



**THE COMMONWEALTH OF THE BAHAMAS**

**FIRST NATIONAL REPORT  
ON THE  
IMPLEMENTATION  
OF THE  
UNITED NATIONS CONVENTION  
TO COMBAT DESERTIFICATION**

The Bahamas Environment, Science and Technology Commission  
Ministry of Energy and Environment

**August 2006**

# TABLE OF CONTENTS

---

<b>LIST OF FIGURES &amp; TABLES</b>	<b><i>iii</i></b>
<b>LIST OF ABBREVIATIONS &amp; ACRONYMS</b>	<b><i>iv</i></b>
<b>UNITS OF MEASURE &amp; UNIT CONVERSION FACTORS</b>	<b><i>vi</i></b>
<b>GLOSSARY</b>	<b><i>vii</i></b>
<b>EXECUTIVE SUMMARY</b>	<b><i>ix</i></b>
<b>1.0 INTRODUCTION</b>	<b>1</b>
1.1 Purpose of the First National Report	1
1.2 Geophysical Characteristics	1
1.2.1 Climate	1
1.2.2 Geography and Topography	1
1.3 Natural Resources	3
1.3.1 Forests	3
1.3.2 Coastal and Marine Resources	3
1.3.3 Freshwater Resources	3
1.3.4 Mineral Resources	6
1.4 Socio-economic Climate	6
1.4.1 Population Distribution	6
1.4.2 Education	7
1.4.3 Economy	8
1.5 Relevance of the UNCCD to The Bahamas	9
<b>2.0 SUSTAINABLE DEVELOPMENT FRAMEWORK</b>	<b>10</b>
2.1 Legal Framework	10
2.2 Institutional Framework	12
2.2.1 Bahamas Environment, Science and Technology Commission	14
2.2.2 Bahamas National Geographic Information Systems Centre	14
2.2.3 Bahamas National Trust	15
2.2.4 Department of Agriculture	15
2.2.5 Department of Environmental Health Services	16
2.2.6 Department of Lands and Surveys	16
2.2.7 Department of Physical Planning	16
2.2.8 Grand Bahama Port Authority and Local Governments	17
2.2.9 Ministry of Energy and Environment	17
2.2.10 Ministry of Tourism	18
2.2.11 Water and Sewerage Corporation	18
2.2.12 Coastal Awareness Committee	19
2.2.13 Docks Committee	20
2.2.14 National Biodiversity Committee	21
2.2.15 National Climate Change Committee	24
2.2.16 National Wetlands Committee	25
2.2.17 Wetland Care Bahamas	26

# **TABLE OF CONTENTS**

---

2.3	Policy Framework .....	26
2.3.1	Environmental Impact Assessments .....	26
2.3.2	National Development Strategy .....	26
2.4	Land Management-Related Projects .....	27
2.4.1	Integrated Coastal Zone Management Programme Project .....	27
2.4.2	Land Use Policy and Administration Project .....	28
2.4.3	Global Environment Outlook – State of the Environment Project .....	29
2.4.4	National Capacity Self-needs Assessment Project .....	30
2.4.5	National Environmental Management Action Plan Project .....	30
<b>3.0</b>	<b>MEASURES TAKEN TO IMPLEMENT THE UNCCD .....</b>	<b>32</b>
3.1	The National Awareness Seminar (NAS) .....	32
3.2	The National Action Programme (NAP) .....	34
3.2.1	NAP Three-tiered Approach .....	34
3.2.2	Proposed Structure of the National Coordinating Committee .....	35
<b>4.0</b>	<b>NEXT STEPS AND CHALLENGES .....</b>	<b>37</b>
<b>5.0</b>	<b>REFERENCES .....</b>	<b>38</b>
	<b>ANNEX 1 – THE NAP PROCESS SUMMARY TABLE .....</b>	<b>A-1</b>
	<b>ANNEX 2 – THE BAHAMAS COUNTRY PROFILE .....</b>	<b>A-2</b>

# **LIST OF FIGURES & TABLES**

---

## **LIST OF FIGURES**

Figure 1:	Map of The Bahamas	2
Figure 2:	Proposed Stakeholder Network for the NAP Process	36

## **LIST OF TABLES**

Table 1:	Comparison of the Quantified Natural Freshwater Resources	5
Table 2:	Population Distribution throughout the Major Bahama Islands	7
Table 3:	Government Agencies with Direct Mandates Affecting Land Management	12-13
Table 4:	The Objectives of the National Biodiversity Committee	20
Table 5:	Cross-cutting Policy Directives from the National Climate Change Policy	22-23
Table 6:	Recommendations from the November 2000 ICZM Workshop	27
Table 7:	Key Points Raised during the National Awareness Seminar	33

## **LIST OF ABBREVIATIONS & ACRONYMS**

---

BEC	- Bahamas Electricity Corporation
BEST Commission	- Bahamas Environment, Science and Technology Commission
BNGIS Centre	- Bahamas National Geographic Information Systems Centre
BNT	- Bahamas National Trust
CBD	- Convention on Biological Diversity
CHM	- Clearing-House Mechanism
DEHS	- Department of Environmental Health Services
DLS	- Department of Lands and Surveys
DOA	- Department of Agriculture
DPP	- Department of Physical Planning
DSS	- Department of Social Services
EIA	- Environment Impact Assessment
GBPA	- Grand Bahama Port Authority
GDP	- Gross Domestic Product
GEF	- Global Environment Facility
GEO	- Global Environment Outlook
GI	- Geographic Information
GIS	- Geographic Information System
ICZM	- Integrated Coastal Zone Management
IDB	- Inter-American Development Bank
LUPAP	- Land Use Policy and Administration
MOEE	- Ministry of Energy and Environment
MEST	- Ministry of Education, Science and Technology
MFA	- Ministry of Foreign Affairs and the Public Service
MOT	- Ministry of Tourism
MOWU	- Ministry of Works and Utilities
NAP	- National Action Programme
NCC	- National Coordinating Committee
NCCC	- National Climate Change Committee
NCSA	- National Capacity Self-Assessment
NDS	- National Development Strategy
NEMAP	- National Environmental Management Action Plan
NGO	- Non-government Organisation
NWC	- National Wetlands Committee
SIDS	- Small Island Developing States

## **LIST OF ABBREVIATIONS & ACRONYMS**

---

UNCCD	- United Nations Convention to Combat Desertification
UNDP	- United Nations Development Programme
UNEP	- United Nations Environment Programme
UNFCCC	- United Nations Framework Convention on Climate Change
USACE	- United States Army Corps of Engineers
WCB	- Wetland Care Bahamas
WSC	- Water and Sewerage Corporation

# **UNITS OF MEASURE & UNIT CONVERSION FACTORS**

## **UNITS OF MEASURE**

ac	-	acre	km	-	kilometre
ft	-	foot	L	-	litre
ha	-	hectare	M	-	metre
gal	-	Imperial gallon	mi	-	mile
in	-	inch	mm	-	millimetre

## **UNIT CONVERSION FACTORS**

ha	multiply by	2.4710	for measurement in	ac
km	multiply by	0.6214	for measurement in	mi
km <sup>2</sup>	multiply by	0.3861	for measurement in	mi <sup>2</sup>
L	multiply by	0.2200	for measurement in	gal
m	multiply by	3.2808	for measurement in	ft
m <sup>3</sup>	multiply by	35.315	for measurement in	ft <sup>3</sup>
mm	multiply by	0.0394	for measurement in	in

## **GLOSSARY**

---

**Agenda 21-** Programme of action adopted by the 1992 United Nations Conference on Environment and Development, designed to protect the environment and encourage nations to move towards achieving sustainable development in the 21<sup>st</sup> Century.

**Biodiversity-** Also termed biological diversity; the variability among organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.

**Climate Change-** a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.

**Conservation-** The preservation and careful management of the environment to prevent its loss change or damage and ensure its continuing availability and functionality for future generations.

**Coppice-** A forest originating mainly from shoots or root suckers rather than seed.

**Crown Land-** Land owned by the Crown; Land which has no official tenure under land legislation, and which is held and managed by the Government. The Government may license the use of such land for specific purposes or may alienate the land by selling or leasing.

**Desertification-** Land degradation in arid, semi-arid and dry sub-humid areas resulting from various factors, including climatic variations and human activities.

**Drought-** The naturally occurring phenomenon that exists when precipitation has been significantly below normal recorded levels, causing serious hydrological imbalances that adversely affect land resource production systems.

**Ecosystems-** Ecological units comprised of complex communities of organisms and their specific environments.

**Ecotourism-** Tourism that involves traveling to relatively undisturbed or uncontaminated natural areas with the specific objective of studying the scenery with its flora and fauna, as well as the existing cultural areas; it includes programmes that minimize the adverse effects of traditional tourism on the natural environment and enhance the cultural integrity of local people.

**Environment-** All external factors (e.g. air, land, water, atmosphere, organic and inorganic matter and living organism), conditions and influences that affects an organism, or community; also everything that surrounds an organism or organisms, including both natural and anthropogenic elements.

**Environmental Impact Assessment (EIA)-** A detailed study conducted to assess the effect on a specified environment of the introduction of any new factor, which may upset the current ecological balance, and to ensure that the environmental effects of the proposed factor are fully considered before any construction/installation work is started.

**Family Islands-** Refers to all islands of The Bahamas, with the exception of the two most populated, New Providence and Grand Bahamas.

**Freshwater-** Water that contains 600 milligrams per litre or less of chlorides, 300 milligrams per litre or less of sulphates, and 1 000 milligrams per litre or less of total dissolved solids.



## **GLOSSARY**

---

**Gross Domestic Product (GDP)-** Total value of all goods and services produced by labor and property located in a country during a specific period.

**Groundwater-** Water contained in interconnected pores located below the water table in an unconfined aquifer or located in a confined aquifer.

**Land Degradation-** The reduction or loss, in arid, semi-arid and dry sub-humid areas, of the biological or economic productivity and complexity of rain-fed cropland, irrigated cropland, or range, pasture, forest and woodlands resulting from land uses or from a process or combination of processes, including processes arising from human activities and habitation patterns.

**Local Government-** An administrative body of government dealing with a local matter concerning the residence of a particular island.

**Non-government Organisation (NGO)-** Democratic entities generally formed around a focused set of goals, and having no affiliation with governments (or the business establishment).

**Protected Area-** A legally established area, under public or private ownership that is regulated and managed to achieve specific conservation objectives.

**Slash and Burn-** Cultivation with recurrent clearing and burning of vegetation and planting in the burnt fields.

**Small Island Developing States (SIDS)-** Small island and low-lying coastal countries that share similar sustainable development challenges, including small population, lack of resources, remoteness, susceptibility to natural disasters, excessive dependence on international trade and vulnerability to global developments. In addition, they suffer from lack of economies of scale, high transportation and communication costs, and costly public administration and infrastructure.

**Sustainable Development-** Development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs.

**Water Table-** The depth or level below which the ground is saturated with water in an unconfined aquifer.

**Wetlands-** Areas of marsh, fen, peat land or water, whether natural or artificial, permanent, or temporary, with water that is static or flowing fresh, brackish or salt, including areas of marine waters the depth of which at low tide does not exceed six metres, including areas which may incorporate riparian and coastal zones adjacent to the wetlands, and islands or bodies of marine water deeper than six metres at low tide lying within the wetlands.

# **EXECUTIVE SUMMARY**

---

This First National Report provides an overview of the existing geophysical, biophysical and socio-economic conditions of The Bahamas. It also identifies various legislation, policies, institutional measures and participatory processes that exist or were undertaken, and highlights the various national projects undertaken and planned that address the land degradation issues facing the country. Annex 1 summarizes key facts that relate to the implementation of the United Nations Convention to Combat Desertification (UNCCD) in The Bahamas, as outlined in the Help Guide (UNCCD General Document ICCD/CRIC(5)/INF.3). Annex 2 contains the country profile.

## **ES-1 Environmental and Socio-economic Conditions**

The Bahamas is an archipelago of some 700 low-lying islands and cays, with a total land area of approximately 15 000 km<sup>2</sup> (5 792 mi<sup>2</sup>). It is known for its subtropical climate, warm waters, fairly high mean temperatures and moderate rainfall. There are no rivers; however, several islands have tidal creeks and blue holes. Lakes are generally small in size, and none are freshwater lakes.

Freshwater in The Bahamas is considered scarce, totaling 66 m<sup>3</sup>/capita/ year (2 331 ft<sup>3</sup>/capita/ year) in the year 2002, based on annual internal renewable resources (USACE, 2004). The only natural source of freshwater is groundwater, which originates from rainfall. The amount of rainfall is a major variable affecting the quantity of freshwater available on each island. The only major inhabited island that is currently unable to supply enough freshwater to meet demand is New Providence. The shortfall is currently met by barging freshwater from Andros Island and producing potable water by reverse osmosis.

Other natural resources of The Bahamas include the coastal and marine environments, which are both vast and vulnerable. Bahamian waters span some 259 000 km<sup>2</sup> (100 000 mi<sup>2</sup>) of ocean, and are the habitat for a diverse range of marine flora and fauna.

The Bahamas is not well endowed with mineral resources. There are no appreciable amounts of metallic ores or fossil fuels; however salt and aragonite have been exploited on a large scale (Sealey, 1994). Bahamian soils are poor in nutrients and require heavy fertilisation. Shallow top soil conditions limit the application of mechanized agriculture.

Agriculture is a small contributor to the economy; together with fisheries and manufacturing, these sectors account for less than 10% of the gross domestic product (GDP). Tourism is the main economic sector in The Bahamas, accounting for approximately 60% of the GDP. The second major sector is banking and finance, which accounts for approximately 15% of the GDP. With

## **EXECUTIVE SUMMARY**

---

tourism and banking and finance accounting for three quarters of the GDP, it is clear that the economy is disproportionately service-based and that the country is vulnerable, not only environmentally, but also economically.

The geographical makeup and location of the Bahama Islands make them vulnerable to seasonal storms and hurricanes. Extensive damage to the landscape, particularly shoreline erosion in addition to flooding, salt intrusion and structural damage, is not uncommon and frequently result in environmental, economic and property losses.

Free education is available in government primary and high schools throughout The Bahamas. Prior to Independence (10 July 1973), persons left home and sought postsecondary education abroad. After Independence, the development of higher education was rapid, and today there are several local institutions and programmes available that offer degree-level instruction.

The participation of Bahamians, particularly women, in higher education is increasing both at home and abroad.

### **ES-2 Relevance of the UNCCD to The Bahamas**

The very limited land resources are under pressure from the demands of economic development. Tourism and housing development have significantly increased the demand for land and land clearing operations. These pressures have led to compromises that increase the vulnerability of the land to degradation caused by both storm surges and improper excavation and mining. Other pressures on the land include inappropriate farming practices.

The United Nations Convention to Combat Desertification (UNCCD) is the only convention that directly focuses on the sustainability of land resources. The Bahamas recognizes the importance of sustainable land management to national development, and signed on to the UNCCD in hopes of participating in information-sharing, technology access and exchange and capacity-building that will facilitate sustainable, national development in The Bahamas.

## **EXECUTIVE SUMMARY**

---

### **ES-3 Sustainable Development Framework**

There is no single legislation that deals with land management in The Bahamas. This responsibility is divided among various government agencies through several pieces of legislation; however, none of the legislation directly outlines or encourages sustainable land management. Furthermore, monitoring and enforcement remain challenges for The Bahamas because of the many agencies involved and the archipelagic nature of the country.

There are numerous national institutional measures that address land degradation. Inter-agency and multi-party committees and workgroups have been established to formulate recommendations and strategies for addressing various issues, such as land information management, coastal zone protection, wetland protection, biodiversity loss and climate change.

These committees and groups have implemented several initiatives and activities, with financial and technical support from various external funding agencies. Currently efforts are underway to establish an integrated coastal zone management programme and a major project to modernize land use and information management – the Land Use Policy and Administration Project -- has begun with technical and financial assistance provided by the Inter-American Development Bank.

There exist policy frameworks that address land management. One policy initiative is the environmental impact assessment (EIA) process, which applies to large-scale development projects, the major pressure on land resources. The EIA process was adopted by the Government in order to instill sustainable development practices in the planning stage of development project proposals.

The other major initiative is the National Development Strategy (NDS). The NDS aims to address the major land administrative and management challenges facing the country (land tenure security, land administration and management) through the successful implementation of three project components: Land Administration Modernization, Land Information Management and National Land Issues and Policy Guidelines.

## **EXECUTIVE SUMMARY**

---

### **ES-4 Measures Taken to Implement the UNCCD**

The BEST Commission convened a two-day national awareness seminar (NAS) on land degradation in The Bahamas 23 – 24 November 2004, with financial support from the United Nations Convention to Combat Desertification (UNCCD) Secretariat. This was the first participatory process organized in The Bahamas that was specifically designed to focus on land degradation. Stakeholders that participated in this seminar include representatives of Local Government, government agencies, non-government organizations and the private sector.

During the seminar, the stakeholders identified major causes of land degradation in The Bahamas: improper land development and agricultural practices, natural disasters, invasive species, poverty (squatting) and lack of education. It was also revealed that there were links between land degradation and biodiversity loss and the effects of climate change. The stakeholders also made recommendations on the priorities of the national action programme (NAP), namely the identification and classification of land, development of land use plans and preparation of educational tools.

The outcomes from the NAS formed the foundation for elaboration of the NAP, which was officially adopted in April 2006. The NAP is designed to address the identified national priorities, in conjunction with the National Development Strategy, using a three-tiered approach (planning, development and implementation, evaluation). It will seek to formulate and implement land management procedures and sustainable development programmes through the creation of a national coordinating committee, the development of science-based assessments of land conditions, the evaluation of existing policies, programmes and legislation and the periodic monitoring and evaluation of land conditions.

## **EXECUTIVE SUMMARY**

---

### **ES-5 Next Steps and Challenges**

With both the national action programme (NAP) and the National Development Strategy sharing the common goal of sustainable growth and development through responsible use of land, coastal, marine and freshwater resources, the next steps for The Bahamas include the implementation of both in a harmonious manner.

Currently there are several projects and programmes completed, pending or underway of diverse duration and time lines, which were or are led by different agencies and organisations. A national coordinating committee that may serve as the umbrella, under which these projects and programmes can be united, should be established as soon as practicable. This will be challenging due to the decentralized approach to land management currently utilized in The Bahamas and the limited capacity within existing institutions.

Another challenge is securing monetary funds for implementing the NAP. The financial mechanism utilized should facilitate the implementation of projects and programmes within the Family Islands. To date, no national project or programme has been successfully implemented without external financial and technical support.

# **INTRODUCTION**

# **1.0 INTRODUCTION**

---

## **1.1 PURPOSE OF THE FIRST NATIONAL REPORT**

The purpose of the First National Report is to provide an overview of the existing geophysical, biophysical and socio-economic conditions of The Bahamas, and to highlight the various national activities, programmes and initiatives undertaken, which address the land degradation issues facing The Bahamas. The report identifies various legislation, policies, institutional measures and participatory processes relating to land degradation that either have been employed or are currently utilized in the country. Annex 1 summaries key facts relating to the implementation of the United Nations Convention to Combat Desertification (UNCCD) in The Bahamas, as outlined in the Help Guide (UNCCD General Document ICCD/CRIC(5)/INF.3). Annex 2 contains the country profile.

## **1.2 GEOPHYSICAL CHARACTERISTICS**

### **1.2.1 Climate**

The Bahamas is well known for its sub-tropical climate, moderated by warm waters of the Gulf Stream, with fairly high mean temperatures and moderate rainfall. The northern islands receive the most rainfall, approximately 1 470 mm (58 in) per annum; the southern islands receive the least amount of precipitation per year, approximately 865 mm (34 in). Most rainfall occurs between May to June and September to October.

As the country is located in the sub-tropical region of the North Atlantic Ocean, The Bahamas frequently experiences severe storm events (i.e., hurricanes and tropical storms). The Atlantic hurricane season starts in June and ends in November. During this season, gale force winds also occur. Since 2000, six (6) named storms struck The Bahamas, causing minor to severe damage. The 2004 hurricane season was the worst season in recent times, causing approximately US\$550 million in economic losses.

### **1.2.2 Geography and Topography**

A map of The Bahamas is shown in Figure 1. The Bahamas, located between latitude 20°.50'N and 27°.30'N and longitude 72°.35'W and 80°.30'W, covers 321 159 km<sup>2</sup> (124 000 mi<sup>2</sup>), with a total land area of 15 000 km<sup>2</sup> (5 792 mi<sup>2</sup>). The coastline of the islands total 3 542 km (2 200 mi), and there is a reef area of approximately 1 981 km<sup>2</sup> (765 mi<sup>2</sup>) within Bahamian waters (BEST, 2006). The highest



## 1.0 INTRODUCTION

---

point in the entire archipelago, at 63 m (206 ft) above mean sea level, is located on Cat Island (Dupuch, 2005).

It is generally believed that The Bahamas was born a little less than 200 million years ago (Sealey, 1994). The country is an archipelago of 700 islands and cays surrounded by coral reefs, wide-ranging sand flats and shallow waters. The island shoreline types vary and include fine silt/sand materials, sandy beaches, and rocky shorelines. Deep-water channels intersect the shallow banks of some of the islands providing active shipping lanes that for centuries have made The Bahamas an accessible destination for explorers and travelers.

Lakes in The Bahamas are usually small in size; and, there are no rivers. Several islands are deeply penetrated by tidal creeks and contain blue holes. Blue holes are found in other parts of the world, but tidal blue holes are unique to The Bahamas. The abundance and uniqueness of the underwater world of Bahamian blue holes has enhanced the popularity of diving, making it a distinctive experience in The Bahamas.

Figure 1: Map of The Bahamas



Source: BEST Commission

## **1.0 INTRODUCTION**

---

### **1.3 NATURAL RESOURCES**

#### **1.3.1 Forests**

There are three major forest types in The Bahamas: pine, coppice and mangrove. The northern group of Bahama Islands is dominated by self-sustaining forests of Caribbean pine (*Pinus caribaea var. bahamensis*). From the early 1900s until the mid 1970s, timber had been exploited from the pine forests, and then all rights to fell timber were surrendered to the Crown once the economic market disappeared. Today forestry, as an industry, is non-existent.

The central and southern islands have been generally described as the coppice islands. Coppice is characterized by many valuable hardwood trees such as mahogany (*Swietenia mahagoni*), cedar (*Cedrela odorata*), mastic (*Masticobdendron foetidissimum*) and horseflesh (*Lysiloma sabicu*). Activities such as shifting cultivation, woodcarving and charcoal-making have led to a reduction of the coppice area and have threatened many endemic plant species.

The third type of forest, the mangrove forest, is found along the coastal areas of The Bahamas and in the inland wetlands and salinas.

#### **1.3.2 Coastal and Marine Resources**

The Bahamas stretches over approximately 259 000 km<sup>2</sup> (100 000 mi<sup>2</sup>) of marine waters. The islands are spread over two shallow oceanic banks, the Little Bahama Bank and the Great Bahama Bank, with depths of 10 m (32.8 ft) or less, surrounded by deep waters of up to 4 km (2.5 mi).

Throughout Bahamian waters and coastal areas, seagrass beds and coastal wetlands provide foraging and nursery habitats for many sea turtle species and a variety of other marine fauna and fish species, respectively. The health of these coastal and marine ecosystems has direct implications for the fisheries industry in The Bahamas, as well as tourism.

#### **1.3.3 Freshwater Resources**

Using internal renewable water resources as the criteria, freshwater in The Bahamas is considered scarce, totaling 66 m<sup>3</sup>/capita/ year (2 331 ft<sup>3</sup>/capita/ year) in 2002 (USACE, 2004). The only natural source of freshwater is groundwater, which originates from rainfall. During a rain event, the rainwater percolates through the ground and becomes trapped underground in three-dimensional,

## 1.0 INTRODUCTION

---

lens-shaped bodies called Ghyben-Herzberg lenses. The size, shape and orientation of an island, the subsurface geology and the amount of rainfall control the shape, size and thickness of the freshwater bodies on each island. For this reason, it is imperative that accurate rainfall records are maintained (BEST, 2006).

Table 1 provides a quantified comparison of the natural freshwater resources available in The Bahamas in the year 2000. The data suggests that there is no net shortage of freshwater in The Bahamas; however per capita shortages can be seen, based on the distribution of freshwater (USACE, 2004). New Providence is currently the only island with a water demand that cannot be met by the supply available on the island. To meet the New Providence demand, freshwater is transported from Andros across 60 km (37 mi) of sea; potable water is also produced by reverse osmosis.

It should also be noted that Table 1 ignores the tourism sector, which is the largest water demand sector. Tourists consume an estimated 400 – 1 000 L (88 – 220 gal) of water per person per day, compared to the estimated residential consumption of 150 – 200 L (33 – 44 gal) per person per day.

## 1.0 INTRODUCTION

*Table 1: Comparison of the Quantified Freshwater Resources*

Island	Daily Maximum Volume Available (million gal)	Water Available Daily per Person (gal) 2000 Census	Calculated Water Demand** (million gal)	Total Population 2000 Census
Abaco	79.1	6 004	0.66	13 174
Acklins	4.36	10 307	0.02	423
Andros	209.92	27 567	0.38	7 615
Biminis and Berry Islands	0.17	74	0.12	2 308
Cat Island	6.8	4 393	0.08	1 548
Crooked Island	1.74	5 103	0.02	341
Eleuthera, Harbour Island, & Spanish Wells	8.13	721	0.56	11 269
Exuma & Cays	2.9	811	0.18	3 575
Grand Bahama	93.17	1 984	2.35	46 954
Great Inagua	0.86	822	0.05	1 046
Long Island	2.88	978	0.15	2 945
Mayaguana	0.65	2 481	0.01	262
New Providence	9.63	45	10.62	212 432
Ragged Island	0.01	145	0.00*	69
San Salvador & Rum Cay	0.1	97	0.05	1 028
<b>Total</b>	<b>420</b>	<b>61 532</b>	<b>15.25</b>	<b>304 989</b>

Source: *BEST, 2005a*

\* actual calculated demand = 0.00345 gal

\*\* based on standard water usage of 50 gal per person per day

## **1.0 INTRODUCTION**

---

### **1.3.4 Mineral Resources**

The Bahamas is not well endowed with mineral resources. There are no appreciable amounts of metallic ores or fossil fuels; however salt and aragonite have been exploited on a large scale (Sealey, 1994). In Inagua, salt production has been occurring for over 156 years. The entire operation uses approximately 12 140 ha (30 000 ac), or 8 – 10% of the island to produce an estimated one (1) million tonnes of salt (BEST, 2006). Aragonite sand, which is an important feedstock material for manufacturing iron, steel, cement, fertilizers and chemicals, is mined from the Great Bahama Bank as well as other deposits found throughout the islands.

Bahamian soils are poor in nutrients and require heavy fertilisation. Nonetheless, there are areas in the Family Islands, such as Abaco, Cat Island, Eleuthera, and Long Island, where some farming is done. Most commercial farming occurs in the more northern islands, while subsistence farming is predominant in the southern islands. Mechanized agriculture is restricted because of the shallowness of the soil and the frequent outcrop of bare rocks (Sealey, 1994). Today, agriculture accounts for less than 2% of the gross domestic product.

## **1.4 SOCIO-ECONOMIC CLIMATE**

### **1.4.1 Population Distribution**

Over the years, socio-economic growth and activity has occurred predominantly among the northern Bahama Islands. In the Northwest Bahamas basic services and infrastructure are more readily available and employment opportunities are abundant. By comparison, development of many aspects of a similar network in the drier, less populated southern islands is still in its early stage of development, as many settlements have limited services.

According to the year 2000 census data, approximately 96% of the population resides in the northern region (Abacos, Andros, Berry Islands, Biminis, Eleuthera-Harbour Island-Spanish Wells, Grand Bahama, and New Providence). More than two-thirds of the population lives on New Providence, the island on which the capital city of Nassau is located (Table 2).

## 1.0 INTRODUCTION

*Table 2: Population Distribution throughout the Major Bahama Islands*

ISLAND	1963	1970	1980	1990	2000
<b>Northwestern Region</b>					
Abaco	6 490	6 501	7 271	10 061	13 170
Andros	7 461	8 845	8 307	8 155	7 686
Berry Islands	266	443	509	634	709
Biminis	1 658	1 503	1 411	1 638	1 717
Eleuthera, Harbour Island & Spanish Wells	9 093	9 468	10 631	10 524	11 165
Grand Bahama Island	8 230	25 859	33 102	41 035	46 994
New Providence	80 907	101 503	135 437	171 542	210 832
<b>Sub-region total</b>	<b>114 105</b>	<b>154 122</b>	<b>196 668</b>	<b>243 589</b>	<b>292 273</b>
<b>Central Region</b>					
Cat Island	3 131	2 657	2 215	1 678	1 647
Exumas	3 440	3 767	3 670	3 539	3 571
Long Island	4 176	3 861	3 404	3 107	2 992
Rum Cay & San Salvador	945	856	825	518	1 050
<b>Sub-region total</b>	<b>11 692</b>	<b>11 141</b>	<b>10 114</b>	<b>8 842</b>	<b>9 260</b>
<b>Southeastern Region</b>					
Acklins	1 217	936	618	405	428
Crooked Island (Long Cay included)	788	715	553	423	350
Inagua	1 846	1 009	924	985	969
Mayaguana	707	581	464	308	259
Ragged Island	371	208	164	89	72
<b>Sub-region total</b>	<b>4 929</b>	<b>3 449</b>	<b>2 723</b>	<b>2 210</b>	<b>2 078</b>
<b>TOTAL POPULATION</b>	<b>130 220</b>	<b>168 812</b>	<b>209 505</b>	<b>255 049</b>	<b>303 611</b>

Source: BEST, 2005a

### 1.4.2 Education

The Bahamas has a strong tradition of oral history. Story-telling, news brought by the many world travelers plying its waters and touching its shores, is readily communicated and shared amongst people. Bahamians have a deep regard for schooling and strive to ensure the formal education of their children because they perceive education as the only opportunity for advancement in a colonial and neo-colonial society (BEST, 2005a).

Education in The Bahamas is under the jurisdiction of the Ministry of Education, Science and Technology. There are 191 schools in The Bahamas: 147 maintained by Government and 44 private schools (Dupuch, 2005). School attendance is mandatory until the age of 16. Free education is available in government primary and high schools throughout The Bahamas.

## 1.0 INTRODUCTION

---

Prior to Independence (10 July 1973), persons left home and sought postsecondary education abroad. After Independence, the development of higher education in The Bahamas was both rapid and eventful as several local institutions (namely The College of The Bahamas, The Bahamas Technical and Vocational Institute, Success Training College and The Bahamas Baptist Community College) and programmes became available which offer degree level instruction locally, ranging from associates to master degree levels (BEST, 2005a).

The participation of Bahamians in higher education is increasing both at home and abroad. Female enrollment in and graduation from Bahamian higher education institutions, with the exception of some engineering and technology programmes, outnumber that of males. Further research studies are needed to discover reasons for low enrollment and graduation rates for males.

### 1.4.3 Economy

The Bahamas, like other small island developing states, has a small economy that is disproportionately service-based. Expenditure on imported goods is extremely high, approximately five times the total value of exported goods. The largest sectors of the economy are tourism and banking and finance. Tourism together with tourism-driven construction and manufacturing accounts for approximately 60% of Gross Domestic Product (GDP) and directly or indirectly employs half of the archipelago's labor force.

Financial services compose the second-most important sector of the Bahamian economy, accounting for approximately 15% of GDP and employing 4 253 persons. The majority of banks and trust companies are non-resident or offshore companies that generate no Bahamian dollar earnings and cover all their expenses for administrative cost, utilities, maintenance and other local overhead by bringing in foreign exchange (Dupuch, 2005).

Agriculture, fisheries and manufacturing together account for less than 10% of GDP. The Government has tried various economic incentives to increase the growth rate of the agricultural sector; however, this sector is not increasing in value. In 2003, the sector was valued at approximately US\$51.78 million, a decrease of 5% from the 2002 estimate (Dupuch, 2005).

In 2004, the total fisheries landings were valued at US\$95.3 million (BEST, 2005a). The commercially important marine fauna live on the shallow banks of Bahamian waters and include spiny lobster (*Panulirus argus*), queen conch (*Strombus gigas*) and Nassau grouper (*Epinephelus atriatius*).

## **1.0 INTRODUCTION**

---

Locally manufactured goods include arts and crafts, fabrics, paint and paper items, bottled water, beverages and pharmaceutical products. In 1997, manufacturing output totaled over US\$230 million (Dupuch, 2005). The leading manufactured item groups in The Bahamas are beverages and pharmaceutical products.

### **1.5 RELEVANCE OF THE UNCCD TO THE BAHAMAS**

Desertification, as defined under the UNCCD, does not refer to the expansion of existing deserts; rather the degradation of land in arid, semi-arid and sub-humid areas. The problem of land degradation is primarily caused by anthropogenic activity and climatic variations.

In The Bahamas, the very limited land resources are under pressure from both human activity and climatic conditions. Economic development, particularly in the tourism and housing sectors, has significantly increased the demand for land and land clearing operations. The financial costs of doing business in The Bahamas is high; therefore land development techniques that are utilized are more often selected on the basis of financial costs, as opposed to environmental costs. Improper quarrying and sand mining scar the landscape and negatively impact the ability of the soils to retain moisture.

Development of certain inland areas also compromises the ability of these areas to sustain the impacts of rain events. For example, the demand for land has resulted in the development of depression areas and swales. These areas are not ideal for development and some experience flooding after a rain event that produces as little as 37.5 mm (1.5 in) of rain over six (6) hours.

Severe storm events, particularly the storm surges produced by these storms, also put pressure on the land. The Bahama Islands are low-lying and the water table is high on most of the islands. These conditions make the islands vulnerable to property losses and damages. In addition, soil salinisation, salt inundation of freshwater resources and vegetation losses also occur as a result of hurricanes.

The UNCCD is the only convention that directly focuses on the sustainability of land resources. The Bahamas recognizes the importance of sustainable land management to national development, and signed on to the UNCCD in hopes of participating in information-sharing, technology access and exchange and capacity-building that will facilitate sustainable, national development.



**SUSTAINABLE  
DEVELOPMENT  
FRAMEWORK**

## **2.0 SUSTAINABLE DEVELOPMENT FRAMEWORK**

---

### **2.1 LEGAL FRAMEWORK**

The 15 000 km<sup>2</sup> (5 792 mi<sup>2</sup>) of land area of The Bahamas is currently managed through a web of legislation. There is no single legislation relating to the development and management of land resources. Legal provisions relating to land management can be found in several pieces of legislation: Agriculture and Fisheries Act (1963), The Bahamas National Trust Act (1959), Land Surveyors Act (1975), Private Roads and Subdivisions Act (1961), Private Roads and Subdivisions (Outlands) Act (1965), Buildings Regulation Act (1971), Reclamation and Drainage Act (1916), Coast Protection Act (1968), Town Planning Act (1961), Conservation and Protection of the Physical Landscape of The Bahamas Act (1997), Water and Sewerage Corporation Act (1976), Environmental Health Services Act (1987) and Plants Protection Act (1916). These pieces of legislation contain provisions that affect land management, but they do not directly outline or encourage sustainable land management.

The Agriculture and Fisheries Act (1963) provides for the supervision and development of agriculture and fisheries industries. With respect to agriculture, the Act prohibits planting, uprooting or destroying plant species without a licence. It also provides guidance on conservation.

The Bahamas National Trust Act (1959) established the Bahamas National Trust (see 2.2.2) for the purposes of promoting and preserving the natural aspect, features, animal and plant life of lands and tenements (including buildings) and submarine areas of beauty or natural or historic interest.

The Land Surveyors Act (1975) regulates and controls land surveys in the country through the establishment of the Land Surveyors' Board and the Bahamas Association of Land Surveyors. The Land Surveyors' Boards is responsible for the oversight and preservation of all survey plans and records, as well as the examination and registration of land surveyors. The Association is mainly focused on promoting best surveying practices among surveyors.

The Private Roads and Subdivision Act (1961) oversees the design and construction of new private roads and the design and development of subdivisions. The Act also confers powers over road and subdivision projects to the Town Planning Committee (see 2.2.6) and the Minister of Works and Utilities. No new private road or subdivision can be built without approval of the Committee or the Minister.

## **2.0 SUSTAINABLE DEVELOPMENT FRAMEWORK**

---

The Private Roads and Subdivision (Out Islands) Act (1965) is very similar to the Private Roads and Subdivision Act (1961), except it applies to the Family Island districts specified by Order of the Governor-General, and conveys powers to the Minister of Works and Utilities.

The Buildings Regulation Act (1971) regulates construction, alteration and repair of buildings. It also provides for the reinstatement or removal of dangerous or dilapidated buildings. The Act authorizes the publication of a building code and makes provisions for setting conditions on construction methodology and materials.

The Reclamation and Drainage Act (1916) outlines provisions for reclaiming and draining swampy areas or any area that is a breeding place or harbourage for insects, or which is otherwise unsanitary and injurious to human health. The Minister of Works and Utilities can declare areas for reclamation and order reclamation work done under this act.

The Coast Protection Act (1968) makes provisions to protect the Bahamian coast line from erosion and encroachment by the sea. The Act prohibits anyone from conducting private coast “protection” work without prior approval from the Minister responsible for ports and harbours.

The Town Planning Act (1961) established the Town Planning Committee (see 2.2.6) and conveyed power upon the Committee to establish zoning and other planning criteria for New Providence, including building size, height, character and architectural design. The mandate of the Committee is guided by Orders handed down by the Governor-General.

The Conservation and Protection of the Physical Landscape of The Bahamas Act (1997) provides oversight over excavation and land fill operations, designates areas for quarrying and mining operations and allows for the preservation of trees that are designated “protected trees”. This act requires permits for excavating land, quarrying, mining and harvesting protected trees. These permits are granted by the Director of Physical Planning.

The Water and Sewerage Corporation Act (1976) not only establishes the Water and Sewerage Corporation (WSC) for controlling and granting water rights, but also provides for the protection of freshwater resources, the regulation of extracting, using and supplying potable water and the disposal of sewage. The WSC mainly focuses on potable water supply and resources; the sewage provisions of the Act (i.e., Part VI) are overseen by the Department of Environmental Health Services.

## **2.0 SUSTAINABLE DEVELOPMENT FRAMEWORK**

Under the Environmental Health Services Act (1987), the Minister of Energy and Environment, whose ministry the Department of Environmental Health Services is a part, is responsible for regulating, monitoring and controlling the actual or likely contamination of the environment. This encompasses the discharge into the natural environment of any solid, liquid, gas, odor, heat, sound, vibration, radiation or combination thereof.

The Plants Protection Act (1916) contains provisions to control the import of plants and packaging that contained plants, with the intent of proactively addressing the risks posed by diseased plants. The Act allows for the creation of rules to govern horticultural practices, including the spraying and treatment of growing plants, cleansing and disinfecting areas and the destruction, removal, uprooting, disposal and treatment of diseased plants.

### **2.2 INSTITUTIONAL FRAMEWORK**

Current parliamentary acts of The Bahamas that relate to land management divide land management responsibility among various agencies (Table 3). The triple responsibility of management, monitoring and enforcement remains a challenge to government because of the many agencies involved and the archipelagic nature of the country. The fragmented division of responsibilities has resulted in blurred jurisdictional lines and an overlapping of both duties and efforts. In addition, legislation granting authority to government agencies and penalties imposed are outdated, in many cases.

This section shows the complexity of land management by briefly describing the mandates of some of the agencies involved in land management. Other multi-agency groups involved in land management are also briefly highlighted in this section.

*Table 3: Government Agencies with Direct Mandates Affecting Land Management*

<b>GOVERNMENT AGENCY</b>	<b>FUNCTIONS AFFECTING LAND DEGRADATION</b>
Bahamas Electricity Corporation (BEC)	<ul style="list-style-type: none"><li>▪ Generates and distributes electricity throughout the country, except the Freeport area on Grand Bahama</li><li>▪ Maintains the electrical grid throughout the country, except the Freeport area on Grand Bahama</li><li>▪ Formulate standards for electrical installations and equipment connected to the public grid</li></ul>

## 2.0 SUSTAINABLE DEVELOPMENT FRAMEWORK

*Table 3: Government Agencies with Direct Mandates Affecting Land Management*

GOVERNMENT AGENCY	FUNCTIONS AFFECTING LAND DEGRADATION
Bahamas Environment, Science and Technology (BEST) Commission	<ul style="list-style-type: none"> <li>▪ Act as the National Focal Point for the UNCCD and CBD.</li> <li>▪ Coordinate activities related to environmental management.</li> <li>▪ Coordinate the development of environmental policy, strategy and action programmes.</li> <li>▪ Develop EIA guidelines and procedures for various sectors.</li> <li>▪ Support efforts to combat land degradation.</li> </ul>
Bahamas National Geographic Information Systems (BNGIS) Centre	<ul style="list-style-type: none"> <li>▪ Manages the national repository of geo-spatial data and information</li> <li>▪ Lead coordinator involved in formulating national geo-spatial data standards</li> <li>▪ Act as the national training centre and promoter of GIS</li> </ul>
Department of Agriculture	<ul style="list-style-type: none"> <li>▪ Implement policies to achieve sustainable growth and development of the agricultural sector through optimal use of land and freshwater resources.</li> </ul>
Department of Environmental Health Services	<ul style="list-style-type: none"> <li>▪ Monitor and enforce sustainable environmental health-related practices adopted into law.</li> <li>▪ Regulate solid waste management and land use utilisation for landfills.</li> </ul>
Department of Lands & Surveys	<ul style="list-style-type: none"> <li>▪ Regulate and monitor land belonging to the Crown (land held in trust by Her Majesty, Queen Elizabeth II on behalf of the Bahamian people) including the seabed; this involves disposing and leasing of Crown Lands, including the seabed, while protecting Crown and Government interest and encouraging balanced use and preservation.</li> </ul>
Department of Physical Planning	<ul style="list-style-type: none"> <li>▪ Regulate and monitor excavation activities in an effort to preserve the physical landscape.</li> </ul>
Ministry of Works and Utilities	<ul style="list-style-type: none"> <li>▪ Regulate and monitor land-use, construction techniques, implementation of building codes and designs that alleviate any negative effects of land degradation.</li> <li>▪ Utilise best available technologies, including GIS, to achieve urban planning and sustainable development.</li> <li>▪ Regulate public utilities.</li> </ul>
Port Department	<ul style="list-style-type: none"> <li>▪ Regulate and monitor coastal and harbour/marina design requiring alteration to the physical landscape of the coastal zone and upland terrain.</li> </ul>
Water & Sewerage Corporation	<ul style="list-style-type: none"> <li>▪ Manage the freshwater resources.</li> <li>▪ Formulate the standards for water resource development and wastewater treatment systems.</li> </ul>

Source: BEST, 2006

## **2.0 SUSTAINABLE DEVELOPMENT FRAMEWORK**

---

### **2.2.1 Bahamas Environment, Science and Technology Commission**

In 1994, the Government established an environmental secretariat in the Office of the Prime Minister., which later became the Bahamas Environment, Science and Technology (BEST) Commission. The primary role of the BEST Commission was to coordinate the response of The Bahamas to environmental, scientific, and technological matters referred to the Government by international organizations.

Today, the BEST Commission is a part of the ministerial portfolio of the Minister of Energy and Environment, Senator, The Honourable Dr. Marcus C. Bethel. Since its inception, the mandate of the BEST Commission has been expanded to include the following responsibilities: to serve as the national focal point and the official point of contact for all international organisations on matters relating to the environment, science and technology; to coordinate matters relating to international conventions, treaties, protocols and agreements relating to the environment to which The Bahamas is, or will become, a party or signatory; to coordinate the national effort to manage the environment in a sustainable manner.

The BEST Commission frequently represents the Government in discussions and negotiations with representatives of regional and international organizations and foreign governments, where appropriate, on matters relating to the environment, science or technology, and the Commission is the national focal point for the CBD, UNCCD and UNFCCC.

### **2.2.2 Bahamas National Geographic Information Systems Centre**

The Bahamas National Geographic Information Systems (BNGIS) Centre was established in 2004 as the technical focal point of the Government for the collection and management of geographic information, particularly for land use planning and monitoring of development.

The BNGIS Centre currently plans to implement its mandate, in part, by providing geographic information (GI) education, public awareness on GI and GIS, data-sharing initiatives and GIS policy development. The Centre is also a lead agency in the National Development Strategy, particularly the Land Use Policy and Administration Project, which is currently underway. (See 2.3.2 for more information on the National Development Strategy.)

## **2.0 SUSTAINABLE DEVELOPMENT FRAMEWORK**

---

### **2.2.3 The Bahamas National Trust**

The Bahamas National Trust (BNT) is the only non-government organisation (NGO) established in The Bahamas by a parliamentary act, The Bahamas National Trust Act (1959). It was first formed during efforts to save the West Indian flamingo (*Phoenicopterus ruber*), the national bird, from extinction. (At that time their numbers were few and declining. Today, the population on Inagua has grown to approximately 60 000!)

The BNT is a self-funded body, governed by a 21-member Council that includes individuals and scientists representing academia and non-profit organisations. An Executive Committee is appointed by the Council to provide oversight and guidance for the organisation; and a professional staff implements policy and runs the day-to-day operations. Volunteers in The Bahamas and overseas are also involved in the BNT work (BNT, 2006).

The BNT also initiated a project called The National Creeks and Wetlands Restoration Initiative in the historic community of Adelaide, New Providence. This project was funded by the Inter-American Development Bank and involved compiling an inventory of degraded wetland sites in need of refurbishment. Other initiatives launched during this project include restoration activities on some of the islands and public education and awareness activities.

These forms of information-sharing led to the designation of February as “Natural Wetlands Month”. During this time, BNT hosts youth groups and conducts activities that teach kids and parents the importance of wetlands.

Today, the BNT is mandated to conserve the natural and historic resources of The Bahamas. It is responsible for managing the national park system, which currently consists of some 25 terrestrial and marine sites. BNT fulfills its mandate primarily through in-situ protection; it is also involved in numerous public outreach and education initiatives.

### **2.2.4 Department of Agriculture**

The Department of Agriculture oversees the agricultural provisions of the Agriculture and Fisheries Act (1963). This department works to stimulate and diversify crop production, and its mandate also includes the following responsibilities: hold, lease, manage and dispose of agricultural land; encourage

## **2.0 SUSTAINABLE DEVELOPMENT FRAMEWORK**

---

agricultural development; provide and encourage scientific research in agriculture, conserve biodiversity and protect wild flora and fauna.

The Department currently encourages farmers to employ conservation methods by offering a discount on land lease rates to persons that employ conservation techniques and practices to work the land.

### **2.2.5 Department of Environmental Health Services**

The Department of Environmental Health Services (DEHS) is responsible for overseeing environmental matters directly affecting human health. Among its responsibilities are the promotion of proper sanitation, the investigation of environmental pollution and the operation of an analytical laboratory.

In March 2006, the Department was transferred from the Ministry of Health to the newly established Ministry of Energy and Environment. The role of DEHS has not changed, and the Department still maintains its presence in most of the Family Islands, Grand Bahama and New Providence.

### **2.2.6 Department of Lands and Surveys**

The Department of Lands and Surveys (DLS) is responsible for disposing and leasing Crown lands, land surveying, reproducing photography and photogrammetry and advising the Government on land matters. The Department works to establish an equilibrium between Government's intentions and the rights of Bahamians to Crown land. To facilitate this effort, DLS uses land resource data to ensure that the natural characteristics of Crown land are complimentary to the proposed use.

Currently DLS is involved in the Land Use Policy and Administration Project (see 2.4.2), and is working to update the land parcel data the department currently stores.

### **2.2.7 Department of Physical Planning**

The Department of Physical Planning (DPP) issues permits and approvals for all physical development undertakings in the country. DPP regulates activities such as quarrying, mining and dredging operations. The Department can also demand environmental impact assessments (see 2.3.1) for excavation or reclamation activities. The DPP has the authority to grant permits for



## **2.0 SUSTAINABLE DEVELOPMENT FRAMEWORK**

---

building construction and specifications, zoning, building restoration and harvesting of protected trees.

The director of the DPP is the chair and chief technical advisor of the Town Planning Committee. The Town Planning Committee consists of seven members appointed by the Governor-General. This committee focuses on development proposals for New Providence and evaluates all such proposals, in consideration of the Governor-General's Orders, zoning and other planning criteria established by the Committee under the authority granted by the Town Planning Act (1961).

### **2.2.8 Grand Bahama Port Authority and Local Governments**

The Grand Bahama Port Authority (GBPA) is responsible for facilitating and regulating all commercial and residential development within the 596 km<sup>2</sup> (230 mi<sup>2</sup>) Freeport area of Grand Bahama. The GBPA also oversees all development and infrastructure requirements of the Freeport area, including land use planning, zoning and public utilities. The Authority is currently building an environmental unit, which will establish and incorporate an environmental component to the Authority's mandate.

Local Government has authority over land issues outside the Freeport area of Grand Bahama and the Family Islands. In these districts, a district council or town committee controls those issues relating to town planning. District councils and town committees have mandates that include issuing guidelines for the upkeep, restoration, design and alteration of buildings and creating open spaces for community use.

Enacted legislation, such as the Freeport Bye-laws Act (1965) and the Private Roads and Subdivisions (Out Islands) Act (1965), assist the GBPA and Local Governments, respectively, in land management.

### **2.2.9 Ministry of Energy and Environment**

In March 2006, the Government announced the establishment of the Ministry of Energy and Environment. This new ministerial portfolio resulted in the transfer of the Department of Environmental Health Services and the BEST Commission from the Ministry of Health, as well as

## **2.0 SUSTAINABLE DEVELOPMENT FRAMEWORK**

---

responsibility for national energy management and the Bahamas Electricity Corporation, to the new ministry.

It is envisioned that within the Ministry a new department, possibly named the Department of Environmental Protection and Planning, will be formed. The new department will be the first statutory body created in The Bahamas with an explicit mandate to address management of the natural environment of the country. Creation of this new department will likely involve morphing of the BEST Commission and expanding the Commission's current mandate.

In addition to environmental management, the new ministry is also responsible for energy resource management, and the Ministry is currently drafting a national energy policy that identifies current and projected energy uses and demands, and encourages research and implementation of alternative energy sources.

Effort is currently underway to finalize the required legislation for the new ministry and department. This draft legislation will form the major component of the 'environment package' that also includes a draft national environmental policy (see 2.4.5) for consideration by Government.

### **2.2.10 Ministry of Tourism**

The Ministry of Tourism has two units, which are designed to incorporate environmental management and awareness in the tourism industry of The Bahamas: the Ecotourism Unit and the Sustainable Tourism Unit. Both these units have separate mandates; however, they work together on certain initiatives, such as National Coastal Awareness Month.

The Ecotourism Unit was established after the Earth Summit of 1992 to promote eco-friendly initiatives in The Bahamas and to cater to a niche market. The Sustainable Tourism Unit was formed in 1994 to implement some of the recommendations emanating from "A Sustainable Tourism Policy, Guidelines and Implementation Strategy for the Out Islands", which was produced in 1994 with the assistance of the Organization of American States. The document identifies a strategy for developing tourism in the Family Islands, in a sustainable manner.

## **2.0 SUSTAINABLE DEVELOPMENT FRAMEWORK**

---

### **2.2.11 Water and Sewerage Corporation**

The Water and Sewerage Corporation (WSC) is the public utility charged with managing the freshwater resources and maintaining potable water supply, quantity, quality and distribution. The Corporation fulfills its mandate by operating and maintaining water supply systems throughout the Bahama Islands and providing oversight over private companies authorized by the WSC to provide potable water.

The Corporation also sets the standards for potable water production and sewage management and manages a public awareness and education programme on potable water. As part of its public awareness programme, the WSC organizes an annual Water Week. The objectives of Water Week include providing information and increasing public awareness on water supply and conservation.

The WSC focuses its efforts on potable water supply. The availability and distribution of freshwater is an ongoing concern in The Bahamas, and the Corporation expends a large portion of its resources addressing the current and projected demands for freshwater against the available supply.

### **2.2.12 Coastal Awareness Committee**

The Coastal Awareness Committee of The Bahamas is a group of stakeholders that was formed to heighten the public's awareness of the importance of preserving and protecting the coastline. This committee's efforts focus on organizing and promoting numerous events on an annual basis during the month of April, which is National Coastal Awareness Month. Events are designed to interest all facets of society: youth, churchgoers, businesses, etc.

The Committee is chaired by the Ministry of Tourism and consists of individuals representing various government agencies, non-government organisations (NGOs), private sector and academia. Human and material resources are donated by the committee members. Funds donated by various private sector and NGOs are used for promotion and production of material.

### **2.2.13 Docks Committee**

This committee is an inter-agency board that meets monthly to evaluate project proposals that include activities relating to construction or installation of equipment in the marine environment and the coastal zone of The Bahamas. The Docks Committee is chaired by the Port Department, and

## **2.0 SUSTAINABLE DEVELOPMENT FRAMEWORK**

---

mainly focuses on marinas and docking facilities; however, land-based components of these proposals are also considered by this body. No person receives a permit to commence construction or installation in the marine or coastal environment without first having the proposal approved by the Docks Committee.

### **2.2.14 National Biodiversity Committee**

The National Biodiversity Committee was formed in 1996 with a mandate to ensure that The Bahamas fulfils its obligations under the Convention on Biological Diversity (CBD), as well as components of other sustainable development programmes. Table 4 outlines the various objectives of this committee.

*Table 4: The Objectives of the National Biodiversity Committee*

▪ To ensure that The Bahamas meets its obligations as a Party to the Convention on Biological Diversity.
▪ To maintain the National Biodiversity Strategy and Action Plan as a living document and to facilitate implementation of the Action Plan.
▪ To further develop and maintain a system of protected areas for the in-situ conservation of biodiversity, in collaboration with the Bahamas National Trust and other relevant government and non-government agencies.
▪ To promote and support the ex-situ conservation of biodiversity.
▪ To identify invasive species and make recommendations for their management.
▪ To identify degraded ecosystems and threatened species and make recommendations for their rehabilitation, restoration and rescue.
▪ To promote education, training and research relevant to the conservation and sustainable use of biodiversity, in collaboration with the Science and Technology Committee.
▪ To encourage public understanding of the importance of the conservation and use of local knowledge where this is relevant.
▪ To recommend funding mechanisms for the conservation of biodiversity in The Bahamas.

*Source: S. Moultrie, 2006*

Since becoming a party to the CBD, participation in enabling activities has allowed The Bahamas to complete the National Biodiversity Data Management Assessment in 2004. This project was

## **2.0 SUSTAINABLE DEVELOPMENT FRAMEWORK**

---

completed with technical and financial assistance from international donors, and resulted in the establishment of the National Clearing-House Mechanism (CHM) for Biodiversity Information in the form of an interactive website ([www.bahamaschm.org](http://www.bahamaschm.org)). This website is a key factor for the integration of biodiversity management. It is the goal of this national CHM website to allow for greater access and benefit-sharing of biodiversity data and information for users within The Bahamas and others throughout the world.

Other projects achieved by the National Biodiversity Committee include a country biodiversity study, which involved inter-agency consultations and the National Biodiversity Framework, which involved consultations with government officials, non-government organisations, the private sector, and concerned citizens in order to determine a strategy for protecting the health of Bahamians, the environment and the economy from the potential risks posed by genetically modified organisms resulting from biotechnology.

### **2.2.15 National Climate Change Committee**

The National Climate Change Committee (NCCC) was established in 1996. It is comprised of government and non-government representatives. The NCCC promotes public awareness of the reality and consequences of climate change for The Bahamas.

The Committee completed the First National Communication with financial support from international funding agencies in April 2001. This project involved the development and execution of a public awareness campaign that targeted the general public, youth, non-government organisations, academia, policy makers and various economic sectors (e.g., tourism, housing, finance, and insurance). The resulting report identified several recommendations relating to capacity-building, research, data collection and public outreach.

The NCCC also drafted the National Climate Change Policy, which was adopted in March 2005. The policy provides an assessment of the degree of vulnerability of The Bahamas by sector to the projected impacts of climate change and the capacity for adaptation to anthropogenic climate change. It also proposes strategies for anticipating and ameliorating or avoiding the negative impacts. In addition, the policy examines some of the possible impacts on biophysical and socio-economic resources, and provides a plan of action for addressing the impacts. Table 5 highlights several cross-cutting recommendations contained in the policy.

## 2.0 SUSTAINABLE DEVELOPMENT FRAMEWORK

*Table 5: Cross-cutting Policy Directives from the National Climate Change Policy*

Resource	Policy Directive
Agriculture	<ul style="list-style-type: none"> <li>▪ Develop a national adaptation strategy for agriculture, both crops and livestock, to address impacts in short-, medium- and long-term; and</li> <li>▪ Incorporate the strategy in a land use management plan.</li> </ul>
Coastal, Marine and Fisheries Resources	<ul style="list-style-type: none"> <li>▪ Continue, expand and strengthen coastal monitoring and data collection so as to facilitate decision-making; and</li> <li>▪ Establish a coastal zone management unit to integrate coastal activities and compile geo-spatial data for all the major islands of The Bahamas.</li> </ul>
Energy	<ul style="list-style-type: none"> <li>▪ Develop a national energy policy to include the use of renewable energy resources, such as solar, wind and wave energy and provide tax incentives to promote these; and</li> <li>▪ Ensure compliance with the Kyoto Protocol.</li> </ul>
Forestry	<ul style="list-style-type: none"> <li>▪ Enact legislation to provide for the efficient management, utilisation, and protection of all the forest resources of The Bahamas; and</li> <li>▪ Maintain the integrity of existing forests and encourage tree-planting initiatives, which will serve as a protection of soil and freshwater resources and habitats for animals.</li> </ul>
Human Health	<ul style="list-style-type: none"> <li>▪ Promote health-related research and information-gathering in order to strengthen the basis for sound decision-making; and</li> <li>▪ Ensure that resources for treatments, such as vaccines and medications, are available.</li> </ul>

## 2.0 SUSTAINABLE DEVELOPMENT FRAMEWORK

*Table 5: Cross-cutting Policy Directives from the National Climate Change Policy*

Resource	Policy Directive
Human Settlements	<ul style="list-style-type: none"> <li>▪ Ensure that national infrastructure standards for jetties, piers, docks, roads, bridges, overhead utility lines, etc., are adequate to withstand the expected impacts of climate change; and</li> <li>▪ Encourage the financial and insurance sector to develop mechanisms aimed at assisting human settlements affected by climate change.</li> </ul>
Terrestrial Biodiversity	<ul style="list-style-type: none"> <li>▪ Develop a comprehensive national land use management plan, which, inter alia, incorporates climate change concerns and governs the location of future settlements and urban development without compromising water supplies and other requisites for sustainability of settlements; and</li> <li>▪ Ensure the inclusion of climate change considerations during the implementation of strategies and action plans under the Convention on Biological Diversity, the Convention on Wetlands of International Importance especially as Waterfowl Habitat, and the United Nations Convention to Combat Desertification.</li> </ul>
Tourism	<ul style="list-style-type: none"> <li>▪ Conduct the necessary research and information-gathering in order to strengthen the basis for sound decision-making; and</li> <li>▪ Ensure that appropriate physical planning guidelines, such as protection of dunes and coastal setbacks, are enforced for new tourism developments</li> </ul>
Water Resources	<ul style="list-style-type: none"> <li>▪ Prepare emergency plans for water distribution during periods of drought;</li> <li>▪ Encourage the use of water-saving devices that are water efficient or are low flow to reduce wastage; and</li> <li>▪ Develop a long-term national water management plan, which incorporates climate change concerns including “worse case” scenarios of sea-level rise, saltwater intrusion, and storm surges.</li> </ul>

*Source: BEST, 2005b*

The NCCC recently secured both national and external resources to prepare the Second National Communication, and in July 2006, a workshop was held to launch the project. The first part of the workshop targeted church groups and the media with an aim of promoting climate change awareness and soliciting their participation in reaching the Bahamian public.

## **2.0 SUSTAINABLE DEVELOPMENT FRAMEWORK**

---

The second part the workshop was a technical session, during which a strategy for collecting the required technical data and information to fill the gaps identified in the First National Communication was sought. Representatives from both government and non-government organisations were in attendance.

### **2.2.16 National Wetlands Committee**

Wetlands management in The Bahamas is led by the National Wetlands Committee (NWC). The objective of this committee is to protect the wetlands and mangroves, identify and teach Bahamians about the “no build and flood zones”, and govern what people do around wetlands. Specifically, the committee’s priorities are to improve institutional and organisational arrangements such that wetland conservation and sustainability are achieved, to increase knowledge and awareness of wetlands and their values, to review the status of and identify priorities for all wetlands in a national context and to address problems at particular wetland sites. These objectives are also important obligations under the Convention on Wetlands of International Importance Especially as Waterfowl Habitat (The Ramsar Convention on Wetlands).

Other priorities of the committee not covered by the Ramsar Convention on Wetlands include the conservation and sustainable use of groundwater resources and development of land use plans for all of the islands of The Bahamas.

The NWC developed the National Wetlands Policy, which was adopted in March 2006. In addition to meeting an obligation under the Ramsar Convention on Wetlands, the policy provides guidelines, objectives and strategies for wetlands protection. It aims to empower those responsible for administering the existing laws and regulations affecting development near wetlands with direction on the sustainable management of wetlands.

The key principles outlined in the policy include the following:

- conservation of wetlands and their basic ecological functions is essential to environmental and economic well being;
- impact assessments are required for all activities in wetlands that are likely to have adverse impacts on wetlands; and
- public awareness and outreach is vital to improving societal perception and attitudes towards wetlands.



## **2.0 SUSTAINABLE DEVELOPMENT FRAMEWORK**

---

The policy also identifies categories of wetlands and basic rules that should apply to each category. In addition, the policy provides guidance relating to management, monitoring and programme formulation.

The Committee also developed environmental impact assessment guidelines that apply to proposed developments which may impact wetlands. The guidelines include criteria for defining acceptable impacts on wetlands, and aim to maintain an adequate level of wetland function, which is vital for protecting the coastal zones and inland areas.

### **2.2.17 Wetland Care Bahamas**

Wetland Care Bahamas (WCB) is a recently formed private, non-profit organisation. The first WCB general meeting was held 18 April 2006, during which time the terms of reference for the organisation were drafted.

The decision to launch WCB was made through the National Wetlands Committee, and the ground work was laid by Ducks Unlimited International of Nashville, Tennessee, also a non-profit organisation. There are 20 founding members of the WCB, representing private individuals, government, non-government organisations, non-profit organisations and academia.

WCB is an organisation whose vision focuses on securing resources needed to action wetland restoration, preservation and conservation activities. One project idea that WCB is considering involves the examination of wetland systems in the southern Bahamas, using appropriate science and technology to determine their status and needed restoration activities.

The organisation is currently seeking technical and financial support to begin this and other projects to increase public awareness and sensitivity.

## **2.0 SUSTAINABLE DEVELOPMENT FRAMEWORK**

---

### **2.3 POLICY FRAMEWORK**

#### **2.3.1 Environmental Impact Assessments**

Agenda 21 is a global programme of action that acknowledges the challenges faced by small island developing states (SIDS) as they endeavour to develop in the global arena. This programme recognizes the importance of sustainable development to the growth of SIDS, and promotes political commitment to development initiatives that aim to protect the long-term interests of a people.

One such initiative, the environmental impact assessment (EIA), is also endorsed by Principle 17 of the Rio Declaration on Environment and Development. Principle 17 states that the

*“Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority”.*

The Government of The Bahamas embraces this approach to development. Since 2000, the Government has held a policy that requires major development proposals to undergo not only an economic feasibility study, but also an environmental study. Large-scale project proposals are subject to an EIA review. This review process requires the project proponent (the developer) to prepare an EIA report, which must then be reviewed by the Bahamas Environment, Science and Technology (BEST) Commission, under the Ministry of Energy and Environment.

During the EIA review, the BEST Commission uses both internal and external consultation to evaluate all aspects of the project, including any mitigation measures proposed for managing potentially negative environmental impacts the project may cause. It is through those evaluations that the various government agencies promote sustainable land management techniques.

#### **2.3.2 National Development Strategy**

New Providence and Grand Bahama have experienced growth for decades, and zoning orders have been in place in parts of New Providence and Freeport, Grand Bahama. In recent times, tourism development has grown throughout The Bahamas, not simply New Providence and Grand Bahama. This interest in the country is encouraged by the Government; however, the Government also recognizes that the country is facing land resource challenges, including land tenure security, land administration and information management. These challenges compromise the Government's efforts to ensure effective and sustainable land use.

## 2.0 SUSTAINABLE DEVELOPMENT FRAMEWORK

For these reasons, the Government developed and launched the National Development Strategy (NDS). The Strategy considers the following: (i) the political, institutional and social sensitivities related to land in the country; (ii) the technical capacity of the relevant government agencies; (iii) expanding the use of private sector surveyors to expedite the transfer of Crown land; (iv) shifting the role of the Surveyor General from performing surveys to regulating and technically supervising the work of contractors; and (v) ensuring the results of this operation form the foundations needed to continue implementation of the Strategy in the future (IDB, 2004). Implementation of the NDS involves several agencies involved in land resource management (Table 3), as well as Local Government.

### 2.4 LAND MANAGEMENT- RELATED PROJECTS

#### 2.4.1 Integrated Coastal Zone Management Programme Project

In November 2000, the BEST Commission held a seminar that focused on identifying the prevalent environmental problems facing The Bahamas, such as climate change and integrated coastal zone management (ICZM). This seminar featured prominent professionals, and through working groups, several concrete recommendations were made. Table 6 highlights key recommendations made in regard to climate change and ICZM.

*Table 6: Recommendations from the November 2000 ICZM Workshop*

<b>Climate Change</b>	<b>Integrated Coastal Zone Management</b>
<ul style="list-style-type: none"><li>▪ Development of digital elevation models and zoning vulnerable areas.</li><li>▪ Establishment of prediction models for sea-level rise and coastal impacts.</li><li>▪ Restoration of damaged ecosystems</li></ul>	<ul style="list-style-type: none"><li>▪ Development of an ICZM plan that will protect and enhance biodiversity and achieve sustainable land management, and sustainable tourism, etc.</li><li>▪ Establishment of a mechanism to facilitate public access to data and information through various media. (This needs a clear approach that considers differing levels or requirements for data and information, depending on the project).</li></ul>

*Source: R. Newbold, 2006*

## **2.0 SUSTAINABLE DEVELOPMENT FRAMEWORK**

---

The Government has indicated to the Inter-American Development Bank (IDB) the desire for its assistance in developing a coastal zone management programme for the country. IDB's consultants are currently working with representatives of various government and non-government organisations to develop various aspects of such a programme. One immediate challenge will be to harmonize and integrate the existing regulations and the associated institutional and legal issues and/or create a new coastal zone management act. To date, the stakeholders have focused their discussions on the following items: physical development of the coast (standards, codes, legislation, etc.); program integration (data and information sharing among stakeholder agencies); implications and participation of the public and private sectors; implications for Government (funding, monitoring, enforcement and integration of ministries).

The goal of the programme is to initiate an integrated management structure of the coastal and marine resources. (All the land area in The Bahamas falls within the coastal zone.) This objective is achieved through two components: capacity-building and development of an ICZM master plan. The first component would establish a coastal zone planning unit; the second component would develop initiatives for planning and participatory processes and implement a demonstration project. An IDB project loan is currently under development to initiate the project in the near future.

### **2.4.2 Land Use Policy and Administration Project**

In support of sustainable land management (and consequently the National Development Strategy), the Government began a major project, the Land Use Policy and Administration Project (LUPAP) in May 2005. LUPAP is a three-year project funded by the Inter-American Development Bank that has three components: Land Administration Modernization, Land Information Management and National Land Issues and Policy Guidelines. These components together are expected to provide several results: (i) the modernization and expansion of the land administration services provided by government land agencies responsible for surveying, allocation and management of Crown Land, and the registration and taxation of real property; (ii) provision of geographic information for land use planning and monitoring of development; (iii) strengthening of the technical capacity of the government in collecting, analyzing and dissemination of land information; and (iv) preparation of policy options and guidelines for national land issues, including stakeholders feedback (IDB, 2004).

## **2.0 SUSTAINABLE DEVELOPMENT FRAMEWORK**

---

LUPAP is well underway. Land parcel data and information collection and analysis has begun; technical training programmes are nearing completion; and an island land use plan for Eleuthera has been prepared, and planning is underway for New Providence and Harbour Island.

### **2.4.3 Global Environment Outlook – State of the Environment Project**

In April 2005, The Bahamas published its first state of the environment report, entitled “GEO Bahamas 2005”, with technical and financial assistance from the Division of Early Warning Assessment of the United Nations Environment Programme (UNEP).

The Global Environment Outlook (GEO) is an integrated environmental assessment process that UNEP is promoting around the world. The process employs various assessment tools to evaluate the state and trends of the environment. The GEO methodology has been used to assess the environment on both global and non-global scales (including regional, sub-regional, national and city levels).

The GEO Project increased national awareness of the state of the environment by involving various stakeholders (including both government and non-government representation from various islands within the archipelago) in identifying pressures and impacts on the environment, listing the policies currently available to respond to these pressures and impacts, and suggesting recommendations to improve the current state of the environment.

The report outlines pressures and impacts placed on the environment by anthropogenic and natural stresses. Protection of coastal, marine and land resources seems to be competing at a disadvantage with stresses such as urban and tourism development and illegal activities. The report also sites the impacts that natural stresses, such as hurricanes, global warming, and brush fires have on the Bahamian environment.

The recommendations in the report identified options for protecting and preserving the complexity of biological diversity, wetland areas, coastal zones and land resources, but did not consider neither existing capacity nor the need for capacity-building. They only indicate possible options for improving the current state of the environment. Some suggestions were revamping and developing legislation, policies and procedures; augmenting compliance and enforcement efforts; and improving information management and dissemination.

## **2.0 SUSTAINABLE DEVELOPMENT FRAMEWORK**

---

### **2.4.4 National Capacity Self-needs Assessment Project**

The Government of The Bahamas sought to assess the capacity needs of the country through a National Capacity Self-needs Assessment (NCSA) Project. This project was initiated with the assistance of UNEP and funding from the Global Environment Facility in 2003. The three objectives of the NCSA Project were to identify and prioritize the most critical needs for implementing four key international environmental conventions: Convention on Biological Diversity, Convention on Wetlands of International Importance, United Nations Convention to Combat Desertification and the United Nations Framework Convention on Climate Change; to assess existing capacity to meet the commitments of the four environmental conventions as well as other environmental issues; and to determine the best way to enhance the national capacity to fulfill the commitments of the conventions.

The methodology employed for this project included literature reviews, interviews with various government representatives, public consultations and national expert workshops. The literature reviews provided contextual information, including the state of the environment and the existing legal, policy and institutional framework. The critical needs for implementing the conventions were identified through the interview process; while the consultations and workshops provided recommendations on closing the gap between the critical needs and the international commitments.

Key gaps and deficiencies sited include: lack of legislation necessary to implement the environmental conventions; no official approval of existing environmental guidelines; non-existence of a department for the environment coupled with jurisdictional conflict and misunderstanding between various agencies with responsibilities relating to the environment; lack of financial and human resources; and insufficient services provided to the Family Islands (i.e., islands other than New Providence and Grand Bahama). Based on the findings from this project, it was recommended that the Government embark on establishing a national environmental management action plan.

### **2.4.5 National Environmental Management Action Plan Project**

As a result of the NCSA Project, it was apparent that a national environmental management action plan (NEMAP), designed to address the various findings from the project, was needed. The NEMAP will act as a mechanism for strengthening the legal, policy and institutional frameworks, with respect to environmental management.

## **2.0 SUSTAINABLE DEVELOPMENT FRAMEWORK**

---

The action plan was developed with input from various stakeholders during a consultative workshop in 2005. The plan requires endorsement by Government and includes various short, medium and long-term activities, such as development of a national environmental policy, creation of a department responsible for the environment, enactment of environmental legislation, and development and implementation of a blueprint for environmental management. The blueprint is proposed as a road map for planning, monitoring, evaluating and reporting on environmental management.

To date, a national environmental policy was drafted and released for public comment. The comments were incorporated in a revision of the policy, which is now awaiting consideration by Government, as a part of a comprehensive 'environment package'.

**MEASURES TAKEN TO  
IMPLEMENT THE  
UNCCD**



## **3.0 MEASURES TAKEN TO IMPLEMENT THE UNCCD**

### **3.1 THE NATIONAL AWARENESS SEMINAR (NAS)**

The BEST Commission convened a two-day national awareness seminar (NAS) on land degradation in The Bahamas 23 – 24 November 2004, with financial support from the United Nations Convention to Combat Desertification (UNCCD) Secretariat. This was the first participatory process organized in The Bahamas that was specifically designed to focus on land degradation. Stakeholders that participated in this seminar include representatives of Local Government, government agencies, non-government organizations and the private sector. Although all regions of The Bahamas were represented, the number of participants was low. Many of the invitees were unable to attend as clean-up efforts from Hurricanes Frances and Jean were still underway in the Family Islands.

Seminar participants recognized the fragility of the Bahamian ecosystems and that land resources are very limited - two attributes common to all small island developing states. During the seminar, it was acknowledged that land degradation occurs in The Bahamas from both anthropogenic and natural forces, and that proper land management was critical to achieving sustainable development.

The NAS was structured to first provide information on the UNCCD, various factors contributing to land degradation and natural resources vulnerable to land degradation, and then through discussion, collect recommendations from the participants that will be used to develop the framework for preparing the national action programme.

Guest speakers presented information on land use planning, agriculture, biodiversity, freshwater resources, climate change and coastal zone management. The presentations were followed by work group discussions designed to identify the pressures and challenges to combating land degradation in The Bahamas. Table 7 summarizes key points from the NAS.

### 3.0 MEASURES TAKEN TO IMPLEMENT THE UNCCD

*Table 7: Key Points Raised during the National Awareness Seminar*

Major Causes of Land Degradation	<ul style="list-style-type: none"> <li>▪ Improper development</li> <li>▪ Improper farming (soil run-off, inappropriate fires, overgrazing)</li> <li>▪ Improper land clearing (quarrying, mining, inappropriate fires)</li> <li>▪ Hurricanes (storm surges)</li> <li>▪ Invasive species</li> <li>▪ Poverty (squatting)</li> <li>▪ Lack of education</li> </ul>
Links between Biodiversity Loss, the Effects of Climate Change and Land Degradation	<ul style="list-style-type: none"> <li>▪ Human activities, including massive land clearing for development, importation of non-native species, release of pollutants into the environment and inappropriate agricultural practices, alter natural habitats to the extent that the complexity of biological diversity is lowered, the ability to cope and recover from the effects of climate change (particularly severe storm events) is lowered and the vulnerability of soil quality and freshwater resources is higher.</li> </ul>
Stakeholders Involved in Addressing Land Degradation & Their Roles	<ul style="list-style-type: none"> <li>▪ Government needs to review and evaluate existing legislation, and consider possibly amalgamating, revising or creating new legislation. Enforcement efforts need to be increased.</li> <li>▪ Private sector (developers, industrialists, farmers, etc.) needs to implement and promote best practices</li> <li>▪ Educators, civil society (NGOs, church groups, etc.) and media need to lead public outreach and awareness efforts</li> </ul>
Main Priorities of the National Action Programme	<ul style="list-style-type: none"> <li>▪ Identify and classify land</li> <li>▪ Develop land use plans</li> <li>▪ Develop restoration activities and mitigation measures</li> <li>▪ Develop and disseminate educational tools</li> </ul>

Source: BEST, 2004

## **3.0 MEASURES TAKEN TO IMPLEMENT THE UNCCD**

### **3.2 THE NATIONAL ACTION PROGRAMME (NAP)**

The Bahamas National Action Programme (NAP) was adopted in April 2006. The foundation of the NAP is the various issues of concern raised during the two-day national awareness seminar (NAS) of November 2004. During the NAS information was shared on the various national issues that either contribute to or exist because of land degradation and the main causes (or priority areas) were identified (see Table 7).

The NAP is designed to address the national priority areas, in conjunction with the National Development Strategy (see 2.3.2). It will seek to engage the stakeholders in the formulation and implementation of land management procedures and sustainable development programmes through the creation of a national coordinating committee, the development of science-based assessments of land conditions, the evaluation of existing policies, programmes and legislation and the periodic monitoring and evaluation of land conditions.

#### **3.2.1 NAP Three-tiered Approach**

The NAP development process for The Bahamas is a dynamic, three-tiered approach, with components capable of changing in order to effectively meet national requirements, while expectantly incorporating the latest and most appropriate technologies and practices. The overall vision of the NAP is to set The Bahamas on a continuous course of sustainable growth and development, through the responsible use of its land, coastal, marine and freshwater resources.

The NAP will further seek, in conjunction with the National Development Strategy, to assist the stakeholders in the formulation and implementation of land management procedures and sustainable development programmes, the development of science-based assessments of land conditions and periodic monitoring and evaluation of land resources.

The limited resources available demand careful planning of the NAP. Tier 1 is referred to as Programme Planning. The activities identified in this planning stage are intended to better comprehend land conditions, promote the importance of addressing land degradation and foster momentum for the programme, such as: the development of science-based assessments of land conditions in The Bahamas, promotion of awareness of the causes and effects of land degradation, and assessments of pressures and driving forces leading to land degradation.

### **3.0 MEASURES TAKEN TO IMPLEMENT THE UNCCD**

Tier 2 is Programme Development and Implementation and involves the development of projects and programmes (public awareness programmes, reforestation, land use planning, water resources management, cultivation techniques, innovative technology applications etc.).

Tier 3 is Programme Evaluation and involves the evaluation of programmes, policies and legislation developed to combat land degradation. This stage is viewed as the stage for re-evaluation and future staging. It is designed to feed into another planning stage (i.e., new Tier 1).

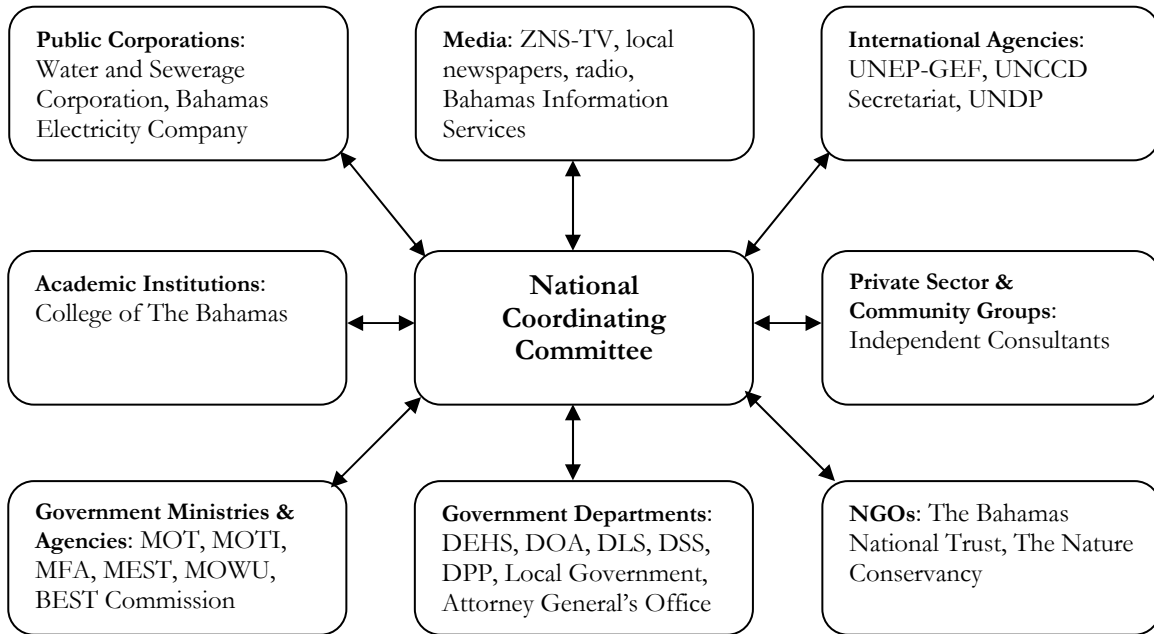
#### **3.2.2 Proposed Structure of the National Coordinating Committee**

The National Coordinating Committee (NCC) has not been established at this time. There is a need to establish the NCC and secure funding, but more time is required to consolidate public involvement and participation. The principle function of the NCC (once recognized) is to coordinate the implementation of the Convention as appropriate for The Bahamas and to establish an operating budget that will facilitate both national and island-specific initiatives.

The tentative composition of the NCC, as a stakeholder network, is shown in Figure 2. Monitoring and evaluation of the various initiatives and the functioning of the NCC and its technical unit should be carried out at regular intervals to ensure that the Government's position on land degradation issues is keeping pace with development trends. This will also ensure that the needs identified by the stakeholders are met, taking into consideration newly emerging issues at local, national and global level. The NCC will also encourage project-planning committees to monitor and evaluate their projects.

### 3.0 MEASURES TAKEN TO IMPLEMENT THE UNCCD

Figure 2: Proposed Stakeholder Network for the NAP Process



Source: BEST Commission

# **NEXT STEPS AND CHALLENGES**

## **4.0 NEXT STEPS AND CHALLENGES**

---

The projects completed to date have identified several stresses on the Bahamian environment, and all concluded with recommending action relating to sustainable land management; for example, establishing island land use plans, revamping or developing legislation, and improving data and information sharing and public awareness.

The Government has considered these recommendations and recognizes the importance of sustainable development to the future of the country. This is the reasoning behind the National Development Strategy (NDS) and the national action programme (NAP).

The next steps for The Bahamas include the implementation of both entities (i.e., the NDS and NAP) in a harmonious manner, particularly since both share the goal of sustainable growth and development through responsible use of land, coastal, marine and freshwater resources.

Currently there are several projects and programmes completed, pending or underway of diverse duration and time lines, which were or are led by different agencies and organisations. The next steps for the country also include establishing a national coordinating committee (NCC) that may serve as the umbrella under which these projects and programmes can be united. This will be challenging due to the existing decentralized approach to land management and the limited human resources currently available to oversee all activities. The committee will also be expected to develop concrete strategies for implementing the NAP within the context of the NDS.

Another challenge for the NCC is securing monetary funds for implementing the NAP. The funding should support a mechanism for facilitating Family Island activities. To date, no national project or programme has been successfully implemented without external financial and technical support.

# REFERENCES



## 5.0 REFERENCES

---

- Bahamas, The. Bahamas Environment, Science and Technology Commission. *The National Action Programme to Combat Land Degradation in The Bahamas*. Unpublished Report. 2006.
- Bahamas, The. Bahamas Environment, Science and Technology Commission. *GEO Bahamas 2005: State of the Environment*. Nassau, The Bahamas: NAPCO Printing, 2005a.
- Bahamas, The. Bahamas Environment, Science and Technology Commission. *National Policy for the Adaptation to Climate Change*. Nassau, The Bahamas: NAPCO Printing, 2005b.
- Bahamas, The. Bahamas Environment, Science and Technology Commission. *Report on the First National Awareness Seminar on Land Degradation in The Bahamas*. Unpublished Report. 2004.
- Bahamas, The. Bahamas Environment, Science and Technology Commission. *The National Invasive Species Strategy for The Bahamas*. Nassau, The Bahamas: NAPCO Printing, 2003.
- Bahamas, The. Bahamas Environment, Science and Technology Commission. *Bahamas Environmental Handbook*. Nassau, The Bahamas. 2002.
- Bahamas Environment, Science and Technology Commission. *The Bahamas Environment, Science and Technology Commission*. accessed 25 April 2006. <<http://www.best.bs>>.
- Bahamas Environment, Science and Technology Commission. *The Commonwealth of The Bahamas Biodiversity Clearing-House Mechanism*. accessed 25 April 2006. <<http://www.bahamaschm.org>>.
- Bahamas National Trust. *Bahamas National Trust*. accessed 28 April 2006. <<http://www.thebahamasnationaltrust.org>>.
- Cox, Loraine. Offices of the Bahamas Environment, Science and Technology Commission. Personal Interview. 14 June 2006.
- Government of The Bahamas. *The Commonwealth of The Bahamas – The Official Website of the Government of The Bahamas: Laws On-line*. accessed 19 April 2006. <<http://laws.bahamas.gov.bs>>.
- Lomer, Dawn, et. al. eds. *Bahamas Handbook*. Nassau, The Bahamas: Etienne Dupuch Jr Publications Ltd. 2004.
- Moultrie, Stacey. Offices of the Bahamas Environment, Science and Technology Commission. Personal Interview. 16 May 2006.
- Newbold, Rochelle. Offices of the Bahamas Environment, Science and Technology Commission. Personal Interview. 7 June 2006.
- Sealey, Neil. *Bahamian Landscapes: An Introduction to the Geography of The Bahamas*. 2<sup>nd</sup> Edition. Nassau, The Bahamas: Media Publishing. 1994.
- United Nations Department of Economic and Social Affairs . *SIDSnet: Small Island Developing States Network*. accessed 22 June 2006. <<http://www.sidsnet.org>>.
- US Army Corps of Engineers. *Water Resources Assessment of The Bahamas*. USA: US Army Corps of Engineers Mobile District & Topographic Engineering Center. 2004.

# **ANNEX 1**

## **THE NAP PROCESS SUMMARY TABLE**

## **ANNEX 1 - THE NAP PROCESS SUMMARY TABLE**

### **SUMMARY TABLE OUTLINING THE NAP PROCESS TO DATE (February 2001 – July 2006)**

Focal Point Institution	The Bahamas Environment, Science and Technology Commission
Name of Focal Point	Dr. Donald Cooper Undersecretary
Address	Nassau Court, P.O. Box N-4849 Nassau, The Bahamas dcooper@best.bs
Country-specific Websites Relating to Desertification	None
Date UNCCD Entered into Force	8 February 2001
Date of NAP Validation	7 April 2006
Government Level which Validated the NAP	Cabinet
NAP Integrated into the National Development Strategy	Pending – Government committed to its integration, in the Cabinet Decision.
NAP Implementation Has Begun	No
Final Draft of NAP Exists	Yes – Minor amendments are required to reflect recent ministerial changes made.
Member of SRAP	No
National Coordinating Body Exists	No
Number of Acts and Laws Passed Relating to UNCCD	Directly – 0 Indirectly – 15 (see 2.1)
Number of Partnership Agreements within the UNCCD Framework	0
Consultative Meeting on UNCCD Name of Meeting Date of Meeting Donor Countries Involved International Organisation or UN Agency Involved	National Awareness Seminar 23 – 24 November 2004 Funding provided by UNCCD Secretariat None
Projects Implemented That Are Related to the UNCCD Name of Project Project Implemented within NAP/SRAP/RAP Framework Project Implemented within Which Framework Project Timeframe Partners Involved Overall Budget	Land Use Policy and Administration Project No National Development Strategy 3 years Government of The Bahamas, Inter-American Development Bank US\$5 000 000.00

# **ANNEX 2**

## **THE BAHAMAS COUNTRY PROFILE**

## ANNEX 2 - THE BAHAMAS COUNTRY PROFILE

GENERAL INFORMATION	
Country	The Bahamas
Data Submitted by	The Bahamas Environment, Science and Technology Commission
Date Data Provided	February 2006
National Focal Point Institution	The Bahamas Environment, Science and Technology Commission Nassau Court, P.O. Box N-4849 Nassau, The Bahamas Tel: 1-242-322-4546 Fax: 1-242-326-3509 Email: bestnbs@hotmail.com
BIOPHYSICAL INDICATORS	
<b>Climate</b>	
Index of Aridity	0.324
Normal Rainfall	1 397 mm (55 in)
Rainfall Standard Deviation	36.068 mm (1.420 in)
Sub-national Areas	
Northwestern Bahamas	1 300 mm (51.18 in)
Central Bahamas	1 000 mm (39.37 in)
Southern Bahamas	750 mm (29.53 in)
<b>Vegetation and Land Use</b>	
NDVI (normalized difference vegetation index)	No Data Available
Vegetation Cover (% of total land area)	No Data Available
Land Use (% of total land area)	1.5% (1994 Census of Agriculture)
Arable Crop Land	5 512.22 ha (13 621.00 ac)
Other Arable Land	6 245.73 ha (15 433.55 ac)
Pasture	2 228.46 ha (5 506.64 ac)
Pine/ Coppice	5 748.35 ha (14 204.49 ac)
Other Lands	600.51 ha (1 483.89 ac)
Surface Albedo	No Data Available
<b>Water Resources</b>	
Fresh Water Availability (million m <sup>3</sup> per capita per day)	1.9
Fresh Water Resources per capita per year (m <sup>3</sup> )	66 (based on annual internal renewable water resources per person)
Agricultural Water Use (million m <sup>3</sup> )	No Data Available
Industrial Water Use (million m <sup>3</sup> )	No Data Available

## ANNEX 2 - THE BAHAMAS COUNTRY PROFILE

<b>Energy</b>	
Consumption	
Energy use per capita (kg oil equivalent)	0
Agricultural Energy Use per Hectare (millions of BTU)	200
Production	
Energy from Renewables Excluding Combustible Renewables and Wastes (% of total supply)	< 1%
Renewables – Consumption by Sector	
Industry (% of Total Renewable Consumption)	75%
Residential (% of Total Renewable Consumption)	24%
Agriculture (% of Total Renewable Consumption)	< 1%
<b>Types of Land Degradation</b>	Quantified Data Not Available
<b>Rehabilitation</b>	Quantified Data Not Available
<b>SOCIO-ECONOMIC INDICATORS</b>	
<b>People and Economy</b>	
Population (Total)	321 000 (Projected Value for 2004)
Population: Urban (Percent of Total)	84.9% (New Providence & Grand Bahama)
Population: Rural (Percent of Total)	15.1% (Family Islands)
Population Growth (Annual %)	1.8% (10-year Period, 1990 – 2000)
Life Expectancy (Years)	76.4 (Women), 69.9 (Men)
Infant Mortality Rate (per 1 000 Live Births)	5.9 (2004 Data)
GDP (Current US\$)	US\$5 734 600 000 (2004 Data)
GNI per capita (current US\$)	US\$13 783 (2004 Data)
National Poverty Rate (% of Population)	9.33%
Crop Production (Metric Tonnes)	34 565.1 (1994 Data)
Livestock Production (Metric Tonnes)	195.0 (1994 Data)

## ANNEX 2 - THE BAHAMAS COUNTRY PROFILE

---

<b>Human Development</b>	
Primary Education Completion Rate (% Age Group)	No Data Available
Number of Women in Rural Development (Total Number)	No Data Available
Unemployment (% of Total)	10.2% (2004 Data)
Youth Unemployment Rate (Age 15-24)	34.6% (2004 Data)
Illiteracy Total (% Age 15 and above)	4.5
Illiteracy Male (% Age 15 and above)	No Data Available
Illiteracy Female (% Age 15 and above)	No Data Available
<b>Science and Technology</b>	
Number of Scientific Institutions Engaged in Desertification-related Work (Total Number)	0
<b>Data Sources for Country Profile</b>	Bahamas Electricity Corporation Department of Agriculture Department of Meteorology Department of Statistics Water and Sewerage Corporation