63,384,734 | | 298.79 | - |
| **Total** | **44,319,800.00** | **60,938** | **82,209,571** | | **539.11** | |

[1] Note: During mid 2002 the South African Rand traded at roughly R10 against the US dollar

The data in Table 2 show the trade performance of South African agriculture over the past two decades. The first observation is that agricultural exports have grown rapidly, especially from 1990, but that agricultural imports have grown even faster. The second observation is that, despite this rapid growth, South Africa's total exports and imports have been growing even faster.

**Table 2: Trends in South Africa's agricultural exports, 1980 - 1999**

| | 1980 | 1990 | 2000 |
|---|---|---|---|
| **Exports** | | | |
| Total SA exports (Rm) | 19 915.4 | 60 770.0 | 253 809.0 |
| Total agricultural exports (Rm) | 2 052.5 | 5 289.8 | 15 819.0 |
| Agricultural exports as % of total exports | 10.3 | 8.7 | 6.2 |
| **Imports** | | | |
| Total SA imports (Rm) | 14 381.3 | 44 141.5 | 227 918.0 |
| Agricultural imports (Rm) | 369.2 | 2 203.3 | 9,643,7 |
| Agricultural imports/total imports (%) | 2.6 | 5.0 | 4.2 |
| **Exports + imports/Total production (%)** | 34.5 | 34.5 | 57.5 |

Sales in the South African manufacturing sector grew by some 2.5% per annum in real terms in the period 1996-2001, a rate close to the overall real rate of growth of the economy. By contrast, sales of the food and beverages industries grew by about half that rate, making it one of the worst performers in this sector. Recent sales growth in this subsector has been third highest among the components of the manufacturing sector. Production in the food and beverages group accounted for about 18.5% of total manufacturing output for the country in 1996, while employment was 15.9% of total manufacturing sector employment and the wage bill 13.5% of total manufacturing sector wages. A more detailed breakdown of the subsector is provided in Table 3, while the degree of concentration in 1996 is reflected in Table 4, the most recent available data.

**Table 3: The South African food and beverage sector**

| | Sales (Rm) | Employment | Exports (R'000) | Imports (R'000) |
|---|---|---|---|---|
| 1994 | 78079 | 225527 | 6205634 | 5524284 |
| 1995 | 80131 | 219155 | 6752412 | 6291720 |
| 1996 | 83886 | 221426 | 8286938 | 6625716 |
| 1997 | 83607 | 209686 | 8247898 | 7471358 |
| 1998 | 81896 | 201594 | 9061613 | 6989492 |
| 1999 | 81759 | 203211 | 9122024 | 6468007 |
| 2000 | 79757 | 187882 | 10270184 | 6556806 |
| 2001 | 84689 | 184187 | 12225957 | 6742894 |

The South African agro-food complex, which consists of primary production plus the input and agro-processing sectors, accounts for around 14% of the GDP. In 2000 the agro food complex exported about R16 billion worth of primary and processed food products, or nearly 10% of South Africa's total exports. Almost all the productive and

social activities of rural towns and service centres are dependent on primary agriculture and related activities. This includes increasingly popular and economically significant agro-tourism and game farming activities. Taking all of this into account it is true that more than half of the provinces and about 40% of the country's total population are primarily dependent on agriculture and its related industries.

**Table 4: An overview of the food and beverage (agribusiness sector) in South Africa, 1996**

| Major group and subgroup | No of firms | Relative contribution of - | | Paid employees | Salaries and wages | Output (Rm) | Intermediate consumption | Value added | Capex on new assets | Herfindahl Hirschman index[1] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 4 largest firms | 10 largest firms | No | Rbn | | | | | |
| **Major group - meat, fish, fruit, vegetables, oils and fats** | **480** | **0,1957** | **0,3678** | **70 383** | **1 962** | **13 142** | **10 366** | **2 776** | **0.339** | **0,0188** |
| Slaughtering, dressing, packaging livestock | 149 | 0,4688 | 0,6358 | 13 731 | 324 705 | 2 610 | 2 184 | 0.425 | 0.034 | 0,0661 |
| Prepared and preserved meat | 119 | 0,5591 | 0,7114 | 13 461 | 269 766 | 1 939 | 1 501 | 0.438 | 0.050 | 0,0989 |
| Canned, preserved and processed fish | 46 | 0,5778 | 0,7924 | 11 862 | 272 275 | 1 333 | 0.789 | 0.544 | 0.144 | 0,1346 |
| Canned and processed fruit and vegetables | 157 | 0,3498 | 0,5497 | 25 321 | 552 940 | 3 685 | 2 831 | 0.854 | 0.067 | 0,0482 |
| Vegetables and animal oils and fats | 16 | 0,6520 | 0,9779 | 6 008 | 272 303 | 3 575 | 3 061 | 0.514 | 0.045 | 0,1319 |
| **Major group - Dairy products** | **113** | **0,6843** | **0,8005** | **21 933** | **852 474** | **5 980** | **4 646** | **1 334** | **0.184** | **0,1598** |
| Processing of fresh milk | 46 | 0,7079 | 0,8350 | 9 002 | 286 451 | 1 960 | 1 491 | 0.469 | 0.048 | 0,2430 |
| Butter and cheese | 17 | 0,8199 | 0,9743 | 3 032 | 155 379 | 1 502 | 1 160 | 0.315 | 0.034 | 0,1923 |
| Ice cream and other edible ice | 45 | 0,6007 | 0,7628 | 2 144 | 68 910 | 0.42 8 | 0.345 | 0.083 | 0.040 | 0,1293 |
| Milk powder & other edible milk products | 13 | 0,8700 | 0,9986 | 7 755 | 341 734 | 2 090 | 1 650 | 0.441 | 0.062 | 0,2742 |
| **Major group - Grain mill products,** | **283** | **0,3604** | **0,5636** | **25 161** | **0.957** | **12 708** | **10 648** | **2 060** | **0.363** | **0,0457** |
| Flour | 209 | 0,4258 | 0,6481 | 16 228 | 0.592 | 7 643 | 6 350 | 1 293 | 0.187 | 0,0648 |
| Breakfast foods, starches & starch products | 8 | 0,9544 | - | 2 126 | 0.103 | 0.967 | 0.688 | 0.279 | 0.145 | 0,3005 |
| Prepared animal feeds | 72 | 0,3727 | 0,6076 | 6 807 | 0.262 | 4 098 | 3 610 | 0.488 | 0.032 | 0,0522 |
| **Major group - Other food products** | **821** | **0,2613** | **0,5331** | **74 116** | **2 571** | **15 414** | **11 086** | **4 328** | **0.583** | **0,0323** |
| Bakery products | 522 | 0,4526 | 0,6262 | 31 228 | 0.881 | 4 224 | 3 003 | 1 221 | 0.199 | 0,0609 |
| Sugar, golden syrup and castor sugar | 7 | 0,9856 | - | 15 304 | 0.442 | 3 565 | 2 583 | 0.982 | 0.121 | 0,3098 |
| Cocoa, chocolates and sugar confectionery | 72 | 0,7287 | 0,8237 | 10 148 | 0.475 | 2 194 | 1 522 | 0.671 | 0.095 | 0,1676 |
| Coffee, coffee substitutes and tea | 15 | 0,8038 | 0,9580 | 3 379 | 0.121 | 1 399 | 1 073 | 0.325 | 0.061 | 0,2060 |
| Nut foods | 31 | 0,5129 | 0,7598 | 1 190 | 0.021 | 0.123 | 0.091 | 0.033 | 2 518 | 0,0920 |
| Other not elsewhere classified | 182 | 0,3719 | 0,5012 | 12 867 | 0.630 | 3 909 | 2 814 | 1 096 | 0.104 | 0,0471 |
| **Major group - beverages** | **163** | **0,4556** | **0,7455** | **36 028** | **1 840** | **14 639** | **10 132** | **4 507** | **0.627** | **0,0760** |
| Distilling, rectifying and blending of spirits | 97 | 0,6926 | 0,7812 | 12 566 | 0.458 | 4 552 | 3 548 | 1 005 | 0.253 | 0,1386 |
| Beer and other malt liquors and malt | 23 | 0,9195 | 0,9756 | 11 497 | 0.738 | 5 944 | 3 863 | 2 081 | 0.228 | 0,3777 |
| Soft drinks;mineral waters | 43 | 0,7355 | 0,9142 | 11 965 | 0.644 | 4 143 | 2 721 | 1 422 | 0.146 | 0,1876 |

Source: Vink, Tregurtha and Kirsten (2002)

An index of between 0.10 and 0.18 represents a moderately concentrated market.

Table 5 shows that the South African food and agricultural industry as a whole is marginally competitive when measured by the Revealed Trade Advantage, a measure based on the share of the country's net trade in a specific commodity relative to its total international trade. The RTA for 1998 was 0.33, although it has improved from 1992 onwards, a period that coincides with the deregulation of agricultural marketing.

**Table 5: Comparative advantage in the South African agro-food industry**

| | **RTA 1998** | **RTA 1997** | **Trend 1980 – 98** | **Trend 1992 - 98** |
|---|---|---|---|---|
| National competitiveness | 0.33 | 0.17 | = | + |

**Note:** '+' Positive trend; '-' negative trend; '=' constant trend

**Table 6: Comparative advantage of selected agro-food chains in South Africa**

| **Chain** | **Product** | **RTA 1998** | **RTA 1997** | **Trends 1980 - 98** | **Trends 1995 - 98** |
|---|---|---|---|---|---|
| Cotton chain | Cotton seed | -6.23 | -5.62 | - | - |
| | Oil of cotton seed | -0.53 | -2.55 | - | - |
| | Cake of cotton seed | -26.74 | -12.01 | - | - |
| | Cotton lint | -1.59 | -1.24 | = | - |
| | Cotton carded and combed | 0.31 | -1.70 | - | + |
| | Cotton linter | 0.42 | 0.21 | = | + |
| Tobacco chain | Tobacco leaves | 0.06 | -0.83 | = | + |
| | Cigarettes | 0.59 | 0.42 | + | + |
| | Tobacco products | -0.15 | -0.03 | = | = |
| Potatoes chain | Potatoes | 0.85 | 0.86 | + | + |
| | Potatoes, frozen | 0.07 | 0.05 | = | = |
| Tomatoes chain | Tomatoes | 0.13 | 0.07 | = | = |
| | Tomato juice | 0.36 | -0.08 | + | + |
| | Tomato paste | -0.07 | -0.06 | = | = |
| | Peeled Tomatoes | -0.57 | -0.78 | = | = |
| Beef chain | Cattle | -1.46 | -3.76 | - | + |
| | Beef and veal | 0.23 | -0.13 | = | + |
| | Beef dried salt smoked | 0.19 | 0.34 | = | + |
| Maize chain | Maize | 2.44 | 3.72 | + | + |
| | Flour of Maize | 28.55 | 10.10 | + | + |
| Soybean chain | Soybeans | 0.17 | -0.11 | = | + |
| | Oil of Soya beans | -0.85 | -0.43 | = | = |
| | Cake of Soya beans | -1.62 | -1.53 | - | - |
| | Soya sauce | -0.30 | -0.27 | = | = |
| Sugar chain | Sugar (Centrifugal, Raw) | 8.88 | 3.00 | + | + |
| | Sugar refined | 2.08 | 1.86 | + | + |
| | Sugar confectionery | 0.32 | 0.39 | = | = |
| | Maple sugar and syrups | -0.02 | -0.03 | = | = |

*Source: Esterhuizen (2001)*

### 3. Linking poor farmers with agribusiness in South Africa

Due to its historical legacy South African agriculture is characterised by extreme dualism, which is not reflected in the overview presented in Section 2 above. There are around 50 000 large commercial farmers who are predominantly, but not

exclusively, drawn from the white population. Commercial farms employ about 1 million workers, which is 11% of total formal sector employment in the country. Many of these workers live on commercial farms and their children receive education in farm schools. These commercial farms compare very well with the large farm enterprises in the US where packing and processing is sometimes done on the farm. Many farmers have recently moved to contractual arrangements with larger processing and retailing companies to secure markets and less volatile prices. On the other hand retailers and agribusiness nowadays prefer such arrangements in order to ensure reliable supplies and less fluctuation in prices (as we discussed in the introduction). This trend has been very apparent following the process of abolishing the controlled marketing arrangements in the country in the post 1994 period. The linkages that have emerged range from formal delivery contracts to production under strict instructions to informal marketing arrangements.

Apart from the large-scale commercial farmers, there are also 240 000 small farmers (mainly black) that provide a livelihood to more than 1 million of their family members and occasional employment to another 500 000 people. These farmers supply local and regional markets where large numbers of informal traders make a living. Furthermore, an estimated 3 million households who are primary located in the communal areas of the former homelands, produce largely to meet part of their family's total needs.

With the change in the political dispensation there has been a need to commercialise the agricultural activities of these households. Some earlier efforts by parastatal development corporations and some agribusinesses are commendable but the challenge of black empowerment in agriculture is so huge that much more needs to be done. Improving on-farm productivity for increased sales could be one way of stimulating commercial activity and thereby linking them to markets. However our experience with development efforts over the years has clearly shown that this approach is not sufficient because access to markets (and finance) seems to be more important for economic success. Poor developed links with markets (and thus with agribusiness per definition) have reduced incentives in agriculture to such an extent that farmers in many cases have abandoned farming activities. This has been a major problem not only amongst farmers of perishable commodities such as dairy, fruits and

vegetables but also amongst grains, oilseeds and beef. The lack of market access is often attributed to poor infrastructure and communication. But sometimes it is just poor quality or quite often lack of trust that creates the perception that these farmers' products do not comply with the basic minimum requirements in order for it to be sold.

It therefor becomes quite important for agribusiness in South Africa to develop stronger links with disadvantaged farming communities to ensure that true economic empowerment materialises. It is argued that some special actions from the business community are needed to tackle this major challenge in South African agriculture. Maybe the lessons emerging from this paper can make a contribution in this regard.

Over the years agribusiness have invested in some initiatives to ensure a much stronger engagement of farmers in disadvantaged communities in the production of especially industrial crops such as sugar, tea, cotton and timber. Lately there have also been a number of initiatives by agribusinesses and some facilitators to provide more and better market opportunities for disadvantaged farmers in the production of tomatoes, other vegetables, wine, fruit, grains, wool and livestock. These are all new initiatives and as a result we will not be able to document it here. For that reason we present only the following case studies to illustrate the nature of the links of small-scale farmers with agribusiness:

- Small-scale sugar farmers linked to a sugar mill
- A group of small-scale timber growers linked to a major timber company
- Small-scale out-growers for a large tea company

In addition we also briefly discuss a very novel approach or concept to link small-scale grain and oil seed producers to the market. These producers are poor, do not have collateral and are therefore excluded from producing grains and oilseeds on a commercial scale. By linking the credit market, input market, output market and the futures market this is now made possible.

We approach the analysis of the case studies from a strict New Institutional Economics perspective. This approach allows us to unpack the nature of the arrangement in a much more structured framework and also enables us to debate the appropriateness of the current arrangement given the characteristics of the product, transactions and the partners.

## 3.1 Creating Opportunities for small-scale sugar farming: The case of the Transvaal Sugar Company.

### 3.1.1. Introduction

The South African sugar industry is regulated by the Sugar Act (1978), which grants statutory powers of self-government to this sector of the agricultural economy. The affairs of the sugar industry are controlled by the South African Sugar Association (SASA) who administers the production and supply of sugar cane to the millers and also the production, marketing and distribution of sugar. The principal sugar growing areas of South Africa primarily include Kwazulu-Natal, Mpumulanga and the Eastern Cape where the climatic conditions are more favourable for the growing of sugarcane. The South African sugar industry produces an average of 2.5 million tons of sugar in 2000/1 of which 50% was exported to markets in Africa, the Middle East, North America and Asia. These exports contributed R 1.9 billion to the country's foreign exchange earnings. The sugarcane industry directly employs approximately 85 000 people and provides employment for an additional 265 000 in industries that are linked to this sector of the economy. The number of growers and area under sugar cane are illustrated in Table 7. South African cane growers produce over 23 million tons of sugar cane annually that are processed in 15 different milling area. Large growers (3%) are responsible for over 70 % of sugarcane produced whilst small growers (97%) account for less than 30%.

**Table 7: Cane Area and Number of Sugar Growers**

| | 1999/2000 | | | | 2000/1 | | | |
|---|---|---|---|---|---|---|---|---|
| **Growers** | **Numbers** | **%** | **Area (ha)** | **%** | **Numbers** | **%** | **Area (ha)** | **%** |
| Small Scale | 51 439 | 96.7 | 82 831 | 19.6 | 50 561 | 96.6 | 83 482 | 19.6 |
| Large Scale | 1744 | 3.3 | 338 806 | 80.4 | 1799 | 3.4 | 343 116 | 80.4 |
| Total | 53 183 | 100.0 | 421 637 | 100.0 | 52 360 | 100.0 | 426 598 | 100.0 |

Transvaal Sugar Limited (TSB), which employs around 4000 people, was founded in 1965 and operates in the province of Mpumalanga with offices in Johannesburg and Durban. TSB is a 100% owned subsidiary of Hunt Leuchars and Hepburn (HL & H) which, in turn, forms part of the Rembrandt Group of companies. The company has the capacity to produce 350 000 metric tons of sugar annually from its two factories and sugar production has increased from 109 500 metric tons in 1975/76 to the current level of approximately 300 000 metric tons in 2000/1. Assets employed have increased from R 80.5 million in 1986 to R 586 million in 1995 with an estimated current replacement value of R 2.3 billion.

The sugarcane supply-processing operation of the Transvaal Sugar Company consists of the factory processing operation and a range of growers. The factory processing operation consists of two sugar mills. The first mill is located at Malelane and the second mill is located south of Komatipoort both in Mpumalanga. The growers include the company estates and a range of contracted large-medium and small-scale suppliers/growers.

The differences between the types of growers can largely be categorised on the basis of the differential farm size and the level of capital investment (See Table 8). In the case of the company estates, the milling company farm large tracts of land. This operation is categorised by a modern capital-intensive mono-cropped sugarcane production system with high levels of management input and control. The second category of grower, namely, contracted medium-large growers, are also characterised by a modern capital-intensive mono-cropped sugar cane production system with high levels of management inputs. These farmers are contracted to the Transvaal Sugar Company by way of a long-term specification contract and supply in excess of 64 % of the total volume of sugarcane delivered to the two mills. Most of these farmers operate farms that are in excess of fifty hectares and in many cases, sugar cane is one of the farm enterprises together with sub-tropical fruit and vegetables. These farmers are largely autonomous and the growing and delivery of sugarcane is self managed with ad hoc inputs from the agricultural division and the factory cane supply division who co-ordinates the timing of the harvesting and delivery operations. The third category of grower, namely the contracted small-scale growers, includes in excess of 1000 small-scale farmers belonging to thirty-two different supplier groups. The

average farm size of these growers is 6.8 hectares with the smallest farm recorded as around 3.7 hectares and the largest 30 hectares.

**Table 8: A profile of the different growers**

| | Komati Mill | | Malelane Mill | | Total | |
|---|---|---|---|---|---|---|
| **Grower Category** | **Area** | **%** | **Area** | **%** | **Area** | **%** |
| **Company Estate (number)** | 7475 (3) | 32 | 45 (1) | 2 | 7932 (4) | 18 |
| **Total Private (number)** | 13465 (70) | 58 | 14140 (70) | 72 | 27605 (140) | 64 |
| **Small-Scale (number)** | 2329 (>300) | 10 | 5144 (750) | 26 | 7473 (>1000) | 18 |
| **Total (number)** | 23269 (>373) | 100 | 19741 (821) | 100 | 43010 (>1194) | 100 |

### 3.1.2 The Supplier Contract

The contractual arrangement between out-growers and the Transvaal Sugar Company (TSB) is controlled by a cane delivery agreement. All growers must adhere to the conditions and obligations that are specified in a comprehensive specification contract that binds the respective parties over long periods of time. The price paid to out-growers is determined by the specifications of the South African Sugar Association who determine the grower-miller split from the proceeds of sugar sales. Clauses nine to twelve cover transfers of areas, rights and amendments to the contract whilst clause thirteen stipulates the terms of the contract as a result of a *force majeure*. Clauses fourteen to seventeen outline the conditions of termination, default, jurisdiction and arbitration respectively. Finally, clauses eighteen to twenty outline the procedure of notification, cession and miscellaneous issues.

### 3.1.3 Transaction Characteristics

The transaction characteristics of the cane supply operations are illustrated in Table 9. The processing of large volumes of a perishable commodity like sugarcane requires the co-ordination of the activities of the growers with the optimum use of high fixed cost processing facilities that are unique to the sugar industry. The volume of supply, the nature of the suppliers and the industry specific nature of the processing plant and equipment, in turn, influences the dynamics of the firm's transactions. In order to identify and evaluate the transaction characteristics of the supply chain a number of assumptions were made. The annual number of sugarcane deliveries to the mill was employed to determine the transaction characteristic of frequency whilst the value and co-ordination requirements of company fixed assets was used as a basis to determine

asset specificity. The transaction characteristic of uncertainty has been evaluated on the basis of analysing the conditions of supply.

**Table 9: The Grower-Processor Transaction Characteristics for 2000/1**

| Transaction Characteristic | Total/Quantity |
|---|---|
| **Hectares** | 42 268 |
| **1. Frequency** | |
| Tonnage Crushed | 3 800 000 |
| Number of Deliveries | 136 000 |
| Administration<br>Tons per transaction | High<br>246 |
| **2. Asset Specificity** | |
| Co-ordination Level | High |
| Value of Plant | R 2.3 bill |
| Agricultural assets | > R 500 million |
| **3. Supply Uncertainty** | Medium-high |
| Processing | High |
| Downstream | High |

*Transaction Frequency*

The TSB milling operation processes around 19 000 tons of sugarcane per day or an annual volume of around 3.6 million tons of sugarcane that are transported by way of 136 000 deliveries. The continuous nature of the processing operation, combined with the large volumes of sugarcane processed and the perishable nature of the raw commodity, do not allow the processor to stockpile sugarcane. On the basis of this evidence, this study has concluded that the transaction characteristic of frequency should be classified as high.

*Asset Specificity*

The mill group currently employs over R500 million of fixed assets at gross book value. These assets have a current value in excess of R2 billion and are highly specific with low opportunity cost outside the sugar industry. The assets, moreover, are relatively immovable and are also site specific as they have been centralised in relation to the company estates and out-grower suppliers. Conversely, the assets of the contracted growers consist largely of irrigation and general farming equipment that can be applied relatively more easily outside the sugar industry. The factory assets also demonstrate high levels of asset specificity as a result of the need to maintain constant use of capacity. TSB management is required to manage and co-ordinate the harvesting and delivery of sugarcane from the company estates, over 140 medium-large scale commercial farmers and, in excess of, 1000 small-scale growers. On the basis of the value of sugar specific plant and equipment, combined with the high level

of co-ordination required to synchronise the sugarcane supply-processing operation, it is quite evident that high levels of asset specificity exist in the supply chain. The milling company has therefore some vested interest in ensuring good relationships with the growers due to the fact that many (especially the larger growers) can easily switch to higher value enterprises such as mangoes and citrus if the incentives in sugar are not appropriate.

*Uncertainty of Supply*

The uncertainty of sugarcane supply is a function of the reliability of the growers combined with the uncertainties of agronomic and climatic variables. Because the supply of sugarcane from the company estates is internalised in the company structure, low levels of uncertainty attach to this category of supplier. The reliability of supply from contracted growers, however, is often a function of alternate opportunities and sugar prices that are struck in volatile markets. The level of uncertainty attached to this category of grower is, therefore, higher than the company estates. The high fixed cost nature of the processing operation, moreover, also promotes uncertainty because of impact this has on the volatility of cash flows (Drury, 1996, Horngren, 1999). On the basis of this evidence a low to moderate level of uncertainty is assumed.

### 3.1.4 The governance structure for the sugar supply chain

The process of matching a set of transaction characteristics with the optimal governance structure (i.e. how the supply chain and the links with growers are managed) is a central tenet of transaction cost theory. Organisations that have transaction characteristics that reflect high levels of asset specificity, combined with the need to carefully co-ordinate a complex input-output function, require higher levels of managed co-ordination than the open market mechanisms (Williamson, 1981; 1996; 2000; Petersen & Wysocki, 1997; 1998).

**Table 10: Governance structure: Grower-processor links**

| **Theoretical optimum/ Actual Structure** | **Spot Market** | **Specification Contracting (82%)** | **Strategic Alliance XX** | **Formal Co-operation XX** | **Full Vertical Integration (18%)** |
|---|---|---|---|---|---|
| **Level of managed co-ordination** | 0% | Low | Intermediate | Int./high | High |
| **Governance Form** | | Contract Growers | | | TSB Company Estates |

In the case of sugar production the transaction characteristics suggest an optimum structure somewhere between specification contracting (using outgrowers with contracts) and full vertical co-ordination (full ownership of production and control) on the vertical co-ordination continuum reflected in Table 10. The actual organisation structure of sugarcane supply in the case of TSB, however, displays an aggregated structure that is closer to specification contracting than full integration because 82% is acquired by means of grower contracts.

*The Transaction Cost of Supply*

The objective of this section is to demonstrate that the transaction cost of small-scale growers exceeds that of medium and large-scale growers in the TSB cane supply operations. Table 11 outlines the type of transaction, as well as, an observation as to whether the company incurs any transaction costs with small farmers (SF) and/or Medium-Large Growers (LF). The TSB departments involved in the various transactions include the Small Commercial Farmer Department (SCG), the Agricultural Division (AG), the Cane Supply Division (CS) and the Administration Department (ADM).

The differential cost of the smallholder supply operation, in general, is illustrated by the annual budget of R3.2 million of the small farm department of the company. The TSB grower transactions include set-up transactions, cultivation transactions, harvesting and delivery transactions and administration transactions. Firstly, smallholders incur higher levels of start-up cost. Start-up transaction cost is incurred by all contracted growers with respect to the initiation of the contract. However, only small-scale farmer projects receive high levels of company assistance with respect to their interaction with local authorities, assistance with financing, training, land preparation and the installation and maintenance of irrigation equipment. Medium and large growers, largely, self establish their legality and ability to be engaged as contracted suppliers. Secondly, smallholders incur higher levels of transaction cost in all phases of the growing operation. Small-scale growers, again, require higher levels of company inputs from the agricultural (AG) and small farm commercial (SCG) departments with respect to the planting, weeding, fertilising, irrigation and ripening of cane. Small-scale growers, moreover, require higher levels of company inputs to guide and co-ordinate harvesting and delivery transactions. Conversely, larger farmers

interact on an occasional basis with TSB with respect to growing technologies. Although larger farmers also receive regular visits from the TSB cane supply (CS) department, transaction cost for the company when dealing with the smaller growers is much higher.

Finally, smallholders also incur higher levels of administration cost per ton delivered. A sample of large, medium and small-scale suppliers accounting transactions is illustrated in Table 12 for the period 2000/1. The administration of suppliers' accounts is managed by way of a creditors system that generates a weekly payment, in cheque form, for the weekly tons delivered to the mill. The creditors system also adjusts this payment if the supplier has drawn items from stores. Large suppliers, for instance, only generated 76 accounting transactions against a delivery volume of 47840.55 tons for the 2000/01 season. Conversely, medium size suppliers delivered 10 623.69 tons against 138 accounting transactions and small-scale suppliers 978.0 tons against 26 accounting transactions. The transaction cost, stated in terms of tons per transaction, indicates that large growers deliver over 613 tons before an accounting transaction is generated whilst the medium suppliers deliver 76 tons per accounting transaction and small-scale growers 37.6 tons per transaction. Smaller growers, in this regard, generate differential levels of administration cost, in the form of accounting transactions, because they make more use of inputs from the company stores and, TSB, in certain instances, sets up and administers their savings accounts. This case study concludes that small-scale farmer transactions exceed those of larger suppliers, principally, because of the disproportionate level of company input in the start-up, growing and administration phase of the cane supply operations. The incremental cost of dealing with different suppliers has also not been identified in the TSB records, which simply record these activities as overhead expenditure.

**Table 11: Costs for grower-processor transactions**

| **Transaction** | **Small-scale Growers** | | **Large Growers** | |
|---|---|---|---|---|
| **TSB Start Up Cost** | **Volume** | **Department** | **Volume** | **Department** |
| Contract Authorisation | High Vol. | SCG, ADM, | Medium volume | ADM |
| Assistance with authorities | High Vol. | SCG | No | No |
| Assistance with financing | High Vol. | SCG | No | No |
| Training Costs | High Vol. | SCG | No | No |
| Land Preparation Inputs | High Vol. | SCG | No | No |
| Irrigation inputs | High Vol. | SCG | No | No |
| **Cultivation** | | | | |
| Planting | High Vol. | AG, SCG | No, Occ. | AG |
| Weeding | High Vol. | AG, SCG | No, Occ. | AG |
| Fertiliser Application | High Vol. | AG, SCG | No, Occ. | AG |
| Irrigation | High Vol. | AG, SCG | No, Occ. | AG |
| Ripening | High Vol. | AG, SCG | No, Occ | AG |

| | | | | |
|---|---|---|---|---|
| **Harvesting and Delivery** | | | | |
| Harvesting | High Vol. | CS, SCG | Low Vol. | CS |
| Extraction | High Vol. | CS, SCG | Low Vol. | CS |
| Transport | High Vol. | CS, SCG | Low Vol. | CS |
| **Cane Receiving** | High Vol. | CS, SCG | High Vol. | CS |
| **Administration** | Very High | ADM | High | ADM |

**Table 12: Volume of Accounting Transactions for 2000/1**

| Supplier | Annual Tonnage | Accounting Transactions | Tons per Transaction |
|---|---|---|---|
| Small | 978.0 | 26 | 37.6 |
| Medium | 10 623.69 | 139 | 76.4 |
| Large | 47 840.55 | 76 | 613.3 |
| Total | 59 442.24 | 241 | 246.7 |

### 3.1.5 Grower Performance

The grower performance, analysed between 1998 and 2001, indicates that small-holder production efficiency matched that of the company estates in this period. The cost structure of TSB and the four sets of selected farmers, although comparable from a total cost perspective, is significantly different in terms of operating and overhead cost. TSB displays a total overhead cost of R27 per ton whilst small-scale farm overhead costs have been estimated at R13.30 per metric ton. The small-scale growers appeared to contract more efficiently for a range of field and transport services than the company estates. Conversely TSB displays total operating costs of R86 per ton compared to small-scale grower costs of between R96 and R100. The company estates appear to have lower cultivating costs than the small-scale farmers indicating, somewhat paradoxically, that the estate productivity exceeds that of the family farms. This could be partially explained by the fact that the production of sugarcane is not particularly labour intensive and that small-farmers may need to incur incremental cost for the use of mechanised inputs.

Although we have analysed only the nature of the linkages here we should in closing also refer to the tremendous impact the small-scale grower programme of TSB had in the Nkomazi valley. Since the mill at Komatipoort was erected and the irrigation infrastructure established the physical and socio-economic landscape transformed within 2 seasons. The link of smallholders with the Sugar Company has improved livelihoods and alleviated poverty in many households in the community. The multiplier effects are also visible as more small enterprises got established. Thus a large benefit for the community has materialised out of small-grower agribusiness linkage.

### 3.1.6 Summary and Conclusion

The case study is an example of a successful smallholder contracting arrangement in the sugar industry. The results illustrated that the transaction characteristics of the cane supply-processing operation influenced the level of managed co-ordination required, that small-holders incur higher levels of transaction cost and that they are able to compete, in terms of production efficiency, with larger contracted growers. The usefulness of these results can be debated from a number of perspectives. Firstly, the use of transaction cost theory can contribute to a more informed process of selecting the right level of managed co-ordination for a given set of contractual conditions. Secondly, the case study clearly demonstrated that differential small-scale farmer transaction cost could be broken down into cost elements. This can be useful in a number of ways. Incremental cost, once identified, can be charged back to the grower, form the basis of an agribusiness approach to the state for assistance or, lastly, provide the motivation to organise farmer inputs by way of a farmers association. These findings can be used as a basis to convince agribusiness that small-scale operators can operate as viable business partners and at the same time create an economic externality to the benefit of the whole of society.

## 3.2 Small-Scale Growers in the Timber Industry: Sappi's "Project Grow"

### 3.2.1 Introduction

The South African forestry industry is an important player in the South African economy. This industry consists of two primary segments, namely, the growing of timber, which falls into the agricultural sector and the processing of timber, which falls into the manufacturing sector. The timber industry contributed a total of two percent of the total national gross domestic product in 2000/1. This contribution, over a twenty two-year period, has grown from 1.4 % in 1979/80 to its current level. The growing of timber, currently, contributes towards around 8 % percent of the national agricultural gross domestic product and the manufacture of pulp and paper products accounts for 9 % percent of the national manufacturing gross national product. This industry, moreover, makes a significant contribution to foreign trade and forestry products generated an annual net trade surplus of R 3.3 billion, or 8% of South African exports, in 2000/1. The industry has demonstrated a consistent annual growth of 8% over the last ten years and is one of the most internationalised industries in the South African economy.

The South African forestry sector is a major employer of labour in South Africa. In 2000/1 the industry employed 135 000 people who were either engaged in the primary production of timber or the processing of wood. This sector employs 5.7 % of the total working population and includes the support of over two million dependants, many of whom live in rural areas. The estimated linkages effect generated by the industry would suggest an average multiplier of four resulting in a total employment potential of 500 000 people. The industry, moreover, is a major contributor towards the development of rural infrastructure and provides R 15 million per annum to the provision of housing and R 40 million per annum to the provision of health care. Other contributions to rural infrastructure include R15 million per annum towards the provision of schooling and bursaries and R10 million per annum towards the maintenance of provincial rural roads.

The South African forestry industry, with a capital base of R25 billion and an annual turnover of R12 billion, is a major supporter of the small-scale grower sector. The

industry has promoted the development of 15 000 emerging timber growers, in addition to, the promotion and support of forestry contractors and entrepreneur development programs. There are two principal types of commercial woodlot afforestation that embrace the small-scale farm sector. The first type is co-ordinated and sponsored by agribusiness and include examples like Sappi's Project Grow, Mondi's Khulanathi Project and initiatives set up by the South African Wattle Growers Association. The second type of small-scale grower operations is typified by ad hoc, uncoordinated individual plantings where no records exist and no authorisation has been received from the relevant authorities. A summary of small-scale timber production, illustrated in Table 13, reveals that 50 % of these growers are located in Zululand, 29 % in the Natal Midlands and 11 % in Southern Natal. Small-scale growers have, therefore, developed predominantly in Kwazulu-Natal with a small percentage in the Eastern Cape. The incidence of forestry as a farming practice appears to be influenced by land tenure systems where in Kwazulu-Natal woodlots are individually owned whereas in the Eastern Cape, land is owned on a communal tenure basis. At present some 24 205 hectares have been planted in managed small-scale grower schemes. The estimated total area planted, however is 43 455 hectares suggesting that 44% of the total area under small-scale farm afforestation is unauthorised and that 35% of farmers are operating without permission.

**Table 13: A Summary of Existing Small Grower Schemes authorised and managed by SAPPI**

| **Location** | **Area planted in hectares by small growers** | | **No. of Growers** | | **Average Size** |
|---|---|---|---|---|---|
| | Authorised | Total | Authorised | Total | |
| Zululand | 16 125 (50%) | 32 250 | 6 155 (50%) | 12 310 | 2.6 ha |
| Natal Midlands | 5 258 (71.4%) | 7 361 | 2 944 (82.2%) | 3 580 | 2.5 ha |
| Southern Natal | 2 555 (71.4%) | 3 577 | 2 504 (70%) | 3 577 | 1.0 ha |
| Eastern Cape | 267 | 267 | 45 | 45 | 5.9 ha |
| **Total** | **24 205** | **43 455** | **12 284** | **18 876** | **2.3 ha** |

Some estimates have been made of the potential to expand the small farm sector and project that this sector can grow at an annual area of 17 630 hectares between 2001-2005 that would result in a total increase of 93 100 hectares involving 10 197 new applicants. The principal areas of new afforestation are projected to be the Zululand area where the industry would expand by 27 225 hectares and the Eastern Cape at an estimated additional 62 000 hectares. These schemes represent an investment of more

than R30 million, which is expected to generate some R 60 million when clear felling takes place.

### 3.2.2 The Sappi-Saiccor Timber Supply Operation

The Sappi-Saiccor timber supply-processing operation includes a processor, namely, Sappi-Saiccor, a company in the Sappi Forest Products Group, and a range of company and contracted timber growers in Kwazulu-Natal, Mpumalanga, the Eastern Cape and the Highveld. The company produces dissolving pulp, a product that is made entirely from hardwoods, namely, eucalyptus and wattle. In 2001 a portion of the production process was subcontracted in order to reduce the level of fixed cost and induce capacity flexibility.

*The Growers*

The entire timber supply operation is co-ordinated by the Sappi Forest Division and Sappi-Saiccor. Sappi Forest Division controls the activities of all the growers including the company plantations and a range of small-scale to large contracted growers. The first category of grower, namely, Sappi Forest, owns and manages 500 000 hectares of plantations in Southern Africa that primarily grow eucalyptus and softwoods.

The second category of grower includes medium to large scale contracted farmers. These growers are typically medium to large size family farms with an area under timber in excess of fifty hectares. These farmers are generally involved in a number of agricultural enterprises, which typically include timber, sugarcane, tea and fruit. Their timber plantations, thus, constitute only a part of the farming operation. This category of grower has been registered as a contracted supplier with the Sappi Forest division and the conditions of supply are dictated by a long-term specification contract. These growers are largely autonomous with respect to the growing of timber but the felling and delivery operations are controlled and co-ordinated by Sappi Forest Division who controls the supply of all timber to the Sappi-Saiccor mill. Sappi Forest personnel, however, can be consulted by the grower on an ad hoc basis. The timber operations of these farmers are less capital intensive than the company plantations with respect to plant, vehicles and equipment and in addition the farmers also subcontracts a majority of the felling-delivery operations.

The third category of grower includes managed small-scale farmers incorporated in Sappi's Project Grow program. This category of grower, occupy on average 0.6 hectares each, is mostly located within a 100 kilometre radius of the company mill. Project Grow is a tree farming scheme that has the objective of converting rural subsistence farmers into emerging commercial operations. This project was launched in 1983 by Sappi Forests, the Gencor Development Fund and the Kwazulu Department of Agriculture and Forestry with a view to developing viable small scale timber operations in rural Kwazulu-Natal. Since 1989, Sappi Forest division has contracted out the management of this project to a rural development organisation called Lima, which is a non government organisation registered under Section 21. This organisation receives an annual fee from Sappi Forest division, to administer the Project Grow initiative with two management staff, two administration staff, six extension officers and eight field assistants.

The Sappi Project Grow arrangement provides small farmers with financial assistance, seedlings, technical advice and a guaranteed market. Sappi Forest, via the management company Lima, provides an interest free loan of up to a maximum of R2 700, calculated on a per hectare basis, for farmers to establish trees where all contracts have the approval of the local tribal authority. Thereafter, advances are paid out to the farmer for completed certified work over the growing period of the trees to ensure that operations are funded over the growing cycle. The contracted farmers are thus paid to do the land preparation, planting, weeding, coppicing maintenance and the management of firebreaks. Lima extension officers visit the growers frequently after the trees have been established to provide further assistance with weed control and the preparation of fire breaks. Sappi Forest, if requested by the growers and Lima, may also assist during negotiations with harvesting and transport contractors. At the time of harvesting Sappi Forest buys the timber from the farmers at a market related price less the advances paid out during the growing period. Additional benefits from growing timber include fencing, building material and firewood which is obtained as a result of coppicing when the trees are between one and a half years and three years old.

Sappi Forest Division has invested in excess of R10 million in Project Grow in terms of loans and an additional R5.2 million for seedlings. A summary of the growth of this project (Table 14) indicates that the number of growers has increased from 101 to 7 100 in the period 1989 to 2001. A total area of 4 223.8 hectares is currently being managed under this programme.

**Table 14: Project Grow Expansion**

| Year | Growers | Area Planted | Area under Coppice | Total Area | GPS Positions marked |
|---|---|---|---|---|---|
| 1989 | 101 | 66.5 | | 66.5 | 15 |
| 1990 | 344 | 218.1 | | 218.1 | 35 |
| 1991 | 273 | 133.2 | | 133.2 | 33 |
| 1992 | 354 | 143.1 | | 143.1 | 59 |
| 1993 | 243 | 132.9 | | 132.9 | 6 |
| 1994 | 234 | 134.2 | | 134.2 | 12 |
| 1995 | 549 | 212.0 | | 212.0 | 5 |
| 1996 | 778 | 409.7 | | 409.7 | 10 |
| 1997 | 656 | 484.5 | | 484.5 | 10 |
| 1998 | 862 | 489.0 | 114.0 | 603.0 | 246 |
| 1999 | 764 | 422.0 | 116.3 | 538.3 | 249 |
| 2000 | 1085 | 400.5 | 172.7 | 573.2 | 335 |
| 2001 | 857 | 574.9 | | 574.9 | 714 |
| **Total** | | **3820.7** | **403.1** | **4223.8** | |

Timber deliveries in excess of 1 500 tons of timber per month were achieved for 2001 generating some R2.6 million for the season. The estimate turnover for 2002 has been set at R3.5 million. It estimated that an additional 1 120 people are employed by contractors who assist the growers with the planning and harvesting of their plots. The project contributes towards the upliftment of women in this area as some 80% of the growers registered with the project are women. The project generates considerable revenue for local communities with an estimate of 50% of turnover retained within the community as a result of payments to local contractors, 42 % retained by the grower and 8% refunded to SAPPI as loan repayment.

### 3.2.3 The Supply Contract

All contracted suppliers are required to enter into a timber purchasing agreement with the Sappi Forests division. The purchasing agreement specifies the exact location of the grower as well as the commencement and duration of the relationship. The agreement indicates the total tonnage to be delivered to the mill during the period of the contract and also stipulates the annual tonnage. The contract specifies the price that the company will pay for the tree species to be delivered or alternatively that the parties shall agree to an annual price. The supplier must adhere to quality

specifications as determined by the company mill. The supplier is required to obtain the necessary permits, license or statutory authority from the Department of Water Affairs and Forestry, the National-Provincial Environmental Authority and the Department of Agriculture. The conditions of delivery, risk, ownership and payment are outlined in the contract with the risk only passing to the mill once the specified timber has passed over the company weigh-bridge. The date and mode of payment for a timber delivery is also specified. The company undertakes to supply seedlings of a specific species on condition that the supplier gives proper notification and that transport costs are to be borne by the supplier. The company also undertakes to provide free technical advice during the growing cycle of the timber, however, the supplier must provide reasonable notification to the company and access to the growing site. A clause is inserted to cover both parties from *"force majeure"* and outlines the terms and conditions of the suspension or waiving of contractual liabilities. The enforcement of the contract is stipulated by way of written notice to the defaulting party and the supplier may not sub-contract or cede any of the terms and conditions of the agreement to a third party. Finally, the contract specifies the *domicilia* of the parties and outlines further miscellaneous legal clauses to the purchase agreement.

In certain cases, suppliers enter into a financial assistance agreement with Sappi Forests. This agreement, called a MAP Agreement 1, stipulates the background of the applicant, the duration of the arrangement and an exact schedule of the growing and harvesting of specific species of trees. This agreement, moreover, stipulates the rate of interest to be paid to the company together with notification of a liability for finance charges. The terms of repayment are specified by way of a deduction of the financial assistance received from payments made with respect to the supply of timber under the timber supply agreement. Furthermore, the conditions that apply in the event of the non-supply of timber to the company, for whatever reason, are outlined in this agreement. The supplier, applying for financial assistance, should be the registered owner of the stated property, and, if a loan in excess of R50 000 is made, then the supplier is obligated to register a covering mortgage bond in favour of Sappi Forests. In certain cases where the supplier plants in excess of 500 hectares the company may enforce a timber servitude on the supplier as an additional measure to enforce the contract. The contract, moreover, stipulates the general obligations of the supplier and

includes conditions that enforce the supplier to comply with all environmental and silvicultural requirements. The contracted supplier, moreover, must sell the specified timber to Sappi Forests when the trees are at a specific age at a market related price relative to the area in which the mill is established. The MAP Agreement 1 includes the provision of free technical advice to the supplier up to a stated number of visits per year and outlines the risk-insurance requirements to be met by the grower who shall forward a copy of the insurance agreement to the company.

A different supply arrangement is used to contract small-scale farmers under the Project Grow arrangement. The Grow Agreement involves an arrangement whereby the Sappi Forest division supports the supplier both financially and technically. The duration of the arrangement is specified and the terms of assistance outlined. Assistance is received in the form of an initial interest free loan for planting, maintaining and weeding the timber. Sappi Forests also undertakes to provide seedlings. The grower must demonstrate they have all the necessary permits, licences and authority to grow timber on the said property including the compliance of the Department of Water Affairs, the National-Provincial Environmental Authority and the Department of Agriculture. The grower undertakes to meet a range of obligations that include compliance with Sappi Forest's environmental and silvicultural practices and access to inspection by all stipulated parties. The grower is obligated to sell the timber to Sappi Forest and this timber must comply with the stated mill specifications. The supplier must also comply with Sappi Forest's instructions to harvest the timber at a specific age. The price paid for timber is negotiated between the parties and will generally be the prevailing price. All risk of damage remains with the grower until it has crossed the weighbridge although timber that does not meet mill specifications may be rejected. The agreement, furthermore, cedes the grower’s rights to the purchase price as a measure to provide additional security to the company. Finally, the contract outlines the conditions relating to the breach of the contract by the grower and the manner in which the contract will be enforced. The grower is not allowed to cede any rights or obligations to third parties and all notices to the grower are to be delivered personally by the company or at monthly Project Grow meetings

### 3.2.4 Transaction Characteristics

The interface between growers and the company mill, with respect to the continuous supply of large volumes of timber, generates a unique set of transaction characteristics. The number of deliveries of timber to the mill can be classified as the transaction characteristic of frequency and the value-degree to which the assets of the processor-grower are tied to the timber supply operation can be classified as transaction characteristic of asset specificity. Finally, the level of supply uncertainty has been classified as the transaction characteristic of uncertainty. The actual Sappi-Saiccor timber supply transaction characteristics, illustrated in Table 15, were developed for the period 2000/1 and are based on the delivery of over 1.6 million tons of timber to the Sappi-Saiccor timber yard.

**Table 15: Transaction Characteristics of the timber supply chain**

| **Transaction Characteristic** | **Sappi-Saiccor** |
|---|---|
| **1. General** | |
| Types of Growers | Estate, Large, Medium, Small, Micro |
| Hectares | > 500 000 hectares |
| **2. Frequency** | **High** |
| Tonnage Crushed | 1.64 million tons |
| Number of Deliveries | 46669 |
| Administration | 5.3 tons/transaction |
| **3. Asset Specificity** | **High** |
| Co-ordination Level | 12 months/year/24 hrs /day 7 days/week<br>road-rail, wood chips perishable, mill requirement 6 000 tons/day |
| Value of Estates | > R 3.8 billion (net operating assets) |
| Value of Plant | > R 5 billion (replacement cost) |
| **4. Uncertainty** | **Low-Moderate** |
| Company Estates | Legislation, environmental issues, cost of inputs, physical variables, land constraints |
| Medium-large Growers | Timber Prices, physical variables, limited additional land, water cost, environmental |
| Small-scale Growers | Different time horizons, land tenure, cost of inputs, legislation, lack of access, moral hazard, theft |
| Processing | High Degree of leverage |
| Downstream | Volatile markets, changing nature of industry > high uncertainty |

*Transaction Frequency*

The transaction characteristic of frequency, illustrated in Table 15, has been developed on the basis of the number of timber deliveries that are made to the timber supply yard. The frequency of timber deliveries is high because of the need to maximise the use of mill capacity of approximately 6 000 tons of timber per day, combined with the limited ability of the timber supply yard to stockpile the commodity. The timber supply yard, therefore, needs to be replenished on a daily basis to ensure that stock-out does not occur. The frequency of deliveries indicates that 46 669 truckloads of timber resulted in the delivery of 1 663 520 tons of timber

involving 1 489 203 tons of gum and 174 317 tons of wattle. The number of deliveries by road exceeds the deliveries by rail with 33 176 delivered by road transport rigs and 13493 deliveries (railway trucks). Of this total, approximately 86 % of road deliveries and 91 % of rail delivery, consist of gum, which accounted for 90 % of the timber processed by Sappi-Saiccor in 2001. On the basis of these records, this study found that a level of delivery frequency of in excess of 125 truckloads per day occurred for the full calendar year. According to the comparative levels of transaction frequency, developed by Williamson (1975) and Petersen and Wysocki (1997), this study has classified the level of transaction frequency as intermediate-high.

*Asset Specificity*

The mill group, which has a capacity of processing an average of 6000 tons of timber per day, employs four mills of different capacity. The net operating assets employed are currently valued at R 1.3 billion, on a historical cost basis, that translates to a current replacement cost in excess of R5 billion for the year ending September, 2001. These assets are highly specific and have a low opportunity cost outside the timber industry. The assets, moreover, are relatively immovable and are also site specific as the they have been located in close proximity to certain suppliers, harbour, rail and road facilities. The finished product is largely exported by ship and therefore the mill is site specific to the coast and harbour facilities. The factory assets also demonstrate high levels of asset specificity as a result of the need for high levels of co-ordination in order to maximise capacity usage. The timing of the delivery stream is, thus, co-ordinated in order to stagger the arrival of over 46 000 vehicles-railway trucks per annum in order to maintain capacity, as well as, reduce the turnaround cost of the timber supply yard. The logistics of timber supply requires the processor to co-ordinate a continuous delivery stream by road and rail from a diverse group of growers that are widely dispersed. The company must, moreover, ensure that each supplier is adhering to their contractual conditions. The high levels of co-ordination are also further influenced by the perishable nature of the semi processed raw commodity, namely, wood chips that are stored in an open yard and loose quality over time, especially in hot humid conditions. Finally, the level of asset specificity is increased by the timber specific knowledge and skills that have evolved, and are locked into, the timber processing industry. On the basis of the historical records, in conjunction with the grading of transaction characteristics it would appear that the

intermediate-high levels of frequency, as a transaction characteristic, are matched with high levels of asset specificity in the processing operation group.

*Uncertainty of Supply*

The uncertainty of supply has, historically, been relatively low due to a number of factors. Firstly, the uncertainty of supply has been reduced by the monopsonistic nature of the timber industry where Sappi Limited is a major player. Secondly, the company estates have, historically, produced more than 50% of the timber processed by Sappi-Saiccor and uncertainty of supply was further reduced by the site specificity of many growers who are located within a fifty kilometre radius of the Saiccor Mill. Thirdly, uncertainty is reduced by the long-term nature of timber production. Sappi Forest division is, in this regard, able to manipulate the supply of timber according to annual mill requirements and standing timber can, therefore, be felled if required or maintained until a future time when it is required. The economic viability of the standing timber is not affected due to the annual growth rate of this commodity. The uncertainty of supply has, therefore, been a function of the reliability of the company plantations and medium and large growers, combined with the normal agronomic and climatic variables that prevail in the timber growing industry. The uncertainty of supply from medium and large suppliers, in this respect, is reduced by a stringent specification contract whilst the activities of Sappi Forest are fully internalised in the structure of Sappi Limited. Finally, deteriorating international markets for dissolving pulp, combined with increased levels of competition, have resulted in Sappi-Saiccor reducing capacity by 25%. Given the same volume of timber supply, the level of future uncertainty looks set to decrease as a result of downstream market pressures. Finally, uncertainty is partially a function of asset specificity. The reason for this is that the high level of fixed cost of the processing operation contributes towards increasing the degree of leverage, which in turn, increases the volatility of company cash flows. Since increased levels of volatility are associated with higher levels of uncertainty, the high level of asset specificity will tend to increase supply uncertainty. On the basis of the analysis of the historical records, combined with the current concerns of the timber, this study concludes that the current level of supply uncertainty can be classified as low to intermediate. Should Sappi Limited divest out of the timber growing industry, as has been suggested, the projected level of supply uncertainty is likely to increase.

### 3.2.5 The governance structure for the timber supply chain.

According to Petersen and Wysocki (1996; 1997) and Williamson (1981; 1996; 1998; 2000), transaction characteristics that include high levels of frequency and asset specificity, combined with a measure of uncertainty, require higher levels of managed co-ordination than the spot market mechanisms. On the basis of transaction cost theory, the control of timber supply could be co-ordinated by a range of structures from specification contracting to full vertical integration on the vertical co-ordination continuum of Table 16. The contract characteristics of the supply arrangement suggest, however, that this structure would involve medium to high levels of managed co-ordination. The actual structure of control at Sappi-Saiccor does not necessarily contradict this and indicates that 50% of supply is controlled by specification contracting and 50% from the company plantations indicating an aggregated control structure in the centre of the continuum.

**Table 16: Governance structure in the timber supply chain**

| **Theoretical Optimum Actual Structure** | **Spot Market** | **Specification Contracting (50%)** | **Strategic Alliance XX** | **Formal Co-operation** | **Full Vertical Integration (50%)** |
|---|---|---|---|---|---|
| **Level of managed co-ordination** | 0% | Low | Intermediate | Int./high | High |
| **Governance Form** | | Contract Growers | | | Company Estates |

### 3.2.6 Summary and Conclusion

The case study demonstrated that large numbers of micro growers, namely, in excess of 7000 farmers, can be incorporated in the timber growing operation of an agribusiness partner. The timber case study also demonstrates that transaction cost theory can be practically employed to test the level of managed co-ordination in an agricultural supply chain. A number of worrying concerns emerged from this case study. Firstly, the high level of company support to the growers has resulted in a cost to Sappi Limited of R10 million since 1989. The project appears to have been conceived as a result of dual political economy-economic company objectives that translated into a paternalistic agribusiness approach to managing the smallholders. Secondly, the withdrawal of the administrative support of the agribusiness could

result in the abandonment of the project. The smallholders, at this stage, appear unlikely to organise their own affairs by way of a farmers association. Thirdly, the case study also supports the widespread contention that smallholders generate incremental transaction cost. Finally, the company's control systems are also, in many instances, unable-reluctant to disclose the differential cost of dealing with smallholders.

## 3.3 Small Growers in the Tea Industry: The Sapekoe Story

### 3.3.1 Introduction

This case study evaluates a tea supply chain in Sapekoe Estates (Pty) Ltd - a company located in the Northern Province of South Africa. The case study focuses specifically on one of Sapekoe Estates's plantations, namely Tshivusa Plantation situated in the former Venda Homeland. The case study specifically discusses the company as a grower compared to the contracted growers and will also discuss the nature of the contract between private growers and the company.

The Tshivase Estate, along with the rest of the company actively promoted small farming after 1987 and by 1992 some 157 small farmers were engaged to supply green tea leaves to the factory. In January 1999, the estate had engaged 330 small farmers occupying an area of 192 hectares. Each farmer occupied an area of approximately 0.6 hectares where 0.5 hectares was under tea. This area was thought to be the optimum size that could be managed by the contracted farmers mostly drawn from the workforce. An annual contract was drawn up between the small farmer, as a grower, and the company as a processor. This contract was translated into the language of the farmer. The profile of the farmers indicated that a high percentage (as high as 96%) of mini farmers were females between the age of 22 and 53 years. Their profile indicated as many as 50% were illiterate whilst 38 % had been educated at a junior primary school level only.

A series of quarterly reviews maintained between January 1999 and April 2001 reveals a trend of a reduction in company involvement with the mini farming project. The principal reasons included small farmers not adhering to plucking schedules, poor field practices, low yields and a lacking of an entrepreneurial ethos. In March 1999, it

was decided to reduce small farm projects from 330 people occupying 192 hectares to 90 farmers occupying 67 hectares. In the period 1/4/1999 to 30/4/2001 the mini farmers complied with standards and demonstrated high levels of productivity. In 1999 the small farmers improved productivity from 63.7 kilograms of green tea per labour unit per day to 99.9 kilograms. In 2000, weeding-fertilising operations were reported as satisfactory and plucking and pruning productivity often exceeded that of the estate. During this period all standards were maintained. The number of farmers reduced to 87, then 80 on the same area and by 31/10/2000 the company had the intention of expanding this number to 100. The mini farming project on Tshivase was terminated in June 2001 due to a change in legislation. The reasons for failure include the poor selection of participants, the poor management skills of the small farmers, the limited duration of the contract, volatile world prices and major strikes in 1996 where company workers intimidated the contracted farmers. The company also displayed a history of paternalism in the corporate culture, a high level of scepticism of company officials and the small farmers, who were originally employees, never became independent farmers.

### 3.3.2 Tshivase Small Farm Contract

The agreement is embodied in the form of a tea harvester agreement between the estate and the designated participant. The agreement stipulates a specified area as designated in the company records and actions both parties are regulated in terms of Section 45 Act 32 of 1994. This act controls the institution of any legal action providing for the enforcement of any rights under, or arising from the agreement, in the Magistrate Court which has jurisdiction in respect the estate in terms of Section 29 (1) of the Act.

### 3.3.3 Transaction characteristics

The Tshivase Factory has processed an average 7 072 370 kilograms of green leaf tea in the period 1999 to 2001. The harvesting and delivery are co-ordinated and synchronised in order to maintain constant use of factory capacity which is estimated at 74 800 kilograms per day. On average, a single daily shift produces around 38 500 kilograms which indicates that around 51.4 % only of Tshivase factory capacity is

utilised. The harvesting and delivery of green tea leaves co-ordinates some 36 different fields occupying an area of 577 hectares. Each field is plucked on an 8 to 12 day cycle indicating a high level of labour management as the teams move from field to field according to the designated plucking programs. The plucking cycle results in each worker's basket being weighed in the field and placed in a covered light delivery vehicle or tractor-trailer for delivery to the factory. The deliveries are weighed on entry to the processing operation and average out at around 1 500 kilograms per delivery. This would indicate that the factory receives in excess of 4 700 deliveries of green tea per annum. Each delivery should be offloaded in between 20 and 30 minutes and the perishability of green tea leaves increases the need for high levels of co-ordination between the factory and the growers. In addition, the number of company weighing-inspection transactions in the field averages at around one transaction per 45 – 60 kilograms per labour unit (June 2001 Plucking Summary). This would suggest that there is a minimum of 25 weighing-inspection transactions in the field for an average delivery of 1 500 kilograms. This would suggest some 117 500-field transactions per annum.

The high levels of frequency, as a transaction characteristic, are matched with high levels of asset specificity in the factory group with lower levels of asset specificity for the agricultural division. The assets of the Tshivase Estate factory were valued at R 7.56 million at gross book value as at the 30$^{th}$ of June, 2001. These assets are highly specific to the tea industry and have a low opportunity cost outside the industry. The assets, moreover, are relatively immovable and are also site specific as they have been centralised in relation to the company estates and out-grower suppliers. The factory assets also demonstrate high levels of asset specificity as a result of the need for high levels of co-ordination in order to maximise the use of capacity. The co-ordination of over 4 700 deliveries from 36 different fields has been that every field is plucked on an 8 to 12 day basis. And every delivery is scheduled to have a turnaround time of 30 minutes and less. The high levels of co-ordination are further influenced by the perishable nature of the green tea leaves that rapidly loose quality if they are exposed after cutting.

The uncertainty of supply has, historically, been relatively low due to the fact that the company estates have produced more than 96% of the processed tea leaves. The

uncertainty of supply has therefore been a function of the normal biological and climatic variables experienced in the agricultural sector. The uncertainty of supply has, at times, been increased by the unavailability of labour, labour disputes and other forms of absenteeism. Small farm supply has been less reliable than the company estates and is cited as one of the factors contributing to the abandonment of this form of supply. The uncertainty of future supply could be affected by the land tenure situation of the company who currently leases all of its land from local tribal authorities. The downstream uncertainty in the tea industry is, however, elevated because of the volatility of world tea prices. The transaction characteristic of uncertainty is also increased because of the high level of fixed cost of the processing facilities where the need to maintain mill capacity is vitally important. The company therefore has a high degree of leverage with respect to its fixed cost structure and any type of breakdown in the processing facilities, or alternatively, major shifts in climatic patterns, have a significant impact on the company cash flows.

### 3.3.4 Governance structure in the tea supply chain

The tea supply chain of Tshivase Estate displays the transaction characteristics of high levels of frequency, asset specificity and a moderate level of cane supply uncertainty. These transaction characteristics, in turn influenced by crop specific characteristics, clearly demonstrate that the Tshivase Estate requires high levels of managed co-ordination in order to co-ordinate large volumes of a highly perishable raw commodity that are supplied by the growers. It is therefore logical to argue that the Tshivase Supply Chain would not be able to function without high levels of managed co-ordination. The adopted governance form has resulted from the need to co-ordinate the high volumes of supply to maintain mill capacity at around 38 000 kilograms of green tea per day. The financial performance of the Tshivase Estate is severely affected if plant capacity is not utilised during the year, as there are moderately high levels of fixed factory cost. This study therefore has demonstrated that governance form is a function of transaction characteristics and that governance forms evolve in order to minimise total cost, rather than just transaction cost as stated by the proponents of transaction cost theory. Organisation structure will thus impact on financial performance. In the case of the Tshivase Estate it would be clearly

impossible to obtain and co-ordinate the supply of green tea leaves on the spot market. The company, moreover, is unable to expand it's own capacity from estate type supply because of an inability to acquire additional permanent land inputs because of a limited land market in conjunction with land tenure problems. Mill capacity, moreover, exceeds own supply capacity so Tshivase must acquire additional supply from out-growers or the mini farmer source. The Tshivase Estate has, therefore, clearly, adopted the optimum governance form over time in support of the original proponent of transaction cost theory, namely, Ronald Coase (1937). The Company has, therefore, clearly, adopted the optimum governance form in order to co-ordinate the large range of growers.

### 3.3.5 Grower Performance

The comparison of the growers has been evaluated on the basis of the plucking performance summaries that have been summarised for the period 1996 to 2000. The plucking performance evaluates the productivity of the estate and the mini farmers on the basis of the kilograms of green tea leaves delivered to the factory per hectare farmed and on the basis of the kilograms of made tea per hectare farmed. A further measure of efficiency also examines the green leaves picked per day per worker and expresses this measure as the yield per labour unit. The results, as illustrated in Table 19, suggest that mini farmers have outperformed the estate between 1996 and 2001 except for the period 1998/9. The mini farmers, on average, have been 7.26 % more productive per hectare in terms of green leaves delivered to the factory, as well as, made tea than the balance of the estate. The labour yield per unit for the estate has been calculated on the basis of the conventional hand plucking technique and again the results indicate that the mini farmers have outperformed the estate in the period 1996 to 2001 except for 1998/9. The results for 1999/2000 were not available but, on average, the mini farmer yield per unit was 13.9 % higher than the balance of the estate.

### 3.3.6 Conclusion

This case study provided useful insights into what should NOT be done with respect to the design of a smallholder linkage or out-grower project. Firstly, the company officials never viewed the contracted growers as independent farmers but rather as former employees. The autonomy of contracted farmers was, therefore, extremely limited. The design of the project, moreover, was rather directed at avoiding labour union problems rather than stimulating small-scale supply. The second important feature was the micro nature of the growers who operated on less than a hectare suggesting the need to evaluate a critical minimum size farm in any crop category. In this respect, there is some correlation with the timber case study. Finally, the reasons for the failure of this project are contradicted by the apparent competitive grower performance of the contracted farmers suggesting that the official company reason for the closure of the project, namely, the incompetence of the growers, was prompted by other reasons.

**Table 19: The Grower Performance: Sapekoe Estates**

| **Season** | **1996/7** | **1997/8** | **1998/9** | **1999/2000** | **2000/1** |
|---|---|---|---|---|---|
| | | | | | |
| **Estate Plucking** | | | | | |
| Area in hectares | 379.38 ha | 436.47 | 385.92 | 510.92 | 509.92 |
| Green Leaf produced in kilograms | 2700155 kg | 4631349 | 4579033 | 6007174 | 6914557 |
| Yield per hectare Green Leaf kg/ha | 7117.28 | 10610.92 | 11865.23 | 11757.56 | 13560.08 |
| Yield per hectare Made Tea kg/ha | 1401.03 | 2139.64 | 2331.41 | 2376.65 | 2720.45 |
| Yield per labour unit/ha green leaf* | 31.8 | 49.8 | 46.5 | | 48.0 |
| | | | | | |
| **Mini Farmers** | | | | | |
| Area | 198.82 | 141.73 | 192.28 | 67.08 | 67.08 |
| Green Leaf Produced | 1647184 | 1805906 | 1872559 | 895872 | 947914 |
| Yield per Hectare Green Leaf | 8284.48 | 12741.87 | 9738.71 | 13355.28 | 14131.09 |
| Yield per Hectare Made Tea | 1631.77 | 2569.34 | 1908.40 | 2699.61 | 2835.00 |
| Yield per labour unit/ha green leaf | 43.4 | 53.4 | 40.3 | | 60.2 |
| | | | | | |
| **Total** | | | | | |
| Area | 578.20 | 578.20 | 578.20 | 578.00 | 577.00 |
| Green leaf Produced | 4347339 | 6437255 | 6451592 | 6903046 | 7862471 |
| Yield per hectare Green Leaf | 7518.75 | 11133.26 | 11158.06 | 11942.98 | 13626.47 |
| Yield per hectare Made Tea | 1480.06 | 2244.97 | 2192.45 | 2414.14 | 2733.76 |

## 3.4 Dealing with price risk and access to markets in the grain industry: An innovative approach to link farmers with grain markets.

### 3.4.1 Introduction

Farmers producing grain and field crops on dry land are usually faced by two types of risk namely price and production risk. Production risk relates to the possibility of crop

failure due to any number of reasons. This risk can be managed through crop insurance (or often referred to as input insurance), which protects the farmer against crop failure. However, as technology and markets evolve, better means of risk aversion or control can be applied. Using precision farming techniques and planting the best variety on the market, farmers can manage the production risk to a certain extent, but there are still a huge number of variables (and thus potential risks) present in agricultural production.

Price risk can be managed very effectively by the use of market-based solutions like derivative instruments (contracts and options). By following a low risk approach to hedging (price insurance), a simple strategy or portfolio can be implemented at relatively low cost to insure a pre-determined minimum floor price. With further management of this portfolio a potentially higher price can be realised, which will obviously benefit the client and his/her banker. Secondly, by actively managing the hedged portfolio the costs of hedging can be considerably reduced.

Dealing with these risks is one aspect farmers have to deal with but then farmers are also faced with marketing decisions. The crop harvested needs to be sold to a suitable buyer and the price needs to be negotiated. Previously in South Africa the various marketing boards took on this role on behalf of all role players. Following the process of deregulation farmers now have to identify their own marketing opportunities. This is especially difficult for those farmers that are now emerging from a subsistence mode of production into some commercial production.

Increasing production costs relative to capital costs and equity during recent years has meant there are increased demand for short-term production credit from financial institutions. Many farmers do not have additional assets (or no assets at all) to provide as security for such finance. This situation will make it almost impossible for many farmers, especially farmers from disadvantaged communities, to enter agriculture and produce for the market.

This section reports on a very interesting and unique concept whereby financial institutions are now adapting their financial products to accommodate this particular need and in the process creating linkages into the input as well as output market. The

contractual relationship involves a process whereby production credit is linked to the risk and output market. It is thus a typical example of interlocking factor markets (between output and input markets) but in addition the facilitating organisation or financier is undertaking a hedging strategy on behalf of the farmers. In essence the 'product' becomes a sort of one-stop-shop whereby the client (usually without collateral) is now able to access the normal products of commercial banks, such as input financing, hedging and pricing services and output insurance.

A number of financial institutions in South Africa have recently used this concept to form successful joint ventures with other partners in the commercial agricultural sector, to facilitate the integration of small-scale farmers from our disadvantaged communities into the commercial sector. For the first time in South Africa this type of arrangement provides a solution to the problem that the farmers in disadvantaged communities are too small to participate in derivative markets. Derivative market instruments are usually specified in 100-ton contracts, which therefore exclude many small-scale farmers from utilising these instruments to minimise price risk.

The innovation is basically related to the fact that small scale farmers are now grouped together to give them a way into a market which is closed to any one producing less than 200t (more than one futures contract). Currently derivatives as a risk management tool is only available to participants producing more than a 100t and who can carry the hedging costs which is a minimum of R18000 for every 100t contract. These requirements make hedging as a management tool inaccessible to most small-scale farmers. Also the understanding and use of these tools is absolutely crucial to commercial producers. Generally if a producer can not use these instruments because either being to small or unskilled in its uses he/she will not be able to receive financial assistance from a commercial bank to finance production. The uniqueness and innovation of this product is in that it was structured with exactly that in mind and will over time integrate small-scale farmers into the mainstream agriculture fully equipped and financially capable to participate in the market.

To a large degree this approach lean heavily on the philosophy of supply chain management, by combining all activities, from production finance to price risk. It channels available credit finance from the financial institution to the farmer, and at the

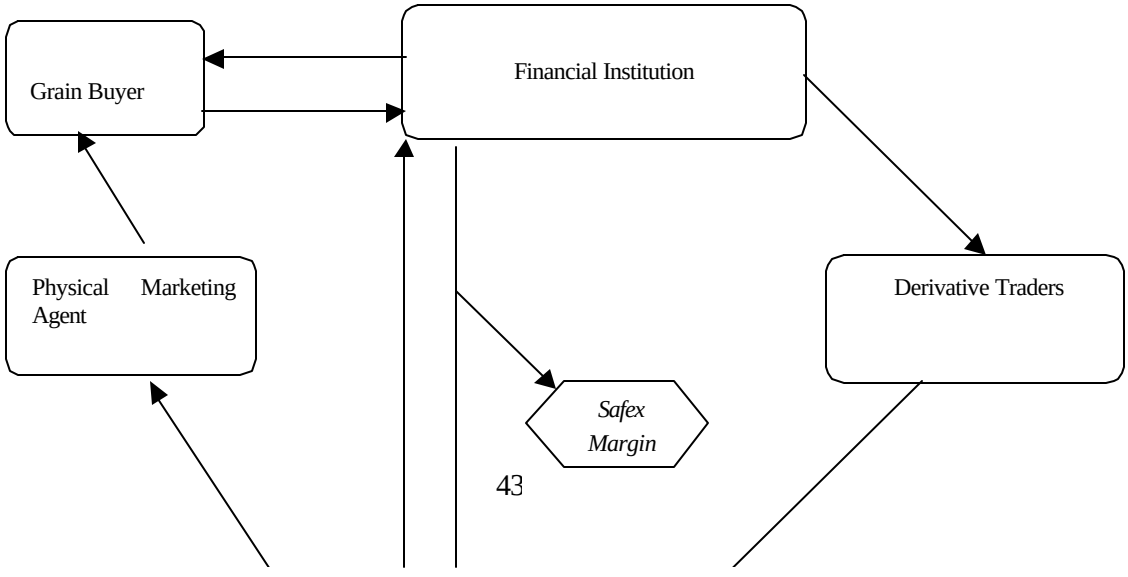
same time assist the farmer through extension services and the entire spectrum of the marketing functions to ensure that his crop will be sold at profitable levels. At the same time it protects the loan book of the financier against defaults which could arise through price risk.

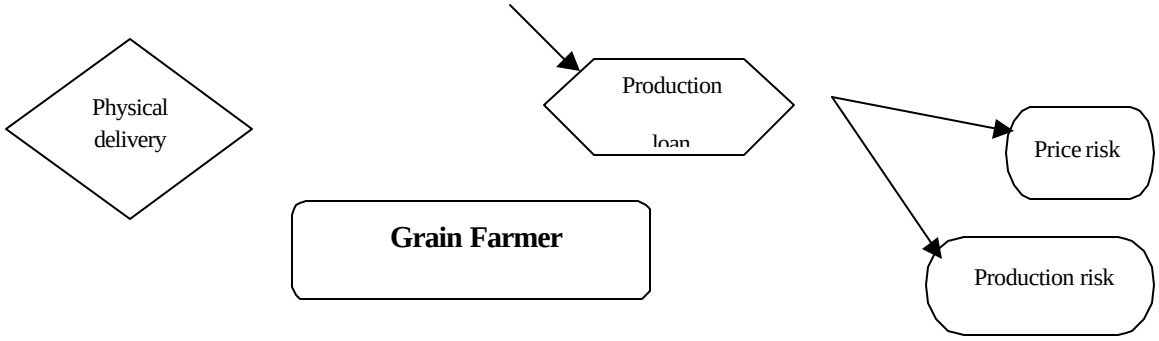
### 3.4.2 The basic foundations of this type of arrangement

This joint venture in this case study was established to do exactly all of the above, i.e. loan book expansion, actively managed hedged portfolio, lowered hedging cost, minimum or higher realised prices, and lower risk exposure to all stakeholders by utilising and pooling of resources, expertise and existing links.

Price risk has for ages been one of the biggest risk factors faced by farmers. With the deregulation of the maize industry, grain producers had to turn to the derivative markets for price insurance. By using the derivative markets, they aim to fix a floor price ahead of harvesting, and maybe an even higher price once the crop has been harvested and sold. One of the problems faced by these producers is the complex and potentially disastrous nature of this kind of market activity. To participate in derivative markets, one needs a high level of understanding and even training to operate safely within it. Furthermore depending on the strategy followed it can also be very demanding on ones cash flow as margin movements can occur very quickly and very steeply. However, with the volatile grain prices since deregulation there is no doubt that these market instruments have to be used if one wishes to secure reliable profit margins over time.

Graphical representation of the structure of the joint venture:






Since the majority of crop production takes place with production loans, the lender himself is also affected by price risk, since adverse price movements have a negative effect on loan repayment ability. In would thus be to the advantage of the lender if the client can manage his marketing process in such a way that continually receives a net price, which will ensure a positive profit margin from a price perspective. It will thus eliminate the price risk from the loan book. The farmer will still be faced with production and yield risk, and thus in essence so will the lender, but this was always the case. One of the biggest risk factors, price, can at least now be eliminated which will hold obvious benefits to the lender. It will however require from the lender to investigate the client's hedge portfolio from time to time to ensure that the client does follow an appropriate strategy or even from the lender to build and manage the strategy on behalf of the client, and so ensure that the lenders loan book is protected from price risk. This however requires the necessary infrastructure and technical expertise, which could potentially be very costly and time consuming to set-up.

Even if the client do succeed in successfully managing his hedge portfolio he then still have to find a contracting party to take the physical crop of his hands, since physical delivery into the spot market is preferred to delivery to SAFEX. Contracting the physical crop is also required to immunize the loan book as much as possible, since SAFEX only really assist in protecting against price movements, as for physical delivery to SAFEX can be very expensive. Physical contracting thus creates the opportunity of saving on transport cost, handling fees and the potential to benefit from basis risk. This aspect unfortunately does require very stringent control over the progress of physical production. Even more so than under normal circumstances were

producers do not make use of forward contracting, for a failure to deliver a preset amount of product could result in a form of contract breaching.

The working of this arrangement is illustrated by the following example:

Farmer A applies for a production loan at the financial institution. Once the application has been approved, the bank purchases put options on the client's behalf although the options will be seeded to the bank. The premium on the put option is added to the production loan and the Farmer signs the increased production loan. Let's assume the put option was purchased with a strike price of R1200/ton and the premium payable on that strike price was R100/ton. By buying the put option, the financial institution has created a floor price for Farmer A of R1200/ton.

If the price increases to let's say R1500/ton, the option became worthless and expires but the client still remains responsible for the repayment of the loan. There was no price risk involved due to the price increase. But, what is going to happen when the price drops to say R1000/ton? The option gain in value and the financial institution can sell the option to another party on SAFEX. The profit generated on the option can be used as a payment on the outstanding loan amount. Thus, creating the same effect as if the financial institution is writing off the loan because of default as a result of the price drop. It is also noteworthy that the further the price declines the higher the option profit will be and thus the more the loan will be repaid by the bank until the loan becomes fully paid and any further profits will then be given to the client.

A number of individuals (facilitators, grain traders, etc) have put this principal in practice by doing this type of arrangement with groups of small-scale maize and sunflower farmers in the North West Province and the Free State Province of South Africa.

## 4. Building successful links between agribusiness and smallholders: Lessons from the case studies and the literature

A series of general proposals are developed in this section that can be incorporated in the design of out grower or contracting arrangements with smallholders. The

proposals have been formulated on the basis of the results of the case studies, the lessons of the international experience of contracting and, in certain instances, the use of transaction cost theory. The lessons of history include the importance of screening future partners, the need to understand how historical and institutional legacies have influenced contracting arrangements and the advantages of creating mutual asset specificity between the contracting parties. Additional lessons include the role of logistics, the need to assess start-up cost, the need to invest in new partners and promote access to facilities, the importance of commodity characteristics and the implication of contracting with large numbers of small-scale farmers. Finally, other important lessons include the presence of a competitive fresh market, the role of the state, the role of trust-contract conflict, property rights economics, the strength of agribusiness management, the volatility of world prices and the important role of women.

- The careful screening-identification of future partners is a key success factor. Farmers who have a record of previous interaction with agribusiness appear to be more successful contracting partners (Levin, 1988; Porter & Phillips-Howard, 1997a; 1997b). The three case studies all appear to have developed a data bank of farmer details for each prospective new farmer. In the case of the sugar industry, however, the screening process took more cognisance of the entrepreneurial ability of the prospective applicant, whereas, in the timber industry, it would appear as if a majority of applicants were accepted. Screening costs, involving large numbers of applicants, can be significantly reduced if these activities are assisted by a representative farmers association or, alternatively, if the agribusiness contracts with the farmers' association rather than the individual farmer. The benefits of screening, moreover, can be increased if the process includes a business aptitude test, a credit check and a list of assets-collateral. Finally, the screening process should capture the location, logistics and communication channels of the applicant in order to ascertain the spatial dynamics of the project.

- An understanding of the historical legacies and institutional environment will contribute towards a better understanding of the future transaction cost of

contracting with large numbers of small-scale farmers. Transaction cost theory suggests that the transaction characteristics of agricultural supply chains are a function of a range historical-social variables. All of the case studies confirm the pervasive long term influence on economic performance of historical legacies, that have influenced transaction cost as a result of the effect of culture, the historic concentration of industry, the influence on property rights economics, the level of regulation and the concentration of political power. It is suggested, therefore, that the design of contracting structures incorporates an understanding of how historical legacies influence transaction cost. Appropriate design measures can then be taken to reduce transaction cost in two ways. Firstly, many industries have the power to lobby for changes in the institutional framework and Williamson (2000) suggests that this form of economising can significantly reduce transaction cost. South African agribusiness, in particular, has the bargaining power to lobby for property rights amendments and some form of subsidy-tax relief for undertaking smallholder start-up costs. Secondly, the design of organisation structures can be undertaken more efficiently if an understanding of the dynamics of transaction characteristics is incorporated.

- The creation of mutual asset specificity reduces uncertainty and raises the exit costs of both sets of contracting partners. The case studies in the sugar and timber industries indicate that the business partner is confronted with significantly higher levels of asset specificity than the contracted farmers. The industry and site specific processing assets, in the sugar and timber case studies, were valued at R2 billion and R5 billion respectively. Conversely, the contracted farmers owned fewer assets that were of a more general nature. The South African sugar firm, TSB, in particular has a very high level of asset specificity and relies on contracted out-growers for 80 % of sugarcane supply. Transaction cost theory would suggest that a higher level of managed co-ordination is needed in the absence of inducing higher levels of mutual asset specificity or other interlocking factors. Mutual asset specificity can be pursued by way of farmers associations undertaking the purchase of industry specific capital inputs. The Swaziland sugar farmers associations appear to have increased mutual asset specificity by investing in sugar specific plant and equipment that is too lumpy for the individual farmer.

The agribusiness can attempt to act as a facilitator of finance, in this regard, to increase the interlocking nature of the arrangement. Finally, the agribusiness can examine other ways of influencing mutual asset specificity by way of configuring the technology of the grower-processor operations in such a way that only the agribusiness possesses the technology to perform a specific element of the growing operation. Contracted growers, for instance, in the processed tomato sector, require specific harvesting technology that can be owned and operated by the agribusiness (Rehber, 1998).

- The design of the logistics of small-scale farm supply is a crucial success factor. An understanding of the relationship between commodity characteristics and logistics could be incorporated to reduce transaction cost (Delgado, 1999). The timber case study, in particular, illustrates the increased level of transaction cost generated by large numbers of small-scale farmers that are spatially dispersed. The agribusiness, at the outset, can evaluate the transaction frequency of visits, inputs and farmer deliveries with the distance from the processor, the nature of the roads and the available communication system. The transaction cost of logistics can be fundamentally reduced by allowing a farmers' association to provide the necessary inputs, as well as, organise the logistics of small-scale supply. The timber case study, in particular, suggests Sappi Forest should contract with a farmers association for an aggregated monthly volume of timber instead of contracting individually with the 7 100 micro farmers. In the absence of a farmers' association the agribusiness can improve efficiency by establishing the nature of the roads, access and communication systems of the proposed project. The timber industry, in this regard, indicates that certain areas are impassable in the wet season and that declining levels of rural security and high levels of ethnic conflict have resulted in a lack of access except for local community members. Finally, the agribusiness can assemble and program the transaction cost of logistics by capturing the spatial dispersion of the farmers, the number of transactions and the average distance to the processor.

- The careful assessment and treatment of start-up cost is a key project evaluation procedure. In many instances, the agribusiness must commit long-term resources

to establish small-scale farmer projects. Sappi Limited, for instance, has invested ten years and R10 million to establish small-scale tree farming in Kwazulu-Natal whilst the Transvaal Sugar Company in Mpumalanga incurs an annual cost of in excess of R3 million to ensure the viability of small-scale supply Start-up cost will, generally, be higher if non traditional crops are being introduced because of the need to train farmers and introduce complex technology. The start-up cost, moreover, can include the linking of small-scale farmers to institutions like banks, insurance companies and suppliers. The lack of access to these facilities, in conjunction with infrastructure deficiencies, has been cited as a prime cause of project failure (Gittinger, 1982). The assessment and treatment of start-up cost will influence the investment decision. This study proposes that the incidence of smallholder contracting in South Africa will be negatively influenced if agribusiness is expected to bear this cost. The assessment of start-up cost, therefore, should form the basis of lobbying for government subsidy-relief or alternatively to charge back this amount to the farmers. If the contracted farmers are unable to amortize start-up cost, the viability of the operation should be questioned from the outset.

- Certain commodity characteristics are better suited to contracting. Crops, in particular, that are labour intensive in the growing operation and display economies of scale in processing, are more suited to smallholder contracting (Delgado, 1999). The case studies in the sugar and timber industries did not demonstrate particular growing economies for smallholder family labour yet these growers, mostly matched larger growers with respect to the cost efficiency of production. The reason for this ability to compete with larger growers appears to stem from the ability to avoid overhead cost rather than the productivity of family labour. The results of the case studies suggest that smallholders maybe able to compete as growers with commodities that are not particularly labour intensive thus further relaxing the suggested product range of Delgado (1999). Commodity characteristics can also be linked to transaction cost for design purposes. Commodities, for instance, that are perishable will require higher levels of co-ordination cost than those that can be stockpiled. Alternatively, commodities that have long growing periods may require a different contract structure from annual

or shorter term crops. Growers, for instance, in the timber industry sometimes receive advances for work performed against the sale of the future crop. The design of contracting structures can thus consider developing a commodity characteristics profile and use this, together with processing capacity, as the basis for determining the transaction characteristics of frequency, asset specificity and uncertainty to determine an optimum structure. The case studies clearly illustrate the ability to plot actual transaction and contracting characteristics with the optimum governance form. The actual governance form can then be compared and moved along the vertical co-ordination continuum of managed co-ordination. Agribusinesses that incorporate both contracted growers and fully integrated estates can, possibly, employ a looser form of specification than those who rely solely on contracted supplies. Finally, the inappropriate choice of technology, a function of the commodity characteristics, has been cited a cause of project failure (Gittinger, 1982). The agribusiness often has a choice of technology alternatives and it has been suggested that if a labour intensive option does not detract from performance, then this option should be chosen to better suit the competencies of the farm family.

- Contracting with large numbers of small-scale suppliers has been associated with higher levels of transaction cost (Runsten & Key, 1996; Rehber, 1998; Key & Runsten, 1999). The transaction costs of small-scale suppliers in the case studies clearly exceeded those of larger suppliers. The case studies demonstrated that transaction cost can be broken down into a series of cost elements including start-up cost, growing costs, harvesting-delivery costs and administration costs. The economics of contracting would suggest there is no reason for the agribusiness to choose small-scale suppliers over larger growers if all the contracted parties are paid the same price and deliver the same level of quality. This being the case, it is necessary to take specific steps to either avoid the cost or, alternatively, charge back the differential cost to the contracted party. Recurrent small farmer transaction cost can be avoided by contracting with a larger entity like a farmers association who undertakes the administration of its members interests. The farmer association, moreover, can be responsible for configuring it's members with agribusiness requirements including training, extension, technology

acquisition, provision of commodity inputs and co-ordinating harvesting-delivery schedules. The agribusiness firm can increase the successful operation of the farmers association by acquiring representation in the management structure, as well as, allowing the association to be represented in it's own management structure. The agribusiness, moreover, can further influence the efficiency of the farmers association by ensuring this body maintains records, has no political agenda, is limited in size and that it contains sufficient professional management. A different approach to reducing transaction cost for the agribusiness can be engineered by way of charging back differential transaction cost to the small-scale grower by using activity based costing systems to identify the smallholders' incremental use of company resources. The case studies illustrate that differential administration cost can be charged back to the grower on the basis of identifying accounting transactions as the primary cost driver. Activity based costing can also be applied to charge back incremental growing, harvesting and delivery transaction cost. The timber case study clearly indicates that the agribusiness cost of timber from small-scale suppliers is higher than medium-large growers and the company plantations. Finally, activity based costing can be used as a basis to highlight the incremental cost of recurring smallholder transactions with a view to lobbying the South African government for assistance-relief.

- The history of contracting demonstrates that the presence of competitive fresh markets for grower outlets increases the level of uncertainty of supply. Transaction cost theory explains the increased level of cost to the agribusiness in terms of higher levels of opportunism by the grower. The occasional opportunistic sale of timber in rural Kwazulu-Natal highlights this problem that was well documented in the Mexican tomato-growing sector (Runsten & Key, 1996). The unauthorised sale of the contracted commodity can especially problematic in the case of projects involving large numbers of smallholders in developing countries with poorly defined-upheld property rights economics. The agribusiness, in this type of scenario, may not be able to legally enforce the contract because of the incremental cost of first dealing through an inefficient system and secondly because of the micro nature of the contract. The agribusiness can reduce unauthorised sales by securing an agreement with competitors with regard to the

purchase of the commodity. Alternatively, the chances of contract enforcement are improved if market based prices are paid for the raw commodity. The agribusiness could also locate outside the area of the competitive fresh market.

- Fafchamps and Minten (1999) suggest that trust based relationships can be a dominant interlocking factor that can contribute to contract enforcement. Transaction cost theory suggests that trust influences uncertainty as a result of it's effect on the opportunistic behaviour of the contracting parties. Farmer distrust, combined with a perceived loss of autonomy and feelings of exploitation, has been widely cited as a major cause of contracting failures in developing countries (Glover, 1987; Clapp, 1994; Watts, 1994). It has been suggested, in this regard, that the level of trust that can be engendered between the parties will influence the success of future South African contracting arrangements. The development of trust is especially important given South Africa's history of colonialism and apartheid (Porter & Phillips-Howard, 1997a; 1997b).

- Gow et al (2000) have demonstrated that contract innovations, or interlocking factors, can contribute towards reduced transaction cost. These factors include the administration of growers' affairs, the company acting as financier and supplier of inputs and high levels of involvement in local communities. The timber industry case study demonstrates the interlocking nature of a contract that provides financial assistance and/or part payment for certain phases in the growing process. Colchao (1999) suggests the agribusiness can successfully induce contract enforcement by acting as a banker to the contracted farmer. The agribusiness, moreover, is able to compete in the banking sector as a result of better information combined with the ability to enforce contracts in alternate ways. In this regard, the business could attempt to own-control the assets and technology of the grower, as well as, play a role in the financing of these assets (Colchao, 1999). The timber case study, moreover, suggested that the small-holder management company, Lima, has effectively become a high cost interlocking mechanism because it is so integrated in the everyday affairs of contracted growers.

- Contract enforcement is an important success factor with respect to small-scale farmer contracting. In many instances contract enforcement is difficult to ensure through the legal process and the logic of contracting with large numbers of smallholders is a questionable issue (Runsten & Key, 1996; Rehber, 1998; Sofranko et al, 2000). The representation of farmers' interests by way of a farmers' association will reduce the agribusiness cost of enforcement. Alternatively, the agribusiness can employ tribal authorities to enforce the contractual conditions. The logic, for instance, of attempting to legally enforce a set of contract conditions with respect to a farmer on less than a hectare of communal tenure land, as was the case in the timber study, is questionable. The case studies in the sugar industry suggest that contract enforcement is achieved through the mutual interests of the parties rather than through the judicial system. The use of a renewable contract is suggested as a cost effective way to achieve enforcement (Key & Runsten, 1999). If suppliers have not performed in the previous year their contracts are simply not renewed the following year. Conversely, the firm in the timber case study appeared to pursue contract enforcement by way of registering a timber servitude or bond, Williamson (2000) suggests that transaction cost can also be reduced by way of first order economising. This approach attempts to favourably influence the prevailing institutional environment in order to influence the economics of property rights. South African agribusiness, in this regard, has the potential to influence legislation that will reduce transaction cost. Legislation that could be amended includes land tenure, the water act, the role of tribal authorities, the labour act, the rights of the female farmer, the national heritage acts and the conservation laws. The timber case study is an example of legislation that substantially increases transaction cost by way of a plethora of acts and legislation that must be complied with in order to register a new grower.

- The grower response to prices and other opportunities is suggested as a key long-term issue that can influence the stability of the contracting arrangements. A long-term perspective on prices could contribute to locking contracted growers into a commodity and ensuring continuity of supply in depressed conditions (Levin, 1988; Watts, 1994; Abbott, 1994).

- A number of other issues influence the success of smallholder contracting schemes. These issues include the role of female farmer, the control of land and water, the role of the state, the household food security issue and land degradation. The role of the female farmer is especially important in many developing country contracting arrangements (Carney, 1988) and Gittinger (1982) suggests that a failure to understand the social environment is a prime cause of project failure. The case studies in the sugar and timber industries suggest female household members supply high levels of labour inputs. Agribusiness in South Africa can contribute towards the future role of the female farmer by securing legislation that ensures full representation-rights for the female farmer in communal tenure areas. It is also suggested that agribusiness payment for the commodity should be directed to the household member responsible for supply. The role of tribal authorities in communal areas will also need to be configured to promoting gender access in rural areas. The issue of who controls land and water in the contract relationship can influence the success of the arrangement. If the land and water is owned by the contracted growers then the decision making autonomy of the farmer is not affected, however, if they are owned by the agribusiness the conditions of use should be mutually developed and fully understood by both parties. Another key issue is the role of the state. In many developing countries the state has been an active partner of small-scale contracting projects. It has been suggested that if the state is a partner then, at the very least, it should provide some form of financial assistance. The equity objectives of the state can also be investigated with respect to their impact on economic performance. Finally, the issue of food security and land degradation can influence the long-term viability of contracting arrangements. Monoculture contracting has been associated with a reduction in food crops and an increase in pollution (Rehber, 1998; Pasour, 1998; Wolz et al, 1999). Agribusiness can respond to these threats by encouraging farmers to grow food crops on a percentage of their land and pro-actively investigating the long-term threat of growing technologies on sustainable land use.

## 5. SUMMARY AND CONCLUSION

The results of the case studies, combined with the potential of the South African agribusiness sector, suggest that large numbers of small-scale farmers could be linked to agribusiness partners by way of contracting arrangements. The proposals suggested, however, that a "fresh approach" to the design of these arrangements is required. This approach combined the lessons of history, conceptual developments in economic theory and the results of the case studies. The results, generally, suggested that the transaction characteristics of the grower-processing operations influenced the level of managed co-ordination required, that smallholder transaction cost exceeded that of larger suppliers and that smallholder production efficiency matched that of larger growers. The design of proposals, in response to these results, indicated a number of potential solutions that included the formation of a farmers association, the possibility of state assistance or the need to develop costing systems to identify, and charge back, incremental transaction cost to small-scale growers.

The case studies also suggest the pervasive, and long-term, influence of social-historical legacies on the economic performance of respective industry sectors. More specifically, the case studies demonstrate how the institutional structure in Southern Africa has been influenced by the earlier experience of colonialism-apartheid combined with the original concentrations of industry and infrastructure. The South African case studies, for instance, suggest that two hundred years of apartheid-colonialism have fundamentally influenced principal-agent costs, the concentrations of infrastructure and the property rights economics of the country. The timber case study, for instance, indicated the plethora of regulations-procedures required by a prospective grower to comply with the requirements of both local and national authorities before a water permit was granted. Clearly, the transaction cost incurred by the agribusiness of assisting these growers was influenced by both the degree of regulation involved, as well as, the inefficiency of local government authorities. The current, somewhat inflexible, labour act in South Africa is a further example of how the costs of labour contracting have been influenced by a government attempting to redress historical imbalances. The case studies also demonstrated how the original concentration of the sugar and timber industries in Southern Africa were located in limited areas that provided the necessary natural resources. The government of the time, international donor bodies and prevailing multinationals then "kick-started"

these industries by providing major inputs, infrastructure and policy to protect these fledgling industries until they were able to compete. The original establishment of these industries, combined with a lack of incremental natural resources, presents an almost insurmountable barrier of entry for new entrants. These industries, moreover, display high levels of site, asset and human skills specificity as a result of the historic concentrations of economic development in specific regions of Southern Africa, as well as, the evolution of human skills and knowledge over the long term.

In conclusion, this report summarises the cost to agribusiness of assisting smallholders overcome the barriers of entry to high value cash crop sectors. The results of the case studies can be used by agribusiness with respect to acquiring a better understanding of the process and sacrifices involved. Smallholder contracting projects often involve many years of agribusiness inputs before supply commences. In many instances, moreover, the company is drawn into protracted equity issues involving a local community. The study, in particular, identifies some of the pitfalls and hidden costs that agribusiness can incur when embarking on small-scale contracting projects. The timber case study, in particular, is indicative of the difficulties of managing large numbers of micro farmers that appear to be unable to be consolidated as an economic entity. The withdrawal of the financed management structure of the agribusiness, in this instance, would result in the collapse of the project and the question needs to be asked, whether or not, the micro farmers have really overcome the barriers of entry, on a permanent basis, to this industry. Contracting projects, ideally, should result in the establishment of permanent growers that operate as viable business entities. Whilst support in the start-up phase is a necessary pre-requisite to overcoming the barriers of entry, the contracted farmers need to be weaned out of the company structure on a long-term basis.

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