



## **Sectoral Integration in Trinidad and Tobago**

### **Contents**

1. Introduction .....	2
National Framework for Biodiversity Management .....	2
2. Governance and Institutional Framework .....	2
3. Legal, Policy and Regulatory Framework .....	5
4. Commitment to and Synergies with other International Conventions .....	7
Success Stories in Mainstreaming Biodiversity .....	8
5. Strengthening of the Policy and Legislative Framework .....	8
6. Collaboration and Coordination in Support of Biodiversity Management .....	8
7. The Ecosystem Approach to Management .....	9
8. Education and Awareness .....	10
9. Sustainable Financing for Biodiversity Management .....	11
10. Main Challenges in Mainstreaming Biodiversity .....	11
11. Measures to Improve Mainstreaming of Biodiversity .....	13

## **1. Introduction**

Trinidad and Tobago reported<sup>1</sup> that the administrative framework for the management of biodiversity is complex. There are several Ministries and State Agencies with legislative mandates to manage biodiversity. There are also a number of civil society organisations that are engaged in biodiversity management projects and activities and play stewardship and advocacy roles. In addition, there are many legal and policies instruments in effect which deal with various aspects of biodiversity management. This multi-sectoral approach to biodiversity management results in:

- Overlaps among agencies involved in the management of biological resources;
- Identifiable gaps in roles and responsibilities for biodiversity management;
- Uncertainty regarding resource utilisation;
- Conflicting legislation, for example, in the area of enforcement, penalties, etc; and
- Inadequate legislation to deal with the issues.

The report provides an overview of the framework for biodiversity management in Trinidad and Tobago, and includes a description of the main success stories and challenges in biodiversity mainstreaming. Based on these, some recommendations are provided for improving mainstreaming of biodiversity considerations into national planning.

## **National Framework for Biodiversity Management**

### **2. Governance and Institutional Framework**

There are several public sector institutions in Trinidad and Tobago with statutory control related to the management of the country's biodiversity. Among the more important institutions are the Forestry Division, Fisheries Division, the EMA and the Tobago House of Assembly (THA). The Forestry Division has responsibility for the management of Wildlife Sanctuaries, Forest Reserves, and Prohibited Areas designated under the Forests Act. Its responsibility has been traditionally limited to the management of forest resources on State lands through the Forestry Act and therefore has limited control on private forest. The Fisheries Division is directly responsible for managing fisheries and has legislative responsibility for designating prohibited areas in the marine environment of Trinidad and Tobago. To date, restrictions for demersal trawling have been established.

THA has responsibility for local governance on the island of Tobago. Its structure somewhat mirrors that of Central Government Ministries and so there are several divisions with responsibilities corresponding

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<sup>1</sup> Trinidad and Tobago (2010). Fourth National Report of Trinidad and Tobago to the Convention on Biological Diversity, Ministry of Housing and the Environment, 144 pp.

to central government counterpart Ministry. THA holds responsibility for certain aspects of environmental management and regulation, forest resources management, land development control, and mining of quarrying materials. The two (2) Departments of the THA that have critical responsibilities for managing biodiversity are:- the Department of Natural Resources and the Environmental (DNRE) and the Department of Marine Resources and Fisheries. The DNRE is responsible for managing the only forest reserve on the island the Main Ridge Forest Reserve and the Tobago wildlife sanctuaries. The Department of Marine Resources and Fisheries is responsible for managing the fisheries resources around Tobago and the Buccoo Reef /Bon Accord Lagoon Complex Protected Marine Area.

The EMA's role is to "coordinate, facilitate and oversee execution of the national environmental strategy and programmes, to promote public awareness of environmental concerns, and to establish an effective regulatory regime which will protect, enhance and conserve the environment". The EMA has responsibility for the leading the development and implementation of environmental policies, plans and strategies; and for initiating and supporting environmental-related activities. The most powerful instruments available to the EMA, for the sustainable management and protection of biological resources are the Environmentally Sensitive Areas (ESAs) Rules, the Environmentally Sensitive Species (ESS) Rules and the Certificate of Environmental Clearance (CEC) Rules.

The ESA rules authorise the Authority to designate areas in Trinidad and Tobago as ESAs. Such designations are meant to conserve natural resources, protect the environment and to promote sustainable socio-economic development. Through such designations, the EMA may establish limitations on use of the area and the type of activities to be undertaken within the selected area. So far, Matura Forest, Aripo Savannahs and Nariva Swamp have been designated as ESAs.

The ESS Rules allows the EMA to provide species found in Trinidad and Tobago that are threatened with extinction with special protection through its designation as environmentally sensitive. Such designations would allow the Authority to establish limitation on use and implement plans and programmes for recovery of the species. To date, the West Indian Manatee (*Trichechus manatus*), the Pawi (Pipile pipile) and the White-tailed Sabrewing Hummingbird (*Campylopterus ensipennis*) have been declared as ESS.

The CEC Rules establish a comprehensive framework to ensure proper management of development and to safeguard the environment from degradation. These Rules apply to proposed developers who are planning to undertake any one of the 44 designated activities which cover a range of development from agricultural to heavy industry. Such developers must obtain a CEC from the EMA prior to the commencement of their project. In effect the CEC Rules are an environmental permitting process that allows developers to conduct scheduled activities under a prescribed set of conditions which pertain to mitigating the negative environmental impacts the activity may pose, parameters for monitoring of those impacts (in addition to the aspects of the project that may negatively affect the environment) as well as any other conditions that may be required to protect any specific features (biological or otherwise) of the project area.

In addition, the Authority is required under the EAct to develop a National Environmental Policy (NEP) which was first drafted in 1998 and revised in 2006. This policy covers all of the main environmental issues including biodiversity management. The Policy is guided by respect for the community of life, keeping within the country's carrying capacity, empowering communities to care for their own environments, the polluter pay principle and the precautionary principle. Towards this end, one of the key objectives of the Policy is to "conserve the vitality and diversity of the natural environment through the conservation of ecological systems and the biodiversity within".

Other key public sector institutions with responsibility for biodiversity management include:

- The Ministry of Housing and the Environment which has responsibility for setting policy direction for the environmental sector; the supervision of a number of institutions, such as the EMA, and the Forestry Division; and coordinating and monitoring the implementation of the country's obligations to Multi-lateral Environmental Agreements to which the country is Party.
- The Water and Sewerage Authority (WASA) which has responsibility for the development and maintenance of waterworks and sewerage facilities, the promotion and proper use of water and for the administration of the Water and Sewerage Act of 1980 and sections of the Waterworks and Water Conservation Act (1980 Revision). Under the Water and Sewerage Act, WASA may define and prohibit or regulate activities in areas for the purpose of protecting any water (surface or groundwater) against pollution known as watershed protection areas.
- Municipal Corporations which have responsibility for administration of the Regional Corporation Act of 1995 and sections of the Public Health Ordinance of 1950, and the execution of local infrastructural works, the disposal of municipal waste (solid and sewage) and the inspection of properties for health nuisances within their municipality. Municipal Corporations have the responsibility of managing heritage parks primarily intended for recreation within their boundaries
- The Land Settlement Agency (LSA) which has responsibility for implementing the State Lands (Regularisation of Tenure) Act of 1998 and administering the process of regularising the status of squatters residing on State lands prior to January 1998 and redeveloping their communities.
- The Ministry of Energy and Energy Industries which has responsibility for developing the energy and energy related industries and for monitoring, controlling and regulating the mining of the country's minerals – oil and gas, quarry materials and asphalt by both private sector and state agencies.
- The Ministry of Food Production, Lands and Marine Affairs which has responsibility for agricultural planning and management, soil testing and research.
- The Land Administration Division (LAD) which has responsibility for the administration and distribution of state-owned agricultural lands. The Division facilitates the leasing process and monitors fulfilment of lease conditions.

- The Land and Surveys Division (LSD) which has responsibilities for arranging surveys, verifying and approving surveys and ensuring valuations are carried out and executing leases of State lands.
- The Commissioner of State Lands which is the designated landlord of State lands.
- The Institute of Marine Affairs which has responsibilities for the collection, analysis and dissemination of data relating to the economic, technological, environmental, social and legal developments in marine affairs, generally, and the formulation and implementation of specific programmes/projects to achieve this objective
- The Town and Country Planning Division (TCPD) which is engaged primarily in development planning, development control and monitoring of development. This includes direct control of physical development on land, and ensures that development on land does not adversely affect coastal and marine areas, for example, land-falling marine structures like pipelines do not disrupt coastal processes and forms. It is empowered to allocate lands for communal parks, game and bird sanctuaries, protection of marine life, and preservation or protection of vegetation under a “tree preservation order”.
- The Chaguaramas Development Authority (CDA) which is directly responsible for administering and coordinating the development of the north-west peninsula, including the offshore islands of Gaspar Grande, Gasparillo, Monos, Huevos and Chacachacare. This area has been designated as the Chaguaramas National Park.

### 3. Legal, Policy and Regulatory Framework

In Trinidad and Tobago, there are over 50 laws, polices, plans, strategies and programmes which seek to address biodiversity issues which directly or indirectly are compatible with the aims and objectives of the CBD. The most significant of legislation and policies are noted in the Table 1.

Table 1. List of Main National Policies/Plans/Laws with relevance to Biodiversity

**GENERAL ENVIRONMENTAL MANAGEMENT**

Environmental Management Act Chapter 35:05  
 Environmentally Sensitive Species Rules 2001  
 Noise Pollution Control Rules 2001  
 Environmentally Sensitive Areas Rules 2001  
 Certificate of Environmental Clearance Rules 2001  
 Water Pollution Rules 2001  
 (Draft) Air Pollution Rules 2005  
 (Draft) Waste Management Rules 2008  
 Motor Vehicles and Road Traffic Act 1997  
 The Tobago House of Assembly Act 1996  
 The Petroleum Act (rev. 1980)  
 The Municipals Corporations Act (rev. 1980)  
 Standards Act No. 18 of 1997  
 The Pesticides and Toxic Chemicals (Amendment) Act (1986)  
 Trade Ordinance No. 19 of 1958  
 National Environmental Policy (2005)  
 National Biodiversity Strategy and Action Plan

**FOREST MANAGEMENT**

Draft Forest Policy of T&T (1942 revised in 1998 and 2010)  
Sawmills Act (1943)

**PROTECTED AREAS**

Policy for the Establishment and Management of a National Park System in Trinidad and Tobago (1980)  
Draft National Policy on Protected Areas (2010)

**TOURISM**

A National Tourism Policy for Trinidad and Tobago (2001)  
The Master Tourism Plan (1996)

**CLIMATE CHANGE**

Draft National Policy on Climate Change (2010)

**AGRICULTURE**

Draft Aquaculture Policy (2001-2005)  
Agricultural Fires Act (1965)  
Agricultural Small Holding Tenure Act (rev. 1980)

**WILDLIFE/PLANT CONSERVATION**

Draft Wildlife Strategic Plan  
Plant Protection (Amendment) Act (2001)  
Conservation of Wildlife Act (1958)  
Importation of Live Fish Act 1980  
The Mongoose Act (rev. 1980)  
The Animals (Diseases and Importation) Act (rev. 1980)  
Cocoa (Import and Export) Act Section 3  
Protection of New Plant Varieties Act No. 7 of 1997, Section 3  
The Town and Country Planning Act (rev.1980)  
The Customs Act  
Botanic Gardens Act (rev. 1980)

**FINANCING**

The Green Fund (2005)

**WATER RESOURCES**

National Water Resource Management Policy (2003)  
The Water and Sewerage Act (rev. 1980)  
The Public Health Ordinance (Rev. 1980)

**LAND USE AND PLANNING**

Draft National Conceptual Development Plan (1999)  
National Physical Development Plan (1984)  
Minerals Act (2000)  
Draft Hillside Development Policy (2006)  
National Action Programme to Combat Land Degradation in T&T  
The Slum, Clearance and Housing Act (rev. 1980)  
The State Lands Act (rev. 1980)  
Mining, Boring and Quarries Act (rev. 1980)

**COASTAL AND MARINE (INCLUDING WETLANDS)**

Fisheries Act (rev. 1980)  
The Continental Shelf Act (rev. 1980)  
Archipelagic Waters and Exclusive Economic Zone Act (1986)  
Marine Areas (Preservation and Enhancement Act) 1970

Draft Fisheries Policy (2007)  
National Policy and Programmes on Wetland Conservation for Trinidad & Tobago (2001)  
Sector Policy for Food Production and Marine Resources (2001-2005)  
The Oil Pollution of Territorial Waters Act (rev. 1980)  
Harbours Act (rev. 1980)

**COMMUNITY DEVELOPMENT**

Community Development Policy (1996)

#### 4. Commitment to and Synergies with other International Conventions

Trinidad and Tobago is committed to a number of multi-lateral environmental agreements which are of relevance in managing biodiversity. The Ministry responsible for the Environment has been seeking to foster a better relationship with international agencies and regional organizations in order to better meet international obligations, and to create better local to global links. The biodiversity related Conventions that Trinidad and is Party is outlined in Table 2.

TABLE 2: BIODIVERSITY-RELATED INTERNATIONAL AGREEMENTS

Convention for the Protection and Development of the Marine Environment of the Wider Caribbean  
Protocol concerning Cooperation in Combating Oil Spills in the Wider Caribbean  
Protocol Concerning Specially Protected Areas and Wildlife in the Wider Caribbean Region  
Protocol Concerning Pollution from Land-Based Sources and Activities in the Wider Caribbean Region  
Constitution of the Food and Agriculture Organisation of the United Nations  
International Plant Protection Convention International Plant Protection Convention – New revised text approved by Resolution 12/97 of the 29th Session of the FAO Conference in November 1997 – Declaration  
Convention on Fishing and Conservation of the Living Resources of the High Seas  
Convention on the Continental Shelf  
International Convention for the Protection of New Varieties of Plants of 2nd December 1961  
International Convention for the Protection of New Varieties of Plants of 2nd December 1961, as revised at Geneva on 10 November 1972, and 23rd October 1978  
Convention on Wetlands of International Importance Especially as Waterfowl Habitat  
Convention on International Trade in Endangered Species of Wild Fauna and Flora  
United Nations Convention of the Law of the Sea 1982  
Amendment for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10th December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks  
Agreement relating to the Implementation of Part XI of the United Nations Convention of the Law of the Sea 1982  
International Tropical Timber Agreement  
Vienna Convention for the Protection of the Ozone Layer 1988  
Montreal Protocol on Substances that deplete the Ozone Layer  
Basel Convention on the Control of Trans-boundary Movements of Hazardous Waste and Their Disposal  
Basel Convention on the Control of Trans-boundary Movements of Hazardous Waste and Their Disposal  
Stockholm Convention on Persistent Organic Pollutants  
Rotterdam Convention on the Prior Informed Consent Procedure for certain hazardous Chemicals and Pesticides in International Trade  
United Nations Framework Convention on Climate Change  
Kyoto Protocol to the United Nations Framework Convention on Climate Change  
Convention on Biological Diversity  
Cartagena Protocol on Biosafety to the Convention on Biological Diversity  
United Nations Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa 1994  
International Convention for the Conservation of Atlantic Tunas International Cocoa Agreement 2001  
International Treaty on Plant Genetic Resources for Food and Agriculture

## **Success Stories in Mainstreaming Biodiversity**

Trinidad and Tobago has made some strides in mainstreaming the conservation of biodiversity in the national planning process. In this regard, the NBSAP and the NEP provides the framework for informing biodiversity management in the country. Although not all activities outlined in the NBSAP have been implemented, the ones that have been implemented have been effective in address some of drivers for biodiversity loss in the country.

## **5. Strengthening of the Policy and Legislative Framework**

Trinidad and Tobago has taken a significant step toward the strengthen of the policy and legislative framework for the management of the country's biological resources with the revision of the National Forest Policy and the development of a National Protected Areas Policy. It is envisioned that with the adoption of these policies the country would be able to implement a systematic and integrated approach to the management of the country's biodiversity through the operationalization of a new system of protected areas and the establishment of a more efficient and effective administrative system for biodiversity management.

Plans are also in place to revisit a number of other policies such as the National Environmental Policy (2006), a Draft Fisheries Policy (2007), a Draft Hillside Policy (2004) and various policies related to agriculture. The recent processes for preparation of the Draft Forest Policy, the Draft Protected Areas Policy, and the Draft Climate Change Policy have been inclusive of stakeholder views and perceptions; have applied sound science as a basis for making policy recommendations; and to varying extents, have incorporated the ecosystem approach. Having considered these a success, the Government plans to continue deepening and expanding this approach in order to bring the legislative framework up to date and make it more integrated.

## **6. Collaboration and Coordination in Support of Biodiversity Management**

To varying degrees, Government Ministries besides the Ministry responsible for the Environment have a mandate to include environmental considerations into their work programmes. Ministries whose portfolios have a direct impact on the environment, such as the Ministry of Works and Transport; the Ministry responsible for Planning; the Ministry of Energy and Energy Affairs; the Ministry of Food Production, Land and Marine Affairs; the Ministry of Tourism; the Ministry of Tobago Development; the Ministry of Public Utilities; and the Ministry of Local Government have been playing a greater role in the extent to which they include environmental considerations in their plans and projects.

There have been several attempts both within the public sector and between the public sector and other stakeholders to improve collaboration and coordination in support of biodiversity management. These have met with varying degrees of success. There are some 100 civil society organizations involved in championing, promoting and fostering sound environmental management. Many are engaged in partnerships with the Government to address environmental issues of mutual concern, and in the implementation of natural resources co-management projects geared at environmental enhancement or remediation of degraded forest lands. This sector is diverse and includes NGOs, not-for-profit

organisations, and CBOs, some of which are informal in nature and may only act once an issue affect or threaten their livelihoods. While some strictly operate in environmental sector, there are those whose main roles and functions are social in nature but who undertake environmental management activities as part of their programme of activities. Some of the more prominent NGOs operating in Trinidad and Tobago include:

- Fondes Amandes Community Reforestation Project
- The Toco Foundation
- Stakeholders Against Destruction (SAD)
- Environment Tobago
- Foundation for the Enhancement and Enrichment of Life
- Protectors of the Environment
- Grande Riviere Environmental Awareness Trust
- Nature Seekers
- Council of Presidents of the Environment
- The Tropical Re-Leaf Foundation
- Cropper Foundation
- Caribbean Forest Conservation Association
- Pointe a Pierre Wild Fowl Trust
- Asa Wright Nature Centre
- Filed Naturalist Club
- Caribbean Network for Integrated Rural Development (CNIRD)
- Caribbean Natural Resources Institute (CANARI)
- The Trust of Sustainable Livelihoods
- Agricultural Society of Trinidad and Tobago
- Trinidad and Tobago Organic Agriculture Movement
- Trinidad and Tobago Orchid Society
- Trinidad and Tobago Zoological Society
- Hunters Associations
- Sawmills Association
- Various Church, Community and Village Councils

## **7. The Ecosystem Approach to Management**

The ecosystem service approach has taking root in Trinidad and Tobago. In April 2002, the Millennium Ecosystem Assessment (MA) hosted a workshop on scenarios in Port of Spain, Trinidad. A number of local researchers and policy-makers were invited to this meeting, and their involvement sparked interest among a core group to initiate efforts to introduce ecosystem assessments to Trinidad and Tobago. In 2003, a local NGO – The Cropper Foundation – and the University of the West Indies in partnership with several other institutions/organizations initiated and led two sub-global assessments as part of the MA - one of these assessments focused on the Northern Range of Trinidad and the other on the Caribbean

Sea (CARSEA). Having been successfully completed in 2005, the Northern Range Assessment was published as the National State of the Environment Report for Trinidad and Tobago in 2005, and it was laid as an official public document in Parliament.

Trinidad and Tobago has begun adopting the ecosystem/ecosystem approach to varying degrees, including research, policy formulation (the Draft Forest Policy and the Draft Protected Areas Policy), and project design and implementation. Recognizing that ecosystem assessments are not well integrated in development planning and practice the Caribbean region, the Government of Trinidad and Tobago hopes to partner with the UNEP-World Conservation Monitoring Centre and other local entities to host a capacity development and awareness building workshop on ecosystem assessments and their applicability at the national and regional levels.

One important project which has been developed in Trinidad and Tobago and applies the ecosystem-service based approach to management is the Nariva Swamp Restoration, Carbon Sequestration and Livelihoods Project. In 2008, and with funding from the World Bank, work began to track GHG emissions in the swamp and to revegetate regions of the swamp - thereby enhancing carbon sequestration functions and reducing methane emissions. In February 2009, the World Bank, acting as a trustee for the BioCarbon Fund, signed an Emissions Reduction Purchase Agreement with the EMA and the GoRTT, for carbon credits earned under the Nariva Project. This is being done under the Clean Development Mechanism of the Kyoto Protocol to the UNFCCC and it is the first of its kind in the Caribbean. Trinidad and Tobago is therefore set to engage in the global carbon market. In March 2010, a further grant from the Green Fund in Trinidad and Tobago was certified to allow for expansion of this project. The Nariva project is hailed as an example of the type of project that should be encouraged to address biodiversity and environmental-related problems in Trinidad and Tobago because of the extent to which it addresses and includes mainstreaming considerations.

## **8. Education and Awareness**

In education, there are notable efforts to integrate biodiversity into both the formal and informal sectors. Primary and secondary curricula now have a greater environmental component. One significant advancement has been an effort by the Caribbean Examinations Council (CXC) – a regional examining body – to better include environmental components into its science curricula at both the “ordinary” and “advanced” levels. There is also now an Environmental Sciences syllabus at the advanced level which recognizes the need for greater emphasis to be placed on the links between humans and the environment – rather than the traditional, more ecocentric approach. This subject is gaining popularity in Trinidad and Tobago.

The Ministry of Education, the EMA, and a number of NGOs such as the Pointe-a-Pierre Wildfowl Trust, The Cropper Foundation, and Environment Tobago are involved in the development of biodiversity-related learning materials for schools, as well as the provision of opportunities for capacity building through workshops and outdoor experiences.

## **9. Sustainable Financing for Biodiversity Management**

The Green Fund was established under the Finance Act 2004, Part XIV – Green Fund Levy – by the GoRTT. The Fund is capitalised by a tax on the gross sales and receipts of corporate companies operating in Trinidad and Tobago. The Fund has had a long journey to operationalization, and its actualization has taken close to seven years.

The Green Fund is a grant facility available to CBOs and NGOs or according to the legislation “...any other body incorporated by or under a law other than the Companies Act.” CBOs are organisations based within a particular community while NGOs may be described as not for profit private sector organisations. The Fund’s monies are distributed by an agency established for that purpose (the Green Fund Executing Unit) under the supervision of an advisory committee. Groups qualifying for funding must be involved in activities focusing on environmental conservation, reforestation or remediation. In this context;

1. Remediation – is defined under the EM Act of 2000 in Part VII Section 72.c as the restoration of environmentally degraded sites, containment of any wastes, hazardous substances or other environmentally dangerous conditions, or other appropriate precautionary measures to prevent significant adverse effects on human health or the environment.
2. Reforestation – is the direct human - induced conversion of non - forested land to forested land through planting, seedling and/or the human - induced promotion of natural seed sources, on land that was forested but that has been converted to non - forested land. (Source: UNFCCC 2001)
3. Conservation - a series of measures required to maintain or restore the natural habitats and the populations of species of wild fauna and flora to a favourable status. (Source: UNFAO 1992)

## **10. Main Challenges in Mainstreaming Biodiversity**

The main challenges to mainstreaming biodiversity include:

1. Rationalisation, harmonisation and modernisation of the legislative and policy framework - There is a need for a more comprehensive and robust legislative and policy package to deal with the management of biodiversity including addressing issues of co-management of State-owned natural resources, partnering between the NGO and community sector and the State, and the institutionalization of public participation. The Government has taken some initiatives to address this concern through the drafting of a new Forest Policy and Protected Areas Policy. There is however a need to update and revise the existing legislative framework to address the needs of modern concepts in biodiversity management which would necessitate revisions to the:
  - i. Environmental Management Act;
  - ii. Chaguarams Development Authority Act;
  - iii. Forests Act;
  - iv. Conservation of Wildlife Act;

- v. Sawmills Act;
- vi. Agricultural Fires Act;
- vii. Town and Country Planning Act;
- viii. Tobago House of Assembly Act; and
- ix. Municipal Corporations Act.

2. Increasing the efficiency of the current process of modernisation of the country's administration process. The administrative process of how biodiversity is managed is being modernized to make it more efficient and effective. Currently the policy framework to effect this change has been drafted but there is a need to increase the efficiency of the approval of the new administration system by enacting the enabling legislation and provision of adequate resources for the supporting environment which must be put in place in order for these laws to be implemented.

3. Lack of proper legal arrangements and other shortcomings in the administration of the quarry/mining industry. This challenge becomes more obvious each year as illegal quarrying occurs unabated and in the wake of continued adverse environmental challenges and impacts. While the MEEI has major responsibilities for management and regulation of the industry and the enforcement of lease terms and legislation, some of its functions overlap with those of the Commissioner of State Lands, EMA, TCPD, Forestry Division and municipal authorities. At present, the MEEI is actively pursuing legislative, institutional, administrative and fiscal reform to address current inadequacies. However, greater collaboration is needed among critical agencies with overlapping responsibilities. The Draft Quarry Policy of 2005 recognised some of the shortcomings of the Minerals Act of 2000 which currently governs the operations of the quarry industry. These include:

- i. Absence of regulations for granting quarry licences;
- ii. Ambiguity with respect to the procedures for assigning and terminating licences;
- iii. Conflicts with existing legislative provisions, for example, the EM Act;
- iv. Ineffective and deficient regulatory control;
- v. Inappropriate legislative mechanisms and institutional weaknesses;
- vi. Absence of enforcement measures;
- vii. Bias in the legislation which favours large scale entrepreneurs; and
- viii. Lack of redress for investor complaints.

4. Establishment of a formal mechanism of collaboration among partners in biodiversity management. A formal mechanism of participatory management needs to be established to ensure effective collaboration among the various stakeholder organisations/institutions. Such formal mechanisms would lead to more effective and greater inter-governmental collaboration to address biodiversity management concerns. Securing meaningful people's participation in the management process is critical if lasting changes are to be made. There are mutual benefits to be derived and lessons learnt when the State and the non-governmental bodies work together. Therefore ensuring mechanism for involvement of people in the development process must be considered as a priority if the country is to address its land degradation issues.

5. Inadequate monitoring and enforcement of existing laws and regulations. This challenge retards proper biodiversity management and are considered to be among the primary underlying causes for degradation. The issue of monitoring and enforcement must include both the revision of existing regulations to include stricter penalties and to clear up ambiguities and loopholes and preparation of regulations for existing laws.

6. Improving people's attitudes, norms and patterns of behaviour towards biodiversity. Changing traditions, the popular culture and modern lifestyles have brought unsustainable uses of natural resources; deforestation and pollution arising from an attitude that nature can absorb all that the population can give. The social requirements for protecting a delicate environment and ecosystem remain a major challenge in Trinidad and Tobago. Changing the way the population values its biological resources and changing negative behaviours are critical requirements for reversing current degradation trends.

7. Biodiversity research remains disconnected from the needs of the country. Tertiary institutions, private sector and civil society conduct biodiversity research in number of areas. Such research is conducted in an un-coordinated manner and yield outputs that are of little use in effecting changes or improving the management of biodiversity. There is a need to develop a mechanism to address the disconnect between research and the biodiversity management needs of the country.

8. NGOs and CBOs lack the institutional capacity to be equal partners in the management process with the Government and private sector. There is need to strengthen the capacity of the NGO and community sector so that they could be true partners in the process of biodiversity management.

9. Lack of Resources. Most State agencies lack the resources to make them good managers of the country's biodiversity. This includes the lack of technical personnel and equipment and inadequate organisational structures and mechanism, all of which contribute at times to low morale and poor work ethics.

## **11. Measures to Improve Mainstreaming of Biodiversity**

It is recognized that mainstreaming biodiversity in a manner that is meaningful and makes the best use of resources will not be an easy task. There are a few key steps which must be addressed urgently in order that Trinidad and Tobago's efforts to manage biodiversity are more effective. This can only be achieved through thinking strategically but acting specifically:

(a) Defining roles and responsibilities: There is a need for better coordination and collaboration amongst stakeholders involved in biodiversity management, including the definition of roles and responsibilities for achieving a joint work programme. It is unlikely that more effective management will be achieved if this enabling mechanism is not established.

What might be most useful to achieving better coordination is the development of a Programme of Work which is operationalized through the establishment of Working Groups based on stakeholder clusters e.g. Public Agencies; NGOs and CBOs; Research Institutions; Private Sector; and other interest

groups. The mandate of Working Groups will be defined in specific Terms of Reference (TORs). Working Groups could meet occasionally and exchange views through electronic means (e.g. an intranet) which would improve logistics and minimise the occurrence of consultation fatigue since stakeholders could make inputs as their schedules allow. In addition to these Working Groups, there could also be the formation of specialist groups to address specific issues. This will ensure greater coherence in efforts. Such a mechanism, however, requires commitment, and Government will need to establish means (including incentives) to ensure ongoing participation. Within the public sector, such involvement should be institutionalized so that involvement is not seen as an “add on”. For other stakeholders, incentives both financial (to cover time and support project activities) and otherwise could be offered.

(b). Setting priorities: It will not be feasible to address all biodiversity-related problems at once. What is therefore required is the re-ordering of priorities identified in the NBSAP which address the current problems being faced by the country. The establishment of priorities would require:

- Identification of problems with a common cause and common solution to better facilitate a multiplier effect
- Assessment of the existing environmental legislation and policies (including drafts). In this regard, emphasis should be placed on ensuring that there is coherence and agreement among the various instruments, guided by a set of defined priorities for management
- Development of a national agenda for environmental research to promote a focus on critical data and information gaps.

(c). Allocating resources: The allocation of resources (human and financial) should be guided by the process of priority setting. As a small island developing state, Trinidad and Tobago will continue to face problems of capacity. Emphasis should therefore be placed on the best orientation and use of existing entities and resources to achieve optimal output.