

# **Belize's**

## **National Environmental Action Plan**



**Resilient**



**Strong**



**Clean**



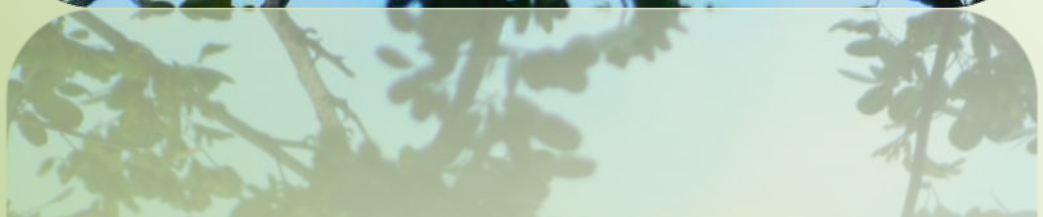
**Green**

**2015 - 2020**



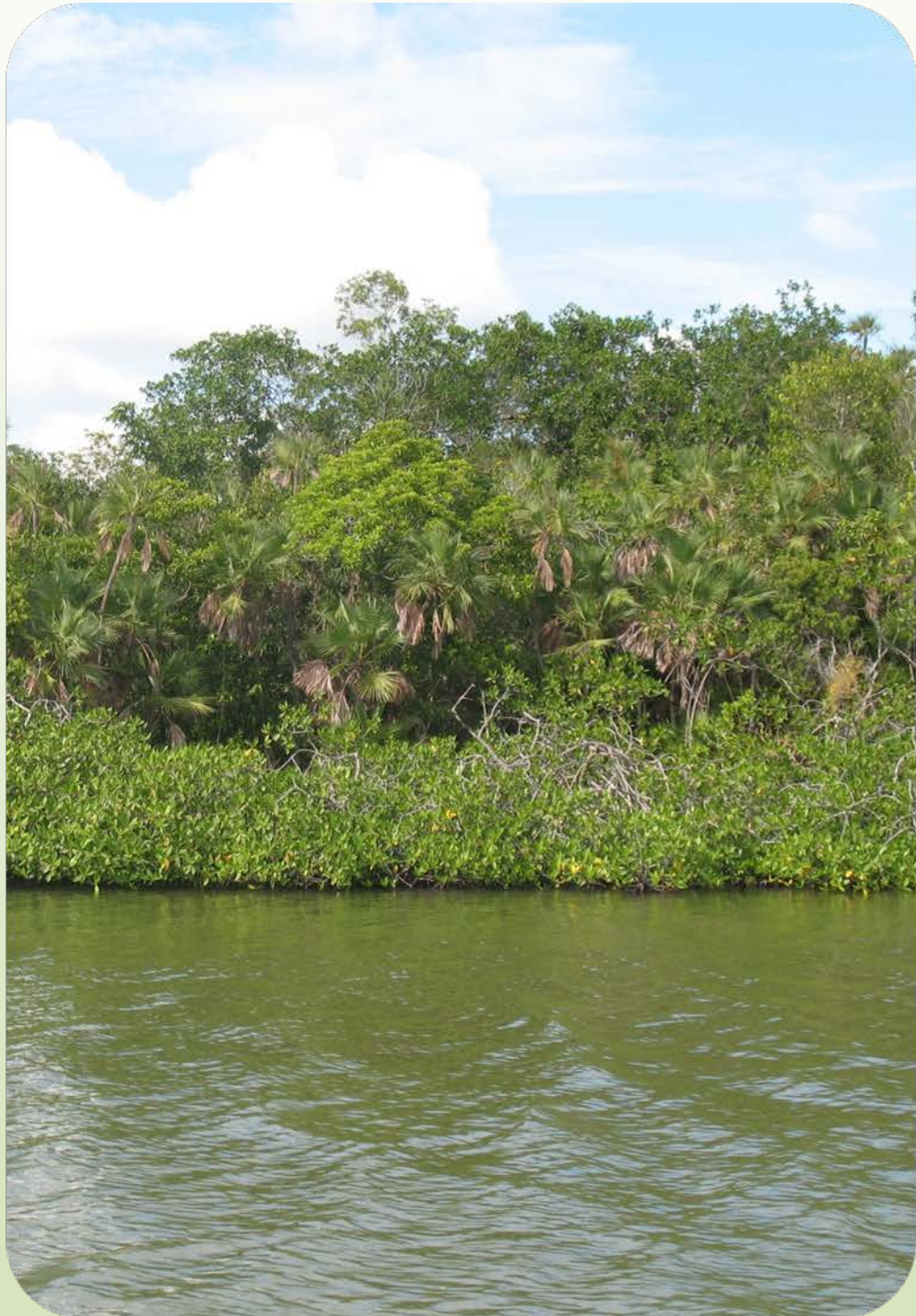
# Vision

To be leaders in environmental stewardship for sustainable development both nationally and regionally



# Mission

To ensure that Belize's development is sound through effective environmental management for present and future generations



## Contents

Abbreviations .....	i
Chapter 1 General Back Ground .....	1
1.0 Introduction .....	1
1.1 State of the Belize Environment Summary .....	2
Chapter 2 A Green Belize.....	5
2.0 Introduction .....	5
2.1 Degradation of Terrestrial Resources (Issue 1).....	5
2.1.1 Strategies and Actions.....	6
2.2 Degradation of Marine Resources ( Issue 2).....	8
2.3 Sustainable Land Management (Issue 3) .....	11
2.4 Integrated Water Resources Management (Issue 4).....	13
2.5 Challenges in Transitioning to a Green Economy (Issue 5).....	15
Chapter 3 A Clean Belize .....	18
3.0 Introduction .....	18
3.1 Waste Management (Issue 6) .....	20
3.2 Reducing Pollution (Issue 7) .....	22
3.3 Marine Pollution (Issue 8).....	23
3.4 Sound Chemicals Management (Issue 9) .....	24
CHAPTER 4 A Resilient Belize.....	26
4.0 Introduction .....	26
4.1 Disaster Risk Reduction (DRR) (Issue 10) .....	27
4.2 Response to Global Climate Change (Issue 11).....	29
Chapter 5 A Strong Belize.....	31
5.0 Introduction .....	31
5.1 Environmental Governance and Institutional Strengthening (Issue12) .....	31
Bibliography .....	35

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## Abbreviations

BBRWHS	Belize Barrier Reef World Heritage Site
BNE	Belize Natural Energy
BOD	Biochemical Oxygen Demand
BSI	Belize Sugar Industries
CBD	Convention on Biodiversity
CBI	Confidential Business Information
CCA	Climate Change Adaptation
CDERA	Caribbean Disaster Emergency Response Agency
CEPREDENAC	Coordination Centre for the Prevention of Natural Disasters in Central America
CITES	Convention on the International Trade in Endangered Species of Wild Flora and Fauna
CLC	International Convention on Civil Liability for Oil Pollution Damage and Fund Convention
CO <sub>2</sub>	Carbon Dioxide
CZMAI	Coastal Zone Management Authority and Institute
DOE	Department of the Environment
DRR	Disaster Risk Reduction
EPA	Environmental Protection Act
GDP	Gross Domestic Product
GEF	Global Environment Facility
GGG	Green Growth Generator
GIS	Geographic Information System
GMO	Genetically Modified Organism
GOB	Government of Belize
HFA	Hyogo Framework for Action 2005-2015
IGO	Inter-Governmental Organization
IPCC	Intergovernmental Panel on Climate Change ()
ISO	International Organization for Standardization
IWRW	Integrated Water Resource Management
LPG	Liquid Petroleum Gas
MARPOL	International Convention for the Prevention of Pollution From Ships
MDG	Millennium Development Goal
MEA	Multilateral Environmental Agreement
MFFSD	Ministry of Forestry, Fisheries, and Sustainable Development
MIS	Management Information System
MND	Ministry of National Development
NEAP	National Environmental Action Plan
NEMO	National Emergency Management Organization
NGO	Non-Governmental Organizations
NIWRA	National Integrated Water Resources Act
NPAPSP	National Protected Areas Policy and Systems Plan

NPAS	National Protected System
ODA	Official Development Assistance
ODS	Ozone Depleting Substances
OPRC	International Convention on Oil Pollution Preparedness, Response and Cooperation
PFA	Priorities for Action
Ramsar	Convention on Wetlands of International Importance Especially as Waterfowl Habitat
SAICM	Strategic Approach to International Chemicals Management
SD	Sustainable Development
SIB	Statistical Institute of Belize
SMC	Sound Management of Chemicals
UNCED	United Nations Conference on Environment and Development
USAID	United States Agency for International Development



# **NATIONAL ENVIRONMENTAL ACTION PLAN**

## **Towards a Green, Clean, Resilient and Strong Belize**

### **Chapter 1      General Back Ground**

#### **1.0    Introduction**

This 2015- 2020 National Environmental Action Plan is an offshoot of the new 2014-2024 National Environmental Strategy entitled “**Belize: Green, Clean, Resilient and Strong**” and should be considered jointly. While the strategy is dated to commence in 2014 and extends to 2024, the supporting action plan is scheduled for the first half of this period and is scheduled to commence in 2015 in consideration of GOB’s fiscal year that commences in April 1. To avoid difficulties in cross-referencing the proposed actions aimed at addressing the identified the priority issues of concerns, some of the information contained in the National Environmental Strategy have been reproduced in this document since this document is intended as a stand- alone document. However, the information transferred from the National Environmental Strategy has been further distilled to be more concise. The National Environmental Action Plan also responds to the new vision and policy statement contained within the strategy presented below.

**Vision Statement: To be leaders in environmental stewardship for sustainable development both nationally and regionally**

**Mission Statement: To ensure that Belize’s development is sound through effective environmental management for present and future generations**

This National Environmental Action documents is intended to be used as an operational and management tool for the mobilization of resources, development of capacity (both institutional and legal), and as guidance for addressing gaps and the improvement in the execution of the of GOB’s Environment’s Protection and Natural Resources Management efforts.

## 1.1 State of the Belize Environment Summary

Belize has made great efforts in the sustainable management of its natural resources base and the protection of its environment. As such, it continues to enjoy a relatively healthy environment with many areas still considered pristine. Much of the support the country receives to prepare and implement its national environmental programmes and activities is linked with the opportunities provided by the Global Environment Facility (GEF) and other facilities aimed at assisting developing countries to strengthen their capacities to meet their international obligations. Belize is a party to various Multilateral Environmental Agreements (MEAs). The literature reviewed indicates that Belize has ratified approximately thirty (30) international conventions, treaties and agreements that deal in some way or another with the protection of the Environment.

However, despite the accomplishments made, Belize continues to face great challenges in meeting the needs of a growing population, particularly the needs of those families trapped in the vicious cycle of poverty. In Belize the poverty rate rose from 33.5 percent in 2002 to 41.3 per cent in 2009 (BSO 2010: MDGs). This situation is exacerbated by the Government of Belize's (GOB's) high fiscal deficits burdened with debt payments.

These all have implications for resource management, sustainable development and environmental protection. This is evidenced by the increase impacts of flooding primarily on the indigent poor and increased deforestation, the pollution of waterways and seas, the indiscriminate use of resources leading to a reduction in marine and terrestrial resources, all having implications to improving and sustaining a qualitative lifestyle.

Several of the issues and concerns identified in the last 2006 National Environmental Policy and Strategy Document inclusive of the older 1999 and 1990 versions remain relevant today. These include those perennial issues identified and include the following, inter alia:

- Insufficient public awareness;
- Insufficient resources to formulate standards and regulations and ensure compliance with environmental law;

- Lack of planning to meet the resource needs for a growing population;
- Limited data bases to inform decision making;
- Inadequate inter and intra ministerial cooperation; and
- Lack of national strategy to better coordinate national efforts to better participate and take advantage of the growing number of regional and international agreements.

As is often the case, some of the issues and concerns identified have evolved during the period 1990 to today, and in some instances there have been significant improvements and accomplishments made in several areas. There have been several updating and adoption of new policies guiding Belize's effort to attain sustainable development and to allow for the implementation to a more integrated approach in the management of these often complex and cross-cutting issues. Several legislations have also been amended to incorporate modern environmental management principles and to make them more responsive to new and emerging issues. There have also been progressive improvements in national decision making processes to allow for greater community participation and greater public awareness and support for efforts aimed at ensuring that development projects address their environmental and social implications. The number of high profile cases dealing with the application of the EIA legislation in the Supreme Court supports this.

Since 2006 the following national policies and plans have been prepared or adopted:

- National Protected Areas System Policy
- Integrated Water Resource Management Policy
- National Climate Change Adaptation Policy
- Sustainable Land Use Policy
- National Energy Policy
- Draft National Culture Policy
- National Gender Policy
- National Development Framework, 2010-2030 (Horizon 2030)
- Tourism Master Plan
- National Poverty Elimination Strategy and Action Plan
- Belize National Hazard Mitigation Plan 2008.

In addition to these, there have also been some major legislative accomplishments, which include the following:

- Amendments to the Environmental Protection Act and three of its regulations
- National Integrated Water Resources Act
- National Protected Areas System Bill
- National Integrated Chemicals Management Bill
- National Fisheries Resources Management Bill
- National Occupational Safety and Health Bill

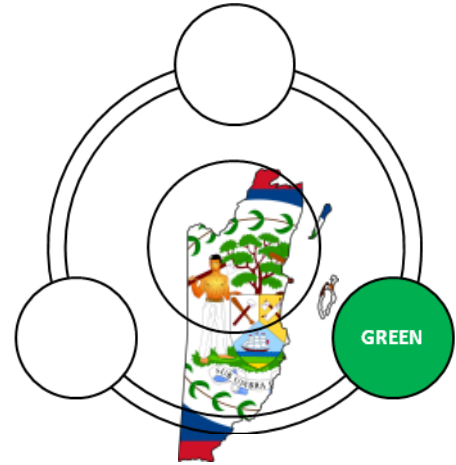
Despite these accomplishments, some of the issues such as pollution and poor waste management, overexploitation of natural resources, unplanned and uncontrolled coastal development and lack of proper land use planning identified in 1990, continue to remain as prominent areas of concerns among those stakeholders involved in the management of Belize's natural resources and the protection of its environment. Since then, issues related to climate change and disaster preparedness, invasive species, threats to the Belize Barrier Reef System from offshore petroleum exploration and impacts associated with the cruise ship sector have begun to gain greater prominence in the national discussion.

In the development of the new National Environment Strategy and accompanying National Environmental Action Plan --- new issues were identified for priority considerations by national stakeholders. These issues are presented below and placed in four strategic clusters Green, Clean, Resilient, and Strong.

## Chapter 2 A Green Belize

### 2.0 Introduction

This Strategic section focuses on addressing those issues related to the management of the natural resources and has as its long-term objective, a Belize where its natural resources, including land, forests, coastal and marine and water resources, are sustainably managed and conserved to improve the quality of life of present and future generation. It recognizes that these are essential elements of GOB's strategies to eradicate poverty by looking at these as a replenishable source of "natural capital" essential in sustaining livelihoods and ensuring food security. It has as its core long-term strategic outcome the "Greening of Belize's Economy".



The Greening of Belize's economy would allow for Belize's development to fully take advantage of its comparative advantage in this area and for greater accounting of Belize's natural capital. Greening of the economy would require that GOB implement policies and legislations that encourage innovation, clean technologies, efficiency, and best practices in its developmental activities. A transition to a green economy requires the adoption of policies that enable the private sector to use natural resources sustainably as part of good business, creating jobs and contributing to long-term growth.

This Cluster looks at three major Environmental Issues identified by stakeholders dealing with degradation of Terrestrial and Marine Resources, Sustainable Land Use and Planning and Integrated Water Resources management. It then examines the challenges in transitioning to green economy.

### 2.1 Degradation of Terrestrial Resources (Issue 1)

The forests of Belize over the past 30 years have undergone extensive change. This is attributable to relentless pressures arising from increasing demand for fuel-wood, fodder and timber; inadequacy of protection measures, illegal logging and the conversion of forest lands to non-forest uses without ensuring compensatory afforestation and essential environmental

safeguards. In addition, the major damage caused by the bark beetle infestation in the country's pine forests led to severe depletion of its national stocks requiring the importation of pine lumber. Another driver of deforestation and loss of biodiversity has to do with the cross border incursions into the forests by neighbouring farmers, hunters and other opportunistic individuals extracting forest products as new economic opportunities arises as is the case of the Xateros. Presently the greatest driver of deforestation is the conversion of forestland being converted into agricultural land. The loss of forest is a contributor to environmental degradation and is a major cause of soil erosion, destruction of wildlife habitats and biological diversity, loss of livelihoods and traditional uses are being compromised.

The Forest Department has noted stagnation in the exploitation and utilization of forests where the focus has been generally to extract and export as primary lumber with no further processing for increased marketability and market value. It recognizes that exploitation has also focused on primary hardwoods with notable underutilization of secondary hardwoods, and less well-known timber species and as well as non-timber forest products. The Department recognizes the need for a new policy that also places greater consideration for forest dependent people and their livelihoods and other issues related to climate change impacts, hurricane damage, national security and indigenous peoples rights.

### **2.1.1 Strategies and Actions**

**Goal 1.1: This section has as its primary goal the development and adoption of “A New and Robust Forest Policy that aims to use the forest and other natural ecosystems sustainably”**

The new forest policy and strategy will look at incorporating preservation, maintenance, sustainable utilization, restoration, and enhancement of the natural environment and inclusion of other actors to improve governance. The policy should address a vision that has state and non-state partners collaboratively manage the forests of Belize for the protection of fundamental ecological services and the sustained generation of income and livelihood opportunities. The Policy shall also look at the promotion of reforestation programs to balance out the forestlands undergoing conversion to agriculture land.

## **Target 1.1.1: Maintain healthy forest cover and natural terrestrial ecosystems at 61%**

### **Strategic Actions**

1. Conduct a National Forest Inventory.
2. Carry out a land use survey of all standing forests to identify its agriculture potential.
3. Prioritize and protect areas that must be maintained as forest (steep slopes, critical watershed etc.).
4. Promote forestry on lands identified as most suited for this purpose for socio-economic gain.
5. Identify and implement fiscal and economic incentives for maintenance of forests and reforestation in degraded areas, with support for public and private sector initiatives.
6. Develop a sustainable forest management system based on international certification standards, with engagement of all actors in the forest sector inclusive of the private sector, local industries and communities.
7. Promote certification in forest management and sustainable agro-forestry management, conforming to international standards.
8. Develop a comprehensive monitoring system to evaluate changes in the forest cover, carbon stocks and forest biodiversity and to use this information for further planning in light of climate change mitigation and adaptation.
9. Identify national and international financing to assist in the promotion of reforestation programs of these lands.

## **Goal 1.2: Optimize Socio-Economic Benefits from Ecosystem Goods and Services**

### **Target 1.2.1 : Increase by 50 per cent the Forest Revenues generated by Instituting a Framework for Payment for Environmental Services**

The Government shall create appropriate regulatory frameworks for the creation of payments for environmental services schemes and the sustainable generation and equitable distribution of benefits derived from those schemes.

### **Supporting Actions**

1. Evaluate the total economic value of the major ecosystem blocks in Belize, the costs of maintaining these systems, and the potential returns on investments in conserving these areas.
2. Institute a Framework for Payment for Environmental Services.

3. Develop a national integrated financing strategy for forest administration in Belize.
4. Define the rights and obligations of forest beneficiaries of investments made for the protection of ecosystem services.
5. Strengthen existing institutions, with the requisite capacity and competence, to monitor, distribute and account for all payments for ecosystem services.
6. Foster the development of carbon projects, REDD+, clean development mechanism etc.
7. Re-direct Environmental Tax funds into maintenance of Ecosystem Services.

**Target 1.2.2: Increase Revenue for Timber and Non-Timber Forest Products from Value Added Activities by 100%**

The Government shall encourage the forest sector to increase its competitiveness through the manufacture of value added products from forest resources and has as its main target, the doubling of revenues from this sub-sector.

1. Develop an awareness campaign to sensitize the forest sector and the public on the qualities and values of Belize's timber and non-timber resources.
2. Establish partnerships with the private sector to develop training program for product development and quality assurance.
3. Develop a marketing strategy to apprise potential investors and buyers on the market value and potential returns from investments.
4. Strengthen linkages between the timber production industry and timber manufacturing industry.
5. Explore opportunities for the development of otherwise underutilized but high market value products.
6. Encourage the full utilization of raw materials derived from forest resources directed to optimize the economic returns on the ecological and economical investments.
7. Carry out research on the use, processing and development of timber and non-timber forest products.

## **2.2 Degradation of Marine Resources ( Issue 2)**

Belize's coastline, particularly in sensitive eco-logical areas and many of the country's mangrove islands are experiencing un-precedented impacts primarily from tourism related development.



Beach erosion and sediment run-off into coral reefs from the loss of mangroves and other coastal vegetation are among the primary adverse impacts. Other direct pressures on the coral reefs of Belize induced by coastal development are in the form of marine dredging operations that destroy sea grass beds and wetlands. In addition to sedimentation from various land use practices contamination with nutrients and pollutants, such as pesticides, from the agriculture and aquaculture industries also threatens the reefs. Over-fishing and removal of key herbivorous fish create a shift in the trophic webs that ultimately affects ecosystem function and health is also an issue of concern.

Recently, oil exploration has raised various issues of concern about possible impacts to the marine environment and pressures on Belize's reefs will continue to increase as the warming of sea temperatures due to global climate change will only intensify "natural" stressors on the reef such as hurricanes, coral bleaching and sea water acidification. The effects of climate change on the marine eco-system is an emerging environmental issue of major concern. The current effort to modernize the Fisheries legislation and reactivate the Coastal Zone Management Authority and Institute (CZMAI) are definitive steps to improve the management of the resources in the coastal and marine resources

**Goal 2.1:** The primary goal of the strategy for this sub-sector is to **promote the protection and rational use of marine-coastal ecosystems of Belize, strengthening trans-boundary coordination and national actions with a focus on fisheries, tourism and marine areas.**

**Target 2.1.1: Reduce the Clearance of Fringing Mangroves, sea grass beds and littoral forest by at least 30%**

#### **Strategic Actions**

1. Determine the amount of fringing mangrove cleared from the 2012 study on Deforestation.
2. Explore the use biodiversity offsets.
3. Implement a mangrove replanting and monitoring program in at least five major strategic locations.
4. Use information resulting from study to develop guidelines for replication of replanting program.
5. Include littoral forests in MPAs.

6. Conduct baseline studies to determine status of sea grass and littoral forest coverage.

### **Target 2.1.2: Reduce anthropogenic pressures on Coral Reef Ecosystem**

#### **Strategic Actions**

1. Implement A National Coral Reef Monitoring Program.
2. Disseminate yearly a report identifying the results of the monitoring program.
3. Based on results, provide yearly maps of the corals in peril identifying possible major reasons.
4. Produce every five years a State of the Belize Barrier Reef System Symposium and a Five Year Scientific Assessment on the State of the Belize Barrier Reef System.
5. Develop and implement annual plans to Reduce Pressure on coral reef system.

### **Target 2.1.3: Ensure sustainable fisheries management**

#### **Strategic Actions**

1. Carrying scientific research on sustainable fishing volumes of all declining stocks.
2. Determine the biological parameters of the fishery in order to develop management specific regulations.
3. Maximizing catches for domestic and export markets, while aiming to achieve sustainability through conservation exploitation.
4. Identify and address any gaps in current management of fisheries resources.
5. Increase capacity building and training for fishermen for responsible fishing.
6. Strengthen data collection and monitoring program.
7. Strengthen public awareness and Education campaigns.
8. Increase enforcement effectiveness and compliance monitoring.
9. Implement economic alternatives and fisheries diversification plan.
10. Determine the capacity to exploit the offshore fishery.

### **Target 2.1.4: Reduce tourism related impacts on coastal and marine resources**

#### **Strategic Actions**

1. Conduct limits of acceptable change.
2. Develop guidelines and best practices for tourism related activities.

## **Target 2.1.5: Strengthening trans-boundary and regional cooperation for fisheries management**

### **Strategic Actions**

1. Harmonization of regulations.
2. Strengthen coordination among regional organizations (such as TRIGOH and CCAD-SICA).

## **2.3 Sustainable Land Management (Issue 3)**

The lack of proper planning to address the needs of a growing population, which has led to the overexploitation of some of Belize's natural resources has been a perennial problem with gains made in certain areas and stagnation in other areas. The issues associated with the lack of proper land use planning is a major cause of several of the other issues identified as priority issues such as those related to deforestation primarily associated with the expansion of the agriculture and tourism sectors and their accompanying pollution issues.

The lack of proper land use planning in Belize is one of the major obstacle in the way of orderly, integrated and sustainable development. In the urban environment, much low-cost housing is being developed in locations that have minimal employment opportunities, negligible public services and poor infrastructure, and are often prone to such adverse conditions as inundation, drought and other hazards. In Belize, the agriculture sector is exceeded only by the transport sector in the use of chemicals and is the largest source of non-point source of pollution due to land erosion and the use of agrochemicals and the largest point source of organic pollutants from the food processing industries.

There have been instances of unsustainable agricultural practices which have been primarily responsible for riparian and steep slope deforestation and degradation (BET 2010). Almost a third of the roughly 1 million acres of agricultural land in Belize occurs on land classified as marginal or unsuitable for agricultural activity. More than a third of all agricultural land in Belize is on acidic soils particularly sensitive to land degradation.

A study on land degradation in Belize indicated that in 2004, approximately 405 square kilometers of Classes 4 and 5 lands were under cultivation. The study also indicated that an area of over 1600 square kilometres having steep slopes and high rainfall was under cultivation. This represented approximately 38% of the land been used for agricultural purposes. The implication is that about 38% of the land under cultivation is prone to erosion.

GOB has made some progress with the support received from GEF and other international donors in the development of contemporaneous Sustainable Land Use Policy and Forest Policy aimed at addressing new and emerging issues in these areas.

**Goal 3.1: Effective Implementation of the 2012 Belize National Land Use Policy** is the primary goal of this sub-section. The land resources of Belize must be managed on an equitable, sustainable, fully representative and accountable basis, and the Land Use Policy and Integrated Planning Framework seeks to create the foundation that can provide that.

**Target 3.1.1: Effective Implementation of Land Use Plan, Mandates and Responsibilities**

**Strategic Actions**

1. Conduct a SWOT Strategic Session with staff of the institutions with legal mandates for planning inclusive of the Coastal Zone Management Authority and Institute to arrive at a strategy to address institutional issues.
2. Prepare institutional plans aimed at addressing institutional weaknesses.
3. Establish a National Land Use Coordinating Commission and National Physical Planning Coordinating Body involving all major stakeholders.
4. Prepare and implement a National Land Use Plan.
5. Identify all Forests that lie outside of forest reserves and protected areas, i.e. on National Land, which needs to be placed under management regimes that recognize their value and potential contribution to the rural economy.
6. Identify all degraded land inclusive of land at risk of erosion on steep slopes and areas where riparian vegetation has been cleared for possible reforestation programs.

7. Integrate the management of the seabed into the National Land Use Planning, with determination of best use and provision of all supporting cross sectoral administrative systems.
8. Integrate national petroleum exploration and extraction strategy into the National Land Use Planning, guiding the exploration and extraction of petroleum resources, reflecting the growing significance and impact of the industry.

## **2.4 Integrated Water Resources Management (Issue 4)**

Having one of the highest volumes of freshwater per capita in Latin America is of little use if there is not the adequate management for this valuable resource in place. Due to its geographic location, low population, relatively high level of forest cover, and 18 different water catchment areas, Belize is said to have one of the highest volume of freshwater availability per capita in Latin America (National Meteorological Service, 2010). However, the value for renewable internal freshwater resources per capita (cubic meters) in Belize stood at 48,019 as of 2009. Over the past 22 years this indicator reached a maximum value of 91,324 in 1987 and a minimum value of 48,019 in 2009, indicating a steady decline over the years.

Presently however, increases in demand due to expansion in the agricultural, industrial and tourism sectors along with a growing population and accompanying water pollution and watershed destruction make it imperative that urgent attention be given to the proper management, use and understanding of the freshwater resources. In response to these issues and growing concerns GOB adopted “The National Integrated Water Resource Management Policy adopted in 2008 and in 2011 it enacted the National Integrated Water Resources Act (NIWRA)”.

The overarching water policy has as its basis the inclusion Integrated Water Resource Management (IWRM) principles, the human rights approach identified under the Millennium Goals and places great emphasis on management and control. The policy for integrated water resources management states:

*“Belizeans have a fundamental right to water and it is hereby declared that the policy of the Government is to bring about the planned development, coordinated management, sustainable use and protection of Belize’s water resources consistent with the social, economic and*

*environmental needs of present and future generations, and to ensure that all Belizeans have access to affordable, safe, adequate and reliable water.”*

**Goal 4.1:** This section has as its primary goal “**Ensuring the Integrated Management of Belize’s Water Resources**”.

**Target 4.1.1: Development of a National Integrated Water Resources Plan**

**Strategic Actions**

1. Conduct a proper and comprehensive assessment of water resources.
2. Carry out a complete national classification and inventory of water resources.
3. Implement a programme for the collection of data, information management and communication systems to make water resources information available to all by 2019.
4. Establish by 2018 baselines of water quality for all types of water and usage to be used as the basis for regulatory action.
5. Determine the economic value of all water resources using economic and social assessments cost models and give consideration to use of this valuation in future planning, modeling and trade in the national water resources.

**Target 4.1.2: Strengthen the NIWRA**

**Strategic Actions**

1. Prepare an Institutional Development Plan aimed at addressing NIWRA institutional weaknesses.
2. Hire a suitably qualified hydrologist (technical staff) to provide technical advice while a minimum of a least two nationals are urgently identified for training in this area.
3. Establish the Financial Mechanism for the sustainable financing of activities and programs of the NIWRA.
4. Increase investment in the development of water storage infrastructure by 50%.

### **Target 4.1.3: Prioritize and Protect Water for Domestic Use**

#### **Strategic Actions**

1. Legislate that water for domestic consumption shall take preference over other uses.
2. Make safe potable water supplies available in adequate quantities twenty-four hours a day to the entire population by Yr 2020 and ensure that every property is provided with an approved means of disposal of domestic wastewater and water borne wastes.
3. Institute national standards and mechanisms for enforcement to assure efficiency and minimize degradation in systems for potable water supply.
4. Mainstream and increase public awareness about conserving the national water resources by efficient use and pollution prevention.
5. Consult with stakeholders to obtain agreement on manner and nature of the regulation of the packaged/bottled/ice-making water industry with special emphasis on the proper disposal of packaging and containers.

## **2.5 Challenges in Transitioning to a Green Economy (Issue 5)**

The issues identified above are all strategically addressed and intimately intertwined with the goal of greening Belize's economy. This development path should maintain, enhance and, where necessary, rebuild natural capital as a critical economic asset and source of public benefits, especially for poor people whose livelihoods and security depend strongly on nature.

Despite challenges such as an overbearing external debt, a weak investment climate, dwindling preferential markets, high incidence of poverty, and a high incidence of natural disasters, the Belizean economy shows positive signs of greening.

### **Goal 5.1: Greening the Green Economy**

The following is recommended to enhance this green trend and eventually achieve a full green economy which is the overarching goal. Key targets include:

### **Target 5.1.1: Enhance Investments**

Continued emphasis should be placed on those key economic sectors which play a part in GOB's development agenda seeking to effectively meet with its sustainable development objectives.

### **Target 5.1.2: Measure Progress Towards a Green Economy**

The Belize's environmental statistics previously published by the Statistical Institute of Belize (2004) and subsequently by the Land Information Center (2006, 2012) should be institutionalized. This information is vital for deeper analysis but more importantly to provide evidence to policy makers on the value of its natural environment through the establishment of qualitative and quantitative indicators to track progress over time and its contribution to economic growth.

### **Target 5.1.3: Increased Stakeholder Engagement**

An extensive stakeholder engagement both passive and active needs to be carried out. This should provide some measure on gauging the general sentiments of stakeholders as it relates to the promotion of green growth initiatives, skills and resources and support for greening at the level of top management as well as to provide some notion on the extent of demand for green technologies. At the private sector level it should encourage Corporate Social Responsibility. It should lend or explore equal opportunities for their participation in developing green policies etc.

### **Target 5.1.4: Promoting Environmental Standards**

GOB should adopt internationally recognized standards for benchmarking performance related to greening of the economy and more broadly towards sustainable development. Not only is it strategic but it provides an opportunity for the adoption and promotion of clean technologies. With time, the demand for standards in Belize particularly environmental standards will grow and therefore there is a great need to promote the use of standards. To this end, there must be initiatives aimed at supporting private sector transition to a green economy so that it can usher a change in the way key commodities are produced, consumed and financed. Understanding the supply chain in this context, there will be the need to develop initiatives that aim to adopt new



standards for sustainability and to drive wider implementation of standards across major economic sectors.

**Target 5.1.5: Enhanced Education Awareness and Capacity Building**

The educational system should guide young minds into adopting and acknowledging green habits as a way of life. Providing incentives for the private sector to engage in green production by promoting the use of environmental standards such as the ISO 14000 series would serve to complement government's effort towards a green economy.

**Target 5.1.6: Adopting the Green Growth Generator (GGG)**

The GGG can guide the decision making process through extensive stakeholder engagement and a rigorous assessment of potential interventions to help create a roadmap that maximizes the potential for an effective and efficient transition to a green economy across Belize. The Green Growth Generator is a decision-making framework which could be developed in partnership with village councils, municipal councils, local government and central government across the six districts within Belize.

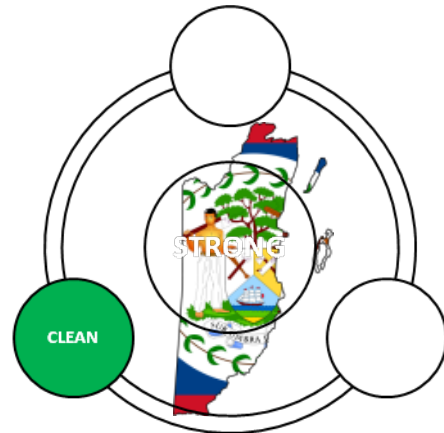
**Target 5.1.7: Undertaking a Quantitative Analysis of Green Policies**

The green economy initiative, like any other development programme/initiative, calls for a cost-benefit economic study to determine its level of feasibility and effectiveness; it is further recommended that resources be allocated to the investigation of alternative models, the collection of the necessary data, and the simulation of various scenarios under one or more such models. This will provide a clearer picture of the expected results of the implementation of the green economy initiative in Belize, and will serve to ensure that the intended benefits do indeed accrue to the country.

## Chapter 3 A Clean Belize

### 3.0 Introduction

While it is generally felt that Belize's environment is pristine, there have been growing concerns related to pollution of ground and surface water and the marine ecosystem in certain areas and other issues dealing with air, solid waste and chemicals management. The economy of Belize is highly dependent on its Tourism Sector that is extremely sensitive to pollution and waste management issues.



This section of the national strategy refers to maintaining a clean Belize, free of litter and pollution where our inland and coastal waters, air and land are free from contamination, enabling our people and visitors to enjoy an unspoiled and health environment. The section also includes consideration for cleaner production standards, encourages, and promotes the adoption of best practices and the identification of best appropriate technology that provides jobs and support Belize's sustainable growth. It also looks at activities aimed at strengthening partnerships among government, private sector and other stakeholders involved in pollution control efforts.

Belize's challenges related to the prevention and control of pollution are, like all other countries, closely related to its level of development and its economic structure. Until the recent discovery of petroleum and the subsequent production of liquid petroleum gas (LPG) gas and small refining activities of crude oil to diesel, its industrial sector was limited to light manufacturing industries such as carbonated drinks, beer and rum production and other food processing activities.

A recent survey identified concerns related to pollution and waste management in particular those issues associated with the improper disposal of liquid and solid waste. Despite the implementation of the National Solid Waste Management plan and the establishment of the National Solid Waste Management Authority to oversee the execution of the plan, the problems with illicit dumps and littering persists. Other issues of concern are those associated with the transportation and final disposal of hazardous wastes.

Air pollution issues although not seen as posing a direct threat to the environment is an issue in several localized areas and there have been isolated incidences where air pollution related issues have triggered instances of public concern. The industrial air pollution issues of concern are those primarily associated with Belize Natural Energy's (BNE's) flaring of production gases, Belize Sugar Industries' (BSI's) emissions, and those associated with thermal generators.

There have also been a few concerns received on vehicular emissions and smoke from illicit fires and few instances of odours emanating from wastewater treatment facilities. In addition, smoke from fuel reduction burning in forest management and bushfires can have wide regional impacts and affect communities far removed from the burn site.

Marine pollution from ship generated wastes and land based sources have been receiving greater attention. The concern with respect to the development of Belize's new petroleum industry and the transportation of crude oil through Belize's sensitive marine ecosystems, coupled with the threat of offshore oil exploration have been driving efforts to increase Belize's protection of the Belize Barrier Reef System and other sensitive marine ecosystems

This section of the policy document focuses on the strategic thrust of a "Clean and Healthy Environment". The issues identified have as the main strategic goal: improved waste management; reduced air pollution; and improved chemicals management.

### **3.1 Waste Management (Issue 6)**

#### **Goal 6.1 Improve Waste management**

##### **Target 6.1.1: Expansion and Effective Implementation of the National Solid Waste Management Plan**

###### **Strategic Actions:**

1. Update the National Solid Waste Plan in respect to the Northern and Southern Regions of the country.
2. Prepare an Implementation Plan in respect to the adjustments to the National Plan in Strategic Action 1, above.
3. Monitoring and Evaluation of Implementation Plan.
4. Identify and assess illicit dumpsites throughout Belize.
5. Establish a task force at the district level including DOE, Local Gov., SWaMA, Village Councils, Town/City Councils, and Public Health to address illicit dumping issues.

##### **Target 6.1.2: Increased enforcement of existing legislation through improved coordination by regulatory agencies**

###### **Strategic Actions:**

1. Organize regular interagency meetings and workshops targeting capacity building in monitoring and enforcement.
2. Rationalize various littering offences regulations to ensure greater effectiveness in their applicability.
3. Develop an anti-littering policy.
4. Work with local government in authorizing and training local government personnel in enforcing pollution regulations.
5. Organize joint enforcement operations targeting illicit dumping activities.
6. Expand enforcement authority to include tour guides, traffic officers, etc. to assist in ticketing littering and illicit dumping offenders.
7. Establish an illicit dumping hotline and reward program with incentives to reporting citizens.

8. Develop programmes to further strengthen voluntary compliance by instituting a National Environmental Awards Programme aim at recognizing industries' efforts at reducing their "environmental foot prints"
9. Develop regulations and accompanying guidelines for environmental audits as a legal requirement.

### **Target 6.1.3: Increased public sensitization programs and access to information**

#### **Strategic Actions:**

1. Develop with assistance of Ministry of Tourism, a program aimed at keeping the Jewel clean.
2. Implement Bi-annual National Clean-Up Campaigns involving primary, secondary and tertiary level educational institutions.
3. Develop training program for bus drivers, conductors and tour guides on reducing littering from public and private buses.
4. Implement campaign to changing purchasing behaviour to reduce waste e.g. encourage use of reusable containers and bags.
5. Activate PRTR program.
6. Develop an Environmental Extension Service Program aimed at assisting small industries comply with regulatory requirements and to develop capacity to participate in the PRTR Program.

### **Target 6.1.4: Reduction of untreated sewage into the receiving environment by 50%**

#### **Strategic Actions:**

1. Development and implementation of a National Liquid Waste Plan inclusive of Financial Sustainability component.
2. Collect baseline data to determine trends and issues in sewage waste disposal.
3. Identify areas of high density and rapid development, which may be in need of modern sewage systems.

## **3.2 Reducing Pollution (Issue 7)**

**Goal: 7.1 Reduction of Air Pollution from illicit burning and vehicular emissions**

**Target 7.1.1 Development and Effective Implementation of an air pollution prevention plan**

**Strategic Actions:**

1. Development and Implementation of an air pollution plan.
2. Establish a working group involving ministries of Transport, Environment, Agriculture, Health, and Forestry and representatives of public transport companies and farmers to develop a program aimed at reducing vehicular emissions of public transports and cargo vehicles.
3. Develop a public sensitization program addressing air pollution issues.

**Target 7.1.2: Development and effective implementation of an ambient air quality-monitoring program**

**Strategic Actions:**

1. Identify critical areas of concern with respect to air pollution and establish monitoring sites.
2. Improve monitoring capacity through acquisition of necessary equipment and training programs.
3. Evaluate effectiveness of air pollution programs of industries.

**Target 7.1.3: Reduce the number of incidents of illicit burning by 50 %**

**Strategic Actions:**

1. Collaborate with academia to undertake research related to the identification of the number of incidents of "illicit burning".
2. Work with Solid Waste Authority and Local Governments to prohibit illicit burnings with special emphasis on those within dumpsites and near residences.

3. Establish an illicit burning hotline and reward program with incentives to reporting citizens.

### **3.3 Marine Pollution (Issue 8)**

To address marine pollution and damage to the marine ecosystem related issues, the drafting of a Marine Pollution Bill commenced in 2013. The purpose of the draft Bill is to provide for the Belize's powers and jurisdiction in relation to the prevention of marine pollution and other related issues such as damage from groundings of ships and anchoring on the Belize Barrier Reef. The Bill also seeks to harmonize the commitments Belize has made in the ratification of several international marine pollution conventions, including the following:

- Powers And Jurisdiction Under The United Nations Convention On The Law Of The Sea 1982 (UNCLOS)
- Intervention on the High Seas under the International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties.
- Dumping Waste at Sea under the Convention on the Prevention of Pollution by Dumping of Wastes and Other Matter, 1972 and its 1996 Protocol.
- Prevention of Pollution from Ships under the International Convention for the Prevention of Pollution from Ships (1973) as amended by the Protocol of 1978 (MARPOL 73/78).
- Oil Pollution Preparedness and Response under the International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990.

Efforts to address marine pollution related issues should focus on the completion of the drafting of the Bill and its socialization.

#### **Goal 8.1: Reduce Marine Pollution**

##### **Target 8.1.1 Adoption of the Draft Marine Pollution Bill**

##### **Strategic Actions:**

1. Develop a Cabinet paper to inform and sensitize government of the proposed bill.

2. Lobby support from other enforcement agencies and the public for the passage of the bill.

### **Target 8.1.2 Improve Marine Pollution Monitoring**

#### **Strategic Actions:**

1. Develop a comprehensive monitoring and surveillance plan to prevent the incidence of or mitigate marine pollution.
2. Strengthen the existing institutions (Coast Guard, Port Authority and Fisheries Department) with the necessary competence to conduct marine pollution monitoring and surveillance and enforcement.
3. Develop an awareness campaign to sensitize mariners on marine pollution prevention.

## **3.4 Sound Chemicals Management (Issue 9)**

Recognizing the importance of Sound Chemicals Management, Belize ratified the Rotterdam Convention, Stockholm Convention on POPs, Basel Convention, and the Montreal Protocol. Furthermore, Belize demonstrated its resolve by implementing the Strategic Approach to International Chemicals Management (SAICM) Quick Start Programme project entitled, “Mainstreaming into development plans sound management of chemicals (SMC) priorities for key development sectors in Belize and Associated SMC governance,” which aims to improve the chemicals management infrastructure in Belize.

**Goal 9.1:** This strategy has as its primary goal the **Integrated Management of Chemicals**. It has as its targets the following:

### **Target 9.1.1: The adoption of the Draft National Integrated Chemicals Management Bill and its Subsequent Implementation**

#### **Strategic Actions:**

1. Development of an Integrated Chemicals Management Cabinet Paper.
2. Passage or enactment through the Parliament.



**Target 9.1.2: The implementation of the Institutional Development Plan supporting the establishment of the Chemicals Management Unit and the National Integrated Chemicals Management Authority**

**Strategic Actions:**

1. Transforming the projects unit into the Industrial Chemicals Management Unit.
2. Implementation of Business plan for institutional capacity of the unit.
3. Development of TORs for Unit Positions.
4. Staffing of the Integrate Chemicals Unit.

**Target 9.1.3: The complete implementation of the National Pollution Release and Transfer Registry**

**Strategic Actions:**

1. Integrate PRT Registry into the DOE data management and information system.

**Target 9.1.4: the development and implementation of the national chemicals management-training program and accompanying public sensitization program**

**Strategic Actions:**

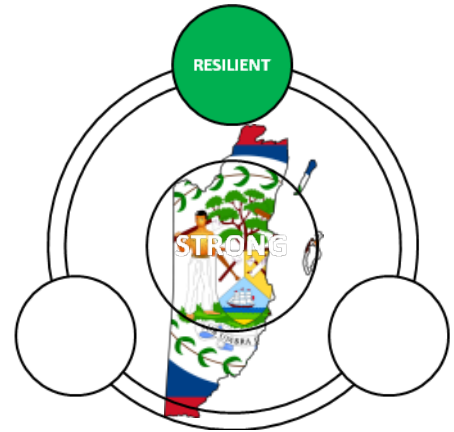
1. Development of capacity building training material/program.

# CHAPTER 4 A Resilient Belize

## 4.0 Introduction

**A Resilient Belize signifies making Belize Resilient by Committing to Policies for Disaster Risk Reduction and Climate Change Adaptation:**

Resilient means making Belize better prepared for coping with the effects of future shocks that may be caused by more frequent and intense natural disasters, more volatile weather patterns and by technological hazards. It also means preparing Belize to effectively adapt to the long term consequences of climate change and to effectively transform to a green economy.



Belize is prone to various hydro-meteorological hazards, which include tropical cyclones, storms surges, floods and drought. The country's high vulnerability to natural hazards and disasters is worsened because a large majority of its population and economic activity such as agriculture and tourism are concentrated along the exposed coastal zone and flood prone areas of the Greater Belize River Basin that drains the central zone of the country.

Marine traffic, particularly oil tankers and cruise ships traveling through our coastal waters and the Caribbean Sea present the risk of oil pollution from accidents at sea. In addition, recent concerns have also centered on the increased risks from the transportation of BNE's crude oil and those that could be associated with offshore exploration. Such pollution threats to the Belize Barrier Reef, coastal installations, marine environment and fisheries have been highlighted in the national media.

Because of these issues, making Belize resilient and climate change adaptable is of immediate importance. Resiliency also involves ensuring healthy and well-managed ecosystems that are more resilient and so play a key role in reducing vulnerability to climate change impacts. Equally important is ensuring that climate resilience is integrated into urban planning and infrastructure development. In the social sphere, effective social inclusion policies will ensure that Belize and

its communities are better prepared to protect vulnerable groups and fully involve women in decision-making.

#### **4.1 Disaster Risk Reduction (DRR) (Issue 10)**

As the spill-over effects of hazard exposure and vulnerability in this globalized world proved unavoidable and necessitated a determined commitment to an international response, Belize was fortunate to join other countries at the United Nations in that international response by signing on to the Hyogo Framework for Action 2005-2015 (HFA) *Building Resilience of Nations and Communities to Disasters*. The HFA, while not legally binding, commits Belize to undertaking certain DRR activities.

The Hazard Mitigation Policy for Belize recognizes that the country is susceptible to a variety of hazard events that could result in incalculable damage to the environment and the erosion of our social and economic development. Hazard mitigation can reduce our vulnerability to these hazards and vastly increase the nation's ability to recover from these events. The policy therefore places emphasis on building national capacities to reduce vulnerability based on the principles of sustainable development and the active participation of all stakeholders in hazard risk reduction activities.

The Strategy has as its Goals, Targets and Strategic Actions the following:

**Goal 10.1: Building Resilient communities to the effects of natural, technological and environmental hazards and engendering a shift from protection against hazards to risk management**

**Target 10.1.1 Reduce the vulnerability of 100% of identified communities**

**Strategic Action:**

1. Assess the vulnerability of identified communities with respect to natural technological and environmental hazards.
2. Develop and apply standard forms of statistical recording of risk factors, disaster occurrences and their consequences to enable more consistent comparisons.

3. Conduct dynamic risk analysis with specific consideration of demographics, urban growth, and the interaction or compound relationships between natural, technological and environmental factors.
4. Develop and implement strategic actions with respective targeted communities to minimize threats and improve resiliency.
5. Enforce land-use planning and programmes in hazard prone-environments.
6. Educate stakeholders so that attitudes, behaviours and lifestyles are modified to enable them to positively respond to hazard risk mitigation issues.
7. Establish national information exchanges, facilities, or websites dedicated to hazard, risk and disaster prevention, linked by agreed communication standards and protocols to facilitate interchange.
8. Undertake periodic reviews of accomplishments in hazard, risk and disaster reduction efforts at all levels of engagement and responsibility.
9. Focus multi-year risk reduction strategies on vulnerable population centers and fragile environments.

**Goal 10.2: Build the capacity of national institutions to more effectively implement programmes and projects to reduce vulnerability of the nation and people to natural and technological hazards**

**Target 10.2.1 Enhance the capacity of institutions by at least 75% to effectively translate policies/ programmes/projects into meaningful results**

**Strategic Actions:**

1. Develop and implement capacity enhancement programme addressing identified gap related to hazard risk mitigation.
2. Build and strengthen alliances between institutions to collaborate in DRR (4).
3. Conduct a national audit or assessment process of existing functions necessary for a comprehensive and integrated national strategy of hazard, risk and disaster prevention, projected over 5-10 and 20 year time periods.
4. Build, or where existing, strengthen national approaches that can increase hazard, risk and disaster prevention capabilities and activities.

5. Study feasibility of specific alternative funding and resource allocation modalities that can ensure continued commitment to sustained risk and disaster prevention strategies.

## **4.2 Response to Global Climate Change (Issue 11)**

The Government of Belize acknowledges the conclusion of the Intergovernmental Panel on Climate Change (IPCC) that mankind is having a discernible influence on the earth's climate. The mean temperature of the earth is projected to rise by 1.5 to 6 degrees Celsius during the next 100 years. This will produce a rise in mean sea level of 15 to 95 centimeters. It will also affect the hydrological cycle, leading to changes in evaporation and precipitation. The effects at the regional and national levels are unknown at this stage. However, the best scientific evidence indicates that there could be significant repercussions on the productive sectors of Belize, i.e. agriculture, coastal zone, energy, fisheries, forestry, human settlements, and water resources. In light of the foregoing, the Government of Belize has developed and adopted a national policy on Global Adaptation to Climate Change.

The Belize Climate Change Adaptation Policy is directed at all government agencies, which execute policies or provide services in sectors, which may be impacted by global climate change. These include but are not limited to agriculture, coastal zone, energy, environment, fisheries, forestry, health, housing, local government, tourism, transportation, and water resources.

This section has as its main goal the following:

**Goal 11.1: Foster the Development and Effective Implementation of a Climate Change Action Plan in tandem with the associated policy**

**Target 11.1.1: The Development and Effective Implementation of a Climate Change Adaptation Action plan in tandem with the associated policy**

### **Strategic Actions:**

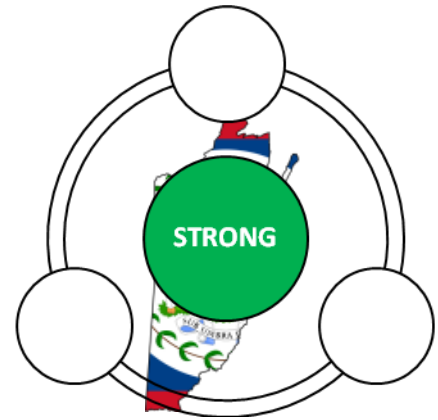
1. Undertake climate change vulnerability studies of the environment.
2. Identify adaptation options to meet the threats of climate change.

3. Develop and implement appropriate mitigation programs to address mitigation opportunities.
4. Require that project proponents address climate change in their Environmental Impact Assessments by incorporating the results of climate change vulnerability studies.
5. Identify economic incentives jointly with the ministry of Finance and develop the National Climate Change Economic Incentive Program to encourage investment in public and private sector adaptation and mitigation measures.
6. Develop a program aimed at educating stakeholders so that attitudes, behaviours and lifestyles are modified to enable them to positively respond to climate change adaptation measures.
7. Provide the necessary training aimed at strengthening Belize's negotiating position on climate change at the regional and international levels to promote its economic and environmental interests.
8. Organize Biennial Symposium Targeting Climate Change Related Topics and efforts in Building Resiliency.

# Chapter 5 A Strong Belize

## 5.0 Introduction

Concerns on cross-cutting issues related to Environmental Governance were also highlighted during the consultation process. These issues coupled with inadequate financial and human resources alongside the need for training were emphasized. It is believed that these are some of the core issue affecting lack of enforcement and inadequate public awareness and education processes essential in creating the supportive political will among policy makers.



A specific cross-cutting issue of concern is that dealing with capacity development and research needs. Scientific data is essential for the decision making process, the lack of key data indicators can have negative effects on the environment and the people. Making decisions on assumptions or on limited data can negatively affect the health, well-being and the quality of life of a country and can also prove detrimental to the environment.

There is the need to strengthen national capacities to adequately monitor and collect data on the indicators used to measure sustainable development goals, which are also essential in being able to quantitatively measure the impacts of development policies on the environment, whether positive or negative, as means to streamline policies that are being implemented. There is also the need to develop programmes that are geared towards obtaining data on the quality of air, water and soil. Of utmost importance is the need to have data on key indicator of environment quality.

## 5.1 Environmental Governance and Institutional Strengthening (Issue12)

**Goal 12.1: Capacities for Effective Policy Development, Implementation and Maintenance Enhanced**

**Target 12.1.1: Effective Inter-agency Planning and Coordination Mechanism Defined, Implemented and Sustained**

### **Strategic Actions**

1. Multi-agency and layered environmental coordination mechanism defined, established, and maintained by the DOE, i.e. higher council on the environment or the Sustainable Development Council.
2. Integrated planning PROCESS defined and operational.
3. Joint evaluations designed and commissioned.

### **Target 12.1.2: Decentralization of DOE's management model for effective policy coordination and implementation**

#### **Strategic Actions:**

1. Conduct institutional analysis to inform appropriate management model for decentralization.
2. Revise and update DOE's Institutional Development Plan.
3. Develop and implement effective programmatic controls for DOE to address issues of errors, fraud and corruption.
4. Strengthen mechanism to deal with public complaints and grievances.

### **Target 12.1.3: Functional and technical capacity gaps of environmental protection and management agencies and staff reduced by 80%**

#### **Strategic Action:**

1. Conduct human resource needs and capacity gap analysis.
2. Develop capacity strengthening program to address identified functional and technical capacity gaps.
3. Enhance DOE's GIS/spatial analytical capabilities.
4. Define and implement a capacity enhancement programme on 'communication for development'.
5. Strengthen DOE's communications tools, e.g. website, PRTR, public interface, hotlines, etc.



### **Target 12.1.4: Robust National Environmental Evaluation Policy and System Designed and Implemented**

#### **Strategic Action:**

1. Develop a national environmental evaluation policy.
2. Develop a national environmental monitoring and evaluation plan.
3. Design and develop a national monitoring and evaluation management information system.
4. Implement and maintain a national monitoring and evaluation management information system, building on experiences from the production of the Belize Environmental Statistics series.
5. Establish and maintain an M&E/Data management unit.

### **Target 12.1.5 NEAP is adequately resourced (90%) and its implementation aligned with MFED's Programme Based Budgeting Initiative**

#### **Strategic Action**

1. Strengthen oversight body to ensure transparent and accountable use of the EMF resources for improved environmental outcomes.
2. Identify and pursue potential sources of grant funding to support implementation of the NEAP.
3. Ensure the NEAP provides for the necessary and sufficient inputs (human resources, equipment, etc.) for effective implementation.
4. Prepare grant proposals for specific actions identified in the NEAP.

### **Goal 12.2: Public and Stakeholder Confidence Improved and Knowledge Management Capacity Strengthened**

#### **Target 12.2.1 Public and Stakeholder Confidence Improved**

**Strategic Action:**

1. Systematize process and instrument for gauging public and stakeholder knowledge, attitudes and perceptions on environmental issues and agency performance building on the 2014 BET-DOE survey.
2. Strengthen platforms for stakeholder participation in the decision making process.

**Goal 12.3: Knowledge Management Capacity Strengthened**

**Target 12.2.2 Knowledge Management Capacity of the Environmental Sector Enhanced**

**Strategic Action:**

1. Undertake triennial environmental symposia on the state of the Belize Environment.
2. Biennial dissemination of environmental statistics.
3. Conduct annual environmental best practice seminars targeting technicians/practitioners to facilitate cross-fertilization and information sharing across sectors.
4. Design and implement behaviour change communication campaigns and environmental education programmes targeting specific environmental issues.

**The Action Plan for these Goals, Strategies and Activities are summarized in Table 5.1 (See Attachment)**

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