

# I. Basic Features of the Sector

## A. Introduction to the Strategic Issues

Sugar cultivation was first introduced into Guyana in the 1630s, and the scale of its planting expanded rapidly from the second half of the seventeenth century onward. In succeeding eras the sugar industry in Guyana played the most important role in the economy and even today, on the eve of the twenty-first century, it continues to be the largest single employer in the country. Historically sugar was the principal reason for most of the settlement of Guyana from other continents, so in a social as well as economic sense its fundamental importance cannot be overestimated.

Along with much of the rest of the Guyanese economy, the sugar sector experienced a decline in the 1980s, with a consequent consolidation of some parts of the industry. However, its recovery in the current decade has been rapid. Its output levels have approximately doubled since 1990 and production in 1996 is expected to mark a further increase over that of 1995. The principal indicators of cane quality have shown significant improvements since 1990, and they can be expected to improve further in the coming years. The recent expansion of Guyana's preferential markets through the addition of the European Union's Special Preference Sugar (SPS) Agreement, to cover mainly the Portuguese market, represents another buoyant factor.

The durability of the sugar industry and its recent evidence of dynamism are reasons for optimism about the future. Nevertheless, there are causes for concern, chiefly that the preferential prices it receives for the bulk of its output are likely to continue to decline in real terms, perhaps substantially,<sup>(1)</sup> and the fact that its current production costs are about two-thirds greater than the prevailing price in the uncontrolled portion of world markets (forecast to be about US\$260/ton in 1996). These factors alone suggest that the industry probably is not sustainable beyond the present decade in its current form, so planning for an appropriate transformation must begin now, while the revenues are available to finance the needed changes.

Sugar in Guyana is fundamentally an export industry, but after 1996 its export earnings are not expected to grow, but rather to shrink gradually, since it cannot expand by selling more on the world market without incurring losses. Sources of shrinkage will include a reduction of the temporarily high European SPS market, of which Guyana has received some of the quotas that other eligible countries (mainly Mauritius) were unable to meet, and a gradual downward tendency in prices. It should also be noted that in 1995 Guyana's sugar industry has benefitted from a sterling - ECU depreciation and a US dollar - sterling depreciation, and those trends cannot be expected to continue. Indeed, the US dollar has appreciated again in recent months.

An industry planning exercise carried out early in 1995 suggested that profits (before levy and taxes) could be expected to decline by about three-fourths in real terms between 1995 and 1999, mainly because of the expected downward trend in sugar prices, but also because production costs are increasing. Subsequent to that exercise, an overdue revision of the way that depreciation has been treated resulted in a reduction of the profits for 1995 by more than 80 percent. In current

prices, profits before levy and taxes declined from almost G\$5 billion in 1994 to about G\$1 billion in 1995. However, they are recovering all of that loss in 1996, primarily because prices in the SPS market turned out to be much higher than expected during the negotiations. Thus, the expected weakening trend of profits will start from a higher base, but nevertheless that trend is almost certain to occur. In effect, the industry showed marked signs of a cost-price squeeze in 1995, but then received a temporary reprieve from the side of international markets in 1996.

Properly utilised, the unexpected gain in revenues in 1996 can help provide a basis for repositioning the industry for long-run competitiveness. It faces an urgent need to make substantial investments in rehabilitation of factories and to otherwise move toward competitiveness in world markets, in order to be prepared for possibly more drastic reductions in real prices after the year 2000.

The foregoing observations are so fundamental to strategic planning for the sector that they are worth amplifying. A clear illustration of the potential problems of viability that the industry faces in the long run is provided by the following magnitudes. The value of the international transfers to Guyana in the form of preferential access to European and other markets will be about US\$85.5 million in 1996.<sup>(2)</sup> However, in that year the profits of the Guyana Sugar Corporation Ltd. before taxes and the domestic levy are expected to be about US\$45.6 million.<sup>(3)</sup> Hence, unfortunately, Guyana spent nearly half the value of these international transfers in sustaining its high costs of production. The consequence is that only a reduced portion of those transfers is available for investment in the future of the industry and, via the levy, in other sectors of the economy.

High costs are not characteristic of the entire industry, but only of a segment of it. In 1996 three of the estates will lose money, and in 1997 a fourth one may join them. All four of these estates are in the Demerara region, while the ones located in the Berbice region are profitable.

In short, although the industry's finances temporarily look rosy, the industry clearly cannot maintain much further the level of costs associated with its present configuration and modus operandi, against the background of a decline in international sugar prices in real terms, as stated in the draft *Five Year Business Plan* of the Guyana Sugar Corporation Ltd.. Several constraints exacerbate this situation that will drive costs upwards and for which accommodation is necessary.

As noted above, foreign exchange markets are volatile. Within recent years the Corporation, as a net earner of foreign exchange, has benefitted from the devaluation of the Guyana dollar (vis-a-vis the US dollar) and latterly from the weakening United Kingdom pound (vis-a-vis other European currencies) and until recently the weakening United States dollar (in relation to sterling). These highly unpredictable events may result in a false sense of security in the short and medium term. Another factor that may influence future trends in costs in an important way is the industry's wage level, which increased substantially in excess of productivity in 1995.

Nevertheless, it is important to recognize that in recent years real improvements have been achieved in productivity and efficiency in both field and factory. The sugar industry's output has recovered well from the low point of 129,000 tons in 1990 to reach 252,615 tons in 1994 and 249,840 tons in 1995. Production in 1996 is expected to exceed 282,000 tons. The supply of labour has improved and the industrial relations environment stabilised; management has been strengthened; and marketing quotas have been secured for the near term.

There has been considerable progress in replacing old field equipment and a start has been made on rehabilitating long out-of-date factory installations. New stores control and computerisation systems to serve the industry have been put in train. Wide ranging programmes to improve health, safety and environmental standards and to rehabilitate community centres have been instituted. A sense of vibrancy and expectation of progress has returned.

These trends are projected to continue but indications are that this alone will not cause the financial turn-around and security necessary for an industry so crucial to the well being of the national economy.

Looking within the industry, it can be seen that there is a deep structural divide. Part of the sector has a clear potential to be competitive even without special access to international quotas, while another part would have a long way to go to improve sufficiently to become competitive. As mentioned, those two parts correspond to the Berbice estates and the Demerara estates, respectively. GUYSSUCO estimates that in 1996 the average cost of production in Berbice will be US\$290/mt while the corresponding figure for Demerara will be US\$434/mt, rising as high as US\$455/mt in the case of the Wales estate. These figures, which should be increased by about US\$60/ton to take into account central costs, may be compared with an expected world market price of about US\$260/mt. Some observers have projected a longer-run world market price of perhaps US\$309/mt (14/lb.), but others have said that is too optimistic, especially in view of the fact that Cuba has the potential to double its sugar output some day, to a level of 7 million metric tons or more. For present planning purposes it is assumed that if the industry can get its costs to the range of US\$300-320/mt then it has a good chance of survival beyond the year 2000. Before returning to these questions and their implications for policy, some other basic aspects of the sector are reviewed in the following sections.

This chapter's observations on the future competitiveness of the sugar industry are supported by the quantitative analysis of competitiveness for several products reported in Chapter 12 of this Strategy.

## **B. The Situation of the Industry**

### 1. Baseline Situation

#### **Industry totals 1995 Result**

Sugar production (tons) estate & farmers cane 249,840

Estate acres reaped mill 95,682

Estate mean tons cane/acre 27.55

Estate mean tons sugar/acre 2.37

Farmers cane % of total cane 8.3

Berbice region total sugar production % of estate total 64

### 2. Production Parameters

The major production parameters for the individual estates in the base year are:

**Estate Parameter 1995 Result**

Skeldon Sugar production (tons), estate and farmers' cane 32,049

Estate acres reaped for mill 10,785

Estate mean tons cane/acre 32.21

Estate mean tons sugar/acre 2.83

Albion Sugar production (tons) estate and farmers' cane 52,224

Estate acres reaped for mill 18,865

Estate mean tons cane/acre 30.19

Estate mean tons sugar/acre 2.70

Rose Hall Sugar production (tons) estate and farmers' cane 43,300

Estate acres reaped for mill 15,114

Estate mean tons cane/acre 29.68

Estate mean tons sugar/acre 2.62

Blairmont Sugar production (tons) estate and farmers' cane 34,052

Estate acres reaped for mill 11,721

Estate mean tons cane/acre 31.81

Estate mean tons sugar/acre 2.91

Enmore Sugar production (tons) estate and farmers' cane 18,965

Estate acres reaped for mill 9,328

Estate mean tons cane/acre 25.18

Estate mean tons sugar/acre 2.00

LBI Sugar production (tons) estate and farmers' cane 28,936

Estate acres reaped for mill 12,817

Estate mean tons cane/acre 23.65

Estate mean tons sugar/acre 1.85

Wales Sugar production (tons) estate and farmers' cane 21,264

Estate acres reaped for mill 7,161

Estate mean tons cane/acre 25.40

Estate mean tons sugar/acre 2.17

Uitvlugt Sugar production (tons) estate and farmers' cane 19,904

Estate acres reaped for mill 9,856

Estate mean tons cane/acre 23.77

Estate mean tons sugar/acre 2.02

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## **II. An Outline of Past Policies of the Sector**

Guyana's sugar industry has experienced far-reaching changes over the three and a half centuries of its existence. It first developed under the colonial policies that typified the industry throughout the Caribbean, initially on the basis of slave labour, then with indentured labour and finally with contracted labour. The cane-cutting labour force was a major protagonist in the struggle for independence. Upon the attainment of independence, the industry remained in the hands of a major British sugar company and the sugar workers' union won recognition as the representative of the estates' labour. During these periods the tension between ownership and labour, and the question of the rights and status of the labour force, occupied center stage in policy debates over the industry. International markets were not so much of a concern as they were effectively assured through the mechanism of the Commonwealth Sugar Agreement (CSA).

A little over a decade after independence the industry was nationalised. Problems grew and production declined. Investment in both field and factory fell short of needed levels, and part of the labour force migrated out of the industry. In 1975 the European marketing arrangements were confirmed through the Sugar Protocol but the industry in Guyana experienced increasing difficulties on the supply side.

As a consequence of the declines in production in the 1980s, policy attention in the sector focussed on the question of management, and as a result it was decided to award an international management contract to a firm with the requisite experience and qualifications. This measure proved successful in arresting and reversing the decline in production.

While historically the concerns for the sector have emphasized labour and then management issues, in the coming years international markets and cost competitiveness will be the main sources of concern, as illustrated by the observations at the beginning of this chapter. Policy to date has not fully come to grips with these new challenges, as evidenced by the fact that in 1995 real wage rates were increased in an amount that far exceeded improvements in productivity, thus exacerbating the risk that parts of the industry may not be able to survive into the next century.

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## **III. Description of the Principal Issues and Constraints Facing the Sector**

## A. Issues

The Corporation has to address several specific concerns as a matter of urgency, and they may be summarized as follows.

### 1. Shortage of Skilled Personnel

There is a shortage of managerial and technical skills in every major area of activity. A human resource development programme is being implemented. There is in place an aggressive recruitment drive, but while there has been some success in attracting young graduates, existing remuneration packages are inadequate to bring aboard the more experienced and qualified to the extent that they might be available.

Serious attention needs to be given to the skills required for the technical planning and implementation of the rehabilitation programme.

### 2. Labour Turnout

As of September 1995, GUYSSUCO's total labour force was 24,000, but reducing labour turn out has been experienced at Enmore, LBI and Wales estates. This could emerge as one of the more intractable problems facing the business, given the Coldingen industrial development and the emergence of other new businesses as the economy opens up. Competition for labour will drive labour rates up beyond the recent increases and further undermine the viability of the industry.

### 3. Capital Expenditure Programme

The capital expenditure programme during the period of the Strategy needs to be carefully determined recognising the industry's objectives and funding sources. Any plan requiring capital investment that cannot be sourced must be deemed unrealistic. A pragmatic development programme must recognise the realities of the environment if it is to be achieved. The proposed capital expenditure may appear large but is in fact reasonable, given the age of the equipment in the factories (as old as seventy years) and after making allowance for what can be considered a normative annual capital programme for eight factories (US\$ 44.0 million over a five-year period).

### 4. Cost of Production

The rising cost of production and declining profit levels with the concomitant deteriorating cash generation has to be addressed urgently. While the declining average sugar prices *might* level off by the end of the period, it is not clear by how much they will fall in total, and the rate at which the cost of production has been escalating cannot be sustained over the next three to five years. There is need for radical review of the industry's cost structure, as the industry has emphasised on a number of occasions. This is perhaps the most daunting challenge faced by the sector and is addressed at length in section V of this Chapter. In part the cost question is related to the spatial structure of the industry, in which one producing region is significantly more productive than the other, and in part it is related to other factors such as the cane farming formula.

The recovery in GUYSSUCO sugar production since 1990 has been accompanied by significant increases in farmers' production and in the area of farmers' cane lands.

Table 33-1

## Cane Farmers' Production Trends

Year	Acre Farmers Cane Harvested	Tons Sugar From Farmers	Farmers' Sugar Percent National Total Production
1990	6943	7934	6.1
1991	7284	11036	6.9
1992	7687	16103	6.6
1993	8354	17929	7.4
1994	9367	18744	7.4
1995	9905	19032	7.6
1996 (Budget)	9776	21605	7.6
1996 percent 1990	140.8	272.3	

The three-year development plan for GUYSSUCO envisages that by 1998 farmers' cane lands will have developed to about 10,130 acres. The proportion of cane purchased from farmers to cane grown by estates has a marked effect on overall cane costs. In 1996 it is budgeted that the cost of growing estate cane to produce a ton of sugar will average US\$238 compared with the cost of buying cane from farmers at a price equivalent to US\$381 per ton sugar. Given that the levy payable in 1996 is expected to be US\$51 per ton sugar then, excluding processing costs, sugar produced from farmers' cane can be expected to cost the industry US\$432 per ton and, with factory operating costs at 1996 budget value of US\$71 per ton sugar, total costs for farmers' sugar will be US\$503 per ton. At a net market price (weighted) for 1996 of US\$565 per ton the financial return on farmers' sugar, on average, will be US\$62 per ton as compared with US\$205 per ton (average) on estate cane. However, if the costs of this cane are set against the incremental revenue arising from the extra production (i.e., world price of \$275 per ton) the extra production is much less attractive and in fact generates considerable losses for the industry. It also must be considered that at LBI and Enmore the price differential is further exacerbated by the statutory requirement to supply transport free of charge to the East Coast "pioneer farmers."

There are two determining aspects of the present price structure for farmers' canes:

- (i) The method whereby the conversion factor from cane to sugar is derived.
- (ii) The proportionate distribution of the net income from this sugar between the farmer and the processor.

Both of these matters are established in the National Cane Farming Committee Act #29 of 1975 (as amended) which establishes that the formula approved by the United States Department of Agriculture in Puerto Rico (the Puerto Rican formula) be employed to calculate the cane to sugar conversion ratio for farmers' cane and also establishes that 70 percent of the net proceeds from sales, before payment of the sugar levy (which is the sole responsibility of the processor) shall be paid to the farmer.

*The cane/sugar conversion factor*

The Puerto Rican formula is but one of many recovery formulae in use worldwide. These include such formulae as: the Louisiana formula which is based on "Growers Standard Sugar Cane" which is derived from net cane tonnage, and thus requires an assessment of extraneous matter, the Queensland Commercial Cane Sugar (CCS) formula and the Jamaican Recoverable Cane Sugar (JRCS) formula. All are based ultimately on various quality analyses, from sub-samples of delivered cane, usually derived from direct estimates of pol % cane, juice purity and fibre % cane.

The JRCS formula would appear to offer a model which would benefit the Guyana industry. A study of this is recommended with the aim of formulating recommendations for modification of the present practice in Guyana.

### *Share of proceeds*

The most recent listing of the percentage share of proceeds attributable to the farmer indicates a range from 27 percent (Zambia) to 76 percent (Puerto Rico) with an average of 53 percent and a median of 61 percent over 19 countries.<sup>(4)</sup> (See Table 33-2.) At 70 percent of net proceeds (before payment of levy) the cane farmer in Guyana is paid more than is expected by the farmer in most cane farming areas. In Jamaica the proportion in which the net return from cane and its approved by-products is shared, is that farmers receive 62 percent and sugar manufacturers 38 percent, which is very close to the world median.

As Table 33-2 shows, there is an approximate relationship between the cane growers' share of proceeds, on the one hand, and the ratio of labour costs to the value of the cane, on the other hand. The latter in turn tends to be linked to the general level of the country's economic development. Viewing the matter in this light, Guyana's current level of development does not justify the high growers' share (70 percent) of proceeds.

The Jamaican experience would seem to be relevant to Guyana in that the division of proceeds from molasses sales must be included as part of industry revenues (as at present) and there may well be merit in looking at the values of bagasse and filter mud (the latter as in Australia) as contributing to the "proceeds" from sugar manufacture.

Table 33-2

International Comparisons of Cane Growers' Share of Industry Proceeds

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Country or region	Average GNP/ inhabitant 1987-80(US\$)	Wages and social security charges for 1 day of work	Value of cane at 10% yield at the factory	Ratio of column (3) to column (4)	Degree of mechanisation at harvest	Planter's share of proceeds
Hawaii	11,400	\$76.56	\$26.50	2.89	complete	63%
Australia	9,680	55.00	21.08	2.61	complete	62%
Florida	11,400	52.53	26.26	2.00	almost	63%
Louisiana	11,400	32.76	21.40	1.53	complete	63%



Puerto Rico	3,150	37.04	24.32	1.52	complete	76%
Guadeloupe	3,470	27.70	32.30	0.85	very variable	70%
Reunion Is.	4,450	22.92	32.93	0.70	very variable	69%
Brazil (Sao Paulo)	1,850	5.30	17.32	0.31	part of cutting	60%
Mauritius	1,080	5.80	22.29	0.26	variable	64%
Venezuela	3,570	9.80	45.28	0.22	variable	62%
Brazil (NE)	1,850	3.94	19.70	0.20	loading	68%
Zambia	540	2.83	15.02	0.19	loading	27%
Kenya	410	2.18	16.78	0.13	part of loading	47%
Philippines	640	1.92	14.40	0.12	very variable	61%
Ivory Coast	1,120	3.24	29.47	0.11	loading	37%
Cameroon	600	3.11	29.02	0.11	loading	36%
Morocco	770	2.67	32.47	0.08	transport	34%
Thailand	620	1.52	22.63	0.07	transport	43%
Guinea	800	0.80	28.37	0.03	transport	43%

The returns to cane farmers are directly linked to the fortunes of the corporation, be it through favourable sugar prices or efficient factory recoveries. Paying farmers a price per ton cane or sugar that is disproportionately higher than the Corporation's cost of production places additional strains on the finances of the business. Guyana's practice in this regard is out of line with international norms, further putting the industry at a competitive disadvantage.

##### 5. Water Availability and Drainage

No significant expansion of cane production in Berbice can be achieved until the issue of water availability is resolved. It must be borne in mind that sugar production in this region is much more economical than that of the Demerara and it would therefore be in the best interest of the industry's long term future to ensure that the right conditions are created there for expanded sugar production. Dealing adequately with this issue will require additional investment, in amounts not yet quantified.

Drainage capacities in Demerara need to be increased to improve yields and sustain them in wetter than average years. This also will require additional investment beyond that which is included in the proposed investment programme.

##### 6. Prices

As the earlier discussion indicated, premium international markets are reasonably secure in the short term in current prices, but that may imply a continuing slight decline each year in real terms. In the medium term, prices will be influenced by policy decisions and by exchange rate fluctuations, and, for the reasons discussed, the prospects that they will decline substantially are much greater than the possibility of an increase. One indicator of the pressure for price reductions in Europe is found in the fact that fully two-thirds of European producers' income arises from governmental intervention, which means that the cost is paid by European consumers.

In the domestic market, the sugar price is already well above the equivalent international price, and approximately at the cost of production in the Berbice estates (when central costs are distributed over the estates). Thus, even though it is below the cost of production in the Demerara estates, it

would not be justified to raise it, for that would imply that Guyanese consumers are subsidising the less efficient Demerara estates. Rather, over the longer run the domestic price should be allowed to fall gradually to its international equivalent.<sup>(5)</sup>

## **B. Overall Constraints**

Certainly a key constraint for the sector is investment finance. Plans have been made to rely on new external borrowing, but even that may be insufficient in light of the vintages of the existing mills, four of which go back seventy to eighty years. It is essential that a way be found to secure the required investments so that the sector can be more competitive in the face of the likely world market conditions in the new century.

From a broad perspective, the sector has been caught in a cul-de-sac of a cost-price squeeze. The presence of this constraint has been masked by the preferential prices received abroad, and the bonanza of the SPS quota, but nevertheless it is starting to appear distinctly in the industry's profit accounting and can be expected to intensify in the future. The losses attributable to the less efficient estates will be approximately equivalent to US\$1200 per man-year of employment in those estates in 1996 and can be expected to rise to about US\$1700 per man-year in 1997. The rise will be attributable to a reduction of the temporary part of the SPS quota and increasing labour costs.

Another constraint is found in the fact that GUYSUICO, for historical reasons, has evolved into a provider of a package of social services for its labour force and, in some cases, for the economy as a whole. Examples include a hospital, recreational facilities, a welfare fund, subsidised land for worker housing, and maintenance of the Lama and Boerasire Conservancies for the benefit of all users. Given the precipitous decline in profits from 1994 to 1995, and the uncertain future, the appropriateness of continuing this paternalistic stance must be brought into question. It adds costs to sugar production for items that are not supported by the industry in many other producing countries. The question may be raised as to whether the National Treasury should not be supporting these costs.

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## **IV. Sectoral Objectives**

### **A. Marketing**

Marketing outlets for Guyana's sugar could widen in the 1996 - 2000 period but increases are not likely to be significant. How exchange rates fluctuate in relation to each other will have as much influence as any other factor in deciding the level of receipts in any particular year. However, the pressure to reduce prices in the vital EU market will continue. To access new markets and at the

same time maintain or increase underlying profitability will therefore depend on improving productivity and reducing costs. Viewed in this light, it will by no means be enough simply to increase market access and the more likely scenario is that markets which are viable to supply may decline slightly.

Total production targets would normally be calculated as the sum of quantities expected in identified markets plus a strategic margin of about 10 percent of that amount, to allow for weather-induced variations in supply and other contingencies.

### 1. The Domestic Market

The local market for brown sugar, currently 22,000 tons, should marginally increase to 24,000 tons. The price at which brown sugar is sold on the domestic market is G\$49,000/ton. Refined sugar requirements, currently 1,500 tons supplied by GUYSUCO out of total requirements of 6,000 tons, will continue to be met through imports.

### 2. CARICOM Market

Efforts to expand sales in CARICOM (including Surinam) are likely to continue, mainly because Guyana finds itself in an advantageous position vis-a-vis other potential suppliers, owing to geographical proximity and the often small size of the shipments requested. It is estimated that sales in CARICOM (including Surinam) could gradually increase from a current level of about 20,000 to 30,000 tons, provided that Guyana finds it profitable to meet that demand.

It is expected that a premium over world price of at least US\$50 per ton, perhaps more, can be maintained. This premium, and indeed maintaining and expanding this market, will depend on a CET on raw sugar imports from outside the region being kept in force. It should be noted that selling to this market from the Demerara estates effectively requires a Government subsidy, since the CARICOM price is well below their costs of production. In a sense, in an average year Guyana is selling its strategic margin on the CARICOM market, because from purely profit-and-loss considerations it would not pay to do so. Thus in the event of an unexpected shortfall in production it is the CARICOM market that would be sacrificed in part, rather than the more profitable North American and European markets.

### 3. U.S. market

Guyana's U.S. sugar quota remains at 12,000 tons and seems assured to stay at that level for the moment, although voices in favor of reform in U.S. sugar policy are increasingly heard in the U.S. Congress.<sup>(6)</sup> NAFTA will not affect current quotas and the minimum U.S. sugar quota is enshrined in the recent GATT agreement. The price in that market should remain in the range of US\$425 - US\$450 per ton.

Representations are to be made to see whether shortfalls in meeting U.S. sugar quotas by any CARICOM sugar-exporting country can be taken up by other CARICOM sugar exporting countries holding U.S. sugar quotas. If this can be achieved, then Guyana could expect to increase its U.S. sugar quota shipments. However, since U.S. producers gain from unfilled quotas, success may be difficult to achieve and therefore increases in U.S. quota shipments are not projected over the longer run.

#### 4. EU Market

This is by far Guyana's most important market for sugar. What happens in this market makes or breaks the industry's prospects. The Sugar Protocol, under which Guyana enjoys an annual quota of 163,000 tons, guarantees settled annual quotas for an unlimited period. The recent GATT agreement further entrenches this arrangement by incorporating access for Sugar Protocol quotas to the EU. The price in this market is a function of the internal European sugar price established through the Common Agricultural Policy (CAP). Since 1986 the price for sales under the Sugar Protocol has remained frozen in nominal terms which has meant a serious loss of revenue in real terms. The EU's restrictive price policy has since 1986 resulted in a 20 percent reduction in the real value of the price. As in the case of the United States, there are increasing pressures to reduce that price. Among other things, maintenance of the CAP prices at their present levels would render unaffordable the incorporation of the Visegrad countries of Central Europe into the European Union. Hence Guyana has to be prepared for eventual reductions in the real price in the European market.

Also, with effect from 1 July 1995, ACP sugar exporters have gained additional access -- mainly in Portugal -- to the E.U. market at a preferential price, the SPS quota. In Guyana's case, this new outlet was expected to amount to between 30,000 to 40,000 tons but in fact will be over 50,000 tons in 1995/96. For the purposes of the Strategy a price of US\$544 per ton is assumed for this new market outlet. In effect, the SPS quota provides Guyana with a respite and additional revenue which can be used for a strategic restructuring of the industry.

#### 5. World Market

Production in excess of domestic needs, Sugar Protocol, SPS, U.S. quotas and CARICOM sales, has been sold on the world market in some years. Under current cost conditions, sales on the world market result in losses for GUYSSUCO and are justified only to maintain the scale of operations, in anticipation of cost reductions and eventual improvements in the world market price. World market sales are not anticipated for 1996.

The world market price is, of course, extremely volatile. At the beginning of 1995 the price at over US\$300 per ton was at its highest level for 4 years, but subsequently it declined. It is impossible to predict prices with exactitude in what is a market for residual sugar, but a price ranging generally between US\$230 and US\$330 can be forecast for this period, with perhaps something around the midpoint of that range (12.7/lb.) being the most likely optimistic forecast. (7)

#### 6. Cost of Transporting Sugar

In the next five years the cost of transporting sugar is likely to increase in real terms. It is difficult at this stage to estimate the increase precisely, but prudence would indicate that provision should be made in respect of the following probable developments:

Dredging the Demerara River main channel: Up to 1994 this was done by Boskalis for the bauxite companies and there was no cost to GUYSSUCO. From 1996 this arrangement will end. The cost of dredging is estimated at US\$1.075 million per annum (two campaigns to a depth of 5.5 metres or 18 feet).

This cost should be recoverable from all who benefit from the dredging and not just GUYSSUCO.

Freight rates to the United Kingdom: In recent years freight rates to the U.K. have been quite favourable. In 1994 the average was 21.74 per ton. However, freight rates have strengthened and the average freight rate in 1995 was 25.30 per ton. Also, indications are that ships to meet our requirements will be getting scarcer and will become increasingly expensive as the available ships get older and cost more to insure. In this regard, the policies enunciated in Chapter 38 of this Strategy are exceedingly important to GUYSUCO's future competitiveness, for example, by making port administration more effective by creating an autonomous National Port Authority.

## 7. Molasses

Production of molasses will increase as cane production increases. However, as juice purities improve the rate of increase in molasses production is relatively less than that of sugar production.

In 1994/1995 revenue from sale of molasses benefitted considerably from a better world price on the basis of which Guyana's molasses is sold. In the period 1996/1997 the world price is expected to remain relatively stable. GUYSUCO is currently examining options with a view to maximising revenue from this important by-product.

## **B. Agriculture**

### 1. Agricultural Strategy, Basic Assumptions, and Common Parameters

The cane yields are expected to continue to increase based on the continuing timely availability of soil ameliorants, fertilisers, agrochemicals, and water, and that machine availability will continue to be sufficient to allow a sustained annual replant programme of 20 percent of the cane area reaped for the mill, with the concomitant maintenance of the industry infrastructure, particularly canals, drains, and roads.

The maintenance of the 20 percent replant programme will enable GUYSUCO estates to maintain a crop cycle of a plant and four ratoon classes from 1997, given that the planting targets are achieved in 1995, with a similar successful effort in 1996. At the beginning of 1995 GUYSUCO still had some 33,469 acres, or 36 percent of total cane area, at fifth or later ratoon and these older cane cycles will not be eliminated until the second crop of 1996.

In land development, it is intended that the industry will move toward total incorporation of all filter mud into replant lands over the coming five years. Significant increases in cane area in East Berbice are feasible. Such extensions will not be possible unless there is a secure supply of water in the Canje creek, particularly in light of plans for the extension of rice production in this region. In January 1995 (in an unusually dry period) salt incursions from the confluence of the Canje with the Berbice river to above Calabash pump station, which supplies water to the Providence section of Rose Hall estate, were common. From many drainage and irrigation reports for the system, this infers a significant degree of over extraction of existing discharge to meet the requirements of existing agricultural activities. The rehabilitation of the Torani canal to transfer water from the Berbice river to the Canje creek is therefore essential. Substantial additional quantities of water are required for crop establishment, crop growth, pest control, flood fallowing, the maintenance of

levels in transport canals, and industrial usage. Unless these supplies are secured, any action which in the short term envisages a net expansion of cane area in East Berbice must be considered problematic as additional cropland will, in effect, simulate the effect of drier than average weather.

For the present purposes, it is assumed that the Drainage and Irrigation Board plans to clean the canal and reduce seepage losses will proceed. If the projected long-term yields at Enmore and LBI on the Demerara East Coast are to be achieved, the planned improvements to drainage systems funded via the Caribbean Development Bank (CDB) must progress as rapidly as possible. It seems unlikely that there will be much work on the drainage pump stations in 1996. So, it is unlikely that there can be any significant yield benefit as result of improved drainage at these estates until 1997. It is assumed that yields post-1997 will reflect the benefits of improved drainage. It is also assumed that the programme of reestablishment of drainage invert levels in Demerara will be completed.

The continuation of the specific pest and disease control programmes initiated between 1992 and 1995 should by 1996/97 have removed any such significant limitation to production at the majority of estates. It is assumed that there will be no significant incursion of any exotic pest or disease in the short term.

The cane transferred from the fields of one estate to the factory of another is processed at the tons cane/tons sugar (tc/ts) ratio of the receiving factory. The sugar so produced, with the cane that give rise to it, is incorporated into the field production schedules of the cane producing estate.

It is taken as a reasonable view, based on long-term rainfall patterns, that in each year 40 percent of total cane should be crushed in the first crop period and 60 percent in the second.

The distribution of acres reaped for the mill between the first and second crops period is then predicated on the relative cane yield potentials of the two cropping periods that show second crop yields to be some 8 to 10 percent higher than first crop yields. This is expected given the rainfall total and distribution patterns through the boom periods of growth of each crop. The combination of cane yield differential and factory operational balance results in about 43 to 45 percent of total mill cane area being reaped in the first crop 1998/1999. This proportion is close to that considered historically optimum.

It is expected that the production in the field and at harvest will not be constrained as a result of labour shortages for such critical operations as planting and cane cutting. In case labour shortages occur for fertiliser application, manual weeding, canal cleaning and herbicide application, mechanical or aerial systems can be substituted.

It is not anticipated that the Bell loader will be introduced on a large scale to the harvesting system. There are worrying, although yet only limited, indications from operations at Rose Hall that repeated use of the loader in a particular field over a number of years may lead to some decline in cane yield. This aspect of loader operation needs to be thoroughly, and widely, investigated with particular reference to bed layout, cane row orientation, post harvest cultivation operations, and variety response. Provision in the capital expenditures programmes is made for the purchase of additional loaders to enable these studies to progress as quickly as possible.

## 2. Cane Quality and Sucrose Enhancement

The widespread introduction of sucrose enhancement (or "chemical ripening") technology is projected for all GUYSSUCO estates from 1996 on. The projections for the Strategy, therefore, incorporate cane quality parameters (pol % cane and first expressed juice purity) which have been predicated to show improvements on the basis of all Berbice estates using cane ripening chemicals in and after first crop 1996 and with full adoption in Demerara in second crop 1996. The widespread introduction of sucrose enhancement technology aligns GUYSSUCO with the sugar industries of Hawaii, Southern Africa, and Jamaica, where such technology is long established practice.

Given the needs to carefully control aerial application of a ripener and to tightly manage the subsequent reaping period as well as other logistical considerations, it seems unlikely that the smaller cane farmers would chose to utilise cane ripeners. There seems no reason, however, why the larger efficient farmer operations, such as Skeldon Co-operatives, Lochaber, and Houston, should not make full use of this technology.

The anticipated improvements as a result of ripener application on pol % cane and first expressed juice purity have been derived from collated studies with "Polaris" (in the 1970s) and "Round-up," "Touch-Down" and "Fusilade" in the 1990s. All of these studies have indicated that the responses to sucrose enhancement chemicals may be expected to be more pronounced in canes reaped in the early and late section of any particular crop and that responses in the second crop tend to be larger than in the first crop.

For the purposes of this exercise it has been assumed that during the first crop period 55 percent of the area to be harvested will be reaped at a time that will allow for a response to a chemical. In the second crop period, with the long end-of-crop rainy season and with cane at the start of the crop growing vigorously as a result of the mid-year rains, some 70 percent of the area to be harvested will respond. It is also assumed (as seems to be the case) that the degree of response is essentially independent of cane yield and that the best returns are, therefore, from the highest yielding cane.

The anticipated average improvements in cane quality parameters were applied to each estate and crop individually. The summarised results, in comparison with the cane quality parameters in the absence of sucrose enhancement were as shown in Table 33-3 below.

Table 33-3

Results of Sucrose Enhancement

Region	Parameter	Crop	1996		1997	
			No Enhancement	Enhancement	No Enhancement	Enhancement
Berbice	Pol % Cane	First	10.25	10.64	10.3	10.69
		Second	10.31	11.09	10.35	11.13
	Purity Mixed Juice	First	77.92	78.39	77.92	78.39

		Second	77.62	78.34	10.22	78.35
Demerara	Pol % Cane	First	10.17	10.17	10.22	10.6
		Second	9.97	10.39	10.01	10.38
	Purity Mixed Juice	First	78.77	78.77	78.82	79.3
		Second	78.79	79.62	78.84	79.68

The anticipated improvements in cane quality parameters are not in any way remarkable and could be expected to be achieved in part as a result of variety substitution during the replanting programme and by improvement in cutting standards and burning-to-grinding intervals.

Quite apart from cane quality gains, sucrose enhancement has been found to produce other beneficial results, including an improvement in pre-harvest burning. This results in a consequent reduction in trash sent to the factory and in ratoon trash management costs, and less interference by vines with the work of the cutters. The various results of a cleaner burn have not been quantified but may even allow for a reduction in burning-to-grinding intervals by allowing cane to be burnt later in the day than is achievable now under otherwise adverse conditions.

### 3. Cane Farming Developments

As remarked earlier in this chapter, it is projected that farmers' cane contributions consolidate at about 7 to 8 percent of total cane production. This does not differ significantly from the average contribution from farmers between 1986 and 1993. It may be noted that farmers at Rose Hall are expected to play a more active part in the direction of their own operations as the estate distances itself from direct management of "farmers" canes. It is anticipated that this will have minimum long-term adverse effects on cane production from Rose Hall farmers. At Enmore, farmers' yields that have been low for many years can be expected to remain low due to lack of adequate drainage capacity in the farm lands and the absence of a short-term plan for any improvement.

Increased production at Skeldon and Albion represents increased efficiencies from farmers, particularly those at Skeldon, who are already producing to a good standard. There will therefore be no increases in farmers cane areas at these factories.

From the industry's financial viewpoint, it does not matter whether the extra cane is produced as a result of increased yields from farmers' lands already in cane, or from the incorporation of additional lands into the cane farming community, at yields not very different from those attained to date.

The apparent reduction in cane farming land at Albion recognises that some "farmers" at this estate have lands that have not produced any cane for more than ten years, although the area is retained on the farmers' representatives records as under cane. This explains the low apparent cane yields by farmers at Albion. The Strategy assumes that these lands will not (indeed cannot easily) be returned to cane and thus removes them from future consideration.

The developments of cane farming activities at the various factories (excluding Blairmont where there is no farming community and no mill capacity to accommodate any cane over and above that



to be produced from estate lands) are proposed in Table 33-4, without taking into consideration possible moves to restructure the industry:

Table 33-4

Expected Developments in Cane Farming

Factory	CROP YEAR 1995		CROP YEAR 1997		CHANGE 1995 TO 1997	
	Acres	Farmers	Acres	Farmers	Acres	Farmers
	reaped	TC	reaped	TC	reaped	TC
Skeldon	708	23,100	708	24,600	0	1,500
Albion	1,277	27,460	1,200	29,880	(77)	2,420
Rose Hall	1,599	48,739	1,600	48,120	1	(619)
Enmore	353	6,580	375	8,062	22	1,482
LBI/GD	2,557	77,717	2,813	87,203	256	9,486
GV/ICBU	2,964	78,461	3,435	90,000	471	11,539
TOTALS	9,458	262,057	10,131	287,865	673	25,808

The development of the industry as a partnership between farmers and estates will depend on mutual goodwill and it is anticipated that the spirit of cooperation will extend to the National Cane Farming Committee (NCFC) adopting a pro-active role in the management of farming developments.

Quite apart from the anticipated developments in the farming community's contribution to cane production, there is little doubt that projected sugar production from farmers could be significantly increased from existing cane supplies at no additional burden to factory operations with attention to those basic agricultural standards that affect cane quality.

In particular, attention to variety extension could be extremely important as the principal variety grown by farmers is the robust, but relatively under-performing B41227. This variety will usually produce cane, even under adverse conditions, and is therefore extremely attractive to the smaller farmers who may not have timely access to those inputs required to maximise yields (fertiliser, herbicides, machinery). Unfortunately B41227 does not respond to these inputs to the same degree as more modern varieties so that where the inputs are available, the cane and sugar yields do not adequately reward the farmers' endeavours. Over the next five years it will be one of the Cane Farming Manager's major responsibilities to work with farmers to achieve a better variety balance than pertains at present.

Attention must also be paid to burning-to-grinding intervals (or at least burning-to-delivery intervals) and to levels of extraneous matter in farmers' cane, as established in current legislation. Over the years the legislation has been ignored as the need for cane, irrespective of quality, to keep factories in operation was of paramount importance. Given that this pragmatism is no longer relevant, it certainly is relevant to begin a phased implementation of the legislative standards. Such action elsewhere has not only had significant, positive effects on cane quality at the factory, but has been welcomed by farmers as rewarding those who pay attention to their operations while penalising those who do not.

It is suggested below that this is an opportune time to review existing legislation relating to cane farming, to ensure that Guyana's cane farming developments are consonant with modern concepts and developments elsewhere. The Jamaican industry might serve as a model for such a review. Such a change may well necessitate a review of the profitability of individual estates.

### **C. Environmental Considerations**

Over the next five years the industry will continue to develop and introduce environmentally responsible agricultural practices. It is the industry's wish to do so, and in addition this programme will ensure that the industry develops in a way that is consistent with the environmental priorities of this Strategy, as set out in Chapters 2 and 18.

It is intended that the aerial application of any synthetic insecticide for the control of any pest in the crop will have been phased out by the end of 1997, with such treatment replaced either by bioinsecticides based on host-specific entomopathogenic fungi or by ground-base applications (to young cane only) of insecticides of low mammalian toxicity. Indeed, insect pests will be managed by attention to cultural systems including variety selection for pest tolerance, attention to drainage, flexibility of harvest dates and the encouragement of population increases in indigenous natural enemies.

The aircraft will continue to apply fertilisers, growth regulators (including chemical ripeners) and herbicides to the crop at different growth stages. For growth regulator and bioinsecticide application, GUYSUCO's agricultural aircraft will be equipped by the end of 1995 with an on-board computer-monitored low drift, high precision spray system, that is already on order to replace the present system which is obsolete for this work. It is intended to build a treatment plant for wash waters from the aircraft to allow these to be brought to European waste water quality standards prior to discharge to the Ogle aerodrome drainage system.

The types of agrochemicals in use by the industry will continue to be reviewed to ensure that only chemicals registered by the Environmental Protection Agency (both in USA and Guyana) and/or the UK Ministry of Agriculture, Food and Fisheries are utilised. Research should be directed towards identifying alternatives to those chemicals that may be de-registered. In addition, as many chemicals as possible will be purchased as the DF (dry flowable) formulation to reduce the hazard levels to those handling chemicals either in the store or at mixing while attention will be paid to the earliest possible introduction of water-soluble packaging for those chemicals for which it is appropriate.

Within the industry 2,4-D amine has been removed from all weed control operations in waterways and fallow lands and manual cleaning of navigation and sidelines is intended to become standard procedure. Nevertheless, the EPA (USA) has approved the use of some products for weed control in waterways and these are under investigation at GUYSUCO given the possibility that labour or canal cleaning may become scarce.

The outmoded, badly sited formulation plant for 2,4-D amine has been closed and will be decommissioned with the advice and assistance of external consultants. The programme to

minimise holdings of obsolete and surplus agrochemicals will continue. The exceptions, large stocks of Thallium Sulphate and Endrin, with smaller quantities of other inorganic toxins, will be enshrouded in high containment drums (already ordered) and stored in a sealed vault.

The programme to significantly upgrade GUYSUICO's central storage facilities at Coldingen for agrochemicals and estate storage units for agrochemicals and fertilisers is giving GUYSUICO some of the highest grade facilities in the Caribbean.

All containers for agrochemicals will be destroyed by crushing and/or shredding after triple washing at the refurbished central chemical store at Coldingen. It is planned that deliveries of chemicals to estates will be linked to the return of washed containers to allow for ease of management of the destruction programme.

Studies will continue to identify and introduce superior protective clothing for agrochemical workers of all descriptions and to introduce safer application equipment (such as the Cooper Pegler CP - 3/2000 knap-sack sprayer as this becomes commercially available).

The environmental monitoring role of the Central Analytical Laboratory is being extended, both by the purchase of new equipment (such as the high pressure liquid chromatograph) and the recruitment of highly qualified staff, to allow for detailed studies of irrigation and drainage water quality and aspects of pesticide distribution in the environment, among many areas of interest.

The recent purchase of a dual wavelength automatic polarimeter may lead to the introduction of lead-free analytical systems for cane juice products and sugars, thus removing a significant pollutant from the sugar factory environment.

Given that a higher quality of diesel fuel than the one that was formerly available is now appearing on the market in Guyana, the possibility of introducing a wider range of diesel-engine vehicles than was previously thought possible will be reviewed to introduce such additional vehicles as appropriate to the fleet.

A range of other activities has also been identified for implementation, including a higher degree of utilisation of filter mud from the factory for soil amelioration, extensive planting of vetiver grass as an earth bank stabiliser and the introduction of concrete drainage tubes, galvanised steel bridges and plastic revetment in place of increasingly scarce hardwood for construction.

## **D. Factory**

### **1. Rehabilitation**

The Strategy has addressed the issue of factory rehabilitation while considering the following technical objectives:

to ensure the ability of the factories to process enough cane at lowest possible cost to satisfy market demand for sugar;

to safeguard ongoing production by phasing out unreliable obsolete factory plant and where possible, using second hand plant from closed factories without compromising factory time efficiencies;

to improve factory sugar recoveries by applying proven modern sugar technology, within accepted financial investment strategies;

to plan and phase project implementation to provide minimum disruption to ongoing operations;

to provide a minimum-cost option that satisfies the above criteria.

## 2. Capital Costs

When assessing the capital costs, the prices used were those from traditional sources. During the execution of the strategy, alternative prices from third world countries and available second hand equipment will be fully explored. Potential savings on certain items could be about 20 percent of the FOB value.

New mill houses at both Skeldon and Blairmont represent considerable investment. These have been included as no alternative is seen at this time to ensure ongoing production while mill rehabilitation is undertaken. At the time of implementation, this problem will be reexamined to seek possible lower cost alternatives.

A major factor influencing capital cost is the requirement to expand factory capacities to suit available cane supplies. Both the available grinding hours and crop length need to be considered when sizing factory throughputs. The following assumptions have been made in this Strategy:

### *Crop length*

The onset and duration of the midyear and end-of-year rains limit the length of the first and second crops, respectively. Demerara weather patterns differ from those experienced in Berbice, Demerara being the wetter region. From examination of the average past cropping patterns, the following assumptions are made regarding crop length:

### W e e k s

1st crop 2nd crop Total/year

Demerara 13 18 31

Berbice 14 20 34

### *Available grinding hours*

Weather also has a major effect on the factories' weekly operating hours. Inspection of the actual weekly operating hours for each crop since the mid-1960s, for all factories, indicates an average of between 120 and 130 hours per week, with the second crop invariably higher than the first. The actual grinding hours per week assumed in this Strategy are 122 hours for the first crop and 125 hours for the second crop.

## 3. Operating Costs

Reductions in unit costs of labour and materials are expected (in constant value terms) through a continuation of programmes already in place. This reflects further improvements in management control and reduced maintenance costs as equipment that is expensive to maintain is replaced under the capital programme.

One significant item which will markedly increase over the next five years is depreciation. In reality, the earlier low levels of set-asides for depreciation are unsustainable and reflect the underfunding of the business over previous years. This adjustment has been made in the accounting practices recently, as mentioned early in this Chapter.

In addition to these measures, reforms of a more encompassing nature will be needed to bring costs to a level that would be consistent with sustaining production at present levels beyond the year 2000. To accomplish this, satisfactory answers will have to be found to the problem of the least productive estates. Policy options for this purpose are discussed in section V below.

## **E. Manpower**

### **1. Labour Shortage**

There have been increasing labour shortages on some estates, notably Enmore and LBI. This trend is likely to accelerate in the future as developments such as Coldingen Industrial Estate and other projects come on stream and the economy as a whole expands.

Attrition rates on the Demerara estates are high, and this will provide significant opportunities for redeployment of those affected by changes in the industry. During 1994 voluntary departures from the factories were as follows: Enmore 194 (11 percent), LBI 584 (26 percent), Wales 216 (11 percent), and Uitvlugt 58 (3 percent).

In addition to the above, some 830 temporary workers were employed by the Demerara estates at the end of 1994. Such workers can be replaced over the next few years by permanent employees whose jobs are affected by the strategic changes. Full advantage must be taken of the lead time inherent in the Strategy to ensure that all opportunities for redeployment are realised before external recruitment occurs.

### **2. Human Resources Development**

There is significant lack of qualified and experienced staff in all areas, but particularly in factory engineering. Every effort is being made to recruit suitably qualified returning Guyanese to meet immediate and medium term needs in these key areas.

At the same time, the investment in capital expenditures to improve factory operations through new technology, upgrading agronomic research, practices to improve field productivity, and the installation of effective information systems and enhanced technical and managerial competence.

During 1994 a comprehensive manpower development and succession plan was drawn up which identified a number of strategies designed to develop competent managerial and technical staff for

the future. This plan will be regularly reviewed during the next five years to ensure that it is responsive to the development needs of the industry.

Emphasis will continue to be placed on the cadetship scheme, the management trainee scheme for engineers, supervisory training and apprentice training. Similar programmes, including training at the University of Guyana and the Guyana School of Agriculture, will continue to provide for the development of the requisite agricultural managerial skills. Particular emphasis will be placed on general management training. Coordination will be maintained with the new National Council on Technical and Vocational Education and Training (Chapter 35), to ensure that the more generally-oriented of GUYSUCO's training programmes meet the criteria of that council and, accordingly, qualify for the offset to the new training levy.

There will be continuing emphasis on specific technical programmes, locally and overseas, relevant to the new technology being introduced into the industry. At the most senior level the training will be supplemented with attachments to comparable operational units overseas to provide relevant experience. In-house training will continue, together with programmed attachments to relevant operational units within the industry, in order to expand the appreciation of senior jobs, as well as other jobs at the lateral level.

A fundamental aim of the manpower development efforts is to replace systematically expatriate staff over the period with suitably qualified and experienced Guyanese, recruited both locally and from overseas, while maintaining high operating standards.

During 1994 three expatriates left and were replaced by Guyanese. It had been planned to replace two more by the end of 1994, but their departure was deferred to April and June 1995 to enable them to complete important projects in which they are currently involved. A further two were identified for replacement during the second half of 1995, reducing expatriate numbers to fourteen by the end of that year. It is expected that one more will be replaced in 1996, bringing expatriate numbers down to 13. Between 1996 and the end of 1999, it is projected that replacements will be developed for at least eight more expatriates, leaving a maximum of four positions at that time.

These plans are summarised in Table 33-5 below.

Table 33-5

Remaining Tenure of Expatriate Personnel

Position	E n d					
	1994	1995	1996	1997	1998	1999
Chief Executive	1	1	1	1	1	1
Estates Director	1	1	1	1	1	1
Agriculture Director	1	1	1	-	-	-
Technical Director (Fact)	1	1	1	1	1	-
Chief Pilot	1	-	-	-	-	-
Reg. Agri. Manager (Dem)	1	1	-	-	-	-
Agriculturalist (Dem)	1	April	-	-	-	-
Surveys Manager	1	June	-	-	-	-
Factory Operations Mngr..	1	1	1	1	-	-

Regional Technologists	2	2	2	2	2	1
Regional Engrs. (Fact.)	2	2	2	2	2	1
Projects Manager	1	1	1	1	-	-
Financial Controller	1	1	1	1	1	-
Management Accountant	1	1	1	-	-	-
Systems Manager	1	1	1	1	-	-
Materials Manager	1	May	-	-	-	-
<b>TOTALS</b>	<b>18</b>	<b>14</b>	<b>13</b>	<b>11</b>	<b>8</b>	<b>4</b>

Notes:

(a) The peak number of expatriate personnel was reached in 1992, at 25.

(b) During the period 1996-1999 an independent specialist team will be established for planning and implementation of capital projects.

## V. Policies for Achieving the Stated Objectives

### A. Basic Thrusts of the Policies

In light of the cost-price squeeze that the industry is beginning to experience, this Strategy establishes a new set of basic policies aimed at improving the sector's competitiveness, in addition to the technical measures in field and factory outlined above. Moving in this direction is an imperative, in order to avoid the emergence, within a few years' time, of a situation in which the industry is obliged to turn to the Ministry of Finance for subsidies to sustain it. The policies arise out of a conviction that sugar in Guyana has a long-term future, and out of a desire to take the steps that are necessary to safeguard its prospects, given its importance to our economy.

The necessary modifications to the industry will be introduced over an appropriate transition period, giving priority to compensating those affected by the changes and creating new opportunities for them.

On the side of markets and prices, Guyana, along with other Caribbean and ACP sugar exporting countries, will continue to lobby for the maintenance of preferential markets, but the country can do little to influence trends in international markets and prices for sugar. Nevertheless, it will undertake to do the following:

Ensure that the exchange rate is sustained at a real equilibrium level, avoiding an overvaluation which has been the death knell to the sugar industry in other countries.<sup>(8)</sup>

Since production for CARICOM results in substantial losses per ton for the industry, consider reducing sales to that market. If the industry is successful in lowering its costs and/or eventually real prices in the Caribbean or world markets move upward, this policy could be re-evaluated.

In addition, GUYSUCO's ancillary costs could be reduced by adopting the following measures:

Similarly, enter into arrangements for recovering costs from the users of the Lama and Boerasire Conservancies.

Enter into an agreement with Government that the industry will be reimbursed fully for its social services, and that by 2005 a programme will have been developed to transfer those services out of GUYSUCO's ambit of responsibility. This will allow sufficient time, for example, for the new model of autonomous hospital administration that is outlined in Chapter 19 to provide benefits in the form of significantly improved health services.

Continue the practice of selling house lots at below-market prices to low-income families, in areas that go out of cane production in the future, under arrangements with Government to reimburse the industry for the implicit cost of such practices, via corresponding reductions in the levy and taxes.

Sell at auction GUYSUCO's dairy complex.

These measures will satisfy criteria of economic fairness, by allocating costs to those sectors and institutions that reap the corresponding benefits. In this regard, they will represent an important step toward satisfying this Strategy's policy condition of institutional viability as regards social services, dredging programmes and canal maintenance.

A central and inevitable thrust of the new policies is the reduction of direct production costs. To guarantee the industry's survival in the new century, and taking into account the various analyses of trends in world sugar markets, it is evident that the target level of production costs must be no greater than US\$330 per ton in 2000, decreasing to US\$300 by 2003 at the latest. In contrast, the 1996 cost of production is projected to be US\$421 per ton. A vital component of the strategy of cost reduction is investing in the modernisation of the industry, and the other main component consists of measures to reduce recurrent production costs.

This cost target represents a major challenge for Guyana's sugar sector, perhaps its greatest of the past quarter century. Failure to achieve it will mean that, inexorably, the industry will move from a position of being a net contributor to the National Treasury to one in which it is forced to seek subventions. It probably will also lead to a situation in which, eventually, the necessity of reductions in capacity is confronted and abrupt decisions are made in that regard without sufficient advance planning or resources to those affected by the measures.

On the other hand, achievement of the target will mean that the sugar industry will continue to be a guiding beacon of Guyana's economy well into the next century, indeed, into the indefinite future. The principal avenues that will be pursued for the attainment of this target are the following:

Revise the National Cane Farming Act which, as commented, establishes an unrealistically high relation between the price of cane and the price of sugar. It should be brought into conformity with the international norm, which is 62:38.

Exercise relative wage restraint until the sector achieves international competitiveness. Wage policy should be reevaluated, in light of progress made toward achieving the industry's cost targets, labour productivity gains, and the evolution of international markets.



The following option will be kept under review over the next few years: If the least efficient estates prove unable to meet the cost reduction targets, a phased and gradual programme for their closure will be put in place. One option could be as described below, giving the affected cane workers opportunities to become agricultural land owners on generous terms or, alternatively, to receive other severance benefits.

Estate closures are an inherent element of the evolution of the industry in all sugar-producing countries. In Guyana, fifty years ago there were about 30 estates, versus the eight in existence today. The important point is to be able to anticipate the need for closures sufficiently in order to be able to plan the transition well, and to have the resources to be able to assist the affected employees to find new, productive employment and to provide their families with the basic material benefits during the transition period.

Another key aspect of this Strategy for the sugar sector could be to involve the private sector more deeply in its financing and management. An important first step was taken in this regard in the decision to contract with private sector management, but the limitations of that approach are already being seen in that important decisions on factory rehabilitation are proceeding too slowly. This situation illustrates well the basic tenet that while Government must strengthen its regulatory and guidance role for the economy, it is not as effective as the private sector in making decisions on production and investment and carrying them out. Therefore, another principal avenue for attaining the target for reduction of the industry's cost is:

Carry out measures to secure the participation of strategic investors in the industry, transforming it into an industry in which ownership is shared with the labour force, the general Guyanese public and strategic investors. The general guidelines of such an approach could be as described below.

## **B. Policies for the Least Efficient Estates**

Guyana cannot continue to carry the financial losses represented by those estates whose cost of production is greater than the prices in the domestic market, the world market, the U.S. quota market and the CARICOM market. Over the longer run, production from those estates might not be justifiable for the European market either. In 1996, the amount of GUYSUCO sales projected for the four markets first mentioned in this paragraph is greater than the projected output of the three least efficient mills. I.e., those mills will be producing at costs that are above the prices in the local market, the world market and the CARICOM market, and at cost roughly equal to the price in the U.S. quota market.

GUYSUCO's *1996 Operating Budget* (Schedule 8) forecasts losses in each of the four Demerara estates, and in total those losses represent 39 percent of the value of the profits earned by the Berbice estates. More recent information indicates there will be losses in only three of the estates, but the financial situation of the fourth one is marginal.

Table 33-6 shows the prices by market and the production costs by estate, with a resulting calculation of profits by estate and in total. In that table, the markets are ordered from the highest price to the lowest price, thus effectively tracing out the demand curve for Guyana's sugar that is

shown in Figure 33-1. Similarly, the estates are arrayed in order of increasing cost of production, creating the supply curve that is traced out in the same figure.

In these data, the costs of production by estate include the costs of central administration and services, which have been estimated to amount to US\$17 million in 1996, or about US\$60/ton.

This analysis is based on an ordering of the estates by cost of production, because in that way it is possible to see at a glance where the bulk of the profits and losses originate and what the most profitable configuration of the industry is. However, it should be mentioned that redrawing Figure 33-1 with a different ordering of the estates would give the same result in terms of net profits and rank ordering of the estates by efficiency.

Figures 33-2 and 33-3 present these results in other graphical formats. The message is very clear: in 1996 GUYSSUCO's profits could be higher by about US\$8.2 million if three of the Demerara estates were not operating and if there were no sales to the CARICOM market. That amount probably will rise to over US\$11 million in 1997.

It is essential to review the national policy issues that are at stake here, for these are not concerns that are confined to the industry level. Adequate planning for the future cannot be done without a realistic assessment of the current situation. The current benefits of running sugar estates at a loss come in the form of greater amounts of employment, but it must be asked if this is the most cost-efficient way of generating that employment and if it is the avenue that contributes most to national economic development over the longer run.

As indicated above, the annual financial cost of that programme is high, probably approaching US\$2,000 per man-year by 1998 in the Demerara region. ***There is an additional and more important economic cost to the country in the sense that those workers are not being trained for occupations in which their productivity could match or exceed their wage.*** From their viewpoint, they are hindered by not being assisted to move into sectors with brighter growth prospects over the long run. Therefore, it is a priority for national development policy to encourage a transformation of the sugar industry, so that it is made more competitive and so that the redundant workers are given financial assistance and economic opportunities in the form of access to agricultural land and training for non-agricultural occupations.

Table 33-6

Prices, Production Costs, and Profits by Market and Estate

Market	Price (US\$/ton)	Total Quantity	Production Cost	Estate	Profit (000US\$)	Cumulative Profit
EU, Protocol	652	39.6	344.8	Blairmont	12,165.1	12,165.1
EU, Protocol	652	99.8	350.4	Albion	18,156.3	30,321.4
EU, Protocol	652	146.2	360.4	Rosehall	13,530.2	43,851.7
EU, Protocol	652	166.9	363.4	Skeldon	5,974.0	49,825.7
EU, SPS	544	180.9	363.4	Skeldon	2,528.4	52,354.1
EU, SPS	544	214.5	489.6	LBI	1,827.8	54,181.9
EU, SPS	544	219.9	494.3	Enmore	268.4	54,450.3

US	430	236.3	494.3	Enmore	(1,054.5)	53,395.8
US	430	240.9	503.1	Uitvlugt	(336.3)	53,059.5
Domestic	350	259.9	503.1	Uitvlugt	(2,908.9)	50,150.6
CARICOM	330	260.2	503.1	Uitvlugt	(51.9)	50,098.7
CARICOM	330	281.8	521.6	Wales	(4,138.6)	45,960.2

Note: GUYSUOCO's estimate of central costs of US\$60.2/ton is added to the estate-level costs to get the total production costs per ton reported in this table. Profits are calculated before levy and taxes.

This situation in Guyana's sugar industry has many parallels to sugar in the Dominican Republic, Panama, Honduras and elsewhere, and also to the situation of oil in countries like Venezuela, Mexico and Nigeria, of copper in Bolivia and Zambia, and other examples of sectors that provided high but transitory gains because of world market circumstances for those products. The fundamental challenge for development policy in these cases is to invest the windfall gains wisely, in ways that create long-term, productive sources of employment for the labour force. In all too many cases, these windfall gains have been dissipated in temporary benefits and the country ended up in worse economic straits than before. In Guyana's case, the windfall gain comes in the form of the temporarily high prices in quota markets, especially under the SPS.

From this perspective, it is imperative that Guyana put its sugar revenues to uses which will best enhance the economy's growth prospects, ensure that labour is continuously provided incentives to move into productive occupations, and restructure the sugar sector so that it will become competitive in the longer run, when the day arrives that preferential prices are reduced.

Of the US\$85.5 million transfer made to Guyana in 1996, via the mechanism of sugar quotas in importing countries, only US\$45 million is expected to accrue to the industry as profit, and of that amount only US\$14 million is programmed for delivery to the National Treasury. These figures are clear signposts of the country moving down the path of some other countries in the sense of dissipating its windfall gains. But it is not too late to begin to recover those gains and start along the road of real development.

To put these conclusions and guidelines into practice, this Strategy calls for consideration of the following sequenced actions:

**First**, revise the National Cane Farming Act to adjust the farmers' share of industry proceeds (per ton of cane) to a value that is more consistent with the international norms discussed above. As mentioned, this step is vital to achieving the targets for cost reduction.

**Second**, implement a programme to transfer title of sugar lands to the cane workers, in the case of the Wales, Uitvlugt and Enmore estates. The price charged for the land would be nominal, at G\$5,000/acre, and the new owners would be given ten-year mortgages for purchase of the land. This step would effectively convert them into cane farmers, but it would also be made clear that they would be free to plant any crop they wished.<sup>(9)</sup>

**Third**, guarantee purchase of the cane crops of these newly enfranchised farmers for a period of two years, to smooth their transition.

**Fourth**, make it clear from the outset that if by the end of the 1997 cycle the Wales estate is not able to reduce its costs of production to US\$350 per ton *without including its pro-rata share of*

*central costs* (as a milestone along the way to the target of US\$330/ton inclusive of central costs), then it would be closed after the 1997 crop. The situation of Uitvlugt and Enmore would be evaluated in the same sense with the aim of making them viable by the year 2000 or phasing them out. The cane workers would be well insulated against the economic effects of closures, should they become necessary, by their ownership of land. Those families who wished to enter urban occupations would be free to sell their landholdings, thus entering a new sphere of life with an economic cushion. The same rule for closure would apply to those of these three mills that met the US\$350/ton target but were unable to further reduce costs to US\$330/ton inclusive of central costs by the crop year 2000. Generous severance packages and training opportunities, in lieu of access to land, would be offered to mill workers displaced by the closures.

These steps will ensure that the needs are met to *downsize the industry so that its sales are profitable, eliminate its least efficient components and relocate the labour force in more productive lines of work*. In a sense, this programme responds to trends in Guyana's economy that already are signaled by the reductions in labour turn-out for some of the Demerara estates, so it also is an acceleration of a natural process, undertaken for the sake of making the industry more competitive as soon as possible, and also to avoid greater pressure on the public sector finances. Indeed, it is worth emphasising that this programme will lead to increases in the sugar industry's net contributions to the national treasury, thus assisting Government to meet its fiscal goals in other areas such as health, education and poverty alleviation. The creation of the export processing zone and other employment-stimulating policies described in this Strategy will complement policies for the sugar sector in the sense of helping redundant workers find more productive lines of work.

### **C. Capitalising the Industry's Future**

The other principal strategic concern is that of securing investment finance in the amounts necessary to rehabilitate the sector, that is, of capitalising the sector in line with its needs. To achieve this goal this National Development Strategy suggests a participatory privatisation of the industry, giving a directly vested interest in it to the labour force and the general public at the same time that a strategic investor is brought into the fold. This approach will achieve the goals of democratising the ownership of the industry as well as securing funding for the rehabilitation that is necessary to make it competitive in the coming century. It must be emphasised that this is not an industry strategy but a national one, conceived with the broader interests of the Guyanese public in mind.

The specific modalities of privatisation would be laid out in companion documents to this Strategy; the remaining discussion in this Chapter is devoted to some principles that should guide this transformation of the industry. Those principles are:

- 1) The privatisation should respect the historical interest of the people of Guyana in the sugar sector, providing the general public with access to shareholdings, on terms that allow their purchase over time, and by the same token providing access to shareholdings for the sector's labour force.

- 2) The participation of a strategic investor should be secured via competitive bidding, to ensure the highest possible return for Guyana from the assets.
- 3) In the first stage of the process, the four estates of Berbice plus LBI will be divested as one corporation. This will be done as quickly as is practicable, by end of 1997 at latest. (Inclusion of all eight estates in the package would make it much less interesting to investors, and consequently the bids received would be much lower.)
- 4) The present ownership and management will continue efforts to improve the productivity of the Demerara estates, closing those that fail to meet the above-mentioned targets for cost improvements. Of the three least efficient Demerara estates, those that make good progress in meeting the cost reduction targets will be divested at public auction no later than the year 2000, and the successful bidder on the earlier package of the Berbice estates plus LBI also will be permitted to bid in this case.
- 5) Long-term rules for the sugar levy will be specified to ensure that the international transfer implied by the sugar quotas in importing countries is passed on in appropriate measure to the Government of Guyana, for promoting general economic development. Those rules also will specify the arrangements for allocating the quota sales over the privatised corporations.

This process will ensure that Guyana's sugar industry is put on stronger economic footing to meet the challenges of the future, and that land and labour that currently is not productive in sugar can be transferred in the smoothest possible way to other lines of production.

In concluding these analyses and recommendations, it is necessary to add that, as of this writing, no definitive Government position has been taken on privatisation of the sugar industry. The recommendations contained here are based on a technical analysis of the issues and do not reflect a Government decision, but they will be carefully reviewed in considering the full range of options facing the industry.

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## **VI. Recommended Legislative Changes**

Some of the policies presented in this Chapter will be carried out by administrative means, through actions of the management of GUYSUCO. Others that are more structural in nature will require new legislation. A specially-convened working group will develop the specific content of such legislation. The principal topics it should cover are the following:

- Revision of the Cane Farming Act, in respect of both the criteria for determining the sugar content of cane and the formula for sharing net proceeds between cane farmers and the industry.
- The sale at subsidised prices of sugar cane land on three Demerara estates to the cane workers of those estates.
- The responsibility of Government in modifying drainage and irrigation works on those lands if the newly-enfranchised farmers solicit it, to permit them to plant other crops.

- The legal guarantees for factory and field workers in the event of estate closures.
- The legal framework for the divestment of the industry along the lines described in this Chapter.
- Any aspects of the environmental improvement programme that need legal codification, in anticipation of the divestment.

1. As noted in GUYSUCO's draft *Five Year Business Plan*, "The EU's restrictive price policy has since 1986 resulted in a 20% reduction in the real value of the . . . price. The pressure to reduce prices is likely to continue . . ." (p.8).

2. The basis for this calculation is the differential between the quota price in each market and the world price, multiplied by the quantity sold in that market. Hence the transfer to Guyana implicit in the quota in the case of the EU Protocol sales is  $(\$652/\text{ton} - \$260/\text{ton}) \times (166,900 \text{ tons})$ , or \$65.4 million dollars. Similar calculations were made for the sales to the SPS, US and CARICOM markets, to arrive at the total of \$85.5 million.

3. This estimate may turn out to be too optimistic in view of the special incentives that are being offered to labour to help bring in a higher harvest.

4. R. Fanconnier, 1993

5. Under present conditions there is some smuggling of sugar across the border to Surinam. This can be best dealt with by revising GUYSUCO's sales policy with respect to Surinam.

6. In 1995/96 a reallocation by the U.S. Government brought Guyana's total shipments up to 21,000 tons, but this is hardly likely to be repeated.

7. The following real projections (in constant 1995 prices) were made recently for the sugar price in the year 2000 by three institutions whose projections are taken most seriously by the industry worldwide:

World Bank, 11/lb. (projection made in 1995)

USDA, 9/lb. (projection made in 1995)

Food and Agriculture Policy Research Institute of the University of Missouri, 9.5/lb. (projection made in 1993).

8. <sup>0</sup>Regarding the importance of the exchange rate to the sector's long run survival, see the analysis reported in Chapter 12 of this Strategy.

9. <sup>0</sup>In many cases, shifting out of cane to another crop would require changes in the drainage infrastructure of the lands, and farmers probably would have to band together to undertake such tasks in groups. Nevertheless, this would remain an option for them and the Government should offer to utilise some of the savings from the closed estates for that purpose if a group of the newly-enfranchised farmers requested it.

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