

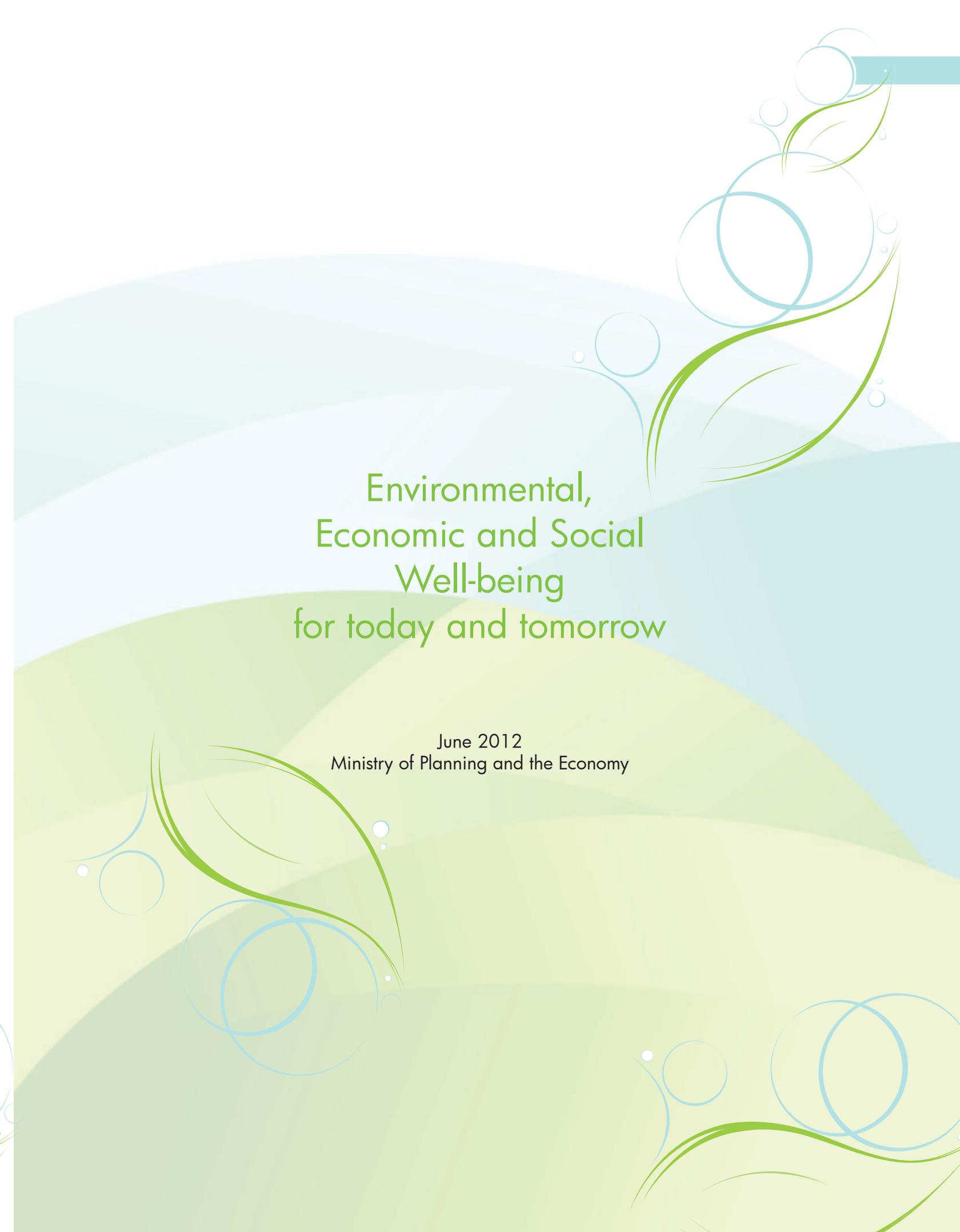


Government of The Republic of Trinidad & Tobago

WORKING FOR Sustainable Development in Trinidad and Tobago



Progress, Gaps and Opportunities for Action



Environmental,
Economic and Social
Well-being
for today and tomorrow

June 2012
Ministry of Planning and the Economy

Preface



This document entitled “*Working for Sustainable Development in Trinidad and Tobago*” comes at an opportune time in the nation’s developmental journey as we seek to create a more resilient and prosperous nation that adheres to the fundamental principles of Sustainable Development.

As a Small Island Development State (SIDS) which has traditionally depended on our natural resource base, we are extremely vulnerable to external economic shocks. Additionally, the land space of our twin island republic is relatively limited and planning for future built development must therefore be sensitive to our fragile ecosystems and long term sustainability concerns. Development that is sustainable and environmentally sound will mitigate challenges that, as a small island state, we inevitably face. Sustainable development will ensure that our economic goals are met, while ensuring people-centred involvement and environmental preservation.

The government of Trinidad and Tobago is steadfast in its commitment to develop this diverse nation with sustainable development at the core of our national policy agenda. The concept of sustainable development is built into the founding policy framework, the Manifesto, which articulates the seven (7) pillars of development for the nation. Arising from the Manifesto, the Medium Term Policy Framework (MTPF) 2011 – 2014 highlights five (5) main priorities for the development of Trinidad and Tobago and addresses issues critical to the advancement of our nation. This sustainable development report is a companion piece to the MTPF and, together with the Manifesto 2010, these three (3) documents constitute the policy and action framework for the government of Trinidad and Tobago. Our Ministry of Planning and the Economy drives and coordinates our developmental thrust and has established a Results Based Framework to measure progress on achievement of objectives and targets.

The sustainable development report is also aligned with the seven (7) thematic areas which the Rio +20 Conference has identified as being of priority. These seven (7) areas include decent jobs, energy, sustainable cities, food security and sustainable agriculture, water, oceans and disaster readiness. The MTPF priorities closely reflect those identified by Rio+20. This close alignment between our priority areas and those of Rio+ 20, demonstrates the extent to which national policy and global focus on enlightened practice are aligned.

The outcomes of the Rio +20 Conference will be taken into account as our national policy agenda evolves, as indeed we have taken the Millennium Development Goals, in policy making so far. Trinidad and Tobago is committed to being a beacon of light in the world through good governance practice at home.

To facilitate this process we recognise that collaboration at all levels of society is a necessity. The government of Trinidad and Tobago will work cohesively with private institutions, NGOs and civil society, labour and business, to ensure that our priority areas are understood and have buy in and that our objectives are met. We will work together as a people and through our collective efforts bring about progress within the framework of sustainable development good practice, not only for ourselves, but for our children and their children and grandchildren.

The vision of my Government is that “through creativity, innovation and collaboration, we shall prosper together”. This is supported by our national mission which is “to achieve economic inclusiveness in an innovation-driven economy, with greater equity, more meaningful participation and a rising tide of prosperity for all.” *Working for Sustainable Development* makes it clear that the Government of Trinidad and Tobago will be managing progress of our nation and development of our people within the framework of Sustainable Development of Trinidad and Tobago, in keeping with our 2010 Manifesto pledge.

We appreciate that the facts indicate that much yet needs to be achieved. But the facts also indicate that we have achieved much and that we are on the right path. I, therefore, now make the commitment of accelerated progress in service of the sustainable development of Trinidad and Tobago.

Honourable Kamla Persad-Bissessar, S.C
Prime Minister of Trinidad and Tobago

Foreword



This document seeks to present truthfully an assessment of where Trinidad and Tobago is, at the present time in pursuit of the clearly identified objective of sustainable development. What we have done in this report is identify what has been achieved, what are the areas in which we need to catch up and what we might usefully focus on as opportunities for action.

The Government of Trinidad and Tobago recognises that all plans for national development relating to resource allocation and utilization must incorporate the concept of sustainability in order to ensure long-term economic, social and environmental stability. To this end we have aligned all our policy documents accordingly and established a Results Based Framework for measuring progress and the achievement of targets.

The strategy for the sustainable development of Trinidad and Tobago is built upon seven (7) developmental, interconnected pillars articulated in the Manifesto (2010), and further elaborated on in the Medium Term Policy Framework (2011-2014). These seven (7) pillars are: People-Centered Development; Poverty Eradication and Social Justice; National and Personal Security; Information and Communication Technologies; A More Diversified, Knowledge Intensive Economy; Good Governance and Foreign Policy. The Medium Term Policy Framework, which leveraged on these seven developmental pillars of the Manifesto (2010) embraces a vision of “*Innovation for Lasting Prosperity*” all contextualised within a larger framework of sustainable development. The vision articulated is that through creativity, collaboration and innovation, prosperity for all will be achieved.

This document which will guide Trinidad and Tobago’s participation at the United Nations Conference on Sustainable Development in Rio de Janeiro (Rio +20 Conference on Sustainable Development), June 2012, will become the third installment in a suite of policy related documents guiding government policy in Trinidad and Tobago. The other two (2) being the Manifesto 2010 and the Medium Term Policy Framework (MTPF) 2011 to 2014. In addition, Strategic Plans have been developed by each Ministry with priorities established by each Ministry and with clusters of Ministries responsible for the achievement of overarching goals. A Result Based Framework facilitates monitoring of progress and evaluation of results.

It should be noted that this particular Report also represents views, ideas and contributions from the public and private sectors as well as various Non-Governmental Organizations (NGOs) obtained through a consultative process. It also incorporates the views of Ministries which submitted comments on the first draft brought to Cabinet after community consultation. This is in keeping with the view of the Government of Trinidad and Tobago that public and private partnerships and participation by the people are essential to the decision making process. On the Medium Term Policy Framework (MTPF) for instance, fifteen (15) consultations have been held with Civil Society across Tobago and the regions of Trinidad.

This document, *Working for Sustainable Development in Trinidad and Tobago* is structured around the two (2) core themes which are the focus of the Rio +20 United Nations Conference on Sustainable Development, June 2012. These are:

- (1) Green economy in the context of sustainable development and poverty eradication; and
- (2) The institutional framework for sustainable development.

Sustainable Development is one of the principal areas of focus of the Ministry of Planning and the Economy. This means that care has to be taken with the alignment of policy, with the compatibility of Ministerial priorities, and with the synergy required of policy and plans, philosophy and practice.

Currently the Ministry of Planning and the Economy, through the Town and Country Planning Division, is involved in a number of projects and initiatives which will allow for sustainable land use, wiser planning and a focused developmental plan, rooted in rational policy making. These projects include the National Physical Development Plan, the ProEcoServ Project and the Land Use Policy.

The recently established Economic Development Board (EDB) has been charged with the mandate of diversifying of our oil based economy through the targeted development of five (5) selected growth poles. This type of focused development will allow for sustained resource use and environmental preservation and conservation while facilitating economic growth and job creation. In addition, investment is now being channeled through a single agency (Invest TT under the jurisdiction of Ministry of Trade and Industry) to which all executing agencies aligned to special investment interest or industrial development sites are now linked. This will facilitate better alignment of policy, decision making, strategy and action to facilitate the investment /development imperative.

Dr. Bhoendradatt Tewarie
Minister of Planning and the Economy

Acronyms

BCM	Business Continuity Management
BOPD	Barrels of oil per day
BRMP	Buccoo Reef Marine Park
CARICOM	Caribbean Community
CaMMESEC	Coastal and Marine Management and Education in the South Eastern Caribbean
CARTAGENA	Convention for the Protection of Development of Marine Environment of the Wider Caribbean Region
CBOs	Community Based Organisations
CCRIF	Caribbean Catastrophe Risk Insurance Facility
CDB	Caribbean Development Bank
CDM	Comprehensive Disaster Management
CDMPF	Tobago's Comprehensive Disaster Management Policy Framework
CEC	Certificate of Environmental Clearance
CNG	Compressed Natural Gas
CREC	Caribbean Renewable Energy Centre
CROSQ	CARICOM Regional Organization for Standards and Quality
CTO	Caribbean Tourism Organization
EDB	Economic Development Board
EIA	Environmental Impact Assessment
EMA	Environmental Management Authority
FAO	Food and Agriculture Organisation
FARP	Fisheries and Aquaculture Research Programme
FBOs	Faith Based Organisations
GCRMN	Global Coral Reef Monitoring Network
GDP	Gross Domestic Product
GEF	Global Environment Fund
GHG	Greenhouse Gas
HDI	Human Development Index
IDB	Inter-American Development Bank
IISD	International Institute for Sustainable Development
IMA	Institute of Marine Affairs
IWCAM	Integrated Watershed and Coastal Area Management

LNG	Liquefied Natural gas
MCM	Million Cubic Metres
MDG	Millennium Development Goals
MPE	Ministry of Planning and the Economy
MTPF	Medium Term Policy Framework, 2011-2014
ODPM	Office of Disaster Preparedness and Management
OECD	Organization for Economic Co-operation and Development
RE	Renewable Energy
SAICD	Strategic Approach to International Chemicals Management
SIDC	Seafood Industry Development Company
SPAW	Specially Protected Areas and Wildlife Protocol
SSIP	Social Sector Investment Programme
STEP	Small Tourism Enterprise Project
SWMCOL	Solid Waste Management Company Limited
TDC	Tourism Development Company Ltd.
THA	Tobago House of Assembly
TTTIC	Trinidad and Tobago Tourism Industry Certification
UNCCD	United Nations Convention to Combat Desertification
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UNECLAC	United Nations Economic Commission for Latin American and the Caribbean
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USAID/OFDA	United States Agency for International Development/Office of Foreign Disaster Assistance
WASA	Water and Sewage Authority
WSSD	World Summit on Sustainable Development
W.T.I.	West Texas Intermediate
WTTC	World Travel and Tourism Council

Table of Contents

EXECUTIVE SUMMARY	1
I. THE CONCEPT OF SUSTAINABLE DEVELOPMENT	3
SUSTAINABLE DEVELOPMENT IN TRINIDAD AND TOBAGO.....	7
II. RIO +20 THEMES OF SUSTAINABLE DEVELOPMENT	13
(1) TOWARDS A GREEN ECONOMY	15
(2) ENHANCED INSTITUTIONAL FRAMEWORK	18
III. PILLARS OF SUSTAINABLE DEVELOPMENT.....	21
PILLAR 1: SUSTAINABLE ECONOMY	23
(i) ACTION ON NEW STRATEGIC SECTORS	27
(ii) REVITALISING TRADITIONAL SECTORS	29
(iii) HERITAGE AND STABILISATION FUND	31
PILLAR 2: SOCIAL SUSTAINABILITY	33
(i) QUALITY OF LIFE	33
(ii) EQUITY AND SOCIAL JUSTICE	39
(iii) INCLUSION AND ACCESS	40
(iv) POVERTY ERADICATION	41
(v) FUTURE FOCUS	42
(vi) PARTICIPATORY PROCESSES	42
PILLAR 3: THE ENVIRONMENT	47
(i) CLIMATE CHANGE AND SEA LEVEL RISE	50
(ii) NATURAL AND ANTHROPOGENIC (MAN-MADE) HAZARDS	53
(iii) MANAGEMENT OF WASTE	58
(iv) COASTAL AND MARINE RESOURCES	63
(v) FRESHWATER RESOURCES	69
(vi) LAND RESOURCES	74
(vii) ENERGY RESOURCES	79
(viii) TOURISM RESOURCES	83
(ix) BIODIVERSITY AND PROTECTED AREAS	89
(x) TRANSPORT	91
THE WAY FORWARD	95
CONCLUSION.....	97
APPENDIX: RIO + 20 UNITED CONFERENCE ON SUSTAINABLE DEVELOPMENT	101
APPENDIX II: SUMMARY TABLE OF THE INSTITUTIONAL MEASURES, GAPS AND CHALLENGES IDENTIFIED IN THE THREE (3) PILLARS	103



List of Figures and Tables

FIGURES

Figure 1 - Pillars of Sustainable Development

Figure 2 - Value of Exports and Crude Oil Prices, 1988-2010

Figure 3 - Trinidad and Tobago Oil Production (bopd), 1978-2011

Figure 4 - Demand for Electricity in Trinidad and Tobago by Sector in 2011

TABLE

Table 1 - Contribution of Energy Sector to GDP and Government Revenue

Table 2 - Central Government Recurrent Expenditure: A Functional Classification

Executive Summary

This document is framed and developed within the context of the Manifesto 2010 of the People's Partnership and the Medium Term Policy Framework (MTPF) 2011-2014. The MTPF 2011-2014 specifically addresses development within the context of sustainability by focusing on poverty eradication, human development, community development, and environmentally and ecologically sensitive practices.

The operational definition of sustainable development used throughout this document is based on the Brundtland Report (1987) and involves the three interconnected pillars of Economic, Social and Environmental sustainability. Global patterns of consumption and production place heavy stresses on many ecosystems and on critical life-support systems. This compromises the stability of this triad of pillars, as well as hinders poverty eradication and further socio-economic development. During the last two decades, there has been much global misallocation of capital toward the exploitation of fossil fuels, property and financial assets accrual, with relatively little being invested in renewable energy, energy efficiency, public transportation, sustainable agricultural practices, ecosystem and biodiversity protection, as well as land and water conservation, particularly in developing nations. The Green Economy and Institutional Framework themes provide a facilitating framework for addressing these issues which developing nations face. The Green Economy focuses primarily on the interrelationship between the environment and the economy, while the institutional framework addresses the structures required to support sustainable development.

The Government of Trinidad and Tobago perceives the attainment of sustainable development through the leveraging of resources and application of efforts in such a way that the country produces more than it consumes, that the fundamental principles of environmental sustainability are integrated into its development strategy, and that the well-being of the present generation is improved without severely undermining that of future generations. Accordingly, the concept of sustainable development is built into the framework of the Manifesto which articulates the seven (7) pillars of development. The Manifesto and its seven (7) developmental pillars were further translated into five (5) priority areas in the MTPF, which will be the focus of government policy over the period 2011-2014. These five priorities are critical to engendering long term sustainability.

Trinidad and Tobago has generally enjoyed decades of economic growth fuelled primarily by its energy sector. However, given the finite nature of oil and gas, Trinidad and Tobago has begun to aggressively seek alternative drivers of economic growth. Hence, while the Government of Trinidad and Tobago strives to optimize opportunities from oil and gas, it simultaneously recognises that the economy must be diversified in the longer term.

In a green economy, growth in income and employment should be driven by public and private sector investments that reduce carbon emissions and pollution, enhance energy and resource efficiency, and prevent the loss of biodiversity and ecosystem services. The energy, agriculture, tourism, manufacturing, forestry, fishery, and water management sectors and sub-sectors all provide viable opportunities for diversification with green economic potential. Specific areas targeted under an industrial diversification policy will be developed and supported. These include: knowledge-based industries; cultural and entertainment industries; ethnic products; food processing; the maritime industry; services industries; biotechnology; information technology (IT); high-tech manufacturing; pharmaceuticals; food production and processing; alternative energy and third and fourth generation renewable energy industries. Trinidad and Tobago's economic sustainability is ultimately dependent on the successful implementation of a viable diversification strategy, which can in turn be facilitated by the development of a green economy.

Trinidad and Tobago also seeks to promote environmental sustainability through the protection and conservation of its natural resources. Strategies to achieve this have predominantly included the development and adoption of policies such as the Climate Change Policy, a Framework for Development of a Renewable Energy Policy, Protected Areas Policy and the Eco-Tourism Policy. In spite of the development and implementation of these policies and various other strategies to foster environmental sustainability, several challenges persist. The factors which coalesce to reduce their effectiveness include slow decision making processes, weak regional and global commitment to the protection of local and global commons, and a lack of environmental consciousness. The Government of Trinidad and Tobago is therefore determined to address these deficiencies in order to foster environmentally sustainable development.

There can also be a mutually reinforcing relationship between social and industrial development, with industrialization potentially promoting, directly and indirectly, a variety of social objectives such as employment creation, poverty eradication, gender equality, labour standards, and greater access to quality education and health care. In Trinidad and Tobago, social development is mainly focused on poverty eradication, education and health. Poverty reduction strategies include: increasing the availability of work programs, creating and strengthening social safety net programs, and increasing regional development, especially in underserved areas, through the provision of basic infrastructure and employment opportunities. Additionally, the Government of Trinidad and Tobago continues to pursue measures to ensure first class health care for all citizens as well as universal access to quality education. In all, the Government of Trinidad and Tobago remains committed to the achievement of sustainable development in order to improve the present and future well-being of all its citizens.



The Concept of Sustainable Development

I. THE CONCEPT OF SUSTAINABLE DEVELOPMENT

According to Hasna Vancock, sustainability is a process which refers to development of all aspects of human life affecting sustenance. It means resolving the conflict between the various competing goals, and involves the simultaneous pursuit of economic prosperity, environmental quality and social equity famously known as three dimensions (triple bottom line) with the resultant vector being technology. It is a continually evolving process; the ‘journey’ (the process of achieving sustainability) is of course vitally important, but only as a means of getting to the destination (the desired future state). However, the ‘destination’ of sustainability is not a fixed place in the normal sense that one understands destination. Instead, it is a set of desirable characteristics of a desired future system. This requires, according to the Agenda 21 Report¹, broad public participation in decision-making to be a fundamental prerequisite for achieving sustainable development. A sustainable development agenda, therefore, should be inclusive and participatory.

According to the International Institute for Sustainable Development (IISD), sustainable development has been defined in many ways, but the most frequently quoted definition is from *Our Common Future*, also known as the *Brundtland Report* (1987), which states that:

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

It contains within it two key concepts:

- 1) The concept of needs, in particular, the essential needs of the world’s poor, to which overriding priority should be given; and
- 2) The idea of limitations imposed by the state of technology and social organization on the environment’s ability to meet present and future needs.

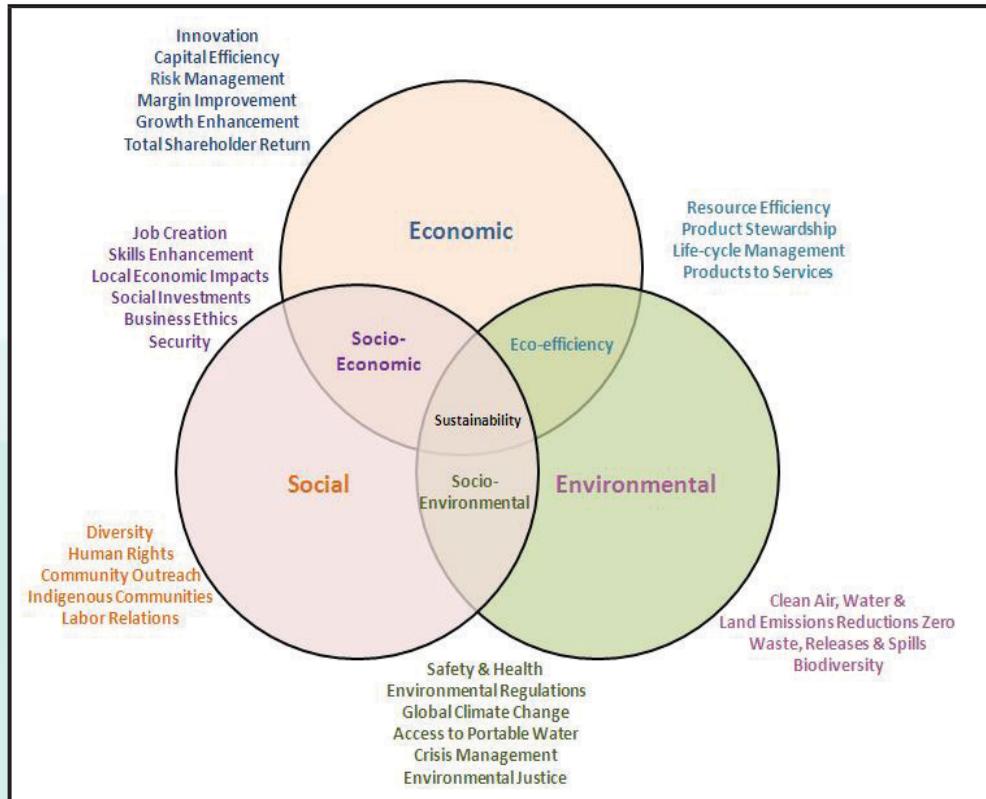
The United Nations World Summit Outcome Document (2005) describes sustainable development as an integrated approach. The following three (3) pillars are identified:

- 1) Economic development;
- 2) Social development; and
- 3) Environmental protection.

¹ Agenda 21 is an outcomes document of the 1992—Earth Summit (Rio) and is a 40-chapter comprehensive blueprint of action for sustainability.

The following diagram (**Figure 1**) shows the three (3) core pillars and their underlying connectivity which would result in sustainability.

FIGURE 1:
PILLARS OF SUSTAINABLE DEVELOPMENT



Source: Adapted from the UN World Summit on Sustainable Development, 2002

In sum, this report defines sustainable development in terms of balancing the interests of different groups of people, within the same generation and across generations, and doing so simultaneously in three major interrelated areas- economic, social, and environmental. Balancing these diverse objectives is a tremendous feat for any country, but is necessary if development is to continue indefinitely.

SUSTAINABLE DEVELOPMENT IN TRINIDAD AND TOBAGO

Trinidad and Tobago is one of the richest countries in the region in terms of GDP per capita, enjoying decades of economic growth, fuelled primarily by its profitable energy sector. However, increasingly the Government and concerned citizens have begun to question whether progress and success to date have made Trinidad and Tobago a low carbon, resource efficient and socially inclusive nation.

According to one indicator, the Environmental Sustainability Index (ESI), which benchmarks the ability of nations to protect the environment over the next several decades, the country's performance has been lackluster, with Trinidad and Tobago ranking 139 of the 146 countries studied. Trinidad and Tobago's poor performance on the ESI is largely due to its status as a petroleum producer with cheap energy prices and its resulting high greenhouse gas production per capita, which is one of the main indicators of the ESI. The development and implementation of more effective environmental conservation efforts are therefore critical if Trinidad and Tobago is to adeptly balance economic and environmental objectives.

Specifically, Trinidad and Tobago recognises the importance of sustainable development as a key component in the country's developmental path due to a number of reasons:

- As a Small Island Developing State (SIDS), with fragile ecosystems, limited land space and finite natural resources, Trinidad and Tobago is vulnerable to external environmental and economic shocks.
- Given its geographical location and geology, it is vulnerable to several natural hazards including hurricanes, floods and earthquakes.
- The country's past economic pathways have tended to emphasize economic and social stability, sometimes to the detriment of the environment.
- Gas reserves are not inexhaustible and the more conservative estimates based on the current and available gas reserves, excluding untapped and unexplored reserves, suggests a limited period of continued supply. Accordingly, alternative energy sources will be a boon to Trinidad and Tobago's sustainability.

Traditionally, the Trinidad and Tobago's main focus has been to generate wealth from its oil and gas sector, and then redistribute much of that wealth to address the various socio-economic demands of its population while supporting developmental strategies.

In fact, Trinidad and Tobago's human development ranking (62 out of the 187 countries in the 2011 Human Development Index) is relatively favourable and is likely to improve given Government's commitment to people-centred development. Moreover, Trinidad and Tobago has experienced a reasonably good level of social stability over the five (5) decades since its political independence. According to the Ministry of National Security, the attempted coup during 1990 was the only serious incident of war or civil strife in Trinidad and Tobago in the last 50 years and this was negotiated and effectively contained.

However, in light of the four (4) important issues identified above, the concept of limitations has now emerged as a dominant concern. Present national development plans therefore focus more evenly, not only on the three (3) pillars of sustainable development, but also on these two (2) concepts (of balancing needs and limitations) as it pertains to sustainable development in Trinidad and Tobago.

Indeed, the Government of Trinidad and Tobago is guided by its 2010 Manifesto commitments to the people which makes a commitment to prosperity for all within a sustainable development framework. The Manifesto has been formalized as government policy and informs the Medium Term Policy Framework (MTPF) 2011-2014. The framework is the first overarching planning document of the present administration, integrating and articulating an approach to development on the basis of shared priorities and cross cutting interventions. This MTPF, in turn, guides annual budgetary allocation, influences fiscal policy, identifies five (5) priorities over the medium-term and is linked to a results-based framework for individual Ministries and clusters of Ministries.

Seven (7) clear pillars of development are identified in the 2010 Manifesto and guide policy in the context of an overarching sustainable development framework. These seven (7) strategic pillars include:

1. People-Centred Development- *We Need Everyone and All Can Contribute*
2. Poverty Eradication and Social Justice- *Preference for Poor and Disadvantaged*
3. National and Personal Security- *Human Security for Peace and Prosperity*
4. Information and Communication Technologies- *Connecting T&T and Building the New Economy*
5. A More Diversified, Knowledge Intensive Economy- *Building on the Native Genius of Our People*
6. Good Governance- *People Participation*
7. Foreign Policy- *Securing Our Place in the World*

The MTPF 2011-2014 is based on four (4) main principles, geared towards achieving sustainable development. These are to:

1. Generate productivity-led growth on the basis of a more diversified production structure with the emphasis on value and wealth creation;
2. Create the conditions for greater inclusiveness and equity in socio-economic development;
3. Build the knowledge and talent of our human resources; and
4. Pursue socio-economic development in the context of prudent spatial management and environmental limits.

These principles are further translated into the following three (3) main goals:

1. To shift from the over dependence on hydrocarbon resources to an emphasis on the development of human capital;
2. To create the conditions which will engender greater equity and inclusiveness in the society; and
3. To link the diversification strategy to absorption of throughput at the tertiary level, to upgrade the skill set of the workforce and to provide better wages and salaries.

The MTPF 2011-2014 also signals its commitment to a green economy by its emphasis on “building a competitive, innovation-driven economy.”

In the context of macro-economic growth and stability, the Government has embarked on strategies which will build a competitive, innovation-driving economy with emphasis being placed on three (3) key areas over the medium-term:

1. Creating a new growth dynamic supporting diversification;
2. Creating new economic spaces; and
3. Creating opportunities for investments, export expansion and diversification.

This new growth dynamic will involve: i) widening and deepening the production base and building new production clusters; ii) developing culture, and supporting the development of Creative Industries; iii) developing Green Industry and alternative energy sources; and iv) developing ICTs and related knowledge and services industries.

In addition, Government has identified five (5) growth poles for focused attention: i) Central Trinidad; ii) South Western Peninsula of Trinidad; iii) East Port of Spain; iv) North-Coast of Trinidad; and v) North-East Region of Tobago, with specific growth initiatives at Invader's Bay in Port of Spain; Chaguaramas Peninsula; TamanaIntech Park; Cove Industrial Estate in Tobago; and the capital city of Port-of-Spain to encourage a greater and more balanced distribution of socio-economic opportunities. The city of Port-of-Spain is one of five pilot cities chosen in the Western Hemisphere to be part of the Emerging and Sustainable Cities Initiative supported by the Inter-American Development Bank (IDB).

SOCIAL IMPERATIVES OF TRANSFORMING OUR SOCIETY

The Government of Trinidad and Tobago continues to recognise that social and economic transformation must go hand in hand if development is to be holistic and sustained. It acknowledges that social system reforms combined with positive changes in value and attitudes can have a catalytic effect on the economic transformation effort. The inculcation of certain attitudes and values such as civic responsibility and community collaboration are critical to the elaboration of any strategy seeking to enable communities to strive for sustainable development. Further, the Government is steadfast in its efforts to improve citizens' quality of life, especially the poor and vulnerable, through the provision of more equitable opportunities for education and quality health care. Additionally, in the interest of fostering a socially inclusive and cohesive society, the Government will continue to consult citizens, especially when making decisions that directly impact on citizens and communities.

To this end consultations with NGOs and CBOs across fourteen (14) regions in Trinidad and in Tobago have been conducted to facilitate the creation of a Civil Society Board (CSB) which will interface with the Economic Development Board (EDB) to influence development policy and plans related to the investment and diversification thrust. In addition, five hundred and eighty five (585) communities have been identified in Trinidad and Tobago and a national land use policy and physical development plan, which integrates local area plans, are being developed through a consultative and participatory process involving these communities.

Beyond these initiatives Government remains committed to protecting and conserving the natural environment and continues to address issues relating to climate change, honouring all regional and international commitments. To reduce socio-economic losses arising from natural disasters, matters relating to disaster preparedness and risk management are also being closely examined.

Further, Government will continue to strengthen its regulatory and legislative support to ensure sound environmental practices. Construction on the Northern Range beyond the 300ft contour line, for instance, has been banned. Recently, the commitment by the Ministry of Energy and Energy Affairs to environmental preservation was demonstrated when the National Quarries Verdant Vale site was instructed to discontinue operations that adversely affected the Asa Wright Nature Centre. Support for existing legislation, such as policy and regulations to improve sustainable land use is currently underway. Trinidad and Tobago is also pursuing a sustainable tourism policy with a range of protected eco-friendly areas, activities and products including wetlands and nesting areas.

PRIORITIES FOR ACTION OVER THE MEDIUM TERM

In the context of sustainable development, the MTPF 2011-2014 further identifies five (5) priorities for action over the three (3) years. In addition to addressing the major concerns of the population, these five priorities will put Trinidad and Tobago on a trajectory towards sustainable economic and social advancement, in harmony with the environment. These five (5) priority areas include:

1. Crime and Law and Order
2. Agriculture and Food Security
3. Health Care Services and Hospitals
4. Economic Growth, Job Creation, Competitiveness, Diversification and Innovation
5. Poverty Reduction and Human Capital Development

Concentrated attention on these priority areas will ensure continued economic diversification strategies; greater investment in human capital; encourage mainstreaming of gender into development planning; promote wellness at the individual, household and community levels; and foster civic responsibility. Within each priority area, targets have been set to ensure that progress can be monitored and evaluated through the formulation of a National Performance Framework. Further, these priorities will facilitate fulfillment the Millennium Development Goals (MDGs) in the medium-term planning period. In terms of land use policy and physical development planning, the National Planning Task Force and Project for Ecosystem Services (ProEcoServ), an initiative funded by UNEP to embed sustainable development practice, are working together in the national interest.

Overall, the Government of Trinidad and Tobago is committed to incorporating the concept of sustainability into all its future developmental plans as it pertains to resource allocation and utilization, in order to ensure equitable, long-term economic, social and environmental stability.





Rio +20 Themes
of Sustainable Development

II. RIO +20 THEMES OF SUSTAINABLE DEVELOPMENT

Trinidad and Tobago's strategy for the sustainable development is guided by the five (5) priority areas identified in the MTPF 2011-2014. In pursuing sustainable development, the process of achieving these priorities must be aligned with the two (2) themes of the Rio +20 Conference: (1) Green Economy; and (2) Institutional Framework for Sustainable Development. Further details of the Rio +20 Conference are provided in the Appendix. In addition, as a Small Island Development State (SIDS), there are peculiar issues which Trinidad and Tobago needs to take into account.

(1) TOWARDS A GREEN ECONOMY

Although sustainable development is a broad overarching concept founded on three inter-related developmental pillars already identified, an intuitive, pervading and parallel concept is that of the green economy. The paradigm of the green economy lends itself to a promise of survival, growth and sustainability while protecting ecosystem value and subsequently, contributing to poverty eradication. The green economy concept, therefore, embraces social, economic and environmental alignment and harmony.

Many SIDS have found it difficult to attain the goals of sustainable development on the basis of theories and practices related to a green economy alone. Many of the resources of SIDS are marine based resources. A 'blue economy' has thus been suggested for these SIDS. The Rio +20 Specific Preparatory Meeting Outcome Document defines a blue economy as an economy based on the sustainable management of marine and ocean resources, enabling SIDS to derive maximum benefits from its aquatic resources. Marine resources include the fisheries sector, coastal protection, wetlands, corals and mangroves, oil reserves and seabed aggregates. This outcome document essentially states that the concept of a blue economy is the maritime equivalent of the concept of a green economy, one of the themes of the Rio Conference.

There is however, a counterargument, as put forward by Pauli² (2010), who argues that adopting the concept of a green economy would create an environment of exclusion to the economically challenged and marginalized strata in society since the green economy relies heavily on subsidies, taxes, and higher economic investments which forces or obliges consumers to pay more.

2 Gunter Pauli (2010) The Blue Economy

A green economy requiring greater investment would therefore be too costly to the poorer individuals in society, potentially resulting in social segregation and isolation.

Pauli therefore outlines a proposed alternative to the concept of the green economy, which is also referred to as a 'blue economy'. In this context the blue economy focuses primarily on economic inclusion and effectiveness rather than maritime resources per se. More specifically, Pauli's blue economy would entail the integration of innovative solutions into the already existing economy, increasing the efficiency of ongoing processes, thereby contributing to environmental protection, and in turn long-term sustainability.

Despite being a SIDS, Trinidad and Tobago's unique economic situation suggests that it would be in the country's best interests to adopt innovative and creative solutions that would drive the country towards greening while adopting Pauli's concept of the blue economy to bridge the gap between where we are and where we need to be and to take a practical approach towards transition. Given that oil and gas is the mainstay of Trinidad and Tobago's economy, accounting for roughly 45.3% of GDP in 2011, action to create a blue economy rather than a completely green economy is likely to be more economically feasible and more practically effective. The rationale is that since most of the country's industrial, commercial, and economic activities rely heavily on oil and gas, introducing heavy taxes on these activities is likely to erode economic competitiveness and discourage investment while also probably exacerbating social inequalities. In contrast, integrating cleaner and more modern technology within existing processes would allow the country to continue activities fuelled by oil and gas, but in a more environmentally sound, and sustainable manner.

To some extent elements of the blue economy approach already exist within the borders of Trinidad and Tobago. For example, relevant amendments were made to the Income Tax act via the Finance Act 2011 so that companies can be granted accelerated depreciation of 75% of the cost of acquiring smart energy efficient systems as well as 150% tax allowance on cost in commissioning energy audits. The formulation of similar policies in accordance with the principles of the blue economy can therefore be a viable method of transforming the national economy.

While blue economy strategies are being pursued, it is important to identify traditional and non-traditional sectors which provide opportunities for diversification with green economic potential. In a green economy, growth in income and employment should be driven by public and private sector investments that reduce carbon emissions and pollution, enhance energy and resource efficiency, and prevent the loss of biodiversity and ecosystem services.

Trinidad and Tobago's energy, agriculture, tourism, manufacturing, forestry, fishery, and water management sectors and sub-sectors all provide viable opportunities for diversification with green economic potential. The creative sector also driven by creativity and the human imagination is a very clean sector that can intensify options and possibilities for greening.

Government's commitment to the development of a green economy can therefore facilitate the successful implementation of a viable diversification strategy and vice versa. The development of these sectors will be discussed in greater detail in the section on the Sustainable Economy Pillar.

In addition, increased investment in these sectors is likely to benefit the poor and disadvantaged by providing sustainable livelihoods that utilise the nation's diverse and still abundant ecosystem services. This creation of sustainable livelihoods for citizens, enabling them to be productively involved in their own economic development, is a priority item in the Government's agenda. The Ministry of Labour and Small and Micro-Enterprises Development, for example, developed the Community Based Business Incubator Initiative (CBBI) which aims to leverage business activities based on the resources of the target community. Turtle conservation, producing economic and environmental benefits, and enhancing community participation in a remote community such as Matelot is one such initiative. Given the relationship between physical ecology and health, health and social impact assessments of any proposed strategy should always be assessed and continually monitored. A holistic approach in matters such as these will inevitably yield more value to a wider community of participants.

Attaining sustainable development tends to be a formidable feat for Small Island Developing States (SIDS) due to their small size, limited economic revenues and natural resources, as well as vulnerability to natural disasters.³ Despite these challenges, Trinidad and Tobago recognises the need for protecting natural resources that contribute to its local sustainability. Considering this, Government's strategies for growth, competitiveness and sustainability have necessitated a shift away from the country's over dependence on hydrocarbon resources to an emphasis on the development of the its human capital and the alignment of human capital throughput with an investment, diversification, competitiveness and innovation strategy. This strategy in turn will combine features of both the green economy and blue economy approach to advance sustainable development and to circumvent several economic, environmental and social issues that Trinidad and Tobago currently faces as a SIDS.

3 Kaly, U., Pratt, C. (2000). *SOPAC Technical Report 306. February 2000*. Fiji: South Pacific Applied Geosciences Commission.

(2) ENHANCED INSTITUTIONAL FRAMEWORK

Institutional framework refers to the system of governance for sustainable development. It includes the institutions charged with developing, implementing and monitoring policies pertaining to sustainable development across its three pillars – economic, social, and environmental.

In moving towards diversifying the economy of Trinidad and Tobago, it is imperative that the environment is not compromised. Hence, the appropriate institutional framework needs to be developed and implemented so that the country is better able to strike a balance across the social, economic and environmental pillars.

A robust institutional framework is also the platform upon which the relevant policies and measures will take root. Currently, Trinidad and Tobago has numerous regulations and policies governing the environment, economy and society. However, there is inadequate monitoring and evaluation of these policies. Policies, however, must be continuously reviewed critically so that problems in implementation can be identified early and solutions crafted. Recognising this, the Ministry of Planning and Economy is in the final stages of designing a National Performance Framework to monitor and evaluate the Medium Term Policy Framework, 2011-2014. Following extensive consultations with all Ministries, the Performance Framework explicitly identifies baseline indicators and targets against which performance can be measured. Through regular monitoring and evaluation of progress made, the framework will better enable the Government of Trinidad and Tobago to adopt and adhere to a viable path to sustainable development.

Additionally, like most developing countries, there are weak intersectoral linkages among the public sector, private sector, and civil society, and across the economic, environmental and social spheres. The importance of identifying and leveraging linkages is evident as in the case of health with a myriad of factors outside of the health sector, ranging from the physical environment to education, influencing health. The development of the appropriate institutional framework will ensure that the impact of policies across all sectors are considered, by fostering an environment conducive to greater collaboration and geared towards sustainable development. Additionally, the role and functioning of existing intersectoral bodies such as the recently established Cabinet Committee on Social Determinants of Health should be examined to ensure synergy of purpose. Furthermore, it is imperative that committees, boards and institutions charged with the responsibility of governing different pillars of sustainable development work together.

The Economic Development Board and the Civil Society Board (CSB) will be the main instruments for the involvement of the population in key decisions related to the national sustainable development agenda. The Economic Development Board (EDB) is responsible for improving the country's global competitiveness and supporting an investment strategy for diversification, particularly through the development of five new growth poles identified for the country. The Civil Society Board will in turn coordinate the opinions/views of NGOs, CBOs, and FBOs on key social, cultural, economic and political issues.

To ensure widespread participation in planning and policymaking as well as the inclusion of environmental perspectives, the composition of the EDB is designed to include representatives from the Civil Society Board as well as leading local environmental practitioners. Together the EDB and CSB will engender greater coherence across these three pillars in accordance with the MTPF and provide an effective means of enhancing the national institutional framework for sustainable development.

Beyond this the Ministers responsible for Planning and the Economy, Finance, Trade, Investment, Energy, Labour and Food Production along with key institutions meet under the Chairmanship of the Hon Prime Minister as the National Innovation System and initiatives are underway to establish engagement of this entity with business, labour, civil society as a multi stakeholder Sustainable Development Council.





Pillars of
Sustainable Development

III. Pillars of Sustainable Development

This section elaborates on Trinidad and Tobago's current status and strategies with respect to the three pillars of sustainable development, namely:

- (i) Economic Stability;
- (ii) Social Sustainability; and
- (iii) Environmental Protection.

The three pillars are regarded as intrinsically linked to the achievement of high levels of sustainable development. Accordingly, they are regarded as mutually supportive of each other rather than as competing priorities.

PILLAR 1

SUSTAINABLE ECONOMY

“From Exhaustive to Alternatives”

In recent years there has been increasing recognition that the overall goals of environmental conservation and economic development are not inherently conflicting, but instead can be mutually reinforcing. This realization has prompted calls for “environmentally sustainable” economic development which will involve the creation of a sustainable economy in which economic growth is pursued in a manner that is both environmentally sound and socially responsible. A sustainable economy as defined by scientists L. Brown and K. Flovin, involves the “transition from irreversible exhaustion of natural resources to renewed energy resources, and continuous repeated using and process of salvage”.

The concept of sustainable development is very much relevant to oil and gas rich Trinidad and Tobago, with its local energy sector having celebrated one hundred (100) years of commercial oil production in the year 2008. The strength of the energy sector is reflected in the fact that Trinidad and Tobago is among the most important world providers of ammonia and methanol, and producers of Liquefied Natural Gas (LNG). In 2011, the energy sector accounted for 45.3% of GDP and 82.3% of export receipts (see Table 1), but only 3% of employment.⁴ Ultimately, Trinidad and Tobago’s hydrocarbon resources, in particular, its natural gas, have enabled it to become the most industrialised Caribbean nation with a relatively high standard of living for its citizens. In contrast, the traditional sectors of agriculture and manufacturing have declined and progress has been slow in the development of other industries that can contribute to sustained growth. The diversification imperative, therefore, within a framework of sustainable development has become a matter of urgency.

TABLE 1:
CONTRIBUTION OF THE ENERGY SECTOR TO GDP
AND GOVERNMENT REVENUE, 2007-2011

	2007	2008	2009	2010	2011
Share of Government Revenue (%)	55.5	57.1	49.5	51.8	57.5
Share of GDP (%)	45	50.8	37.1	43.9	45.3

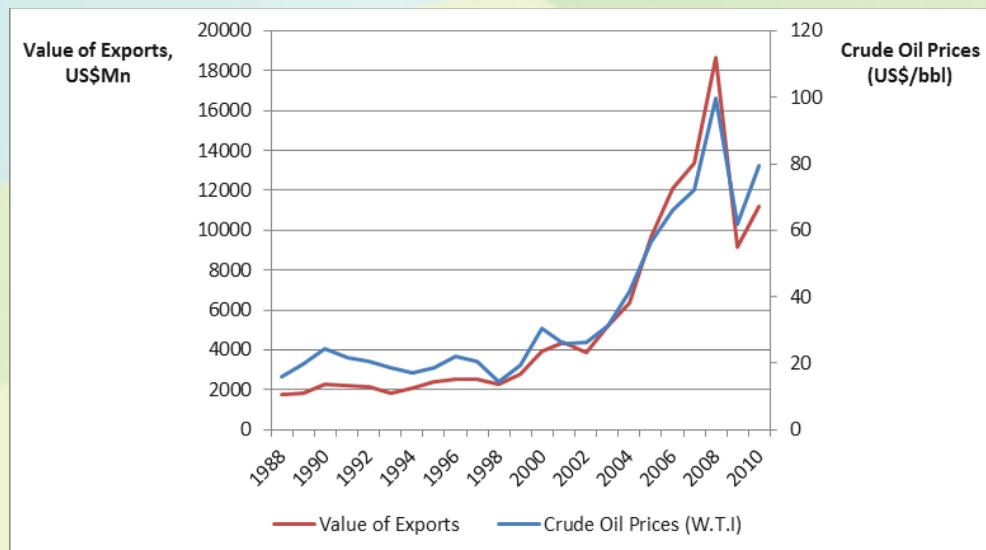
Source: Central Bank of Trinidad and Tobago

⁴ Central Bank of Trinidad and Tobago. (2011). Annual Economic Survey 2011.

However, since economic growth has been and continues to be largely fueled by the irreversible exhaustion of its finite natural resources while the non-energy sector remains largely underdeveloped, the current challenge is how to create and build a sustainable economy and how to incentivise key components of such an economy. Indeed, while the energy share of GDP has fluctuated significantly over the last 25 years (mainly due to fluctuations in oil prices), there is a clear upward trend, with the sector's contribution increasing from 27% in 1985 to roughly 45.3% in 2011.⁵

In light of the importance of oil and gas to Trinidad and Tobago's economy, it is unsurprising that this small island economy continues to exhibit another symptom associated with natural resource abundance, namely vulnerability to external shocks, specifically oil price shocks. This vulnerability is reflected in export earnings. Figure 2 below shows that the trend in value of total exports and oil prices are strongly correlated for the entire period 1988-2010, with the value of exports and oil prices both increasing dramatically over 2002-2006 period and subsequently peaking in 2008. This is to be expected given that the petroleum sector share of exports stands at roughly 70%-80% since 1999, of which more than a half is refined petroleum, LNG and natural gas liquids.

FIGURE 2:
VALUE OF EXPORTS AND CRUDE OIL PRICES, 1988-2010



Source: Central Bank, Central Statistical Office, and U.S. Energy Information Administration

In order to foster a sustainable and stable economy in the future, the existing opportunities in the energy sector must be optimized, while simultaneously, the economic base must be diversified. These are the twin considerations driving the Medium Term Policy Framework. How to get the most out of oil and gas assets, developed and created, current, future and evolving and how to create new opportunities outside of this sector because in spite of the value of energy assets they are inevitably finite.

Economic transformation in terms of repositioning Trinidad and Tobago from depending on hydrocarbon resources to “an information, technology-driven, innovative, knowledge-based and globally connected economy; the foundation of which is rooted in the acquisition, exploitation, creation and strategic deployment of knowledge and skills” is the position strongly articulated in the Medium Term Policy Framework 2011-2014.

According to the MTPF 2011-2014, Government has embarked on the following strategies to ensure sustained macro-economic stability and growth with regard to its investment, growth and job creation objectives:

1. Diversification to restructure the productive base;
2. Promote new strategic sectors with the potential for contributing to growth, job creation and innovation namely, the Creative Industries, Environmental Services, Renewable Energy, Eco-tourism and Events and Conference Tourism, and Information and Communication Technology Services (ICTs);
3. Develop new growth centres across the country to ensure greater geographical distribution of wealth and to support industrial diversification
4. Promote innovation and entrepreneurship
5. Revitalise traditional sectors capable of achieving competitiveness and promote viable clusters capable of achieving sustainability;
6. Move up the value chain in energy
7. Develop a sustainable tourism industry.

Specific areas targeted under an industrial diversification policy will be developed and supported. These include: knowledge-based industries; cultural and entertainment industries; ethnic products; food processing; the maritime industry; services industries; biotechnology; information and communication technologies (ICT); high-tech manufacturing; pharmaceuticals; food production and processing; alternative energy and third and fourth generation renewable energy industries. Steps will also be taken to provide the appropriate infrastructural support needed to sustain these developmental initiatives, some of which will be through the application of Public-Private Partnership (PPP) models.

Trade could also be an important catalyst of sustainable development. By bringing new investment and growth, trade can create the necessary conditions for poverty alleviation. By spreading new and more efficient technologies, trade can also reduce the production of waste and help increase the efficiency with which resources are used. Alternatively, trade-induced growth can have serious environmental and associated social impacts that render trade unsustainable, hence it is important that these impacts are taken into account and addressed. The Ministry of Trade and Industry is currently finalising a Trade Policy for the period up to 2015 to chart a clear path of Trinidad and Tobago's engagement in trade issues and to grow and diversify trade to ensure integrated sustainable growth. The Policy will also offer recommendations on how local businesses can grow non-energy exports and widen the export mix in a sustainable manner.

The Government of Trinidad and Tobago also remains fervent in its efforts to invest in human capital development to inculcate a culture of innovation and entrepreneurship, transitioning from exploiting non-renewable fossil fuel to harnessing the natural creative genius of its people. This is supported by the reorientation of primary education, the transformation of the secondary school curriculum and the expansion of tertiary education. In addition incentives are being offered for innovation and invention, and a National Innovation System is being developed.

Furthermore, efforts are underway to strengthen competitiveness, to strengthen standards, to raise productivity and to increase the country's attractiveness to foreign investors, which will in turn fuel economic growth and job creation. More specifically, Trinidad and Tobago companies have moved toward ISO 14001 certification to facilitate integration into the global business network. There would also be continued investments into the Heritage and Stabilisation Fund (HSF), a buffer mechanism for maintaining economic stability in light of internal or external (international or regional) shocks. Moreover, a green fund has been created to support environmentally friendly projects.

By and large, these strategies would contribute to alleviating Trinidad and Tobago's dependence on its finite natural resources and reduce its vulnerability to external shocks, thereby facilitating the creation of a sustainable economy. The following three sections will provide a more detailed description of strategies for promoting new strategic sectors, revitalising traditional sectors and insulating the economy from oil price shocks via the Heritage and Stabilisation Fund.

(1) ACTION ON NEW STRATEGIC SECTORS

Creative Industry

Trinidad and Tobago has a diverse mix of cultural forms derived from its colonial history. Visual and performing arts, publishing, design and the promotion of music and festivals have all grown over the decades and have become the main elements of a growing creative industry. An industry based on creativity and cultural power has the capacity to foster innovation and entrepreneurial activities, preserving and strengthening while simultaneously promoting local cultural attributes, indigenous skills and talents of the citizens of Trinidad and Tobago. Harnessing such natural creativity provides a viable platform for diversification of the economic base, with the development of a variety of unique cultural products and services to generate export earnings.

Government will therefore develop and strengthen this sector to build an industry that will generate sustainable livelihoods. Cultural capital has been built by people living in their communities and interacting in a social environment over time. Creative capital can be built through strategic investments and sound managerial approaches which focus on excellence in quality and in organisation. The development of this sector as a unique, competitive and innovative sector will enhance entrepreneurial as well as commercial possibilities and strengthen export capacity. The successful development of creative and cultural industries can ultimately facilitate continuous generation of lucrative material for sale with minimal risk to the environment in comparison with the manufacturing and petrochemical industries. Creative industries derive from the human imagination, are foreign exchange efficient, build organisational capacity, are labour intensive, stimulate creativity, facilitate innovation and are clean.

Environmental Services

The environmental services industry in Trinidad and Tobago is in its fledgling stages, but represents significant potential for further development. Growth and diversification in this area depends on investment, policy emphasis, demand responsive and driven strategies and increased environmental awareness. Areas identified in the MTPF 2011-2014 for possible development include renewable energy and eco-tourism.

- *Renewable Energy*

Diverting waste into productive uses, for example energy and fuels, can supplement the use of fossil fuels in Trinidad and Tobago, and therefore, is of potentially great economic and environmental benefit. Other renewable energy sources can be harnessed to make similar economic gains while promoting the preservation of the environment.

To this end, a number of fiscal incentives have been introduced in the Budget Statement for fiscal 2011 and 2012 to encourage the expansion of renewable technologies such as solar, wind and waste to energy. Solar and wind energy companies now have the enabling environment in which to operate by exploring the potential for establishing links along the value chain.

Additionally, the United States Department of Energy (USDOE) and the Government of Trinidad and Tobago are currently discussing and collaborating with respect to the establishment of a Regional Renewable Energy Research Centre. A Memorandum of Understanding (MOU) to this effect has been finalised, and signing is imminent.

- *Eco-tourism*

Eco-tourism provides many opportunities for creating environmentally sustainable livelihoods at the community level while preserving the country's sensitive ecosystems. Proper management of eco-tourism products and services will recognise the uniqueness of each community's environmental and cultural heritage, and will balance socio-economic gains with environmental consciousness. In this light, the Government has identified a range of eco-tourism initiatives to facilitate private sector engagement. In addition, specific thrusts in product development, strategic marketing, and events development and management have been identified for action. These include development of Chaguaramas, the development of nature trails, nature spots and reserves, protection of wetlands and identification of ecologically sensitive areas and issues in the development of land use policy.

Information and Communication Technology Services

The development and use of Information and Communication Technologies (ICTs) are necessary for ensuring that Trinidad and Tobago achieves and maintains a high level of global competitiveness. The digital economy products industry is a high value, fast growing industry. In Trinidad and Tobago, local firms are increasing their capability to provide a complete suite of ICT services such as web content development, wireless services, end-user equipment, software, professional services, computer systems, and communication equipment. There is also the capability for the provision of ICT products in hard services such as networking, communication equipment, real time operational systems and back office services, and other services such as software design and re-engineering, web development and e-commerce.

Initiatives to further stimulate this sector include the development of a Science and Technology Park in close proximity to a Research University (TamanaIntech Park/UTT) with a thrust and focus on the ICT sector. Another ongoing initiative is the Cove Eco-Industrial Estate and Business Park in Tobago, which will provide Tobago with opportunities in the area of eco-industrialisation.

It is envisaged that these two (2) Parks will become home to major technology players and become places where innovative ideas will emerge. Specific initiatives in these areas are being buttressed at the comprehensive national level by the development of a National ICT strategy, an enhanced Broadband capability nationwide, an iGov strategy for the public sector, a competitiveness strategy for the private sector and a national innovation strategy to stimulate the development of an innovation driven economy.

(2) REVITALISING TRADITIONAL SECTORS

Agriculture and Fisheries

Initiatives are focused on expanding production and on improving productivity in traditional agriculture as well as diversifying the cultivation of food crops for both local consumption and for export purposes. Strategies to improve agricultural practices through the use of environmentally sound methods are also of priority for Government in order to strengthen the sustainable development thrust.

In addition, the Government acknowledges that aquatic wildlife plays a major role in sustaining healthy marine and freshwater ecosystems. Within the fisheries sector, strategies are being implemented to manage the natural fish stock in the major fishing villages, engaging local fisher-folk in such initiatives. Moreover, aquaculture practices will now supplement the existing fisheries sector with intentions to earn additional revenues from the exporting of aquaculture products. Major legislation to address conservation in the management of ocean fish stock in the waters of Trinidad and Tobago is now before the Legislative Review Committee.

Tourism

Trinidad and Tobago has traditionally depended on the island of Tobago for its sun, sea and sand product, while Trinidad has been promoted as the Carnival centre. However, given the strategic geographical location and geographical landscapes, along with the rich, diverse cultural traditions, both islands have the potential to develop a wider range of tourism products and services. Over the last decade, eco-tourism has been promoted as an avenue for economic gains while maintaining harmony with the environment. In addition, Tobago has the potential for sports and heritage tourism, while Trinidad has been growing in the niche markets of business and cultural tourism. Tourism offers many opportunities not only for diversification, new business creation and the development of clusters, but also to harness sound environmental practice and promote ecological sensitivity.

Manufacturing

The emphasis is on specialised skills training and development to encourage competitiveness and sustainability within the Manufacturing sector. The development and adoption of Green Manufacturing Practices will also give local manufacturing firms a competitive edge given the increasing emphasis on creating a green economy and incentives are available for this. Adhering to the highest environmental standards by which international companies operate is actually good for the environment as well as good for business.

Cluster development in areas of ICTs development, aforementioned, will provide high-value manufacturers with a competitive advantage in utilising high-quality infrastructure and capitalising on business to business opportunities.

Additionally manufacturing as well as other traditional sectors such as tourism and agriculture will actively develop inter-sectoral linkages. These linkages can significantly augment the national product mix for domestic, regional and international markets.

Moreover, specific initiatives for moving up the value chain in energy will also expand the manufacturing sector without harming the environment. Investments being pursued include:

(i) an Ammonia-Urea-Melamine (AUM) Complex; ii) Methanol to Polypropylene/Polyolefins; and iii) Midscale LNG. Each of these will draw on the strength of our energy assets to create environmentally friendly manufacturing plants and clean products.

Energy Services

Energy services are the range of services that are directly related to or necessary, to support and facilitate the exploration, extraction, refining and distribution of energy products within a national market or through international trade. Trinidad and Tobago seeks to maximize the returns from its energy services capacity by actively promoting access to new markets and improving the local operating environment. In recent years, partly as a result of the local content policy, local service contractors have been active in platform fabrication. Local services companies are also involved in platform maintenance services as well as gas pipeline construction. The private and public sectors continue to work together to develop new markets abroad. With new energy finds in developing countries around the world as near as Guyana and Suriname and further afield in Ghana and Mozambique, the option for Trinidad and Tobago to develop knowledge services is real.

(3) HERITAGE AND STABILISATION FUND

In addition to achieving the aforementioned economic objectives, the state has introduced additional measures to ensure socio-economic sustainability in the distribution of resources. One such measure is the establishment and implementation of the Heritage and Stabilisation Fund. As at September 30th 2011, the fund amounted to US\$ 4.1 billion. HSF is supported by profits derived from the oil and gas sector and its purpose is two-fold:

- (1) To ensure economic stability in the future, especially in times of global economic crisis, and
- (2) To financially support heritage initiatives of Trinidad and Tobago particularly aimed at future generations.

As defined in the Heritage and Stabilisation Fund Act (2007), the purpose of the Fund is to save and invest surplus petroleum revenues derived from production business in order to:

- 1) Cushion the impact on or sustain public expenditure capacity during periods of revenue downturn whether caused by a fall in prices of crude oil or natural gas;
- 2) Generate an alternative stream of income so as to support public expenditure capacity as a result of revenue downturn caused by the depletion of non-renewable petroleum resources; and
- 3) Provide a heritage for future generations from savings and investment income derived from excess revenues.

Given the Fund's dual purpose, consideration is being given to possible separation of the fund's stabilisation and saving roles. These are two separate, equally important and mutually dependent roles which may better be dealt with as having separate and distinct objectives though these may be connected. Obviously short-term stabilization concerns without equal consideration given to heritage or heritage emphasis without addressing short term requirements would make little sense.

Balancing the Economy and the Environment

Trinidad and Tobago's historical economic dependency on oil and natural gas as well as past activities in its manufacturing sector have resulted in some environmental degradation over several decades.

In order to achieve sustainable economic development, the Government of Trinidad and Tobago therefore recognises the need to better synchronise and harmonise the relationship between the economy and the environment. One such method is through valuing the country's ecosystems.

Assigning a monetary value to ecosystem goods and services will ensure that the returns from natural resource extraction will be wisely reinvested into the environment. This system of “natural green accounting” allows for a mutual relationship between the environment and the economy. The ProEcoServ Programme, a new initiative of the Government of Trinidad and Tobago in collaboration with the University of the West Indies, integrates ecosystem assessment, scenario development, and economic valuation of ecosystem services into national sustainable development planning. This is being pursued with support from the UNEP, and Professor John Agard of the Department of Life Sciences at UWI who leads the ProEcoServ effort has been coopted on the Committee charged with overseeing the integration of Land Use Policy with National Physical Development.

Conservation and preservation of Trinidad and Tobago’s ecosystems, together with ensuring the sustainable and optimal use of the country’s limited renewable and non-renewable resources in the pursuit of economic growth and diversification, will lead to better synchronization of Trinidad and Tobago’s economic and environmental goals. This is being buttressed by legislative and regulatory initiatives. For instance, the Planning and Facilitation of Sustainable Development Bill will be presented in Parliament in the next session.

Overall, Trinidad and Tobago has adopted multiple strategies to develop a culture of innovation and entrepreneurship that harnesses the human capabilities and inherent cultural and environmental diversities within its borders. Such strategies will allow the national economy to move up the value chain and increase access to existing markets while simultaneously seeking out new, niche markets for its unique products and services. These new strategies used in further developing the economy will simultaneously lend to environmental preservation, thereby creating a “green economy” which is conducive to macro-economic stability and sustainable growth. The idea also is to foster and facilitate economic inclusion and community participation with shared benefits and to put people at the centre of the development process. People centred development is the number one pillar of the seven pillars which establish the framework for the Sustainable Development of Trinidad and Tobago.

PILLAR 2

SOCIAL SUSTAINABILITY

“Enabling people in their communities to strive for Sustainable Development”

Social sustainability incorporates considerations related to justice, poverty, inequality and people’s aspiration for a better life. In this report social sustainability is equated with a society that is just, equal, without social exclusion and holding the promise of a decent quality of life, or livelihood, for current and future generations. More specifically, the concept of socially sustainable development includes development that:

- meets basic needs for food, shelter, education, work, income and safe living and working conditions;
- is equitable, ensuring that the benefits of development are distributed fairly across society;
- enhances, or at least does not impair, the physical, mental and social well-being of the current and future populations;
- promotes education, creativity and the development of human potential for the whole population;
- preserves cultural and biological heritage, thus strengthening citizens’ sense of connectedness to their national history and environment;
- promotes conviviality, with people living together harmoniously and in mutual support of each other; and
- is democratic, promoting citizen participation and involvement.

There are also six (6) themes that highlight the basic features of social sustainability. These themes are as follows: (i) quality of life, (ii) equity and social justice, (iii) inclusion and access, (iv) poverty eradication (v) a future focus and (iv) participatory processes.

(1) QUALITY OF LIFE

Though the term ‘quality of life’ is highly subjective, it involves ensuring that basic needs are met and that overall well-being is fostered for all members at the individual, group and community level. One of the most commonly cited indicators of the quality of life within a country is the Human Development Index (HDI). The HDI combines indicators of life expectancy, educational attainment and income into a composite human development index. It emphasizes that people and their capabilities should be the ultimate criteria for assessing the development of a country, not economic growth alone.

Trinidad and Tobago's HDI value was 0.760 in 2011, positioning the country at 62 out of 187 countries.⁶ Between 1980 and 2011, Trinidad and Tobago's HDI value increased from 0.673 to 0.760, an increase of 13.0 per cent or average annual increase of about 0.4 per cent. The HDI of Latin America and the Caribbean as a region increased from 0.582 in 1980 to 0.731 in 2011, placing Trinidad and Tobago above the regional average and classified as a High Human Development Country (the second highest category). In particular, during this period, its life expectancy at birth and mean years of schooling increased, by approximately 3 years (to 70.1 years) and 2 years (to 9.2 years) respectively. Between 1980 and 2011 Trinidad and Tobago's GNI per capita also increased by roughly 62 per cent.

Trinidad and Tobago's relatively favourable scorecard is largely the result of the Government's commitment to poverty eradication, education and health. These three areas are all identified as strategic priority areas in the MTPF until 2014. This commitment is reflected in Trinidad and Tobago's relatively high levels of spending on the social sectors (such as education, health, housing and social services). Table 2 shows that with the exception of the 'Other' category, the majority of central government recurrent expenditure, roughly 30%, is allocated to the social services sector compared to the 9% and 8% provided for economic services and public services (specifically national security) respectively.

6 UNDP.Human Development Report 2011.

TABLE 2:
CENTRAL GOVERNMENT RECURRENT EXPENDITURE (TT\$ MN):
A FUNCTIONAL CLASSIFICATION¹, 2007/08-2011/12

	2007/2008	2008/2009	2009/2010 ^r	2010/2011 ^p	2011/2012 Budgeted	5yr Avg as % of Avg Total Recurrent
Economic Services	5,029.4	3,840.7	3,040.3	3,285.8	5,008.4	9%
Energy	2,388.5	1,148.9	1,038.1	1,281.5	1,694.8	4%
Agriculture, Land and Marine Re- sources	573.9	589.4	546.7	595.1	802.2	1%
Transport	2,067.0	2,102.4	1,455.5	1,409.2	2,511.4	4%
Social Services	10,774.8	11,265.5	11,797.2	14,758.7	15,160.1	30%
Education ²	5,071.3	4,881.5	5,331.7	5,785.3	6256.9	13%
Health	2,747.2	2,979.8	3,268.4	3,612.3	3,656.9	8%
Housing	282.6	311.2	194.8	919.3	878.9	1%
Small and Micro- Enterprise Devel- opment	108.5	122.4	134.3	167.2	165.2	0%
Social Services ³	2,565.2	2,970.6	2,868.0	4,274.6	4,202.2	8%
Public Services	3,683.9	3,796.6	3,950.6	2,585.3	2,967.6	8%
National Security	3,683.9	3,796.6	3,950.6	2,585.3	2,967.6	8%
Other⁴	27,875.1	17,926.2	19,556.0	22,975.8	23,973.2	53%
Total Recurrent Expenditure	47,363.2	36,829.0	38,344.1	43,605.6	47,109.3	100%

Source: Ministry of Finance

¹ Classified according to recurrent expenditure allocated to the respective ministry head.

² Includes Ministries of Education and Science, Technology and Tertiary Education.

³ Includes Ministries of Community Development and Culture and Gender Affairs, Social Development and Sport and Youth Affairs.

⁴ Includes Office of the President, Auditor General, Judiciary, Industrial Court, Parliament, Service Commissions, Statutory Authorities, Elections and Boundaries Commission, Tax Appeal Board, Registration, Recognition and Certification Board, Public Service Appeal Board, Office of the Prime Minister, Tobago House of Assembly, Central Administrative Services, Tobago and all other Ministries. Other excludes Charges on Account of the Public Debt.

^r revised

^p provisional

The Government of Trinidad and Tobago clearly recognizes citizens' health and wellness as critical to development, and therefore focuses on the creation of an efficient and modern health care system. One such initiative undertaken in fiscal 2011 was the commencement of preparatory work for the establishment of a Health Services Accreditation Council of Trinidad and Tobago (HSACTT). At present, Trinidad and Tobago has an inadequate system of health services accreditation which is a necessary tool for regulating, monitoring, and improving the quality of health care (Social Sector Investment Programme, 2012). This initiative is one of several that will enable Trinidad and Tobago to develop a modern responsive high quality health care system that will benefit both current and future generations. Other initiatives include the upgrade and expansion of hospitals and Enhanced Health Facilities such as the newly opened Scarborough hospital in Tobago, the Chronic Disease Risk Factor Screening Campaign, mobile clinics, the passage of the Tobacco Control Act 2009, upgraded and expanded training for doctors and nurses, international recruitment of medical practitioners to fill gaps, construction of a Children's hospital, a new emphasis on specialised training, and new public-private initiatives in health care delivery of specialist care.

In the MTPF 2011-2014, the Government of Trinidad and Tobago reiterated its commitment towards ensuring that every child has access to quality education. From Early Education to Tertiary level priority attention is being given to the development of new, modern subject areas that are better aligned to current and future labour market needs, and methods of learning that are technology focused. A very significant component of the reform effort is the integration of ICT throughout the school system. Government has already initiated the process through the eConnect and Learn (eCAL) Programme and the laptop for every child initiative. These education initiatives will play a pivotal role in creating a more relevant and productive workforce to expedite the emergence of a sustainable economy. Education up to University degree level is fully supported by the State and at higher levels fifty percent support is offered. The target for tertiary participation by 2015 is 60%.

In addition, the Government of Trinidad and Tobago remains committed to improving the quality of life of its citizens through the provision of adequate and affordable housing solutions. The housing problem in Trinidad and Tobago is two-fold. Firstly, there is an insufficient supply of adequate and suitable housing to meet current and future needs. Secondly, there is an issue of affordability, which is intrinsically linked to a supply-demand imbalance and which continues to be of great concern.

Through collaboration and joint venture arrangements with small, medium and large contractors, focusing primarily on poor and low and middle income, the following strategies are being pursued:

- Review existing financial arrangements such as the provision of grants, subsidies and mortgages to further alleviate the issues of affordability and accessibility;
- Transform squatter settlements through upgrade and regularisation, into planned, sustainable communities to reduce the plight of squatters in accordance with the Squatter Regularisation Act No. 25 of 1998; and
- Review existing legislation and adopt public awareness initiatives in order to contain further squatting.

Citizens' sense of security is also another important factor impinging on quality of life with crime remaining an urgent issue confronting Trinidad and Tobago. Citizen security refers to the freedom from physical violence and to the freedom from fear of violence. A recent Caribbean Human Development report (2012) emphasizes the need for government action in addressing citizens' security concerns. A noteworthy initiative in Government's fight against crime is the Citizen Security Programme (CSP). This community-based crime prevention programme seeks to reduce crime and violence by addressing risk factors—such as firearms use, unsafe neighbourhoods and violent behaviour—in 22 'high-need' communities in Trinidad and Tobago. The components of this programme include: (a) institutional strengthening of the Ministry of National Security by improving its ability to plan, coordinate and manage violence and crime prevention projects; (b) institutional strengthening of the police service to increase public confidence by improving performance, training, management and supervision; and (c) coordination and implementation of community-based preventive measures. It is a strong reflection of government's determination to engender a culture of peace and lawfulness.

Not only has the Government recognised local and regional security risks, but also the threat of transnational organised crime. To protect society from these international security risks several important pieces of legislation have been passed to address both local and international challenges. Agriculture continues to play an important role in the quality of life of the citizens of Trinidad and Tobago. Continued investment into the agricultural sector would ensure food security while simultaneously contributing to poverty eradication. According to Agenda 21, by 2025, 83% of the expected global population of 8.5 billion will be living in developing countries. This means that the capacity of available resources and technologies to satisfy the demands of this growing population for agricultural commodities remains uncertain. Therefore the agricultural sector must meet this challenge, mainly by increasing production on land, already in use and by avoiding further encroachment on land, which is only marginally suitable for cultivation.

A number of initiatives to address this challenge have already been initiated by the Government of Trinidad and Tobago. These include incorporation of Post-Harvest Technologies and other technologies, the Infrastructure Development Land Distribution Program and the Marketing Program just to name a few. Further development of the agricultural sector can aid in poverty eradication through job creation from initiatives such as the Agricultural Labour Program and the Young Professionals in Agriculture Development and Mentoring Program.

Overall, improving the quality of life of citizens through the creation of a safer and healthier nation in which citizens can achieve their full potential and can lead lives that they value, and have reason to value, is of the utmost importance to the Government of Trinidad and Tobago.

(2) EQUITY AND SOCIAL JUSTICE

The second theme, equity, recognizes that the quality of life can vary significantly across certain segments of the population. Synonymous with fairness, equity has come to refer primarily to distributive justice— that is, unjust inequalities among people. Inequalities are especially unjust when particular groups, whether because of gender, race, birthplace or sexual orientation, are systematically disadvantaged. Equity is the most commonly mentioned requirement for social sustainability since high levels of inequity and social division are strongly correlated with conflict and instability. It is important to note that while inequity is conceptually different from inequality, inequity and inequality in outcomes are closely linked in practice.

Data from the Central Statistical Office indicate that roughly 16.7% of population was below the poverty line in 2005, with the most recent Household Budgetary Survey in 2008/09 suggesting that poverty increased by approximately 2 per cent between 2005 and 2009. Moreover, the geographic distribution of poverty was highly unequal according to the Survey of Living Conditions in 2005, with the north-eastern, east and southwestern parts of the island of Trinidad lagging behind, in terms of the living conditions of the population. The recently completed Human Development ATLAS 2012⁷ (based on 2009/10 statistical data), which disaggregates key aspects of human development by the 15 regional corporations, suggests that regional inequalities persist. However, recent trends in poverty suggest that progress has been made with poverty reduction, with a figure of 14.7% for 2011. Though a modest progress, Trinidad and Tobago is headed in the right direction.

The Government of Trinidad and Tobago has therefore intensified its efforts to reduce both poverty and inequalities, with the MTPF 2011-2014 establishing a poverty reduction target of 2% per year and a Gini Coefficient target of 0.21 by 2015. (In 2005 it was recorded as 0.39). The subsequent themes, inclusion and access, will discuss some of the Government's strategies in greater detail.

7 The preparation of Trinidad and Tobago Human Development Atlas was a collaborative effort among the Ministry of Planning and the Economy, the Central Statistical Office (CSO) and the United Nations Development Programme (UNDP).

(3) INCLUSION AND ACCESS

Closely related to the concept of equity are the notions of inclusion and access. Social exclusion refers to the way poverty, deprivation and related social problems discussed above alienate people both physically (through inequitable access to transport, jobs or public services for example) and socially from the benefits and opportunities afforded by full social and economic participation. Progressing towards social sustainability requires increasing the level of access (to resources, services and opportunities) for those currently experiencing social exclusion. This means addressing inequitable levels of access to all aspects of life, from employment, housing and living conditions, services and facilities, to opportunities for participation in social, cultural and political structures and processes. In fact, creating conditions for greater inclusiveness and equity in Trinidad and Tobago's socio-economic development is one of the fundamental principles underlying the Government's economic and social transformation strategy articulated in the MTPF 2011-2014.

Specific interventions include increasing the availability of work programs, and creating and reinforcing social safety net programmes that better target the needs of the vulnerable and the excluded. The Poverty Reduction Programme (PRP) is one such initiative. The Micro Enterprise Grant is one of its components, and is intended to provide persons living in poverty as well as welfare recipients with a grant to undertake a micro business venture or skills training. The expected impact is that these vulnerable citizens will have a viable avenue for becoming self-sufficient and empowered to lead sustainable livelihoods via small businesses and through acquisition of skills. In terms of health, a number of initiatives are also in place to assist the vulnerable with their health care needs such as the Children's Life Fund, financial assistance to needy patients and the Adult Cardiac Surgery Programme. With regard to reducing regional disparities, the Government will provide regions lacking basic infrastructure with the necessary amenities and opportunities for investment in order to create an environment for sustainable communities.

One of the key initiatives in this respect involves the expansion of the economic space within the country, specifically the five (5) growth poles, four (4) of which are in Trinidad - Central, the South Western Peninsula, East Port of Spain and the North-Coast. The fifth growth pole is the North-East Region of Tobago. These chosen locales will benefit from a special package of fiscal incentives, including the granting of Free Trade Zone Status where businesses qualify and will be allowed to access the tax incentives provided to the Agriculture, Manufacturing and Tourism sectors.

While the expansion of the new economic spaces will create employment in surrounding communities, the Government is simultaneously implementing initiatives to ensure the development and protection of workers' rights through a Decent Work Policy and Programme of Action for Trinidad and Tobago (2011-2013) which aims to foster: the promotion of standards and fundamental principles and rights at work; the creation of employment; the enhancement of social protection and the strengthening of social dialogue. The Policy will provide opportunities for improving the quality of life, promoting self-development and shaping a brighter future for generations to come.

The Government is also committed to the improvement of Health, Safety, Security and Environmental (HSSE) standards. The adoption of a preventative, proactive culture of HSSE, incorporating effective Occupational Safety and Health (OSH) management systems (inclusive of policy, regulations, compliance, environmental protection), would ensure human security and be the hallmark of excellence as citizen safety and security are pursued in tandem with sustainable development. The OSH system will comply with world standards with respect to health and safety issues such as NEBOSH Health and Safety System of the UK and the OSHA system of the US.

Furthermore, the Government of Trinidad and Tobago is making a concerted effort to promote gender equality. Currently the Ministry of Gender, Youth and Child Development is developing a National Gender Policy to set out the Government's gender equality priorities across the social, economic and political spheres, to build coherence among all stakeholders including Government, private sector, labour and civil society, and to secure the necessary resources to address the critical gender issues facing the nation.

(4) POVERTY ERADICATION

The Government of Trinidad and Tobago is committed to the eradication of poverty at the rate of 2% per year. At present levels this translates into 1500 households and about 6000 persons per year. A wide range of social programmes support the unemployed and the poor. These programmes target children, single mothers, the old and needy households. Other programmes address training and skills building needs, and opportunities for entrepreneurship and micro enterprise development. There are also well targeted, recently restructured, temporary work programmes.

Beyond this however, the emphasis is on increasing economic inclusion and participation by helping people to raise themselves out of poverty through education, training, skills building, and the development of labour intensive sectors and community driven sectors. Action proceeds on these fronts. Based on income data, poverty which increased by 2% between 2005 and 2008-2009, decreased by over 5% to 14.7% in 2011.

(5) FUTURE FOCUS

It is imperative that the ability of future generations to live healthy and fulfilling lives is not undermined by the decisions and actions undertaken by the current generation in pursuit of their own needs and wants. This theme therefore emphasizes intergenerational equity.

As discussed previously in the Sustainable Economy Pillar, one of the objectives of the Heritage Stabilization Fund (HSF) is to use savings and investment income derived from excess petroleum revenues to provide a heritage for future generations of Trinidad and Tobago. Similarly, the diversification of the economy, together with the creation of new, high-value jobs in new knowledge and creative industries (for example, entertainment, information technology, light manufacturing, and agro-industries), is also likely to benefit current as well as future generations through the provision of sustainable livelihoods.

Environmental conservation is also closely tied to safeguarding the welfare of future generations, especially the poor and the vulnerable. This is because the poor and vulnerable tend to be disproportionately affected by the wider effects of environmental degradation due to more severe stresses and fewer coping tools. The Government of Trinidad and Tobago ultimately recognises the importance of balancing social and economic transformation with environmental conservation, and hence has taken concrete steps to embrace 'green' policy planning in order to guarantee environmental security and a good quality of life for future generations. A good recent and tangible example of this is the construction of a board walk at Williams Bay Chaguaramas with recyclable materials as part of a totally green initiative.

(6) PARTICIPATORY PROCESSES

Inclusive, consultative and participative processes for citizens' involvement are central to the concept of social sustainability. The participation of a wide cross section of society in the decision making process will increase the likelihood that the ecological, social and economic consequences of different courses of action are taken into account, and that diverse and possibly conflicting interests are reconciled. Consultation and consensus building will also serve to legitimize contentious decisions that impact directly on citizen and on communities, and thus increase the probability that their desired impact will be realized. This is because societies must understand the nature of changes and tradeoffs required if they are to successfully move towards sustainable development. It is for primarily these reasons that the Government is actively undertaking the establishment of mechanisms that increase citizens' understanding of and involvement in the social and economic transformation of Trinidad and Tobago.

Education programmes that build understanding and potentially lead to positive changes in values and behaviour (as consumers and as citizens) conducive to moving towards sustainability are important social interventions being undertaken by government agencies as well as CBOs and NGOs. The Government and various civil society organisations are also committed to promoting greater access to information that enables and empowers citizens to influence and make inputs that are consistent with the national sustainable development agenda.

The MTPF 2011-2014 further outlines several new institutional arrangements that will permit greater collaboration amongst social partners- government, business, labour and civil society- in the State's decision-making process. For example, the establishment of an interconnected triad, namely the Civil Society Board (CSB)⁸, the Stakeholder Advisory Councils (SAC) and the Economic Development Board (EDB), will facilitate the development of a Social Compact, with all stakeholders cultivating an understanding of the important role that each party plays in the country's socio-economic transformation as well as an appreciation of the potential benefits of greater collaboration. The CSB, SAC and EDB are the current primary mechanisms for public involvement and consultation, and will be part of the national governance arrangements and Institutional Framework for Sustainable Development. Over the last six months consultations have been held with Civil Society organisations across fifteen (15) regions in the country on the Medium Term Policy Framework (MTPF) and with several communities on development plans for their area. The Business community has also been engaged on several issues of interest to them by the Economic Development Board and the Council for Competitiveness and Innovation. In a difficult climate of labour relations the labour movement has been engaged on an ongoing basis at the highest levels of Government.

This participatory model of development will also extend to the development of the aforementioned five (5) growth poles in support of balanced regional development. The Government has actively sought community input in the drafting of Regional Developmental Plans due to its recognition of the vision, strength, skills and resources that reside within communities. Government has also already conducted consultations with several communities on its Land Use Policy for these specific districts based on its recognition that each community is unique with certain communities having special needs that require customised solutions and direct government intervention from time to time. Ultimately, the Government of Trinidad and Tobago is determined to provide citizens with the opportunity to influence key decisions related to the national sustainable development agenda at the individual, community and regional level.

⁸ The formation of the Civil Society Board is currently underway pending public consultations, fourteen (14) of which is being held in Trinidad and one (1) in Tobago.

The Government of Trinidad and Tobago also acknowledges the need to bolster its good governance mechanisms. Mechanisms such as the National Performance Framework, established by the Ministry of Planning and the Economy in consultation with other Ministries and institutions to review and link policy, budget, implementation and results to a clearer, calculated, evidenced based planning and mold the nation into one of good and efficient governance.

Stronger and more effective public sector anti-corruption efforts are also important in moving toward greater transparency and accountability. In September 2010, the Government of Trinidad and Tobago reaffirmed Trinidad and Tobago's commitment to the Extractive Industries Transparency Initiative (EITI). The EITI is a global initiative which aims to foster transparency and accountability by companies involved in extractive (i.e. oil, gas and quarrying) industries by disclosing to the population the total payments made to government by these companies reconciled with the government's declared receipts. A Cabinet appointed Multi-stakeholder Steering Committee comprised of nineteen (19) members, eight (8) of which represent civil society organisations, has been charged with the responsibility for Trinidad and Tobago achieving EITI compliant country status by August 2013. The EITI implementation process involves the production of annual independently audited reports on the revenues earned from the extractive sector, the removal of legal and administrative barriers to revenue transparency and accountability and the building of the capacity of civil society to engage in a discourse on the manner in which revenue is managed and distributed nationally. The Government is also in the process of bringing an enlightened procurement bill before Parliament, which addresses not only transparency, accountability and value for money issues, but also green economy issues.

The Importance of People-Centred Development

Although the global sustainability debate has historically been confined to environmental and economic considerations, the social dimension of sustainability is increasingly being regarded as equally important. This is indeed the case for the Government of Trinidad and Tobago given its strict adherence to the principle that people should be at the centre of all development interventions. In outlining the five themes of socially sustainable development within the context of Trinidad and Tobago, it becomes abundantly clear that the Government of this twin island Republic is committed to improving and maintaining citizens' freedom of choice, standard of living and general welfare while simultaneously engendering meaningful participation. Altogether Trinidad and Tobago's steadfast pursuit of sustainable development is due primarily to the Government's belief that its people are the country's greatest assets and their welfare, its greatest priority.

The Government has made some errors on the Consultation front which it will proceed expeditiously to rectify as it also proceeds to strengthen the process of genuine consultation and improve the context of governance to support community participation, social cohesion and civil society influence in the governance process.



PILLAR 3

THE ENVIRONMENT

“Green is the New Black”

The Millennium Development Goals (MDGs) recognise that environmental sustainability is a critical component of global economic and social well-being. While environmental problems have intensified globally, and most environmental problems are global in nature, most ecosystems that are managed under national jurisdictions demonstrate the need for better national governance to support the protection of these global commons more effectively.

These global public goods have immeasurable positive externalities and Trinidad and Tobago recognises the need, not only to protect and effectively manage its local ecosystems, but to accede to supportive and cooperative governance arrangements of national natural resources under a global decision-making regime. Even in the absence of effective compliance mechanisms and enforcement regimes for most global environmental agreements, Trinidad and Tobago is of the resolve to strengthen environmental sustainability as it has been doing in the areas related to its natural resources. Strategies to achieve this have been predominantly through the development and adoption of policies such as the Climate Change policy, a framework for Development of a Renewable Energy Policy, Protected Areas Policy and Eco-Tourism Policy- all of which have been developed.

The Government of Trinidad and Tobago has also engaged diverse stakeholders in many projects and programmes in this process. The Integrated Watershed and Coastal Area Management project, an initiative of the Ministry of Housing and the Environment, as well as a project tied to the Global Coral Reef Monitoring Network⁹; are two examples of technical exercises that continue to protect and promote Tobago in particular as a south-eastern Caribbean success in sustainable practices, research and education.

Recently, a firm decision has been taken by the Government of Trinidad and Tobago, which debars development of any kind and construction on and beyond 300 feet contour line of the Northern Range.

9 The Global Coral Reef Monitoring Network (GCRMN) is managed, organised and run by a number of agencies which includes UNESCO, UNEP, Reef and Rainforest, World Fish Centre, Australian Great Barrier Reef Marine Park Authority, International Union for Conservation of Nature (IUCN), The World Bank Environmental Department, Intergovernmental Oceanographic Commission (IOC), Convention on Biological Diversity (CBD) and the Coral Reef Initiatives for the Pacific (CRISP).

This decision was taken following the numerous occurrences of landslides along the Northern Range Coast which has resulted in loss of land, damage to property and person and the associated financial losses. Actions such as this one by the Government aims to promote environment protection and sustainability.

The Government additionally acknowledges the local transportation sector as a major contributor to the national carbon footprint and, as such, the Ministry of Energy and Energy Affairs is making a determined and progressive effort to encourage the use of compressed natural gas (CNG) and CNG gas mixes as a major and future preferred vehicular fuel in Trinidad and Tobago.

On the Northern Range of Trinidad and Tobago a firm decision has been taken to allow no development or construction beyond the 300 ft. contour line.

However, while many policies and strategies have been drafted and developed to foster local environmental sustainability, several challenges persist in many areas. Renewable Energy, in particular, suffers from a lack of programmes and institutional capacity to support research, development and acquisition of renewable energy technology. Trinidad and Tobago also has a slow decision-making process. This is especially the case in the context of approval of policies or plans and acquisition of resources for action. In addition, as a SIDS, the entire country is highly vulnerable to direct and indirect impacts from local, regional and international natural and man-made disasters.

Regional and global commitment to the protection of global commons is crucial to the well-being of the population, as the negative impacts of global events such as climate change can have disastrous consequences for Trinidad and Tobago due to the relatively small size of the islands. While this is a complicating factor, planning for, and ensuring the sustainable development of Trinidad and Tobago requires that appropriate consideration be given and actions taken to address its land management and degradation challenges.

Moreover, since any attempt to promote sustainable use of the environment must challenge existing norms and cultural practices, changing behaviour patterns and attitudes about environmental sustainability are critical. To achieve attitudinal change, sustained educational efforts to disseminate new ideas or reinvigorate old environmentally sound practices are required for any significant effect to occur.

There have been several reports that have influenced Government's approach to the issue of monitoring progress on enlightened environmental practices. These include the Mauritius Declaration (2005) and the Mauritius strategy for Implementation of the SIDS Programme of Action (2005). Ten (10) thematic areas were identified in these reports as of critical concern to the sustainable development of SIDS.

Under this pillar of sustainable development, the ten (10) problem areas which have been identified as being environmental issues and challenges for Trinidad and Tobago include:

1. Climate Change and Sea Level Rise
2. Natural and Anthropogenic (Man-made) Hazards
3. Management of Wastes
4. Coastal and Marine Resources
5. Freshwater Resources
6. Land Resources
7. Energy Resources
8. Tourism Resources
9. Biodiversity Resources
10. Transportation

These challenges currently occupy the attention of the Government of Trinidad and Tobago and a collaborative approach involving local, regional and international partnerships is being sought to address these challenging problems.

(1) CLIMATE CHANGE AND SEA LEVEL RISE

The issue of climate change and global warming was identified as a common problem since 1979. It is the main global environmental concern amongst all the environmental issues. The international policies responsible for addressing the issue of global climate change are two legal frameworks: the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol. The ultimate objective of the UNFCCC is the stabilization of greenhouse gas concentrations in the atmosphere. The Kyoto Protocol is a legally binding instrument that requires developed country parties to reduce their aggregate greenhouse gas emissions by 5.2% below their 1990 levels.

Trinidad and Tobago, as a SIDS, is particularly vulnerable to severe consequences of climate change, which results in sea level rise, increased flooding, increased frequency and intensity of hurricanes, hillside erosion, and loss of coastal habitats. The main sectors that are likely to be impacted on are the:

Agriculture sector:

- Projected increases in air temperature are likely to increase the aridity of soils thus decreasing crop yields;
- Increase in sea level is likely to result in inundation of coastal areas and salination of soils and
- Increased temperatures can result in the increased proliferation of new and existing pests and diseases and increase the demand for water for irrigation purposes.

Human Health:

- The projected increases in ambient air temperature are likely to increase the spread of vector diseases since higher temperature and humidity favour the spread of these vector borne insects;
- Decreases in rainfall will affect the availability of potable water; and
- Projected increases in sea level and precipitation intensity are likely to result in increases in the incidence of water borne diseases.

Human settlements:

- Projected increase in precipitation can result in increased flooding which will have adverse effects on human settlements, commerce, transport and towns and villages. This can add pressure to already existing urban and rural infrastructure; and
- Increased frequency and intensity of storms and its associated flooding and storm surges can disrupt and destroy several coastal settlements, increasing the incidence of poverty.

Coastal Zones:

- Sea level rise will result in increased inundation, increased erosion and loss of coastline, loss of natural resources such as wetlands and loss of important ecosystems goods and services; and
- Temperature increases will lead to loss of the country's vital coral reefs ecosystems and fisheries resource. It will also increase coastal erosion.

Water resources:

- As temperature increases, there will be loss of available surface water as increased evapotranspiration will take place; and
- Decreased precipitation will reduce percolation and recharge of groundwater reserves in aquifers. There will reduce the availability of surface water and potable water.

It has been projected that the mean global annual temperature is projected to increase by 0.7°C to 2.6°C by the 2060s and by 1.1°C to 4.3°C by the 2090s. For Trinidad and Tobago, projections of mean annual rainfall indicate a decrease in rainfall, a direct consequence of increase in global temperatures.

Greenhouse gas inventories conducted for the period of 1990-2060 indicate that the energy sector, transportation and industrial sector account for the majority of carbon dioxide emissions in Trinidad and Tobago. Although the twin island Republic accounts for less than 1% of the absolute global greenhouse gas emissions, it is the second largest producer of carbon dioxide emission on a per capita basis in the world.

One of the primary ways in which Trinidad and Tobago is seeking to reduce carbon dioxide emissions is through the development of Compressed Natural Gas (CNG) as an alternate fuel for vehicles, which is also informed by the need to reduce the nation's high fuel subsidy bill. The use of CNG can reduce Green House Gas (GHGs) emissions by as much as 15 to 20 percent of GHGs produced by liquid fuels, gasoline and diesel. CNG has been proven to be a cleaner, cheaper, safer and greener fuel and as such, a suitable alternative fuel to use in Trinidad and Tobago.

There have also been initiatives to use renewable energy sources such as solar, wind and wave to complement supplies from existing sources and the adoption of Energy Efficiency (EE) measures and practices.

As outlined in the MTPF 2011-2014, Trinidad and Tobago has adopted a National Climate Change Policy (2010), the implementation of which will increase the use of new and innovative technologies that can lower the levels of emission; encourage the use of clean energy technology and renewable energy and promote the adoption of more energy efficient practices. The stage is therefore now set for a strategy for mitigating climate change and taking the steps to adapt to it.

The Government of Trinidad and Tobago acknowledges the seriousness of the impacts of global warming and greenhouse gases on the island and its surrounding territory. In response to this the 'Green Government Policy of Trinidad and Tobago', outlines recommendations for greening government workplaces. This would result in increased energy efficiency in government buildings and renewable energy will be the energy source in government housing projects. This initiative would set the precedence for greening all other workplaces, with the intent that greening practices be adopted by private businesses and even within individual dwellings.

Another initiative taken by the Government in response to the impacts of climate change was to establish a committee of government ministers on climate change. The appointed ministers will oversee matters pertaining to climate change in particular, providing guidance for climate change policy implementation in Trinidad and Tobago.

An indicator of progress made in this area and some of the continuing challenges are listed below:

Progress

- Adoption of a national Climate Change Policy (2010);
- Increase in the use of renewable energy (solar);
- Increase energy efficiency in commercial and residential buildings;
- Enhanced natural carbon sinks (done through the conservation and protection of natural forest)
- Increase the use of cleaner technologies in all greenhouse gas emitting sectors; and
- Enhanced research and development in renewable resources, granting fiscal incentives to involve private sector investment in renewable energy sources, energy efficiency, alternative energy technologies, devices and programmes.
- The establishment of a Cabinet appointed Energy Service Company (ESCO) Certification Committee, whose mandate includes the development of regulations and standards for the conduct of energy audits to ensure adherence to minimum industry requirements in accordance with best international practices.

- Ministry of Works and Infrastructure is undertaking the Mayaro Coastal Studies Project which is intended to analyse and identify the causes of erosion along the eastern coastline and to develop solutions to arrest the rate of erosion.
- The Manzanilla Seawall Project is another initiative being undertaken by the Ministry of Works and Infrastructure. The main aim of this project is to preserve the coastline of the Manzanilla coastline.

Constraints and Challenges

- Inadequate data relevant to climate change, particularly historical data;
- Deficit of programmes and institutional capacity to support research, development and acquisition of renewable energy technology;
- Need for establishment of incentives to promote the use of clean technologies, alternative fuels and recycling initiatives; this is now being addressed by policy and action;
- Institutional and technical capacity constraints in identifying possible impacts of climate change on human, biological and physical resources through the conduct of vulnerability assessments with specificity;
- Need for more educational programmes to enhance the public awareness on climate change and the need to sustain this to effect change of behaviour.

(2) NATURAL AND ANTHROPOGENIC (MAN-MADE) HAZARDS

Trinidad and Tobago's geographical position and landscape renders the twin-island nation highly vulnerable to a wide range of geological and hydro-meteorological hazards. Firstly, while the country is located at the southern end of the Hurricane Belt, reducing its risk of direct impact of storms, low risk does not necessarily mean 'no risk'. Additionally, the country has suffered perennially from flood events associated with the movement of the Inter-Tropical Convergence Zone (ITCZ), tropical waves and convectional rainfall. Secondly, its proximity to active plate tectonic boundaries and its geological features mean that both islands are vulnerable to earthquakes and their secondary hazards; mud volcanic eruptions; landslides (mainly associated rainfall events) and tsunamis.

While Trinidad and Tobago has remained largely unscathed compared to some of its CARICOM neighbours, the collective regional experience serves as a reminder to the hazards which exist. For instance, over the last decade, the El-Nino/La Nina cycles have demonstrated the vulnerabilities of the Caribbean Region to changes in the global weather patterns.

The 2001, 2003 and 2010 drought conditions within the region, along with the increased frequency and intensity of storms in 2004 (e.g. Hurricane Ivan), 2005 (e.g. Hurricane Emily) and 2007 (e.g. Hurricane Dean) were noteworthy, demonstrating the need for strengthening national disaster preparedness. The devastating Haitian earthquake in 2010 was yet another reminder of the region's vulnerability.

In addition, Trinidad and Tobago is susceptible to anthropogenic (man-made) hazards. The nation's economy is hinged on the extraction and processing of oil and gas. The hazards associated with the operations of the industry are numerous, for instance, environmental hazards such as fires, or spills which can destroy watersheds and marine ecosystems. There are also similar hazards such as industrial mishaps, chemical spillages and contamination, atmospheric pollution; which are inherent to other sectors such as Manufacturing and Agriculture, which can negatively impact sustainable development if not efficiently and effectively managed.

Such hazards, in particular natural hazards, have historically resulted in losses to life, property and reduced sectoral outputs, and are typically associated with health issues and increased incidence of poverty. These negative impacts on individuals, households, communities and sectors/industries reduce the nation's ability to maintain sustainable socio-economic growth and stability.

Trinidad and Tobago's approach to disaster management is presently evolving from the existing approach of disaster preparedness and response, to embrace prevention, mitigation, recovery and rehabilitation planning through a Comprehensive Disaster Management (CDM) approach. This is aligned with the international and regional paradigm shift in disaster management and is critical to sustainable development.

The strategic goals of Trinidad and Tobago's Comprehensive Disaster Management Policy Framework (CDMPF) include:

1. More effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with special emphasis on disaster prevention, mitigation and preparedness;
2. Develop and strengthen institutions, mechanisms and capacities at all levels, in particular at the community level, which can systematically contribute to building resilience to hazards;
3. Systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programmes in the reconstruction of affected communities.

Progress

MITIGATION

The Ministry of Planning and the Economy has established a partnership with the Seismic Institute at the University of the West Indies to conduct a systematic Microzonation Study in phases over the next ten (10) years. Work on this project is proceeding and is reviewed annually.

The Office of Disaster Preparedness and Management (ODPM) is currently conducting preliminary vulnerability assessments of each municipality in Trinidad and Tobago. The Preliminary Vulnerability Assessment, Critical Facilities Map and Hazard Occurrences Map of Tunapuna/Piarco Region and Arima Borough, Couva/ Tabaquite/ Talparo Region, Penal/ Debe Region and Sangre Grande Region have been completed. The Preliminary Vulnerability Assessments will feed into the comprehensive national risk and capacity assessments.

In addition, in February 2011, the Government of Trinidad and Tobago and the Inter-American Development Bank (IDB) signed an agreement to deliver a program aimed at improving the delivery of CDM in Trinidad and Tobago. Also in February 2011, the Government and the United Nations Development Programme (UNDP) signed an agreement to deliver a program which also develops capacity for disaster risk management.

Further, the Regional Code of Practice for the Construction of Houses was developed in collaboration with the CARICOM Regional Organisation for Standards and Quality (CROSQ). CDEMA provides up to USD \$10,000.00 for delivering the Safer Building Course. The ODPM is currently encouraging institutions in Trinidad and Tobago to run the Safer Building Course.

A Committee has been established by the Ministry of Housing and the Environment to address the issue of Building Codes. This Committee works closely with the National Planning Task Force.

PLAN AND PREPARE

The ODPM continues to encourage and facilitate Business Continuity Management (BCM) to ensure that essential services, private business, and local sectors prevent critical service interruptions before, during and after an event or be able to re-establish full functionality after an event.

A National Land Use Policy and a Physical Development Plan are being prepared and will be completed in September 2012. This is supported by fifteen (15) regional plans and five hundred and eight five (585) community plans which will result in rezoning, and better order, process and planning.

RESPONSE

The ODPM continues to ensure effective response in the aftermath of a disaster. As such, plans are regularly practised through national exercises. Past exercises mainly included simulating flooding, earthquakes and ODPM's response to these events.

Further, the Government's Emergency Shelter Programme augments the resources of the private sector and non-government organizations to cope with the emergency shelter needs resulting from a threatened alert or the impact of a disaster. Some of ODPM's priority areas for action continue to be: 1) shelter identification and inspection; 2) retrofit of homes to meet acceptable standards; 3) train shelter management personnel; 4) enactment of laws and regulations for shelters; and 5) establish purpose built shelters.

Response initiatives also involve the development of the National Volunteer Programme which will allow members of the community; public, private and civil sectors to take ownership of their communities' vulnerabilities and engage in risk reduction and management practices. The ODPM will facilitate the training of volunteers which will enable them to support stakeholders at each phase of Disaster Risk Reduction and Management (prevention, mitigation, preparedness response and recovery).

RECOVERY

The ODPM has hosted and facilitated several training sessions in damage assessment in collaboration with the United States Agency for International Development/Office of Foreign Disaster Assistance (USAID/OFDA) and with UN Economic Commission for Latin American and the Caribbean (UNECLAC).

The ODPM continues to assist in recovery efforts after hazard events. This involves the restoration and improvement of facilities, livelihoods and living conditions of disaster-affected communities in efforts to reduce disaster risk factors.

The agency also facilitates relief efforts through the provision of assistance or intervention during or immediately after a disaster to meet the life preservation and basic subsistence needs of those people affected. Measures are either immediate, short-term, or for an extended duration depending on the scale and impact of the disaster.

In addition, several funds are available for the Government to tap into to assist in recovery and relief efforts. These include: the Caribbean Catastrophe Risk Insurance Facility (CCRIF); the UN Central Emergency Relief Fund; the Inter-American Emergency Aid Fund (FONDEM); the Caribbean Development Bank (CDB); the Emergency Grant, Emergency Response Loan and Rehabilitation Loan and the Heritage and Stabilisation Fund.

Constraints and Challenges

- The small size of Trinidad and Tobago renders the entire country highly vulnerable to direct and indirect impacts from local, regional and international natural and man-made disasters, affecting its efforts to achieve sustainable development;
- Population continues to demonstrate a high level of complacency in mitigating risks and preparing for natural events;
- Lack of knowledge by the general population of the country's disaster response mechanisms such as shelter location and emergency response bodies; and
- Need for greater efforts to develop synergies between the leading disaster agency (ODPM) and various stakeholders in mitigation initiatives, planning and preparing, response and recovery efforts to effectively and efficiently deliver the CDM policy.

(3) MANAGEMENT OF WASTE

Over the past two to three decades, rapid industrialisation to facilitate economic development has caused a tremendous increase in solid waste generation. Advances in material science facilitating cheaper and non-biodegradable packaging materials have also exacerbated this issue. Population growth, increased urbanisation, increases in per capita income and improvements in standard of living have allowed for greater consumption of packaged goods. Several attendant environmental problems stem from inability to cope with increasing quantities or changing composition of waste. Locally, Trinidad and Tobago is not immune to this phenomenon. Solid waste management has become an important issue on the sustainable development agenda for Caribbean SIDS.

Under the Environmental Management Act, waste is defined as any material discarded or intended to be discarded which constitutes garbage, refuse, sludge, or other solid liquid semisolid or gaseous material resulting from residential, community, commercial, industrial, manufacturing, mining, petroleum or natural gas exploration, extraction or processing, agricultural, health care or scientific research activities.

There is no single institution/agency responsible for waste management in Trinidad and Tobago. Responsibility for waste management is still shared among several Ministries, statutory bodies and other government agencies. The Environmental Management Authority (EMA) was established in 1995 to address the country's environmental issues. However, the EMA has signed a Memoranda of Understanding (MoU) with various agencies, institutions and companies in order to facilitate cooperation in the management of the environment. The existing legal framework does not comprehensively address the issues facing waste management. Existing legislation is spread over a number of different institutions and agencies making implementation and enforcement somewhat fragmented and difficult. Existing Legislation include the:

- Public Health Ordinance (Chapter 12. No. 4),
- Litter Act (No. 27 of 1973),
- Environmental Management Act (2000),

However, the myriad of legislation, their amendments and new propositions require the establishment of more comprehensive rules and regulations explicitly focused on the management of wastes. The EMA is currently in the process of undertaking this task.

Waste Management in Trinidad and Tobago

Trinidad and Tobago averages 1,000 tonnes of waste which reaches its landfill sites per day. Per capita waste generation ranges from 0.55 kilograms per day in the rural areas to 1.75 kilograms per day for highly commercialised and industrialised areas. Trinidad and Tobago also generates a significant amount of hazardous waste. The small developing country has experienced a rapid rate of industrialisation due to its petroleum resources. Despite this fact, there is no dedicated hazardous waste landfill or disposal facility.

The responsibility for solid waste management and disposal is shared by a number of agencies which results in duplication of efforts in some areas and negligence in others. The Trinidad and Tobago Solid Waste Management Company Limited (SWMCOL) is responsible for the management of the country public landfill sites. Municipal Borough and City Corporations are responsible for the collection of domestic wastes within their individual Municipality. The Tobago House of Assembly (THA) is responsible of waste collection and disposal on the island of Tobago.

Most solid waste generated in Trinidad and Tobago is disposed of at either of the three major public landfill sites in Trinidad: the Beetham Landfill, which is the largest facility with an area of 61 hectares and receives approximately 458 tonnes of general waste per day, serving the northwest region; the Guanapo Landfill which is about 7 hectares and receives approximately 132 tonnes of waste per day, serving northeast Trinidad; and the Forres Park Landfill which is 8 hectares and receives approximately 243 tonnes per day, serving the central and southern regions. There is also one public landfill site in Tobago located at Studley Park. Presently, most disposal sites have reached capacity and alternatives are needed.

As a SIDS, landfilling, while being the preferred method of waste disposal, competes for the country's limited space; therefore, minimising the amount of waste entering landfill sites is critical. However, efforts to reduce amount of waste generated are minimal. In 1989, SWMCOL established waste recovery systems and markets for recyclable materials, including glass, paper, cardboard, metals, used-oil and textiles. The establishment of a recycling industry was meant to reduce the amount of waste entering landfills, while at the same contribute to the conservation of resources, employment creation and income generation, and to create a source of foreign exchange.

However, the recycling industry remains rudimentary. The citizenry themselves do not actually place value on enlightened waste disposal practices. There are several private organisations that engage in recovery efforts for material that will eventually be recycled. Glass and steel are still the two materials that usually complete the recycling loop in Trinidad.

Other materials such as paper, cardboard, plastic, non-ferrous metals, ferrous metals are recovered; however, they have to be shipped to other countries for processing. Most of the sorting is done at the landfills creating health problems for the persons who sort through the garbage to collect recyclable materials.

In essence, there are few facilities for, and only isolated efforts at, recycling, while there is no formal facility for the treatment of toxic and hazardous waste. Greater efforts must be made to reduce the amount of waste generated, to sort waste at the source and to increase substantially the re-use and recycling of waste. Additionally, the waste to be disposed must be done in a manner that is most efficient. To achieve efficiency and to inform the planning and transformation process further, general information on waste generation rates and classification data is critical.

Progress

In the Budget Statement for fiscal 2011, proper waste management practices have been duly considered particularly with respect to its role in safeguarding the environment. The Government has consistently reiterated its responsibility to the environment which it views as a national asset to be conserved, for the benefit of this generation as well as future generations. There are several proposed pieces of legislation currently engaging the attention of stakeholders such as:

- Draft Waste Management Rules, 2008,
- Draft Beverage Container Bill, 1999 (amended, 2011),
- Draft Waste Prevention and Recycling Policy, 2010,
- Draft Municipal Solid Waste Management Policy (2008), and
- The Code of Practice for Biomedical Waste Management in Trinidad and Tobago (2005)

Initiatives have been also been geared toward institutional strengthening; aimed at giving adequate powers to the environmental agency to support quick action to enforce existing standards, including a direct attack on littering. To compliment this, penalties will be increased in the near future by 100 percent under the Litter Act to protect the environment from the harmful effects of citizens and corporations in the disposal of waste and effluent.

Propositions have been suggested for the next fiscal year, 2012-2013, for strengthening the Environmental Management Authority's (EMA) capacity to enforce environmental laws. It is the intention to increase, by 100 per cent, the police and enforcement capacity of the EMA.

It has also been proposed to amend legislation governing the Green Fund to allow Non-Governmental Organisations (NGOs) incorporated under the Companies Act as Non-Profit companies to access the fund.

After acceding to the Rotterdam Convention on the Prior Informed consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade in November 2009, Trinidad and Tobago has some of the necessary tools and information to identify potential hazards and exclude chemicals that it cannot manage safely. This compliments other international agreements such as the Strategic Approach to International Chemicals Management (SAICM) grant, which aims to use Trinidad and Tobago as a pilot country to design model legislation. This model legislation will aim to strengthen the legislative, regulatory and enforcement capacity of Trinidad and Tobago to implement and comply with international obligations under the Basel Convention and, as appropriate, the Stockholm Convention on Persistent Organic Pollutants and the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade.

Other international initiatives include:

- the signing of a project document with the UNDP to assess the capacity of the Global Environment Fund (GEF) to develop within two (2) years a National Implementation Plan for the Stockholm Convention;
- the signing of a Memorandum of Understanding (MoU) with the Province of Nova Scotia to assist the Government with the development and implementation of an integrated Solid Waste/Resource Management System; and
- the signing of a Framework Agreement with the Basel Convention Secretariat and enactment of enabling legislation for the establishment of the Caribbean Basel Regional Centre for Technology Transfer and Training.

Considering the country's limited space and the need to minimise, recycle and re-use wastes, the ongoing and relatively recent efforts to examine the feasibility of establishing a recycling industry are critical. If pursued aggressively, this would give birth to a new category of entrepreneurs and provide benefits to manufacturers from the recycling and reuse of products.

An alternative that can be proposed is the use of biogas as a source of energy. Biogas refers to the gas that is produced by the breakdown of organic matter in the absence of oxygen. The biogas that is produced comprises primarily methane, carbon dioxide and small amounts of Hydrogen Sulphide. In developed countries biogas technology already exists, where it is used on an industrial scale to power large farming operations, landfills, and so on. The use of biogas as an alternative energy source has its advantages:

- It reduces the impact of greenhouse gases such as methane which is a significantly more powerful greenhouse gas than carbon dioxide, with greater potential for increasing global warming effects;

- A Renewable Resource: Since biofuel is the product of recently consolidated atmospheric carbon, it is also considered to be a highly renewable resource;

Although biogas production has shown to be quite effective for the conversion of organic waste into an energy source, the use of biogas technology will only help reduce organic waste, for example, waste from food and agricultural production. Municipal waste still poses a problem. In some developed countries, municipal waste is combusted to produce heat.

In trying to achieve this, there exists a major challenge of slow implementation of waste initiatives and a poor legal framework for legislative support. Also, changing behaviour patterns and attitudes about waste is very challenging. To achieve attitudinal change requires sustained educational effort before it will take effect. A sustained effort is also required in maintaining budgets and in engaging all stakeholders if Trinidad and Tobago intends to transform with the new era of waste management practices.

It is to be noted also, that another alternative consideration can be the extraction of energy from waste (EfW). This is an important suite of technologies with the ability to provide both renewable energy and a solution to the growing challenges of waste management. Popularly referred to as “Waste-to-Energy” (WtE), the adoption of this technology, is a process by which energy stored in waste is extracted in the form of fuel, heat or electricity. Notwithstanding the many benefits to be derived however, to effectively implement the process, inter alia, legislation would demand higher environmental standards of waste disposal.

The Government of Trinidad and Tobago is now looking at an integrated strategy to address waste management focused on reduction of waste, development of recycling industries and optimization of waste for commercial purposes, within the framework of enlightened environmental practices and a sustainable development framework.

(4) COASTAL AND MARINE RESOURCES

Small island developing States (SIDS) are defined by their historic, cultural and economic links to the oceans and seas. They continue to be heavily dependent on their marine resources, particularly for the sustainable livelihoods of coastal communities. The management of coastal and marine resources has become integrated into broader ocean management strategies since the entry into the United Nations Convention on the Law of the Sea (1982). However, for those SIDS which are State parties to the Convention, implementation continues to be impeded by financial constraints and insufficient capacity.

Trinidad and Tobago depends on the marine ecosystem primarily as a source of food. There are several major fishing communities distributed throughout the islands, for example, in Trinidad, areas such as Cedros and Mayaro in the south, and Balandra in the north are the main fishing villages. In Tobago, there are established fishing communities at Castara and Buccoo. In addition, Trinidad uses its coastal mangrove ecosystem for ecotourism whilst Tobago uses its Buccoo Reef ecosystem for similar purposes.

Some challenges and concerns brought to light at the first annual National Conference for Environmental Management in Trinidad and Tobago, 2011 were:

- Land based sources of pollution directly impact upon the nation's water resources.
- Pollutants from the petrochemical industry, yachting, farming, quarrying and even religious activities have a significant impact on the nation's water systems.
- In Trinidad, there is little regulation of activities within watershed areas since only areas which have been specifically designated as protected, regulate activities in watersheds.
- It has been estimated that approximately 72% of the nation's water systems are moderately to severely impaired, mainly by the presence of high concentrations of heavy metals such as copper, lead and zinc which can be attributed to land disturbances.
- The failure to properly regulate the release of pollutants generated from land activities is having a significant impact on sensitive marine ecosystems as illustrated in Tobago, where the Buccoo Reef Complex and associated fringing reefs have been adversely impacted by the direct release of sewage from a growing population in the area.
- Inadequate testing of national waters and availability to the public of data identifying condition of national waters, both fresh and marine.

Progress

Global marine fisheries have exhibited continuous declines in recent years and the Food and Agricultural Organization (FAO) has stated that 74% of the world's commercially fished species are depleted, over-fished or fully fished. Simultaneously, due to the health benefits associated with a seafood-based diet, consumer demand for seafood has steadily increased. It is very clear that in order to ease pressures on wild fisheries stocks and to satisfy the growing global consumption of seafood, marine species must be produced through aquaculture. One such option is the use of mariculture for environmentally sustainable and economically feasible production systems.

Trinidad and Tobago has embarked upon aquaculture and mariculture programmes in order to satiate consumer demands, relieve pressures on its marine food resources and engage the nation in the sustainable development of the seafood industry. Aquaculture initiatives have been introduced and promoted by the Ministry of Food Production, Land and Marine Affairs.

As articulated in the National Food Production Action Plan 2012-2015, the goal of the aquaculture programme will be to increase production within the first year with incremental increases in production over the five year period. Also, an accelerated marketing and promotional campaign and centralized processing and cold storage facilities will ensure sustained supplies and expanded production of farm grown fish. Further key elements of the Action Plan for Aquaculture will include, inter alia:

- Encouraging and promoting the adoption of Global Aquaculture alliance Standards (GAAS);
- Development of a policy on water use for aquaculture;
- Development of Tech – Parks to support investment in the sector;
- Production of a National Policy on Aquaculture through review and update of the draft aquaculture policy;
- Development of a model farm to promote and test production systems;
- Facilitating the expansion of hatcheries and research in production of high – value feeds; and
- Resolve issues of regulatory approvals for aquaculture projects in collaboration with relevant stakeholders.

Currently, site suitable studies are being conducted at Bamboo Grove to construct a model aquaculture system; the plans for which have already been finalized. At the present time, there are approximately twenty five (25) persons who engage in aquaculture for food purposes.

The cost of agricultural land is relatively high and successful enterprises are limited. However, increased demand for fish and fish products, coupled with declining stocks as well as the need for diversification in the local economy has seen a renewed interest in aquaculture as a source for fish and as a potential business. Consequently the Ministry of Food Production, Land and Marine Affairs has introduced a revised Agricultural Incentive Programme designed to provide support to the various agricultural sub-sectors which now specifically targets Aquaculture.

In tandem with these initiatives, research in aquaculture to improve Trinidad and Tobago's local production efficiency is still ongoing. The Institute of Marine Affairs' (IMA) Fisheries and Aquaculture Research Programme (F&ARP) has introduced re-circulating aquaculture systems (RAS) to improve the efficiency and sustainability of aquaculture production systems. One project based on this system is a collaborative effort with the Seafood Industry Development Company (SIDC) for the development of an intensive production system for growing hybrid red tilapias. To date there is no successful large scale commercial aquaculture project for food fish in Trinidad and Tobago. This project would therefore serve to demonstrate the possibilities for successful commercial aquaculture and potentially initiate further developments in commercial aquaculture.

Furthermore, trade in ornamental fish has been one of the most consistently expanding areas of aquaculture in Trinidad and Tobago. Trinidad was once ranked third (behind Colombia and Brazil) in exports to the US from this region (2005). However, there has been a significant decline in the exportation of ornamental fish in recent years. Importation of ornamental species far outweighs the exportation rate. This is due to the low local fish stock and fish biodiversity available to aquaculture farmers. Ornaments are therefore, now imported from international markets such as South America and the Far East. The increased importation of ornaments is for breeding purposes to facilitate the local demand. The surplus of ornaments produced for local demand is exported to the CARICOM region and the United States of America.

Together with the aquaculture efforts, measures must be taken to ensure the sustainable use of the existing fish resources. In light of this Trinidad and Tobago is currently reviewing the fisheries management policy and legislation. The enforcement of existing regulations and agreements until the promulgation of the Fisheries Management Act, and the finalisation of the Fisheries Policy can assist in the sustainable management of the fisheries resources.

The Integrated Coastal Zone Management and Rural Area Development Policy (2000) address coastal development. In order to minimise the impact of marine and land-based pollution, monitoring shall be facilitated by the Fisheries Division in conjunction with the fisher-folk organisations.

Moreover, the Marine Areas Preservation and Enhancement Act of 1970 (amended in 1996 and updated September 2009) will also be important. The Act governs the usage of the marine areas of Trinidad and Tobago and entails the “flora and fauna” to include any part of a coral reef or other deposit existing in its natural conditions.

In addition, Government has recently approved of the appointment of a Committee to develop an Integrated Coastal Zone Management (ICZM) Policy Framework, Strategies and Action Plan for Trinidad and Tobago. This ICZM policy will require that the different stakeholders (such as hoteliers, fisher-folk, coastal communities) use the marine resources in a sustainable manner.

Further, the Ministry of Public Utilities, which has oversight responsibility for the Trinidad and Tobago Meteorological Service (Met Service), has recently adopted the Marine Meteorology and Oceanography Programme (MMOP). The mission of MMOP is “to regulate, coordinate and facilitate the sustained provision of global and regional coverage observational data, products and services to address the continued and expanding requirements of the maritime user community for met-ocean services and information, focusing on safety of life and property at sea, integrated coastal management and societal impacts”. The Met Services has therefore embarked on a training programme to furnish the necessary capacity that will enable it to gradually provide an array of services, such as pollution monitoring and clean-up, that can contribute to the efforts towards promoting sustainable development.

Additionally, the Environmentally Sensitive Areas Rules of 2001 are being reviewed to allow for further conservation efforts. The international conventions which govern coastal and marine resources are:

- The Convention for the Protection of Development of Marine Environment of the Wider Caribbean Region which entered into force in Trinidad and Tobago on October 11, 1986 (the CARTAGENA Convention).
- The Protocol concerning Specially Protected Areas and Wildlife to the Convention for the Protection and Development of the Marine Environment of the Water Caribbean Region which entered into force in Trinidad and Tobago on January 18, 1990 (the SPAW Protocol).
- The Convention on Wetlands (the Ramsar Convention, Iran 1971) which entered into force in Trinidad and Tobago on April 21, 1993.
- The United Nations Framework Convention on Climate Change which entered into force in Trinidad and Tobago on September 22, 1994.
- The United Nations Convention on Biological Diversity which entered into force in Trinidad and Tobago on August 01, 1996.

Tobago – ‘Buccoo Reef’

Buccoo Reef receives an estimated 45,000 visitors every year. Glass-bottom-boat tours of Buccoo Reef typically include a stop at Coral Gardens, where the boat anchors on sand adjacent to the coral formations to allow passengers to snorkel over the Coral Gardens. The improper use of anchors is a major cause of coral reef damage on many reefs around Tobago, where marine tourism activities are concentrated. While some boat-owners take great care in positioning their anchors on sand, this is sadly not the case with all boat operators - both locals and visitors. An initiative undertaken by the Department of Marine Resources and Fisheries as well as the Buccoo Reef Trust to counteract this problem involved the installation of suitable moorings in Buccoo Reef Marine Park to be used by reef tour operators.

Further, government has undertaken initiatives to protect the coastal and watershed areas of Tobago. The Integrated Watershed and Coastal Area Management Project (IWCAM) is one of these projects in eight Caribbean Sea countries, funded by the Global Environment Facility (GEF). The project is linked with national priorities, as listed in the “Protecting Our Environment” Action Plan for 2002-2007 produced by the Government of the Republic of Trinidad and Tobago. Trinidad and Tobago is also signatory to the Convention on Biological Diversity, the Ramsar Convention on Wetlands, the Cartagena Convention and its protocols and the United Nations Convention to Combat Desertification (UNCCD), all of which also contribute to coastal preservation.

Amidst the background of declining fisheries, the Buccoo Reef Trust has embarked on a Campaign to raise awareness of important ocean conservation issues and to shift the purchasing habits of consumers, restaurateurs and other seafood purveyors to sustainable sources of seafood. This education and research initiative is adapted to Tobago’s specific needs. Phase I of this project involved the production of a Species Evaluation Report. In this report, the ten most popular seafood species in Tobago (kingfish, Wahoo, flying fish, dolphin fish, tuna, snapper, grouper, conch, lobster and shrimp), as determined from a survey of local restaurants, were evaluated based on five (5) criteria (adopted from prominent seafood evaluation guidelines) and then assigned an overall sustainability recommendation of: Best Choice, Good Alternative or Avoid.

Constraints and Challenges

These following challenges have been identified from the first annual National Conference for Environmental Management in Trinidad and Tobago 2011:

- Lack of legislation and lack of enforcement of existing legislation example Water Pollution Rules 2001, to absolutely restrict quarrying within watersheds and above a designated contour line.
- Licenses for quarrying do include mandatory provisions that mining should adopt a terracing method and that agriculture should be promoted on the terraces created.
- Limited role of Ministry of Local Government and associated entities in water resource management within their districts.
- Absence of the proper authority to address abstraction; discharge; liquid waste disposal (sewage treatment); pollution of waterways; monitoring programme for groundwater systems and rivers.
- Absence of programmes to monitor water quality for bathing beaches and other recreational areas throughout Trinidad and Tobago.
- Limited resources within the E.M.A.
- Lack of civil society involvement in educating the public on, and implement programs to, promote effective watershed management in Trinidad and Tobago.
- Lack of adherence to the Ramsar Convention and the Policy of No Net Loss of Wetlands, particularly in Tobago.

Though Trinidad and Tobago has made some headway in protecting its coastal and marine resources, research and ideas have been suggested for SIDS to adopt the blue economy approach. A UNESCO report, '*Blueprint for Ocean and Coastal Sustainability*'¹⁰(2011) suggests that there be a shift from the current green economy emphasis towards the blue, ocean oriented, end of the spectrum and argues that for SIDS a green economy must in fact be very blue. In this report, ten (10) proposals were highlighted for ocean and coastal sustainability:

1. Create a global blue carbon market as a means of creating direct economic gains through habitat protection;
2. Fill governance gaps in the high seas, by reinforcing the UN Convention on the Law of the Sea;
3. Support the development of green economies in (SIDS);
4. Promote research on ocean acidification - how to adapt to it and mitigate it

10 IOC/UNESCO, IMO, FAO, UNDP.(2011). A Blueprint for Ocean and Coastal Sustainability. Paris: IOC/UNESCO

5. Increase institutional capacity for scientific monitoring of oceans and coastal areas;
6. Reform and reinforce regional ocean management organisations;
7. Promote responsible fisheries and aquaculture in a green economy;
8. Strengthen legal frameworks to address aquatic invasive species;
9. “Green” the nutrient economy to reduce ocean hypoxia and promote food security; and
10. Enhance coordination, coherence and effectiveness of the UN system on ocean issues.

Though a fairly new idea, this concept of a blue economy can be useful for Trinidad and Tobago, especially when it comes to managing its coastal and marine resource in a sustainable manner. Several of these key ideas are now under active consideration.

(5) FRESHWATER RESOURCES

While Trinidad and Tobago is a hydrological rich land having 1,200 to 3,800 mm of rainfall per year, its water demands create deficits. Globally, there is an immediate need to relieve excessive pressure on those already highly stressed watersheds where freshwater resources are now being depleted and damages to ecosystems and human health are already manifest. Locally, water pollution is an area of major concern given the increasing development thrust of the nation.

Trinidad and Tobago has historically enjoyed good potable water quality. However, the discharge of effluents from its industries, the improper disposal of sewage and farm wastes, non-functional sewage treatment plants and the disposal of domestic refuse and solid waste are degrading the nation’s rivers and streams.

The discharge of effluents into the country’s rivers and watercourses are especially troubling given that the majority of the country’s potable water emanates from surface sources, and considering that proper water quality is essential to the quality of life of the citizenry.

Land-use changes, which are the result of forest fires, indiscriminate quarrying, slash and burn agriculture, demand for land development for various uses, as well as other inappropriate land-use practices, have all impacted negatively on the water resources. Water quality, compounded by existing deficits in the water supply (despite an apparent abundance of water in Trinidad and Tobago), creates issues which necessitate serious management if the country is to attain sustainable economic development and human health and well-being.

Surface water availability, the major source of water, is strongly influenced by seasonal and spatial variations. The available surface water in Trinidad is estimated at 3,600 million cubic metres (MCM) per year, which is more than 10 times the present water demand. For Tobago, the demand is 7 percent of the available surface water, which is estimated at 140 MCM per year. About 52 per cent of Trinidad and Tobago's water supply is derived from surface water sources, 32 per cent is derived from ground water while 12 per cent is provided from desalination. The major surface water supply sources are the Caroni Arena Reservoir, North Oropouche Intake, Hollis Reservoir, Guanapo River, and the Navet Reservoir in Trinidad, and the Hillsborough Reservoir and Courland Intake in Tobago.

The country's groundwater potential is estimated at 611 MCM per year (545 MCM per year for Trinidad and 66 MCM for Tobago). Groundwater abstraction for 2000 was 82 MCM per year (77 MCM per year for Trinidad and 4 MCM for Tobago). Annual surface water and ground water availability for Tobago have been calculated at 140 MCM and 65 MCM, respectively. The natural water balance suggests that there is sufficient water available to satisfy year round demand. However, the country continues to experience water supply problems, particularly during the dry season.

The domestic sector is the largest single user of water in the country, accounting for approximately 36 per cent of demand, followed by the industrial sector accounting for 18 per cent, and irrigated agriculture accounting for only approximately 3 per cent of demand. Unaccounted-for-water comprises 40 per cent of water demand. The quantity of public water supply is a very important aspect of water resources management in Trinidad and Tobago.

Water Resource Management and Development are shared amongst several government ministries and agencies. The Legislation governing Water Resources functions in Trinidad and Tobago are spread over several Acts such as:

- Water and Sewerage Act (1965);
- Waterworks and Water Conservation Act (1944);
- The Environmental Management Act (1995);
- The Town and Country Planning Act (1960);
- The Freedom of Information Act (1996);
- Regulated Industries Commission Act (proposed);
- Fair Trading Act Green Paper (proposed);
- Local Government Act No. 26 (1977);
- Municipal Corporation Act No. 21 (1990); and
- The Planning and Facilitation of Development Bill due to be laid in Parliament in mid-2012.

Progress

The formulation and subsequent approval of the National Integrated Water Resources Management Policy in 2005 constituted a major step in this country's water sector reform since it has established a coherent, cohesive and sustainable institutional framework for Integrated Water Resources Management.

Other initiatives undertaken in alignment with the national goal of the water sector were:

- Establishment of the EMA through the enactment of the Environmental Authority Act (2000 revised)
- Establishment of the Regulated Industries Commission through the Regulated Industries Act (1998)
- Adoption of a Water Resources Management Strategy (2000)
- Establishment of the Water Resources Management Unit within the Ministry of Public Utilities (2000)

Some other initiatives undertaken to address freshwater resources issues include:

- Implementation of the Water Pollution Rules (2007) which is aimed at reducing both the volume and concentration of pollutants discharged into watercourses thereby improving the quality of water. A registration system has been established to create an inventory of water polluters.
- Provision of commercial service facilities for farming and related agricultural enterprises and institutions, and wastewater treatment facilities. Further to the registration system, Water Pollution Discharge Permits will be issued to regulate the level of pollutants being discharged into water bodies.
- Development of a Water Quality Index and a water quality monitoring programme to ensure that water quality in rivers, seas, swamps and beaches are protected.
- Conduct of an education and awareness campaign to sensitise the public on water related issues;
- Establishing a potable water supply to approximately 95 percent of the population through the installation of improved infrastructure;
- Development of major water sources including the construction of additional desalination plants, the construction of a National Water Transmission and Distribution Grid, completion of the Beetham Water Re-use project, implementation of an aggressive Demand Management Programme of Universal Metering, and the completion, refurbishment and upgrade of water treatment plants, booster stations and service reservoirs;
- Upgrade of the wastewater management systems and sewerage systems through the

refurbishment of the Primary and Secondary Clarifiers at the San Fernando Wastewater Treatment Plant; Integration and Expansion of the Wastewater Systems in the City of San Fernando and environs and the design of treatment, collection and outfall systems for the South-West Tobago Environment and Wastewater Project;

- Development of Quality of Service Standards and Codes of Practice which have been agreed to by the Regulated Industries Commission (RIC) and WASA;
- Implementation of a Beetham Wastewater Reuse Project to provide a dedicated water supply to the Point Lisas Industrial Estate from non-traditional source waste water. This involves the use of the high quality effluent from the Beetham Wastewater Treatment Plant to be treated to a standard that will permit its use by industries in the Point Lisas Industrial Estate via a Submarine Pipeline in the Gulf of Paria. The project will comprise three components, namely, a water reuse treatment facility, a submarine transmission system and a localized water distribution network; and
- Implementation of Sludge Management at Beetham Wastewater Treatment Plant to improve the quality of sludge being discharged from the Beetham Wastewater Treatment Plant.

While many of the abovementioned items are still in the fledgling stage, it is important to also be aware of possible challenges along the way. Again, there is the need to upgrade the legislative framework to give effect to integrated water resources management, which is necessary to guarantee water security. Legislation must be geared to prevent the deterioration of watersheds as a result of forest fires, indiscriminate quarrying, slash and burn agriculture and other inappropriate land-use practices which have impacted negatively on the country's water resources.

As the government and citizenry are becoming more conscious of the growing limitations of freshwater supplies, various paths must be pursued towards ensuring a sustainable water supply for the future. Consequently, desalination has increasingly become an economical solution in many countries of the Caribbean. A viable prospect, particularly for Industrial usage is Sea Water Reverse Osmosis (SWRO) which has surpassed thermal desalination in energy efficiency. Regional and National research in this field should be supported as the region faces prolonged periods of reduced rainfall and highly active hurricane seasons. Considering that Trinidad and Tobago has already invested in desalination plants, SWRO is one avenue of moving toward since it has the potential to become more efficient with a very modest environmental footprint.

Both quantity and quality of traditional fresh water resources have been rapidly depleted through overuse and pollution. Though citizens have enjoyed a historically good potable water quality at a very economical rate the country's culture must shift towards one that encourages less dependency

on fresh water sources and more responsible stewardship of the nation's freshwater resources at all levels, which in turn, leaves sufficient natural water flow for the maintenance and improvement of ecosystem health. Policies such as the Draft National Integrated Water Resource Management Policy (2002), now being reviewed, are essential in supporting initiatives that will guide the management of activities for the sustainable use of the country's water resources.

Responsibility to reduce freshwater demand must be borne amongst all in moving forward to accomplish sustainability. Water reuse can be encouraged and is most sensible to meet non-potable public water demands, particularly for irrigation of agricultural land and landscaping purposes, and the primary means of attaining this is through advanced technologies in the wastewater treatment processes. Wastewater coming from municipal or industrial sources will affect its use in non-potable applications as well as indirect potable use in replenishing ground water aquifers.

The Government of Trinidad and Tobago recognises Water Resources Management as a critical issue in development strategy. Ours is an integrated approach which will follow examination and review of the 2002 Draft National Integrated Water Resource Management Policy. This will be followed by consultation and legislation to support action on an Integrated Water Resources Management Policy for Trinidad and Tobago.

(6) LAND RESOURCES

Trinidad and Tobago is endowed with a diverse land resource base compared to other Small Island Developing States (SIDS). It possesses a range of soils, minerals and ecosystems which are utilised to achieve the country's development goals. The country's development and its land resources are therefore closely inter-related and inter-dependent.

However, like most SIDS, its small size, coupled with its complex land tenure systems, soil types, topography and climatic variation, restricts the area available for human settlement, agriculture, forestry, mining/quarrying, tourism and infrastructure, and creates intense competition among land use options.

Of its total land area of 512,800 hectares, Trinidad and Tobago has an estimated total arable land area of 75,000 hectares with an additional 47,000 hectares under permanent crops, while 11,000 hectares are under permanent pasture. Wetlands are said to occupy about 23,500 hectares, and forests 248,000 hectares of which 77 per cent is State-owned.

Maintaining and enhancing the economic and environmental value of land resources in terms of food production, food security, biodiversity and sustainable agricultural development are of critical importance to Trinidad and Tobago. Issues of concern with respect to land resources include the degradation of the Northern and Central Ranges, coastal wetlands and coastal areas from:

- Deforestation by fire
- Quarrying
- Squatting settlements
- Shifting agriculture
- Urbanization

Most aspects of environmental management in Trinidad and Tobago are directly dependent on and influenced by the planning and utilisation of its land resources. Competing demands and a lack of a comprehensive land use planning and development mechanism have led to unsustainable utilisation, overuse and degradation of the country's land resources. The country's physical planning is governed by the Town and Country Planning Act (Chapter 35:01). In keeping with the requirements of that legislation, the first National Physical Development Plan (NPDP) was prepared in the early 1980s and became statutory in 1984 with a 20-year lifespan, providing a broad policy framework within which more detailed regional and local area plans were to be prepared to guide development on the ground.

Competing demands for limited land resources have become more critical. Land area under built development is currently in the vicinity of 14% (2010), with approximately 53% of the country's land space allocated to forestry and conservation and 33% to agriculture. This emphasizes the urgency of a new National Physical Development Plan. The second National Physical Development Plan is currently being prepared with a delivery date of September 2012 and will be more robust than the first, addressing the Government's commitment to guide development by setting national economic, social and environmental priorities towards the achievement of the goals expressed in the Medium Term Policy Framework 2011-2014 and inform development strategies for the 2014-2020 Policy framework and plan.

National Physical Development Plan (NPDP)

The National Physical Development Plan (NPDP), now close to completion, is currently being revised to meet the present land use requirements of a growing and differently distributed population. As such, it will focus on zoning activities as it relates to residential, industrial and agriculture lands. In an effort for developmental control and more effective zoning, the Microzonation Project is one initiative which will allow new attempts at land-use planning to be informed by hazard assessments so that mitigation planning can be filtered into land use policy conceptualization and design.

The project is a collaborative effort between the Town and Country Planning Division (TCPD) of the Ministry of Planning and the Economy and the Seismic Research Centre (UWI) to develop a Microzonation Database and will be used in the determination of land use patterns as well as the application of site development standards and building codes. This project will ultimately result in the creation of an information repository detailing seismic hazard risk for all areas of the country, over a ten year period, with clear deliverables in each year. A microzonation map of Port of Spain, and selected priority areas are benchmarked for primary consideration, and subsequent attention will then be dictated by the outcome of the national spatial planning framework.

Planning and Facilitation of Development Bill

Likewise, the Planning and Facilitation of Development Bill, subject to Parliamentary review in mid-2012, will assist in correcting the disconnect between the socio-economic and physical planning dimensions, as well as several other deficiencies plaguing the administration of planning. This new legislation will be introduced shortly and is geared towards significantly altering the way in which planning is undertaken, particularly in the delegation of powers.

Successful implementation of plans and policies is linked to a system of planning that is transparent, inclusive and responsive, while ensuring the sustainability of development at the national, regional and local area or community level. The establishment of a National Geographic Information System (GIS) is another initiative which will create greater transparency in the decision-making process as it relates to land development. Apart from permitting online public access to TCPD's land use policies, the National GIS intends to provide a wide range of land-based data from governmental and statutory bodies to the public to foster more informed decision-making by the citizenry as it pertains to land matters.

Forestry

In Trinidad and Tobago, forestry reserves are being degraded at an unprecedented rate. Forest area is less than 248,000 hectares, and of this FAO (2005) estimates that 0.8% is the annual national deforestation rate. However, about 75,000 hectares of Trinidad and Tobago's natural forests are regarded as intensively managed guided by clear management plans. The National Forest Policy recognises that forests, forest resources and forest uses contribute significantly to national development, livelihoods and human wellbeing. This Policy also recognises that the quality and extent of the forest estate has changed dramatically since the 1940s, and that the demands for goods and services from these forests have also greatly intensified. Given that the functions of forests are varied and the relationships between forests and other sectors are complex, this policy statement encompasses all the main dimensions of forest conservation, use and management. Additionally, two major pieces of legislation have been revised and amended: the Forests Act (revised 1999) and the Sawmills Act (revised 1999). The 1998 Forest Policy revision proposed sustainability within two pillars of forest management.

The contribution of forests to livelihoods and the national economy comes from a combination of extractive and non-extractive uses. Currently, ecological services and added-value and downstream industries are not recognised in national accounting. Forestry is included as part of the agricultural sector and is currently estimated to contribute approximately 0.69% to the Gross National Product, approximately \$85.7 million. In order to sustainably manage national forests Trinidad and Tobago needs to optimally use its forest resource while simultaneously protecting native genetic species and ecosystem diversity. While Trinidad and Tobago has a strong history of Sustainable Forest Management, significant institutional and policy weaknesses can lead to further deterioration of this tradition unless remedial measures are taken. Both natural forests and plantations are affected by over-harvesting, encroachment, fires and other forms of damage; although the extent of these have not been quantified and police patrols probably help reduce illegal activities. Forest conservation is receiving decided emphasis.

Quarrying and Land Degradation

Quarrying has been highlighted as a serious problem in terms of the use of the country's land resources. In Trinidad and Tobago, quarries provide a source of aggregate materials for the construction industry. Noise pollution, air pollution, high water consumption, however, are serious issues that are typical in the industry. Additionally, habitat loss and flooding adversely affects biodiversity and reduces the sustainability of land use. Fortunately there are means of mitigating these effects and reducing their long-term impact without requiring the cessation of the activity. The goal of the Minerals Division of the Ministry of Energy and Energy Affairs has been to make available to the local construction industry, adequate quantities of high quality aggregate at the lowest possible prices, with minimal deleterious effects on the environment. To achieve this goal, local mining is encouraged and steps to improve the regulation of the industry are made on a continuous basis.

Stronger regulation of quarry operators requires the combined efforts of multi-stakeholder teams, and a greater awareness by quarry operators of the value of biodiversity. Steps have been taken towards achieving this objective, by re-instituting the Minerals Advisory Committee which is a body, chaired by the Ministry of Energy and Energy Affairs and comprising key stakeholders in the management of natural resources.

Furthermore, given that there are serious environmental issues that can be directly caused by quarrying; an Environmental Impact Assessment (EIA) is carried out at the behest of the Environmental Management Agency (EMA) as a condition for fulfillment of a Certificate of Environmental Clearance (CEC). Prior to March 16th 2012, only quarries above 150 acres in size were required to apply to the EMA for a CEC but this has been changed. Currently all quarries are required to do so.

The laws of Trinidad and Tobago cannot be enforced retroactively, as such, quarries which were granted licenses under the previously existing regulations, will be allowed to operate under the terms of those licenses until they are due for renewal. Therefore the 41 licensed quarries of which 30 are on state lands and 11 on private lands, will not require the input of the EMA until the licenses are to be renewed. The 90 applications that have been submitted, as well as all other license applications that have not yet been issued, will be subject to the new legislation.

Quarry rehabilitation needs to be addressed by multidisciplinary teams to establish practical protocol for creating ecologically flourishing and economically viable sites.

Quarry operators will need to act under the advice of Town and Country Planning for the creation of aquaculture ponds, and under the supervision of the Forestry Division for re-vegetation.

Improvement to the revenue collection system of the Mining Industry is of primary importance. Several strategies are currently being assessed for feasibility and cost effectiveness. As such, complimenting the above requirement, consideration will be given to possible avenues which can assist in tightening revenue monetisation from quarrying. Through the crafting of strategies for more stringent auditing, it is hoped that a substantial contribution will be made to ensuring that the system is more efficient, transparent and beneficial to the citizens of Trinidad and Tobago.

Constraints and Challenges:

- Land uses may compete with each other and there are often conflicts while trying to achieve broader objectives of resource utilisation for productive uses.
- Lack of coordination between ministries responsible for land management.
- Land policy is outdated (1984) and only focuses on state (agricultural) land distribution.
- Balancing the rights of community with the use of resources by society for national development.
- Problems of illegal logging and landscaping where trees are removed to landscape private properties.
- Quarry operations are responsible for sedimentation in rivers and environmental degradation.

Planning for and ensuring sustainable development of Trinidad and Tobago requires that consideration be given and actions taken to address its land management and degradation challenges. The United Nations Convention to Combat Desertification (UNCCD) to which Trinidad and Tobago became a signatory on August 6th, 2000, provides a suitable framework within which Trinidad and Tobago could address land degradation and implement solutions to promote sustainable management and wise use of land resources.

One important step towards sustainable development in the mining industry is the establishment of a Strategic Environmental Impact Assessment (SEIA), which is currently being prepared. Upon completion, the SEIA will establish mining zones through Trinidad and Tobago, significantly reducing the environmental impact in each location. Coordinated efforts can then be made to work alongside sensitive species and rehabilitate large areas without the difficulty of contrasting opinions on after production land use from each Quarry Operator.

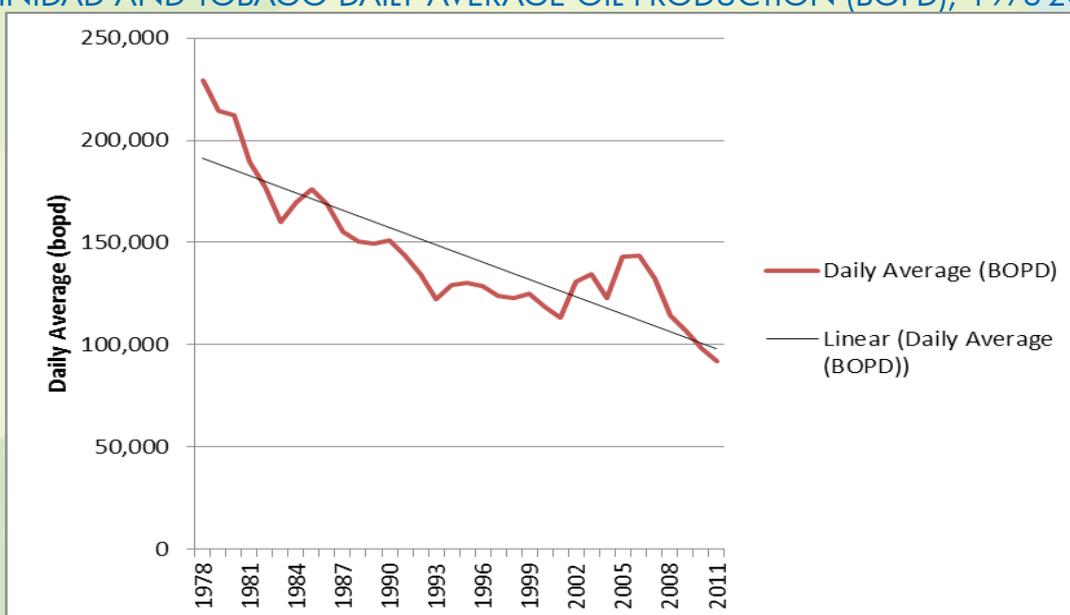
(7) ENERGY RESOURCES

Oil and Natural Gas

Trinidad and Tobago has been an oil dependent nation for the past 103 years. Oil and natural gas have sustained economic and infrastructural development of Trinidad and Tobago consistently, from 1908 when commercial production was established until present. Exploration actually began in 1866 when the first oil well was drilled in south Trinidad, close to the La Brea Pitch Lake. Oil, natural gas, petrochemical industries and other oil related downstream industries contribute an overall of 57.5% of the Trinidad's total Government Revenue (2011). Up to the early 1950s oil exploration and extraction was restricted to land; this was however, expanded to include offshore exploration and drilling in the late 1950s. This prolonged dependence of this natural resource has resulted in its substantial depletion and it is estimated that known reserves would last until 2017 based on the current rate of production. In reality, well bore pressures will result in a declining rate of production that will continue for decades until it is uneconomical to produce. In fact, the country has experienced a relentless decline in its production of oil over the last 34 years. As shown in the Figure 3 below, oil output fell from a high of 229,527 bopd on average in 1978 to a low of 92,072 (estimated) bopd in 2011.

Recently new oil and gas finds have been made and it is possible that additional discoveries will be made but the challenge of over-dependence, diversification, and alternative energy sources remain.

FIGURE 3:
TRINIDAD AND TOBAGO DAILY AVERAGE OIL PRODUCTION (BOPD), 1978-2011



Source: Ministry of Energy and Energy Affairs

The country's energy sector has allowed for the development of energy intensive industries, including a range of petrochemicals such as ammonia, methanol, urea and Liquefied Natural Gas (LNG). Trinidad and Tobago ranks amongst the top ten LNG producers in the world (currently seventh), is the largest exporter of ammonia and methanol, and is the third largest nitrogen producer globally. One of the world's largest methanol plants was completed and commissioned in Trinidad and Tobago in 2005.

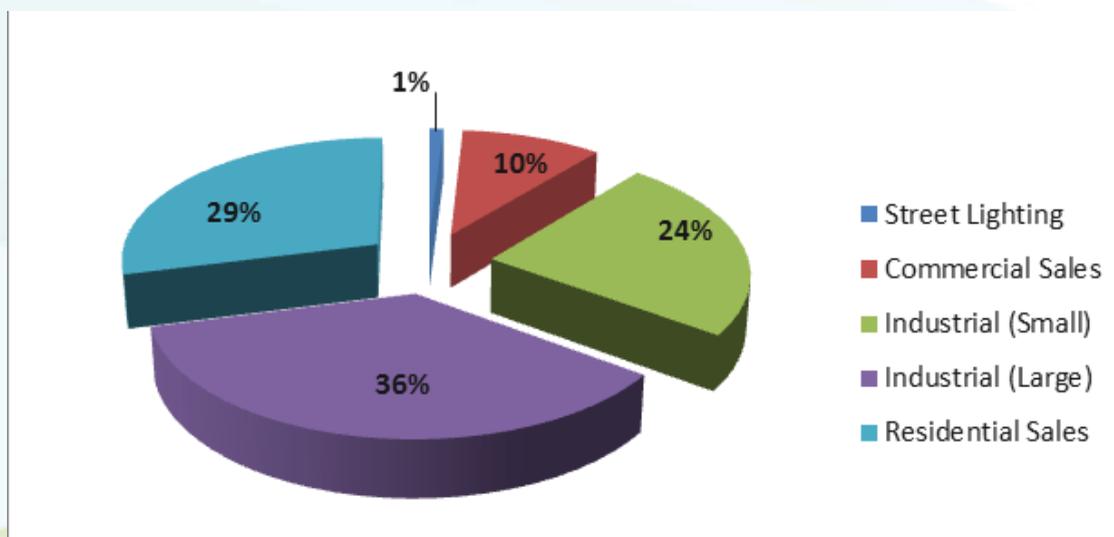
This mainstream use of oil and gas, however, has had serious negative impacts on Trinidad and Tobago's environment. Heavy dependence on combustion of these resources has had numerous impacts on the nation's land, waterways, atmosphere in the form of pollution and human health as well.

Another consequence of the country's dependence on the energy sector is its vulnerability to external shocks. It is therefore imperative for sustainability to be considered with respect to extraction of this resource for the country's future generations. Initiatives with respect to sustainable use of energy resources include:

- Developing a programme for continuous sustained exploration, but also with the intent that downstream demand for natural gas is met. This would be done through a bidding process.
- Engaging in optimal development of the petroleum industry to ensure that gas is explored, drilled and utilised in an efficient and effective manner through the development of a National Energy Policy inclusive of a natural gas utilisation and pricing policy. This would ensure future development of the country's hydrocarbon resources and would take into consideration green initiatives, as identified in the National Energy Policy Green Paper, which would be finalised in 2012. Reducing the Carbon footprint that harmfully impacts Trinidad and Tobago and its coastal neighbours is also a key priority of the Government.
- Diversifying - alternative gas based industries would be established within the Energy sector. This would reduce the impacts on the environment as a result of exploration and drilling processes. In an attempt to curb the emission of greenhouse gases from industry related activities, the Government would integrate cleaner technologies into the existing industrial parks.
- Fiscal incentives to encourage the use of renewable energy were proposed in the National Budget Statement for fiscal 2011 and 2012 such as the zero-rating for VAT purposes of solar water heating equipment with the relevant amendments having been made to the Income Tax act via the Finance Act 2011.

- In order to reduce the fuel input (gas and oil) into electricity production and consumption, the Government is exploring the possibility of a wind project for integration into the national electricity grid. The Government will also aim to reduce the greenhouse gas emission through a reduction in carbon emissions from targeted economic activities-for example transportation, industrial activities, power generation.

FIGURE 4:
DEMAND FOR ELECTRICITY IN TRINIDAD AND TOBAGO BY SECTOR IN 2011



Source – Trinidad and Tobago Electricity Commission (T&TEC)

Figure 4 shows the demand for electricity by sector in Trinidad and Tobago. The second largest demand for electricity was by the residential sector, which required a total 29% of the total electricity produced in 2011. At present, electricity production is solely via fossil fuel combustion. To reduce the dependence on natural resources as a source of electricity, renewable energy is now being considered by Trinidad and Tobago to supplement the energy requirements and would ultimately reduce the non-renewable energy consumed by the residential sector.

Consideration would be given to the implementation of Renewable Energy Technologies to possibly generate 5% of the representative peak demand for electricity by 2020, which would amount for approximately 60MW of generation. At present, wind energy is seen as the most practical RE Technology for electricity generation. A penetration factor of 5% of total installed capacity (80MW) is seen as practical for Trinidad and Tobago. However, at present, a lower target of 5% of existing peak demands (60MW) has been recommended.

Therefore, to further supplement the sustainability of the oil and gas sector, the Ministry of Energy and Energy Affairs has developed a Draft Renewable Energy Policy for Trinidad and Tobago, exploring alternative forms of energy for use in Trinidad and Tobago. This in turn would impact on:

- 1) the carbon dioxide output from the burning of the fossil fuel which would be significantly reduced
- 2) the amount of oil and natural gas used in the production of energy locally, in the form of electricity, which would also be minimized, hence conserving the current oil and gas reserves; and
- 3) the exploration, extraction, refining and exportation of oil and natural gas by greatly diminishing in particular, atmospheric, land and water discharge, dust emissions and interruption of the flora, fauna and other biological cycles.

This framework for renewable energy use entitled “Framework for Development of a Renewable Energy Policy for Trinidad and Tobago,” proposed in January 2011, focuses on three sources of renewable energy to supplement the use of natural gas internally as a country. The three forms of renewables being looked at for future development include solar energy, wind energy and biogas from combustion of refuse from the landfills.

The energy balance of Trinidad and Tobago would be reviewed to determine a current state assessment of Renewable Energy applications and research activities into PV solar power, solar thermal energy, wind energy, wave energy, and bio-fuels (biomass, biogas, biodiesel and bio-ethanol).

Efforts also are being made to promote collaboration between Trinidad and Tobago and regional partners in renewable energy and efficient energy for growth and development. This would be done via the establishment of the Caribbean Renewable Energy Centre (CREC) facilitated by the United States Department of Energy.

Quarrying and Mineral Resources

In addition to its oil and natural gas resources, Trinidad and Tobago is heavily dependent on the mining industry for raw materials to fuel the extensive construction industry in both Tobago and Trinidad. At present, in Trinidad, there are sixty nine (69) active quarries (both public and private), of which thirty one (31) are sand and gravel quarries. Forty percent (40%) of these quarries are located on state lands. In Tobago, the primary material quarried is Andesite.

The demand for construction aggregates increased considerably from fifteen (15) million cubic yards in 2006 to twenty (20) million cubic yards in 2007 to satisfy the heightened activity in the construction sector. Such an upsurge in quarrying activity, has adversely affected the forests, wild life sanctuaries, water courses and communities. Measures are currently being undertaken to ensure sustainability with respect to mineral extraction. These include:

- Increasing environmental restoration and rehabilitation through procedures to identify mining zones and also to assess the impact of quarrying activities on the environment;
- Continually accounting for the quarry material through a continuous resource quantification programme. This would aid in sustainability in terms of extraction as the known reserves of quarry material would always be known, therefore allowing officials to limit extraction in some instances or increase extraction in other cases;
- Addressing the needs and concerns of the members of the public who are affected by quarrying activities and take initiatives to reduce the negative impacts on them. This in turn would have positive effects on the health of citizens and the health of the environment as well; and
- Minimising the negative impacts on quarrying and to increase the efficiency of the quarry industry, by informing quarry operators and stakeholders of good quarry practises through public education initiatives.

(8) TOURISM RESOURCES

In 2011, Trinidad and Tobago was unanimously voted *The World's Best Tourist Destination* for 2012 as well as the *Favourite Cultural Destination* in 2012 by the 27 member states of the European Union Council on Trade and Tourism. The Government of the Republic of Trinidad and Tobago continues to recognise the sustainable development of the tourism sector as a key driver for socio-economic transformation, boosting economic diversification and competitiveness, while simultaneously balancing the need for environmental, social and human development, enhancing local communities, preserving natural and cultural assets, and consequently securing the advancement of the entire nation. Trinidad and Tobago is the first country in the Western Hemisphere to receive the *World's Best Tourist Destination Award*.

The Tourism Development Policy articulates that the sector can be an engine of growth capable of rejuvenating other sectors of the economy given that it: i) is labour intensive and employs a multiplicity of skills; ii) provides entrepreneurial opportunities; iii) has the potential to create linkages with other sectors of the economy, such as agriculture, manufacturing and services; iv) allows rural communities to share in the benefits of sustainable development; and v) is a final good.

As of January to May of 2010, tourist arrivals have totaled 158,117 persons. According to the Caribbean Tourism Organization (CTO), Trinidad and Tobago accounted for just over 1% of the 22.1 million international arrivals to the Caribbean in 2009. According to the World Travel and Tourism Council (WTTC), travel and tourism contributed approximately 10.6% (direct and indirect) to the GDP of Trinidad and Tobago in 2009. Tourism's direct contribution to GDP in 2011 was 4% which was the equivalent of US \$866m. Additionally, according to WTTC, the travel and tourism industry accounted for 14.7% of total employment in Trinidad and Tobago. This figure represented a total of 88,000 (direct and indirect) jobs in the sector. Direct industry employment was calculated to be 5.4% of total employment or 33,000 jobs.

When disaggregated, Tobago's employment figures in 2009 were higher and reflect the importance of the tourism industry to Tobago's economy. Tourism contributed to almost 36.9% (direct and indirect) of Tobago's economic activity in 2009, accounting for 47.6% (14,000 jobs) of total employment on the island.

Trinidad and Tobago has many tourism products which can be sustainably developed to ensure socio-economic transformation. The traditional 'sun, sand and sea' tourism product will always be important to the sector. In addition, Trinidad and Tobago comprises of a wide variety of biodiversity of exotic flora and fauna ranging from rainforest and mangroves to freshwater swamps and coral reefs, as well the endangered species such as the manatee, the leatherback turtle, and the red and blue macaw. These have offered the country opportunities to develop its eco-tourism subsector, harmonising environmental products with economic development.

The development of both traditional and relatively new tourism products are guided by the National Tourism Policy of Trinidad and Tobago (2010). The policy recognises the differences between the product offerings of each island and therefore, its efforts are geared towards building on and optimising this diversity so that the islands tourism products are complemented.

For instance, Trinidad is recognised for its cultural diversity (Carnival), thriving business environment and its potential for sports and health tourism. In contrast, the unique selling proposition for Tobago is its semi-rustic and idyllic island-environment, focusing on leisure tourism, based on sun, sea, sand, eco-tourism, and weddings and honeymoon, in addition to developing niche markets for events and cultural/heritage attractions.

Environmental Considerations

To ensure that the tourism sector is developed in a sustainable manner, the following environmental considerations are being addressed:

- Develop the management and monitoring tools required to ensure the sustainable development of the sector;
- Continuously monitor the impacts on sensitive areas;
- Require and ensure that environmental impact assessments (EIAs) are conducted for all tourism-related projects;
- Evaluate and consider the impacts of proposed tourism projects on other sectors of the economy;
- Work with the Environmental Management Authority (EMA) and other agencies to develop a co-ordinated, country-wide environmental strategy;
- Consult with all land-use agencies to ensure the optimal allocation of land for tourism development;
- Ensure that the tourism sector's physical structures are in accordance with the building codes and regulations of the country;
- Work towards developing carrying capacity regulations that will ensure the protection of ecologically sensitive areas;
- Encourage and promote the use of sustainable practices and strategies throughout the sector, including delivery of service, the design, construction, and operation of visitor accommodations, sites and attractions and other tourism projects;
- Encourage adherence to global environmental standards and related certification;
- Develop initiatives fostering a more environmentally-conscious population; and
- Aspire towards the achievement of reducing carbon footprint for the local travel and tourism industry.

The Draft Eco-Tourism Policy (2010) currently under review by the Standing Committee on Tourism has been crafted to address these environmental concerns within the sub-sector. The Government, in partnership with stakeholders, endeavors to:

- Identify and promote potential eco-tourism sites;
- Develop ecologically sound eco-tourism infrastructure;
- Diversify the range of tourism activities available at sites;
- Develop and enforce standards and norms for eco-tourism activities;
- Secure the involvement of the local communities living in and dependent on peripheral and other areas for their livelihood;
- Develop natural areas into national parks with emphasis on conservation with government/community/NGO co-managed visitation;

- Increase awareness amongst the general public, local communities, foreign visitors and Government staff;
- Enunciate mechanisms for securing the partnership of private sector enterprises committed to the goals of ecotourism for development of infrastructure and services; and
- Sensitise communities and augment local community livelihood.

According to the Draft Eco-Tourism Policy (2010), Eco-tourism Development would be contextualised as a Protected Area Management Strategy involving community-based co-management/programmes linked to ecotourism; capacity building, training, education and increasing public awareness; certification and labelling; and safety measure. Several activities will be embarked upon. These include the establishment of nature camps; eco-friendly accommodation; treks and nature walks; wildlife viewing and river cruises; adventure sports; fishing; herbal ecotourism; urban ecotourism through eco-parks; visitor interpretation centers and conservation education.

Projects Implemented

Some of the current initiatives undertaken by the Tourism Development Company Ltd. (TDC) to develop and expand the local tourism industry include the Service, Training, Attitude, Respect (STAR) programme, School Awareness, the Maracas Beach Redesign and Restoration Project, the Small Tourism Enterprise Project (STEP), and the Trinidad and Tobago Tourism Industry Certification (TTTIC).

The National Tourism Quality Service Improvement Programmes are geared towards fostering a culture of service excellence in Trinidad and Tobago and offers specialised training and development to providers at all strata of the tourism sector over the course of three (3) years.

The Maracas Beach Redesign and Restoration Project includes the establishment of a higher capacity waste water treatment plant, the elevation of the car park to address the flooding issue and increase capacity; improved drainage facilities and the establishment of a children's play area, and zoned areas for sports such as football and volleyball.

A sustainable and ecologically sensitive strategy for Chaguaramas as a centre where local and international tourism meet.

School Awareness- In an effort to raise awareness of the local Tourism Industry, the many career opportunities and other tourism related matters, the TDC has been participating in career fairs and conducting presentations at various institutions throughout the country.

Small Tourism Enterprise Project (STEP) targets small tourism operators and presents a comprehensive approach for addressing performance and profitability within the small tourism enterprise sector. In the last year, more than 600 persons have received training and certification in a range of areas, including defensive driving and first aid.

The Trinidad and Tobago Tourism Industry Certification (TTTIC) programme is a national certification programme designed to ensure that tourism operators and service providers in the tourism sector conform to prescribed standards of quality in their operations. These standards have been developed through the Trinidad and Tobago Bureau of Standards (TTBS), the national standards and certification body, as well as through stakeholder consultations.

Green Globe 21 is an international Environmental and Social Management Certification Programme designed specifically for the travel and tourism industry. It is based on Agenda 21 of the United Nations Earth Summit 1992 and the Principles of Sustainable Development. The Green Globe Standards are the foundation of the Green Globe 21 programme, allowing participants to benchmark their current environmental and social performance in order to measure and monitor their performance in key areas.

The standards under the Green Globe 21 Programme include:

- The Green Globe 21 Company Standard – for any company in the travel and tourism industry (E.g. hotels, restaurants, tour operators, visitor attractions, visitor centres).
- The Green Globe 21 Community Standard – for communities who have a community tourism product.
- The Green Globe 21 International Eco-tourism Standard – to determine genuine eco-tourism products (not companies), which includes tours, accommodations and attractions.
- The Green Globe 21 Design and Construct Standard – for the design and construction of tourism infrastructure with an environmentally responsible approach.

The TDC recognises that tourism development and the environment are intrinsically linked. The success of the industry lies in the preservation of the country's natural resources. TDC is partnering with the Trinidad Hotels Restaurants and Tourism Association in identifying interested properties (about 10) to conduct a pilot project which seeks to have a pioneer group of Green Globe certified establishments.

Tourism Development Incentives includes tax holidays of up to seven (7) years; tax exemption on profits from the initial sale of villas, condominiums and sites within an Integrated Resort Development; carry-over of losses from tax exemption period; duty concessions on vehicles; duty exemption for building materials and articles of tourism equipment; and capital allowances.

Constraints and Challenges

A number of factors affect the sustainable development of the tourism industry and its potential to contribute more significantly to the economy. The major constraints and challenges include:

- Insufficient collaboration and communication among major stakeholders;
- Environmental degradation and socio-cultural impacts;
- Insufficient tourism education and training to increase human resource and entrepreneurial development;
- Inadequate local community involvement;
- Inadequate infrastructure;
- Inadequate air and sea access for intra-regional travel;
- Limited innovation in product development, marketing and promotion;
- Quality of tourist accommodation establishments;
- Poor adherence to international standards;
- Inadequate funding; the need for effective investment schemes and industry incentives;
- Insufficient land use plans and carrying capacity studies;
- The need to address safety, security as well as issues of disaster management, preparedness and communication;
- Insufficient research and measurement of industry results, standards and indicators;
- Increased social issues of crime, HIV, prostitution and the illegal drug trade which adversely affect the country's image.

Notwithstanding the above, major strides have been made in diversifying Trinidad and Tobago's tourism from sun, sand and sea through development of a range of products linked to ecotourism, heritage and the country's cultural diversity. These initiatives in product development, infrastructure support, with its emphasis on eco-friendly sites and products, heritage sites and products and the culturally rich diversity of the country are beginning to bear fruit.

(9) BIODIVERSITY AND PROTECTED AREAS

Biodiversity is the variability of all living organisms including animal and plant species and their genetic make-up, and of the terrestrial, aquatic and marine ecosystems of which they are part. Biodiversity makes up the structure of the ecosystems and habitats that support essential living resources such as forests, wildlife and fisheries. It provides for citizens' basic needs of food, shelter and medicine while at the same time, providing oxygen in the air, purifying the water and regulating climate.

Trinidad and Tobago has a high biological diversity to surface area ratio due to its small size and geographical relationship shared with the South American continent. Its terrestrial ecosystems include evergreen seasonal, semi-evergreen seasonal, seasonal montane forests, littoral woodlands, forests, marshes, mangrove woodlands, palm marshes and savannahs. The marine ecosystems includes the nation's water masses, mud bottoms, coral reefs, sandy bottoms, rocky shores, seagrass beds and mudflats. Both these ecosystems support 2,160 species of flowering plants, 420 species of birds, 100 mammals, 55 snakes, 25 amphibians, 85 reptiles, 36 species of reef building corals and a wide array of corals.

The islands' biological resources are of significant importance to all sectors in Trinidad and Tobago namely agriculture, fishing, recreation, tourism and culture. However, society's growing consumption of resources and increasing populations have led to a rapid loss of biodiversity, eroding the capacity of earth's natural systems to provide essential goods and services on which human communities depend. On an international scale, human activities have raised the rate of extinction to 1,000 times its usual rate. In Trinidad and Tobago, expansion in industrial activities, mineral and lumber extraction, housing provision and road network expansion are just some of the major activities that have resulted in significant deterioration of the natural environment. The Food and Agriculture Organisation (FAO) has estimated the annual rate of conversion of Trinidad and Tobago's forests to be approximately one percent (1%). The high biological diversity of the country within a very small geographic area implies that relatively small incremental loss in natural areas can have serious impacts on ecosystem and species management.

One of the ways in which biodiversity can be protected is through the establishment of protected areas. Protected Areas (PAs) are important management tools for protecting, conserving and managing natural and built heritage; critical to sustainable national development. They vary in intensity of human use from no entry areas in the case of strict nature reserves, to sites that allow for multiple uses in different zones. They can be terrestrial, coastal, or marine or a combination of these.

The primary reason of establishing PAs for biodiversity is the conservation of genetic diversity, species, ecosystems and natural habitats, and as a tool for the maintenance and recovery of viable populations of rare or threatened species in their natural environment.

Trends indicate that the present rate of exploitation of Trinidad and Tobago's natural biodiversity is detrimental for sustainable development. For instance, the national current hunting rates have resulted in a serious decline of the game animal population, while fishing and forestry data also show that these resources are in decline. In addition, development pressures and increasing pollution are imposing an additional burden on ecosystems and their ability to provide their services.

Progress

- Adoption of the Protected Areas Policy (2011);
- Preparation of a Draft National Biosafety Network for Trinidad and Tobago;
- Declaration of the Buccoo Reef as an Environmentally Sensitive Area;
- The EMA has recently undertaken efforts to conserve the country's local biodiversity by conducting an assessment of the status of the biodiversity resources, compiling existing national biodiversity in Trinidad and Tobago and undertaking a gap analysis of the biodiversity information. The aim of this was the synchronisation of national biodiversity information to produce guidelines and protocols for the integration of biodiversity conservation issues into national plans, programmes and policies.

Constraints and Challenges

- To protect biodiversity, the National Wildlife Policy needs to be adopted;
- Financial and technical support;
- Inadequate trained personnel for all aspects of biodiversity management;
- Lack of collaboration among the multitude of agencies involved in biodiversity management;
- Need to formally establish a National Biodiversity Centre to provide applied science to support the work of the management agencies;
- Greater representation of NGOs and CBOs on the Forest and Protected Areas Authority Board is needed;
- The country's biodiversity, in particular, its marine resources, faces new threats in the form of marine alien invasive species which require legislative controls;
- Existing regulatory framework for the management of the nation's biodiversity is severely deficient, piecemeal at best, and responsive only to issues when they arise on the national agenda;

- No wildlife sanctuary or environmentally sensitive area is sufficient in size to support the range of the species which it seeks to protect;
- Sensitive Species Rules and the Sensitive Areas Rules under the Environmental Management Act are failing;
- Hunting is taking place in an ad hoc, unsustainable manner; and
- Slow decision-making process, especially in the context of approval of policies or plans and acquisition of resources for action.

Action is being taken to protect our biodiversity. The first step has been to accurately catalogue the species diversity of this country. This is being done through collaborative work between the University of the West Indies St. Augustine Campus in Trinidad and the Oxford University of the United Kingdom. Emphasis needs to be placed now on the protection, strengthening of legislation and enforcement and a national approach to better integrated actions and strategies.

(10) TRANSPORT

Transportation sectors globally are heavily dependent on hydrocarbons. In Trinidad and Tobago, the use of hydrocarbons for transportation is subsidised by the Government and as a consequence, there has been little effort to promote the use of alternative energy for fuels within the sector. There has been a steady increase in the purchase of gasoline- and diesel-fuelled vehicles, especially with the opening of the foreign-used vehicle market which has resulted in a steady increase in greenhouse gas (GHG) emissions.

Trinidad and Tobago has approximately 630,000 vehicles in the country and increases are projected at approximately 30,000 annually. GHG from the transportation sector alone have increased by 278 per cent over the period 1990 to 2006. When compared to neighbouring countries in South America, Latin America and the Caribbean, Trinidad and Tobago has the highest motorisation levels relative to its population. The transport infrastructure and urban spatial plan have not been able to keep pace with the increase in travel demand and have resulted in severe congestion and prolonged travel times in many instances.

Today, the local transportation sector accounts for 2.4 tonnes per year of carbon dioxide emissions. As a small developing country facing high priority issues of poverty reduction and human development as well as its inability to contribute significantly to reversing the global warming trend, the feasibility of Trinidad and Tobago's efforts to minimize its CO₂ emissions can be questioned. However, while the absolute emissions are miniscule accounting for about 0.1% of the total global CO₂ production, Trinidad and Tobago is committed to playing its part as a responsible member of the global community.

Progress

Methods of producing fuels can include the formation of alcohols by fermentation of biomass in bioreactors containing microorganisms and the gasification of biomass in reactors to form syngas (carbon monoxide and hydrogen mixture), which can then be used to produce numerous hydrocarbon fuels such as diesel. The biomass used in these processes can potentially range from sugarcane to switch grass, algae, or biodegradable waste, with different raw materials providing better product yields dependent on production method.

Considering the contribution of the transportation sector to GHG emissions, the Government of Trinidad and Tobago has prescribed several remedial measures. Specifically, the MTPF 2011-2014 outlines a strategy for the “Greening” of the Priority Bus Route, which is the major East-West road network artery utilised by public (buses) and private (maxi taxis) mass transportation. The Priority Bus Route is in the process of being converted into a “Green” route which envisions:

- (i) all vehicles using the route being powered by either low carbon emission fuels (CNG), have zero emissions (electric power) or a combination of electric power and fossil fuel (hybrid power), and;
- (ii) all street and traffic lights along the Route being converted to ones that are solar powered.

As a corollary of its commitment to transform the traditional transport sector, appropriate subsidies and exemptions currently being explored and honed will support the adoption of electric powered vehicles (buses and cars) and hybrid vehicles (diesel/electric and gasoline/electric hybrids) as an incentive for the private sector. In tandem with the “Greening” of the Priority Bus Route, further incentives will be offered to ensure that future authorised users of the route are operating low emission or zero emission vehicles. Further, ethanol which can be produced from sugarcane or imported can be blended with gasoline to produce a cleaner burning fuel, thereby releasing less carbon dioxide.

Biofuels can provide the local transportation sector with fuel in a carbon neutral cycle, i.e. vehicular CO₂ emissions is absorbed by the photosynthesizing plants used to produce the fuel so that there is no net increase in CO₂ emissions. However, this is conditional on the choice of technology. Monitoring research and development in gasification and other processes used in the production of biofuels is critical to determine the applicability of this technology in Trinidad and Tobago in the future as the world shifts from peak oil through peak natural gas, toward consumption of alternatives.

A major limitation to the development and use of biofuels is the necessary commitment of land and food crops to provide the biomass needed to produce the fuel which could in turn undermine food security. As a result, waste may be the only feasible raw material for a nation with limited land mass. Initially, a waste segregation system must be implemented locally in order to separate biodegradable waste suitable for producing biofuel.

Compressed Natural Gas (CNG)

Leaders in energy self-sufficiency, namely Brazil and Canada, as well as other competitive countries in the alternative fuel race such as India, have opted for alternatives such as bioalcohol (primarily ethanol) or chemically stored electricity (batteries and fuel cells). Transitioning from conventional petroleum automobile fuels to compressed natural gas (CNG) provides Trinidad and Tobago with a cleaner burning, more economical, safer, greener, practicable, immediate short-term, and alternative fossil fuel antidote to the looming emissions of its traditional transport sector. Compressed natural gas (CNG) is the country's chief fossil fuel substitute for a sector that has been heavily consuming gasoline (petrol), diesel, and propane/LPG. Although the combustion of CNG produces greenhouse gases, it is more environmentally sensitive relative to the traditional fuels, as well as much safer in the event of a spill or leak (since it is lighter than air and will disperse quickly when released).

Approximately 100,000 vehicles (roughly 20%) of the projected 2015 vehicular population in Trinidad and Tobago will be converted to use CNG. High mileage vehicles will be targeted for conversions such as mass transport vehicles (maxi taxis and transport buses) and others (taxi, commercial vehicles and state vehicles). In this strategic attempt to reduce emissions from the transportation sector, the Government of Trinidad and Tobago has recognised, initiated and encouraged the move toward CNG through the introduction of several fiscal incentives such as the removal of Value Added Taxes (VAT) and import duties on CNG conversion kits. In this collaborative effort, the Ministry of Energy and Energy Affairs has set up a task force to make further recommendations for use of CNG and CNG gas mixes as a major vehicular fuel in Trinidad and Tobago. Research is currently being done by the CNG working group. The intent of this project is to widen the energy mix in transportation fuels to promote energy efficiency, minimize costs and reduce greenhouse gases.

Currently there are approximately 3,800 vehicles using CNG, one gasoline to CNG conversion centre and nine existing CNG filling stations. This national drive necessitates that the National Petroleum Marketing Company takes the necessary steps to improve the fuel distribution sector.

The Government of Trinidad and Tobago as part of its effort to accelerate the development of CNG as a significant vehicular fuel has agreed to the establishment of seven (7) New to Industry Retail Marketing sites (NTIs) for the refueling of both liquid fuels and CNG. These NTIs will be highly visible and accessible, and demonstrate the Government's commitment to ensuring that there is an adequate refueling CNG network available for the public.

Increased Public Transport Efficiency and Infrastructure

Despite the deficiencies in the public transport system, Trinidad and Tobago has continued to pursue infrastructural developments which nurture the auto-mobility culture while simultaneously reducing extreme congestion experienced during peak hours, prolonged travel times and declines in productivity. While alleviating congestion via the construction of planned multi-lane highway development projects is a possible solution to the country's traffic congestion problems, it can also lead to increased auto-mobility and car ownership, thus can be counterproductive.

However, the Government recognises the need for a more efficient public transport and simultaneously improving public perception for its use. Consequently, the transportation sector in Trinidad and Tobago has recently been improved to increase the availability and accessibility of public transport to the population; attracting more of the population towards the utilisation of public transportation. Although some of these measures were put into place to reduce traffic flow entering and exiting Port of Spain on a daily basis, there have been some additional benefits to the environment in terms of reduced emission of carbon gases. These measures included the introduction, since 2009, of four (4) Catamarans water vessels that can transport approximately 405 persons on each trip between the city of San Fernando and the port of Port of Spain. Additionally, there have been an increased number of buses island-wide. These transportation services reduce the individual carbon footprint as well as that of the nation. It is also worth mentioning that investments to improve the capacity and efficiency of public transportation will benefit key economic sectors such as tourism, manufacturing and agriculture.

Furthermore, the Ministry of Works and Infrastructure is currently embarking on the formulation of a National Land Transportation Plan, the parameters of which will be derived from the National Physical Development Plan. The Land Use Policy, the National Physical Development Plan, the development of the roads network, the management of transportation and the management of the Carbon Dioxide (CO₂) emissions are all connected and plans are being pursued against this background of interconnectivity.

The Way Forward

Even though Trinidad and Tobago has made significant strides in its development to become one of the wealthiest and most developed nations in the Caribbean, needs to strengthen its thrust towards sustainable development. In more recent years the Government acknowledges that the economy, society and the environment must all be harmonised within a framework of balance in order to achieve sustainability. Moreover, there must be objectivity in managing competing requirements in the developmental process of the nation. Traditionally, both the economic and social pillars have taken precedence over the environmental pillar, undermining the country's sustainability agenda.

In order to achieve sustainable development and ensure that all three pillars are recognised as fundamental to the process, the following steps must be taken: institutional strengthening; revision of legislative and regulatory framework; increased public education, genuine consultation and participation; attitudinal changes; diversification of the economy; and reforms in the social sphere. All of this must be done with the objective of minimising policy clashes and contradictions. The agenda identified above is being actively pursued.

Strengthening of the institutional framework is the first critical element to address matters of sustainable development. This will ensure that policy areas and strategies across the three (3) pillars are streamlined, thereby facilitating a more effective use of the country's limited resource base. Moreover, in light of the recent oil find, estimated at 48 million barrels, a well-developed institutional framework will be highly beneficial in ensuring that these new oil reserves are optimally used.

The review of existing legislative and regulatory framework is also crucial as this process would support institutional strengthening. The review of existing laws must however, be coupled with stringent enforcement for maximum impact. Additionally, existing laws and policies may be insufficient to guide the developmental process and as a result the formation of new laws and policies is of high priority. It is also imperative that conflicts between new and existing laws must be addressed to support development along the path of sustainability. The policy and strategy implications of a coherent legislative framework must also be carefully thought through.

It is also essential that the government continues to engage key stakeholders in its decision-making process and to increase stakeholders' awareness of their specific roles and responsibilities. A viable sustainable development strategy requires that all sectors of society work together towards a shared vision of socio-economic and environmental sustainability.

Furthermore, transforming values and attitudes of the population is important. Since the cultural industries are based on the transmission of ideas and concepts in a palatable form, the development and expansion of these industries can also coincide with increased discourse, debate on and promotion of the attendant changes in attitudes and behaviors that will buttress economic transformation efforts as well as social development. Discussion on ‘greening’ of the economy and new industry development can also facilitate meaningful discourse.

Diversifying the national economy in order to reduce the country’s dependency on its finite reserves of oil and gas is another critical component of Trinidad and Tobago’s sustainable development thrust. The diversification process will incorporate the principles of a green economy as well as Pauli’s blue economy to create a more productive and competitive economy, driven by innovation.

Better targeted social safety net programmes must also be designed and structured with clear exit strategies to ensure that the country’s wealth is equitably distributed. Areas targeted for reform in the social sphere are the social services including safety net programmes geared towards reducing poverty, the education and training system, the health system, regional and community development and housing and community creation.

The Government of Trinidad and Tobago is more committed than ever before in taking the necessary action required in all of these areas in order to realise its goals for sustainable development. The MTPF, the guiding framework for sustainable development, articulates the plans and strategies as well as guides the Government of Trinidad and Tobago in its developmental process. The MTPF is the rolling plan of the Government of Trinidad and Tobago and as such this guiding plan will be reviewed annually to ensure that the three (3) pillars of sustainable development are adequately considered. Beyond 2014, the Plan will focus on sustainable development strategies to take Trinidad and Tobago into the third decade of the twenty first century.

CONCLUSION

“From stability to sustainability”

Over the past 50 years, development in Trinidad and Tobago has primarily focused on stimulating economic growth and creating a regionally and globally competitive economy. This focus on economic development through the exploitation of the country’s natural resource base has been the foundation upon which Trinidad and Tobago’s prosperous economy has been built. As testimony to the relative stability of the economy, Trinidad and Tobago has emerged relatively unscathed from the recent global financial crisis in comparison to other Caribbean and small developing countries and even larger, more robust economies around the world.

Further, the profits derived from the main economic sector, oil and gas exploration, continue to be channeled into meeting the growing needs of the country’s 1.3 million population. There has been continued investment in the development of the citizenry, particularly in social infrastructure including education. Positive results from these investments are manifested in a national literacy rate of 98.6% and a poverty gap¹¹ of 4.6% at the current time.

The thrust towards economic stability and development of human capital, however, has negatively impacted on the nation’s environment. The environment has often been the trade-off between the advancement of the economy and long term considerations for the society. Although some initiatives have been taken to mitigate and reduce these negative environmental externalities, greater effort is still required to ensure sustainability. In moving forward, cognisance must be taken of the country’s finite natural resource base, the increasing needs of a growing population with more demands and the need to build sustainable capacity to support development which meet the needs of the present but which does not undermine the needs of future generations.

The transition from stability to sustainability therefore requires a greater synergy among the three (3) pillars of sustainable development. Greater emphasis must now be placed on managing Trinidad and Tobago’s natural resource base and protecting the environment so that development in this area would be on par with the other two (2) pillars. This does not only require formation of new laws and legislation, but also the strengthening of existing ones with special focus on more stringent enforcement and initiatives to promote a green and blue economy.

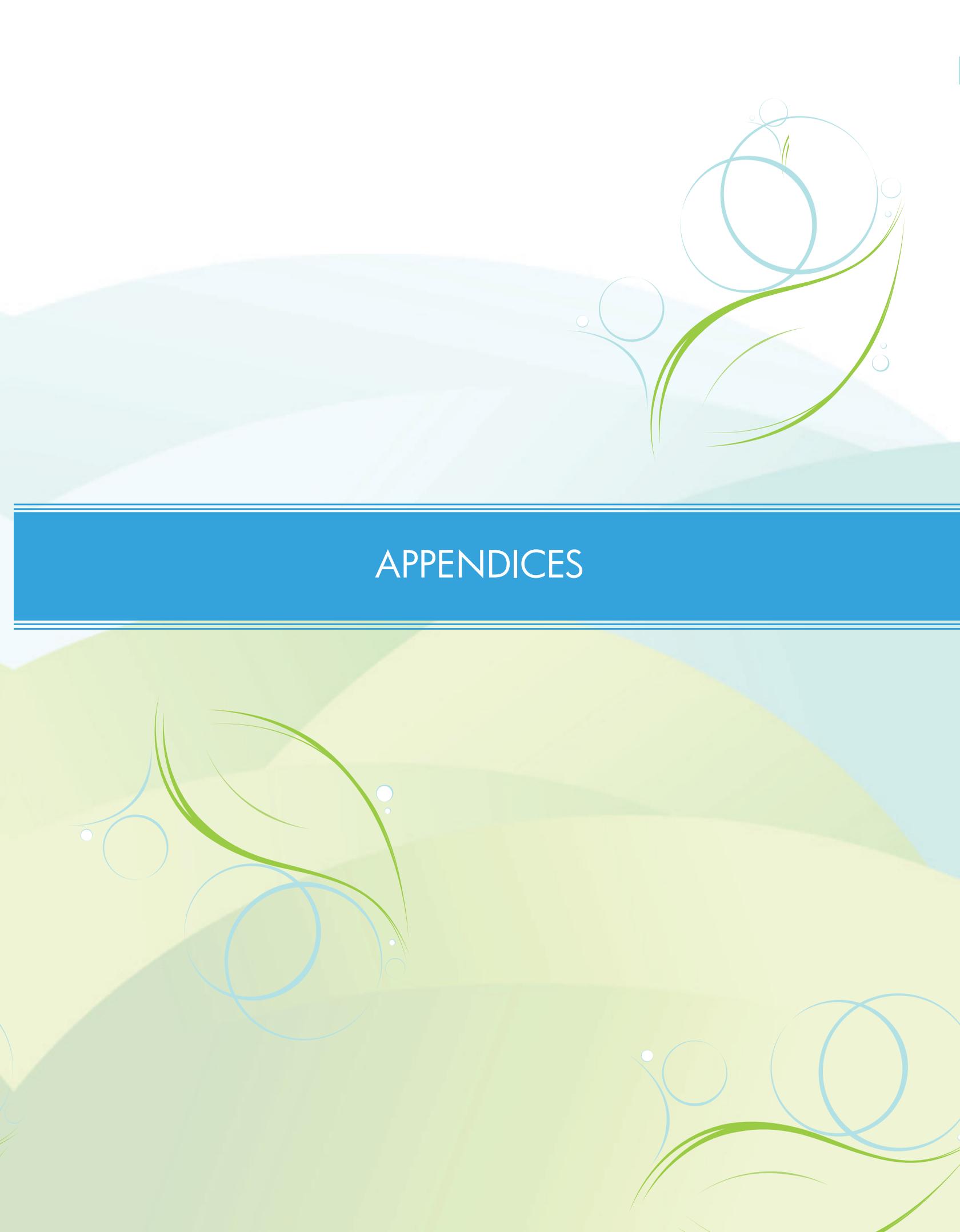
11 The poverty gap is the mean proportionate distance across the whole population of the poor from the poverty line.

Transforming Trinidad and Tobago into a sustainable nation however depends not only on government led initiatives. It requires the commitment of all sectors of society; private sector enterprises, public sector organisations and civil society organisations, especially those representing communities, in order to better determine the needs of the entire population and to identify and implement innovative and appropriate solutions. Sustainable practices require thoughtful considerations, entrepreneurial initiative and innovative solutions.

The goal of sustainability is to establish local economies that are economically viable, environmentally sound and socially responsible. The key to this transformation lies with the harmonization among the three (3) pillars, taking into account not only the needs of the population (which was done in the past), but now also bringing to the forefront the idea of limitations as it applies to the nation's diminishing natural resource base as well as a focus on the needs of generations to come. Although Trinidad and Tobago has begun to move in the right direction towards sustainability in terms of economic diversification and renewed focus on developing the creative genius and innovation of its people, more must be done to accomplish the overall sustainability of this country. Innovation for lasting prosperity is a major thrust that can advance our country towards sustainability.

However, Trinidad and Tobago must continue to aggressively pursue the path towards sustainable development in order to ensure long-term prosperity and continued economic progress for future generations with creativity, entrepreneurship, social capital building through consultation, participation and education and with an eye to the value of innovative solutions to what seems like challenging problems. In this regard the creative capital of the country must be built by nurturing creativity wherever it exists.

The idea is that through creativity, collaboration and innovation, citizens of Trinidad and Tobago can prosper together. If prosperity for all can be achieved within the framework of sustainable development, then it might just be possible that individual prosperity, national economic advance and competitiveness, community integrity and social cohesion, enlightened environmental practices, ecological protection and a general positive harmonious evolution of Trinidad and Tobago's society can take place together.



APPENDICES

APPENDIX I: RIO + 20 UNITED NATIONS CONFERENCE ON SUSTAINABLE DEVELOPMENT

The United Nations Conference on Sustainable Development commonly referred to as Rio + 20, will be held in Brazil between 20th-22nd June, 2012 to commemorate the 20th anniversary of the 1992 United Nations Conference on Environment and Development (UNCED), more commonly referred to as the Earth Summit, in Rio de Janeiro, and the 10th anniversary of the 2002 World Summit on Sustainable Development (WSSD) in Johannesburg.

The 1992 Earth Summit was the second major UN environmental summit. One main theme of the event was that environmental protection and economic growth should not be separate, and that both could be achieved simultaneously. At the Summit, a series of agreements were negotiated to ensure sustainable development across the globe, including the Convention on Biological Diversity, the Framework Convention on Climate Change, and the Statement of Forest Principles. However, perhaps the most notable result of the conference was Agenda 21-a comprehensive document and plan to implement sustainable practices internationally.

The preparatory meetings leading up to the Rio+20 Conference have highlighted seven areas which need particular priority attention; these include decent jobs, energy, sustainable cities, food security and sustainable agriculture, water, oceans and disaster readiness. The outcomes of this Conference will focus on innovative solutions which would focus on achieving each of these priority areas.

The upcoming Rio+20 Earth Summit will revisit commitments made to Agenda 21, as well as address challenges that remain today. Rio+20 will have two major themes: **Green Economy**; and an **Institutional Framework for Sustainable Development**. The **Green Economy** theme focuses on sustainable development in the context of poverty eradication, while **Institutional Framework for Sustainable Development** will address global governance issues.

The **Green Economy** focuses primarily on the intersection between the environment and the economy. Despite progress since the Earth Summit, it has become apparent that a global economy based on current patterns of consumption and production is placing heavy stresses on many ecosystems and on critical life-support systems.

At the same time, extreme poverty persists in many parts of the world, despite the fact that world gross domestic product (GDP) has increased by roughly 60 per cent since 1992.

The main challenge facing humanity now is to sustain the process of poverty eradication and to enhance achievement with regard to socio-economic development. It is understood that broad based economic growth has been and continues to be the most effective contributor to poverty eradication. At the same time, it is appreciated that, in the twenty-first century, growth needs to be propelled by non-renewable energy and with less use of non-renewable resources within which the notion of a green economy is conceived.

The **Institutional Framework for Sustainable Development** covers a spectrum of formal and less formal bodies, organizations, networks and arrangements that are involved in policymaking or implementation activities. The institutional framework must be considered at the local, national, regional and international levels. The **Institutional Framework for Sustainable Development** recognises the need to strengthen the institutional framework for sustainable development at all levels. In particular, the aim is integration in policymaking and implementation of the three pillars of sustainable development- the economic, the social, the environmental.

A strengthened **Institutional Framework for Sustainable Development** will encompass a number of objectives:

- Ensuring coherence and policy integration in the economic, social and environmental field;
- Improving analysis, assessment and scientific advice;
- Strengthening implementation, monitoring and accountability;
- Limiting overlap or duplication of activities;
- Enhancing participation; and
- Strengthening national and local capacities for sustainable development.

The institutions for the environment are frequently described as the weakest of the three pillars. While the adoption of a large number of multilateral environmental agreements has resulted in broad coverage, it has arguably also been spread thin with limited financial and human resources resulting in inadequate coordination. In response, efforts are also focused on bringing about greater coordination between multilateral environmental agreements through joint administrative support and thematic clustering.

APPENDIX II: SUMMARY TABLE OF THE INSTITUTIONAL MEASURES, GAPS AND CHALLENGES IDENTIFIED IN THE THREE (3) PILLARS

PILLAR	INSTITUTIONAL MEASURES	GAPS/CHALLENGES	NEEDED ACTION
<p>THE ENVIRONMENT</p>	<p>Matters relating to the environment fall under the purview of the Ministry of Housing and the Environment and its state agencies.</p> <ul style="list-style-type: none"> • Policy Formation and Review <ul style="list-style-type: none"> - Mainly the responsibility of the Environmental Management Authority (EMA) and Ministry of Housing and Environment - Sustainable Development and extended environmental issues guided by the Ministry of Planning and the Economy. • Education and Awareness <ul style="list-style-type: none"> EMA along with several environmental NGOs, other organizations and interest groups. • Rehabilitation and Conservation NGOs such as: <ul style="list-style-type: none"> - Fondes Amandes – hillside revegetation, - Natureseekers – wildlife conservation and protection - National Tree Planting initiatives. 	<ul style="list-style-type: none"> • Conflicting Laws, Policies and Legislation • Relevant existing laws and legislation out-dated and insufficient • Lack of enforcement of existing laws and legislation • Lack of proper monitoring of companies which are known polluters. • Lack of knowledge and awareness of environmental issues. • Existing institutions do not have the capacity or the authority to properly execute policies. 	<ul style="list-style-type: none"> • Formation of new laws and legislation to reflect international best practices. • Strengthening of existing laws and legislation which remain relevant to our modern situation and environment. • Overlap and contradictions of existing laws and legislation must be rectified. • Increased efforts in promoting environmental awareness to schools at all levels and across the general public. • All existing institutions must be reviewed, restructured and streamlined so that they are better integrated into

PILLAR	INSTITUTIONAL MEASURES	GAPS/CHALLENGES	NEEDED ACTION
	<ul style="list-style-type: none"> • Financial enablers, natural resource valuation, protection and incentives <ul style="list-style-type: none"> - The Green Fund - ProEcoserv, • Promoting Recycling <ul style="list-style-type: none"> - NGOs - Plastikkeep, - Chaguaramas Development Authority (CDA) Boardwalk, 		<p>the developmental process to ensure matters of the environment are properly handled.</p> <ul style="list-style-type: none"> • Resolution of contradictions and incompatibilities.
THE ECONOMY	<ul style="list-style-type: none"> • Transformative Policy Agenda <ul style="list-style-type: none"> - The Medium Term Policy Framework (MTPF) 2011-2014 is the guiding framework for development in Trinidad and Tobago - Identifies areas of action in order to move up the value chain, to diversify the economy and to ensure sustainable economic growth in the medium term. • Collaborative Institutional Planning <ul style="list-style-type: none"> - The Ministry of Planning and the Economy is currently collaborating with other Ministries and agencies to develop plans to ensure long-term, sustained economic growth. - Establishment of the Economic Development Board (EDB) and the Council for Competitiveness and Innovation (CCI) to guide the process of economic growth and diversification. 	<ul style="list-style-type: none"> • Heavy dependence on finite reserves of oil and natural gas leaving the economy vulnerable due to volatile energy prices. • Lack of linkages between the energy and non-energy sector. • Mismatch between existing skills of labour market and skills demanded. • Low levels of productivity. • Weak linkages between research efforts to commercial prospects and to industry innovation 	<ul style="list-style-type: none"> • A well-defined and feasible diversification strategy is needed, focussing on the growth and development of the tourism, agriculture and creative industries. • Improve competitiveness and expand investment, both local and foreign. • Targeting innovation initiatives at areas that have the potential to provide high impact in terms of value creation and job generation • Integrate efficient technologies into existing and new processes in an

PILLAR	INSTITUTIONAL MEASURES	GAPS/CHALLENGES	NEEDED ACTION
	<ul style="list-style-type: none"> • Strategic Regional/Geographic Development <ul style="list-style-type: none"> - Currently developing five (5) growth poles across Trinidad and Tobago as centres of investment in industry, creating jobs for citizens in the surrounding communities. • Research and Technological Supportive and Enabling Mechanisms <ul style="list-style-type: none"> - The Tamana Intech Park and the Cove Business Park are targeted growth initiatives that will provide high-value manufacturers with a competitive advantage in high quality infrastructure and business to business opportunities. • New procurement process to include green issues in procurement. • Guiding process <ul style="list-style-type: none"> - Developing and Integrating a National Innovation System through the Ministry of Planning and the Economy in collaboration with other Ministries and institutions. 		<p>effort to green the economy.</p> <ul style="list-style-type: none"> • Ensure that the quality, reliability and maintenance of existing infrastructure is of the highest standard, while adopting transparent and fair procurement practices. • Develop/enhance relations with strategic countries regionally and internationally. • Strategic focus on diversification to develop green industries that are higher up the value chain and that utilize intellectual capital.
THE SOCIETY	<ul style="list-style-type: none"> • Grants and Subsidies towards Poverty Reduction 	<ul style="list-style-type: none"> • Poverty continues to be a challenge for Trinidad and Tobago, although in 2011 there was a 2% reduction. 	<ul style="list-style-type: none"> • Streamlining of and better collaboration among the numerous Ministries, agencies, NGOS and other interest groups to prevent duplication of efforts,

PILLAR	INSTITUTIONAL MEASURES	GAPS/CHALLENGES	NEEDED ACTION
<p>THE SOCIETY</p>	<ul style="list-style-type: none"> • Land Settlement, Housing Support and Community Development <ul style="list-style-type: none"> - Land for the Landless Policy. - Squatter Regularisation Policy. - Community Development Policy with expansion of housing stock. - Green Community Spaces Strategy. • Effective Judicial System <ul style="list-style-type: none"> - Capacity building • Collaborative and Participatory Decision Making Process <ul style="list-style-type: none"> - The initial stages of the formation of the Civil Society Board (CSB) have been undertaken with public consultations; fourteen (14) in Trinidad and two (2) in Tobago. It is intended that the CSB will bring to the forefront the views of civil society so that they will have in critical national developmental plans. This is an initiative of the Ministry of Planning and the Economy and the Office of the Prime Minister. 	<ul style="list-style-type: none"> • Access to healthcare from prenatal healthcare to geriatric healthcare is a major problem this country faces. • Crime continues to be a grave problem in society although there was a significant reduction in the last year. • Lack of proper infrastructure and access to basic needs persist. • Access to affordable and adequate housing continues to pose problems to the poorer classes of society. • Lack of employment opportunities • Mismatch between skill acquired and job opportunities • Social projects and programmes that are currently in place, have not always achieved the desired outcomes and impacts. 	<p>maximize limited resources and to achieve the maximum possible benefits.</p> <ul style="list-style-type: none"> • In terms of our values and attitudes, we need to inculcate a passion for lifelong learning among our citizenry, heighten our sense of civic responsibility as well as our commitment to nation building and place a premium on the value of productivity. • All social programmes and projects must be reviewed with an aim of better alignment to the needs of the society. • There is a great need for job creation with a focus on the creation of jobs to match the skill set of society which will require intervention through entrepreneurship, innovation and new diversified investment.

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