REPUBLIC OF TRINIDAD AND TOBAGO

NATIONAL ASSESSMENT REPORT

ON

THE FIVE YEAR REVIEW OF PROGRESS MADE IN IMPLEMENTATION OF THE MAURITIUS STRATEGY FOR FURTHER IMPLEMENTATION OF THE BARBADOS PROGRAMME OF ACTION

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1.0 PREFACE

The United Nations General Assembly in Resolution A/57/262 called for a full and comprehensive review of the implementation of the Programme of Action for the Sustainable Development of Small Island Developing States (SIDS POA) commonly referred to as the Barbados Programme of Action (BPOA) at an international meeting to be held in Mauritius in 2004. The Government of Trinidad and Tobago played a lead role in the preparation for this international meeting through the hosting of the Caribbean SIDS preparatory meeting during the period October 6-11, 2001. The international meeting for the 10-year review of the SIDS POA was held in Mauritius in January 2005 and culminated in the adoption of the Mauritius Declaration and the Mauritius Strategy for the Further Implementation (MSI) of the SIDS POA.

The United Nations General Assembly in February 2009 by Resolution 63/213 called for the review of progress made in addressing the vulnerabilities of SIDS through the implementation of the MSI at the sixty-fifth session of the General Assembly. The implementation of the MSI is primarily a national responsibility and therefore the review of progress on implementation, five years since to adoption of the MSI is to be based on national assessment reports.

To reduce the burden on reporting, the national reports are expected to build upon, rather than duplicate, the ten year national assessment reports prepared for the Mauritius International Meeting by providing a brief update on progress in the development and implementation of thematic issues contained in the MSI that SIDS are particularly vulnerable. The thematic issues identified are:

(i) Climate Change and Sea-level rise;
(ii) Natural and Environmental Disasters;
(iii) Management of Wastes;
(iv) Coastal and Marine Resources;
(v) Freshwater Resources;
(vi) Land Resources;
(vii) Energy Resources;
(viii) Tourism Resources;
(ix) Biodiversity Resources; and
(x) Transportation and Communication.

The National Assessment Report of the Republic of Trinidad and Tobago in respect of the five year review of the MSI has been prepared in accordance with the guidelines provided by the United Nations. The Report therefore highlights the progress of implementation in the identified various thematic areas of being of critical concern to the sustainable development of SIDS. It builds on the preceding assessment report that was prepared for the Mauritius International Meeting.

In the Report, Trinidad and Tobago's socio-economic environment is discussed within the development planning context, with emphasis on the sustainable development objective of the national strategic framework. Some mention is made of the recent global economic crises and the impact on the country's economy as well as the broad-based policies implemented in response.

The status of implementation of the National Sustainable Development Strategies in the thematic areas reflects the efforts that are being engaged in the thrust for national development. While success varied across the thematic areas, it can be said that the country experienced a level of success in spite of prevailing constraints. As in other countries, there has been an expansion of national discussion on climate change particularly and related environmental issues.

The Government of Trinidad and Tobago is fully committed towards the national effort for sustainable development, as articulated in the National Development Strategy, . The Strategy demonstrates Trinidad and Tobago's commitment to sustainable development and includes the relevant priorities and commitments identified in the MSI such as eradicating poverty and improving the livelihoods of its citizens by the implementation of strategies which build resilience and capacity to address its unique and particular vulnerabilities. At the domestic level, sound environmental, social and economic policies, democratic institutions and an enabling environment are the basis for sustainable development. However, globalization and external factors are critical in determining the failure or success in its national efforts. Implementation has been nationally driven and has been grounded in an effective and stable decision-making and planning environment - integrated into the national planning systems and processes for allocation of resources and responsibilities implemented within the national institutions.

Trinidad and Tobago has had some level of success in attaining its goals in the areas of natural disasters; marine resources; agriculture and rural development; Transport and information communication technology; management of wastes; freshwater resources. However, the degree of success varied in the focal areas. There has been some national effort to deal with all issues; however, this was limited due to lack of national institutional, human capacity and financial constraints. Moreover, the significance and magnitude of the detrimental effects of some focal areas, such as waste, climate change and sea-level rise on Trinidad and Tobago transcend national capacity and require action at both the regional and international level. Trinidad and Tobago has participated in regional and international initiatives to address some of these issues.

To achieve the sustainable development agenda, the Government of Trinidad and Tobago has not only developed a national plan, but instituted legislative and institutional reforms to create an enabling environment. In this regard, a local government reform programme is being undertaken and is aimed at ensuring more equitable development, the building of institutional capacity (at the municipal level) whilst strengthening public participation. Moreover, decentralization of services is being addressed in many areas in order to improve efficiency and effective delivery of public goods and services.

In the implementation of the National Development Strategy, a major constraint is lack of national understanding and ownership by citizens. Prior to its implementation there was initial consultation involving representation from all civil society groups including the private business

sector. An emerging issue is the lack of capacity in terms of skills and opportunities for citizens to participate in decisions that affect their well-being and livelihoods. Achieving this requires strengthening and promoting civil society participation in policy development, decision making and environmental management.

On another level, with growing recognition that human beings are depend on ecosystem services, governments of SIDs and development agencies are increasingly partnering with the private sector in implementation of various initiatives. The private sector contributes to development goals in two ways. First, it enhances competitive forces which are needed to produce growth and jobs. Second, it allows government to provide for more flexible spending in social and infrastructure sectors, which are fundamental to sustaining growth in the long term. Enhancement of such partnerships in Trinidad and Tobago needs to be addressed.

Human capacity requires strengthening for monitoring and evaluation, particularly in the area of data collection. In this regard qualitative and quantitative data is required in addition to civil society participation in this effort. Data should also be disaggregated and shared with citizens to promote collaboration at multiple levels to address and find solutions to the challenges. To effectively implement the MSI an effective regulatory systems, technical support and transfer of expertise from international inter-governmental institutions, together with adequate funding is critical to achieving the national sustainable development objectives.

Security, a multidisciplinary concept, continues to be a challenge, (including environmental degradation, food security, HIV/AIDS, personal safety, narcotics and small arms trafficking) and impacts on the country's development, particularly on the economic sector and tourism. While implementation of the sustainable development agenda proceeds, the current emphasis on security calls for increased financial and other commitments at the national level.

Furthermore, the high level of vulnerability to external shocks (global economic downturn) and prevailing environmental factors, such as weather conditions, requires policy review for medium and long-term milestones. . While industrial and development activities offer important opportunities, without effective monitoring these can create more vulnerability for the poor since they give rise to certain risks, particularly in the management of pollution, human health and other incidences such as flooding. This close relationship to the environment is indicative of the need for better environmental monitoring and in particular, risk and disaster warning systems to support greater preparedness and more effective responses. Moreover, there is greater need to create synergies in areas, such as biodiversity, tourism and health.

Legal and institutional reforms can greatly enhance initiatives such as economic market instruments (such as the polluters pay principle). Also, greater use of the precautionary approach combined with enforceable legal provisions is needed. The different initiatives pursued by Trinidad and Tobago underscores the linkages of the development process, social advancement and environmental conservation. A sector by sector approach to implementation needs to be replaced by integrated management.

Trinidad and Tobago is well on the way to achieving its obligations under the MSI. However, there is need to address the constraints so that implementation can be accelerated.

2.0 INTRODUCTION

2.1 Background

The Republic of Trinidad and Tobago is an archipelagic state in the southern Caribbean, lying northeast of the South American nation of Venezuela and south of Grenada in the Lesser Antilles roughly between 10 and 11.5 degrees North latitude and between 60 and 62 degrees West longitude. The country covers an area of 5,128 square kilometers (1,979 sq. miles) and consists of two main islands, Trinidad and Tobago. Trinidad is the larger and more populous of the two main islands; Tobago is much smaller, comprising about 6% of the total area and 4% of the population.

Over the preceding fifteen-year period, Trinidad and Tobago has recorded consecutive economic growth. For the past seven (7) years, economic growth averaged slightly over 8% recording a figure significantly above the Caribbean regional figure which averaged 3.7%. Weaker performance was experienced in the energy sector as a result of lower production levels from the petrochemical sector which registered a decline of 4.3% and the other petroleum sub-sectors which registered a decline of 1.7%. While the energy sector dominates activity in the local economy, depressed oil prices also affected the economy.

Partly due to the global decline in commodity prices, the economy experienced a decline in inflationary pressures, since December 2008. Growth has been fuelled by investments in liquefied natural gas (LNG), petrochemicals and steel. This optimistic outlook for refining is predicated on expansions in oil refining and processed gas and LNG. However, the expansion of the energy sector has been accompanied by declines in the manufacturing and agriculture sectors and slow progress in the development of other industries that can contribute to sustained growth in the event of decline or depletion in the energy sector.

Export commodities include Petroleum and Petroleum products, LNG, Methanol, ammonia, Urea, steel products, beverages, cereal and cereal products, cocoa and coffee, citrus, vegetables and flowers while tourism is also a growing sector. Within the Non-Petroleum Sector there is contribution by the Services, Manufacturing, Construction, and to a lesser extent, Agriculture sectors. Within the manufacturing sector, the sub-sector of Food, Beverages and Tobacco makes the greatest contribution. Over the period 2003- 2004, the Agriculture sector fell 35.5% due to the closure of the commercial operations of Caroni (1975) Limited.

In the first quarter of 2008/2009, the unemployment rate declined to 3.9% from 5.5% (2007) but was followed in the second quarter 2008/ 2009, by an increased rate of 5.0% and a 63.6% participation rate. The increased number of persons employed in the first quarter of 2008/2009 were registered in Community, Social and Personal Services; Finance, Insurance and Real Estate, and Business Services; Wholesale and Retail Trade, Restaurants and hotels; and Other Manufacturing (excluding Sugar and Oil). There were, however, decreases in the number of persons employed in Construction, Other Agriculture, Forestry, Hunting and Fishing, Transport,

Storage and Communication sectors. In the second quarter of 2008/2009, the sectors which had previously recorded gains in employment suffered the highest number of job losses.

In terms of productivity throughout the economy, for the calendar year 2008, workers' productivity in all industries increased by 7.2% but decreased by 2.2% during the first quarter of the fiscal year 2008/2009. Growth in productivity was recorded mainly in Oil and Natural Gas refining (42.4%); Sugar (36.7%); Wood and Related Products (30.1%); Textiles, Garments and Footwear (26.3%) and Drink and Tobacco (20.9%). Other sectors with productivity declines include: electricity; oil and natural gas refining; food processing and petrochemicals.

Trade liberalization and globalization present opportunities for Trinidad and Tobago in terms of erosion of trade preferences. In this regard, the Doha Round, which is underpinned by commitments to strengthen assistance to developing countries, has provided Trinidad and Tobago with a platform to articulate the following issues of major concern: ensuring that the necessary technical assistance is provided to ensure the enhancement of our productivity capacity, competitiveness and improved market access to global trading partners and that priority be given to the mandate of making Special and Differential Treatment more precise, effective and operational.

In addition, Trinidad and Tobago, as a member of the Caribbean Community, has establish and maintain the Common External Tariff in respect of all commodities imported from third countries in accordance with a plan and Schedule adopted by the Conference. The impact of tariff liberation in Trinidad and Tobago on it trade flow was the change in the product-line imports from CARICOM and non-CARICOM countries against time and commodity-level variation. In Trinidad and Tobago the higher ratio was largely due to the result of non-member imports crowding out member import

In spite of its strong economic base, the country continues to be challenged with how to maintain favorable prospects for growth, job creation and poverty reduction in the face of exogenous factors, such as a possible downturn in the energy sector, uneven patterns of development within Trinidad and between Trinidad and Tobago and threats to human security including serious crimes such as narcotic offenses, burglaries and robberies. The population of Trinidad and Tobago is estimated at 1.3 million. The Government is aiming to eradicate poverty among sections of the population by the year 2015. Recent preliminary figures show that the national poverty line stands at 17 percent. Trinidad and Tobago is ranked as 64th in the Human Development Index and GDP per capita is estimated at 23,300 (2009).

While contributing to growth in some sectors, energy exports, has created attendant economic, social vulnerabilities, and environmental challenges manifested as land degradation and water and air pollution. A number of initiatives are being pursued, with the main objective of inculcating an attitude of care and respect for the environment among citizens. These initiatives include the "greening" of public spaces, the regulation and control of outdoor advertising and the motivation of individuals, communities and businesses to adopt clean and safe environmental practices.

2.2 National Sustainable Development Strategy

In 2002, Trinidad and Tobago embarked on a process of long-term planning which articulated a vision for a higher quality of life for all the people of this country. The National Strategic Plan aims to take the country along a path of sustainable development and therefore establishes the policy framework through with the MSI and BPOA will be implemented nationally. The Plan is built on five development pillars: Developing Innovative People, Nurturing a Caring Society, Enabling Competitive Business, Promoting Effective Government and Investing in Sound Infrastructure and the Environment under which the establishment of a National Council for Sustainable Development was proposed, to facilitate consensus building on policies and strategies for attaining environmental sustainability in Trinidad and Tobago. While the development pillars focus on development at the domestic level, the potential impact of external factors at the regional, hemispheric and global level directly affect the achievement of these goals.

The Ministry of Planning, Economic and Social Restructuring and Gender Affairs is the focal point for national planning in the Republic of Trinidad and Tobago and coordinates and review the implementation of the National Strategic Plan . The Ministry is responsible for both physical planning and socio-economic planning through its Town and Country Planning Division (TCPD) and Socio-Economic Policy Planning Division (SEPPD) respectively. The Ministry of Planning, Economic and Social Restructuring and Gender Affairs also collaborates closely with the Ministry of Housing and the Environment in ensuring the sustainability in national planning and development processes through monitoring of environmental and sustainable criteria by its Agency the Environmental Management Authority (EMA). In this regard, the EMA is vested with powers, under the Environmental Management Act, 2000, to request that an Environmental Impact Assessment (EIA) be done as a requirement for the granting of a Certificate of Environmental Clearance in respect of certain proposed projects in a wide range of activity areas. Planning that addresses the specific needs of Tobago falls under the purview of the Department of Planning of the Tobago House of Assembly.

2.3 The Socio-Economic Environment and the global crises- Impact and Responses

The country has been impacted by the recent global financial crisis, as well as by issues of food and energy security, food inflation and climate change. The global financial crisis had the greatest impact - there were signs of a marked slowdown in the pace of economic activity, prompted by a weakening in both external and domestic demand and the overall budget recorded a deficit compared to the earlier year. The energy sector is the main driver of the Trinidad and Tobago economy. There was only a marginal increase in energy revenues and non-oil revenue declined. In this changing economic environment liquidity problems that were experienced in major institutions but swift intervention by the Central Bank Severe addressed some initial contagion effect. A Restructuring Plan was implemented by the Government resulting in the halting of contagion effects on the rest of the financial system.

2.4 Responses of Trinidad and Tobago's Government to the financial crisis

In November 2008, the Government eased fiscal policy by reviewing the approved budget for Fiscal Year 2009 to provide for an overall deficit of 1.1 per cent of GDP. This compared with an initial projection of a virtual balanced budget and fiscal surpluses averaging 4.9 per cent of GDP over the previous three years. In the face of mounting evidence of the slowdown, additional

fiscal stimulus or a marked easing of monetary policy was postponed as inflation remained at an elevated level. The imperative for macro-economic management then became the confrontation of a short-term trade-off between inflation and employment. In summary, the short-term outlook for the Trinidad and Tobago economy is very closely tied to the evolution of the global recovery and the way in which the macro-economic policy stance adapts to the changing circumstances.

3.0 NATIONAL PROGRESS MADE AND PROBLEMS ENCOUNTERED IN THE IMPLEMENTATION OF KEY THEMATIC AREAS OF THE MSI

3.1 Climate Change and Sea-Level Rise

Current Situation

The issue of global warming and climate change was identified as a common problem of mankind as far back as 1979 and is globally recognized as the single environmental issue of the 21st century that poses unprecedented threats to mankind and now requiring a global approach to finding a solution. The international policy response to global climate change has been through the adoption of two legal instruments: the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol, to both of which Trinidad and Tobago is a ratified signatory. The ultimate objective of the UNFCCC is the stabilization of greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous human interference with the climate system and in a timeframe that would allow ecosystems to adapt naturally, will not hamper food production and allow sustainable economic development. Developing countries have no such legally binding commitment but are mandated pursue development pathways that will achieve the ultimate objective of the UNFCCC to which they are signatories, that is, developmental pathways that will follow a low carbon paradigm as far as is possible

Trinidad and Tobago as a SIDS is particularly vulnerable to the severe consequences of climate change, which results in phenomena such as, for example, rising sea levels, increased flooding, hillside erosion and loss of coastal habitat. The vulnerability of Trinidad and Tobago is compounded by an interplay of a variety of factors, among these being size, fragility of ecosystems, relative distance from developed country markets and vulnerability to exogenous economic shocks, technological resources, insufficient technical capacity, and limited ability to reap benefits of economies of scale. Trinidad and Tobago, in addition, as a result of its increasing industrialized economy, contributes to the emission of gases which bring about global warming and climate change.

Greenhouse gas inventories conducted for the period 1990 - 2006 indicate that the energy sector, transportation and industrial sector account for the bulk of carbon dioxide emissions are from the energy, transport and industrial, and power generation activities. Although Trinidad and Tobago accounts for less than 1% of absolute global greenhouse gas emissions, its emission portfolio is expected to increase. Downscaled regional models give projections for Trinidad and Tobago for higher temperatures and lower rainfall. The mean annual temperature is projected to increase by 0.7 to 2.6°C by the 2060s, and 1.1 to 4.3 degrees by the 2090s. The range of projections by the 2090s under any scenario is around 1-2°C. The projected rate of warming is similar throughout the year. Projections of mean annual rainfall indicate decreases in rainfall for Trinidad and

Tobago. Sea-level in this region is projected by climate models to rise by the following levels by the 2090s, relative to 1980-1999 sea-level: 0.13 to 0.43m under B1 scenario and 0.18 to 0.56m under A2 scenario.

Trinidad and Tobago is committed to playing its part as a responsible member of the global community, by continuing efforts geared towards pursuing policy and initiatives to increase the use of new and innovative technologies that have lower levels of emissions; encouraging the use of clean energy technology such as natural gas technology and clean production technology; encouraging the use of renewable energies that have zero emissions; and, adopting more energy-efficient technologies and practices. To this end, and consistent with the provisions of the National Environment Policy 2006, the Government is pursuing a policy framework towards the development of a programme of work to address greenhouse gas emissions and towards the development of a low-carbon economy and developmental path.

Progress Made in Implementation

Some of the key initiatives undertaken to address waste management issues since the ten (10) year assessment report on the SIDS POA include:

- The development of a draft climate change policy
- Preparation of the Second National Communication to the UNFCCC which includes an assessment of the country's greenhouse gas emissions
- Increasing the number of service stations retailing Compressed Natural Gas (CNG) throughout the country to promote less carbon intensive an environmentally friendly, cleaner and cheaper fuel
- Introduction of measures by Caribbean Airlines Limited to reduce the fuel consumption and greenhouse gas emissions. Specific measures that have been implemented include:
    - the equipping of all aircraft with winglets to reduce drag and improve fuel efficiency;
    - the introduction of a fuel management programme which incorporates pragmatic operational measures to reduce the overall weight of the aircraft and flying the shortest most fuel efficient routes;
    - the reduction of the weight of catering supplies and equipment by using more 'weight sensitive' materials;
    - the re-design of the overall network of Caribbean Airlines to allow for flying longer non-stop sectors at 'cruise' speeds, thus reducing overall fuel consumption
    - embarking on a re-fleeting program in order to operate the most modern, fuel efficient aircraft
- elaboration of a Strategy for the Reduction of Carbon Emissions in the Power Generation, Transportation and Industrial Sectors which will result in a strengthening of the institutional framework for carbon reduction; an identification of clear strategic elements and policies for reducing carbon emissions from target sectors; and the development of a framework for strategy implementation
- collaborating with the Inter-American Development Bank's (IADB) to access grant funding under its Sustainable Energy and Climate Change Initiative (SECCI) which it is anticipate will be utilized to undertake:

  - development of mitigation and adaptation strategic plans consistent with the draft national climate change policy
  - strengthening of institutional capacity to participate in the carbon trading market
  - development of a pilot project to make the Priority Bus Route a CNG route through policy and legislation analysis and the development of fiscal incentives for conversion of traditional fuel use to the use of CNG
  - development of a pilot project on carbon capture and storage in geological formations (CCS)
  - development of technological and engineering solutions for adaptation, in particular, to address flooding in urban and rural areas as a result of likely increase in intensity of rainfall arising from climate variability and change.
- collaboration with the United Nations Environment Programme (UNEP) with a view to accessing grant funding under the Global Environment Facility (GEF) to develop a project aimed at developing policy approaches for increasing energy efficiency and renewable energy use including lighting in government, commercial and domestic buildings; and development of a pilot/demonstration project for solar-powered street lighting and traffic lights
- participation in the Australian Global Carbon Capture and Storage Initiative in order to, *inter alia*, share experiences, build capacity and secure technology readiness for CCS when it becomes a mainstream technology

Constraints and Challenges

Key constraints and challenges to implementation include:

- Uncertainties in the present assessment of climate change and sea level rise impacts in Trinidad and Tobago
- Inadequate or absence of data relevant to climate change, particularly historical data
- Institutional and technical capacity constraints in identifying possible impacts of climate change on human, biological and physical resources through the conduct of vulnerability assessments.
- Lack of programmes and institutional capacity to support research, development and acquisition of renewable energy technology
- Need to mainstream climate change issues into government policies in order to increase adaptive capacity to climate change through the development of hazard maps, land use policies and building codes
- Establishment of incentives to promote the use of clean technologies, alternative fuels and recycling initiatives
- Lack of formal educational programmes to enhance the public awareness on climate change

3.2 Natural and Environmental Disasters

Current Situation

The Republic of Trinidad and Tobago is located just south of the Caribbean hurricane belt, so there is a low risk to direct hits from hurricanes and tropical storms. Low risk however does not mean that there is no risk and the country has in the past been impacted by hurricanes and tropical storms. Other potential disasters that can have potential negative impacts on Trinidad and Tobago include earthquakes, mud volcanic eruptions, tsunamis and industrial accidents. Of these annual flooding event have frequently impacts both urban and rural areas of Trinidad and Tobago. This phenomenon can result in substantial losses of property, crop damages, health problems, severe inconvenience to communities, disruptions in commuter traffic, loss of man-hours and sometimes at worst, loss of lives. In fact, in 2001, the Caribbean Disaster Emergency Response Agency (CDERA) reported that flooding was identified as both the most common natural disaster event and silent development killer within the region.

Flooding has continued perennially throughout Trinidad and Tobago in several areas, including the East West corridor at the foothills of the Northern range, the Caparo, Caroni, South Oropuche and North Oropuche basins. Within recent years, the concept of flood management has been assuming greater significance where recognition is now being given to the integral link between the flooding problem and management of our watersheds. This concept stresses the active involvement of communities at risk and other river basin stakeholders in the process of Disaster Preparedness and Management.

Drought like conditions have been experienced recently in the years 2001 and 2003 throughout the entire Caribbean region. The current 2010 dry season has been particularly harsh in Trinidad and Tobago resulting in water rationing and legislative action to limit the use of sprinklers and hoses. Such conditions have been linked to the periodic El Nino / La Nina episodes emanating within the Southern Pacific region, resulting at times in below average rainfall and consequent dry season water supply deficits. Such phenomenon can have negative impacts on the social and economic development of vulnerable SIDS like Trinidad and Tobago, if adequate preparedness and management measures are not introduced. It should be noted that the projections for global climate change and weather variability point to increased disaster management challenges. In Trinidad and Tobago, measures aimed at the prudent management of surface and groundwater resources; and watershed protection have been implemented to alleviate the severity of the impacts of adverse dry season conditions on the ability to maintain an adequate level of water supply.

Disaster management in Trinidad and Tobago falls within the National Disaster Management System (NDMS). This system is coordinated by the Office of Disaster Management and Preparedness (ODPM) within the Ministry of National Security. The ODPM coordinates the public and private sectors' preparedness for, mitigation against, response to and recovery from, potential disasters. The first responses to emergencies are the Fire, Protective and Emergency Health Services.

Progress Made in Implementation

A vital part of improving our disaster management capacity includes the institutional strengthening of the Office of Disaster Preparedness and Management (ODPM). As such, the ODPM continued to focus on developing meaningful partnerships with several agencies. In keeping with this focus, the ODPM provided training to various partners and relevant stakeholders in the areas of: Damage Assessment and Needs Analysis, Initial Damage Assessment, Shelter Management, Training for Instructors, Medical First Responder, Mass Casualty Management, Emergency Care and Treatment (ECAT), Incident Command Systems (ICS) and, Search and Rescue.

Additionally, priority was given to the development of a plan of action to ensure coordinated inter-agency collaboration for emergency and disaster management in light of the inadequacy in the availability and quality of water and electricity service especially in disaster response. In this regard, the utility companies continued work in order to upgrade and equip their Emergency Operating Centres (EOCs) to meet emergency demands and to facilitate rapid response and recovery after a disaster. Such initiatives included:

- Installation of standby generators to supply electricity to critical areas e.g. hospitals, wells, water treatment plants and areas prone to electricity system failure as a result of flooding or landslides
- Training selected personnel in emergency and disaster response
- Upgrading and equipping of main stores
- Procurement of emergency storage containers
- Drilling of high capacity wells
- Public education in the print and electronic media on the prevention, preparation and mitigation of disasters, response during and recovery after a disaster.

Moreover, in order to enhance the human resource and institutional capacity for accurate weather forecasting and early warnings of impending adverse weather conditions, emphasis continued to be placed on training of weather forecasters and meteorologists so that they would be able to use state-of-the-art equipment and systems that are now available at the Meteorological Services Division to enhance weather forecasting and storm tracking. Such equipment and systems include:

- TerraScan Satellite Receiving equipment which accesses high definition satellite images, and can provide every half an hour, environmental data over large expanses of ocean.
- SmartMet system which micro analyses general weather forecast and produces micro weather forecasts
- Doppler radar which was installed at Brasso Venado and could produce real-time coverage of weather events

Constraints and Challenges

Key constraints and challenges to implementation include:

- Complacency of the population that Trinidad and Tobago would not be impacted by a major natural disaster. The population has not faced a major natural disaster for a number of generations and do not make adequate preparations, for instance hurricane warnings and watches are ignored by the majority of the population
- The limited size of Trinidad and Tobago can result in the entire country being impacted by a single natural disaster. The country's existing institutions and overall capacity to prepare and respond to such disasters are insufficient making it difficult to recover from major disasters without international assistance. Examples of such vulnerability have been demonstrated by the impacts of Hurricane Ivan on the island of Grenada and the 2010 earthquake in Haiti
- Lack of knowledge by the population of the country's disaster management system especially the locations of emergency shelters and how to access emergency supplies
- The need to improve disaster management infrastructure such as upgrades to the network of emergency shelters and increasing the availability of emergency supplies
- Greater leadership and ownership of national programmes at the community level is required as well as enhancing community-based rural infrastructure programs which will serve as a mechanism to rehabilitate damaged community-level infrastructure, in order to organize and deliver timely and effective rescue, relief and other post-disaster assistance
- Lack of mainstreaming of disaster risk reduction and recovery, and climate change adaptation, into development planning
- Great attention needed to develop synergies between disaster risk reduction and climate change adaptation, as well as support for adaptation efforts which would build the foundations for sustainable adaptive capacity, particularly for the vulnerable groups.

3.3 Management of Wastes

Current Situation

Solid waste management problems have escalated in Trinidad and Tobago over the past few years as a result of interacting factors such as population growth, accelerated industrial development, increasing commercialism, unsustainable production, and consumption patterns. As one of the most diversified and industrialised economies in the English-speaking Caribbean, Trinidad and Tobago also generates a significant amount of hazardous waste. Despite the fact that the country generates a large amount of potentially hazardous waste, there is no dedicated hazardous waste landfill or disposal facility.

Most of the solid waste generated in Trinidad and Tobago is disposed at the country's landfills. There are three major public landfill sites in Trinidad: the Beetham, which serves the northwest region; the Guanapo which serves the Northeast Trinidad; and Forres Park which serves the central and southern regions and one public landfill site in Tobago located at Studley Park. It is estimated that an average of one kilogramme of waste is generated per capita per day, with a range from 0.55 kilogramme per capita per day in the rural areas to a 1.75 kilogramme per capita per day for a highly commercialised and industrialised area such as Port of Spain. There is little

or no regulation of the operations of the country's landfills. The three public landfills, all of which have passed the average 20-year lifespan recommended for operation of a landfill, operate at low level of efficiency and pose health and security risks to persons entering and operating within the facilities.

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 cooperation are responsible for collection of domestic waste within their individual municipality. The THA is responsible of waste collection and disposal on the island of Tobago.

For various administrative and technical reasons, the collection and haulage of solid waste in the municipalities is an inefficient and ineffective operation. Collection scheduling problems are the main resultant problem. Often residents are not informed of schedule changes or they themselves create problems when they put out their garbage at irregular intervals. In addition, all businesses have legal responsibilities for the waste they produce. However, these responsibilities are usually neglected, particularly in commercial sector. The municipal authorities are obligated to dispose of the waste of a commercial business within a limit. Beyond this weight it is the responsibility of businesses to dispose of their waste. However, businesses are known to neglect their responsibilities and put out large quantities of waste on the street at the end of the business day.

A major factor to the country's problems of solid waste management is the negative perception and hands-off attitude about waste by the citizenry. Waste is considered just that, waste - something to dispose of at the first chance provided. While there has been talk about recycling, the citizenry does not actually place value on waste. There is the general perception that waste is somebody else's business once it leaves the home or business compound.

Little attempt has been made to reduce amount of waste generated. 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. 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 conclusion, most of the disposal sites throughout the country are inadequate and inefficient. 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 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.

Progress Made in Implementation

Some of the key initiatives undertaken to address waste management issues since the ten (10) year assessment report on the SIDS POA include:

- strengthening of the legislative framework by the drafting of the Waste Management Rules under the Environmental Management Act. The rules were subjected to a public comment process and are currently being finalized by the EMA
- development of a municipal waste management policy
- acceding to the Rotterdam Convention on the Prior Informed consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade in November 2009. The Convention establishes a first line of defense by providing Trinidad and Tobago the tools and information necessary to identify potential hazards and exclude chemicals that it cannot manage safely
- completion of a hazardous waste inventory of the period 2003-2008 which provided information on the amount of hazardous waste generated in the country and the current mechanism for disposal. Such information is critical to development of appropriate policy, legislative and administrative framework for the environmentally sound management of hazardous waste
- completion of an assessment of the Municipal Waste Collection System in Trinidad and Tobago
- the approval by Secretariat of the Strategic Approach to International Chemicals Management (SAICM) for grant funding under the Quick Start Programme Trust Fund for a project aimed at strengthening the capacity of SIDS in the Caribbean in implementing their obligations under the Basel Convention. The twelve (12) month project is to be undertaken in Trinidad and Tobago, as a pilot country to design model legislation aimed at strengthening 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
- the singing of a project document with the UNDP to assess GEF fund to develop within two (2) years a National Implementation Plan for the Stockholm Convention
- the singing of a Memorandum of Understanding with the Province of Nova Scotia to assist the Government of Trinidad and Tobago with the development and implementation of an integrated Solid Waste/Resource Management System
- the singing of a Framework Agreement with the Basel Convention Secretariat and enactment of enabling legislation for the establishment of the Caribbean Basel Regional Center for Technology Transfer and Training

Constraints and Challenges

Key constraints and challenges to implementation include:

- Changing behavior patterns and attitudes about waste is very challenging. Attitudinal change requires sustained educational effort before it will take effect

- Waste management affects many public and private sector organisations. Achieving consensus on how to move forward is difficult
- Instituting a new waste/ resource management system requires sustained effort. Maintaining budgets and the involvement of all stakeholders has been a challenge
- There exist a challenge of slow implementation of waste initiatives and a poor legal framework for legislative support
- The major challenge is to bring waste disposal in Trinidad and Tobago into the modern era and in so doing ensure the proper closure of two existing landfills that are environmentally poorly located
- 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 lack of a dedicated hazardous waste disposal facility
- The inability to establish the Regional Steering Committee for the Caribbean Regional Center for Technology Transfer and Training

3.4 Coastal and Marine Resources

Current Situation

The coastal and marine areas of the Trinidad and Tobago contain a rich biological diversity with a variety of ecosystems that are highly productive contributing to the socio-economic development of the country by supporting a striving local fisheries industry which positively impacts on the country's food security. The pristine and scenic nature of some coastal and marine areas especially beaches and coral reefs provide recreational opportunities to the citizenry and livelihood opportunities for tourism entrepreneurs. The integrity of costal wetlands also contributes to the recharge of fresh water aquifers and coastal defence. It is therefore critical that coastal and marine ecosystems are protected and managed sustainably.

Costal and marine ecosystems are also of significant regional and global importance, in particular, mangroves, coastal swamps and coral reefs. They also support locally and globally endangered species such as the leatherback turtle, anaconda, West Indian Manatee, parrots and macaws. The Nariva Swamp, Caroni Swamp and Buccoo Reef/Bon Accord Lagoon Complex have been designated as Ramsar sites. A number of these sites have been identified for global and regional priority and are considered among the "Global 200" list of top global priority eco-regions by the World Wildlife Fund (WWF).

The coast and marine areas of Trinidad and Tobago has been negatively impacted by marine pollution, overharvesting of marine resources and illegal removal of coastal vegetation particularly mangroves. Environmental problems include coastal eutrophication due to inappropriate sewerage treatment, contamination arising from agricultural pollutants, inappropriate coastal development, sand-mining along beaches, heavy contamination from industries and sea vessels, over-fishing, degradation of coastal zone and marine species, including mangrove systems and coral reefs. These impacts have been compounded, in recent years by coastal erosion. Erosion along the north and northeast sea coast has not been associated with coastal development principally because there are no industrial activities, and the residential

use of the back beach is considered benign. However, erosion over the years has been quite noticeable and has been attributed as part of the long term natural processes.

On the south coast and the west coast, erosion is seen as consequential to the activities of the oil and gas companies. From Manzanilla on the south-east coast to Moruga, there has been erosion over the years but there has been an acceleration of erosion during the last 20 to 30 years. Headlands have been eroded and individual and family property has been lost in some places at the rate of roughly one metre per year. Erosion along Trinidad's southwest and south coasts has prompted the construction of coastal protection measures by both the State and private entities in Manzanilla, Guayaguayare, Fanny Bay and Clifton Hill Beach, Point Fortin.

Progress Made in Implementation

Some of the key initiatives undertaken to address coastal and marine areas issues since the ten (10) year assessment report on the SIDS POA include:

- Increased opportunities for researchers and scientists were provided under the research programme of the Institute of Marine Affairs (IMA). These include the Environmental Research Programme (ERP) and the Fisheries and Aquaculture Research Programme (FARP). Under these two primary research programme the IMA has been conducting research into a number of areas including monitoring coastal conservation, assessing coral reefs in Tobago and fish studies on the tilapia and other species. The Marine Chemistry Department of the IMA has been engaged in a number of long-term monitoring projects on bacteriological water quality and water pollutants.
- Development of a National Programme of Action (NPA) for Trinidad and Tobago for the Protection of the Marine Environment from Land-based Activities. The main purpose of the NPA, is the development of a sustainable, pragmatic and integrated environmental management approaches and processes, such as integrated coastal area management, harmonized, as appropriate, with river basin management and land-use plans. In essence, the implementation of the NPA will ensure the integrity of coastal and marine resources and their sustainable use.
- Amendments to the Shipping (Marine Pollution) Bill of 2004 to the control and manage ship's Ballast Water and Sediments and the control of harmful Antifouling Systems on ships.
- Signing of a Caribbean Sea Large Marine Ecosystem Project with the UNDP in order to access grant funding from the GEF to strengthening and improve the fisheries policy and legislative framework of the country and to harmonize the fisheries regulatory, monitoring and surveillance framework throughout the region to ensure the sustainable management of living marine resources of the Caribbean Sea.
- Review of progress on CARIFIS implementation and determination of fisheries and related information required for decision-making and fisheries management.
- Establishment of a monitoring and surveillance unit for fisheries
- Revision of the Fisheries Policy
- Development of a policy for aquaculture
- Collection of fisheries data and updating of the fisheries database
- Revision of fisheries legislation

- Review and update of fisheries resource management systems and regulations
- Research and training related to management of coral reefs and inshore fisheries
- Restoration of habitats at Buccoo Reef Marine Park.

Constraints and Challenges

Key constraints and challenges to implementation include:

- Inadequate awareness and appreciation of the value of marine biodiversity/ecosystems and its importance to the sustainable development of Trinidad and Tobago
- Inadequate implementation and enforcement of policies and legislation, particularly for endangered species, such as the leather back turtle.
- Inadequate baseline data required to make informed decision.
- Insufficient use of financial incentives for the conservation of coastal and marine resources.
- Weak institutional support for the management of these resources resulting in gaps in the implementation of the policy and legal framework and poor communication and co-operation within and among agencies
- Absence of proper methodologies and systems for valuation and environmental accounting of these resources.
- Limited capabilities to manage and respond to marine pollution, hazardous waste, solid waste, sewerage and other land-based sources of pollution which impact negatively on coastal and marine resources requires attention;
- Unsustainable fishing particularly when taken before they are fully mature especially species that do not have a very fast growth rate, e.g. lobster, conch, grouper;
- Poor reef conduct/etiquette- recreational activities such as snorkeling or diving resulting in negative impacts on reefs or spread of disease;
- Threats from invasive species

3.5 Freshwater Resources

Current Situation

Management of the freshwater resources is a critical to the sustainable development of Trinidad and Tobago. Natural availability of the country's freshwater supply is affected by the occurrence and distribution of rainfall and the occurrence, movement and quality of surface water and groundwater.

The per capita water availability in Trinidad and Tobago is approximately 2,500 cubic metres per year. It is internationally accepted that countries/regions, which have an annual per capita water availability level of 1,000 cubic metres and lower, experience chronic water scarcity, which could hamper economic development and human health and well-being. Thus, by international standards, Trinidad and Tobago is not a water scarce country. However, surface water availability which is the major source of water is strongly influenced by seasonal and spatial variations.

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 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 available surface water in Trinidad is estimated at 3,600 million cubic metres per year. For the year 2000, water demand was estimated to be 336 million cubic metres, 10 times less than the available surface water. In 2000, water supply totalled 300 million cubic metres. This means that there was an 11 per cent (36 million cubic metres) deficit in 2000. Such deficit is worsened during severe dry seasons when surface water flows are at their lowest, adversely affecting the reliability of raw water supply.

The country's groundwater potential is estimated at 611 million cubic metres per year (545 million cubic metres per year for Trinidad and 66 million cubic metres for Tobago). Groundwater abstraction for 2000 was 82 million cubic metres per year (77 million cubic metres per year for Trinidad and four million cubic metres for Tobago).

Annual surface water and ground water availability for Tobago have been calculated at 140 million cubic metres and 65 million cubic metres, 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 three per cent of demand. Unaccounted-for-water comprises 40 per cent of water demand.

Water pollution is an area of major concern given the increasing development thrust of our nation. The discharge of effluents from our 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.

Progress Made in Implementation

Some of the key initiatives undertaken to address freshwater resources issues since the ten (10) year assessment report on the SIDS POA include:

- implementation of the water pollution rules which is aimed at reducing both the volume and concentration of pollutants discharged into watercourse and thereby improve the quality of water. A registration system has been established to create an inventory of water polluters. The water pollution rules covers industrial and mining activities,

commercial service facilities of all kinds, farming and related agricultural enterprises, 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 the nation's receiving 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 sensitize 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 five large 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 a 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
- implementation of Sludge Management at Beetham Wastewater Treatment Plant to improve the quality of sludge being discharged from the Beetham Wastewater Treatment Plant

Constraints and Challenges

Key constraints and challenges to implementation include:

- the need to undertake complex and/ or multiple water projects in order to produce a sustainable water supply
- land tenure issues
- the multitude of agencies and institutions involved in the water sector and in the execution of water resources management functions.
- the need to upgrade the legislative framework to give effect to integrated water resources management, the implementation of which is necessary to guarantee water security

- deterioration of watersheds as a result of forest fires, indiscriminate quarrying, slash and burn agriculture and other inappropriate land-use practices have impacted negatively on the country's water resources

3.6 Land Resources

Current Situation

Trinidad and Tobago is endowed with a diverse land resource base compared to other Small Island States (SIDS) of similar size. 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 forest 248,000 hectares of which 77 per cent is State-owned. Built development accounts for approximately 15 per cent of the country's total land area. The recent closure of Caroni (1975) Limited has had serious implication for agricultural land use and development since the company owned and controlled more than 30,000 hectares of the country's agricultural lands. Since its closure, all lands owned by Caroni have been vested in the State and are being managed by the Estate Management and Business Development Company Limited (EMBD). Most of the agricultural lands are currently being sub-divided for distribution to over 7,000 former Caroni workers. Sub-division of these lands into two acres and fifty acre parcels would have serious implications for future use and management. Care must be taken to ensure that these lands are managed sustainably and are used for agricultural purposes.

Land tenure in Trinidad and Tobago includes freehold, leasehold on private or State land and rented on private or State land, squatting on State or private land, and occupation of 'family land'. About 52 per cent of all lands are owned by the State in 86,000 parcels, while private lands make up the remaining 48 per cent on 334,000 parcels. Leasehold tenure on State lands provides lower income individuals an opportunity to own land. The State leases lands for residential, agricultural, commercial, religious or community purposes.

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. Moreover, extreme climatic events and other natural disasters particularly tropical storms and landslides, have impacted adversely on the land resources of certain regions of the country (for example, North Coast of Trinidad and Windward Tobago) to such an extent that corrective measures must be taken for recovery of the region's economies.

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 6, 2000, provides a suitable framework within which Trinidad and Tobago could tackle land degradation and implement solutions to promote sustainable management and wise use of land resources. The implementation of the UNCCD is expected to strengthen the prevention and correction of land degradation and enhance the framework for sustainable management and wise use of land resources.

Progress Made in Implementation

Some of the key initiatives undertaken to address land resources issues since the ten (10) year assessment report on the SIDS POA include:

- Adoption of a National Action Programme to Combat Land Degradation in Trinidad and Tobago (NAP) which is an integrated framework for mitigating the physical, biological and socio-economic impacts of land degradation;
- Provision of US$250,00 to the UNCCD Secretariat towards the implementation of the Caribbean Youth Environment Programme which provides for the development of different initiatives, including dissemination of information and awareness raising of environmental problems caused by the processes of land degradation;
- Finalization of a Medium Sized Project under the Least Developed Countries – Small Island Developing States Portfolio Project for Sustainable Land Management to access grant funding from the GEF which would be used to strengthen the institutional and human resource capacity of the country to improve sustainable land management planning and implementation through the strengthen of the policy, regulatory and economic incentive framework to facilitate maintaining and improving ecosystem stability, integrity, functions and services while enhancing sustainable livelihoods;
- Increasing the acreage of land under agricultural production through the establishment of mega-farms and increasing the number and support of persons involved in food production;

- Streamlining institutional arrangements to better foster and coordinate the financing, production and marketing arrangements that are key for a competitive agricultural sector
- Upgrade and expand the agricultural road network
- Improvement of drainage and irrigation infrastructure including river and, road realignment and bridge construction to reduce the frequency and severity of flooding and erosion, and to alleviate salt water intrusion in agricultural areas.
- Regularization of the land tenure of the former sugar cane employees of Caroni Ltd.
- Distribution of agricultural plots not allocated to former Caroni workers to graduates of the University of the West Indies (UWI), the Eastern Caribbean Institute of Agriculture and Forestry (ECIAF) and graduates of the Youth Apprenticeship Programme in Agriculture (YAPPA) in a drive to increase food production.=
- Increasing agribusiness development activities under the Agricultural Sector Reform Programme-Technical Assistance Programme;
- Enhancement of seed production of key land races;
- Adoption of Good Agricultural Practices consistent with EUROGAP guidelines;
- Improvement of food processing, product development and quality control systems through the National Agricultural Marketing Development Company (NAMDEVCO) in collaboration with Caribbean Agricultural Research and Development Institute (CARDI) and Caribbean Industrial Research Institute (CARIRI);
- Initiating relevant research and development of priority crops including: cocoa, selected vegetables, fruits and root crops and eestablishment of a commodity specialist groups;
- Establishment of the Aquaculture Industry Committee, run by the private sector to foster commodity development;
- Obtaining ISO 14,000 certification (Environmental Management System) of the state owned National Quarries Company Limited.
- Conducting awareness building and education related to agricultural development, forests, and other natural resources;
- Increasing support for traditional small and medium size private farms through soft loan facilities, expanded extension services and a comprehensive program of training for farmers.
- Revision of the agricultural incentive programme to strengthen land tenure, control praedial larceny, access to credit and facilitate insurance against losses;
- Development of micro-irrigation systems
- Continuing efforts to regularize squatting
- Initiated steps to develop an updated National Physical Development Plan
- Development of draft quarry policy and strengthening of mechanisms to address illegal quarrying

Constraints and Challenges

Key constraints and challenges to implementation include:

- insufficient or limited institutional capacity to safeguard against unsustainable practices and behaviours environmental degradation follows

- lack of alignment of legislation with the country's principles of environmental sustainability
- lack of inter-institutional collaboration as well as the effective implementation by state agencies involved in sustainable land management
- multiple agencies and legislation relating to land management. The natural resources and environment of Trinidad and Tobago are governed by some 40 pieces of legislation and managed by about 28 state agencies
- national legislative frameworks for various aspects of the land management system are too weak and the penalties for non-compliance are not stringent enough to act as deterrents
- absence of baseline data and the lack of appropriate ecological monitoring
- lack of impact monitoring during the construction, and operation of large development projects
- insufficient resources available to ensure continuity and to maintain the integrity of monitoring programmes, including the availability of technical expertise, and adequate information management systems

3.7 Energy Resources

Current Situation

Economic development of Trinidad and Tobago is based primarily on petroleum and petrochemical sector. As one of the most vibrant economies in the Caribbean, the economy of Trinidad and Tobago remains strong driven, in part, by LNG expansion. The country has a long history with oil production with the first oil well being drilled in Trinidad in 1866 and commercial production commencing in 1908. Up to the early 1950's production was confined to reservoirs under the land area. Exploitation of fields in the Gulf of Paria began in the 1950's and the fields off the east coast were discovered in 1968. Today, programmes for secondary recovery from land operations have been initiated to extract formerly uneconomic deposits. At current rates of production known reserves of petroleum are expected to last to 2017.

While the first energy boom was based on the country's oil reserves, at present the economy, which is driven by its offshore natural gas reserves, is experiencing a second energy boom. Trinidad and Tobago is experiencing a transition from an oil-based economy to a natural gas based economy. Apart from the recent increases in crude oil prices, the recent discovery of major offshore oil and gas fields has bolstered the current and future economic prospects.

The country's energy sector has allowed for the development of energy intensive industries, including a range of petrochemicals, including ammonia, methanol, urea and natural gas. Trinidad and Tobago ranks amongst the top five liquefied natural gas (LNG) producers in the world, 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.

The Trinidad and Tobago is not dependent on or vulnerable to supplies of external energy sources. The Government is however cognizant that of the economic vulnerability of its dependence on an non-renewable resources and beside initiatives at diversifying the economy, it is also creating a facilitative environment for the development of alternative energy projects including renewable energy projects which is consistent with its policy stance on reducing carbon dioxide emissions into the atmosphere. In this regard, the Government welcomes projects which utilize carbon dioxide in their production processes or minimize its release into the atmosphere.

Progress Made in Implementation

Some of the key initiatives undertaken to address energy resources issues since the ten (10) year assessment report on the SIDS POA include:

- Investing in research and development by the private and public sectors to facilitate the creation of new and creative ideas and industries within the energy sector. In this regard, the University of Trinidad and Tobago (UTT) has partnered with the Natural Gas Institute of the Americas and British Petroleum of Trinidad and Tobago (BPTT) in the pursuit of a robust research programme in the areas of Natural Gas and Energy. Additionally, the UTT and the University of the West Indies (UWI) are collaboration on research on Renewable Energy
- Increasing power generation efficiency, through conversion from Simple Cycle Gas Turbine and Stream Plants to Combined Cycle Generating Units resulting in a decrease in natural gas consumption and generate revenue savings. Currently, existing generation plants are predominantly gas turbines (GTs) and gas fired boiler steam turbines (STs) with a thermal efficiency averaging 25%. However, the proposed conversion will use high efficiency generation (over 40%)
- Establishment of a Renewable Energy Committee to formulate a Green Paper (Renewable Energy Policy) which is intended to foster renewable energy development, educate the national community and promote widespread recognition and acceptance of the opportunities for renewable energy development
- Investigation of the feasibility of a photovoltaic manufacturing industry
- Implementation of a Pilot Solar Water Heater project for the hospitality industry, which is a joint venture among state institutions and private enterprises. Solar heating systems were installed in bed and breakfast homes both in Trinidad and in Tobago through the United nations Development Programme, Global Environmental Facility/Small Grants Programme (GEF/SGP)
- Investigation by Methanol Holdings Trinidad Limited the use of methanol as a fuel for power generation. The project demonstrates the country's capability to enter the elite domain of creation and innovation of new technology and systems
- Modernization of retail gas service stations nationwide to ensure safe and reliable service through tank replacements and storage capacity enhancement; and installation of modern underground storage facilities
- Participation in regional partnerships aimed at energy efficiency through the implementation of a Regional Energy Policy
- Establishment of a Policy Task Force in 2006, with the following objectives:

- Produce bulk electricity in Trinidad and Tobago, and sell to Grenada and St. Vincent and the Grenadines
- Supply natural gas via a pipeline to Barbados, the French West Indies, with a take-off to LUCELEC
- Supply compressed natural gas to Jamaica, using existing tankers, at a negotiated contract price
- Collective purchasing of crude from Venezuela for refining at Petrotrin and product sold at a discount

- Participation in the Caribbean Renewable Energy Development Programme (CREDP)

Constraints and Challenges

Key constraints and challenges to implementation include:

- Limited experience in the adoption of new approaches to energy supply due to the challenge of the country's "net exporter" status

- Cost, availability and limited capacity to deploy renewable energy technologies in a cost effective and sustainable manner
- The need for the amendment of legislation to permit and encourage the use of renewable energy technologies
- The current low cost of electricity and the lack of incentives to develop or adopt new renewable alternatives, combined with the relatively high costs of solar panels and wind turbines restrict their use

3.8 Tourism Resources

Current Situation

Over the past years the Government of Trinidad and Tobago has placed emphasis on the development of the tourism sector given its potential to make a significant contribution to the socio-economic development of the country and as a means to diversity the economy from its dependence on the petroleum sector. Indeed the sector has been growing, and particularly in Tobago where it is the lead sector in terms of income and revenue generation, employment creation and foreign exchange earnings.

In order for the tourism industry to flourish there was need to create a sustainable tourism sector. One of the first steps was to identify the natural resources that can be used to attract the tourist and then to develop such resources in order to make them competitive on the international market. The next step was to create effective promotion and marketing skills in the major consuming centers of the world.

Trinidad and Tobago comprises a large biodiversity of exotic flora and fauna ranging from rainforest and mangrove forest to freshwater swamps and coral reefs as well as mammals such as the endangered manatee and the red and blue macaw. Tourists have an interest in these types of eco-tourism attractions. Consequently, the aim is to promote the islands as ecotourism centers

based on their rich biodiversity, and in particular the pristine conditions of their reefs, forests, flora and fauna. The development of this form of tourism depends on creating an almost pristine natural environment for the tourist which contributes to the maintenance of the environmental integrity of country.

The two islands, Trinidad and Tobago, compliment each other. Trinidad has the excitement and activity of Carnival, the flora and fauna, the historical and cultural attractions, while Tobago, one of the Caribbean's most unspoilt islands, offers the peace, tranquility, beautiful beaches, coral reefs and a Heritage Festival. Tobago is also enriched with history and many of the tourist sites are indicative of the presence of the Spaniards, French and British who occupied the island at some time in the past.

In order to enhance and promote the sustainable development of the tourism sector, the Government has:

- Improved the deep water harbour for the entry of cruise ships in Scarborough
- Extended the Crown Point Runway to accommodate wide-bodied aircraft
- Established a Cruise Ship Complex on Wrightson Road, Port of Spain
- Constructed a new terminal building at the Piarco International Airport in Trinidad
- Developed a Tourism Master Plan

Major developments in the tourism sector e.g. large hotels and golf courses can potentially have adverse effects on the environment. For instance removal of a large percentage of vegetative cover will lend to flooding, soil erosion, destruction of habitat and poor aquifer recharge. Therefore, policies have to be developed to monitor any such activity and the potential effects that they might have.

Tourism development is becoming increasingly important but is impacted by international and regional factors, including economic swings, terrorism and increasingly discerning and demanding consumers, destination competitiveness, and efficient airlift capacity. The Republic of Trinidad and Tobago has adopted an integrated approach for the sustainable development of the tourism industry which is being developed using a participatory approach between communities, the public and the private sectors.

Progress Made in Implementation

Some of the key initiatives undertaken to address tourism resources issues since the ten (10) year assessment report on the SIDS POA include:

- Revision of the Tourism Policy, which includes elements on community-based tourism and policy monitoring and evaluations system;
- Visitor perception survey for three beaches;
- Undertaking capacity building for staff in areas related to sustainable tourism, including multi-hazard contingency planning, anti-terrorism initiatives, standards, and certification systems;
- Convening of disaster and crisis communications workshops targeting key stakeholders;

- Production of a crisis communications manual for the tourism/hospitality sectors;
- Redesign of Maracas Beach facilities which included upgrade of lifeguard services and other beach facilities;
- Conduct of carrying capacity surveys for the North East coastal areas;
- Adoption of policies and regulations concerning land-use and environmental management and conservation practices;
- Promotion of the implementation of environmental management systems such as Green Globe and Blue Flag Certification for tourism/hospitality related operations;
- Implementation of Safer Sands pilot project at Las Cuevas beach;
- Establishment of a Standing Committee on Tourism to facilitate integrated planning and decision making;
- Provision of technical assistance to Local Government agencies to assist with the development of tourist attractions in selected communities;
- Undertaking capacity building initiatives to support community-based tourism through the involvement of the Business Development Company.

Constraints and Challenges

Key constraints and challenges to implementation include:

- Consistent and timely support from other government agencies and organizations for impact monitoring and other tourism activities;
- Difficulty in enforcing recommendations of carrying capacity studies;
- Resolution of user conflicts. e.g. use of beaches for commercial fishing vs. recreation;
- Accessing the required amount and type of resources (technical, financial and other) to promote tourism development and increase global competitiveness in a sustainable manner;
- Ensuring that the tourism sector is given greater priority on the national agenda as part of the country's economic diversification thrust;
- Working with communities that want to participate in community-based tourism but lack basic needs (infrastructure, utilities, education etc.) as well as the leadership, skills and tools for developing, managing and implementing plans and projects.
- Little control over exogenous shocks which can negatively impact the sector and includes practices of unsustainable nature which can damage or even destroy the environment that attracts tourists
- Mechanisms to develop synergies with other sectors such as biodiversity and agriculture and appropriate measures to protect traditional knowledge and practices;
- Staff shortages or high staff turnover in many of the guest houses and hotels

3.9 Biodiversity Resources

Current Situation

Trinidad and Tobago, has a high biological diversity to surface area ratio due to its small size, location, and geological relationship shared with the South American continent. The range of terrestrial ecosystems include evergreen seasonal, semi-evergreen seasonal, deciduous seasonal, littoral woodlands, lower montane rainforests, seasonal montane forests, montane rainforests, elfin woodlands, swamp forests (including mangrove woodlands), palm swamps, marshes and savannahs. These support approximately 2160 species of flowering plants, 110 of which are endemic; 420 species of birds; 100 mammals; 55 snakes; 25 amphibians and 85 reptiles. Marine systems include the water masses; mud bottoms; coral reefs and communities; sandy bottoms; rocky shores, sea grass beds and mud flats. These support a range of macro and microbiota including a large array of commercially import fish species and 36 species of reef building corals.

The islands' biological resources are of great importance to all sectors of Trinidad and Tobago society playing a critical role at both national and local levels, mainly through agriculture, fishing, recreation, tourism and culture. Rural communities depend upon a variety of wild flora and fauna for their existence through hunting, fishing, craft, tour guiding and other nature-based activities. Activities such as nature tours to the Caroni Bird Sanctuaries, forest trails, marine turtles nesting sites and coral reefs in Tobago generate revenue for individuals and communities associated with these features. Trinidad five terrestrial species of game animals also support a hunting industry worth hundreds of thousands of dollars annually. The country's wildlife fauna and flora are also prized in the lucrative international pet (particularly tropical fish, reptiles and birds) and horticultural markets.

In recent years, growing population pressures, industrialization and unsustainable utilization of the country's biological resources have resulted in the significant deterioration of the natural environment. The Food and Agriculture Organization (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 integrity and resiliency. The National Biological Diversity Strategy and Action Plan which was completed in 2002 and was intended to guide local planning and activities related to ecosystem and species management. The supporting existing policy, regulatory and administrative framework for management of the natural ecosystems and other forms of biodiversity of Trinidad and Tobago, however, have failed to provide for the proper management, conservation and protection of the country's biological heritage. Moreover, the increasing utilization of the remaining natural areas for recreation, non-traditional economic activities such as ecotourism, as well as for traditional uses such as hunting and collection of non-wood forest products (for handicaft and traditional medicines), predicates the need to develop mechanism to ensure the conservation of the country's biodiversity resources to ensure that it continues to contribute to the sustainable development of the country.

Progress Made in Implementation

Some of the key initiatives undertaken to address waste management issues since the ten (10) year assessment report on the SIDS POA include:

- Revision of the 1942 National Forest Policy
- Development of a National Protected Areas Policy
- Implementation of a Forest Regeneration Programme to monitor and protect forests and wildlife. This programme targeted state-owned forested lands that were degraded as well as commercial timber plantations that were harvested
- Implementation of a Reafforestation of Denuded Northern Range Hillsides Project
- Implementation of a Community Based Forestry and Agro-Forestry Project which targeted sensitization and awareness training and the production of seedlings
- Initiation of an assessment of the wildlife resources in game sanctuaries and forest reserves, under a Sustainable Management of the Wildlife Resources in Trinidad and Tobago Project which is expected to be completed by 2011
- Initiation of a biodiversity monitoring system for Trinidad and Tobago to evaluate animal and plant species which are under threat
- Declaration of Environmentally Sensitive Species. In 2005, the Manatee, the Trinidad Piping Gwan (PAWI) and the White-tailed Sabrewinged Hummingbird were declared environmentally sensitive species. Action has been initiated to declare the ocelot and the golden tree frog as environmentally sensitive
- Declaration of Environmentally Sensitive Areas. To date the Matura Forest, Aripo Savannahs and the Nariva Swamp have been declared environmentally sensitive. Action has been initiated to declare the Buccoo Reef and Main Ridge Forestry Reserve as environmentally sensitive
- Conduct of public education and awareness campaigns on the Manatee and the conservation of the Matura Forest
- Establishment of Stakeholder Management Committees to manage the Buccoo Reef, Matura Forest and Aripo Savannahs Environmentally Sensitive Areas. These Management Committees comprise community representatives, Non-Governmental Organisations (NGOs), Community Based Organisations (CBOs) and other stakeholders
- Incorporation of biodiversity considerations into Terms of Reference of Environmental Impact Assessments under the Certificates of Environmental Clearance process for development projects/activities in the country
- Preparation of Strategic and Business Plans for the Forestry Division using participatory approach;
- Development of a Forestry Information Exhibition Centre;
- Strengthening community involvement in managing natural forest, fire protection and turtle protection;
- Training of community groups in aspects of natural resources management

Constraints and Challenges

Key constraints and challenges to implementation include:

- Biodiversity issue not fully integrated into sectoral policies due to insufficient awareness among some decision makers and constraints of the policy cycle;
- Weak individual, institutional and systemic capacities in the management of protected areas;
- Multitude of agencies involved in biodiversity management;
- Inadequate trained personnel for all aspects of biodiversity management;
- Difficulty in accessing or sharing of data among government and other agencies;
- Inadequate policy, administrative and legislation framework;
- Slow decision making process, especially in the context of approval of policies or plans and acquisition of resources for action

3.10 Transportation and Communication

Current Situation

Transport and communication systems are critical to the sustainable development of SIDS including Trinidad and Tobago. An efficient and reliable transportation and communication system impacts on every aspect of the economy as it provides a vital link to external markets through the trade in goods and commodities required for the future growth and sustainability of the agriculture, manufacturing and petrochemical sector. Such services are also a key to the growth of the tourism industry and provides access to goods and commodities not manufactured in the country particularly pharmaceuticals; medical supplies and equipment, agricultural supplies and equipment.

Trinidad and Tobago has two (2) international airports. The Piarco International Airport which is located on the island of Trinidad has a 3,600- meter runway which can accommodate large wide body commercial aircraft. Piarco which was voted in the 2006 World Travel Awards as the Caribbean's leading airport, serves more than three million passengers and about 64,000 arrivals each year. The airport operates from one passenger terminal that encompasses three concourses and 14 gates. The Piarco airport features extensive amenities including travelers access to free wireless Internet throughout the check-in, departure and customs areas. The airport serves as a hub for flights to destinations through the United States, Canada, United Kingdom, South America and the Caribbean. The other international airport is the Crown Point International Airport located on the island of Tobago which offers approximately 60 flights per week to destinations throughout Europe and the Caribbean. The airport also serves as a point of access between the two islands operating numerous flights with Caribbean Airlines offering 12 direct flights daily between Piarco and Crown Point.

There are nine major ports in Trinidad and Tobago. These include ports located at Port of Spain, San Fernando, Point Lisas, Pointe-à-Pierre, Chaguaramas, Point Fortin, Brighton, Tembladora, and Scarborough. The central shipping location for the nation is at Port-of-Spain. Port- of-Spain's modern facilities included advanced handling equipment, extensive warehousing, ancillary

sheds, refrigeration areas, bunkering, and freshwater facilities. The Prot of Spain port also services as the hub for cruise ships and the water taxi service between the cities of Port of Spain and San Fernando. The Point Lisas port specializes industrial shipping including fertilizers, chemicals, petrochemicals, and sugar. Pointe-à-Pierre and Chaguaramas were ports of entry, and the latter also served as a timber and bauxite transshipment site. Point Fortin handled primarily oceangoing oil tankers, Brighton served the asphalt industry, and Tembladora is a privately owned port used as a transshipment point for Guyanese and Surinamese bauxite. Numerous shipping companies make port calls to the country, and Trinidad and Tobago was a member of the regional West Indies Shipping Corporation.

The topography of the islands places constraints on Trinidad and Tobago's road system with roads being mostly confined to the foothills of the mountain ranges, the plains and along the coast. In Trinidad, there are two major dual carriage way highway running north-south and east-west. In Tobago, one major loop road existed from Scarborough to Roxborough to Plymouth, with one major offshoot to the Crown Point Airport on the southwestern tip of the island. The two islands contained more than 8,000 kilometers of roads, of which roughly half is paved with locally produced asphalt. Most of the approximate 4,000 kilometers of unpaved roads are mostly agricultural access roads.

The country has a public bus service operated by the Public Transport Service Corporation which operates 78 routes among the major cities, boroughs and towns of the country. The current fleet included 137 buses in Trinidad and 33 buses in Tobago. Trinidad’s main bus terminal is at City Gate in South Quay, Port of Spain. Tobago’s daily bus service operates form the island’s main bus terminal at Sangster’s Hill in Sacarborough. Route taxis and maxi taxis (minibuses) which are privately owned also operate across both islands. Maxi taxis can accommodate 12 to 24 travelers and operate on set routes but do not operate on a timetable.

Unlike most developing countries where public transportation systems dominate, private automobile is the preferred means of transportation in Trinidad and Tobago. It is estimated that Trinidad and Tobago possessed one of the highest number of automobiles per capita in the Western Hemisphere, a result of cheap, subsidized gasoline; low employment rates and the vibrant economy. This development has placed a burden on the country's road infrastructure which did not keep pace with the growth in automobile population which has contributed to the high rates of traffic congestion. In order to address this problem the Government is upgrading the bus fleet; improving the road network through the construction of new highways and interchanges; determining the feasibility of introducing a rapid rail system and introduced water taxi services between the cities of Port of Spain and San Fernando.

Trinidad and Tobago has a rather sophisticated communications system. As at 2006, the two islands had 325,500 installed telephones, or about 310 phones per 1,000 people. There are also about one million mobile pones in use in the country which represents 962.4 cellular subscribers per 1,000 people. There are over 163,000 internet users representing 155.6 internet users per 1,000 people. The country’s fixed line telephone service is dominated by the state owned Telecommunications Services of Trinidad and Tobago Limited (TSTT) with Columbus Communications Columbus Communications (Flow) offering limited fixed line services to it digital

cable television subscribers. Mobile telephone services are provided by TSTT and Digicel. There is excellent local and international service, including direct dialing via submarine cable systems providing connectivity to US and parts of the Caribbean and South America; as well as tropospheric links and an Intelsat Atlantic Ocean satellite station.

The country's mass media included six (6) television stations, two (2) cable television operators, over twenty (20) radio stations and three (3) daily newspapers and two (2) weeklies. The government operates the Caribbean New Media Group that operates three (3) radio stations: Sweet 100.1, Next 99.1 and Talk City 91.1, as well as a television station CNMG-TV. Television sets are common numbering over 300,000. There were an estimated over 350,000 radios in Trinidad and Tobago. The country's high literacy rate allowed the printed media to hold an important role in the dissemination of information. Trinidad and Tobago had the highest per capita consumption of newsprint in the Caribbean. The country's three major newspapers enjoyed a daily circulation of over 240,000. The Trinidad Guardian and the Trinidad and Tobago Express were responsible for two-thirds of that total. Established in 1917, the Trinidad Guardian was the oldest newspaper on the two islands and played an influential role throughout the twentieth century. The Trinidad and Tobago Express, established in 1967, came to usurp some of the readership of the Trinidad Guardian.

Progress Made in Implementation

Some of the key initiatives undertaken to address energy resources issues since the ten (10) year assessment report on the SIDS POA include:

- Improvement of the inter-island sea transport between the islands of Trinidad and Tobago with the introduction of a high speed ferry service
- Introduction of a Water Taxi Service between the cities of Port of Spain and San Fernando in an effort to alleviate traffic congestion on the road network, and decrease emissions
- Improvement of the bus service through the upgrade of the bus fleet which has allowed introduction of bus service to new areas of the country especially rural communities and increased the efficiency of schedules
- Introduction of school bus service that provides students with adequate, safe and reliable transportation to and from school
- Improvement of the road and highway infrastructure which includes the construction of interchanges at the intersection of the Churchill Roosevelt and Uriah Butler Highways, Aranguez, and El Socorro; widening of Wrightson Road; construction of highways San Fernando to Point Fortin, San Fernando to Mayaro, Arima to Sangre Grande; construction of a causeway from Diego Martin to Chaguramas
- Improvement of the Inter-island and Regional Air Transport by Caribbean Airlines Limited which has allowed the increase of its services by the introduction of different routings to facilitate connectivity both between Trinidad and Tobago and regional connections
- The Telecommunication Services of Trinidad and Tobago (TSTT) has upgraded its obsolete copper plants in East and South Trinidad and in Tobago to fibre optics to enhance existing services and also provide new services. This includes faster internet

connectivity to homes and businesses, video conferencing, security services and Internet Protocol Television (IPTV and will also facilitate the implementation of Closed Circuit Television Technology throughout the country;

- Increase of international and regional connectivity and bandwidth service. This transformation will also provide citizens with equal access to cutting edge technology including easy access to Government e-services. The technology will also provide improved e-security and connectivity service through mobile telephones, laptops and television;
- Removal of the monopoly on communications resulting in expansion of the mobile telephone network, cost reduction in mobile telephone service, allocation of new bandwidths for potential telecommunications service providers, increase in the availability of broadband wireless internet access;
- Improvement of access to the Telecommunications Authority of Trinidad and Tobago's Consumer Complaint Mechanism;
- Enactment of Telecommunications Regulations 2006 concerning Fees, Interconnection and Access to Facilities

Constraints and Challenges

Key constraints and challenges to implementation include:

- Slow pace in upgrading the passenger capacity for reliable inter-island transportation, especially during the holiday periods
- Slow pace of implementation of initiatives geared towards reducing traffic congestion
- Residents dissatisfaction with and protests against the erection of telecommunications towers in certain residential areas