

**Framework Contract Beneficiaries – Lot 1 Rural Development and
Food Safety**

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**(PLEASE NOTE: There has been some diversion from the
recommendations originally found in this report since the time it was
drafted. – Dr. Mary M. Matthews, EC SEA Consultant)**

Finalising the Sugar Adaptation Strategy for Trinidad and Tobago

Final Report

4 March 2007

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Project funded by the European Union

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ACRONYMS

ACP	-	African Caribbean and Pacific
ADB	-	Agricultural Development Bank
ADDFCS	-	Association of Direct Delivery Farmers Cooperative Society
AMSP	-	Accompanying Measures for Sugar Protocol Countries
CAP	-	Common Agricultural Policy
CARDI	-	Caribbean Agricultural Research and Development Institute
CARICOM	-	Caribbean Community
CARIRI	-	Caribbean Industrial Research Unit
CBI	-	Caribbean Basin Initiative
CFATT	-	Cane Farmers Association of T&T
CPATT	-	Cane Producers Association of T&T
CNG	-	Compress Natural Gas
COTED	-	Council for Trade and Economic Development
EC	-	European Commission
ECA	-	Employers Consultative Association
EIB	-	European Investment Bank
EMBDC	-	Estate Management and Business Development Company
EU	-	European Union
GDP	-	Gross Domestic Product
GORTT	-	Government of the Republic of Trinidad and Tobago
LNG	-	Liquid Natural Gas
MALMR	-	Ministry of Agriculture, Land and Marine Resources
MEEI	-	Ministry of Energy and Energy Industries
MOF	-	Ministry of Finance
MOTI	-	Ministry of Trade and Industry
MPU & E	-	Ministry of Public Utilities
MPD	-	Ministry of Planning and Development
MSD	-	Ministry of Social Development
NAMDEVCO	-	National Agricultural Marketing Development Company
NAS	-	National Adaptation Strategy
NEDCO	-	National Entrepreneurship Development Company
PNM	-	People's National Movement
RDTTL	-	Rum Distillers Ltd
SAC	-	Sugar Association of the Caribbean
BDC	-	Business Development Company

SCFC	-	Sugar Cane Farmers Cooperative
SIT	-	Sugar Industry Team
SMCL	-	Sugar Manufacturing Company of Trinidad and Tobago
T&T	-	Trinidad and Tobago
TICFA	-	Trinidad Island wide Cane Farmers Association
TTABA	-	Trinidad and Tobago Agribusiness Association
TTMA	-	TT Manufacturers Association
UNC	-	United National Congress
US	-	United States of America
USDA	-	United States Department of Agriculture
VSEP	-	Voluntary Separation of Employment Programme
WTO	-	World Trade Organization

EXECUTIVE SUMMARY

1. **Process:** Preparation of this adaptation strategy (NAS) has involved GORTT consultations with the country's sugar industry and with private and public sector entities throughout the assessment and strategic planning process. The strategy draws on a wide range of reports and studies on the industry, on agriculture and on national economic development prepared over the past ten (10) years. A list of meetings and consultations is provided as Annex 6. Persons interviewed and consultations held.
2. **Background:** In 2003 GORTT implemented a policy decision to divest public sector ownership of sugar industry operations and assets within a five year time frame. Since then Government has funded a TT\$6 billion divestment programme that stopped state-owned production of sugar cane, including the termination of over 7,000 employees of the publicly-owned Caroni (1975) Ltd. All production is now being carried out by private farmers. Government plans to sell the remaining (sugar processing) assets to the private sector by the end of 2007. It is estimated that raw sugar production could be 30,000 tonnes for the 2007 crop. An updated assessment of the industry is provided as Annex 4, Updated Assessment of the Sugar Industry in January 2007. This assessment has confirmed that there could be a future for a reconfigured **cane** industry that provides cane as feedstock for downstream low cost energy-based bio-refining operations.
3. **Impact of EU Sugar Reform:** From 2007 onwards, the impact of the phased reduction in Protocol prices will be borne by the private sector who choose to remain in the industry and who opt to process raw sugar for export to the EU – if Trinidad and Tobago continues to keep its annual quota. In 2006 the EC provided support under Accompanying Measures for Sugar Protocol Countries (AMSP) to Trinidad and Tobago (T&T)¹ for drafting the National Adaptation Strategy (NAS) for sugar.
4. **Approach:** This NAS is founded on a combination of decisions already taken by GORTT regarding the sugar industry's future operating framework; the implications of EU Sugar Reform; the current economic trends in T&T, and the priorities established for advancing the Vision 2020 agenda in the related 2007 – 2010 implementation plan. Essentially, our strategic approach is based on a national policy position that future growth in revenue-generating sectors of the economy must be both private sector-led and sustainable.
5. **Goal:** The overall goal or purpose of T&T's strategy is to contribute to the realization of specific priorities established in Vision 2020, the country's Development Plan to become a developed nation by the year 2020. These priorities include creating an environment of competitiveness, developing innovative people, fostering a caring society and improved government.
6. **Strategic Objectives:** Our strategic objectives are 1) to enhance competitiveness of a private sector-led sugar cane sector on a sustainable basis; 2) promote economic diversification of sugar dependent areas, and 3) address broader impacts generated by the adaptation process related to social, environmental, community and area-based issues. The development of these objectives and the content of this strategy reflect the fact that the industry itself is at a crossroad where its future direction will be determined by the private sector. Therefore realisation of the objectives articulated below are contingent on decisions by a) the private sector to make/not

¹ The Minister of Agriculture announced to the Trinidad and Tobago media that Trinidad and Tobago would be seeking to transfer its EU quota to Guyana.

make any further investment(s) in Sugar and b) government, in terms of the nature and level of non-commercial support it would provide to a privately run industry and in terms of the content of an exit package for those who opt to leave the industry.

7. **Elements of the Strategy:** The elements or components of Strategic Objective 1 are a) Facilitating informed Sugar related decision making b) facilitating private sector led investment in the industry and c) supporting technological options for use of the sugar cane plant that leverage T&T's comparative advantage.

The elements of Strategic Objective 2 are a) Exit strategy for sugar farmers who choose to leave the industry and b) improving the enabling environment for economic diversification.

The elements of Strategic Objective 3 are a) maintaining environmental stability and b) providing sustainable social and economic support related to the socio-economic effects of transitioning out of the industry.

8. **Expected Results:** The expected results from implementation of the strategy are as follows:

- By 31 March 2007, divestment of rum factory, sugar mill, refinery and sugar/molasses terminal to private investors resulting in 100% ownership of sugar industry assets and investments by the private sector.
- Sustainable private sector sugar-cane production that is linked to/derived from downstream private investment in alternative uses of sugar cane.
- Smooth transitioning by sugar-dependent small businesses (e.g. farmers, cane delivery operators, tractor operators, service providers etc.) out of cane production and related activities into other business ventures and income generating activities.
- Improved macroeconomic, business facilitation, and regulatory frameworks that are closely aligned with Trinidad and Tobago's economic diversification and Vision 2002 thrusts.
- The establishment of effective mechanisms to reduce and control praedial larceny and illegal (timber) logging.
- Limited adverse socio-economic and environmental impacts from the planned transformations - such as urbanization and energy related investments - in former and remaining sugar-dependent areas.

9. **Main actions to implement the strategy:** The planned actions are as follows:

- a. Ministry of Finance's Investment Division to confirm recommendation of Divestment Unit on the selection of the successful bidder(s) to whom government-owned sugar industry assets will be sold by 31st March 2007.
- b. MOF to enter into and complete negotiations and legally transfer the sugar industry assets to new owners by 31st December 2007.

- c. Potential private sector investors to investigate and evaluate the two different technologies for processing bagasse².
- d. Private investors take responsibility for establishing new operating facilities and cane production requirements including minimum raw material characteristics.
- e. GORTT to facilitate natural gas availability to power the plant and provide continued infrastructural support, research and development and pesticide control and other support services as defined by the market.
- f. MALMR to develop a package of adjustment measures formulated and provided to farmers (to be developed by Government and farmers).
- g. MALMR to provide support to existing farmers from the industry via the establishment of an information network or the use of an existing business development service that would link exiting farmers to relevant investment products and SME support services (e.g. ADB, NAMDEVCO, NEDCO, BDC etc.).
- h. MALMR to contribute to improving the regulatory and support frameworks for a competitive business environment as part of GORTT's agenda and commitments in this area by establishing a collaborative analytical relationship with MOTI's Enabling Environment Committee that would allow MALMR to identify and proffer key constraints to be addressed in improving the SME environment for farmers and the agribusiness sector.
- i. MALMR, in collaboration with other key government entities such as the Ministry of Public Utilities and the Environment's (MPUE), to develop and implement a plan to reduce praedial larceny and illegal logging.
- j. The MPUE's Forestry Division, in collaboration with the Environmental Management Agency (EMA), Town and Country Planning and other relevant GORTT entities, to develop a plan to ensure environmental stability, e.g. the protection from erosion, flooding, urban and commercial business encroachment, inadequate drainage and maintenance of soil fertility on 32,000 acres of former cultivated sugar lands by the Forestry Division of Ministry of Public Utilities and the Environment.
- k. MPUE to increase the institutional capacity of the Forestry Division (FD) to ensure successful implementation of the ensuing forestation programmes emanating from the environmental stability plan in collaboration with land owners and (land) tenants.
- l. The FD to launch and manage the "forest cover" programme on formerly cultivated sugar lands with support from the EMA and relevant stakeholders (community groups, farmers, private sector investors who are investing in the sector).
- m. The Ministry of Social Development (MSD) to channel funds to sugar based communities through the decentralised structures established under the 8th EDF sponsored Poverty Alleviation Programme.

² If technical assistance is requested and deemed appropriate, GORTT would consider funding this activity as a pre-investment non-commercial research and development cost to support the eventual private sector investment in the industry.

- n. MSD to conduct studies for gender analysis and social inventories among communities in former and existing sugar-dependent areas. These studies will build on EU-funded Survey of Living Conditions and an inventory of government, donor and private sector social programmes due by the end of February 2007.
- o. GORTT to fund the establishment of community-based organisations in addition to those already established by the EDF-supported poverty alleviation programme and/or GORTT or non-governmental organisations.
- p. MSD to identify and/or create linkages to training needs emerging from the studies carried out on gender analysis and social inventories or from other donor assessments.

Annex 1 presents a summary logical framework that sets out the strategic objectives, results, objectively verifiable indicators and their sources of verification, risks and assumptions associated with this strategy.

10. **Structure for implementation:** Overall responsibility for implementation of Trinidad and Tobago's National Adaptation Strategy resides with the Cabinet, the highest GORTT executive body. A Technical Sub-Committee established in 2006 to articulate future agricultural policy and whose work is coordinated by MALMR will assume responsibility for oversight and coordination of this NAS.
11. **Roles and Responsibilities:** Several government entities will have responsibility for implementing various parts of the strategy. They comprise seven Ministries (MOF, MOTI, MALMR, MEEI, MPU&E, MSD, MPD) and the Enabling Environment Committee (at MOTI). A Programme Coordinating Unit (PCU) will be established to support implementation of Actions (i.e. activities) that would be additional to GORTT's ongoing economic development and diversification programmes. Monitoring and Evaluation functions will be carried out by the PCU.
12. **Costs and sources of financing:** The overall cost over the seven year period from 2007 to 2013 is estimated at **TT\$1,777,200,000 (€222,150,000)**. Approximately half of the overall costs associated with this NAS over its seven year period is estimated to be potential private sector investment in a new bio-refining venture. That investment opportunity is still under considerations by interested foreign and local parties.

The cost of the country strategy for year 2007 will include priority programme design and PCU set up work. Multi-annual sources of financing will include GORTT's annual commitments under its public sector investment programmes (PSIPs). Therefore GORTT support is not additional funding but part of its annual investment commitments to achieving Vision 2020 goals.

It is also anticipated that, the private sector (farmers, investors and SMEs) will commit resources to some aspects of the NAS as will the EU via annual accompanying measures to support this strategy.

1 BACKGROUND

1.1 Introduction

This National Adaptation Strategy (NAS) establishes a comprehensive framework to support national adjustment to a combination of reforms to the European Union (EU) Sugar Protocol and a 2003 economic policy decision by the Government of the Republic of Trinidad and Tobago (GORTT) to terminate its support for and direct involvement in the sugar cane industry's commercial activities. The NAS is based on an updated assessment of the industry which articulates limitations, opportunities and key issues to be addressed. The main points of reference are: a) on-going adjustments in the sector resulting from GORTT's comprehensive policy and structural reforms to facilitate its progressive withdrawal from Sugar in 2003 and transfer any future initiatives to the private sector; b) the expected impact of the Sugar Protocol (SP) reforms adopted by the European Parliament in 2005; c) the scope for private sector diversification of the industry in the context of Trinidad and Tobago's (T&T's) robust energy-driven economic growth trends, and d) the expected role of agriculture in Trinidad and Tobago's development strategy in the context of its vision of becoming a developed nation by 2020 (entitled and referred to as ***Vision 2020***).

1.2 Overview of Market Reforms

1.2.1 The Sugar Protocol

Trinidad and Tobago has benefited from the provisions of the Sugar Protocol (SP) of the Lomé Convention and its successor Cotonou Agreement. The SP provides access to the European Union (EU) market for specific quantities of sugar exports from African, Caribbean and Pacific (ACP) countries for an indefinite period at a guaranteed price. Over the past three decades this Protocol has allowed T&T to export raw sugar into the EU at preferential prices that, in recent years, have reached €524 (US\$620) per tonne.

1.2.2 Recent Reform Measures for Sugar Protocol Countries

The EC's decision to reform "the common organisation of the markets in the sugar sector" included a price cut at 36%, to be implemented over four years as follows: by 5 per cent of the original price in year one – 2006; by 17% in years two and three; and by 36 per cent of the original price in year 4.

It is axiomatic that the phased reduction in the export price for sugar is going to reduce the earnings available to ACP industries and those countries. This reform will also have potentially adverse socio-economic consequences – particularly in sugar-dependent regions of the Protocol countries. Consequently, on 28th February 2006 Regulation 266/2006/EC of the European Parliament and of the Council established accompanying measures for SP countries affected by the reform of the (EU sugar) regime. This regulation established a scheme to grant SP countries financial and technical assistance, possibly, where appropriate, in the form of budget support.

This scheme agreed to provide a sum of €40 million in the first year to help the ACP countries to adapt to the changes in the sugar regime, and a further package of assistance over the 7 succeeding years from 2007 to 2013. Trinidad and Tobago did not submit a multi-annual adaptation strategy by the agreed date of 28th April 2006, so benefited in 2006 only of technical assistance to help it establish such a strategy. A national adaptation strategy is hereby developed and could benefit of EU funding from 2007 to 2013.

1.3 Analysis of the Sugar Industry

1.3.1 Industry Profile

The period 1990-1998 was similar to previous years when sugar cane production accounted for 40 – 50% of agricultural GDP in Trinidad and Tobago. Until 2004 the single largest producer was state-owned company, Caroni (1975) Ltd., which cultivated about 12,200 hectares, while private farmers cultivated 14,200 hectares³.

Since production of raw sugar peaked at 117,000 tonnes in 1995, there has been a steady decline. Oil and gas, have long since dwarfed sugar as well as the aggregate of other agricultural production and exports as the main drivers of the country's economic growth. Sugar exports were a mere 0.32% and 0.52% of total exports in 2003 and 2004 respectively although it still accounted for a significant share of food exports (24%) in 2004.

Table 1 indicates the decline in the production of raw sugar, refined sugar and sugar exports during the period 2000 to 2006.

Table 1. Sugar Production and Exports (2000-2005)

	2000	2001	2002	2003	2004	2005
Raw Sugar Production (000 tonnes)	111	88	98	68	43	33 ^p
Sugar Production – Raw/Refined - (000 tonnes)	162.5	135.4	136.3	84	85	69
Sugar Exports (000 tonnes)	83	60	61	53	44	33
% change exports	..	-28.66	2.35	-13.63	-16.73	25%

Source: CSO, Agricultural Report 2004); P-Provisional Estimate, Sugar Industry Team

In 2004 exports of sugar were 25.4% lower than in 2003. Although this country met its EU export quota that year, the quotas are being reduced as production contracts. Local sales are also in decline from 60,000 tonnes in 2003 to 54,000 tonnes in 2004.

Since 2002, there was a 43% decline in the quantity of milled cane. The tonnes cane to tonnes sugar ratio slightly improved and the average yield per acre of cane declined by 36% over the period 2002 to 2006 (Annual Economic Survey, Central Bank, 2006). These statistics conclude a generally bleak circumstance. Tables 2 and 3 indicate that Trinidad and Tobago has the highest cost of production among a group of CARICOM countries and the lowest yields per hectare.

Table 2. Comparative Cost of Sugar Production (US Cents per Pound)

Country	Cost of Production (US Cents Per Pound)
Belize	15.63
Guyana	20.37
Barbados	38.30
Jamaica	39.67
St. Kitts	41.98
Trinidad and Tobago	56.40

Source: <http://www.trinicenter.com/Raffique/2002/Feb/162002.htm>

Data as at 2003

³ http://www.procaribe.org/networks/clawrenet/reports/z_tt/tt.htm#102

Table 3. Comparative Sugar Yields Tonnes of Sugar (per Hectare)

Country	Tonnes Per Hectare
Belize	5.23
Guyana	5.85
Barbados	5.86
Jamaica	5.21
St. Kitts	6.55
Trinidad and Tobago	2.94

Source: <http://www.trinicenter.com/Raffique/2002/Feb/162002.htm>

1.3.2 Restructuring in 2003

In 2003 GORTT established a TT\$6.375 billion (approximately US\$1 billion) divestment and restructuring programme to reorganize the industry in order to attain efficiency, equity and economic transformation objectives. The programme was based on a GORTT decision to phase out its direct participation in the industry and to turn over all future initiatives to the private sector.

Approximately half of the divestment programme was committed to repayment and assumption of Caroni bank loans and closure of Caroni (1975) Ltd. Approximately TT\$653 million was committed to a Voluntary Separation of Employment Package (VSEP) offered to employees. The restructuring strategy consisted of the following components:

1. Continuation of sugar production, with a reduced production target of 80,000 tons of raw sugar annually to satisfy the domestic market and export quota arrangements in the EU and USA.
2. Institutional reorganization of the industry with the formation of three new entities: the Sugar Manufacturing Company Ltd., (SMCL) Rum Distillers of Trinidad and Tobago Ltd., (RDTTL) and the Estate and Business Management Development Company Ltd (EBMDC). The state-owned SMCL was given responsibility for purchasing canes, sugar milling and refining as a transition towards new investor involvement in sugarcane processing. The EMBDC was given the responsibility for managing the land holdings and facilitating development of business and agricultural activities.
3. After 2003, all future production of sugar cane by private farmers only since they can produce cane at a lower cost than Caroni. It was proposed that prices after 2003 would be based on cane quality.
4. Sugar cane processing and refining to be carried out at one mill at Usine Ste. Madeleine. If not before, at the end of five (5) years a decision will be taken with respect to the future operation of SMCL, the company created for that purpose.
5. The Ministry of Agriculture, Lands and Marine Resources (MALMR) was to retain responsibility for policy, research and extension activities in support of the restructured private sector driven sugar industry.

To date, EBMDC has earmarked 17 Caroni (agricultural) estates for issuance of 2 acre plots to 7,000 former employees and 31 (residential) estates have been earmarked for such purposes of which 27 are set aside for 20,000 residential lots, including the 7,000 lots

promised to these former workers. The company estimates that infrastructure on the agricultural estates will be completed by October 2007⁴.

1.3.3 Overview of Alternate Uses of Sugar Cane

As a very high cost producer of both sugar and sugar cane, there are limited opportunities for developing downstream industries. However there is inexpensive energy which could contribute significantly to projects requiring high energy inputs. The Trinidad and Tobago cost of US\$1.60/MCF (thousand cubic feet) for natural gas is very low in comparison with that paid by, for example, US sugar manufacturers (US\$6.00/MCF)

The most recent data on production cost reported by the Sugar Association of the Caribbean (SAC 2003) is a very high production cost of \$US1196.12. Cane production cost is \$US73.73 per tonne cane milled and factory cost as \$US242.72 per tonne of raw sugar made to which must be added the cost for administration, transport protocols, selling and distribution of \$US415.57.

After the 2003 reorganisation, cane production cost is estimated by private farmers to be in the \$US 45 to \$US 50 per tonne range and sugar production cost at SMCL is reported to be about \$US700.00 per tonne sugar without considering MALMR inputs. This is the basis for assessing the alternate use of sugarcane and its by-products.

Paper

Leading among the projects for the alternative uses of sugar cane is the already fully developed French based proposal, by Compagnie Industrielle de la Matiere Vegetale (CIMV), to produce printing and writing paper, lignin, animal feed (xylose) and high test molasses. Lignin and xylose may be used directly or as a platform for producing down stream chemicals.

The proposed project requires 600,000 tonnes cane for a period of 15 years. The projected cane price is acceptable to farmers who will also be shareholders in the processing plant and party to profit taking at that level. The company will ultimately assume responsibility for most of the support to cane farmers.

Project development started in Trinidad in January 2006 and most of the ground work for implementation has been put in place. Project finance is on 30:70 equity to debt ratio and has received favourable considerations from the financial institutions including a provision for the farmers 20% equity shareholding in the paper plant.

In order to produce fine quality paper the company will also cultivate sweet sorghum which can be grown, harvested and processed with the same equipment used with sugar cane. It is also the intention of the cooperative to cultivate food crops in rotation with sugar cane which is a sound agronomic and food security policy. The calculated high test molasses output is in excess of 95,000 tonnes which will satisfy the Angostura requirement of 80,000 tonnes of final molasses for rum and contribute significantly to animal feed and other molasses requirements.

The Caricom printing and writing paper market (45,000 tonnes) can absorb most of the projected plant output of 50,000 tonnes per year. At the current price of natural gas to SMCL of US\$ 1.60 per MCF the cost of replacement fuel will be US\$ 1,276,800. Accordingly the cost of making bagasse available to the paper plant will be the equivalent US\$6.46 per

⁴ Information on the status of the VSEP programme is provided in Annex 4, Industry Assessment in January 2007.

tonne of wet bagasse. This is a Trinidad and Tobago advantage which will be further utilised in the downstream processing of the bagasse and the value added products that are expected to come on stream as the project develops.

Ethanol from Sugar Cane

Ethanol from sugar cane is an unlikely option because of the high cost of cane. This option would not benefit from inexpensive fuel since such plants are typically powered by bagasse which is without cost to the process.

With an expected yield of 14 gln of ethanol per tonne of cane and a market price of US\$2.0 per gallon of hydrated ethanol this would assign a gross product value per tonne cane of US\$28 before processing cost is taken into account. This option would not be viable at the current estimated best possible cost of US\$ 50 per tonne of cane. It should be noted that ethanol producers in the US have a targeted production cost of US\$1.00 per gln.

Cellulose Ethanol

Cellulose ethanol technology is developing rapidly in most developed countries as a part of their thrust to secure a locally produced renewable fuel, at a competitive price, to reduce their dependence on imported liquid fuels.

As an example of this technology, Celunol Corporation in Jennings Louisiana is operating a cellulose ethanol **pilot plant** and are in the process of constructing a **demonstration plant** with a capacity of 1.4 million gln per year.

The pilot plant is run on surplus bagasse, obtained from a Louisiana sugar factory, which it purchases for US\$30 per dry ton delivered.

The demonstration plant will also use surplus bagasse with a view of this being augmented by the total biomass of **high fibre cane**. High fibre cane varieties which have been developed in Louisiana are currently being commercialized for this purpose. These high fibre varieties produce about 50 to 75% more biomass per acre than sugar cane and are less costly to produce.

The economics of a commercial cellulose ethanol plant of 25 million gln per year is reportedly viable at an alcohol price of US\$1.00 per gln based on a feedstock of 325,000 dry tonnes per day. Trinidad's targeted production of 600,000tcy would produce approximately 100,000 dry tonnes per year of feedstock which would be one third of that required for plant viability. Plant viability using low cost natural gas and the possibility of expanded cane production together with the inclusion other available biomass should be explored.

logen Corporation in Ottawa Canada is another example of this developing technology. The logen demonstration plant is producing cellulose ethanol from grain crop stover at a delivered feedstock cost of Cdn\$ 30 per dry tonne. The logen demonstration plant is the only operation currently producing commercial cellulose ethanol and the company is in the process of constructing a 400,000 dry tonne plant in western Canada.

The extent to which this rapidly developing technology will reduce production cost and the level to which Trinidad may be tolerant to above world market prices for ethanol is a matter for future consideration as at best the full commercialisation of this technology is still 3 to 5 years away.

Biorefining of Sugar Cane and High Fibre Cane

The total biorefining of cellulosic biomass, such as sugar cane, into high value products is the technology that is most likely to be viable in Trinidad and Tobago at the level of a small scale development project. High value products include, but are not limited to, Lignin, Sugar and Cellulose Ethanol, Xylose, Furfural, Acetic Acid and wax extractives.

Given the expected increase in yield when total biomass is harvested using high fibre cane varieties and considering the current best possible cost of the cane (US\$50) it is evident that such a project would bring back a profit margin to the industry and viability to the farming of sugar cane.

A pre-feasibility study has been carried out. It used yields obtained in pilot plant trials with both sugar cane and bagasse. This study indicated that a proposed commercial plant having a capacity of 100,000 tonnes of dry biomass harvested from 3000 acres would generate sales of \$US 15.6M. These sales represent a gross income per acre of \$US 7100 which is many times that of sugar. The profit margin, before taxes, was \$US 5.1M on a capital plant of \$US 30M.

Industrial Chemicals and Medicinal Compounds

The traditional opportunity for alternate uses for sugar cane is the use of sugar as a platform for industrial chemicals and medicinal compounds. This however is only viable with the lowest cost sugar and projects of this type arise in periods of very low world market prices or by way of special subsidies or in protected environment.

In consideration of the above, the French paper and pulp proposal offers the best option to take the larger industry out of sugar and into a profitable enterprise within the private sector in the shortest time frame. The biorefining option is to be preferred for smaller scale applications, higher value products and a higher profit margin in the medium range time frame.

1.3.4 Conclusions about Alternatives

In the assessment of alternate uses of sugar cane there are no identifiable uses that would be viable for the 2008 or 2009 crops, although both the pulp and paper project and the biorefining of cane appear to be viable options for the medium term. These options would need to be explored in greater detail to determine when they could be put in place. Furthermore, it is unlikely that the private sector will be prepared to take over the responsibility for raw sugar production under prevailing prices that are currently US\$691 per tonne sugar reducing to US\$442 in three years.

Since options for paper production or biorefining, even if adopted at this time, could not be operative for 3 to 5 years. It is expected that if a **cane** industry replaces the existing **sugar** industry that the new industry's position will strengthen in subsequent years as the demand for paper from annual crops is emphasized and biorefining of renewable resources that are carbon dioxide neutral increase in importance.

Notwithstanding the potential viability of biorefining, it is not clear whether sugar cane farming will continue in T&T. As articulated in Section 3, Implementation Plan, 3.1 Main Actions to Implement Strategy, there are numerous prerequisites for the various elements of the strategy to take hold. However, the ones that are possible deal breakers could not be

pinpointed given that interested investors were still in the process of development their final business plan for the venture at the time this NAS was prepared in early February 2007⁵.

1.3.5 SWOT Review and Update

In late 2005, Kairi Consultants Ltd. conducted a commissioned study entitled “Forthcoming Changes in EU Sugar: Options for an Effective Competitiveness Package for Trinidad and Tobago”. Kairi highlighted the industry’s strengths, weaknesses, opportunities and threats in a SWOT Analysis⁶. What follows is an update of this analysis.

Strengths: The industry’s strength as a major contributor to agricultural exports remains unchanged although its contribution to export earning and foreign exchange are continuing to decline with the downward trend in production – now expected to be around 30,000 tonnes for 2007. Backward linkages in rural areas are still important. Increasing job prospects in T&T’s buoyant economy mitigates an unemployment fallout impact among previous workers of Caroni (1975) Ltd. The continuing maintenance of land under sugar cultivation remains a key contributor to environmental stability. Most importantly, the industry still has a raw sugar mill that with repairs and modest modifications could be used to process/produce alternative products for export and the domestic economy.

Weaknesses: Most of the industry’s weaknesses have not changed since the Kairi assessment in 2005. Although production is now entirely in the hands of private farmers, their scale of operations will continue to compromise operational efficiency. Acreage under cane is contracting without any immediate prospects of economies of scale, application of best practices and technological upgrading. The Caroni divestment has fractured the provision of support services to growers. Moreover, the deep sense of marginalisation amongst farmers has not changed - exacerbating the continuing downward cycle of decreasing production, falling investment, withdrawal of labour and more difficult access to crop finance.

Threats: These are both exogenous and internal. The exogenous ones are outside of T&T’s influence or control. The main ones are a possible elimination of all protection for ACP producers of sugar; further cuts in the Protocol price that GORTT could pass on directly to farmers; and increasing competition from other more competitive sugar producing countries. The internal threats are more pervasive and are the ones that are likely to determine the industry’s composition, focus, viability and future. These include rising costs and increasing demand for labour from local non-agricultural industries, the aging demographics of the rural farming community, declining research and limited technological progress and capacity, the opportunity cost of land, zoning uncertainties, and right of tenure (leasing) issues that are continuing to inhibit agricultural investment.

Opportunities: There are two groups of opportunities that have emerged out of the post-Caroni and EU market reform decisions. The first is the opportunity to restructure the industry as a cane industry that could provide biomass for refining into high value products using low cost (energy) fuel. The second is the opportunity to convert land usage from sugar cane to other agriculture and/or forestry-based programmes⁷.

⁵ Examples include: the amount, if any, that government will offer the private farmers as an exit package, the key investment requirements of the biorefinery investors – i.e. their business model, the response by the farmers to lower levels of Government support or no support at all etc.

⁶ See Page 18 and 19 of the Kairi Report.

⁷ These opportunities are explored in greater detail in ensuing sections of this NAS.

1.4 Policy Framework

1.4.1 Government Policy Towards the Sector in 2007

Since GORTT has decided to stop subsidizing the sector after the 2007 crop there would have to be substantial (private sector) cost reductions along the production to processing chain that are not technically feasible given the industry's current structure and operating characteristics. Therefore the basis of current GORTT policy is that the demand for sugarcane should be treated as a derived demand dependent on agro-industry. Consequently, any future GORTT commitments will be to facilitate this eventuality and/or support its continuance in non-commercial areas of agricultural development – i.e. infrastructure, research, extension etc.

In line with this policy position, GORTT published and received responses to Requests for Proposals (RFPs) for the divestment of SMCL in late 2006. GORTT is prepared to explore opportunities for private sector investment in agro-industries that combine sugarcane and natural gas and other products from the Point Lisas development into new higher valued outputs⁸. The MALMR is in the process of revising the GORTT's existing support programme to the sugar industry to bring it in line with the support framework for other sub-sectors.

However, although GORTT's policy position is relatively clear, the private sector's response to it and the implications of possible lower levels of non-commercial support to the industry after 2007 are still uncertain. Therefore the development of a strategy aimed at facilitating adaptation to EU Reforms allows for the unfolding of various scenarios with the expectation that the strategy itself would have to be revised depending on the decisions of current and prospective investors in the industry. For instance, if the bio-refining option does not materialise then there will probably be an accelerated exit by almost all farmers from the industry. If this happens GORTT would place greater emphasis on helping existing farmers to transfer their business capabilities into other agricultural and non-agricultural opportunities.

1.4.2 Sources of Support and Funding to the Sector

GORTT, the Agricultural Development Bank (ADB) and private farmers are the main sources of funding to the sector.

GORTT provides a TT\$10 per tonne price subsidy plus pest and disease control, froghopper control, infrastructure support, research and development, extension, cane transport costs from purchasing points to factory and a subsidy on fertilizer.

The ADB provides crop loans to farmers but is now very cautious about extending loans to the sector given its contraction, low profitability and uncertainty about its future. Twenty eight percent (28%) of ADB's current sugarcane loan portfolio are in arrears. This arrears is valued at TT\$3.01 million.

The ADB policy since August 2006 is that it will only lend to farmers who are already involved in non-sugar generating activities (e.g. other crops). Growth areas include cocoa, vegetables and fruit. ADB points out those labour-intensive projects are being increasingly affected by the acute shortage of farm workers, most of who are now being drawn to more lucrative jobs in other sectors. This trend is likely to continue over the medium term and will

⁸ One example of this is the planned investment by the French firm, Compagnie de la Matière (CIVM), which is seeking commitments from farmers for 100,000 tons of bagasse at prices significantly above those currently contracted by SMCL.

have equally severe consequences for sugar growers especially those who have diversified into other crops.

1.5 Potential Impact of Restructuring and EU Market Reforms

1.5.1 Socio-Economic Impact Since Restructuring in 2003

Caroni (1975) Ltd. was a state corporation envisaged to represent Government's watershed in the economic and political life on a fairly large geographical space within the island of Trinidad. This space occupied a large central island location which had excellent coastal access. Several important towns and villages relied on the company for growth, sustenance and economic buoyancy. These included the country's second capital city of San Fernando and two towns which continue to expand rapidly even in the absence of the company namely, Couva and Chaguanas. Also the towns where manufacturing operations occurred benefited from numerous occupations which had become possible. The pending absence of the company threatened many social and economic trends.

In collaboration with the Ministry of Finance; Planning and Development and the Ministry of Industry and Trade, the MALMR decided on equity factors in relation to the past and present members of the sugarcane industry. The underlying theme of this initiative was to present as much compensation as possible and feasible to previous participants.

Approximately 10,000 factory workers, field workers, technical and administrative staff and other miscellaneous categories of workers of the former Caroni (1975) Ltd accepted VSEP at a cost of \$TT653 million to the state. Unions negotiated on the workers' behalf. The employees obtained lump sum benefits, housing, agricultural plots and training according to their category of employment and the outcome of negotiations.

1.5.1a Gender Impacts

Women's traditional roles in the sugarcane industry had gradually eroded when Caroni 1975 Limited came into existence. In the earlier plantation economy there were gendered expectations of task performance in which weed control, burning, cutting and transportation were masculine and planting, fertilizing, cutting mature canes, loading and hauling were feminine. Women still contributed to social reproduction and caring in the household while doing these tasks. Although at that time they received income from agricultural occupation, they were always paid comparatively less than men for their efforts.

As Caroni Ltd mechanised the industry, males were given the opportunity to acquire the 'high status' jobs requiring training and specialized skills and women's frontline contribution in production became phased out. Their lack of involvement became further exacerbated as women in these sugar based areas would not have been provided with opportunity to contribute to decision making and control. Hence by 1980, cane vendors were all male and women would have searched opportunities to shift their agricultural interests to vegetable production. This shift provided food security and extra income for the cane farming household.

By the 1990's only the fiercely competitive female producers stayed in vegetable production. Few women with opportunities to inherit lands from deceased husbands or other 'default' situations also remained in agricultural primary production. Many women would have left farming completely and partook in peripheral economies selling in wholesale and retail markets, selling processed foods, working as domestics and working in unemployment relief programmes. Some who received educational opportunity assumed jobs in the oil and gas sector and in the Government service sector. Many younger women became teachers in secondary, primary and vocational schools in the sugar based areas. Younger males began

to leave the sugarcane growing sector but did not generally seek as much further education as their female counterparts. Today there are less than 200 private male farmers who are less than 45 years old.

This legacy has distanced most women from direct effects of further industrial changes in 2006. However there are indirect, severe effects for those who are still producing vegetables. There are also fallout effects should males challenge current female occupational spaces in the absence of traditional 'sugar occupations' as previously occurred when the industry became mechanised. There are effects on older women who may not be easily averse to retraining given their low level of literacy. . There are possible fall out among the males who may pursue idle occupation and even delinquent paths.

Since the women have more responsibility to household caring and social reproduction, a decline in family values could occur if there is disequilibrium in the delicate balance between female exchange value occupations and household leadership tasks. Some of these leadership responsibilities may be to manage difficult younger males who abuse male privilege. Specific studies which analyse the current gender circumstances are recommended to understand the complexity of the gender issue. Gender analyses would understand how the gender variable interfaces with the age, class and income earning capacity.

1.5.2 Impacts on Participation in the Agricultural Industry

In the absence of Caroni's operation in the main agricultural regions of the country, there is proof that no immediate fall out of agricultural holders has occurred. The Table 4 below compares the number of holders located in four counties in which Caroni's agricultural presence would have been felt. The data compares figures for 1982 and 2004.

Table 4. Relative Ranking of Sugar-Dependent Areas

County/ Year	1982	Rank in '82	2004	Rank in '04
Caroni	2932	2 nd	2819	3 rd
Victoria	4028	1 st	4502	1 st
St. Patrick	2344	4 th	2568	4 th
St George	2894	3 rd	3484	2 nd

Source: CSO 1982 AND 2006

All counties maintained populations of holders conducting agricultural activity. In 2004 Caroni placed third behind County St George, dropping its rank (out of 7) by one. St George is the main urban area and may have had an increase in small vegetable producers who can meet the increasing demand for vegetables in the county.

By 2006, the remaining group of active sugarcane producers supplied declining quantities of sugarcane to the Sugar Manufacturing Company Limited (SMCL). In 2006, the SMCL purchased 435,000 tonnes of sugarcane from 3,666 farmers. In 2003, 750,000 tonnes were purchased from 6,000 private farmers. There is also a declining acreage under production by private farmers. Farmers are still plagued with the longstanding problems within the industry. Reported problems are the lack of appropriate technology and mechanization; limited and inconsistent quality of extension services; bush fires, praedial larceny, disease, and uncertainty about the future; better infrastructure in order to harvest and transport cane to the factory; better service operations of scales at the purchasing points or arrangements for direct cane delivery to the factory, labour shortages, work stoppages, poor weather conditions; a fixed price paid for cane by SMCL since 2004. For the current (2007) crop

farmers have been offered a 14% increase in price. Additionally growers are expected to benefit from a 'soft landing' facility in order to facilitate their exit from cane production.

Some farmers are prepared to find alternative agricultural commodities and abandon cane farming completely. Those commodities mentioned by farmers are pigs, cattle, poultry, goat and vegetables. All these commodities have much support in the future plans of the MALMR but there are implications for a new influx of producers in the agricultural production scenario of Trinidad and Tobago. Some producers have begun to grow other agricultural commodities and to seek support from the National Agricultural Marketing Development Company (NAMDEVCO).

Some farmers would like to leave the industry in exchange for 'a lump sum to exit the industry'. Others have presented a popular (among themselves) proposal to the MALMR. This is a proposal to jointly purchase the SMCL in collaboration with a potential foreign investor. These farmers are prepared to support the financing of the newly intended operations with support from the local banking sector.

1.5.3 Impact on Employment

A limited number of severed Caroni workers have been re-employed by the scaled down industry operators – SMCL, RDTTL and EMBDC. It is estimated that 5,400 jobs were lost in the agricultural sector during 2003 and 2004 as a direct result of restructuring. If SMCL continues to produce refined sugar, there would be downstream effects on employment especially in the Food and Beverage sector which uses 75% of refined sugar produced by SMCL and contributes TT\$1billion to export revenues. This sector employs over 9,000 persons in soft drink manufacturing, bakeries, food processing and manufacturing and the manufacture of other drinks. However, the sector is not dependent on SMCL-supplied white sugar and is now importing directly about 50% of industrial sugar consumption annually.

SMCL also supplies about one-third of the molasses requirements of one of Trinidad's leading rum producers at prices that are about 67% of world market prices. The net effect of the contraction in cane production is that input costs for such buyers are going to increase – although it is not clear why SMCL should have been selling this product at less than CIF prices.

However, the impact on the sugar related industries should be limited since most of them are not solely dependent on sugar: e.g. the transport industry already covers the haulage from the port, persons involved in land preparation can be employed by the construction industry, etc.

1.5.4 Environmental Effects

EMBDC has responsibility for maintaining positive environmental impact. Of immediate resolve is whether the transformation of the milling factories into alternative operations is likely to unduly pollute the environment. The abandoned Caroni lands remain undisturbed in a fallow of mostly sugarcane ratoon.

Should sugar cane production be discontinued there would be an estimated 42,000 acres of prime agricultural land abandoned and, unless these lands are not brought back under meaningful stewardship, this could constitute an environmental crisis.

Trinidad and Tobago has the second highest level of carbon dioxide emissions on a per capita basis of 21 countries recently reviewed (Kairi 2005). Of more alarming importance is the concern that while carbon emissions have remained relatively constant, over the 12 years (1990-2002), for almost all countries, Trinidad and Tobago's emission rate has

increased from 13.9 to 31.9 metric tonnes of carbon dioxide per capita. Moreover, the following major projects to be undertaken in the energy sector are:

- Essar Steel/Iron and Steel Integrated Complex
- Westlake Ethylene Complex
- Alutrin Aluminium Smelter
- Urea/Ammonia/Melamine Plant
- Ansa McAl UAN Plant – Urea Ammonia Nitrate (UAN)
- Polypropylene Complex
- Alcoa Aluminium Smelter
- Maelic Anhydride Processing Facility

These new Plants would significantly increase the level of carbon dioxide emissions. Also, industrial activity within the former cane belt will have further consequences for this pollution concern. Nevertheless, a land use policy for 42,000 acres of prime agricultural land into a relatively small population base will take time to develop if costly mistakes are to be minimised.

1.5.5 Impact of EU Reforms on Sugar Industry Operations

The impact of the closure of raw sugar operations will increase operating cost of the refinery marginally, with regard to processing refinery molasses, but will not otherwise affect its operation since the refinery would be processing world market-priced raw sugar supplies. However, as noted elsewhere, the rum industry buys about 70% of its molasses requirements from the world market and 30% from SMCL. The locally purchased molasses is about US\$35 per tonne less expensive than the imported molasses as the former is not subject to ocean freight. Trinidad's leading rum producer, Angostura whose main market is bulk rum would become less competitive in this low end niche.

1.5.6 Socio-Economic Implications of the EU Reforms

EU market reforms will add to the sector's socio-economic challenges, some of which were successful but only partly addressed by Caroni's comprehensive divestment programme initiated in 2003. Moreover since current government policy is to phase out special support to the sector, the operating costs of private farmers will increase. This will place even more pressures on profitability and disposable incomes to cane growers.

There will be need for appropriate price support measures which have become increasingly difficult to negotiate. In the absence of price support even the best producers may be forced to retire from the industry. There will also be need for research and development support in order to obtain the best yields with more mechanised varieties on the best lands.

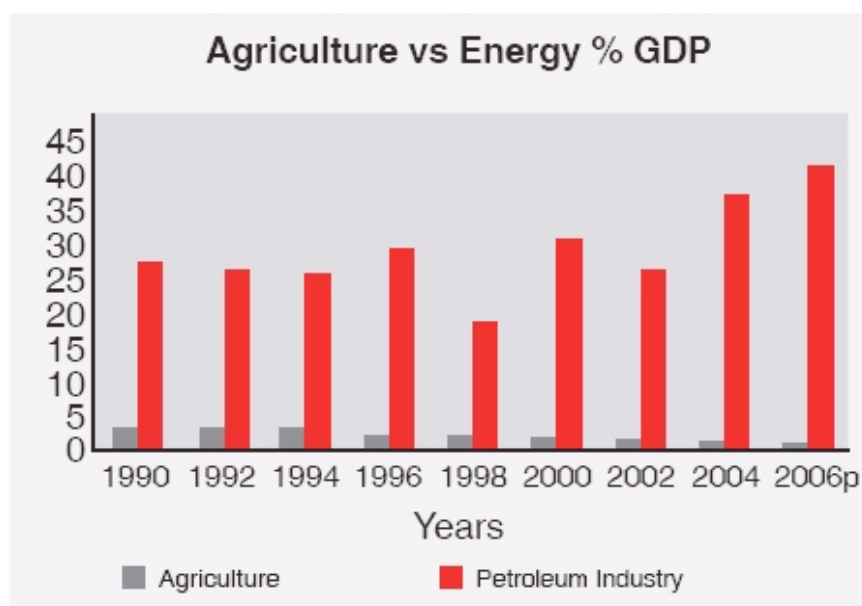
If provisions are not forthcoming the socio-economic situation among the remaining stakeholders in the industry will deteriorate, with the distinct possibility of voluntary closure and withdrawal, at least from sugar, by those who are currently operating in the sector. Finally, without the supply of raw material there would be implications for the refinery, the factory, and molasses production for downstream activity and sugar consumers. Most sugarcane farmers have already diversified their income base and b) both industrial sugar users and consumers would not face significant price hikes – if any – for those products.

1.6 Sugar in the Context of Vision 2020

GORTT's 2003 decision to restructure Sugar was confirmation that the sector is not a major development priority for Trinidad and Tobago. Also, although Agriculture remains important

for food security reasons, it is no longer a major contributor to economic growth as depicted in Figure 1 below:

Figure 1: Agriculture VS. Energy in Trinidad and Tobago



Source: Trinidad and Tobago Chamber of Commerce's "Contact Magazine" article on "The De-agriculturalisation of Trinidad and Tobago, January 2007

Vision 2020 is based on the underlying philosophy that each and every citizen must be afforded equal opportunities for personal growth, self-expression, enjoyment of life and participation in the development process.

The Draft Plan articulates five (5) development priorities, which form the basis to guide the country towards the year 2020. These priorities are:

- Developing Innovative People – the Draft plan stresses the importance of developing a highly skilled, well-educated population that aspires to a culture of excellence;
- Nurturing a Caring Society – emphasis is placed on eradicating poverty, negating social marginalisation, providing efficient delivery of social services, ensuring adequate income distribution and social protection and adequate housing;
- Governing Effectively – the focus is on strengthening the capacity of public institutions, enhancing democratic systems, developing and implementing fair-trading and competition laws and improving national security all necessary preconditions to Trinidad and Tobago achieving and sustaining a high standard of living;
- Enabling Competitive Businesses – in order to enhance the country's competitive edge, emphasis was placed on:
 - Building a skilled and educated workforce that can support the growth of more knowledge and technology intensive activities;
 - Enhancing innovation through research and development (R&D) efforts;

- Expanding the use of information and communications technology to increase efficiency and productivity; and
 - Accelerating the development of new growth sectors; and
- Investing in Sound Infrastructure and Environment – stresses well designed, continuously upgraded and environmentally sound infrastructure; an efficient Information and Communication Technology (ICT) platform; and public utilities and transportation infrastructure that enable social mobility and economic growth.

The priority of enabling competitiveness business is embedded in GORTT's five year national medium term investment plan to increase farm profitability and competitiveness via 1) expansion of the irrigated area; 2) strengthening the marketing system and linkages to demand centres and 3) technical assistance to improve effectiveness of agricultural support systems; to support agricultural planning; to develop alternative strategies for use of land, especially former sugar lands; to reduce the risks of praedial larceny; and to facilitate more effective participation of industry and farmer groups in the agricultural development process. However, sugar does not feature as a key input in seven priority non-energy sectors nor is it one of 10 agricultural commodity priorities earmarked for promotion and support by the Trinidad & Tobago Agribusiness Association (TTABA). Furthermore although Government has decided not to provide any commercial support to Sugar after 2007, the scope and quantum of non-commercial support that could be made available to the sector is still to be articulated by MALMR and MOTI, the two Ministries that provide most of the current support to the sector.

1.7 Macroeconomic Situation and Implications

Trinidad & Tobago is the richest country in the Caribbean, with a GDP of close to US\$15,000 per person. Energy is the key economic sector, accounting for over 40% of GDP and close to 45% of revenue in 2006.

Although rising energy revenues have improved the nation's balance sheet, a rapid increase in public spending has had adverse effects on the underlying budgetary position. Monetisation of the non-energy deficit remains the major catalyst for pushing liquidity into the financial system. This has placed an increasing burden on monetary management and poses a serious inflationary risk. Nevertheless, the real exchange rate (REER) in 2005 was about its 2001 level.

Dutch Disease-like crowding out has occurred in agriculture and manufacturing. Agriculture, for instance, now contributes less than 1% to total GDP compared with 2.5% in 1982. Over the last 10 years the manufacturing sector's contribution has been stagnant at 6% of GDP. Agriculture lost over 11,000 jobs in 2000-2005 while manufacturing gained only 1,000 jobs during that period. Despite GDP growth rates in excess of 5% since 2003, by 2005 the country's global competitiveness ranking had declined to 67th position from 31st position in 2001.

Public spending on education and health is high - attesting to a strong national consensus on building human capital. There is near universal primary and secondary enrolment rates and the quality of education is improving although, in some areas, it is still below developed country standards. Furthermore, despite Trinidad & Tobago's high per capita income, health indicators such as life expectancy, infant, and child mortality are not significantly better than the average for the Caribbean. While unemployment in 2006 was estimated at a recent all time low of 5% and there are growing concerns about the scarcity of skilled labour. Still, poverty persists and is presently estimated at 17% of the population or over 220,000 persons.

Going forward, policymakers need to adopt a policy of restrained spending to ensure economic stability given that inflation could be easily fuelled by heavy Government outlays⁹. GORTT must also continue to diversify non-energy exports to reduce dependency on the booming energy sector and make them competitive. The 2006/2007 Budget identifies seven key sectors for industrial development – Yachting; Fish and Fish Processing; Merchant Marine; Music and Entertainment; Film; Food and Beverages, and; Printing and Packaging.

1.8 Sugar in the Context of T&T's Trade Policy

At the trade policy level, any possible links between Trinidad and Tobago and other Caribbean Sugar Protocol countries are now unclear in light of the Minister of Agriculture's 26th January 2007 announcement to the Trinidad and Tobago media that T&T would seek to transfer its Sugar Protocol quota to Guyana. The future relationship between Trinidad and the other Caribbean countries is also unclear given Government's decision to divest the industry's remaining commercial assets to the private sector. The reason why the trade relationship is to be defined is that: although Trinidad does have an operating capacity to refine Caribbean raws into white sugar for subsequent re-export to the region, it would be up to the private sector buyers of the industry's remaining processing assets to decide whether they should (or should not) explore and negotiate this option with others in the region.

Finally, given that Government has taken a policy decision to withdrawal from Sugar, this subject is unlikely to be a major negotiating issue for Trinidad and Tobago in terms of its country-specific input in the Caribbean EPA negotiations with the EU.

⁹ GORTT has increased the PSIP in recent years. However, this had not had a material effect on inflation mainly because of GORTT's low rate of actual PSIP spending relative to the PSIP budget(s).

2 NATIONAL ADAPTATION STRATEGY

2.1 Process

Preparation of this adaptation strategy (NAS) has involved consultations with the country's sugar industry and with private and public sector entities throughout the assessment and strategic planning process. It has drawn on a wide range of reports and studies on the industry, on agriculture and on national economic development prepared over the past ten years. GORTT has also met with representatives of the wider economy and society including civil society to develop a clear understanding of issues and likely impacts that could emanate from an adaptation process. The results of this process are therefore factored into the assessment and formulation phases of this document.

2.2 Approach, Guiding Principles and Rationale

This NAS is founded on a combination of decisions already taken by GORTT regarding: the sugar industry's future operating framework; the implications of EU Sugar Reform; the current economic trends in Trinidad and Tobago; and, the priorities established for advancing the Vision 2020 agenda in the related 2007 – 2010 implementation plan.

Essentially, our strategic approach is based on a national policy position that future growth in revenue-generating sectors of the economy must be both private sector-led and sustainable. Our approach to the NAS was underpinned by the following principles:

1. Ownership: clear commitments by GORTT to adopt the strategy and to ensure stakeholder involvement, adoption, and continued participation as necessary.
2. Assimilation and harmonisation: ensuring that the strategy – in terms of its focus and content – can be smoothly assimilated into GORTT current development framework and activities rather than requiring adjuncts or a separate “stand alone” agenda and programmes. The strategy therefore reflects the framework and content of broader initiatives embedded in the 2007 Public Sector Investment Programme (PSIP); in the Vision 2020 Implementation Plan; and in the 2007 – 2011 medium term investment plan/policy for agriculture.
3. Responsibility: ensuring that GORTT will address the key factors for successful implementation in appropriate areas (e.g. policies, regulations, infrastructure and services support) by assigning responsibility for strategic elements to the most relevant implementing entities.
4. Flexibility: maintaining flexibility within the strategy to make needed adjustments to strategic elements and planned or on-going actions as defined in the implementation plan if any major areas of expected activity do not materialize.
5. Consistency: ensuring that the strategy is and stays in line with national development priorities, especially Vision 2020, as the Vision unfolds.
6. Commitment: the commitment by GORTT to provide institutional as well as financial resources for implementing the strategy as part of ongoing initiatives under existing modalities and/or via new mechanisms as defined in Section 3, Implementation Plan and Section 4. Financial Plan, of this document.
7. Targets and Impact: establishing targets for each of the strategic objectives that serve as the basis for monitoring and assessing the extent to which each group of

activities are contributing to the achievement of the strategic objectives (these should be defined for each element of the strategy and action plan).

This approach is based mainly on the operational and policy decisions taken by GORTT between 2003 and 2006 to terminate public sector involvement in industry operations and to transition all remaining commercial activity to the private sector. This included a policy decision endorsed by Cabinet in late 2006 to provide future support to all agricultural sectors (and industry) on a “level playing field” principle. This means that GORTT will not provide price-related or direct operational support to sub-sectors. Effectively, this is in line with GORTT’s already well-established policies towards Industry to let markets and investors decide on the viability of investment opportunities and ongoing operations.

This approach was reinforced by the implications of EU market reforms which would have increased the burden on Government - had GORTT not followed through on its 2003 decision to withdraw commercial support to the sector within five years and had opted instead to continue to support the industry after 2007.

Two clarifications about GORTT’s policy position are put forward. First, GORTT is not shutting down the sugar industry but is completing the phase out of commercial support to the industry by the end of 2007. Second, this approach is “market neutral”: *the future of the sugar cane industry in its current or newly devised forms will be decided entirely by the private sector*. If they choose to stay or invest in it they will be exposed to domestic pricing structures and to prices in non-EU export markets such as the United States of America¹⁰.

Conversely, if the private sector decides that future investments or current operations are not feasible, then the industry will cease to exist although some parts (e.g. molasses extraction for rum distilling) may survive based on market priorities and privately negotiated arrangements between buyers and suppliers. Consequently, this approach ensures that GORTT could still provide non-commercial support for a) various investment opportunities in the sector - should they materialize, as well as b) socio-economic consequences of the industry reconfiguration or closure. This flexibility is embedded in our Vision 2020 quest to facilitate competitiveness business, foster innovative people, provide sound infrastructure and environment, engender a caring society, and improve effective government *on a sustainable basis*.

2.3 Goal

The overall goal or purpose of the Trinidad and Tobago (T&T’s) strategy is to contribute to the realization of four of the priorities established in Vision 2020, the country’s National Development Plan to become a developed nation by the year 2020. As noted above, these priorities are to create an environment of competitiveness, innovative people, a caring society and improved government.

2.4 Strategic Objectives

We have established three strategic objectives that, once achieved, will confirm that that the NAS goal has been realized:

1. Strategic Objective 1: To enhance competitiveness of a private sector-led sugar cane sector on a sustainable basis;

¹⁰ When this NAS was prepared, the Minister of Agriculture had already announced to the Trinidad and Tobago media that GORTT would move to have its EU sugar quota transferred to Guyana and that all GORTT support for (commercial aspects) of the current sugar production system would cease at the end of 2007.

- 2. Strategic Objective 2: To promote economic diversification of sugar dependent areas; and**
- 3. Strategic Objective 3: Address broader impacts generated by the adaptation process related to social, environmental, community and area-based issues.**

These strategic objectives fall within the framework of EC guidelines for developing an NAS namely a) enhancing competitiveness, b) promoting economic diversification and c) addressing broader impacts generated by the adaptation process. The Trinidad and Tobago NAS is also *multi-sectoral*; combines several sources of funding – not just EC financing; and is multi-annual. These Strategic Objectives are key objectives of the GORTT.

2.5 Elements of the Strategy and Action Plan

The main elements of the three strategic objectives are as follows:

1. Elements of Strategic Objective 1 - to enhance competitiveness of a private sector-led sugar cane sector on a sustainable basis:
 - a. Facilitate informed sugar related decision making
 - b. Facilitate private sector led investment in the industry and
 - c. Support technological options for use of the sugar cane plant that leverage T&T's comparative advantage
2. Elements of Strategic Objective 2 - to promote economic diversification of sugar dependent areas:
 - a. Exit strategy for sugar farmers
 - b. Improving the enabling environment for economic diversification
3. Elements of Strategic Objective 3 - addressing broader impacts related to social, environmental, community and area-based issues
 - a. Maintain environmental stability
 - b. Providing sustainable social and economic support related to the socio-economic effects of transitioning out of the industry

2.5.1 Facilitating Private Sector-Led Investment in the Industry

In 2006, as part of its continuing programme to withdraw from all commercial activities in the sugar industry GORTT, contracted PricewaterhouseCoopers to publicise Requests for Proposals (RFPs) to purchase the assets of SMCL, rum distillery and sugar and molasses terminal. The RFP included a restrictive covenant that will require the purchaser(s) to use the facility for sugar and/or related activities for 5 years. Twelve interested parties requested bid documents and two of them submitted proposals to purchase the assets of SMCL. One bidder intends to continue the operations of the facility.

At the time of writing this strategy in January 2007, an evaluation committee of the Divestment Secretariat, Ministry of Finance has completed the assessment of the two proposals and had communicated its recommendations to the MOF's Investment Division for a final decision. In this regard, it is GORTT's intention to either a) negotiate the sale of these three groups of assets or b) failing to complete the divestment, to close down those operations by the end of the 2007 crop. The Divestment Secretariat will be responsible for facilitating the interest of future investors. Other options for private sector investment are to be investigated.

2.5.2 Supporting Technological Options that Leverage T&T's Comparative Advantage

GORTT support for this option will largely depend on the intent of the initial purchasers of the industry remaining core assets since this will be a barometer of the scope for future private sector-led initiatives in the sector. Government, through the Ministry of Trade and Industry, will be prepared to provide relevant industrial development and infrastructure support to investors who acquire these assets for sugar-related energy-based investments that leverage the comparative advantage afforded such investment via low cost locally sourced energy.

Support for industrial projects such as the CIMV project or the Lignol biorefining project would be eligible under the Fiscal Incentive Act. This Act is for capital intensive projects (over US\$50 million) and is administered through the Ministry of Trade and Industry. The Act provides a waiver for import duty on plant equipment and raw materials used for a negotiated period of time. For projects having a capital value of less than US\$50 million exemptions on the payment of VAT, withholding taxes and import duty is available, for a period of 10 years, through the Ministry of Finance.

Agricultural based projects like the CIMV one are eligible for non-commercial support through the MALMR. This support could include, but is not limited to maintenance of farm roads, land drainage, disease and pest control, R&D programmes and training for employees requiring special skills. The MALMR will also provide access to the package of agricultural (fiscal) incentives made available to all farmers – this includes for e.g., waiver of taxes on motor vehicles, rebates on irrigation equipment/ facilities, rebates for land preparation etc).

2.5.3 Exit Strategy for Cane Farmers and Sugar Industry Workers who Choose to Leave the Industry

The combination of GORTT's phased programme of withdrawal from commercial sugar operations and the growing alternative economic opportunities for workers and entrepreneurs once mainly dependent on sugar-derived incomes necessitate the development of a final exit strategy for those who prefer to leave the industry. This will consist of a package of measures linked the withdrawal and support from various established SME investment and service providers.

With regard to the first set of measures, on 26th January 2007, the Minister of Agriculture, Lands, and Marine Resources (MALMR) announced to the media that GORTT planned to meet with farmers to discuss the expected impact of a Government decision to stop providing commercial support to the sector at the end of the 2007 crop. GORTT has indicated that it could consider providing assistance to farmers to alleviate any difficulties resulting from this decision. The composition of a possible package of assistance for which the GORTT would provide 100% financing, will be worked out by mid-2007 and integrated into the NAS after relevant issues are discussed and agreed with private cane farmers. There will be a specific programme for sugar industry workers and their dependents to address their particular situation.

The second set of measures (i.e. support that connects exiting farmers and workers to investment products and services) will include the establishment of a simple IT-based networked database of farmer profiles and investment product and service providers can use to develop a package of tailored support in the context of new SME opportunities that existing farmers may opt to pursue. Examples include financing from the ADB and other SME loan providers, technical and market-led advice from NAMDEVCO, business plan assistance from the Business Development Company (BDC), and participation in

agribusiness market-led assistance programmes formulated by the Trinidad and Tobago Agribusiness Association (TTABA) to expand supply chain capabilities and capacity for 10 agricultural commodities with agro-processing, export and new downstream product development potential.

2.5.4 Improving the Enabling Environment for Economic Diversification

The NAS will focus on two groups of economic diversification priorities that will influence the efficacy of the country's progress towards Vision 2020 goals:

1. Contributing to improvements in the enabling environment in support of GORTT's ongoing initiatives to facilitate a competitive business environment and
2. Reducing and controlling praedial larceny - the most significant disincentive to new investment in agriculture and forestry.

Improving the Enabling Environment

Notwithstanding Trinidad & Tobago's recent economic success and momentum, improving the enabling environment for private sector investment is essential to future growth. Improving this environment is especially relevant given the country's focus on the development and expansion of seven targeted non-energy sectors under the Vision 2020 Development Plan (yachting, fishing and fish processing, merchant marine, music and entertainment, film, food and beverage, and printing and packaging).

In October 2004 a MOTI-commissioned study prepared under the aegis of the Enabling Environment Committee - the Prime Minister's Standing Committee on Business Development, produced a comprehensive list of impediments to business formation, growth and development. The study has been circulated to various private and public sector stakeholders as that basis for developing an action plan for subsequent funding and implementation. From 2007 onwards, there are critical priorities that need to be addressed at legal, regulatory and operational levels that are relevant to SME development in general and therefore embraced by this NAS. The priorities to be addressed include a) macroeconomic issues such as wide interest rate spreads; b) trade procedures including archaic systems procedures at Customs and an inefficient export certification system; c) labour market issues such as rising wages and scarcity of skilled labour due to full employment and rapid economic growth; d) education and human resource issues such as a continuing high brain drain and school curriculum that is not linked strongly to the economic diversification thrust and e) regulatory framework issues including a lack of sector specific incentives for desired growth engines of the economy and a highly inefficient process of leasing lands (e.g., for new agribusiness related activity).

Simultaneously, Government is continuing to make significant commitments to economic diversification. To this end, GORTT, in its 2007 public sector investment programme (PSIP), has committed TT\$413.9 million to facilitate a competitive business environment that includes investments in the Caribbean Industrial Research Institute (CARIRI), support to the local film industry, and funding for technology/industrial parks. Resources have also been earmarked for the Business Development Company to continue to provide support to SMEs. The EC-funded Caribbean Business Services Ltd is also supported by complimentary GORTT investment and is providing technical support on a demand-led basis to SMEs. The quantum of funding in 2007 mirrors the levels established in 2006 and is likely to continue at similar levels over the next 3 – 5 years.

Reducing and Controlling Praedial Larceny

As noted in its 2007 – 2011 medium term investment plan for agriculture, GORTT is committed to the development and implementation of a comprehensive praedial larceny programme, without which any future momentum in private investment in agriculture by former sugar farmers or by new investors will be severely compromised. Praedial larceny ranks as the No. 1 concern of farmers according to a 2005 agricultural sector census. Therefore, under the NAS, GORTT will develop a stakeholder-driven plan aimed at minimizing this development constraint. The plan will be developed by the MALMR in 2008 and implemented thereafter via a combination of GORTT and proposed support from the EC. The plan will be taken into consideration lessons learned and best practices adopted by other developing countries and will seek to develop a stakeholder-inclusive management approach to the problem.

2.5.5 Maintaining Environmental Stability

The possible closure of the sugar cane industry at the end of the 2007 crop could result in an estimated 28,000 acres of prime agricultural land being abandoned. In addition to these lands there are 10,000 acres in the Couva area which have already been abandoned. The GoRTT plans to facilitate the development of large farms by the private sector on a number of lands of the former Caroni (1975) Limited. Additionally, the sugar processing assets of the industry are either to be divested, disposed or maintained. Therefore, a Strategic Environmental Assessment (SEA) of the National Adaptation Strategy will be undertaken to define an environmental stability programme. It is envisaged that this programme include support for the expansion of the country's forestation programme. With institutional support to the Division of Forestry, and if necessary the use of private contractors, the planting programme could be expanded. The expansion of the forestation programme would be identified by a detailed forestation study which would take into account the specific conditions of private land farmers.

Forestation is a highly appropriate alternative use for these lands given: a) the threats of continued urbanization; b) the scarcity of agricultural labour; c) excessive praedial larceny of alternative crops; and d) the need to improve flood control. Furthermore, forestation is a highly effective mechanism for achieving environmental stability by committing large acreages to land conservation programmes. Such strategies contribute to atmospheric carbon dioxide reduction and the control of global warming. A forestation programme will also provide meaningful employment in agricultural communities that have displaced sugar workers with the basic agricultural skills to ensure the success of the project. A comprehensive forestation programme can create an agricultural land reserve to which land may be added or withdrawn as the demand may arise without adversely affecting this valuable resource.

GORTT has an on going program to up grade and maintain 33,000 acres of existing forest and Forestry Division's community based replanting program of about 400 acres per year in other (non-sugar) areas such as its existing forest zones. Therefore an additional forestation initiative to address potentially fallow sugar lands would contribute to environmental goals embedded in the draft development plan and as well as the priorities established for forestry and environmental management in the 2007 Public Sector Investment Programme (i.e. the urgency to reduce pollution and promote the wise use of natural areas).

There are also pragmatic reasons why forestation would be beneficial as a transitioning strategy. One reason is that there is a worldwide shortage of quality hardwoods and demand for tropical hardwoods is expected to increase as environmental constraints restrict the use of temperate climate softwood preservatives. In addition the local hardwood market is

presently under supplied and there are growing export market for manufactured hardwood products.

The major species to be propagated will include mahogany, teak, cedar, apamate, poui and cypre and areas need to be identified that would best suit the species and the conservation objective.

Any additional forestation will be undertaken by the Forestry Division of the Ministry of Public Utilities and the Environment. The Division will provide Environmental Certificates of Clearance which ensure that any new programmes are consistent with sustainable environmental requirements. The Environmental Management Agency (EMA) has not carried out any sugar land related studies but has advised that any new activity for that area would need to be approved by the EMA.

The present structure of the Forestry Division, which is currently planting 400 acres of new forest per year, can accommodate an expansion to plant and maintain an additional 500 acres per year by enlarging the numbers in the community groups already used by the Forestry Division. Beyond this level of output the Forestry Division would require additional institutional capacity to support a major forestation programme on former sugar lands. GORTT has already provided additional capacity in specific projects along Trinidad and Tobago's Northern range. These can serve as 'lessons learnt' examples for new projects which build institutional capacity.

2.5.6 Providing Sustainable Social and Economic Support

The negative outcomes which could arise from socio-economic fall out as the industry closes this phase of existence are: loss of income effects, new occupation effects, loss of morale among community members, an erosion of social status and poor attitudes towards sustaining longstanding links with agriculture. These effects will contribute to undesirable disequilibrium between rural and urban economies through rural migration to urban areas. Presently these potential outcomes are mitigated by the alternative opportunities which Trinidad and Tobago's buoyant economy affords and the general duality of occupation which most community members partook. Yet some community members will not be easily buoyed. A strategy to provide sustainable socio-economic support must consider the circumstances in order to arrive at appropriate solutions and actions.

In the context of this NAS the relevant Vision 2020 priorities are to develop an innovative people and to nurture a caring society. Social sector ministries working within the purview of a third goal element, good governance, have responsibilities which could enact themselves among the communities affected by transitioning out of the cane industry. For the fiscal year 2005/06, the expenditure out of the Ministry of Social Development amounted to \$TT1.7 billion.

Some of these funds contributed to social safety net programmes which allegedly disproportionately benefited urban areas. Nevertheless these programmes are also carried out in the sugar dependent areas and many opportunities are available to ex participants of Caroni (1975) Ltd. It would be incumbent on new strategies to be more responsive to the needs of the rural areas.

The strategy will complement the public sector investment programmes in the area of social programming for the following: Better organised decentralised services through the regional corporations; further funding for the sugar based communities through the regional social and human development councils (RSHDCs), Network of Civil Organisations and the Regional Micro Projects Fund (RMPF), already established under the 8th European Union Development Fund (EDF) Poverty Reduction Programme. The micro project fund assists in

number of poverty reduction initiatives including e.g. income generating activities, environmental protection, training, alleviation of social problems.

The strategy must recognise and support studies which seek to understand new features arising out of social fallout, gender displacements, labour migrations out of agricultural production and out of rural communities and demographic changes. For instance the International Labour Organisation (ILO) has conducted a study regarding 'post sugar' demographics and the results are imminent. More specific social studies are recommended. Other recommended studies are those which distinguish between rural and urban areas and between stakeholder groups with regard to impacts on employment and levels of income. These are lacking and will be important to assess further desired strategy.

2.6 Expected Results

Under each of the three strategic objectives, the expected results from implementation of the strategy are as follows:

1. Strategic Objective 1: to enhance competitiveness of a private sector-led sugar cane sector on a sustainable basis.
 - 1.1 Private sector options for alternate use of sugar cane investigated
 - 1.2 Divestment of rum factory, sugar mill, refinery and sugar/molasses terminal to private investors resulting in 100% ownership of sugar industry assets and investments by the private sector by 31st March 2007.
 - 1.3 Sustainable private sector sugar-cane production that is linked to/derived from downstream private investment in alternative uses of sugar cane.
2. Strategic Objective 2: to promote economic diversification of sugar dependent areas
 - 2.1 Smooth transitioning by sugar-dependent small businesses (e.g. farmers, cane delivery operators, tractor operators, service providers etc.,) out of cane production and related activities into other business ventures and income generating activities¹¹.
 - 2.2 Improved macroeconomic, business facilitation, and regulatory frameworks that are closely aligned with Trinidad and Tobago's economic diversification and Vision 2020 thrusts
3. Strategic Objective 3: to address broader impacts related to social, environmental, community and area-based issues
 - 3.1 Formerly cultivated sugar land areas protected
 - 3.2 Limited adverse socio-economic and environmental impacts from the planned transformations - such as urbanization and energy related investments - in former sugar-dependent areas

¹¹ It is important to point out that most of these 'small businesses' (except farmers) were already well diversified and will find it easy to transition out of Sugar. Many of the transport people already have haulage business from the port; many of the people involved in land preparation are involved in the construction industry; the planes are owned by companies that provide services to the petroleum industry. Most farmers have sugarcane based farming systems in which they already grew other commodities.

Assessments of the extent to which these results are achieved will be carried out in accordance with Section 3.5 Monitoring and Evaluation and will be based on Objectively Verifiable Indicators (OVIs) as articulated in Section 3.6 Indicators of Achievements, below.

3 IMPLEMENTATION PLAN

3.1 Main Activities to Implement Strategy

The main activities to be undertaken under this adaptation strategy were developed within a multi-dimensional parametric framework. These parameters include: a) GORTT's ongoing public sector programmes and PSIP initiatives; b) pipeline private sector proposals for investments within and/or in proximity to former sugar-dependent areas; c) recent and/or planned programmes to address agricultural and economic diversification challenges by private sector or community groups; and d) socio-economic and urbanization trends as a result of the Caroni restructuring and Trinidad and Tobago's robust economic growth.

The NAS portfolio of activities is therefore a combination of both ongoing programmes and proposed (i.e. new) ones. Moreover, given the substantial levels of public and private sector investments already identified or committed in many broader areas of development, the amount and impact of EC additionally will be quite modest in the context of the overall commitments already embedded in larger national initiatives. Therefore, we propose to utilise EC support earmarked for Trinidad and Tobago emanating from the accompanying measures for sugar protocol countries to: a) strengthen components of GORTT's 2007 – 2011 medium term investment plan for agriculture and b) provide support for some of the activities defined below.

Under each of the expected results the proposed and/or ongoing actions to achieve them are as follows:

Result 1.1: Private sector options for alternate use of sugar cane investigated

1.1.1 MALMR will evaluate the opportunities for alternate uses of cane

Result 1.2: Divestment of rum factory, sugar mill, refinery and sugar/molasses terminal to private investors resulting in 100% ownership of sugar industry assets and investments by the private sector.

1.2.1 Ministry of Finance's Investment Division to confirm recommendation of Divestment Secretariat on the selection of the successful bidder(s) to whom the government-owned sugar industry assets will be sold by 31st March 2007.

1.2.2 MOF to enter into and complete negotiations and legally transfer the sugar industry assets to new owners by 31st December 2007.

Result 1.3: Sustainable private sector sugar-cane production that is linked to/derived from downstream private investment in alternative uses of sugar cane

1.3.1 Private investors take responsibility for establishing new operating facilities and cane production requirements including minimum raw material characteristics.

1.3.2 GORTT to facilitate natural gas availability to power the plant, as well as to provide continued research and development assistance on varieties and production techniques that can assist in lowering the production cost; continued infrastructural support; pesticide control; other support services as defined by the market.

Result 2.1: Smooth transitioning by sugar-dependent small businesses (e.g. farmers, cane delivery operators, tractor operators, service providers etc.) out of cane production and related activities into other commercial ventures

- 2.1.1 Package of adjustment measures formulated and provided to farmers and sugar industry workers (TBA between Government and farmers and sugar industry workers).
- 2.1.2 Support exiting farmers from the industry by establishing a network system of linking them to relevant investment products and SME support services. (e.g. ADB, NAMDEVCO, NEDCO, SBDC etc.).
- 2.1.3 Assist with Agricultural diversification in cane growing areas

Result 2.2: Improved macroeconomic, business facilitation and regulatory frameworks for the private sector

- 2.2.1 Contribute to improving the regulatory and support frameworks for a competitive business environment as part of GORTT's agenda and commitments in this area.
- 2.2.2 Praedial larceny and illegal logging reduced.
- 2.2.3 Assist with rural infrastructure in ex-cane growing areas.

Result 3.1: Formerly cultivated sugar land areas protected

- 3.1.1 Develop a plan to ensure environmental stability on 32,000 acres of former sugar lands by the Ministry of Public Utilities and the Environment and other institutions which can support this type of development initiative.
- 3.1.2 Increasing the institutional capacity of the Forestry Division to ensure successful implementation of the various forestation programmes in collaboration with land owners and (land) tenants.
- 3.1.3 Conduct reforestation study, formulate implementation plan and implement the "forest cover" programme on formerly cultivated sugar land.

Result 3.2: Limited adverse socio-economic and environmental impacts from the planned transformations - such as urbanization and energy related investments - in former sugar-dependent areas.

- 3.2.1 Channel funds to sugar based communities through the decentralised structures established under the 8th EDF sponsored Poverty Alleviation Programme.
- 3.2.2 Conduct studies for gender analysis and social inventories among communities in former and existing sugar-dependent areas.
- 3.2.3 Identify training needs emerging from the studies carried out on gender analysis and social inventories or from other donor assessments. Implement training programmes.
- 3.2.4 Establish a Programme Coordination Unit (PCU) within MALMR to support implementation of the NAS.

Annex 1 presents a summary logical framework that sets out the strategic objectives, results, objectively verifiable indicators and their sources of verification, risks and assumptions associated with this strategy.

3.2 Structure for Implementation

Overall responsibility for NAS implementation resides with the Cabinet, the highest GORTT executive body. Cabinet has established a Technical Sub-Committee to articulate future policy (and therefore future support) for the cane industry. This sub-committee has also overseen the process of preparation of the strategy. The structure for implementation will reflect the fact that the activities contained in the strategy will be carried out by a wide range of public sector institutions, private sector companies and civil society organizations.

The government will seek to establish appropriate structures for the implementation of those aspects of the country strategy that may be carried out with funding support from the European Union. The design of programmes or the strengthening of existing ones would seek to draw on the experience of the government, particularly in the areas of a) economic transformation and b) leveraging of the country's comparative advantage in energy into downstream industries in other growth sectors (e.g. agro-industry).

It is proposed that the structure that was used to develop this NAS be maintained for its implementation, namely that the Cabinet Sub-Committee continue to hold oversight responsibility for monitoring a combination of a) GORTT's continued commitment to its Vision 2020 development plan and b) implementation of any new components or activities approved by GORTT under this NAS. In this regard the Sub-Committee will be expanded to include representation from participating government entities. The Sub-Committee will provide guidance on implementation arrangements and activities that are agreed to by the EC and GORTT and defined in subsequent Financing Agreement(s) between the two parties. In addition, GORTT will set up a Project Coordination Unit (PCU), staffed with appropriate expertise, to advise and coordinate the day-to-day tasks of advancing those programmes/activities. The PCU would be situated within an appropriate line ministry such as the MALMR or MOTI, one or both of which would assume responsibility for the successful management and implementation of these programmes on behalf of GORTT.

3.3 Roles and Responsibilities

In the context of the preceding strategic elements, the following entities will be involved in decision-making, coordination and implementation of the actions defined in section 4.1, Main Actions to Implement the Strategy:

Strategic Element	Responsibilities	Role
1.a. Facilitate informed sugar related decision making	1. MALMR	1. Fund assessment of bio-refining methods 2. Advise GORTT on sugar trade related options (molasses, sugar, rum)
1.b. Facilitate private sector led investment in the sugar cane industry	1.MOF & MOTI	1.2 Divest SMCL assets
1.c. Support technological options for use of the sugar cane plant	1.MALMR 2.MOTI	1 Support to cane production 2 Investment concessions 3 Facilitate access to natural gas for paper and pulp plant

Strategic Element	Responsibilities	Role
1.a. Facilitate informed sugar related decision making	1. MALMR	1. Fund assessment of bio-refining methods 2. Advise GORTT on sugar trade related options (molasses, sugar, rum)
	3. MEEI	
2.a. Exit strategy for sugar farmers who choose to leave industry	1. MOF and MOTI 2. MOTI	1 Establish and administer adjustment package for cane farmers 2. Facilitate access to investment products and services
2.b. Improving the enabling environment for economic diversification	1. Enabling Environment Committee at MOTI	1. Establish priorities and support actions by various GORTT agencies 2. Improve rural infrastructure 3. Improve regulatory framework for private sector
3.a. Maintain environmental stability on former sugar lands	1. MPU&E, TCPD of MPD, MALMR,	1. Develop plan for former sugar lands and fixed assets 2 Increase capacity of Forestry Division 3 Conduct reforestation study and implement the programme
3.b. Provide sustainable social and economic support	1. MSD 2. MSD 3. MALMR and MOTI 4. MALMR	1 Implement poverty reduction programmes 2 Conduct impact studies 3. Conduct training needs assessments 4. Establish PCU

The private sector will also have responsibility for the business development aspects of this strategy. This includes large investors interested in biorefining, SMEs coming out of sugar, and new investors in other diversified sectors of the economy who respond to/take advantage of an improved enabling environment.

3.4 Implementation Schedule

The implementation schedule for this country strategy is presented as Annex 2. Considerable emphasis is being placed on laying the groundwork for the multi-year strategy in 2007. The activities in that year focus the completion of Government policy to transfer remaining sugar industry assets to the private sector and to establish the basis for possible downstream investment in biofuel production to begin in 2008. In 2007 studies will be commissioned as first steps towards developing frameworks for subsequent support in other strategic areas in the ensuing years (2008 – 2013).

3.5 Monitoring and Evaluation

The monitoring and evaluation framework for this strategy will have a number of components that will reflect the nature of the strategic objectives. The monitoring and evaluation framework will be constructed that includes reviews of the technical performance of the implementing entities as well as agreed EC review criteria for both project and budget support. The framework will include regular progress reports, period reviews and evaluations by external consultants, a process of business and community-based feedback and stakeholder consultations. The Project Coordination Unit proposed in section 3.2. (Structure for Implementation) would establish a monitoring and evaluation system and prepare terms

of reference for independent audits and evaluations (mid-term and ex-post). The first evaluation of the strategy will be carried out in 2009 or no later than three years after the first Financing Agreement is established.

3.6 Indicators of Achievements

The logical framework provided in Annex 1 includes the main objectively verifiable indicators (OVIs) proposed for the periodic assessments of the success of the country strategy for the sugar industry. These indicators may be ascertained by reference to the sources of verification which are also included in Annex 1.

4 FINANCIAL PLAN

4.1 Cost of Overall Strategy

The total cost of the country strategy comprises the cost of the individual activities proposed to achieve the results under the three main strategic objectives over the seven year period from 2007 to 2013. As shown in Annex 2 the total cost of implementation of this national adaptation strategy is **TT\$1,777,200,000 (€222,150,000)**. About half of these costs are linked to a proposed biorefining investment by a joint group of foreign and local private sector investors (farmers).

4.2 Seven -Year Cost Schedule (2007 – 2013)

The projected timing of resource requirements to meet the costs of implementation of the country strategy over the seven years from 2007 to 2013 is shown in Annex 3.

Annex 3 details the projected cost of the country strategy 2007-2013. The cost of the country strategy for year 2007 will include the priority activities to be undertaken to accelerate the adaptation of the industry. The subsequent years show an increase in the activities to fulfil the second and third strategy objectives respectively.

4.3 Sources of Financing

4.3.1 Government

Notwithstanding the possibility of increased private sector participation in the sugar industry, GORTT will be the major source of funding for the implementation of planned NAS activities. Almost all GORTT funding will be for implementing projects, programmes and policy directions that have already been agreed by the Government. Unlike most sugar protocol countries, Trinidad and Tobago's energy-derived income has ensured that the nation's financial position is very strong. For instance Trinidad and Tobago funds at least 90% of the Public Sector Investment Programme from a combination of the Consolidated Fund and the re-introduced Infrastructure Development Fund. This is among the highest proportion of locally-sourced PSIP funding of ACP countries. Furthermore, sugar now accounts for less than 1% of GDP. Therefore GORTT's related investments under this adaptation strategy are skewed towards enhancing economic transformations that are in line with Vision 2020 given the combined implications of ample funding to support such an objective and the relatively insignificant macroeconomic effects of a possible termination of all commercial sugar-related production activity in Trinidad and Tobago.

4.3.2 Private Sector

The country strategy looks to local and overseas private sector interests as the main potential source of funding for capital investment in downstream energy based activity in a diversified industry. Local investors will seek and/or provide funding in complimentary or alternative small business investment by those withdrawing from the industry. For example, it is expected that private cane farmers will take the economic decisions necessary to achieve the improvements in productivity and efficiency required to input targets that a diversified new technology driven industry like pulp and paper will set for such suppliers that will be complimented with non-commercial government support to the sector. It is also anticipated that leading local financial institutions will provide local capital and financial advisory services to small businesses migrating and/or emerging new business opportunities that will continue to drive T&T economic transformation.

4.3.3 European Union

Trinidad and Tobago benefited from technical assistance grant in 2006 in order to complete this NAS. The EC has confirmed its commitment to assist ACP countries to implement their national adaptation strategies and is offering a package of assistance to be provided over the seven years from 2007 to 2013 under Accompanying Measures for Sugar Protocol Countries (AMSP). The specific areas and mechanisms of EU assistance will be negotiated with each country by the EC and its EU delegations in the respective countries based on their strategies for adaptation.

In providing the planned assistance the EC has a range of funding modalities that it could employ. Where the assistance is intended to help the country to achieve broad economic goals the EU may consider provision of budget support that may be linked to appropriate indicators. Where the desired results are more specific to particular sectors or geographically defined regions, the preferred approach may involve EU funding assistance in the form of a project or a programme comprising a series of projects that would be designed through collaboration between the respective government and the EC and implemented over an agreed time frame with an element of co-funding by the government. In the case of Trinidad and Tobago, the EC has indicated that the budget support that is linked to a limited number of progress and performance indicators could be the most suitable mechanism. Other possibilities for support available from the EU include technical assistance through the CDE as well as loans and investment instruments through the European Investment Bank (EIB).

4.4 EC Financing for 2007 – 2010

GoRTT is requesting the EU to provide the sum of **€6 million** for 2007 and **€35 million** for the period 2008 to 2010 to help Trinidad and Tobago adapt to the changes in the sugar regime. The focus of this assistance will be on strengthening the diversification of the economy and addressing broader social, environmental, community and area-based issues. EC support is envisaged for the strategic objectives 1 and 2. This support will complement the GoRTT PSIP and operational budget support for the sector.

In 2007 the GoRTT intends to take preparatory steps to adjust its capacity to use the package of assistance that will become available over the seven year period. In this context, Trinidad and Tobago will carry out early actions that will address the most immediate effects of the adaptation process and build the confidence and commitment of stakeholders to the long-term objectives of the country strategy.

In 2007 a Project Coordination Unit (PCU) will be established to assist with the implementation of the activities. Activities during the year 2007 will include the completion of technical and development studies that will provide the basis for design and implementation of major priority activities under the country strategy from 2007 to 2013. In addition to these preparatory studies the country will undertake initial actions under the adaptation process including public awareness and sensitization campaigns in vulnerable communities to prepare them for the transition process, and support for schools in sugar-dependent communities to provide assistance to students and upgrade facilities. Finally, the financing proposal for 2007 will include provisions that would be precursors to year 2008-2010 activities and will serve to create an operational platform for accelerating the adaptation of the industry, as well as support for on-farm agricultural diversification in areas that may be affected by the adaptation process.