THE UNIVERSITY OF THE WEST INDIES

University Position Paper

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A FRAMEWORK FOR NATIONAL DEVELOPMENT: CARONI TRANSFORMATION PROCESS

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FOREWORD

On April 27th 2003, a seminar entitled 'Caroni Lands: Sustainable Development' was held at the UWI St Augustine Campus. The seminar invited participants from the national community to talk about ways in which the newly opened Caroni (1975) Ltd. lands could best be developed. There were strong calls from participants encouraging the University to declare a position on the Caroni Transformation Process. This Position Paper is a response to that call. It comprises the perspectives of over fifty persons, in the main, University lecturers.

This Position is not a reflection of the contributions of individual members of the University; it encapsulates a corporate vision. It is important for the University, as a regional institution, to articulate its vision: to guide, to propose and to check. This paper is therefore directed to all citizens and institutions interested in developmental issues.

This document is divided into three parts.

Chapters One and Two are introductory; they explain the terminology used in the document, and describe the historical context of the Caroni Transformation Process.

Chapters Three, Four and Five present a framework for development, followed by Guidelines and Preconditions for development.

Chapter Six provides Proposals for specific sectors; they are examples of projects which may be implemented on the Caroni lands and are subject to modification.

The University acknowledges with deep gratitude those persons who willingly gave of their time to this very important national issue.

INTRODUCTION

The fundamental assumption of this position paper is that Trinidad and Tobago, like many vulnerable states in the region, is a nation under threat. There is a gradual withering away of the powers and authority of the State, a weakening of its ability to act cohesively and decisively in the nation's favour. The Republican State of Trinidad and Tobago is being forced to "roll back" to accommodate the international drive of conquest trading. The pressures on governments are telling. The State is finding it increasingly difficult to safeguard the institutions of health, education, shelter and security. This is not only the State's failing, but also the people's failing. There is a common negligence of thinking; few can be bothered to think stubbornly, incisively, profoundly about genuine possibilities for renewal and reconstruction.

This document proposes a number of guidelines for how a process of reconstruction may begin. It proposes a reformation of outlook. It proposes a method of strategic intervention, using modular planning and platform building. It proposes that the State use portions of the newly opened lands of Caroni (1975) Ltd. to develop a number of key projects which may be used as bases for reconstruction of the Caroni to Point Fortin region, as well as in Trinidad and Tobago and the Caribbean.

One fundamental pre-condition for reconstruction is a redefinition of the national outlook. This position document proposes the concept of *the heterogeneous outlook*. The heterogeneous outlook respects the presence and integrity of the small, the vulnerable and the diverse. It recognizes the importance of a diversified agricultural and industrial production regime, which will create a greater range of market choices. In education, it represents the appreciation of the presence and integrity of different learning styles, and therefore of different forms of educational institutions. In shelter, it means the recognition of the presence and integrity of untenured residents and their descendants. For the ecology, it recognises the presence and integrity of cycles of water, soil and air, and of plant and animal species. This outlook is a way of viewing each of our particular selves and our particular spaces as a small feature of a larger, grander national pattern.

But heterogeneity is more than just a way of regarding ourselves. The heterogeneous outlook is also a method of resistance to international agendas that threaten *to homogenise* the diverse fabric of the nation. Homogenisation is the very opposite of heterogeneity. To homogenise is to take diverse elements and make them alike in nature. It is to take diverse identities and make them uniform in disposition. It is to take recalcitrant denominations and convert them into controllable ones. Homogenisation is the instrument of global authoritarianism; it seeks to convert the nation and its peoples to larger fractions, for easier control and capitulation.

This Position Paper is urging immense care and forethought in planning the Caroni Transformation Process. It urges a comprehensive and profound review of options. It urges the establishment of a number of preconditions before any act of implementation may take place. It urges an altered measure for defining national wealth: GDP 'account sheet' figures have been the historical measure for defining wealth; the definition must now include wealth flows generated by less abstract capital stocks - the institutional, the human, the ecological. It urges that the State fortify itself through national consultation, to resume its constitutionally granted authority to act decisively in the national favour.

CHAPTER ONE
Objective and Definitions

1.1 OBJECTIVE

To outline, for **the people** of Trinidad and Tobago, **a framework** for the **development** of our **national resources,** and to illustrate how this framework may be used to develop the lands of **Caroni (1975) Limited**.

1.2 DEFINITIONS

1.2.1 THE PEOPLE

The dense speciation of groups and cultures which have continually arrived over the past four hundred years and continuously engaged in social and cultural interchange. The people also include the future generations of these arrivants.

1.2.2 A FRAMEWORK

This document is a framework, not a plan. It is an ordered series of guidelines developed to inform a plan of action, in this case the orderly movement of the nation into the future.

1.2.3 NATIONAL DEVELOPMENT

The articulation and provision of the needs of present generations and of the ecological system, without endangering the ability of future generations, or the ecological system, to meet their needs.

1.2.4 NATIONAL RESOURCES: COMMON SOURCES OF WEALTH

This document defines two categories of national resources:

The Ecological

The soil, water, air systems; and the vegetation, animal, microbial cultures. Each has its peculiar evolutionary history. Each of these systems/cultures is discrete yet they are interdependent.

The Anthropological

The complex cultural, institutional and physical systems that provide security and growth for human life. These systems are internally as well as externally competitive. Internally, groups vie for valued resources and

goods. Externally, international factors invade national boundaries vying for valued resources. Both internal and external competition may weaken vulnerable social and political systems leaving human life insecure and stultified. Additionally, anthropological systems exert pressures on the environment, which weaken or ruin ecological systems/cultures.

These ecological and anthropological resources constitute social capital, public goods, the most valuable assets owned by the nation - common sources of wealth.

1.3 CARONI (1975) LTD.

1.3.1 GENERAL HISTORY

The history of sugar production at Caroni dates back to the 17th century, although Trinidad's first mill was installed in 1787. By 1900, fifty factories were operating in Trinidad but over a seventy-eight year period, that number dwindled to four. Today Caroni (1975) Ltd. is the country's sole producer of sugar, operating two factories.

What is now Caroni (1975) Ltd. was in 1924 known as the Caroni Sugar Estates (Trinidad) Ltd. and later in 1937 under the new owners Tate & Lyle Ltd. – a U.K. registered company – as Caroni Ltd. Under Tate & Lyle Ltd. the company expanded until by 1957 it obtained control of most of Trinidad's cane production.

In 1970, the Government of Trinidad & Tobago procured 51% of Caroni Ltd.'s shares and a further 4% by 1975, the same year in which the Government registered a new Company, Caroni (1975) Ltd. In 1976 the newly registered company bought the entire shareholding of Caroni Ltd.

In November 1978, all the assets of Caroni Ltd., were transferred to Caroni (1975) Ltd. and under Act No. 40 of 1978, Caroni (1975) Ltd. gained control of Caroni Ltd.'s liabilities and undertakings. (Caroni Ltd. was eventually dissolved.)

1.3.2 HUMAN RESOURCES

Approximately 10,000 workers comprise the Caroni (1975) Ltd. labour force, which can be generally classified into five groups: professionals, technicians, administrative/supervisory, skilled labour, and unskilled labour.

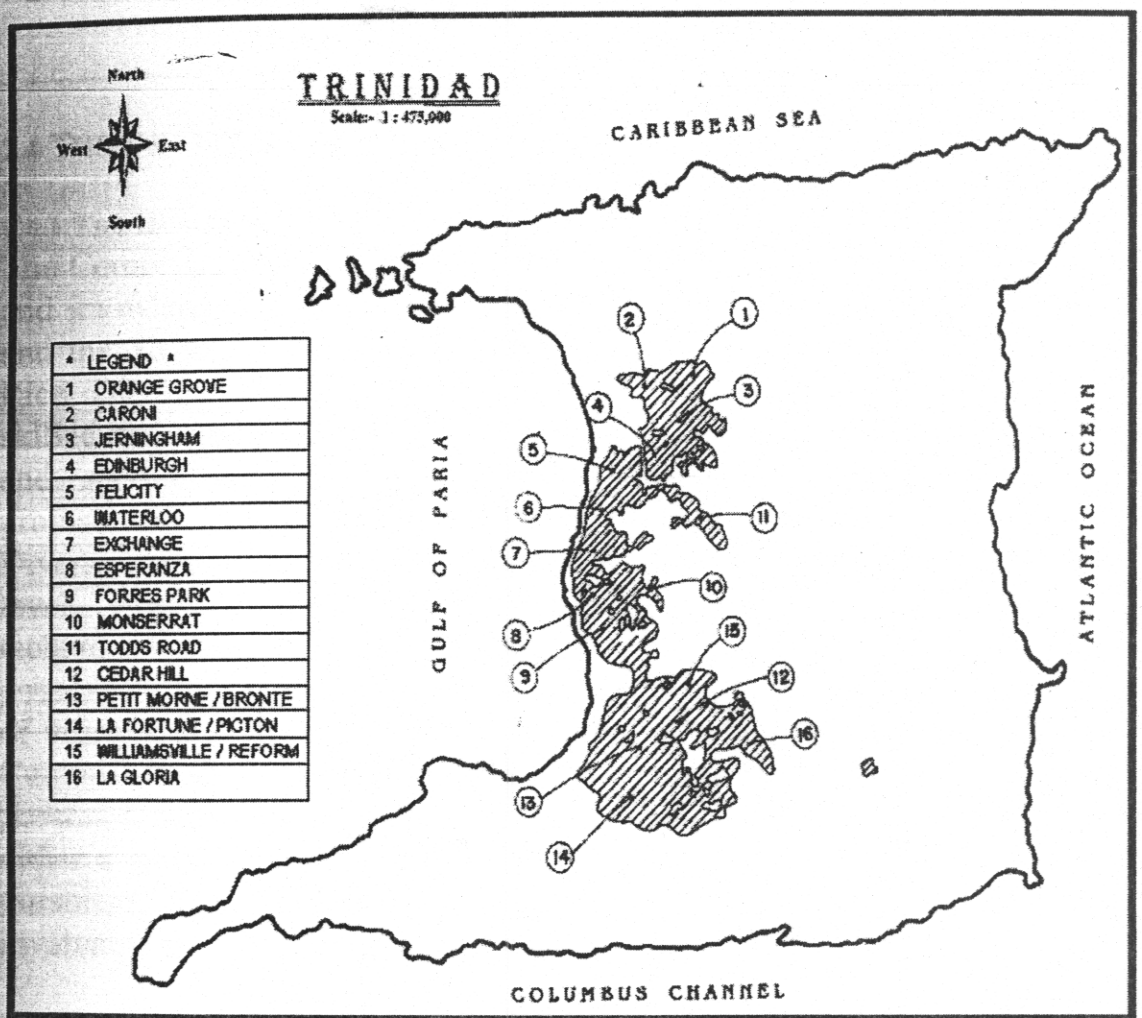
The Table[1] below shows employee distribution during the height of sugar operations, in addition to the number of persons employed in the Company's diversification programme, for 2002.

CATEGORIES	NO. OF EMPLOYEES
Factories	1800
Refinery	226
Citrus	537
Distillery	98
T & FED	542
Services	602
Rice	53
Beef	89
Dairy	27
Cane Cultivation	5032
Cane Farming	461
Transport	230
TOTAL	**9697**

[1] Statistical Information obtained from Table 15 [Sequencing of the Manpower Separation Programme] of the 2002 Report of the Committee on the Future Direction of Caroni (1975) Ltd.

1.3.3 Location

Below is a map of Trinidad showing the total area comprising the Caroni (1975) Ltd. lands.



Source: The Report of the Committee on the Future Direction of Caroni (1975) Ltd.

1.3.4 Acreage And Current Land Use Statistics

Caroni (1975) Ltd. possesses approximately 74,000 acres of land. The table and graph in Appendix 1 and Appendix 2 respectively detail the Company's current land allocation/usage scheme.

1.3.5 Known Planned Activities

The downsizing of the sugar industry will leave approximately 25,000 acres of land free for development. The State is currently in the process of planning for or executing infrastructural development on approximately 11,000 acres. Lease and tenure arrangements are being managed by the

Estate Management and Business Development Company Ltd. and the Cabinet. These lands will be devoted to Heavy Industry, in Point Lisas North, and perhaps South; Light Industry; and Residential, Commercial, and Agricultural lots. (See Appendices 3 and 4).

1.4 The Importance Of Caroni (1975) Ltd.

1.4.1 The Human Resources

The Company possesses an enormous diversity of skills, talents, experience and knowledge: researchers and scientists in the Caroni Research Station and the Sugar Cane Feed Center; managers and technicians in the Citrus, Rice, Distillery, Dairy, Beef, Sugar, Engineering and Transport divisions; skilled and semi-skilled agriculturists; and a corpus of independent farmers and service companies which have supported the institution. Many professionals who laboured long and hard to plan Caroni (1975) Ltd. Diversification Projects have become sceptical and wary; but at the ground level, where implementation has suffered enormously, the managers, technicians and other workers have learnt what is feasible, practicable and possible. Additionally, these human resources are mainly based in a cluster of villages and small towns, which have grown out of the sugar industry. Culturally and economically, they are Sugar Belt villages and towns. They possess a number of agriculturists involved in small, integrated farming on either a subsistence or competitive basis. This disposition for agricultural pursuits is a rare quality in a heavy industrial environment; it constitutes an invaluable stock of wealth.

1.4.2 Plant And Infrastructure

The second stock of wealth of Caroni (1975) Ltd is its existing plant and infrastructure capacity. It owns two sugar factories and a sugar refinery; a well-organized, technologically enhanced sugar factory may produce a number of industrial, value-added products from the sugar stalk. It possesses farmland and industrial infrastructure; depleted or ongoing uncompetitive enterprises - for example, in teak and mahogany; tree crop or food crop farming; inland fisheries; livestock; the distillery; animal feeds; sugar refining – may be reconstructed or invigorated. The physical infrastructure also includes a dense grid of trace/road networks, ponds, airstrips, administrative and farm buildings, scale-yards, vehicles and engineering

equipment, port facilities, and semi-developed irrigation systems in certain areas.

1.4.3 The Land

Land is the resource base upon which a nation's anthropological and ecological stock of wealth is founded, secured and sustained. Dr Mary Alkins-Koo, a lecturer in the Faculty of Agriculture and Natural Sciences at the University of the West Indies, refers to land as "a vertical asset": it encompasses the biosphere above it, the soil and terrain, the surface water and water table, the plant and animal populations, and the human infrastructure patterns. If the Caroni lands are used judiciously they will bring invaluable wealth flows to the people of Trinidad and Tobago.

Mr. Uthara Rao, the chairman of the Estate Management and Business Development Company Ltd., a company appointed by Government to oversee the land assets of Caroni, names Caroni (1975) Ltd. as "the richest company in Trinidad and Tobago," in terms of its command of land resources. The Caroni lands interlock over forty villages and towns. Both from the anthropological point of view (that is, its potential for the development of man-made social and economic systems and structures), and the ecological (that is, its potential for the development of plant, animal and microbial habitats) the land is invaluable. The land is port land, lying directly on, or next to, a placid waterfront stretch of thirty miles between the Point Fortin, Petrotrin, Claxton Bay and Point Lisas ports. The Point Lisas Industrial Estate, with its international port, was once Caroni land; at Felicity the land runs along the waterfront. The Caroni lands is also a watershed area, a basin channelling the Caroni, Guayama, Couva, Guaracara and Oropuche rivers and their tributaries, from the Northern and Central Ranges to the sea, and forming a natural extension to the Caroni and Oropuche wetlands to the North and South.

The Caroni lands are of immense strategic significance; they may be used to enhance the nation's anthropological and ecological stocks of wealth, or to weaken them. If the leases for these valuable port lands are stringently devised, lease income may be used to support and invigorate a number of projects on the lands, which may be built into platforms for institutional sector reform, nationally.

CHAPTER TWO
Caroni Lands: The Historical Context and the Historical Model

2.1 The Historical Context

The emergence of the sugar industry in the Caribbean in the 18th century was not unproblematic. The attempt to develop competitive agrarian systems suitable to West Indian conditions was long and arduous. Settlers had been trying with a number of crops before the advent of sugar. Once sugar was recognized as the viable and lucrative option, there were problems of forest clearance, developing the right agrarian systems, the best sugar cane variety, developing suitable technology, and of finding labour. A number of problems haunted the industry throughout its career: soil erosion, soil nutrient depletion, labour problems, competition, and technology adjustment.

In Trinidad, in the mid 1970's the industry relented to a number of terms and conditions demanded by the sugar unions. Increased labour costs and a decline in the international fortunes of sugar would irremediably change the history of the industry. Did the nationals who were now called in to manage really appreciate the complexity and magnitude of the work before them? Could they accurately interpret the international picture? Did they possess the foresight, the operational skills and savvy required to compete in a globally competitive industry?

2.1.1 Reasons For Demise

A panoply of plans attest to the long and tortuous history of Caroni (1975) Ltd., over the last quarter of a century. At almost every juncture the promise of plans turned into an escapade into futility. The attempts at diversification, particularly of the Orange Grove section, read like an act in a national tragedy. The citrus, the rice, the rum and the livestock sectors never made a profit and were continuously bedevilled by problems. The following are some the reasons many have attributed to the demise of the Company.

- The decline in the international sugar market
- A failure by the state to implement plans

- A failure by management and middle management to properly implement plans
- Managerial salaries and benefits too high for agriculture sector
- The difficulty of managing such a large acreage of land
- The difficulty of instilling the regime of discipline on a workforce which was protected by a managerial and industrial relations policy based on benevolence
- The difficulty of encouraging workers to work efficiently and meet targets in a paternalistic state enterprise
- Lack of crop-specific managerial expertise (most managers were drawn from sugar) to manage the diversified sector
- Poor pre-planning and research before embarking on new ventures
- Poor support and marketing structures to develop assured markets
- Claims of a conspiracy by lending agencies and their operatives to mismanage in order to win more "bail out" loan contracts
- Technical problems: declining technologies, crop and animal disease, poor soils, lack of irrigation, poor yields, limited funding for research, prædial larceny, wrong crop types, lack of consultation with workers, shortage of scientific management and practice in agriculture.

A key reason for failure was poor or improper implementation. It seems unlikely that any plan for enterprise restructuring in the sugar or diversified sectors at Caroni will be successful without a radical re-conceptualisation of implementation strategy.

2.2 THE HISTORICAL PLANNING MODEL

The Caroni Transformation Process is being governed by the assumptions of two plans: the first, the Total Separation Enhancement Plan (TSEP) and the second, the Future Direction of Caroni Ltd. Both are government plans. The first was produced in 2001 and the second in 2002.

The Total Separation Enhancement Plan (TSEP) of 2001called for a total shutdown of the operations of the sugar industry, with an enhanced separation package for workers. The following are the striking features of the Plan.

- It was economistic rather than developmental. It gave pre-eminent value to saving costs rather than using the assets of the Company for local (the Caroni-Point Fortin Coastal Corridor) or national development.

- It placed an inordinate reliance on externally-appointed market driven factors to rescue Caroni and bring unprofitable sectors to profitability. It did not consider the Caroni human resource base as a source for enterprise formations.

- It was lacking in equity. It was intent on withdrawing and disconnecting workers from the land, which provided a continuous or seasonal income, with a lump sum payment; and allocating the land to external investors to capitalize on, to accrue continuous income.

- It gave the workers no real choice. The plan was construed without consultation with the labour force. (Choice is a fundamental measure used to chart equity, transparency and national development). The plan was intended to be sold to the labour force through propaganda; in part it read, "The well-crafted media strategy to capture the national community and specifically the targeted audience must be developed." The "targeted audience" here refers to the workers; in short, the plan was advocating that the workers should be fooled.

- It undervalued the assets of Caroni (1975) Ltd. This was true, not only of the workers, but the land. The value of port land, in an area favourable to gas-based enterprises, could accrue returns through lease-income that could be used to fund national development programs on State land.

- Its plans for agriculture were ill-devised. It did not sufficiently consider the array of pre-conditions, for example soil enhancement, irrigation, agricultural skills base, and feasible management systems, as preconditions for competitive successful agriculture.

- It gave token consideration to the Ecology of the area. The Caroni lands are denuded of tree cover. Their surface water is the most contaminated in Trinidad and Tobago, and possibly the Caribbean. (See Appendix 5). The coastal area is degraded. These circumstances were not seriously treated in the Plan.

- The plan was lacking in vision. In the section 'Final Recommendations' it states: "The Sugar Industry in Trinidad has long outlived its usefulness and has no place in a modern knowledge driven economy." Is Trinidad and Tobago a modern knowledge driven economy? Where are the knowledge base and the labs for converting the sugar cane stalk to productive modern uses, pharmaceuticals, food ingredients, fuel additives etc? Where is the research on genetics and biotechnology to convert a high-fibre yielding product such as the sugar cane into agro-industrial products? In any economy, knowledge must be used to create or develop technologies for exploiting natural resources in order to generate social and economic wealth flows.

The 2002 'Future Direction of Caroni (1975) Limited' was fashioned after the same imperatives: cost cutting without sufficient attention to local or national development; the undervaluing of the labour force and the land; the excessive reliance on externally-appointed, market driven entities to rescue the Treasury; the absence of serious attention to preconditions for successful, competitive agriculture; and cursory attention to the Ecology of the area.

However, this later Plan called for a downsizing rather than a total shutdown of the sugar industry. Additionally, it strongly recommended a **phasing** of the closure of part of the sugar industry, detailing a statistically elaborate plan for closure in 2007.

The current Caroni Transformation Process is following the TSEP Plan with the significant exception that it is downsizing the industry rather than totally closing it down. It is following selected aspects of the Future Direction Plan.

It completely ignores the phasing recommendation of the 'Future Direction' Plan.

The current Caroni Transformational Process is about converting national assets into private assets. In the main, it is serving interests who wish to generate private capital from public wealth stocks; for this reason, the current Process is exploitative and fraught with inequity. This is nothing new. The current Process is being driven by an exploitative historical model of development. This claim may best be verified by illustrating the manner in which the product of these two plans, the current Process, is being driven by the historical model.

2.2.1 Elements Of The Historical Model

This historical model, which date to the beginnings of European expansion into the Americas, may be understood by reference to the ways in which privileged entities (European monarchs, mercantilist companies, corporate patrons) have undertaken the control and divestment of "new" lands (conquests by Requisition, threats, self-entitling leases) or "native" labour (rural/agrarian labour in Ireland, China, India, Africa) in order to exploit lucrative stocks. The following elements of the historical model may be observed in the current restructuring drive.

Enterprise conception

The enterprise is conceived to control land space. To control land space, especially select portions close to the port, is to control the socio-economic agenda.

Land acquisition

Land is leased on gratuitous terms, ninety-nine years for example, without publication of terms of lease or tenure. This leaves the process open to political and economic opportunism and speculation. Soldiers of fortune are repaid for services to Crown, Corporation, or Cabinet.

Propaganda

The enterprise is sold through propaganda, using leaflets and newspapers, promising jobs and security. The rhetoric of sustainable development, ecological care and agricultural development is applied to imply security for all.

Establishment of Plant

Factories, depots, malls et cetera are established through a servant company: a functionary or operative acting on behalf of Royal, Corporate, or Cabinet interest. Leases and investments are directly controlled through Crown, Corporate, or Cabinet rule.

The Establishment of a Labour Pool

A labour pool is contracted through direct importation into the area, or through eviction/retrenching of labour from economic units which have become dysfunctional.

Minimal Training

Minimal training, sometimes called "re-tooling", is provided to ensure subsistence living and dependence. The descendents of the new enterprise managers remain outside, protected from the re-tooling process.

Compliant Education

Education is of a certain type; it produces jobless graduates who inevitably gravitate towards servicing the corporate sectors. In the modern situation, the State pays for the education bill thereby granting the Corporation a saving.

Minimal Housing

Housing is conceived in terms of projects, schemes, estates, and settlements, not of communities. In instances, the principle of fitting as many heads to acres is applied. This saves the Corporation an extended cost. Many "labour pool" settlements are architecturally unpleasant or unhealthy and/or ecologically ruinous.

Wealth extraction

Wealth flow is defined in monetary GDP terms; rather than in terms of wealth flows to human, or institutional or ecological stocks. It is based on monocultural stock, for example sugar or oil or gas. The success of this stock on the international markets encourages rapid investment which rapidly withdraws when the currency of the stock declines, leaving classes of persons psychologically and economically dependent.

The historical model is being excruciatingly exacted on the Caroni lands: the current transformation process clones the historical model. If this model is allowed to prevail, through Corporate and Cabinet prerogative, the stock of wealth of the Caroni lands will not flow to the people to Trinidad and

Tobago. The statistics show that the lowest income households in Trinidad and Tobago are those in Nariva/Mayaro and Point Fortin. In a Government survey conducted in 2000, of the fourteen districts surveyed, the Average Gross Monthly Household Income for these areas were the lowest. Rural districts have been unable to access the superabundance of wealth that exists within the one or two mile radius of their habitat. If this model persists, rural security will continue to decline. Agriculture will continue to be neglected. Soil, water and air systems will continue to be degraded. The ecological system of Trinidad and Tobago will face continued threat. Housing and education achievement for the vulnerable classes will continue to be low. Crime will continue to flourish and demoralise the nation.

The question is: how can the resources of Caroni (1975) Ltd. be developed to secure the needs of present human and ecological systems without compromising the needs of future generations of human and ecological systems? What form of planning outlook, perspective, or framework should we employ to guide the planning process? The following chapter proposes an altered framework for development.

CHAPTER THREE
A Framework For Development

3.1 The Problem: Development vs. Realpolitiks

The discovery of new lands west of the Atlantic gave Western Europe an immediate management headache. After the initial push westwards by sailors, soldiers and clergy, something more was required. The Western European states moved urgently to consolidate the nationalist state, national banks, corporate trading ventures, and well-organized navies and militias. The earliest wealth was garnered in the form of bullion, mined ores and precious metals. Then came the establishment of plantation economies; in due course, a monocrop platform was built in the Caribbean and sugar became the chief source of wealth. In Trinidad, in the liberal trade atmosphere of the late 19th century, huge investments were made in clearing land and establishing new factories and technologies. For a brief period at the beginning of the 20th Century, cocoa was king. Today, the new Trinidad and Tobago stock is oil and gas. Over the course of the last century, European and USA governments, and their banks and corporate trading ventures have reorganised to exploit this vital industrial primer.

3.1.1 The Vulnerability Of Caribbean Ecological Stocks

There is much talk coming mainly from Europe and the United States about saving ecological stocks, investing in the future. The question is "Whose future?" Do those movements which lobby on behalf of the Green Agenda have a say, when push comes to shove, in controlling the international agendas of their own states, banks and corporate sectors? Will they have a say in the future? The rhetoric of sustainability has already been co-opted to suit the advertising campaigns of the oil and gas lobby. It may be that when Caribbean and Latin American peoples move towards preserving ecological stocks, they are doing so, not for the future of their own generations, but for the future of others. The ecological stocks of the Caribbean may be the new source of wealth for the metropolitan centres in the future. There is a real possibility that the soil, water and food stocks of the United States and Britain in particular may suffer nuclear, biological and chemical fallout; in these nations, planning measures to forestall this are being strongly pursued.

3.1.2 The Vulnerability Of Sustainability

The point is not that sustainable development needs to be abandoned, but that it needs to acknowledge its vulnerability in the face of global and local

realpolitiks. The two recent plans by two successive governments illustrate that the private sector, the heavy industrialist, house developers, the commercial merchants, the manufacturers, and the venture entrepreneurs have been given the responsibility of leading the development charge on the newly opened Caroni Lands. The second plan, commissioned by the current Government in February 2002, does strive for a more sustainable outcome in respect of the retrenchment of 10,000 workers of Caroni (1975) Ltd. It calls for phased restructuring and phased de-hiring. While the first part of this plan, giving private enterprise the lead role, is in the process of being implemented, the five-year phased de-hiring recommendation, a more sustainable principle recommended by the authors of the plan, is being ignored. The state has circumvented its own plan. On August 2nd 2003, thousands of workers will not be returning to work at Caroni (1975) Ltd. The sustainability argument is no match for realpolitiks. Realpolitiks, using the rhetoric of sustainability, ignore real sustainability.

3.1.3 Contradictions And Inconsistencies

In the study 'The Regulation of the Barbados Sugar Industry' the authors state: "Understanding the relationship between capitalist dynamics and unsustainable outcomes may provide a practically adequate explanation of why development tends to be conditioned to the unsustainable." Is the State's policy of giving the lead to market driven sectors and rolling back itself going to inevitably lead to unsustainable outcomes?

Ramesh Ramsaran, in his paper *Structural Adjustment in the Commonwealth Caribbean*, concludes: "The role of government, education policy, the exchange rate regime, strategies for the manufacturing and agricultural sectors, policies for sustained growth and improved living conditions etc remain far from clear in a context where the thinking space has been yielded to external actors with an unconvincing record, and local functionaries are reduced to parroting inarticulate rhetoric that is often riddled with contradictions and inconsistencies." Has the Republican state of Trinidad and Tobago yielded up developmental activity to "external actors"? Have local state officials simply become the functionaries of "external actors", the historical cabal of banks and corporate traders?

Norman Girvan states: "For the reality of globalisation is that the game of global competition is not among equals. It is dominated by giant firms, backed by their governments, who have set rules or their own benefit."

The Caroni Transformation Process has led this nation to an important historical juncture. Will our peoples allow the Caroni (1975) Ltd. lands to become a platform for "the game of global competition" or will they assert that this land must be used by the people, for the people, in the interest of the future of our people? Will the rules of international competition afford growth and security for our ecological stocks of land, soil, water, vegetation, and animal life?

3.2 An Altered Perspective For Development

3.2.1 Diversity As Wealth

Diversity is tangible wealth. In Trinidad and Tobago, our history of continual human arrival on a relatively limited land space has resulted in a dense genetic and anthropological stock. Our anthropological, topographical and zoological stocks are very dense and richly accumulated. Therefore, diversity is a capital stock, which may be held in reserve, secured and developed for the benefits of the variegated constituents of the country, or traded in. The bid for this stock is becoming increasingly urgent – this bid comes in the form of the homogenising demands of trade liberalisation. Homogenisation is the conversion of diversity into bigger more universally manageable fractions, so they may be more purchasable, or the human component of the stock may purchase more. Homogenisation aims at the reduction of lifestyles, tastes, and cultural and economic forms into larger fractions. It aims at the absorption of the small diversified units into larger, more absorbable ones. Densely variegated anthropological and ecological systems pose a fundamental obstacle to the homogenising principle of trade liberalisation.

3.2.2 The Heterogeneous Principle

The principle which secures the capital stock of diversity, the very opposite of homogenisation, is the heterogeneous principle. This principle views diversity as a stock of common wealth, to be secured and developed for the benefit of the constituent components of the variegated anthropological and ecological system, rather than be traded in. This principle defines an outlook: diversity is not to be traded in, but it should be held in reserve as social capital and as common wealth. It asserts that the forces, which drive the use of this stock, must be internally driven, rather than externally controlled. It argues that diversity is a more resistant and hardy currency for

challenging the homogenising global environment. It advocates the balanced and simultaneous development of all the common stocks of wealth: the human, the institutional, and the ecological. It argues for a central outlook where all the inhabitants of the nation state – the plethora of zoological forms and the ecological cycles of water, soil and air – must be taken into the account books of national development.

3.2.3 Heterogeneity And Globalisation

Globalisation implies heterogeneity. It means the sharing of cultures, markets, political traditions, fashions, tastes, globally. However, many North Atlantic nations, using international institutions devised to protect the interests of vulnerable and small states, are using globalisation to homogenize markets, political traditions, cultures, tastes, fashions. Fortunately, Trinidad and Tobago possesses one of the most diversely speciated animal and plant cultures on the planet. Because of our geographical location, one square inch of soil, or of tree bark, yields a dense speciation of microbial life. Because of our historical circumstances the human population is diverse. These heterogeneous stocks must be protected; they provide bases to counter agendas that are using globalisation in order to homogenize and control.

How can this theoretical position help in the Caroni Transformation Process?

3.3 Application Of Altered Perspective To The Caroni Process

The following are some of the ways in which the principle of heterogeneity may be applied to the Caroni Transformation Process.

a. The process must be a shared one. It must guard against undue and disproportionate influence of Corporate and Cabinet powers. It must be shared between the diverse stakeholders: the densely variegated Caroni workforce; the sugar cane farmers; the residents of the North South Coastal Corridor; the untenured residents and agriculturists; the Trade Unions; the communities of manufacturers, farmers, industrialists; all the State entities including the Ministries, the Town and Country planners, and the Opposition Party; civic institutions, particularly those involved in research and developmental planning.

This is a necessary prerequisite to guard against distrust in the process and disorderly transfer into the future.

b. The process must be geared towards genuine product diversification in the agricultural and industrial sectors, and towards creating integration between sectors.

c. The process must strategically continue the diversification process already started on the Caroni lands. Chapter Four of this Position Paper outlines a process **from** strategic continuity, strategic intervention, and modular planning, **to** platform building, cluster formation and exponential growth.

d. The process must take into account the vulnerability and integrity of the diverse human and ecological stocks in the area - the workforce, the natural cycles, plant and animal cultures.

e. The process must balance the need for diverse land usage with the permanent need to protect varieties of soil classes for national food, beverage and water security.

f. The process must regard the Caroni lands as a national asset, available to diverse sections of the national community, and must make mechanisms for migration into the area equitable and transparent.

g. The process must diversify its strategy with respect to the balance between rural and urban development; rural development has, in the main, been neglected in Trinidad and Tobago.

h. The process must be geared towards building diversified platforms upon which to launch growth in diverse economic and social institutions. (See Chapter Six, Proposals).

3.4 Funding For Diversified Platforms: Lease Income Funding Enterprise

The national assets of the Caroni lands should be used, in the main, for national reconstruction, for developing projects that assist the nation as a whole. In the current Caroni Transformation Process the State has broken the flow of wealth between the land and ten thousand Caroni workers; it is in the process of re-connecting this flow to private capital. Whilst it should be using the national assets of Caroni to build national assets, it is using them to

enrich private property. It may be argued that private capital alone has the assets required for reconstruction. This is far from a factual. Lease income from lucrative port lands could be used to fund a number of national projects. A Lease Income Funding Enterprise (LIFE) system may be established to offer loans to Caroni workers, or others, to establish small or medium sized enterprises. Income from ninety-nine year leases could guarantee long-term developmental funding for the national projects proposed in Chapter Six. These projects, A Botanical Plan, a Model Education Plan, a Model Community Plan, a Buffalo Reconstruction Programme, A Food Park Plan, and a Sugar Industrial Diversification Plan could all be funded by lease income.

Additionally, the funding of projects may be acquired through joint ventures with investors in the oil and gas sector. It is a phenomenon, unique in the history of the modern world, to have a small island nation possess such ample reserves of natural gas and oil. The risk of ecological degradation to limited land, sea and atmospheric spaces are enormous. It is essential that the costs of securing and buffering ecological stocks be shared between the State and the investors. Green taxes levied on investors may seem punitive; joint ventures may be the best way to engage investors in the co-funding of educational and environmental programs.

The Guidelines, Preconditions and Proposals in the next three chapters provide a framework for development of the Caroni lands based on the Altered Perspective For National Development presented in this Chapter.

CHAPTER FOUR
Guidelines

4.1 The Need For Guiding Principles

The continued withdrawal and dismantling of the local managerial apparatus of Caroni (1975) Ltd., and the vesting of the lands in the State, and new state-guided apparatus, have led to the following circumstances:

- The state has become the chief driver in the Caroni dismantling and re-allocation process.
- All the assets and stocks – land, plant, diversification projects, knowledge and research bank, human, ecological systems of Caroni (1975) Ltd. now remain exposed and open for use: re-allocation or shutdown.

Thus far, the State has not acknowledged that it is following the TSEP and Future Direction plans. Besides newspaper advertisements propagandising the Enhanced Separation Plan for workers, and media interviews by the Minister of Agriculture, Land and Marine Resources, no document detailing plans or measures has been brought into the domain of the Parliament or the public. The Guidelines, Preconditions and Proposals, which follow in this and in Chapters Five and Six, are designed to challenge the State and the Public to think anew about the Caroni Transformation Process.

4.2 Guidelines For The Caroni Transformation Process

4.2.1 Strategic Continuity

Planning may occur in leaps and starts, but implementation is an incremental process. Although bold action may be taken in policy direction, by the state or by planning agencies, the social capital on the ground, the fund of human resources, institutional capital, ecological stocks, cannot be modified overnight. Strategic continuity refers to the scientific absorption of the viable and creative elements of the old enterprise, into the new planning and implementation processes.

Application to Caroni Transformation Processes

- Analysis of Strengths: identification of systems, processes and ideas developed in Caroni (1975) Ltd., which may have been alienated in the old state/board managed structure, but which will be viable in the new post-Caroni framework. Many ideas developed at Caroni (1975) Ltd. required long periods of gestation, involved many years of arduous work, often by visionary individuals or groups isolated and alienated within the old structures. This relates especially to the projects and plans of the Sugar Cane Feed Centre, the Caroni Research Station, and the viable ideas, systems and processes developed by workers and managers, particularly in the rum, milling, refining and diversified sectors

- Entrepreneurial and skills selection: the development of a human resource registry to determine potential, skills, needs, levels of willingness and commitment to potential enterprise formations

- Detailed soil capability and land use analyses: to determine stock of valuable soils, and best land use plans

- Detailed profiles and analyses of plant and diversified sectors

- Detailed profiling of the trade union sectors: to exploit managerial skills, ideas, potential to lead or assist potential enterprise formations

It is important to stress the incalculable value of genuine consultation, on-the-ground conversation, as the basis for the crystallisation of ideas, which will guide new policy and implementation.

4.2.2 STRATEGIC INTERVENTION

Attempts to change anthropological structures, the cultural, social, and economic milieu, suddenly and on a large scale, may lead to chaos. In order to ensure orderly transfer into the future, it is necessary to intervene at strategic points, take potentially progressive units of the old structures and invest and redirect them within the framework of the altered model.

Application to Caroni Transformation Process

- Selection of key sectors for growth. Dedicated research, guided by clear criteria for local and national development will point to the sectors of Caroni (1975) Ltd. which may be targeted for investment and growth. Largeness of scope, based on the example of the past at Caroni (1975) Ltd., is a recipe for failure. Strategic selection of small to medium sized sectors will focus entrepreneurial and managerial energies and optimise human, land and plant resources.

- The reasons for developing each sector must be clear. Sectors may be developed for different reasons. Sectors already on the ground have achieved different levels of maturity; or have been beset by particular difficulties. Sectors have different growth rates, and achieve market competitiveness at different rates. It is therefore important to be extremely scientific in selecting key sectors.

4.2.3 Modular Planning

This refers to the taking of already established potentially progressive units, investing and redirecting them, using them as models for development in particular sectors, for example, in agriculture and industry. Model structures use model individuals, model processes and programs, and act as visible, pedagogical instruments for change. The advantages of modular planning are as follows:

- Modular structures use plant, people, processes and programs at the micro level; since these structures are small, they avoid large errors in planning.

- They are visible. They illustrate to planners, persons involved in common sectors, and people in general what is possible. The concept is future driven.

- They operate within controlled environments and are more amenable to adjustments.

- They may encourage public participation and develop critical thinking about enterprises involved in common sectors.

- They encourage an incremental approach to development, starting small, but later developing into possible cluster formations.

- The discreteness, which a particular plant, process or programme, offers may make it easier to source funding, or grants.

- Models may bring together the best-suited or rare individuals, processes, programmes and plant architecture.

Application to Caroni Transformation Process

Over the years, a number of fledgling enterprises started by Caroni (1975) Ltd. have been abandoned through lack of support or managerial expertise. A range of projects remains shelved. Modular planning, co-sponsored by the state and business participants, bringing together experts, original-idea persons, and adequate support structures, may be used to develop small enterprises, until they can mature and become competitive or become drivers (for example in education, training, health) for other sectors. Modular planning may also be employed in a number of areas within the diversified sector, for example, in selected livestock enterprises. (See Buffalypso Proposal, Chapter Six)

4.2.4 CLUSTERS

Successful models lead to the growth of similar structures and plants. In time, a number of plants burgeon, alongside related service and ancillary systems and plants, into cluster formations. Cluster formations are the basis of large scale, successful, competitive, indigenous enterprise on a global scale.

Application to the Caroni Transformation Process

- Caroni (1975) Ltd. itself was a cluster: it achieved a certain level of diversification; it brought together a number of villages, support services (transport, repair, engineering), self-employed individuals (bicycle repair, vendors, parlours), state and para-statal interests, local and international finance companies, and a number of allied buyers and sellers. It connected the international and the local, the urban and the rural, the industrial and the agricultural; it was a social unit.

- The problem with the Caroni (1975) Ltd. cluster is that it was based on a stock that was declining on the international market. The State and its appointed managers were using an aged and declining mother, sugar, to nurse a recalcitrant diversified sector. A cluster will only develop if it is based on internationally competitive stock. Or, in a

multi-sectored cluster, if one successful sector can provide support for the others.

- Target sectors, if well envisioned, managed, marketed, funded and stuck to with patience and will, achieve self-sufficiency. If these sectors burgeon into clusters, these clusters will become trans-regional and international and add to the stocks of wealth of the nation and the region.

4.2.5 PLATFORM

A platform is a base for exponential growth. A nation may devote a particular locality to develop a specific wealth-producing sector; as this local sector/model achieves incremental success, it becomes an agent for change at the national level, generating this change by example, association and momentum.

Application to the Caroni Transformation Process

- The North-South Coastal Corridor, within which the Caroni (1975) Ltd. lands are interlocked, is one of the fastest growing areas of economic activity in the Caribbean region. This growth is fuelled by industrial energy, and has led to marked expansion in the industrial and commercial sectors, in housing, and in suburban and urban areas. But this expansion has, in the main been characterised by ad hoc expansionism. This kind of carte blanche process cannot build a platform for development. It is ruinous to the environment, it privileges certain sectors, and it has gone ahead without corresponding growth in the public sectors: education, health, security, and public space development.

- The lands of Caroni (1975) Ltd. offer a unique opportunity for platform development, that is, the planned development of agriculture on a parallel and equitable basis with industry; the protecting and securing or rural spaces; the planned development of urban spaces; the sharing of entrepreneurial spaces among small, medium-sized and large enterprises; the provision of educational and training facilities to secure and drive human resource capital; the provision of architecturally creative, housing units and communities; the re-greening of exposed lands; and the provision of recreational spaces.

4.2.6 The Heterogeneous Outlook

The universal principle of heterogeneity is a weapon of resistance against homogenising monolithic, authoritarian structures such as colonialism or imperialism or neo-liberal trade. In Trinidad and Tobago, it finds its expression in the diversity of plant, animal and human cultures. Assertive developmental planning in Trinidad and Tobago must take into account the diverse means by which diverse groups and sub-groups have constructed wealth systems. Each system has its particular integrity and must be afforded space to grow and develop. Entrepreneurship is ubiquitous; it exists in many forms, at all levels. The heterogeneous outlook recognises the integrity of all these diverse elements within the national population; it also recognises the integrity of other diverse elements that constitute the national fabric: the cycles and systems of soil, vegetation, water, atmosphere, biotic and animal life.

Application to the Caroni Transformation Process

- Diversification is antithetical to the interest of large financial players. Lending agencies could accrue more gains from a failed Caroni, once its loans were guaranteed by the State, than from a successful diversified sector. Diversification deals with small economies, not large monocrop ones. But diversification of the food and beverage industry, for example, is beneficial to the people. It affords greater choice; develops the skills base of the production sector; caters for a multi-talented, multi-skilled workforce; and avoids failure on a massive scale. It affords a flexible, balanced diet. It caters for varieties of taste. It allows for optimum use of the varied soil capability. A number of small industries servicing a Food Park is preferable to a giant plantation structure, of the USA/Latin American variety, engaging in monocrop culture (See Chapter Six, Health Food Park). Staying small and staying diverse may not convert into a rewarding statistic on the GDP account sheets, but will tangibly augment national health. Diversification on the Caroni Lands is a prime expression of heterogeneity.

- The lands of Caroni (1975) Ltd., purchased with public finance, are a common stock of wealth. Homogeneity predisposes authority to think of stock as belonging to certain privileged or favoured sectors; heterogeneity predisposes authority to think of stock as shared. The heterogeneous outlook must take into account the security of all the key stakeholders in the area: the workers, the cane farmers, the

agricultural squatters and resident squatters, the support services industries, the trade unions, the new sugar company, the residents in the area, and the stocks belonging to the various diversified sectors.

4.2.7 INTER-GENERATIONAL TRANSFER

Inter-generational transfer is the key to development. The ideal of genuine development is to meet the needs of present generations and the ecological systems, without compromising the ability of future generations and ecological systems to meet their needs. This model asserts that development must shift its weight from being market driven to future driven. Logically, what this means is that future driven development for humans is children based development. Only the children are privileged to move on into the future.

Application to the Caroni Transformation Process

- The health, education, spiritual and social well being of children must be taken into account in all modes of development. It is paradoxical, that those who have the most interest in securing the future do not have the knowledge base or the experience to lobby for it. Though children may be substantially different from each other, their needs are basically the same. The urban, village, street and "squatter" child will all move off with one another into the future. Inequalities spawned today will be surely addressed with vengeance in the future. It is therefore essential that the state use the Caroni Lands for the development of shared educational spaces, shared social spaces, and shared health and leisure spaces. It is an accepted idea that the solutions of today are the problems of the future. Careful planning will make it less likely that future generations will suffer future shock; having to battle their way out of imbroglios which the current generation has created.

Thus far, this Position Paper has outlined a framework for national development, based on an altered model of development: on the principle of strategic continuity, strategic intervention, modular planning, platform building, cluster formation; and on the perspective of heterogeneity. The following chapter will focus on preconditions for the establishment of successful, competitive enterprises on the Caroni lands.

CHAPTER FIVE
Preconditions for Development

The following preconditions are indispensable for the establishment of successful, competitive enterprises in respect of [A] Land Use Planning, [B] Agriculture and [C] The Sugar Authority, the new entity charged with managing the St Madeleine Sugar Facility.

5.1 CONSULTATION

With respect to the management of lease and tenure for agricultural, housing, industrial and commercial lands, there appears be no key role for the Parliament or the Public. This is being managed via exchanges between the Cabinet and its servant company, the Estate Management and Business Development Company Ltd. To date there is no written plan, published or brought to Parliament. There is no written document outlining the conditions of lease and tenure for the Caroni lands. This is a dangerous manner of dealing with a huge, complex and difficult national issue; it is dangerous in ways that some members of Cabinet or the Estate Management and Business Development Company Ltd. may not be cognizant of. The danger is realised in the interpretation of the international picture.

With the advent of neo-liberalism, the internationalisation of privatisation, the Republican State of Trinidad and Tobago is being forced to "roll back" to accommodate the drive of conquest trading. The pressures on governments are enormous. The imperatives of international donor capital, added to those posed by local donors and cabals, often allow governments little room for manoeuvre. Cabinet, acting in isolation with a subsidiary company, is no match for such pressures. The strategic response to such pressures is twofold.

1. The Cabinet must enlist the help of the Parliament and the Public by genuinely devolving authority through participatory processes and mechanisms; in this way implementation is pursued on a wide, common front.

2. This common, heterogeneous front must embark on a long-term program of social reconstruction of the declining anthropological and ecological stocks of the nation.

5.2 The National Physical Development Plan

The growth of many groups on a small island environment - with different mechanisms for land acquisition, different perceptions about legal acquisition, different abilities to pay for land on the open market, different historical movements onto or away from land, different rates of land acquisition, different feelings about the importance or land, and the ever-present partisan anxieties about electoral boundaries - creates inevitable competition for land.

There exists at present a great demand for land. The price of land has risen beyond the reach of populous vulnerable classes. Agricultural squatters occupy over four thousand acres of Caroni land. Residential squatters occupy six hundred acres. Business interests, particularly in the North Western peninsula of the island, have virtually run out of land for expansion. Many civil groups, including religious groups of various denominations, are developing their own mechanisms for acquiring lands. Many have illusory hopes of acquiring lands; many are waiting to see who gets what land.

In this climate of competition and distrust, it is an essential precondition that the state develop a transparent mechanism for migration into the Caroni Lands; the law must be the ultimate arbiter in land usage, and therefore land allocation. Claims by governments that they are transforming land use for the sake of "improvement" or in the name of "modernity" are not sufficient; as we have witnessed, in the Caribbean and the Americas generally, many nations have been evicted from their ancestral lands on the basis of these claims. Use of the Caroni Lands must comply with the National Physical Development Plan, the substantive legal document passed by Parliament in 1984, framed to govern land usage in Trinidad and Tobago. Any deviation from this Plan must be implemented through the legally stipulated process, which includes laying amendments to this Plan before Parliament.

5.3 Pre-conditions For The Establishment Of Agricultural Enterprises

5.3.1 The Establishment Of Support Structures:

a. To promote the idea of agricultural enterprise as a feasible one which may be practiced professionally and competitively

b. To devise trade and tariff structures and develop assured markets locally and internationally

c. To provide the blueprint for an agrarian development platform

The following is a map illustrating a possible route towards building an agricultural platform:

- The selection of agricultural enterprise managers
- Promoting the benefits of the enterprise to the public
- Creating local and regional institutional linkages, for extension services, Research and Development, corporate venture sharing
- Pre-analysis and survey of local household food and beverage needs and trends
- Pre-analysis and survey of international market needs and trends
- Product regime selection: traditional; niche; and research driven non-traditional, for example biotechnological products
- Upgrading of land holdings regime
- Establishing security system to control prædial larceny
- Establishing inter-cropping, integrated and seasonal crop regime
- Matching soil capability to crops
- Matching acreage to crop
- Matching technology to crop
- Developing soil fertility measures
- Developing water control systems, and irrigation systems
- Selecting entrepreneurs and workers and matching them to farm/crop type
- Developing relevant agriculture programs in schools, colleges, the university
- Developing extension support services
- Developing market intelligence: pointing entrepreneurs to the profits
- Developing regulatory mechanism – fertilizer regimes, disease control, feeds, land use, water supplies, labour legislation, environmental impact

- Developing flexible tariff management to suit the global environment
- Developing value adding systems – processing
- Establishing a packing and packaging plant
- Monitoring, adjusting and evaluating program
- Building cluster formations, for example food park, or agro-industrial products

5.3.2 Planning For Small And Medium Sized Farms

There is a strong body of international and local opinion that is increasingly pointing to the strategic importance of the small and medium sized farmer in the building of national agrarian platforms. Small and medium producers, engaging in mixed enterprises, operating within organized frameworks, provide a feasible model for agricultural land use on the Caroni lands. The VSEP packages offered to Caroni workers include an offer of land. If some of the workers can successfully bid for lands contiguous to each other, and in areas favourable to agricultural enterprise, they will reserve the option, now or in the future, to engage in small, mixed farming enterprises. The specific enterprise would depend on the farmer's aptitude, the soil, marketing prospects, availability of water, and other physical characteristics of the land. A farmer whose main enterprise would be the production of sugar cane, may also have subsidiary enterprises on his farm such as a few diary cattle or small ruminants; he may also engage in food and vegetable crop production or even in aquaculture on part of his holding. The mixed enterprise has several important advantages:

- The income derived from the farm would be distributed more evenly, than if there were a single crop, throughout the year and will enable the farmer to better meet his commitments

- The mixed enterprise would make better use of products derived on the farm itself. For instance, if cane farming is the main enterprise, grass which will grow along the edges of beds and traces and cane tops can be fed to ruminants and the manure produced by the livestock would be utilized for food and vegetable crop production

- It would ensure the optimum use and economic benefit from the land

- It will address the national problems of rural protection and development, and of food security at all levels

It is not possible for small or medium sized farmers to plan such enterprises without assistance. A competent Caroni worker may not necessarily be a competent farmer. There must be an organized framework to provide support. The following specific supports must be provided for the small and medium sized farmer:

- Services to establish a general farm plan for the locality
- Extension services to provide land capability and soil distribution information using an air photo mosaic of the farm at a scale of 1:1000 or 1:1500
- The provision of extension officers and a subject matter (crop, soil etc) specialist to help to devise, implement and monitor specific farm plans within the general plan
- Security support on the land to deter prædial larceny

Two most essential preconditions for successful competitive farming are the selection of a competent entity to support agricultural enterprises and the construction of a system of water control and irrigation. An independent entity ought to be charged with the overall authority to implement plans for agriculture, rather than leaving this to the Ministry of Agriculture, Land and Marine Resources. One clear measure of the State's commitment to developing an agricultural platform on the Caroni lands, which will raise agriculture to become a key sector in employment creation, assist in the preservation of rurality, develop a covering of productive vegetation for the soil, lift the health standards of the citizenry, encourage food import substitution, earn foreign exchange, and provide long term food security, is its action in respect of an expanded and upgraded irrigation system. A comprehensive system of water control, in order to facilitate irrigation, is an essential precondition for the establishment of agricultural enterprise on the Caroni lands.

5.4 Preconditions For The Success Of The New Sugar Authority

How can the State ensure that the new Sugar Authority does not fall into ruin, that it does not fall into the same debt trap as the old Caroni (1975) Ltd., and that it is not mismanaged out of existence? The following factors must be urgently considered.

- The refurbishment of sugar cane planting soil to ensure as close as possible maximum sugar cane yield

- Research into new varieties of sugar cane, some of which has already started at the Caroni Research Station

- The development of practices and systems, for example fertiliser regimes, which ensure long-term soil security

- Scientific assessments of acreage required to produce the targeted sugar quotas, and the number of farmers, and size of farms required

- The organisation of logistical systems, for example involving harvesting and transport of canes to the factory, to compensate for loss of economies of scale

- The importance of technology upgrade of certain features of the plant at St Madeleine such as the efficiency of the crystallisation section, and adequate control and maintenance systems

- A study of the repercussions of the system of purchasing cane by quality, especially on the future of the industry as a whole

- A well-equipped managerial system, supported by a para-statal authority, well equipped to interpret, predict, advise on global sugar trade

- The role of the sugar refining company, which currently has a capacity to produce 60,000 tons of refined sugar per year, much more than could be provided by the current plan to mill 80,000 tons of sugar per year. What are the economies involved in importing raw sugar for refining, in the light of developments in the Guyana sugar industry?

- The use of available and ongoing research pertaining to the use of the sugar cane as a raw material for producing feedstock for a range of industries, for example pharmaceuticals, fertiliser

inputs, feeds, boards, ethanol, and a range of ingredients for food products

- The development and reform of protocol for trading with local industrial sugar consumers

- The future of the small farmers and the workers, particularly field workers, in the light of current plans

The prospect for the small sugarcane farmer in the new system – in which all canes will now be purchased from private farmers, and in which the sugar company will now purchase canes on the basis of quality - is dim. The small farmer does not have the equipment to transport canes to the factory. For confirmation of prices for his canes, and for tracking his cane produce, he will have to rely on the transport contractors, the large farmers who own transport facilities, or the factory. The small farmer generally has to pay for his own cane plants, ploughing, fertilization, weedicide, insecticide, harvesting and transport to the scaleyards. In the purchase by quality system, he can hardly be expected to have capital to devote to soil improvement or to introduce new varieties of cane. This category of cane farmer will suffer from the weak economies of scale associated with the smallness of the scale of his enterprise.

One possible hope for the small farmer and the sugar industry generally is for a system of subsidies similar to that which exists, for example, in the cocoa and coffee industries. In this system, the small farmers are protected by subsidised prices. The probability of this happening if the new Sugar Authority is leased to a private investor is unclear.

New, emerging, and changing protocols in the international sugar market make for dim prospects for the sugar industry in the next decade. The nation has to consider the repercussions of a total shutdown of the sugar industry. The social and economic costs to Trinidad and Tobago will not be small. It is therefore extremely important to recognise the distinction between the commercial future of sugar and the viability of sugar cane as a raw material for a number of viable products. But viable products, unless the nation is prepared to imitate and plagiarise, may not be created without a viable technological base. And a viable technological base may not be created without a viable system of education in technology and enterprise. (See Chapter Six, Proposal for a Technological and Vocational Institute). In the

short term, it is essential that the State develops and issues mandates to established research institutes (for example, the Caroni Research Station, the Sugar Feed Center, the University of the West Indies) to conduct the research and development of viable agricultural and industrial products.

Having established a framework for planning, consisting of principles, preconditions and a guiding perspective, it may now be useful to consider why many of the best laid plans, conceived by state technocrats, researchers and experts, are either ignored or poorly implemented. One principal reason for this is that the State is not an autonomous entity. The State is an arrested State. Often, the State's inability to implement plans is proportional to the ability of corporate capital to successfully exploit the consequences of failure. The following are examples of this latter proposition:

- **A weak legal environment** in respect of physical land planning and regulatory control of land prices leads to profiteering from ad hoc development and corporate (real estate) hiking of land prices, leading to land alienation among the vulnerable classes and persistent pressures on the mortgage-burdened middle income groups
- **A weak platform for agriculture** allows food choices to be corporate (local and international merchant) driven, leading to less real choice and a thriving non-nutritive food sector with its attendant health problems
- **Questionable expenditure portfolios** lead to a corporate dependent, donor-driven (local and international bank) economy which affords niggardly capital expenditure on health, education, housing and other social capital projects
- **A weak (cloistered), screening and bargaining system** for investment (foreign and local) leads to corruption, environmental degradation, and reduced national incomes
- **Weak port lands security** leads to illicit trade (gunrunning and narcotic businesses) leading to demoralized security systems and violated communities

To what extent are governments complicit in their weaknesses and to what extent are they not?

The following Chapter proposes that the State embark on a number of reconstruction projects on the Caroni lands, that will create, if properly managed, platforms for national development.

CHAPTER SIX
Proposals

6.1 Opportunities For Development

The opening up of approximately fifty thousand acres of land, in an area interlocked with industrial enterprise, and at a time of lucrative returns from the oil and gas sectors, offers the people and the State of Trinidad and Tobago a rare opportunity for re-conceptualising national development. The lucrative oil, gas and petrochemical sectors offer an opportunity to strategically intervene in development and invest in anthropological and ecological capital for the future. No other Caribbean nation is similarly placed. Strategic intervention, modular planning and platform building at the local level may generate a similar momentum at the national and international levels in the Caribbean. Trinidad and Tobago may lead the way by illustrating how a nation may concretely band together its people and enterprises to secure and build common sources of wealth: human, institutional and ecological stocks. Additionally, the withdrawal from such a pivotal sector as sugar is bound to lead to current shock and future social and economic depression. Here is an ideal opportunity to intervene and create an assertive, independent, technologically opportunistic milieu in the area. The following proposals provide examples of where the State, the corporate sector, and the populace may intervene and act.

Reconstruction Programmes

Ecological	***A Botanical Plan***
Social	***Model Education Plan*** ***Model Village Plan***
Agricultural	***Buffalo Reconstruction Plan***
Agro-Industrial	***Food Park Plan*** ***Sugar Diversification Plan - Ethanol***

6.2 Ecological Reconstruction Program

All the empirical evidence at hand points to the dire need for a massive ecological reconstruction of the Caroni to Point Fortin corridor. A first and relatively cheap step towards reconstruction is the creation of a botanical, or Green Plan, for the area.

6.2.1 Review

Before the advent of monocrop farming, the area was covered with swamp, mangrove, high grasses and forests. This was replaced in the 18th and 19th centuries by sprawling plantations of sugar cane. The building of housing settlements, hauling roads, metalled roads, pylons, embankments, ports and jetties and industrial estates, have severely restricted the natural surface water systems in the area. The natural coastal buffer system to the area, the mangroves, from the Caroni Swamp to Point Fortin, has been almost totally destroyed. The animal life systems within them have degenerated. Artificial structures provide obstacles to the free movement of animals, and they now find refuge in small enclaves within swamps, drains, or they have migrated. Deforestation, human settlement and denudation of soils in the Northern Range result in seasonal flooding in some parts of the region. A 1994 aerial photography map shows that most of the Western Coast, between the Caroni River and Point Fortin, is either scrubland, built-up area or covered with treeless cane lands (See Appendix 6). If current State plans materialise, most of the cane lands in the Northern and Central Sections of Caroni (1975) Ltd., will not be farmed after the current crop, leaving the land unattended for an unforeseeable period of time.

6.2.2 Trees as Capital Stock

Silviculture, the propagation, management and conservation of trees, is not optional. It is an imperative investment in long-term capital stock. The value of this stock is multifarious: essential habitats for animal and microbial cultures; leaf nutrient additive to soils; soil protection and preservation; flood control from water-absorbing roots; a source of fruit, woods and other produce; absorption of toxic atmospheric elements; a source of shade for livestock and pasture; regenerative health effects and a buffer against industrial pollutants. Unlike industrial produce they require little or no manufactory inputs once planted. They do not produce waste. The economies of scale are unlimited; one tree planted may take twenty years to mature, one thousand trees will mature in the same period. One tree is a single stock, a thousand trees is an ecological system, a habitat, a civilisation for densely speciated life forms.

6.2.3 Preconditions For A Botanical Plan

- The plan will require the inputs of scientists in the field of botany, anthropology, land survey, soils, agriculture and possibly pharmacology.
- Development of the plan will require promotion about the advantages of the botanical plan.
- The plan must be developed within the framework of a national development and regulatory framework.
- The plan will need to be informed by detailed aerial surveys of the area.

6.2.4 Components Of A Botanical Plan

The plan may be divided into the following five components:

i. Tree patterning: designing tree cultures around villages, roads and on shrub-lands

ii. National Park: designing tree cultures in a National Park

iii. Forest Reserves: establishing small forest reserves

iv. Timber stocks: establishing a timber stock on large expanses of land

v. Plant propagation centres

i. **Tree Patterning**. The design of tree cultures around villages, roads, on shrub-land and on permitted empty lots is akin to the art of embroidery. Many communities, particularly in the Chaguanas and Couva areas are hemmed in by the Caroni lands; patterns of trees "sewn" into the landscape around villages provide aesthetic and regenerative health outcomes.

ii. **A National Park**. One of the higher ranges of figures in the Land Capability chart of the lands of the North and Central Sections of Caroni (1975) Ltd. is the Class IV-VII figures relating to the

Esperanza/Phoenix section. It shows that this section has a total area of 1462 hectares, of which 1374 hectares are in the Class IV-VII category. These latter categories are, respectively, "suitable for cultivation with special practice otherwise suited for pastures and tree crops"; "not suitable for cultivation – consider for pasture, fruit and forest"; "not suitable for cultivation but for pasture and forest"; "suitable only for rough pasture, wildlife, recreation and water conservation" (See Appendices 7 and 8). These lands - centrally located, encompassing the Point Lisas Industrial Estate, and of a suitable soil class - provide the ideal area to locate a National Park.

A National Park in the area will afford the following benefits:

- Recreational areas for all
- A buffer against the pollutants from the Industrial Estate
- A regenerative green area
- Non-motorized area for sports and cultural activities
- A wildlife sanctuary for threatened species
- Employment, particularly for women and elders
- A water reserve which may feed into agricultural lands in the dry season
- Fruit trees and a fruitery for servicing local consumption

iii. **Forested Reserves**. Small reserves may be built in proximity to industrial locations, those existing, and those planned. Heavy industrial and petrochemical sites, quarries, engineering and contracting companies may be insulated from villages and other communities with protective belts of greenery. Quarries themselves, once depleted, may be forested with small clumps. The banks of the Couva and Guaracara Rivers may be planted with appropriate trees.

iv. **Timber Stocks**. Large expanses of land may be partitioned from anthropological use and set aside for a timber reserve for a period of

fifty or sixty years. The objective is to build a reserve of exotic and/or valued woods which may only be opened for exploitation when lucrative oil and gas stocks eventually decline. Timber reserves for the mass stockpiling of timber may be built in all areas of Trinidad and Tobago where estate and plantation culture have withdrawn, leaving lands in shrubs or fallow.

v. **Plant Propagation**. Plant propagation stations may be established throughout the region to service this sector. Part of the Brechin Castle compound may be used as the headquarters for this sector.

Trinidad and Tobago has a rich heritage in botanical research. The State, the University, the Environmental Management Agency, the Caroni Research Station and a number of community-based groups may participate in this sector. The future benefits of this plan are incalculable: employment, tourist attraction, recuperation of human and animal habitat, health, education, the enhancement of social life. The flow from this stock of wealth will not be reflected in GDP accountings; world bodies such as the United Nations Development Program are only now beginning to devise an econometric for reflecting the value of such invaluable national stock.

6.3 Educational Reconstruction Programme

6.3.1 Vision

This programme envisages the creation of a corpus of highly motivated, independent, assertive, technologically opportunistic young persons, possessed of the critical thinking edge required to create and apply new solutions to current and future problems. The following observation is pertinent: "Education does have a social function but it is not a subservient one. It is essentially an independent and democratic function. Its task is not to serve business, government and the economy, but to examine, investigate and analyse them" (Anthony Arblaster). To apply Arblaster's observation to the children of Trinidad and Tobago is to militate against their becoming a factory-dependent labour pool for historically privileged, elite sectors.

6.3.2 Strategic Continuity And Intervention

This plan envisages the building of a model school, with a primary and a secondary sector, on the Caroni lands. Instead to offering the Brechin Castle houses and administrative buildings for sale on the open market, the campus could be developed there. This Model School will visibly illustrate, to a population largely caught in the conceptual trap of the old colonial model, what is possible in primary and secondary school education. From single units of primary and secondary schools, cluster formations may develop to create a generation of citizens equipped to build problem-solving systems and technologies. The pedagogical principle of the school is to educate through the design and building of products, systems, styles, and concepts. Learning will be technology based: students will be involved in building technology, tools for solving and administering to problems.

6.3.3 Benefits Of The Model School

The Illustration Of A Productive Program Based Syllabus

The syllabus will be program based. Few students who graduate from secondary school develop a general proficiency in more than one of the following: foreign language skills; a vocational subject; a technology subject; a sporting field; literacy; a field of performance/theatre; a visual arts subject; a category of grammar based subjects such as Mathematics, History, Geography, Science, English Language. Proficiency in most of these areas is acquired through private tuition, or post-secondary "training" or "re-tooling". The current secondary and primary school systems are wasteful of much of the time, talents and energies of most students. The Model School

will illustrate how a productive five to sixteen/eighteen year educational career may be achieved, using strong, well-monitored scientific programs.

Strategic Location

One of the major goals of the Model School is to act as a pedagogical model for primary and secondary schools. Systems will be installed for teachers, students, educational planners, parents and administrators to continuously visit the school to witness the workings of management, architecture, facilities, syllabus, programs and everyday routine. It is therefore important that the model school is centrally located. (See Appendix 9 for the geographical distribution of schools in Trinidad). It should also be located in an area with fair access to a technologically intensive manufacturing or industrial zone.

Societal Regeneration

In the face of the downsizing of Caroni (1975) Ltd., a regeneration of the North-South Coastal Corridor is imperative. The establishment of a model school is an investment in the future: it will help to create technologically opportunistic generations of young people, locally and nationally.

Sustainable Employment Of Available Land Space

The Model School may use the existing facilities on Brechin Castle lands to develop required amenities: a swimming pool, a multi-sport complex, labs, workshops, vocational centers and an auditorium with a theatre for visual and performing arts. In addition, the lands in the environs hold a wealth of natural resources, which could be used as a research area for science, technology and agriculture.

Base For Platform Development

The Model School will create a base for the development of tertiary institutions, especially those devoted to programs in the fields of industry and agriculture. Any plans to create agricultural and industrial platforms and clusters must envisage the securing and development of human resources at the tertiary level. Tertiary level institutes will work in tandem with the agricultural and industrial platforms in the area, drawing their student population from the model primary and secondary programs.

School-Industry Linkages

One of the major approaches of the Model School is to educate in the classroom, the lab and on the factory floor. Existing and proposed heavy and light industries provide organized space, equipment, management and

systems within which students may learn. Additionally, students may be allowed to apprentice in these industries. The new model would equip students with managerial, enterprise and system-building skills.

Esteem and Confidence Building

Esteem and confidence may not alone be built through "talks" and "retreats". These qualities may be best built through creative achievement, for example in designing or building a program, a product, a tool, a model. It is well established that the impulse to compete, to excel, to impress is strong at an early age; if formal structures are not created to channel these, the young themselves create informal or illegal structures to "live out" these impulses.

The Fostering Of Enterprise Skills

The adoption of a practical education system would lead to the proliferation of a class of highly creative young people capable of building products from idea/concept to marketing stage.

6.3.4 PRE-CONDITIONS

Reformed Concept Of Education

Education must go beyond the outdated concepts of "re-tooling" and "training". A technology-opportunistic model may be based on the following:

- Altered concepts of architectural and interior (e.g. labs, classrooms) design to produce a comfortable, controlled, creative milieu
- Curriculum altered to include project based programs in non-traditional areas such as agriculture, sports, visual and performing arts and ecology
- Scientific evaluation and assessment systems
- Reformed managerial, staffing structures; induction programmes designed to educate staff to meet requirements of altered system
- The integration of vocational, entrepreneurial and on-the-job education in an area rich in industrial enterprise (See Appendices 10 and 11 for Primary and Secondary Schools Draft Curriculum)

Land, Building And Human Resource Requirements

- An extensive allotment of land will be necessary to support thriving agricultural fields, an auditorium with a theatre, a multi-sport gym, kitchens and cafeteria facilities, a swimming pool, parking facilities, laboratories, a language center, workshops, an infirmary and administrative offices.

- Human resource will include:
  a. An Executive Team with responsibility for research, conceptualisation, and promotion.

  b. Support Group which networks teachers, principals, as well as consultants and experts in the field of education

  c. Institutional Support comprising the University of the West Indies, the Government of Trinidad and Tobago, private companies, international agencies, organizations and foundations, the National Library and Information System Authority (NALIS)

6.3.5 FUNDING

The major source of funding for the Model School will be from the Lease Income Funding Enterprise. The following sources may also be considered: international endowments; in-kind contributions; the Government of Trinidad and Tobago; individual donors and private businesses.

Additional capital for recurrent expenditure may be met by rental of facilities, workshops and courses for teachers, the purchase by the State of some places at the secondary level, sale of items in the Model School Shop, bursaries and scholarships sponsored by companies.

6.4 Model Community/Village

This plan proposes the building of a model village that may be used as a template for the construction of communities for [1] habitual-income groups and [2] non-habitual, untenured groups, in accordance with the economy, ecology and climate of small-island developing societies.

6.4.1 Concept

Rural design rural enterprise – a model village that makes use of rural ambience and architecture to engage in outlying rural enterprises, for example farming, horticulture, livestock rearing, plant propagation and small manufactories involved in cottage trades such as jams, jellies, drinks.

Rural design urban enterprise – a model village which makes use of rural ambience and architecture to engage in pursuits by professional and business classes which have been traditionally managed from urban and metropolitan centres, for example software design, publishing etc.

6.4.2 Review

There is quite an array of vocabulary to describe the varied types of housing communities which have burgeoned in Trinidad and Tobago since the middle of the 19th Century. A knowledge of the vocabulary tells the story of West Indian settlement since emancipation from slave and serf structures: bung, barracks, shanty, tenement yard, government yard, scheme, quarters, project, housing settlement, housing estate, housing complex, spontaneous settlements, gated communities. This vocabulary reflects the heterogeneity of the nation's social, economic, and cultural architecture. It also reflects the paucity of opportunities and standards for community building in the Caribbean. The opening up of new lands gives the nation the opportunity to build communities, or provide models for communities, using standards far superior than provided by convention. The following have become conventional features in housing development in Trinidad and Tobago.

- Ad hoc siting, for example the location of settlements on fertile agricultural land
- Locating settlements in congested districts
- Strict grids, rather than relaxed or loose contours for settlements
- Densely agglomerated housing units, either vertically or laterally, leading to health risks, loss of privacy, deviance or crime
- Small housing plots which leave little or no room for permitted

types of enterprises, or for making gardens
- Poor housing unit design, inappropriate for a tropical island climate; or leading to health risks
- Minimal structures within settlements - for example places of worship, shops, post offices, community centers - which encourage community life
- Lack of efficient green planning for the settlement, for example, shrubbery, trees, hinterland vegetation
- Planning driven by political or short term economic imperatives, leading to voter or proletariat "dumping" in settlements

Spontaneous settlement has also become conventional. Social and economic inequities have led to large groups of citizens becoming alienated from the official housing markets or programs. The following are some of the risks associated with this form of land occupation.

- poor matching of land use to land suitability
- there is generally varied use of the soil, but negligent use may result in soil erosion, ground water contamination, deteriorated vegetal cover
- irregular water supplies, poorly constructed houses, improper sewage or garbage disposal facilities
- educational and health risks to children living in squalid conditions
- poor access to market, health, educational, cultural facilities
- the threat of violence due to tenure disputes which may arise
- the threat of stigma: there is a view that squatter "do not have a right to land, they have a right to work"

6.4.3 Principles

Currently, the State is publicizing plans to build 100,000 housing units in ten years, for upper-income groups, middle-income groups and untenured residents. It is desirable that the State planners embark on such an ambitious program using principles superior to those pursued by conventional planning. The following are some principles for the construction of a Model Community, using either of the **rural design rural enterprise** or **rural design urban enterprise** concepts referred to above.

- Best land use: already compacted, alienated, or Class V11 soils
- Proximity to Green Zone: margins of forest reserve
- Logistical ease: access to employment, and educational, health, transport, cultural facilities, communication facilities

- Humanistic contours: village outlines supple; irregular housing unit shapes rather than rigid; street system - open, relaxed rather than grid-like
- Ample lot size: optimal size for house, enterprise-annex, gardening, plants and trees
- Optimizing tropical ambience and its health effects: architecturally creative designs of homes
- Optimal community facilities: places of worship, shops, postal unit, internet room, library, community centre, kindergarten, recreational park integrated into the general contour
- Wildlife integration: a wildlife corridor for feeding, nesting species between areas of forest (see proposal on Silviculture) and the village
- Enterprise activity: outlying areas to be used to develop farms, cottage enterprises, small manufactories etc.

6.4.4 UNTENURED RESIDENT MODEL VILLAGE/COMMUNITY

The principles outlined above may be used for the building of communities for Non-Habitual income groups who are untenured residents; untenured residents will be engaged in the actual construction of the model village.

The following is a plan for the construction of an Untenured Resident Model Village for Non-Habitual Income earners.

6.4.4.1 STRATEGIC INTERVENTION

A team of architects and planners appointed by the State will select an expanse of land in accordance with the above prerequisites. The following are the necessary steps for the implementation of the Model Village programme: -

1. Site chosen by architects and planners within a national developmental and regulatory framework

2. Building model infrastructure, and creating a variety of model house designs

3. Selection of untenured residents

4. Developing a training team to teach group basic carpentry, masonry, plumbing, electrical, landscaping, horticulture etc

5. Implement teaching program

6. Provision of subsidised building materials

7. Building groups to build houses under direction of a management/ training team

8. Election of Council to manage public facilities

9. Allocating houses on a probation basis

10. Monitor and adjust system

10. If successful, widen scope

6.4.4.2 PHASES

Physical

A Training Centre will be constructed for basic vocational training. After the training phase, the building will be used as a community center within the Model Village.

Institutional

The second phase of the project will comprise a training course aimed at empowering the untenured residents with the skills and abilities needed to construct their own community. The vocational skills learnt will also enable the residents to be more marketable in the competitive work environment.

A team of certified pedagogues in the fields of plumbing, masonry, carpentry, electrical installation, welding, joinery and upholstery will teach the courses over a six month period. There will be morning and evening classes to accommodate those who work 'shift jobs' and as a result do not have fixed schedules. At the end of the training course, an exam will be given and successful participants will be given a certificate which may be used to enter higher-level training programmes, or for entry into a trade. During the building of the Model Village, the untenured residents will be paid a stipend.

Legislative

For a period of ninety-nine years, the State will lease the land that will be used for the Model Village. The untenured residents will be required to sign a contract, which prohibits them from remaining on the State's land after the model community is established. In the interim they are allowed to remain on they lands they currently occupy. Upon completion of the programme, the untenured residents will move into their homes but will be carefully monitored by a probation committee. After a twelve-month period, if approved by the committee, the untenured residents will obtain a deed to their house.

Financial

The State has already, according to its current promotions, devised an elaborate system of funding, from international and local lenders, to start its housing programme. Finance for the untenured Model Village may come from the Lease Income Fund Enterprise.

6.4.5 BENEFITS

The untenured Model Community program will derive the following benefits:

- Degree of equity in terms of land distribution
- Securing of rural spaces
- Merging traditionally rural and urban dwellers in an enterprise-driven milieu
- Healthy home environments
- Visible model structures may be imitated nationally and regionally
- Planned and less detrimental to ecology
- Balanced land use for housing, enterprise, recréation, agrarian culture
- Prevent future social chaos
- Empowering the untenured citizens as they actively participate in shaping their lives

One strong opinion suggests that the Caroni lands have acted - on account of their vastness and of the manner in which they interlock with villages, towns, agricultural and industrial districts - as a hindrance to development. The models proposed here for untenured Non-Habitual Income Earners and Habitual Income Earners, may be built on the Caroni lands. They may be used as templates for building communities on the Caroni lands and elsewhere.

6.5 Buffalo Reconstruction Programme

The water buffalo is part of the national heritage of Trinidad and Tobago, representing over fifty years of selection. The species known as *buffalypso* – the word is a blend of "buffalo" and "calypso" - has its origin in Trinidad, as the result of unplanned crossing among five milk breeds imported from India to Trinidad between 1900 and 1949. It is a national resource of tremendous value, with great potential to be exploited locally, regionally and internationally for its meat, milk and breeding. Yet today our water buffalo stocks remain significantly under-utilised. The buffalypso survives today along the sugarcane belt in Trinidad. The present "opening up" of the Caroni Lands provides an opportune juncture for strategic intervention in the Buffalo Industry. This is the time for the State to make a bold and positive move to determine the fate of the Buffalo Industry.

6.5.1 Vision

A profitable and sustainable buffalo meat, milk and breeding industry, exploiting a large, healthy buffalo population, driven by expanding local and foreign markets, and supported by a complex of necessary institutional, financial and legal infrastructure.

6.5.2 Preconditions

Health

Up to fairly recently, Trinidad's small buffalypso population was generally disease-free, both in relation to cattle, and in comparison to the formidable buffalo populations of major stakeholders like India and China. At present, the country remains relatively free of major infectious diseases, in spite of a recent outbreak of brucellosis infecting about 50% of the stock of Caroni (1975) Ltd. Naturally, the health of the nation's herds is a primary precondition to the establishment of any successful animal production industry. It is imperative, therefore, to restore the health of the population.

Population

A second foundational consideration is the size, distribution and growth pattern of the nation's buffalo population. In 1991, a Commodity and Area Planning Report for Trinidad and Tobago estimated the total number to be 4,474. In a study done in 1986, it was stated that large farms comprised only 2% of the total buffalo farms in Trinidad but accounted for 58% of the total buffalo population. On the other hand, 34% of the buffaloes were to be found on small farms (1-5 heads). 86% of these small farms were

geographically distributed in the sugarcane area of the Caroni, Victoria and Nariva/Mayaro counties. However, much of this information is outdated. The importance of creating and maintaining a databank of current information on the size, location and growth rate of the existing population to the development of this industry can hardly be overstated.

6.5.3 Strategic Intervention: Physical Infrastructure

In order to restore the health of the existing population and remain up to date on the status of the population, it is necessary to establish certain physical infrastructure, namely a centre for research and development into the immediate, widespread problem of brucellosis. The short-term objective of this centre would be the elimination of the infestation plaguing the buffalo population. The Sugarcane Feed Centre appears to be ideally situated, both geographically and historically, as a central location for such a centre.

6.5.4 Phases

Research and Development

The centre must be immediately concerned with the following areas such as:

- Registration of the breed "Buffalypso" (buffalo + calypso) as the official name of the nation's original and indigenous stock
- Research into the incidence, prevalence and development, among the existing population, of major diseases such as foot and mouth disease and brucellosis, with the ultimate goal of reinforcing disease control
- Research into the resistance of the population to endogenous and exogenous parasites, pneumonia and tuberculosis
- Research into the optimal plot size for small, medium and large farmers
- Development of an up to date and computerised performance recording database, which can be used to inform the formation of the financial policy and legal framework that regulate activity within the industry.
- Provision of extension services, and training in every area of buffalo husbandry and reproductive physiology, nutrition and management (including consistent maintenance of lineage records)

- The centralisation of support services, such as slaughtering, processing, quality assessment and quality assurance

While there is not necessarily a shortage of human resource to meet the obvious need for institutional, technical and academic expertise, the success of this venture is likely to depend on the realisation of a genuinely collaborative effort involving all the University of the West Indies, the Sugarcane Feed Centre, the Caribbean Agriculture Research Institute and other institutional and independent resources.

Legislation

Once the prospect of a healthy population proves to be achievable, there is the potential for thriving industry, but this potential will not be realised in the absence of a legislative framework that regulates the activity within the industry. Therefore, there is a need for the enactment of new laws, as well as the enforcement of existing legislation that will lend legal support to the development of the industry.

Another possible area of legal intervention to be considered is enactment of legislation in favour of the preferential treatment (indirect subsidisation) of buffalo production. This proactive initiative would assist in the accelerated advance of the local buffalo industry, especially in the area of edging out its foreign competitors in beef and cow's milk.

There are several reasons why the State should support the buffalo industry in this way. Firstly, although buffalo meat and milk do not appear to be in demand in the local market, it is a fact that butchers at municipal markets and supermarkets have long been distributing it locally in the guise of beef for fear of consumer rejection. Nonetheless, buffalo meat compares favourably to beef in terms of quality, colour, taste, and leanness.

Secondly, in terms of meat, the buffalo has a greater yield than cattle, and represents an "all natural", more economic alternative to cattle. The buffalypso carcass itself has a lower proportion of bone and fat, it yields more meat than cattle, its meat is leaner and it contains about half the cholesterol content of beef. In addition, the growth rate of the buffalypso compares favourably to that of cattle. Along with its ability to survive on low quality forage, and to adapt to marginal habitats, such as scrub pasture and swamplands, the buffalo also displays higher feed conversion efficiency.

In fact, not only did the buffalo outperform cattle on high quality forage diets but, in addition, unlike cattle, the buffalypso can be reared organically on low quality forage (on cane tops, in open pasture, under coconuts, or with agro-industry by-products like molasses, bagasse-based feed, wheat midlings and poultry litter).

Finally, there is a case to be made for buffalo milk. Cow's milk production is a drain on the State. The need to provide high quality forage and roughage for cattle hikes up the cost of local cow's milk production, and this price to the consumer is subsidised by the State. Moreover, the local suppliers satisfy only about 10% of the local demand for milk, and Trinidad imports about 90% of its milk requirement. Buffalo milk has a much lower cost of production, and although its higher fat content seems to have negatively affected its marketability, it is precisely this difference in quality that gives the mozzarella cheese (made from buffalo milk) its distinctive flavour. However, one channel available for exploitation is the school-feeding program, through which buffalo milk can be made available to young students for breakfast. This programme would have the added benefit of influencing the taste of the young people and in this way potentially expanding the market for buffalo milk.

Finance

It may be argued that the entire question of competition between beef/dairy and buffalo products is irrelevant because the local buffalo sector does not and cannot currently operate at a competitive level. At the same time, it must be noted that significant capital investment into this niche of the livestock sector must be made by the State in order to bring the industry up to a competitive level. Buffalo is a choice local product whose value is widely acknowledged in the foreign market, but appears to be under-appreciated, if not unrecognised, not only by the citizenry at large, but also by the State. It is largely as a result of this widespread ignorance that the present level of activity in the buffalo industry persists at a substandard level. There can be little reasonable doubt that up to this point the buffalo, as a national resource, simply has not been manipulated and managed into a position of profitability. (In fact, it can be argued that quite the opposite has been the case.) Therefore, it seems logical to conclude that if, by contrast, these resources were aggressively manipulated under visionary leadership, the outcome would be positive. For example, there is a foreseeable need for controlled importation, regulated pricing mechanisms and clever tariff

management of beef stocks and dairy products in order to protect the local industry.

Breeding Industry

Unlike, buffalo meat and milk, which do not have ready markets, buffalo calves are clearly a source of revenue, which has been overlooked. The reproductive rate of the buffalo is generally poor, especially in comparison to cattle. But it is precisely this poor reproductive performance that contributes to the high demand for buffalo calves on the world market. Already, Trinidad has exported buffaloes to Costa Rica, Brazil, U.S.A., Guatemala and Venezuela. However, there is immense potential for the generation of a sustained and profitable buffalo breeding industry exploiting the existing regional and international markets.

Necessarily, the opportunity for expansion of the buffalo industry beyond food production requires extensive and collaborative Research and Development into the reproductive performance of the animal under varying conditions, and in various seasons.

Furthermore, the centre can be charged with responsibility for the supervision of a national breeding programme for genetic selection and improvement, drawing on world-class expertise and technology in techniques of super ovulation, artificial insemination and embryo transplant.

6.6 FOOD PARK PROPOSAL

A Food Park is a site devoted to developing a critical mass of a wide range of processors, services, suppliers and a range of marketing, technical and business support for the processing of food. The thrust of a Food Park is to maximise the potential for symbiosis between local agriculture and industrial systems. The following are the goals of this enterprise.

- To develop a variety of nutritious, moderately priced foods for the citizens of Trinidad and Tobago.
- To develop and grow leading processors and suppliers of value added food and drink products based on differentiated raw products.
- To build Trinidad and Tobago's reputation as a supplier of premium high quality products to niche markets at home and overseas.
- To grow advantage through innovation and technology.
- To build a credible food-safe quality chain to secure the reputation of local products.

6.6.1 REVIEW

The following are three major trends that have emerged in food consumption patterns in Trinidad and Tobago over the last decade:

- From consumption of home-made towards take-away foods and beverages
- From consumption of home-made towards supermarket food and beverages
- The increasing dominance of international consolidated corporations in the take-away and supermarket food and beverage industry

International food manufacture and preparation are taking the place of local manufacture and preparation. There is an increasing variety of international foods and a decreasing variety of local foods on the markets and supermarkets. These trends seem to indicate that the consumer has more choice in foods and beverages on the local markets. But nothing could be further from the truth. Variety implies choice; however, it is not quite the case that the consumer has more choice on the local markets. The fact is that the consumer's options are increasingly being determined by international

factors, huge consolidated chains of food and drink suppliers. Nutritional choices are being taken from local consumers and given to these international factors. Taste is being manufactured, cultivated, and harvested by these factors; it is well known that to control taste is to control, in the food industry, the socio-economic agenda, the market. What all of this means is that the health and well-being of our children and future generations is being increasingly decided by international factors.

A 1999 study 'Strategic Framework Action Plan and Projects for Food Processing Sector' points to the inability of the State machinery to monitor the quality of food and beverage imports into the country. Here again, as with other sectors, neo-liberalism does not increase choice, but reduces it; it also "rolls back" the ability of State agencies to control national standards for health, and therefore well-being.

The following are some other problems which militate against the development of a thriving food processing sector:

- Inconsistency of raw materials supply.
- Lack of market and technical know-how.
- Overall contraction of local food processing.
- Too few processors gaining access to premium markets at home or abroad.
- Lack of compliance with international market standards.
- Lack of skilled labour supply.

The Caroni lands are important here. Certain sections of these lands may be secured and preserved for cultivating nutritional foods to feed both the local population and the international. According to the 'Strategic Framework' study, "Another significant retail development in the speciality food market has been the aggressive growth of natural and organic foods. Where once they were the staple of the health food stores, this segment of the market has developed into retail chain stores and supermarket style stores." Nutritional ethnic foods may also be cultivated and targeted towards "various ethnic groups. New York, Miami and Toronto have large West Indian immigrant

neighbourhoods with retailers that cater to their ethnic food tastes." The production of genuinely nutritional foods, natural or organic, enhances the morale of the producers and the health standards of the nation.

6.6.2 Strategic Intervention

The development of a Food Park - a site devoted to developing a wide range of processors, services, suppliers, and a range of marketing, technical and business support for the processing of nutritious food, based on a strong agricultural platform - is one way in which the nation can band together to develop common stocks of wealth. The plan which follows is based on the ideas proposed by Project Partnerships, authored by Fred Millan, Philip McGauran, Brian Rennick, Dr Gail Baccus-Taylor, Daniel Taylor and Stanley Lau in a document entitled Strategic Framework Action Plan and Projects for Food Processing Sector, commissioned by the Tourism and Development Company of Trinidad and Tobago in 1999.

6.6.3 Phases Of Enterprise

Infrastructure

Physical infrastructure for the Food processing plant must be compliant with the following international standards: -

- Food safety, hygiene, general food security
- Food processing machinery
- Food processing practices
- Temperature controlled storage
- Staff accommodation
- Access and storage
- Segregation between raw materials, process activity and finished products

The following is a description of the physical infrastructure and the business support required to develop a successful, competitive Food Park.

STRATEGIC BUSINESS SUPPORT	PHYSICAL INFRASTRUCTURE
The Food Park must be part of National Food Policy and Strategy. It must be managed and driven by a dedicated team of professionals	➢ **Business Resource Centre** ➢ **Incubator units** ➢ **Test kitchens** ➢ **Pilot plants** ➢ **Laboratory** ➢ **Cold store**
Dedicated Development Team	➢ **Model food factories**
Delivers agreed marketing and business support	➢ **Serviced sites**
Dedicated resources and funds	➢ **Inward investment park**

Business Resource Centre

This facilitates the delivery of comprehensive, market, business and technical intelligence in a form that is accessible. The centre has to be "plugged in" to best information at all times to keep abreast of the fast moving data now available on all aspects of the food industry. The centre must also provide in-house or out-house technologies and expertise that can be mobilised quickly and effectively to meet the daily needs of commercial food business.

The Food Park must contain the following essential units: -

➢ Incubator Units: (50-100sq.m)

These are small workshops designed and specified to food standards and capable of establishing commercial production in the initial stages. They normally have easy in and out rental conditions to suit the needs of rapid expansion to larger units or of a business which has failed to extricate itself from financial burdens or legalities.

➢ Test kitchens: (7.5-15sq.m)

These are basic commercial kitchens for those seeking cost-effective ways of launching new business. The concept is easy access to equipped kitchens for short periods to develop recipes and check ingredient alternatives. Experience indicates that such facilities are most useful to individuals, entrepreneurs and graduates who are seeking low financial entry.

➢ Pilot plant: (150-500sq.m)

Many small and large companies have limited space in which to experiment with new processes or to create and then develop new products. This is exacerbated if there is pressure on current production lines and limited scope to assemble a temporary line necessary to trial a product. Access to onsite pilot facilities is invaluable if they can be rented as required, for a few days, a week or a few months.

➢ Technical laboratory

Quality and quality assurance is fundamental in the modern food chain. The expertise can be obtained from any certified provider. However, the fact that the concept of food park is based on clustering relevant services in close proximity suggests that a better choice is that a laboratory be placed on the Food Park, central to all other facilities such as incubator units, pilot plants and test kitchens.

➢ Cold Storage (1000-2000sq.m)

The modern food chain is more and more dependent on temperature control to ensure that food products and produce reach the consumer fresh. This means temperature controlled factory storage for reception or dispatch of goods on-site and, where larger volumes are involved, access to larger, commercial storage. There is therefore advantage for a private cold storage (chilled and frozen) being established either on-site or close by.

➢ Modular factories (300-1000 sq.m)

Demonstration is one of the most effective ways of illustrating competence to companies just starting up, companies relocating to address new markets with higher compliance requirements and to inward investors who seek well organised support and comfort in an unfamiliar environment.

Providing model factories that reflect international food-safe standards is a major selling point, especially for new or smaller relocating food companies. This should take the form of incubator units for individuals, small to mid size factory units for relocating indigenous companies and serviced sites of 0.5 to 5 acres to meet future expansion needs.

➢ High Profile Sites (1-10 acres)

There is a fundamental need as with science parks to have access to developed service sites targeting larger and/or inward investing companies with:

a. Good national record

b. High amenity green fields service sites

c. High quality and consistent supply of electricity, water and effluent disposal systems

d. A range of best practice model factories

e. Expansion potential

f. Located within an industrial zone with no neighbouring noxious industries

g. Access to skilled labour at all levels of education and technical qualification.

h. Good on site management and care and maintenance.

6.6.4 PRECONDITIONS

➢ Understanding the sector (commission study and or task team)

➢ Identify market and technology leaders in the sector worldwide

➢ Identify "potential" agro-capacity i.e. bringing land up to the requirements of organic protocols

➢ Build profile on key local players

➢ Determine case for competitive advantage (brochures, web sites etc.)

➢ Target appropriate media, press, trade journals, fairs etc.

➢ Directly target key individuals and companies

➢ Identify resources and budget campaign.

Legislative

The resource center must take responsibility for the governance of the buildings and surroundings to ensure food hygiene, quality, product integrity and most of all consumer confidence. This includes the maintenance of the highest standards in all aspects of the physical husbandry of the park, building specifications, site density and layout, zoning between users, operating activities and all aspects of environmental practices.

6.6.5 Benefits

There is much potential for the establishment of a Health Food Park on the Caroni lands. The following are the benefits to be derived:

- A healthier citizenry, especially child population
- Choice and taste determined locally rather than internationally
- Greater protection from: (i) international food borne diseases such as have afflicted Europe over the past decade, salmonella and BSE (mad cow's disease); (ii) possible harmful effects of Genetically Modified foods; (iii) possible effects of future Nuclear, Biological, Chemical contamination.
- Massive savings on future health bill
- Local employment creation at all levels from production to marketing
- Raises morale of producers, and youth who may be integrated into project at the Technological and Vocational School level

6.7 Agricultural Diversification Plan - Ethanol

6.7.1 Vision

A robust, diversified agricultural sector, which provides feedstock for an expanding industrial sector.

6.7.2 Specific Example

The diversification of the sugar industry to include the production of several industrial by-products, such as ethanol, for which there is a growing international market.

Sugar is the least profitable of all sugar cane products. In the past, plans to create a more profitable sugar industry through diversification have given weighty consideration to the numerous agricultural by-products of sugar but currently, the market for industrial by-products is expanding. If the sugar industry is to be sustained, diversification in the direction of industrial by-products must be considered seriously as a direction for future expansion.

6.7.3 Strategic Intervention

The investment of TT $50 million in the upgrade of the existing Brechin Castle sugar mill.

The opening up of the Caroni Lands opens the question as to the alternative usage of the equipment currently at the Brechin Castle sugar mill. The potential for conversion of the site to that of a complex for the manufacture of agricultural and industrial sugar by-products merits significant consideration.

6.7.4 Specific Example: Ethanol Production

Ethanol production via cane juice presents a probable alternative for the struggling cane sugar processing industry. Ethanol has been in use as a fuel in the USA since at least 1908. Ethanol as an additive to extend gasoline for automotive fuels has the advantage of producing fuel blends that are less sensitive to phase separation when small amounts of water are present at low temperature than are blends involving Methanol. Ethanol for industrial usage is mainly produced by the hydration of ethylene, a petroleum based feedstock. It can also be produced from the fermentation of grains, forestry, and other organic or agricultural material referred to as biomass.

Ethanol fuel, known as gasohol, has a higher heating value per gallon than gasoline. The cost of ethanol depends on the conversion-fermentation step and on the recovery and dehydration of the ethanol produced.

Typical material and utility costs for a sugar cane distillery are as follows.

UTILITY	UNIT	CONSUMPTION
Steam	t	6.5
Water	m^3	200.0
Fuel (Bagasse steam raising and electricity generation)	t	3.0
Compressed Air	$N\ m^3$	80

A typical material balance for an independent sugar cane distillery is shown in the table below. The bagasse produced can be burnt in the furnace.

ITEM	UNIT	QUANTITY
Sugar Cane	t	15.1
Chemicals	kg	46.2
Fusel Oil	kg	4.8
96 G L Alcohol (93.8 wt%)	l	50.0
Stillage	t	12.5
Flegmass	t	1.0
Bagasse	t	3.8
Carbon Dioxide	kg	760.0

6.7.5 Benefits

There are several reasons why the development of ethanol production, as a sugar by-product, should be considered.

- The production of ethanol from cane juice can be feasible at about the price now being paid for cane.
- The employment created would fill the void resulting from the downsizing of the sugar industry.
- Sugar cane is renowned for being a most efficient renewable energy conversion crop with the highest annual yields of biomass among all

plant species. It therefore provides a naturally renewable, promising source of raw material for ethanol production.

- Ethanol production involves a simple process of fermentation of agricultural biomass. Feed preparation is minimal and the extra processing to produce molasses is omitted. A typical process may involve washing, milling, and screening, juice preparation, fermentation and ethanol distillation.

- None of these processes is new to Trinidad. Thus the industry would be readily supplied from a resident human resource pool with the requisite expertise in manipulating the available technology.

- Ethanol has a growing market. Currently oxygenates are added to more than 30% of gasoline used in the USA and the percentage is increasing. Methyl tetra-butyl ether (MTBE), at present the most commonly used oxygenate, initially replaced tetraethyl because of environmental reasons, but has now been classified as a carcinogen by the US Environmental Agency. It has been detected in ground water, contaminating aquifers and domestic water supplies. In 1999, the state of California, which uses 25% of global MTBE, announced a phase out of MTBE. MTBE will most likely be replaced by ethanol.

- Ethanol is more costly to produce and has less favourable transfer and blending characteristics, but it has lower CO, CO2, S, CH4 particulate emissions. As such, it is less likely to pollute the valuable water supplies in the Caroni watershed area, which provide water to over forty per cent of the island's population.

- Ethanol is superior in performance to MTBE. As a fuel and a fuel additive, ethanol produces more efficient combustion, has a higher octane number (16 pts) and oxygen content and reduces green house gas emissions by 12-19%.

6.7.6 PRECONDITIONS

Research and Development

Pilot studies around the production of ethanol have already been carried out in Trinidad. Further research can be conducted by institutions such as the University of the West Indies, which have the requisite skills, into the production of other sugar based products such as bagasse, gum, wax, edible

fibres and biodegradable plastics (dextran) from the sugar cane shell, fibres, juice and molasses. The advent of biotechnology has made it possible to genetically alter the plant to produce more fibres or sugars.

Feasibility Study

There is a need for a detailed economic feasibility study, exploring the existing and potential markets for and competitors in the production of alternative low-cost energy sources. Brazil leads the world in the large scale production of ethanol, followed by the USA. The United States market is growing and is the most dynamic while the Brazilian market is stagnating. The status of the European Union, Argentina, Kenya, Malawi, Mexico, India and Columbia, as producers of ethanol, should be verified.

Legislation

The political will and regulatory framework are required to promote the use of bio-ethanol products. This would encourage and mandate oil producers to participate in the development of a fruitful relationship between the oil and sugar industries. Specifically, the oil company can be asked to partner in the use of ethanol in a mixture with gasoline which could reduce the cost of gasoline. This joint venture would allow the oil company to use the ethanol and thus have more gasoline available for export purposes. Extending the volume of conventional gasoline is therefore a significant end use of ethanol and should benefit the local oil company. The price of ethanol must therefore be close to that of the wholesale price of gasoline.

CHAPTER SEVEN
Conclusion

7.1 The future fortune of Trinidad and Tobago and the Caribbean depends on our ability to clearly interpret and forecast the international environment, particularly as it applies to global trade. Global trade is animated by global conquest. Unless this is apprehended, all developmental models will fail.

It is therefore imperative that the civil institutions, and the citizens band together, to find ways in which all the resources of the nation, its anthropological and ecological stocks, may be secured.

This Position Paper has recommended a perspective, a method and a number of possible interventions. It argues that the newly opened Caroni (1975) Ltd. lands provide a historic opportunity for intervention. It is possible to use portions of the Caroni Lands to employ modular planning to create a platform for national development. Models are visible and they may be imitated. They are small scale and may be adjusted to achieve relative success. In time, if well conceived and supported, they turn into cluster formations, which engender exponential growth and international trade. A number of areas for modular planning have been proposed in the areas of Botany, Education, Housing, Livestock, Food and Agro-Industrial production.

This Position Paper has also recommended the principle of strategic continuity. Though diversification processes at the old Caroni (1975) Ltd. have largely failed, it is important to comprehend the vital importance of the philosophy of diversification. This diversification, already rooted in our anthropological and ecological heritage, must extend and grow. It calls for the diversification of all wealth-producing sectors – the industrial, the educational, the agronomic, for example – to create variegated, heterogeneous structures for development. Heterogeneity is a means by which national stocks of wealth may be protected from the homogenising drive of conquest trading, a brand of trading which seeks to factorise states and dissolve national boundaries.

It is clear that small Caribbean states are in jeopardy. The Republican State of Trinidad and Tobago is being asked to "roll back" to accommodate the

drive of conquest trading. This is untenable. The greater the withering of the national state, the more vulnerable are the people and its resources. The Caribbean has many a rude historical chapter already written on this subject. It is therefore imperative that the civil institutions of the nation, those who are able to correctly interpret the international environment, band together to encourage the governments to seek at once the best measures for protecting the nation and its rich heritage of anthropological and ecological stocks in the cause of wealth creation and national and regional development.

CHAPTER EIGHT
Recommendations

This University Position Paper recommends the following:

1. That the Government move immediately to prepare and publish a comprehensive plan detailing how it intends to restructure Caroni (1975) Limited.

2. That the Government take urgent steps to convene a national consultation on the Caroni resources and on the published plan.

3. That, in respect of the use of Caroni lands, any departure from the National Physical Development Plan - the substantive legal document framed to govern land use in Trinidad and Tobago - must be done through the legally stipulated process, which includes bringing amendments to this Plan before Parliament.

4. That all conditions for the lease and tenure of the Caroni lands be detailed to the public in a published document, to meet the requirements of transparency.

5. That the Government immediately establish a mechanism for consultation and information gathering with the Caroni workers, in order to determine (a) their skills, experience, intentions, dispositions, so that (b) a detailed and authentic skills bank will be created and that (c) their determinations are taken into account in the transformation processes, so that (d) they may have choices of how they may be integrated in future planned enterprises.

6. That the State establish an independent Screening Committee to stringently screen potential investors who seek Caroni lands as their location of business.

7. That the Ministry of Agriculture, Land and Marine Resources establish an independent Authority charged with the implementation of plans for agriculture and agriculture-related industries.

8. That Government establish a comprehensive system of water control on the Caroni lands, in order to facilitate irrigation, as an essential pre-

condition for the establishment of agricultural enterprise on the Caroni lands.

9. That the Government establish a Lease Income Funding Enterprise system, and embark upon a comprehensive joint funding venture with companies in the heavy industrial sector, in order to fund national platforms for development, such as the following ones proposed by this Position Paper:

[a] A Botanical Plan
[b] A Technological and Vocational Institute
[c] A Buffalo Reconstruction Program
[d] A Model Program for Untenured Residents
[e] A Food Park Plan
[f] A Research and Development Mandate, for the University of the West Indies and other research institutes in order to support Agro-Industrial development.

Appendix 1

CARONI (1975) LIMITED
SUMMARY OF LAND ACREAGES
AS AT DECEMBER 2001
(FOURTEEN SECTIONS UNDER THREE ADMINISTRATIVE AREAS)

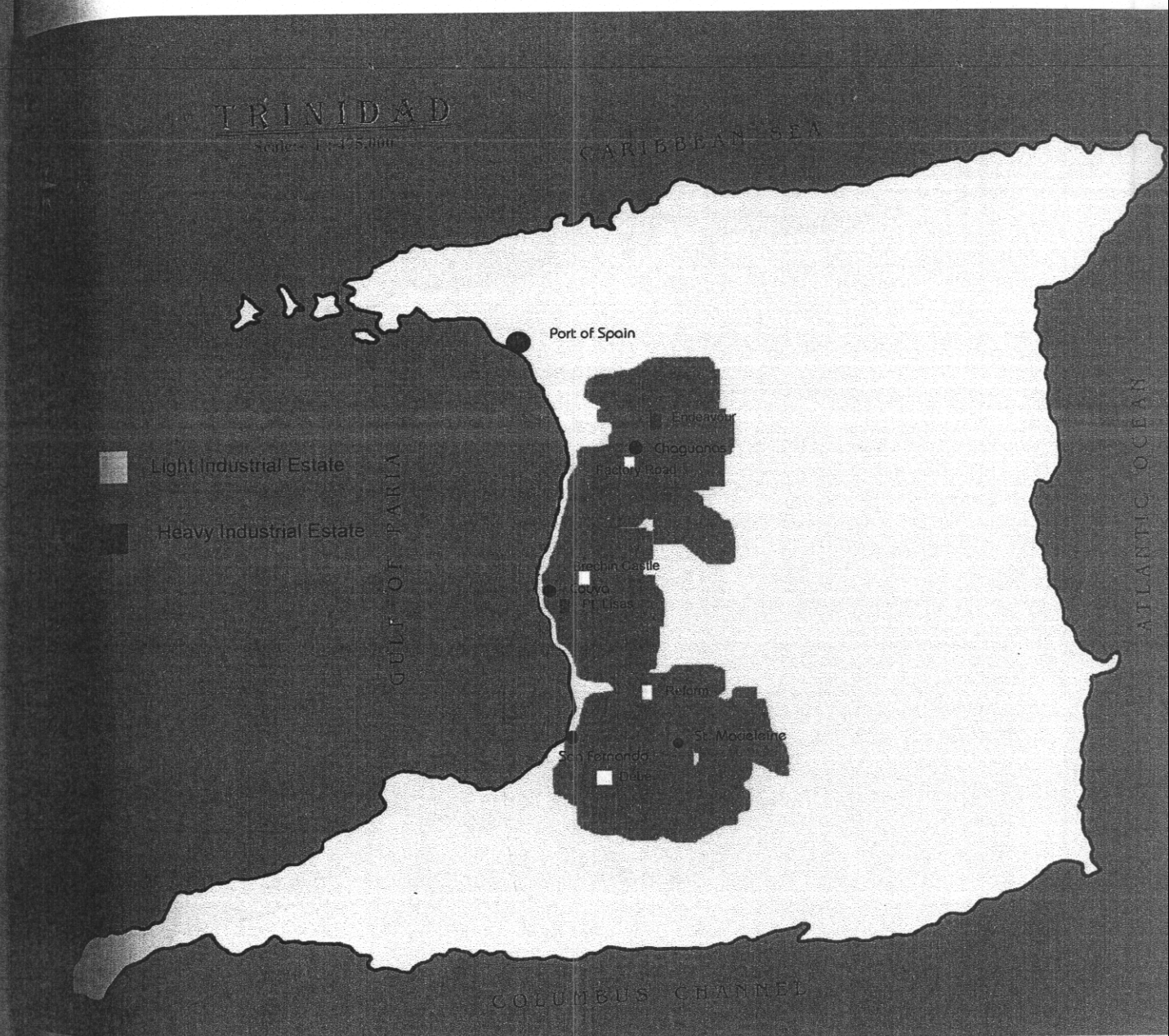
DESCRIPTIONS	ACREAGE
AREA OF LAND UNDER CANE CULTIVATION (INCLUDING LANDS FOR PLANTING)	28,895.12
AREA OF LAND BEING TAKEN INTO CANE CULTIVATION	-
AREA OF UNCULTIVATED LAND CAPABLE OF CANE CULTIVATION	6,407.97
AREA OF LAND UNSUITED FOR CANE CULTIVATION	2,340.31
AREA OF LAND TAKEN BY SEA EROSION	40.00
AREA OF LAND TAKEN BY HIGH TENSION WIRES	13.00
AREA OF LAND UNDER PASTURES	1,470.40
AREA OF LAND UNDER RECREATION GROUNDS AND FOOTBALL STADIUMS AND REGIONAL CORPORATIONS	447.31
AREA OF LAND RENTED TO CANE FARMERS	10,887.24
AREA OF LAND RENTED TO LOT RENTERS (NO. OF LOTS IN SECTION)	909.10
AREA OF LAND UNDER TRACES	3,018.44
AREA OF LAND UNDER METALLED ROADS	1,081.88
AREA OF LAND UNDER PONDS, RAVINES AND WATER COURSES	605.54
AREA OF LAND UNDER DERRICK SITES AND OTHER SERVICE AREAS	221.76
AREA OF LAND UNDER COMPANY DWELLINGS, OFFICES, PENS AND OTHER BUILDINGS	618.90
AREA OF LAND UNDER CULTIVATED GRASS (ELEPHANT, GUATEMALA OR PANGOLA, ETC)	-
AREA OF LAND UNDER SQUATTING AND SPONTANEOUS SETTLEMENT	2,361.12
AREA OF LAND RENTED OUT FOR OTHER PURPOSES	436.10
AREA OF LAND UNDER FACTORY, DISTILLERY, BAGASSE AREAS AND TRANSPORT	168.03
AREA OF LAND UNDER CITRUS (NEW ESTABLISHED CITRUS)	3,180.73
AREA OF LAND UNDER ABANDONED CITRUS/LA PHILLIPINE LANDS	197.00
AREA OF LAND UNDER RAILWAY TRACKS, HOUSING AND CASSAVA BLOCK	107.03
AREA OF LAND UNDER NEW COLONIAL COMPANY AT BARRACKPORE AND DEBE	4.65
AIDES STRIP- BARRACKPORE	249.66
AREA OF LAND TAKEN FOR SEWAGE POND	12.50
AREA OF LAND FOR AQUACULTURE – ORANGE GROVE	284.00
LONG LEASE RENTAL – TOBACCO/LIVESTOCK FARM	10.00
MON REPOS QUARRY AND GUARACARA	29.00
AREA OF LAND COVERED BY AIRSTRIPS	83.42
AREA OF LAND UNDER TEAK AND MOHAGANY	165.07
AREA OF LAND LEASED TO PERNOD RICARD	450.00
UNALLOCATED – GUARACARA, DUNGARD, ESMERALDA, BEACH HOUSE SITES AND STOCK FARMS	498.95
AREA OF LAND UNDER VARIOUS FOOD PRODUCTION – RICE, RESEARCH & DEVELOPMENT	5,035.93
AREA OF LAND TAKEN BY GOVERNMENT AGENCIES	2,648.87
AREA OF LAND SOLD – RIENZI COMPLEX AND OTHERS	84.90
AREA OF LAND – TREE CROPS, CASHEW, PUMPKIN AND MANGOES	944.04
AREA OF LAND – ABANDONED TREE CROPS	168.13
AREA OF LAND – ALLOCATED TO U.W.I. ASJA, API GAS LINE	313.46
TOTAL ACREAGE	74,389.56

APPENDIX 2

Series1
Tree Crops
Other
Squatting
Citrus
Rice
Buildings
Traces/Roads
Rented to Cane Farmers
Pastures
Sugar Cane
0
10000
20000
30000
40000

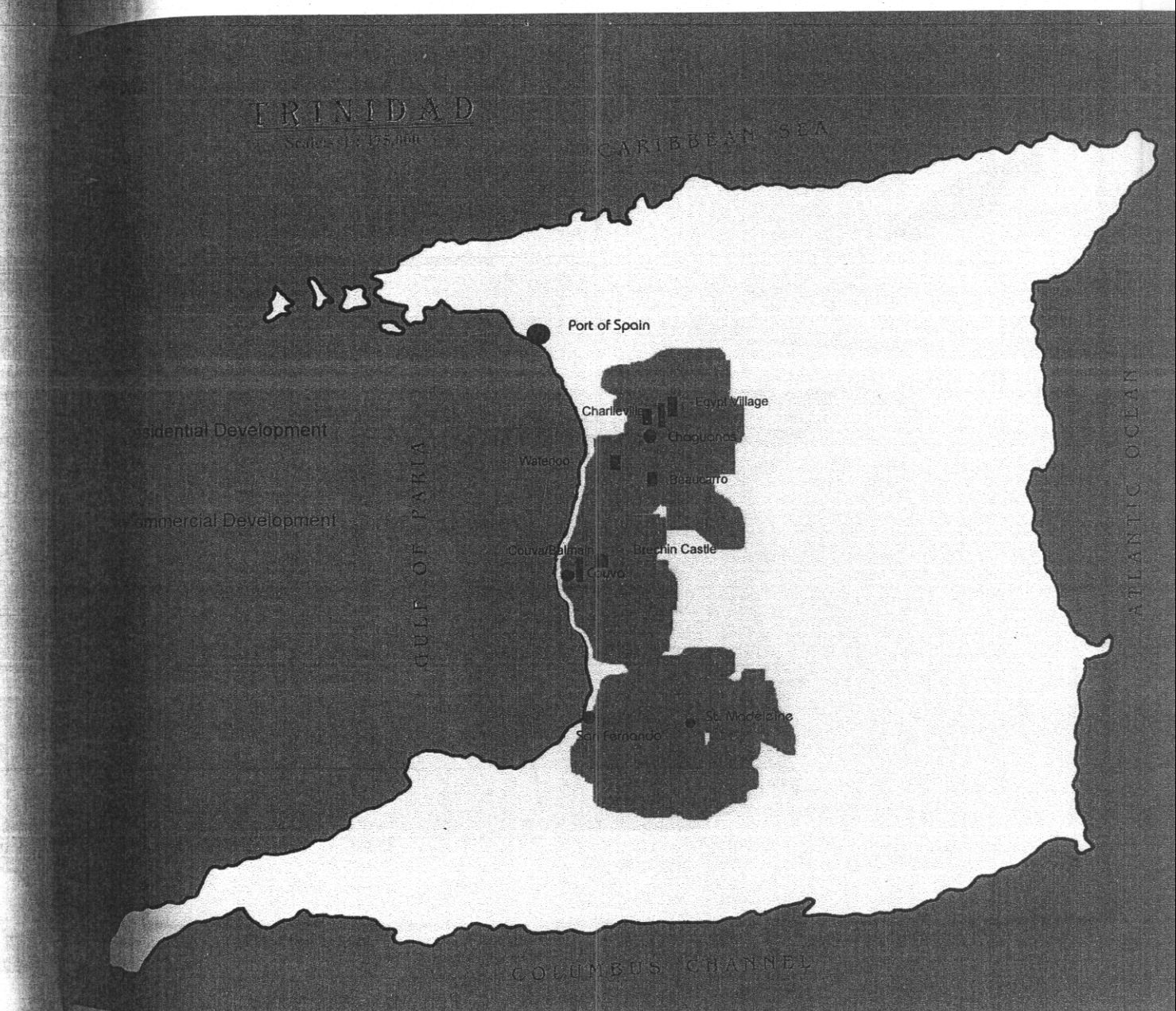
Appendix 3

MAP OF TRINIDAD SHOWING LOCATION OF LIGHT AND HEAVY INDUSTRIES



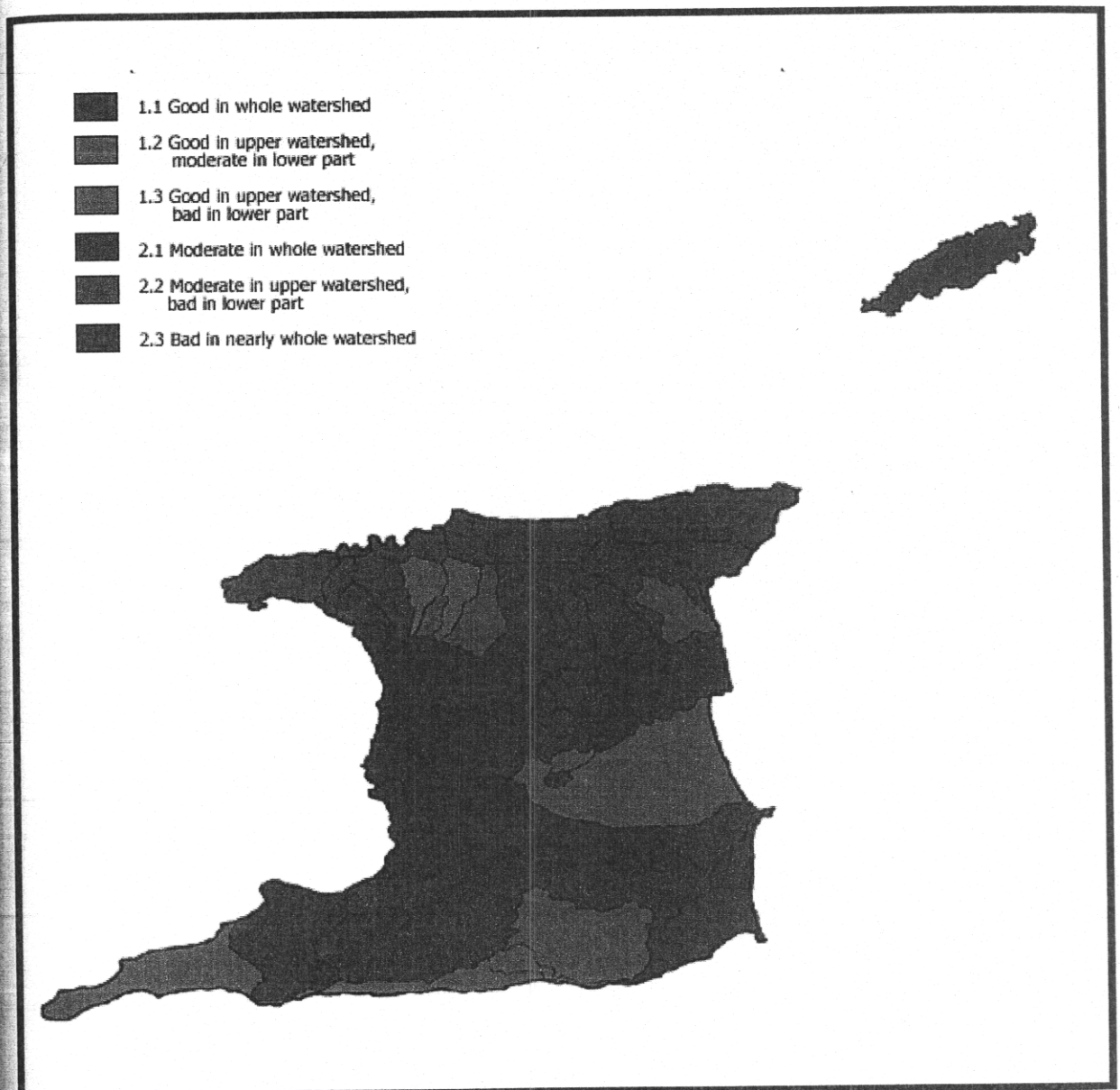
Appendix 4

MAP OF TRINIDAD SHOWING RESIDENTIAL AND COMMERCIAL DEVELOPMENT



Appendix 5

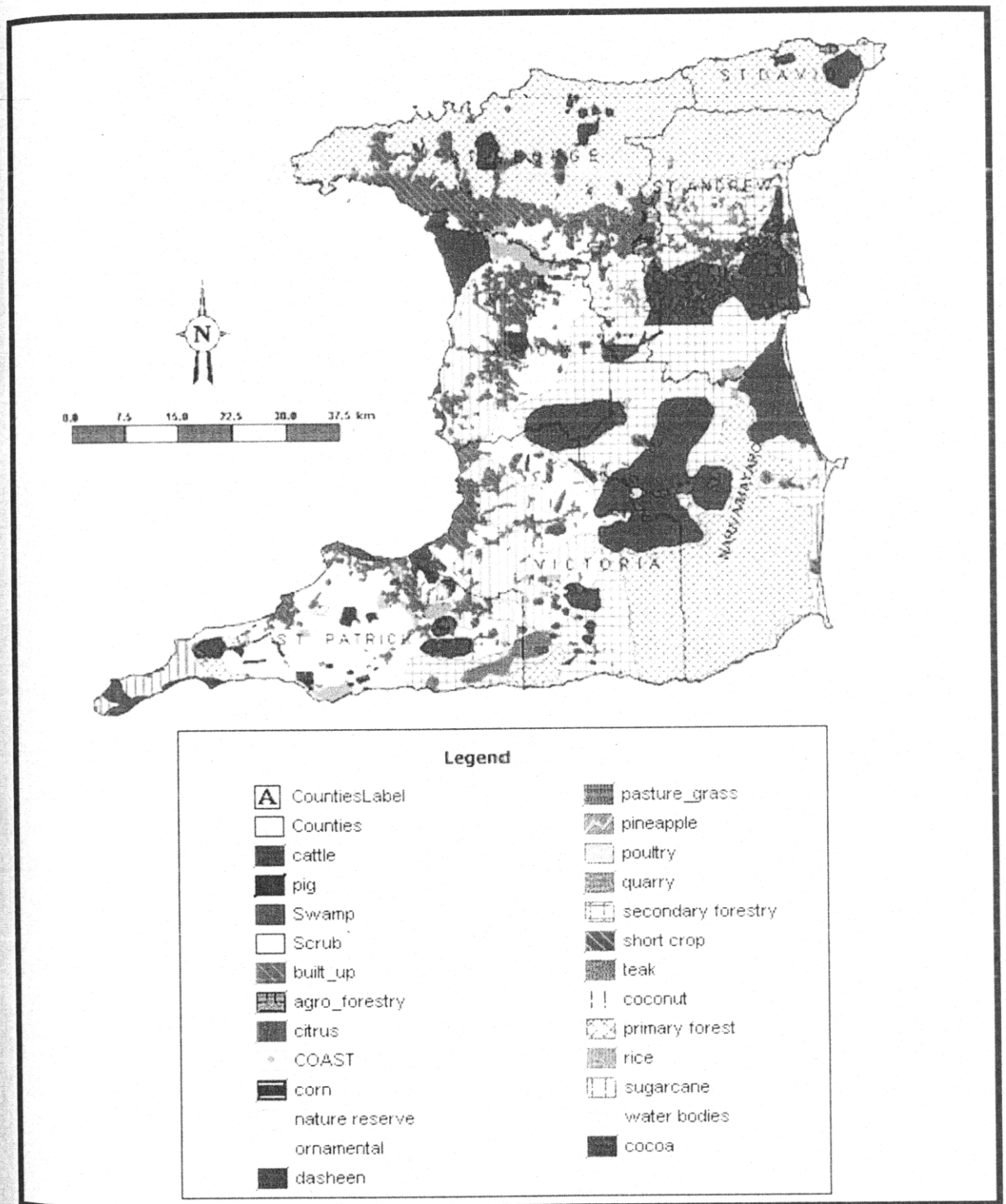
MAP SHOWING SURFACE WATER QUALITY IN TRINIDAD AND TOBAGO



Source: *Water Resources Management Strategy for Trinidad and Tobago, Final Report*
DHV Consultants/Delft Hydraulics/Lee Young and Partners
Government of Trinidad and Tobago. June 1999.
(Available online: http://www.procicaribe.org/networks/clawrenet/reports/z_tt/ttmp311.htm)

Appendix 6

MAP SHOWING LAND USE IN TRINIDAD



Source: *From 1994 aerial photographs* - Ministry of Agriculture, Land and Marine Resources (Available online: http://www.procicaribe.org/networks/clawrenet/reports/z_tt/ttmp261.htm)

Appendix 7

LAND CAPABILITY CLASSES FOR THE LANDS OF THE NORTH AND CENTRAL SECTIONS OF CARONI (1975) LIMITED

Section	Capability classes (ha)				Total (ha)
	I	II	III	V, VI, VII	
Todds Road	0	354	124	498	977
Caroni	0	1175	1073	0	2272
Waterloo	0	1178	398	0	1576
Exchange	0	883	582	22	1487
Edinburgh	0	660	586	0	1246
Jerningham	0	592	235	97	924
Forres Park	0	56	77	142	276
Orange Grove	46	784	54	0	884
Felicity	0	529	912	0	1442
Montserrat	0	43	326	544	914
Esperanza/ Phoenix	0	87	736	638	1462
TOTAL (ha)	46	6340	5105	1943	13,434

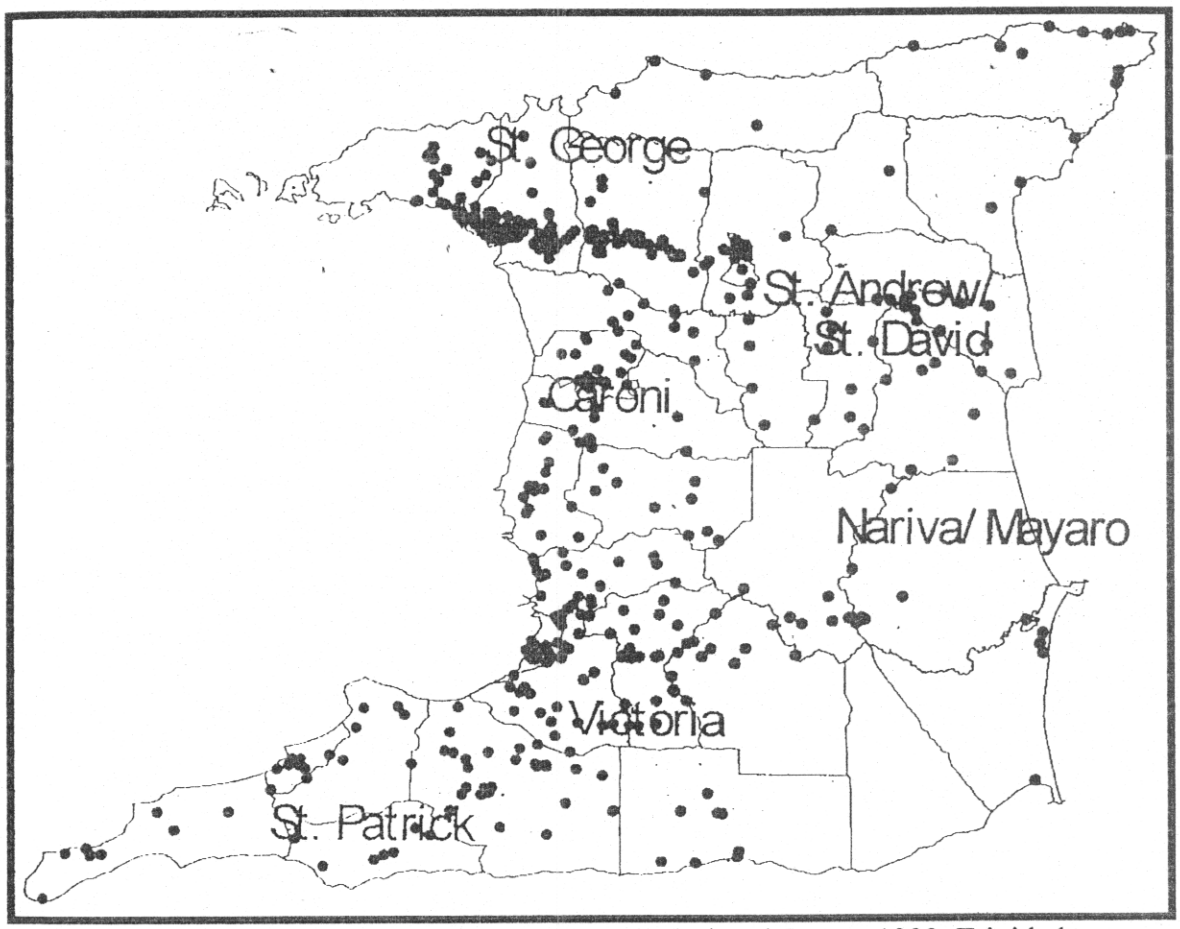
Appendix 8

LAND CAPABILITY CLASSES

Class I	**Suitable for cultivation without special practices**
Class II	**Suitable for cultivation with simple practices**
Class III	**Suitable for cultivation with intensive practices**
Class IV	**Suitable for cultivation with special practice otherwise suited for pastures and tree crops**
Class V	**Not suitable for cultivation – consider for pasture, fruit and forest**
Class VI	**Not suitable for cultivation but for pasture and forest**
Class VII	**Suitable only for rough pasture, wild life, recreation and water conservation**

Appendix 9

MAP OF TRINIDAD SHOWING THE LOCATION OF PUBLIC SCHOOLS



(Source: Ministry of Education. Education For All National Report 1999, Trinidad: Ministry of Education, 1999.)

Subjects offered at Primary School illustrating a sample of relative weighting given to each

	Reading	Writing	Math	Spanish	Technology	Sport	Ecology	Social Studies	Visual/Performing
Reception	4	4	4	4	4	4	2	2	2
Preparatory									
Junior 1									
Junior 2									
Junior 3									
Junior 4									
Junior 5									

Technology I, 2 and 3 are offered in the primary school and Technology 3 and 4 in the Forms 1 and 2 at Secondary School

Technology studies is a forerunner to Vocational Studies. The aim of the Vocational Studies Program is to help to create a class of persons who can design, innovate, invent forms, styles, objects, systems.

Hours spent per week on each program at each level of the primary school

At the end of Junior 5 each student shall reach the standards in reading, writing and numeracy set by the State, and shall have achieved the following:

- a basic speaking competence in Spanish
- a basic understanding of the working of an ecological system
- a bacic competence in at least one sport, as well as its rules, ethics and conventions
- a basic knowledge of the human social system
- a basic competence in operating simple machines, as well as the first principles which cause them to operate.

APPENDIX 10

Secondary School General Draft Curriculum

Technology 4 and Technology 5, will be offered in Forms 1 and 2 only, a program continuing from the Primary School Technology 1, 2, 3.

Vocational subjects from: Beauty Culture, Dressmaking and Design, Machineshop, Tailoring, Construction (Carpentry and Joinery), Technical Drawing, General Deaughting, Welding, Building Engineering Technology, Clothing and Textiles, Graphic Design, Agricultural Science, Agriculture Craft, Food Prep.

Sports subjects from: Track, Field, Swimming, Tennis, Boxing, This is apart from the general sports recreational program offered.

Academic subjects from: English Language, Mathematics, Spanish and subjects in the following options: Business, Science, Maths and Computer, Modern Studies, Languages

Visual and Performing Arts from: Painting, Sculpture, Film, Photography, Music, Dance, Theatre, Singing,

	Vocational	Sport	Academic (including Spanish)	Visual and Performance	Technology
Form 1	0	6	12	6	6
Form 2	0	6	12	6	6
Form 3	Major	Major	Minor	Minor	0
Form 3	Major	Minor	Major	Minor	0
Form 3	Minor	Minor	Major	Major	0
Form 3	Minor	Major	Minor	Major	0

Students may at the end of From 3 adjust Minors and Majors, and shall follow final programs into Forms 4 and 5

Each student will graduate at the end of Form 5 with competence in at least two vocational subjects, a foreign language five academic subjects, at least one Sports and Visual and Performing Arts subject.

Appendix 11

THE UNIVERSITY OF THE WEST INDIES

University Position Paper- Executive Summary

A Framework For National Development: Caroni Transformation Process

Produced by:
The University of the West Indies

St. Augustine, July 2003

EXECUTIVE SUMMARY

1.1 INTRODUCTION

This document is a summary of a Position Paper produced by the University of the West Indies on the Caroni Transformational Process. It comprises the perspectives of over fifty persons, mostly lecturers from the St Augustine Campus of the University. These perspectives were compiled from interviews, or from oral presentations at a forum 'Caroni Lands: Sustainable Solutions' held at the University on 27th April 2003. The objective of the University Position Paper is **to outline, for the people of Trinidad and Tobago, a framework for the development of our national resources and to illustrate how this framework may be used to develop the lands of Caroni (1975) Limited**. The authors of the Paper interpreted the University's most cogent ideas on national development and applied them to the Caroni process. The framework is not a plan. It presents guidelines and preconditions for the transformation process; it outlines six proposals for specific projects; and it makes nine recommendations. This Summary is divided into the following five sections:

I. The Stocks of the Caroni Lands

II. The Historical Model of Development

III. An Altered Perspective for Development

IV. Application of the Altered Perspective to the Caroni Process

V. Recommendations

2.1 THE STOCKS OF CARONI (1975) LTD.

The Land

At the end of 2001, the Caroni lands measured 74,390 acres; this is a land mass slightly larger than Tobago. The land is bound by St Augustine, Tacarigua, Trincity and Piarco to the North; sprawls Southwards around the districts of Chaguanas and Couva; provides an Eastern border for the districts of California, Claxton Bay, Point-a-Pierre, Marabella and San Fernando; and sprawls further southwards and eastwards in an arc from St

Madeleine, Barrackpore, Princess Town and Reform. This land interlocks over forty villages and sub-urban and urban districts.

The land lies directly on, or next to a placid waterfront strip of thirty miles. The Point Lisas Industrial Estate with its international port, was once Caroni lands; at Felicity the land runs along the waterfront. The land is port land: it lies between one and three miles from the Point Fortin, Petrotrin, Claxton Bay and Point Lisas ports. The Caroni lands is a watershed area, a basin which channels the Caroni, Guayama, Couva, Guaracara and Oropuche rivers and their tributaries, from the Northern and Central Ranges to the sea. It forms a natural extension to the Caroni and Oropuche wetlands to the North and South. Mr. Uthara Rao, the chairman of the Estate Management and Business Development Company Ltd., a company appointed by Government to oversee the land assets of Caroni, names Caroni (1975) Ltd. as "the richest company in Trinidad and Tobago," in terms of the resources commanded by the Company.

In terms of its potential for the development of its anthropological (man-made social and economic structures), and ecological features (plant, animal and microbial habitats) the land is invaluable. Dr Mary Alkins-Koo, a lecturer in the Department of Life Sciences at the University of the West Indies, refers to land as "a vertical asset": it encompasses the biosphere above it, the soil and terrain, the surface water and water table, the plant and animal populations, and the human infrastructure. Land is the resource base upon which a nation's anthropological and ecological stocks of wealth are founded, secured and sustained. If the Caroni lands are used judiciously they will bring invaluable wealth flows to the people of Trinidad and Tobago, to other species, and to other cycles of life - soil, water, air -which form the Republic.

The Human Resources

The second invaluable stock of wealth of Caroni 1975 Ltd. is its human resources. The company possesses an enormous diversity of skills, talents, experience and knowledge: researchers and scientists in the Caroni Research Station and the Sugar Cane Feed Center; managers and technicians in the Citrus, Rice, Distillery, Dairy, Beef, Sugar, Engineering and Transport divisions; skilled and semi-skilled agriculturists; and a corpus of independent farmers and service companies which have supported the institution. Many professionals who laboured long and hard to plan Caroni (1975) Ltd. Diversification Projects have become skeptical and wary; but at

the ground level, where implementation has suffered enormously, the managers, technicians and other workers have learnt what is feasible, practicable and possible. Additionally, these human resources are mainly based in a cluster of villages and small towns which have grown out of the sugar industry. Culturally and economically, they are Sugar Belt villages and towns. They possess a number of agriculturists involved in small, integrated farming on either a subsistence or competitive basis. This disposition for agricultural pursuits is a rare quality in a heavy industrial environment; it constitutes an invaluable stock of wealth.

The Existing Plant And Infrastructure Capacity

The third stock of wealth of Caroni (1975) Ltd. is its existing plant and infrastructure. The Company owns two sugar factories and a sugar refinery; a well-organized, technologically enhanced sugar factory may produce a number of industrial, value-added products from the sugar stalk. It possesses farmland and industrial infrastructure; depleted or ongoing uncompetitive enterprises - for example in teak and mahogany; tree crop or food crop farming; inland fisheries; livestock; the distillery; animal feeds; sugar refining – may be reconstructed or invigorated. The physical infrastructure also includes a dense grid of trace/road networks, ponds, airstrips, administrative and farm buildings, scale-yards, vehicles and engineering equipment, port facilities, and semi-developed irrigation systems in certain areas.

These then are the essential wealth stocks of Caroni (1975) Ltd.: the land and its environs; the human; the plant and infrastructure. They are immense. However, wealth stocks by themselves do not necessarily lead to wealth flows. And they may not necessarily lead to wealth flows to benefit the national community. The question is: how can the resources of Caroni (1975) Ltd. be developed to secure the current needs of human and ecological systems without compromising the needs of future generations of human and ecological systems? What form of planning outlook, perspective, or framework should we employ to guide the planning process?

3.1 The Historical Planning Model

The Caroni Transformation Process is being governed by the assumptions of two plans: the first, the Total Separation Enhancement Plan (TSEP) and the second, the Future Direction of Caroni Ltd. Both are government plans. The first was produced in 2001 and the second in 2002.

The Total Separation Enhancement Plan (TSEP) of 2001called for a total shutdown of the operations of the sugar industry, with an enhanced separation package for workers. The following are the striking features of the Plan.

- It was economistic rather than developmental. It gave pre-eminent value to saving costs rather than using the assets of the Company for credible local (the Caroni-Point Fortin Coastal Corridor) or national development.

- It placed an inordinate reliance on externally-appointed market driven factors to rescue Caroni and bring unprofitable sectors to profitability. It did not consider the Caroni human resource base as a source for enterprise formations.

- It was lacking in equity. It was intent on withdrawing and disconnecting workers from the land, which provided a continuous or seasonal income, with a lump sum payment; and allocating the land to external investors to capitalize on, to accrue continuous income.

- It gave the workers no real choice. The plan was construed without consultation with the labour force. (Choice is a fundamental measure used to chart equity, transparency and national development). The plan was intended to be sold to the labour force through propaganda; in part it read, "The well-crafted media strategy to capture the national community and specifically the targeted audience must be developed." The "targeted audience" here refers to the workers; in short, the plan was advocating that the workers should be fooled.

- It undervalued the assets of Caroni (1975) Ltd. This was true, not only of the workers, but the land. The value of port land, in an area favourable to gas-based enterprises, could accrue returns through lease-income that could be used to fund national development programs on State land.

- Its plans for agriculture were ill-devised. It did not sufficiently consider the array of pre-conditions, for example soil enhancement, irrigation, agricultural skills base, and feasible management systems, as preconditions for competitive successful agriculture.

- It gave token consideration to the Ecology of the area. The Caroni lands are denuded of tree cover. Their surface water is the most contaminated in Trinidad and Tobago, and possibly the Caribbean. The coastal area is degraded. These circumstances were not seriously treated in the Plan.

- The plan was lacking in vision. In the section 'Final Recommendations' it states: "The Sugar Industry in Trinidad has long outlived its usefulness and has no place in a modern knowledge driven economy." Is Trinidad and Tobago a modern knowledge driven economy? Where are the knowledge base and the labs for converting the sugar cane stalk to productive modern uses, pharmaceuticals, food ingredients, fuel additives etc? Where is the research on genetics and biotechnology to convert a high-fibre yielding product such as the sugar cane into agro-industrial products? In any economy, knowledge must be used to create or develop technologies for exploiting natural resources in order to generate social and economic wealth flows.

The 2002 'Future Direction of Caroni (1975) Limited' was fashioned after the same imperatives: cost cutting without sufficient attention local or national development; the undervaluing of the labour force and the land; the excessive reliance on externally-appointed, market driven entities to rescue the Treasury; the absence of serious attention to preconditions for successful, competitive agriculture; and cursory attention to the Ecology of the area.

However, this later Plan called for a downsizing rather than a total shutdown of the sugar industry. Additionally, it strongly recommended a **phasing** of the closure of a section of the sugar industry, detailing a statistically elaborate plan for closure in 2007.

The current Caroni Transformation Process is following the TSEP Plan with the significant exception that it is downsizing the industry rather than totally closing it down. It is following selected aspects of the Future Direction Plan. It completely ignores the phasing recommendation of this Plan.

The current Caroni Transformation Process is about converting national assets into private assets. In the main, it is serving the interests of those who wish to generate private capital from public wealth stocks; for this reason, the current Process is exploitative and fraught with inequity. This is nothing

new. The current Process is being driven by an exploitative historical model of development. This claim may best be verified by illustrating the manner in which the current Process is being driven by the historical model.

3.2 Elements Of The Historical Model

Theis historical model, which date to the beginnings of European expansion into the Americas, may be understood by reference to the ways in which privileged entities (European monarchs, mercantilist companies, corporate patrons) undertook the control and divestment of "new" lands (conquests by Requisition, threats, self-entitling leases) or "native" labour (agrarian labour in Ireland, China, India, Africa) in order to exploit lucrative stocks. The following elements of the historical model may be observed in the current restructuring drive:

Enterprise conception
The enterprise is conceived to control land space; to control land space, especially prime property close to the port, is to control the socio-economic agenda.

Land acquisition
Land is leased on gratuitous terms, ninety-nine years for example, without publication of terms of lease or tenure. This leaves the process open to political and economic opportunism and speculation. Soldiers of fortune are repaid for services to Crown, Corporation, or Cabinet.

Propaganda
The enterprise is sold through propaganda, using leaflets and newspapers, promising jobs and security. The rhetoric of sustainable development, ecological care, and agricultural development is applied to imply security for all.

Establishment of Plant
Factories, depots, malls et cetera are established through a servant company: a functionary or operative acting on behalf of Royal, or Corporate, or Cabinet interest. Leases and investments are directly controlled through Crown, Corporate, or Cabinet rule.

The Establishment of a Labour Pool

A labour pool is contracted through direct importation into the area, or through eviction/retrenching of labour from economic units which have become dysfunctional.

Minimal Training

Minimal training, sometimes called "re-tooling", is provided to ensure subsistence living and dependence. The descendents of the new enterprise managers remain outside, protected from the re-tooling process.

Compliant Education

Education is of a certain type; it produces jobless graduates who inevitably gravitate towards servicing the corporate sectors. In the modern situation, the State pays for the education bill thereby granting the Corporation a saving.

Minimal Housing

Housing is conceived in terms of projects, schemes, estates, and settlements, not of communities. In instances, the principle of fitting as many heads to acres is applied. This saves the Corporation an extended cost. Many "labour pool" settlements are architecturally unpleasant or unhealthy and/or ecologically ruinous.

Wealth extraction

Wealth flow is defined in monetary GDP terms, rather than in terms of wealth flows to human, or institutional or ecological stocks. It is based on monocultural stock, for example sugar or oil or gas. The success of this stock on the international markets encourages investments which rapidly withdraw when the currency of the stock declines, leaving classes of persons psychologically and economically dependent.

The historical model is being excruciatingly exacted on the Caroni lands. The current transformation process clones the historical model. If this model is allowed to prevail, through Corporate and Cabinet prerogative, the stock of wealth of the Caroni lands will **disproportionately** flow to the people of Trinidad and Tobago. The statistics show that the lowest income households in Trinidad and Tobago are those in Nariva/Mayaro and Point Fortin. In a Government survey conducted in 2000, of the fourteen districts surveyed, the Average Gross Monthly Household Income for these areas were the lowest. Rural districts have been unable to access the superabundance of

wealth that exists within the one or two mile radius of their habitat. If this model persists, rural security will continue to decline. Agriculture will continue to be neglected. Soil, water and air systems will continue to be degraded. The ecological system of Trinidad and Tobago will face continued threat. Housing and education achievement for the vulnerable classes will continue to be low. Crime will continue to flourish and demoralize the nation. It is within this context that the University of the West Indies outlines the following summary of its position.

4.1 An Altered Perspective For Development

The basis of all guidelines, proposals and recommendations in the University's Position Paper is a theoretical position on national development. The following is a summary of this theoretical position.

One of the continual failures of vulnerable states globally is a failure by its peoples to interpret and predict international trends. Tate and Lyle, the giant sugar corporation, correctly predicted the international sugar market, accurately assessed the local labour, soil and technology situation, and withdrew from Trinidad in 1975. Many of the problems confronting sugar today, and many of the problems encountered by those who tried to diversify the company, may have been circumvented if international trends had been accurately assessed. In planning for the future of sugar and for the Caroni lands, it is imperative that we correctly assess the international picture.

Two long, and formidable sounding words may help us to interpret this picture. The words are antonyms; they are opposites of each other. It is important to have these opposing words; one defines what the nation must accept and the other defines what it must reject. In other words, one stands for what must be fought **for** and the other defines what must be fought **against**. National and regional development will not happen "Just So" (The Mighty Chalkdust). It must be vigorously pursued; the process of fighting **for** implies a process of fighting **against**.

4.2 The Concepts Of Homogenization And Heterogenization

To homogenize is to take diverse elements and make them alike in nature. It is to take diverse identities and make them uniform in disposition. It is to

convert mixed fractions into common fractions. It is to take many recalcitrant denominations and convert them into controllable ones. Homogenization is the instrument of global authoritarianism. It was the instrument of imperialism; and it is the instrument of neo-liberal imperialism. Most of the tendencies of the historical economic model described above are homogenizing tendencies. In the 18th and 19th centuries, large segments of grassland, swampland, forests, and integrated croplands in Trinidad and Tobago were cleared to make way for the single crop, sugar. This was a process of homogenization, a conversion from diversity to homogeneity in order to easier control the labour stocks, planting, fertilizer, production, marketing, and trading regime, in order to simplify and enlarge the account returns. Once a nation, its economy, its culture, its institutions, its tastes are homogenized, it take generations to re-diversify. This partly explains the tragic failure of Caroni to diversify. This partly explains why our primary and secondary school education formats fail both students and the nation; the format is still elitist, colonial, grammar school "prestige" based; efforts to diversify into technology and vocational formats in the 1970's have failed the greater percentage of students. This is why efforts to diversify our political culture have failed; the system still remains Colonial, Crown Colony, Cabinet & Corporate based. Diversification is too untidy for large corporations or for the present political party culture; large corporations and cabals profit most considerably when fractions of the economy are converted into larger fractions. Political parties rely for their support on large ethnic bases.

The opposite of homogeneity is heterogeneity. Heterogeneity defines the tendencies towards diversification; the conversion from large fractions to smaller units. It respects the integrity and authenticity of difference. It is against totalizing, authoritarian uniformity. The heterogeneous outlook respects the presence and integrity of the small, the vulnerable and the diverse. It recognizes the importance of a diversified agricultural and industrial production regime, which will create a greater range of market choices. In education, it represents the appreciation of the presence and integrity of different learning styles, and therefore of different forms of educational institutions. In shelter, it means the recognition of the presence and integrity of untenured residents and their descendents. For the ecology, it recognizes the presence and integrity of cycles of water, soil and air; and of plant and animal species.

Globalization implies heterogeneity. It means the sharing of cultures, markets, political traditions, fashions, tastes, globally. However, many North Atlantic nations, using international institutions devised to protect the interests of vulnerable and small states, are using globalization to homogenize markets, political traditions, cultures, tastes, fashions. Fortunately, Trinidad and Tobago possesses one of the most diversely speciated animal and plant cultures on the planet. Because of our geographical location, one square inch of soil, or of tree bark, yields a dense speciation of microbial life. Because of our historical circumstances the human population is diverse. These heterogeneous stocks must be protected; they provide bases to counter agendas that are using globalization in order to homogenize and control.

How can this theoretical position help in the Caroni Transformation Process?

5.1 Application Of The Altered Perspective To The Caroni Process

- The process must be a shared one. It must guard against undue and disproportionate influence of Cabinet & Corporation powers. It must be shared between the diverse stakeholders: the Caroni workforce; the sugar cane farmers; the residents of the North South Coastal Corridor; the untenured residents and agriculturists; the Trade Unions; the communities of manufacturers, farmers, industrialists; the State entities, including the Ministries, the Town and Country planners, and the Opposition party; civic institutions, particularly those involved in research and developmental planning. This is a necessary pre-requisite to guard against distrust towards the process and disorderly transfer into the future.

- The process must be geared towards genuine product diversification in the agricultural and industrial sectors, and towards creating integration between sectors.

- The process must strategically continue the diversification process already started on the Caroni lands. The extended University Position Document outlines a process **from** strategic continuity, strategic intervention, and modular planning, **to** platform building, cluster formation and exponential growth.

- The process must take into account the vulnerability and integrity of the diverse human and ecological stocks in the area; the workforce, the natural cycles, plant and animal cultures.

- The process must balance the demand for diverse land usage with the permanent requisite to protect varieties of soil classes for national food/beverage and water security.

- The process must regard the Caroni lands as national assets, available to diverse sections of the national community, and make mechanisms for migration into the area equitable and transparent.

- The process must diversify its strategy with respect to balancing rural and urban development; rural development has, in the main, been neglected in Trinidad and Tobago.

- The process may be geared towards building various platforms upon which to launch growth in diverse economic and social institutions. The University Position Document proposes six **models** that may be used to build platforms for re-constructing **institutional sectors**:

INSTITUTIONAL SECTORS	MODELS
i. Conservation	***A Green Plan for the Area – Integrating Recreation, Timber-stocks, Plant Propagation, Tree Cropping, Buffers against Industrial Pollutants.***
ii. Education	***A Technological and Vocational School – Allied to the Agricultural and Industrial sector; located on the Brechin Castle compound.***
iii. Housing	***An Untenured Housing Community – A Housing Program for Untenured Residents.***
iv. Agro-Industrial	***Ethanol Production – An example of a Sugar Cane Based product which may use the Existing Plant Facilities at Brechin Castle for processing.***
v. Livestock	***Buffalo Reconstruction – A Program for Resuscitating the National Buffalo Stocks.***
vi. Food	***A Food Park – Cluster Enterprise which Integrates Agriculture and Industry and Affords Healthy Food and Beverage.***

5.2 Funding For Platforms: Lease Income Funding Enterprise

Income from ninety-nine year leases could guarantee long-term developmental funding for the national projects proposed above. The national assets of the Caroni lands should be used, in the main, for national reconstruction, for developing projects that assist the nation as a whole. In the current Caroni Transformation Process the State has broken the flow of wealth between the land and ten thousand Caroni workers; it is in the process of connecting this flow to private capital. It may be argued that private capital alone has the assets required for reconstruction. This is far from factual. Lease income from lucrative port lands could be used to fund a number of national projects. A Lease Income Funding Enterprise (LIFE) system may be established not just for the projects outlined above, but for a range of competitive small and medium scale enterprises.

6.1 Recommendations

The position outlined above has informed the following nine recommendations. These recommendations are meant to be guidelines for the public and the state. They also provide precise checks; the degree to which each recommendation will be rejected or adopted is measurable.

1. That the Government move immediately to prepare and publish a comprehensive plan detailing how it intends to restructure Caroni (1975) Limited.

2. That the Government take urgent steps to convene a national consultation on the Caroni resources and on the published plan.

3. That, in respect of the use of Caroni lands, any departure from the National Physical Development Plan - the substantive legal document framed to govern land use in Trinidad and Tobago - must be done through the legally stipulated process, which includes bringing amendments to this Plan before Parliament.

4. That all conditions for the lease and tenure of the Caroni lands be detailed to the public in a published document, to meet the requirements of transparency.

5. That the Government immediately establish a mechanism for consultation and information gathering with the Caroni workers, in order to determine (a) their skills, experience, intentions, dispositions, so that (b) a detailed and authentic skills bank will be created and that (c) their determinations are taken into account in the transformation processes, so that (d) they may have choices of how they may be integrated in future planned enterprises.

6. That the State establish an independent Screening Committee to stringently screen potential investors who seek Caroni lands as their location of business.

7. That the Ministry of Agriculture, Land and Marine Resources establish an independent Authority charged with the implementation of plans for agriculture and agriculture-related industries.

8. That Government establish a comprehensive system of water control on the Caroni lands, in order to facilitate irrigation, as an essential pre-condition for the establishment of agricultural enterprise on the Caroni lands.

9. That the Government establish a Lease Income Funding Enterprise system, and embark upon a comprehensive joint funding venture with companies in the heavy industrial sector, in order to fund national platforms for development, such as the following ones proposed by this Position Paper:

   [a] A Botanical Plan
   [b] A Technological and Vocational Institute
   [c] A Buffalo Reconstruction Program
   [d] A Model Program for Untenured Residents
   [e] A Food Park Plan
   [f] A Research and Development Mandate, for the University of the West Indies and other research institutes in order to support Agro-Industrial development.

7.1 CONCLUSION

One clear test of the State's commitment to developing an agricultural platform on the Caroni lands - that will raise agriculture to become a key sector in employment creation, assure the preservation of rurality, ensure a covering of productive vegetation for the soil, lift the health standards of the citizenry, encourage food import substitution, earn foreign exchange, and provide long term food security - is the irrigation test. Recommendation Eight of this document suggests that "a comprehensive system of water control be developed on the Caroni lands, in order to facilitate irrigation, as an essential pre-condition for the establishment of agricultural enterprise on the Caroni lands." If this absolutely essential pre-condition is not met in the short term, the State's intention for agriculture on the Caroni lands will be clearly revealed.

With respect to the allocation of lease and tenure for agricultural, housing, industrial and commercial lands, there appears be no key role for the Parliament or the Public. This is being managed via exchanges between the Cabinet and its servant company, the Estate Management and Business Development Company Ltd. To date, there is no written plan, published or brought before Parliament. There is no written document outlining the conditions of lease and tenure for the Caroni lands. This is a dangerous manner of dealing with a huge, complex and difficult national issue; it is dangerous in ways that some members of Cabinet or the Estate Management and Business Development Company Ltd. may not be cognizant of. The danger is realized in the interpretation of the international picture.

With the advent of neo-liberalism, the internationalization of privatization, the Republican State of Trinidad and Tobago is being forced to "roll back" to accommodate the drive of conquest trading. The pressures on governments are enormous. The imperatives of international donor capital, added to those posed by local donors and cabals, often allow governments little room for manoeuvre. Cabinet, acting in isolation with a subsidiary company is no match for such pressures. Norman Girvan states: "For the reality of globalization is that the game of global competition is not among equals. It is dominated by giant firms, backed by their governments, who have set rules for their own benefit." The strategic response to such giants is, in the view of this University Position Paper, twofold.

1. The Cabinet must enlist the help of the Parliament and the Public by genuinely devolving authority through participatory processes and mechanisms; in this way implementation is pursued on a wide, common front.

2. This common, heterogeneous front must embark on a long-term program of social reconstruction of the declining anthropological and ecological stocks of the nation.

The opening up of new lands, as large as Tobago, provides a historical opportunity to launch such a strategic response.