Belize National Report

To the

World Summit

On Sustainable Development

Ministry of Natural Resources, Environment, and Industry
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TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS

I. INTRODUCTION 1
   1.1 LOCATION
   1.2 CLIMATE
   1.3 PHYSIOGRAPHY
   1.4 HYDROLOGY
   1.5 TERRESTRIAL ECOSYSTEMS
   1.6 COASTAL ECOSYSTEMS
   1.7 POPULATION ISSUES
   1.8 SOCIO-ECONOMIC ASPECTS

II. NATIONAL PLANNING PROCESS FOR SUSTAINABLE DEVELOPMENT AND ITS IMPLEMENTATION 5
   2.1 BACKGROUND
   2.2 MAJOR INITIATIVES FOR SUSTAINABLE DEVELOPMENT
      2.2.1 National Committee and Task Force for Sustainable Development
      2.2.2 The National Strategic Plan
      2.2.3 The National Environmental Action Plan
      2.2.4 The National Biodiversity Strategy and Action Plan
      2.2.5 The National Poverty Elimination Strategy and Action Plan 1998-2003
      2.2.6 The Belize Medium Term Strategy 2000-2002
      2.2.7 The National Human Development Advisory Committee.
   2.3 CHANGES IN THE POLICY AND DECISION-MAKING PROCESS
   2.4 STRENGTHS AND WEAKNESSES OF THE PLANNING PROCESS

III. NATIONAL CRITICAL ISSUES 13
   3.1 BACKGROUND
3.2 NATIONAL CONCERNS

3.3 INTEGRATED NATURAL RESOURCES MANAGEMENT (TERRESTRIAL ECOSYSTEMS)
   3.3.1 Land Resources Management/Land Use Management
   3.3.2 Forest Management

3.4 INTEGRATED NATURAL RESOURCES MANAGEMENT (AQUATIC ECOSYSTEMS)
   3.4.1 Freshwater Resources
   3.4.2 Degradation and Depletion of Coastal Resources

3.5 VULNERABILITY TO NATURAL DISASTERS AND OTHER PHENOMENA

3.6 SOLID WASTE MANAGEMENT

3.7 BIODIVERSITY MANAGEMENT

3.8 STATUS OF PROTECTED AREAS

3.9 ACTIONS TAKEN TO ADDRESS THE ISSUES

3.10 MAIN ACCOMPLISHMENTS

3.11 THE WAY FORWARD

IV. EMERGING CRITICAL ISSUES

   4.1 BACKGROUND

   4.2 SOCIETY AND CULTURE
      4.2.1 Family, Community and Traditional Values
      4.2.2 Traffic
      4.2.3 Migration
      4.2.4 Health

   4.3 ECONOMIC VULNERABILITY
      4.3.1 Energy
      4.3.2 Globalization
      4.3.3 Tourism

V. EDUCATION

VI. REFERENCES
ACRONYMS AND ABBREVIATIONS

ALIDES Central American Alliance for Sustainable Development (Alianza Centroamericana de Desarrollo Sustenible).

BFLA  Belize Family Life Association
CBO  Community-Based Organization
CCAD  Comision Centroamericana de Ambiente y Desarrollo
CBDB  Caribbean Development Bank
CEDS  Conservation and Environmental Data System
CPA  Country Poverty Assessment
CZMAI Coastal Zone Management Authority and Institute
DFID  Department For International Development
ECLAC Economic Commission for Latin America and the Caribbean
ESTAP  Environmental, Social & Technical Assistance Project
FAO  Food and Agriculture Organization of the United Nations
FPMP  Forest Planning and Management Project
GDP  Gross Domestic Product
GEF  Global Environmental Facility
GEF/SGP  Global Environmental Facility/Small Grants Programme
GIS  Geographic Information System
HECOPAB  Health Education and Community Participation Bureau
IAP-WASAD  International Action Programme on Water and Sustainable Agricultural Development
IDB  Inter-American Development Bank
IICA Regional Institute for Agricultural Cooperation (Instituto Inter-Americano de Cooperación para la Agricultura)
IMF  International Monetary Fund
LIC  Land Information Centre
MBRS  Meso-American Barrier Reef System
MHD  Ministry of Human Development, Women, Youth and Children
MOH  Ministry of Health and Sports
NAFTA  North American Free Trade Association
NARMAP  Natural Resources Management And Protection Project
NATF/PEP  National Aids Task Force/Peer Education Programme
NCSD  National Council for Sustainable Development
NEAP  National Environmental Action Plan
NGO  Non-Governmental Organization
NHDAC  National Human Development Advisory Committee
NHI  National Health Insurance
NWHP  National Worker's Health Plan
OAS  Organization of American States
OECD  Organization for Economic Cooperation and Development
PACT  Protected Areas Conservation Trust
PHB  Public Health Bureau
PHC  Primary Health Care
PSIP  Public Sector Investment Programme
RESSCA  Conference of Ministers of Health and Environment of Central America

SIDS  Small Island Developing States
UB  University of Belize
UNCED  United Nations Conference on Sustainable Development
UNDP  United Nations Development Programme
UNESCO  United Nations Educational, Scientific, and Cultural Organization
UNICEF  United Nations Children's Fund
USAID United States Agency for International Development
WSSD  World Summit on Sustainable Development
I. INTRODUCTION

1.1 LOCATION

Belize is located in northern Central America, bordered by Mexico on the north, Guatemala to the west and south and the Caribbean Sea to the east. Including its territorial waters in the Caribbean, Belize's geographic coordinates are 15° 53' to 18° 30' north latitude and 87° 15' to 89° 15' west longitude. Using an offshore territorial limit of 20 km. (12 miles), the national territory covers about 46,620 sq. km (18,000 sq. m.), of which 49% is land. Belize's land mass includes more than 1,000 tiny islands, known as cayes (pronounced 'keys'), totaling about 690 sq. km (266 sq. m). However, there are about 1,540 sq. km. (595 sq. m.) of lagoons on the mainland, reducing effective land area to some 21,400 sq. km (8,263 sq. m). The average dimensions of the Belize rectangle are about 260 km (156 miles) north to south and 180 km (109 miles) east to west; the mainland has 280 km (168 miles) of coastline.

The barrier reef, the second longest in the world and the longest in the northern hemisphere, extends 200 km (132 miles) from the Mexican border in the north to the Sapodilla Cayes in the south.

1.2 CLIMATE

The climate is subtropical, with temperatures ranging from 21º C in the cooler months of October to February to 32.2º C in the warmer months of May to September. The annual mean relative humidity is 81.8%, while total rainfall varies from 1,588 mm to 4,290 mm, annually. The average annual rainfall over the past 15 years is reported at 2006 mm. There are two distinct seasons: a rainy season, which normally commences in late May and lasts until November, and a dry season, which stretches from December to early May. Topographic variations throughout the country are responsible for major fluctuations in air temperature, humidity and rainfall.

1.3 PHYSIOGRAPHY

The northern half and eastern fringes of the southern half of the country comprise a plain of low relief. The Maya Mountains, 300-1,100 m in altitude, occupy the south-center and dominate much of the remainder of the country. They rise steeply to a maximum of 1,120 m at Victoria Peak in the Cockscomb Range, and then slope down to the Vaca Plateau in the west. The third major physiographic feature of the country comprises karst landscapes, sometimes hilly and sometimes rolling, on the north and west of the Maya mountains. Prominent discontinuous foothill ranges exist in the southern interior and comprise much of the hinterland of the southern Toledo District.

1.4 HYDROLOGY

Though Belize is a relatively low country, its river systems and many perennial streams supply most of its water needs. The country is well endowed with both surface water, and water stored in aquifers, as evidenced by the fact that wells can be drilled almost
anywhere in the country with the expectation of reaching water. The Land Information Center (LIC) has identified thirty-two watersheds, although the National Hydrological Services classifies twenty-two major watersheds for Belize. Streams draining the southeastern and eastern slopes of the Maya Mountains have well-developed branching patterns with relatively steep, straight courses in the mountainous areas. On the coastal plain, streams become progressively more sluggish and drainage is less effective. Near the submerging coast, there are numerous lagoons, mangrove swamps, deep estuaries and river-mouth bars.

1.5 **TERRESTRIAL ECOSYSTEMS**

Belize has a significant number of terrestrial reserves. Presently, the terrestrial reserves cover about 2,450,143 acres or 9,921.3 sq. km., equivalent to 43% of the country. Although small in size, Belize is a country of exceptional biological diversity; it is home to a highly diverse number of animal species: up to 163 species of mammals (mostly bats), 571 species of birds (including the endangered Jabiru Stork), 121 of reptiles, and 42 of amphibians have been listed for Belize. Of this number, 52 species of mammals and 81 of the bird species are determined to be endangered, although not necessarily so in Belize. In its territory are some of the last healthy populations in Central America of the Black Howler Monkey and the Jaguar. In addition, the spectacular barrier reef is home to hundreds of species of fish and other aquatic life.


Belize is estimated to have about 4,000 species of native flowering plants (Angiosperms) of which 2,500 are dicots (Dwyer and Spellman 1981) and 1,500 are monocots (Spellman et al. 1975). The latter include approximately 250 species of orchids (B. Adams). Approximately 700 species of native trees are reported for Belize, representing 331 genera in 87 plant families. The richness of Belize’s biodiversity may be attributed to the fact that approximately 79% of its territory remains under some form of vegetation cover. In addition, most water resources and mangrove forests remain in relatively pristine conditions.

1.6 **COASTAL ECOSYSTEMS**

The Belizean barrier reef is considered one of the “Seven Underwater Wonders of the World” and received recognition as a World Heritage site in 1996. During the early 1970s the state of the coral reef was designated by a Smithsonian expert as pristine, but more recent studies and observations have revealed sufficient change for the designation to be changed to “almost pristine”. Approximately half of Belize’s national territory is under the sea. The extent and diversity of highly productive tropical coastal and marine ecosystems that are characteristic of Belize are exceptional in the Caribbean. These include coastal lagoons, mangroves (which occupy about 3% of the country), sea grass beds and coral reefs.
1.7  **POPULATION ISSUES**

The 2000 population census determined that the enumerated Belize population stands at 240,204, an increase of 26.8% over the 1991 census. After adjusting for a 3.5% under-enumeration or under-coverage, the Central Statistical Office of the Ministry of Budget Management places the population at mid-year 2000 at 249,800, a 28.5% increase over the 1991 figures. This is partly as a result of a large influx of Central American refugees, primarily Salvadorans and Guatemalans. The latest census information also indicates that immigration has been even more pronounced in the last nine (9) years than in the eleven (11) years between 1980 and 1991. The improvement in the delivery and quality of basic health services and reduction in the death rate have probably also contributed to the increasing population growth. Other sources of data indicate that the overall fertility rate has been declining during the period 1980-1991. Even so, Belize experienced an increase from 2.6 to 2.7% population growth per annum during this period. At this rate, Belize’s population will double in the next 26 years.

The previously observed low population density, estimated at 5.2 inhabitants per sq. km. in 1970, increased to 7 persons per sq. km. in 1994, and has changed to a high of 10.4 per sq. km in 2000, still one of the lowest in the world; its ratio of 306 persons per sq. km of cultivated land is, however, higher than that of nearby Honduras and Nicaragua. Additionally, approximately 50% of the population lives in urban areas and much of the country is currently inhospitable to human habitation.

An unusual feature of the recent Belizean experience is the fact that the rural population has been growing not only in absolute numbers but also in its share in total population. The urban/rural balance has shifted over the years, from 46% rural in 1970 and 49% in 1980 to 52% in 1991; the situation changed to 51% in 1994, increased to 53% in 1998 and was again 52% in 2000. (Population Census 2000---Major Findings, Central Statistical Office, Ministry of Budget Management). This feature is explained by the tendency of immigrants to settle in rural areas, the higher fertility rates in the rural areas, by the fact that most out-migration occurs from the urban areas and that land is generally available in the rural areas. Both population growth and its high concentration in rural areas have important consequences for environmental resources. Pressures on tropical forest areas are greater than what could be expected given the low population level. Similarly, a rapidly increasing population, particularly of the “slash and burn” type that normally inhabits the rural areas, increases the potential for unsustainable agricultural practices.
1.8 SOCIO-ECONOMIC ASPECTS

Belize has experienced impressive economic growth since the mid-1980s, largely because of the rapid expansion of agriculture, fisheries and tourism, which are heavily dependent on the environment. The sustained growth in these sectors is, therefore, crucial for the Belizean economy. This will only be possible if the land is appropriately used, if the forests are protected, if the physical and chemical properties of agricultural soils do not seriously deteriorate, if the fish stocks do not get depleted, and if the country is able to maintain its many tourist attractions in coastal areas as well as inland. These attractions largely correspond to the country's unique natural environment, including relatively pristine beaches, coral reefs, natural tropical forests and biodiversity.

Belize is ranked 58th out of 117 countries rated by the United Nations Development Program (UNDP) in its 1999 Human Development Report. This is an improvement from 83rd place in 1998 and places Belize favorably among the nations of the world in respect of GDP per capita (US$2,825), education (75.5% literacy) and life expectancy (72 years). While this ranking appears good, it masks the fact that a full 33% of the population is considered poor, as determined by a poverty assessment carried out in 1995/96. Equally disturbing are the current parallel critical issues of drugs, crime, teenage pregnancies and unemployment and/or underemployment. The report, additionally, does not factor in environmental degradation and urban development problems.
II. NATIONAL PLANNING PROCESS FOR SUSTAINABLE DEVELOPMENT AND ITS IMPLEMENTATION

2.1 BACKGROUND

National planning processes for sustainable development have been in operation long before the 1992 United Nations Conference on Environment and Development (UNCED); however, UNCED served as a catalyst to bring together the nations of the world in a concerted effort towards sustainable development. At this forum, country representatives at the highest level made important commitments towards a sustainable future. Due to its geographic location, as well as its cultural ties with its Central American neighbours, Belize is able not only to initiate national programmes designed to achieve sustainable development, but also to participate in regional programmes with the same objectives.

During 1994, there were follow-up “summits” by the Presidents and Heads of State of the Central American countries, culminating in the “Central American Alliance for Sustainable Development,” (ALIDES) which for the first time outlined an integrated and coordinated strategy for the promotion of political, economic, social, cultural and environmental sustainability for the people of the region.

Through its membership in ALIDES Belize was able to participate in this regional approach for the implementation of Agenda 21. A basic principle behind the strategy is the realization by the Summit Heads that sustainable development must be approached from a regional perspective and their reaffirmation of the need to establish close links between regional and national initiatives in order to achieve a harmonic and coherent whole. This further necessitates the creation of a coordinating mechanism that will assist member states of the region in the implementation of their strategic and action plans towards sustainable development.

ALIDES also committed the governments, through two very critical instruments, to:

a) “establish National Councils for Sustainable Development, to be made up of representatives from the public sector and civil society” and to establish

b) “the Central American Council for Sustainable Development, to be made up of the Presidents of the Central American countries and the Prime Minister of Belize, who may be represented by their delegates.”

The National Councils for Sustainable Development (NCSD), when formed, would be responsible to ensure that national policies, programs and projects reflect the aspirations and will of the population at large and are consistent with the sustainable development strategy, while the regional council will ensure that the mandates of the Heads of State are carried out and that civil society participates meaningfully in the whole development process.
Support has been provided to Belize, by the Canada Fund and the Central American Commission for the Environment (CCAD), to help to establish its NCSD. This effort has continued sporadically during the last few years. Legislation has been drafted and a national Steering Committee has also been established for the purpose of creating the NCSD, but this has also not yet been operationalized. The Department of the Environment has been leading this activity, but it is possible that the changes that have occurred at the political level during those years affected the continuity of the process.

More recently, Belize has been given the lead role in another regional community’s efforts to work towards the achievement of sustainable development. Belize has been a member of the Caribbean Community (now known as CARICOM) since its formation. This institution comprises of a number of Caribbean islands as well as mainland countries, including Guyana, Suriname and Belize. A meeting of the CARICOM heads of state held earlier in 2001 resulted in a decision to establish a CARICOM Sustainable Development Task Force. Belize was given the lead role to steer the region’s activities in the areas of sustainable development, environment and disaster management. The Prime Minister has since appointed a Task Force whose job is to draft Terms of Reference for the establishment of the National Council for Sustainable Development. The NCSD will be expected to provide support to the Prime Minister in his discharge of the new regional assignment.

2.2 MAJOR INITIATIVES FOR SUSTAINABLE DEVELOPMENT

With the combined input of government, non-government organizations, civil society, the private sector and international and regional funding agencies, a number of strategies were initiated to implement Agenda 21. These include:

2.2.1 National Committee and Task Force for Sustainable Development

The National Steering Committee was established in 1995 for the purpose of creating the National Council for Sustainable Development, but this has not materialized to date. In 1999, the structure and role of the committee was revised. It was upgraded to become the National Task Force for Sustainable Development in 1999, whose members were appointed by the Prime Minister.

Belize has also drafted legislation for the appointment, by Cabinet, of the National Council for Sustainable Development, with provisions for establishment of District Councils for sustainable development. This is still in the draft stage.

2.2.2 The National Strategic Plan

This strategic plan was first drafted in 1998, sets out the development objectives of the country to be achieved over the period 1998 to 2003. Investments were proposed that would achieve human, social, institutional and environmental development.
The National Environmental Action Plan

The first National Environmental Action Plan (NEAP) was prepared by the Ministry of Tourism and the Environment with the collaboration of the Ministries of Health, Economic Development, Natural Resources, Agriculture and Fisheries, Trade and Industry, Finance, and that of the Attorney General. Other contributing agencies included the Water and Sewerage Authority, and the University College of Belize. Technical and financial support for this project was provided by the World Bank on two separate missions in 1993 and 1996. The final draft of the NEAP was adopted by the Department of the Environment in 1996. The NEAP provided an overview of the major environmental issues facing Belize and was intended to provide guidance to the GOB in the prudent use and management of natural resources. It focused on issues, policies, and programmes which were considered most critical to Belize. Policy and management recommendations were made for:

- strengthening land use management
- improving waste management
- reducing deforestation and unsustainable agricultural practices
- strengthening legal and institutional capacity
- enhancing integrated coastal zone management
- improving water resources management
- expanding the use of financial mechanisms for environmental and natural resources management
- improving health conditions
- breaking the poverty/environmental degradation cycle
- development of a conservation strategy for tourism.

The National Environmental Action Plan was considered to have two levels of objectives. The immediate objectives of the NEAP were described as:

- the provision of a blueprint for the development and implementation of environmentally sustainable development policies by the government of Belize and
- the improvement of inter-sectoral coordination of the various environmental players.

The ultimate objective was a program of policy reform, institution building, studies and investments that would improve the state of the environment in Belize and put the country on a path to sustainable development. It was recognized that the NEAP was a document that would require constant updating as circumstances change, updating that would require the continued involvement and participation of the public and private sectors, non-government and community-based organizations. It embodied or conformed to several of the UNCED principles.
2.2.4 *The National Biodiversity Strategy and Action Plan*

Belize became a signatory to the United Nations Convention on Biological Convention on June 13, 1992 in Rio de Janeiro, Brazil and ratified it in December 1993. An interim National Biodiversity Committee (NBC) was formed in late 1995, charged with the responsibility of providing guidance to the government of Belize on policies necessary to conserve and sustainably use the country’s biological diversity. The NBC was comprised of five government ministries, two umbrella non-government organizations, one representative from the United Nations Development Programme (UNDP) and one from the University College of Belize (UCB). The first major task was the formulation of the National Biodiversity Strategy and Action Plan (NBSAP), which evolved after several months for consultants’ drafting of reports, country-wide public consultations and review. During the process it was revealed that, although Belize was endowed with a high level of diversity in plant and animal species and habitats in relatively healthy conditions, there were a number of activities and factors which threatened the sustainable use and conservation of those same species and habitats. The National Biodiversity Strategy sought to address those threats, and recommended the establishment of a National Biodiversity Office to coordinate the conservation efforts. Other recommendations made include the drafting and adoption of a National Protected Areas Systems Plan, the removal of overlapping legislation, the formulation of legislation specific to biodiversity, the development of enforcement mechanisms, the development of a management framework for marine reserves and other protected areas, major education and public awareness campaigns, substantive investments in human and institutional capacity, and legislation to ensure compliance with Belize’s commitments under the CBD and other international agreements relevant to biodiversity. The Strategy also emphasized that community participation was essential for successful implementation of the programmes or plans. The National Biodiversity Strategy provides a long-term framework for Belize to conserve and sustainably use its biological resources. It outlines priorities for action based on what is realistically achievable, with the assumption that successful conservation of the biodiversity will be achieved if community participation is maximized and equitable distribution of benefits is ensured. This national effort to produce the first Biodiversity Strategy could also be used to demonstrate that the wide stakeholder participation in such planning processes can make a difference in Belize’s sustainable development.

The formulation of the National Biodiversity Action Plan was preceded by the Stocktaking and Assessment exercises which identified gaps and analyzed cross-sectorial issues which impact directly on Belize’s biological diversity. The Plan describes actions under twelve main subject areas such as: *in-situ* and *ex-situ* conservation, laws and policy, human and institutional capacity, research, monitoring, and sustainable use, community participation, public education and awareness, institutional collaboration and coordination, access to genetic resources, equity and benefit-sharing, information management, population and biodiversity and biosafety. The Action Plan also calls for greater collaboration.
between government agencies, non-government organizations, research institutions, community-based organizations, local communities, youths, traditional healers and the general public, to work together as partners in biodiversity conservation.

2.2.5 The National Poverty Elimination Strategy and Action Plan 1998-2003

A Country Poverty Assessment (CPA) was conducted in 1995/1996. The assessment was carried out by the National Assessment Team (NAT) for Poverty, with technical and financial assistance provided by the Caribbean Development Bank (CDB), the United Kingdom’s Department for International Development (DFID), and the Canadian International Development Agency (CIDA). The results of the assessment revealed the incidence and extent of poverty in the country and the degree of vulnerability to social deprivation experienced by individuals, social groups and communities. The CPA provided a source of data which government, cooperating with other social partners and international development agencies could utilize to devise policies, strategies and programmes designed to countervail the impact of poverty.

Following the 1995 World Social Summit, a November 1996 meeting of Caribbean Ministers’ Meeting on Poverty Eradication, proposed a Directional Plan for Poverty Eradication in the Region. The meeting recommended that each nation, using the model of the Directional Plan for the Region, should formulate a National Strategy for the Eradication of Poverty. The GOB collaborated with ECLAC, CDB, and the Organization of American States (OAS) to prepare the Belize strategy document.

A series of nation-wide consultation workshops were convened by the National Human Development Advisory Committee (NHDAC) during 1998. Those served to identify policies and actions being implemented or planned by government as poverty eradication measures while indicating additional issues which a national strategy for poverty elimination should seek to address. Six broad themes were identified as areas where investment should be directed if meaningful progress is to be made towards the elimination of poverty in Belize. The themes identified are:

(a) economic growth for the sustenance of employment and livelihoods
(b) investment in human capital through education and training
(c) investment in health services and health care delivery
(d) housing shelter and human settlement
(e) social vulnerability and safety nets
(f) protection and conservation of the environment.

Other measures or actions already being implemented or planned for contribution to the framework to combat poverty include:
Employment and Sustainable Livelihoods

Infrastructural investment and technical assistance in the poorer southern region in the form of the construction of a new highway and associated economic social and physical planning activities, the reform of land administration, the establishment and strengthening of participatory mechanisms for local government bodies and the provision of incentives for investment.

Education and Training

Reform of the primary education system, employment training for youths and adults, targeting of the Commonwealth Debt Relief to fund school books and materials in deprived communities and construction of additional school facilities to double as hurricane shelters.

Health Care and Services

Water and sanitation projects in rural and low-income housing areas, utilizing the Commonwealth Debt Relief to fund water projects in deprived communities, mortgage financing for home construction or improvement for low-income families.

Social Vulnerability and Safety Nets

The provision of social infrastructure in poor communities, a programme for cash transfers to the elderly, disabled and destitute families and an economic empowerment programme for individuals dependent on the social assistance programme.

Environmental Protection and Conservation

Community-level environmental management efforts funded through the United Nations Global Environmental Fund and the Protected Areas Conservation Trust (PACT).

2.2.6 The Belize Medium Term Strategy 2000-2002

Belize’s “Medium Term Strategy: 2000-2002,” proposes that it will “improve the natural and productive resource base to ensure long-term sustainable management and viability.” It will also encourage close working relationships and collaboration between and among the various ministries in efforts to “promote greater participation and initiatives of rural people (e.g., women, youth and indigenous groups) for effective program planning, implementation and evaluation.” The strategy will also “promote and support an integrated approach to the use and management of natural and environmental resources for agriculture/fishing production.”
Although the document is described as a medium-term strategy, it is actually intended to contribute to improved efficiency and delivery of services, which are necessary processes in sustainable development.

2.2.7 The National Human Development Advisory Committee

The National Human Development Advisory Committee (NHDAC) is a committee endorsed by the Cabinet and chaired by the Ministry of Economic Development. It is comprised of government ministries, non-government organizations and district representatives. It is mandated to provide guidance for policy and programme development to the government with regard to poverty elimination initiatives that are particularly related to the social sector. It is also expected to guide, monitor and evaluate the implementation of integrated programmes, including those related to poverty elimination and socio-economic development.

2.3 CHANGES IN THE POLICY AND DECISION–MAKING POLICY

The last decade saw some important changes in the policy and in the decision-making processes of government. Public-private partnerships were utilized with much more frequency than in the previous decade. This strategy has proven to be effective for the implementation of public projects, since it guaranteed a greater chance of sustainability after project input was completed. It also established ownership by the beneficiaries from the stage of project formulation and results in greater efficiency because better use is made of the available human, financial and other resources that are utilized for the particular project. The non-governmental, private and civil society sectors were much more involved in the development and implementation of projects, either entirely or partially.

Government has also made some changes in the way decisions are made. Since the current government took office in August 1998, all policy or legislative decisions are made by the Cabinet instead of by the individual minister who would otherwise have responsibility in the area of the activity. The public is given the opportunity to make inputs on national issues via public consultations, the media, sub-committees of the national assembly and/or individual representation. The mid- and senior management levels of the public service use the consultative or participatory decision-making process frequently through the formation of technical and advisory committees, which extend across departments, ministries and civil society.

2.4 STRENGTHS AND WEAKNESSES OF THE PLANNING PROCESS

Any process involving the participation of all interested stakeholders generally produces better results, since it benefits from greater input of and from a wider variety of sources; however, this is many times considered time-consuming by the ultimate decision-makers because of the longer time required, and because of the difficulty in reaching a decision that satisfies all stakeholders. The same is the result if the decision needs to be by
consensus instead of majority rule. Very often confrontational and adversarial relationships and turf-protection positions develop. Compromise and conflict resolution then needs to be applied during the process. All participants in partnerships may not perceive their benefits to be equal and, therefore, may not have as much commitment to the process, thereby contributing to some weaknesses in the system.
III. NATIONAL CRITICAL ISSUES

3.1 BACKGROUND

As a developing country, Belize depends on the utilization of its natural resources for sustainable development. It must, therefore, exploit both its renewable and non-renewable natural resources for the development process. Broadleaf and pine forests, wildlife and fisheries are the primary renewable natural resources while water and land are the main non-renewable resources which need to be properly managed. While greater and more immediate economic benefits are derived from development in other sectors, such as tourism and agriculture, the proper and efficient use of these natural resources continue to contribute significantly to the country’s social and economic growth. On the other hand, these same sectors place increasing pressure on some of the land, forests and water resources.

3.2 NATIONAL CONCERNS

It is recognized that social and economic development causes increasing stress on the environment, particularly if improperly managed. Belize faces similar challenges in its pursuit of economic development as that experienced by most small developing countries. In its quest for sustainable development, Belize is faced with issues arising from the utilization of the country’s natural resources. The application of proper conservation management is pivotal to Belize’s development.

As part of the preparation of Belize’s Report on Rio+10, several consultation workshops were undertaken. The participants in these workshops determined that the lack of an integrated natural resources management process was one of the major National Critical Issues. However, the discussions also suggested that the sensitivity of Belize’s natural resources required that during the process of integrated natural resources management, adequate consideration be given to the following two related sectors: those dealing with terrestrial ecosystems, and those affecting aquatic or marine ecosystems. The principal problems affecting terrestrial ecosystems stem from the following existing situations:

(ii) The lack of, or inadequacy of land resource management capability  
(iii) inadequate land use planning  
(iv) insufficient or incomplete forest management  
(v) problems associated with solid waste management  
(vi) the lack of adequate biodiversity management  
(vii) poverty.

National Critical Issues affecting aquatic or marine ecosystems include the following:

(i) lack of management of freshwater resources  
(ii) degradation and depletion of resources in coastal and marine zones  
(iii) vulnerability to natural disasters.
3.3 INTEGRATED NATURAL RESOURCES MANAGEMENT (TERRESTRIAL ECOSYSTEMS)

Many of the issues identified are related to the management and utilization of natural resources. Collectively, the major issue was determined to be the lack of integrated natural resources management capability. For integrated natural resources management to be applied, the management of several sectors should be addressed at the same time.

Activities in inland areas eventually have some impact, usually negative, on the coastal and marine areas because of the physical features of the country. Activities in the marine area can similarly have negative impacts on the rest of the country. Since coastal and terrestrial resources are interrelated, it was decided to treat them as terrestrial and aquatic components for purposes of discussion and possible resolution. Some of the issues affecting terrestrial resources include: Land Resource Management/Land Use Planning, Forest Management (Degradation and Depletion of Forest Resources), Solid Waste Management, and the Reduction and Loss of Biological Diversity. Issues related to Aquatic Ecosystems that need to be addressed include the Management of Freshwater Resources, Degradation and Depletion of Resources in the Coastal and Marine Zones, and the Depletion of the Fisheries Resources.

3.3.1 Land Resource Management/Land Use Management

There is no single answer to the issues of land management and planning. The perceived problems range from the reducing availability of land resources, insecure land ownership, conflicts on land ownership, inaccuracy of land surveys, environmentally unsafe developments, agricultural development on unsuitable soils, housing development on unsuitable (wet, swampy, or mangrove) sites, inequitable distribution of land resources and the illegal squatting on privately held and government held land. These are some of the issues, which continue to be high on the list of matters requiring resolution at a countrywide level.

3.3.2 Forest Management

Sustainable forest management continues to be an increasingly difficult task to address because of the ever-increasing demand placed on the forest resources. The recently completed Forest Management and Planning Project determined that only fourteen percent (14%) of the forests of Belize was suitable for timber production forest or which could be utilized for multiple-use management. The forest industry has contributed an average of 3% to the GDP over the last several years. This low figure is due to the fact that not all the goods and services derived from the forests are captured in financial terms, some revenues being credited to other sources even though derived from forests.

Developmental pressures created by expanding agricultural industry (including farming and aquaculture), urban and rural (housing and farming) expansions, and the improvement and expansion of infrastructure (roads, etc) all contribute to reducing the forest estate. Activities such as illegal logging and squatting with land clearing, exacerbated with the lack of accurate information about the status of the
forest, combine to make the job doubly difficult. The fact that public investments made in the forest sector require a relatively long time to be recovered reduces the priority that is placed on this type of forest development. There are also no economic incentives to promote sustainable re-forestation.

With respect to the other environmental concerns, the need for watershed protection, biodiversity protection and management are some issues, which now require greater emphasis in the management equations. While the timber industry (processing and manufacturing) continues to grow slowly, and exploitation is underway, the lack of accurate and reliable data about the national forest estate prevents a holistic approach to its management. The impact of non-timber exploitation is not determined because the information is incomplete, so mitigation measures cannot be applied.

Pollution

Pollution of the terrestrial ecosystem has three main sources. These are: solid waste disposal, industrial effluents and unsustainable agrochemical input. Terrestrial contamination is also directly related to the contamination of water resources as a point source of pollution. Contamination of terrestrial systems can also come from anthropogenic sources, such as the removal of vegetation cover and urbanization.

Solid Waste Disposal

The Government of Belize is cognizant of the need to put in place a comprehensive solid waste management program. Recently, the Solid Waste Management Project was put under way in order to analyze alternatives for solid waste management and disposal in Belize. This program was initiated after the recognition that solid waste management is a principal environmental problem facing Belize. Solid waste disposal in Belize is carried out on an ad hoc basis, with most population centers still lacking a comprehensive management scheme. However, solid waste collection systems have recently been put in place in certain urban centers. There are no technically designed landfills in place throughout the country, thereby increasing the risk of contamination of the surrounding environment. Until the comprehensive solid waste management program comes into place, Belize’s water bodies will continue to be faced with the risk of contamination.

Industrial Effluents

Belize has no heavy industry and has remained relatively free of industrial contamination. However, significant contamination has resulted from the sugar processing industry in the north, which has contaminated the New River. In the south, the citrus industry has contaminated (to a certain extent) the Stann Creek River. Heavy metal contamination has been detected at the mouth of the Belize River and along the Haulover Creek (Gibbs & Guerra, 1996), although the source
of this contamination, has not been scientifically ascertained. However, this type of contamination has been determined to be transported largely by river sediments. Dredging activities and use of this material as a source of fill in low-lying areas may result in the transportation of the contaminated sediment to terrestrial sites.

Agrochemical Use

Agrochemical use in Belize is extensive. Agrochemicals are used in most industries undertaking agriculture and farming practices.

The Sugar Industry

The districts of Corozal and Orange Walk produce 1.2 million tons of cane annually. The average ton per acre produced is 18; farmers who fertilize use 25 lbs. of nitrogen, 12 lbs. of phosphorous and 8 lbs. of potassium per acre. The rate of fertilizer application is 8 times this amount in the Caribbean, and 4 times this amount in the U.S. (E. Zetina, personal communication). In addition, all the sugarcane, approximately 60,000 acres, is burnt as a matter of fact annually for sugar cane production; this practice supposedly facilitates reaping and reduces the danger of snake bites, but increases pollution.

The Citrus Industry

This industry is concentrated in the west and south of the country, mainly in the Cayo and Stann Creek Districts. Mineral fertilizers (mainly dolomite) are used. Herbicides and pesticides are also used but very little fungicides. Fertilizer is applied carefully and at reduced levels during the harvesting process. It is believed that contamination is minimal in this sector.

Citrus processing usually results in large volumes of effluent, which is disposed into nearby streams; recently, however, the largest citrus processing plant installed a treatment system consisting of anaerobic settlement lagoons. These lagoons have been installed on a trial basis with its performance to be monitored over a period of time and, if necessary, to make the adjustments.

The Banana Industry

In 1992, 77,233 acres of banana were under cultivation (King et al, 1992). The whole industry was virtually destroyed by Hurricane Iris in 2001 but is recuperating and will be in full production by 2003. Pesticide use in the banana industry is extensive. Aerial spraying for Black Sigatoga is frequent, and exposures to employees have been of concern, especially in the last two decades. Social concerns as a result of the spraying became an issue during the 1990s. Little water quality data on the effects of pesticide residues on the receiving water bodies is available. One report indicated that of two chemicals tested, little or no residues were found in the receiving water bodies.
Other Sources of Pollution

Some activities occurring as a result of urbanization or commercial activities have direct impact on forested watersheds. Logging, mining, residential development and agriculture lead to erosion and siltation of streams and waterways, which may impact the surrounding environment. Land clearing of slopes and on the edges of waterways contribute to soil loss, siltation and transportation of dust to residential and other areas.

Pests and Diseases

While pests may cause major damage to individual crops or species of trees, the long effect can cause major economic loss to the development of the country. During the last two to three years there have been outbreaks of agricultural pests such as the Pink Hibiscus Mealy Bug, which fortunately was isolated to certain parts of the country and was subsequently eliminated. Similarly, in late 2000 the country experienced a major outbreak of the Southern Pine Beetle (Dendroctonus frontalis), which destroyed close to 70% percent of the pine forests of the Mountain Pine Ridge Forest Reserve. Some outbreaks were also observed and attacked in other pine forests of the south of the country. Although the full effect of this infestation has not yet been evaluated, its impact is already determined to be significant because of the impact on employment in the industry and the revenue generated from this source. Prior to this pest infestation, the records were showing the MPR was generating more revenue than all the other areas (including hardwood forests) combined.

3.4 INTERGRATED NATURAL RESOURCES MANAGEMENT (AQUATIC AND MARINE ECOSYSTEMS)

3.4.1 Freshwater Resources

Background

Although Belize’s population is widely dependent on abundant freshwater resources, this important resource has not been thoroughly assessed. Belize’s water resources includes an extensive river network and associated water catchments, freshwater aquatic ecosystems such as wetlands and marshes, groundwater resources and cave water systems associated with karst lands of central Belize. These freshwater systems form a major part of Belize’s ecosystems, playing a critical role in the support of biological diversity. They also support an integral part of Belize’s economic and social well-being as they provides water for domestic, industrial and agricultural use, transportation and tourism development. Hydropower is also a minor, but important, source of energy in Belize, with plans to increase Belize’s energy needs from this source.
The mechanisms to adequately manage and protect Belize’s freshwater resources do not reflect their abundance, nor their importance. This is partly due to relatively low population demands on this resource; however, recently there has been increasing awareness of the importance of properly managing and protecting Belize’s freshwater resources. Several local and national initiatives have been established that will lend support to the management and improvement of Belize’s freshwater resources.

In 1992, within the context of the International Action Programme on Water and Sustainable Agricultural Development (IAP-WASAD), the Government of Belize, with the participation of the Food and Agriculture Organization (FAO), sponsored the First Inter-Ministerial Workshop on Water and Sustainable Agricultural Development. The private sector and non-government organizations, as well as government agencies, participated in the workshop. This workshop was followed by the formation of a pro-tem Water Commission, which was given the task of preparing recommendations for water institutions and legislation. These actions reflected government’s awareness of the importance of introducing adequate integrated water resources management to sustain economic and social development, and the increasing incidents of degradation and pollution of the water resources.

More recently, at a water resources meeting, a working group was formed to continually discuss and promote issues pertaining to freshwater resources management and protection.

**Surface Water**

Belize has a rich supply of surface water; it has 18 major rivers, which drain the country. These are supported by an extensive system of streams and tributaries draining most of the country. Rivers in Belize supply most of the freshwater needs of the country, with aquifers providing most of its potable source of water. Communities adjacent to freshwater bodies make use of rivers extensively. Freshwater bodies are used in the agriculture sector for irrigation, by the tourism industry for the supply of fresh water as well as for recreational purposes, and to a lesser extent, the energy sector for the production of hydropower.

**Pollution**

A comprehensive threat analysis of Belize’s water resources has not been conducted; however, various agencies have conducted ad hoc water quality monitoring of surface water bodies, which has verified a certain degree of contamination of Belize’s water resources. While the Department of Environment has prepared a comprehensive water quality-monitoring program, this monitoring program is limited to surface water bodies and has not been fully put into place due to the lack of resources.
The lack of a comprehensive water policy for Belize affects water resources management. The lack of a comprehensive management policy is, therefore, an important factor that requires urgent attention.

Threats to Belize’s surface water bodies cannot be attributed only to the lack of policy towards its management. The threats also come from a combination of factors, including the relation of the water body to population centers and industry, the geochemical and hydrological background of the water body, the type of topographical features, and from the lack of adequate management and enforcement mechanisms.

Overall, surface water bodies have been the center of ad hoc water quality monitoring, mostly as a response to suspected contamination from industry. Point sources of contamination of surface waters come from the sugar processing industry in the north, and the citrus processing industry in the south. More recently, the aquaculture industry has become a point source of contamination of both freshwater bodies and the marine environment. Point sources of contamination are also derived, to a lesser extent, from the rum and soft drink industries (Newell, 1992), and from the hotel industry.

Non-point sources of contamination are suspected to be extensive in Belize; however, very little data has been collected that quantifies the level of this type of contamination. A few investigations have been conducted on the use of agrochemicals. It is widely accepted that nutrient enrichment of water bodies comes from various non-point sources, including agriculture run off, sewage, sediment and silt loss due to deforestation.

Most agricultural activities in Belize are located within the river valleys. The Belize River Valley, for example, is used extensively for agricultural production. This basin is home to 45% of Belize’s population. During the dry season, the rivers are used for extensive irrigation. Without irrigation, most agricultural activity would be halted during the dry season.

The use hydropower in Belize is limited. The Mollejon hydroelectric plant is currently the largest hydropower plant in Belize, capable of producing from 5 to 20 megawatts depending on the availability of water. This plant utilizes the water by the use of a dam and a penstock, which directs the water towards the turbines for electricity generation. The water returns to the river largely unchanged in quality. Plans to build an upstream storage facility will increase the supply of water to the plant, thus ensuring a more stable supply of electricity from this plant.

**Ground Water Resources**

Belize’s ground water resources have not been thoroughly assessed. Ground water is extensive in the less mountainous regions of Belize (Hydrology Department, 1995). Belize’s limestone aquifers have been found to yield abundant water but it has been difficult to ascertain water availability in other types of bedrock.
Groundwater is available at depths of 100 feet or less in most areas, but sporadic occurrences of poor water quality do occur in some areas. High concentration of chloride is found as a result of seawater encroachment in the cayes, along the coast and along water bodies that are subjected to tidal influences.

Pollution

A comprehensive assessment of the aquifer vulnerability has not been conducted. A pollution risk assessment of an aquifer would require the analysis of two main semi-independent factors: the contaminant load as a result of human activity, and the natural vulnerability of the aquifer to pollution. The vulnerability of the aquifer would require an in-depth geological survey in order to identify the aquifer attenuation capacity and the material within the saturated zone (British Geological Survey, 1994). Certain aquifers within Belize are known to have high aquifer vulnerability: for example, the Coastal Plain and Shelf Province, which includes the northern part of the country, would be classified as an aquifer of high vulnerability due to the fractured limestone and the relatively high population and industrial activities in the area.

The potential sources of ground water pollution come from:

(i) Leachates from solid waste disposal
(ii) Improper discharge of industrial effluents
(iii) Agricultural use of agro-chemicals
(iv) Domestic sewage

Regional Initiatives

At the regional level, Belize has signed several important agreements on biodiversity having signed the Central American Convention on Biological Diversity Protection and the protection of Priority Protected Areas of Central America, as well as the Alliance for Sustainable Development (ALIDES) in 1994. Two important programs have arisen at the regional level as a result of this and other regional conventions on biodiversity. These are:

The **Mesoamerican Barrier Reef Project**, which includes Belize, Mexico, Guatemala and Honduras. This project is will be implemented in three phases over a 15-year period. Its objectives are to improve the protection of the unique and vulnerable ecosystems of the Mesoamerican Barrier Reef System (MBRS). Through this project, Belize will attempt to put in place mechanism to reduce the negative impacts of pollution to the coastal marine environment, as well as mechanisms to alleviate the level of stress to this sensitive environment.

The other regional project is the **Mesoamerican Biological Corridor Project**, which includes the seven countries of Central America and Mexico. The Convention on Biodiversity and the Protection of Priority Protected Areas in Central America was signed in Managua, 1992 by the six Central American
countries except Belize, which later signed in 1994. These initiatives will also assist in the reduction of land-based sources of marine pollution, thus reducing the threat to the coastal and marine environment, including the Barrier Reef System.

Other international initiatives, which have been signed, include Tri-national Alliance for the Gulf of Honduras (TRIGOH), and the Tri-national Alliance for the Selva Maya. Both of these initiatives will assist in sustainable development of transboundary regions in order to reduce the level of degradation to the coastal and marine environment.

Belize has also been nominated as the secretariat for the Caribbean Council on Sustainable Development, an initiative of the Caribbean Community (CARICOM).

Challenges to Effective Management of Freshwater Resources

Belize faces several challenges with respect to the management of its freshwater resources. The relatively low population pressure, coupled with the abundant freshwater supply, has not been conducive to the prioritization of the need to protect Belize’s freshwater resources. Consequently, the financial resources to be able to identify the risks and threats to its freshwater resources have not been allocated.

Belize has very little water legislation and, whatever does exist, is primarily biased towards the exploitation of the resource for domestic use. Very little legislation exists which is aimed at the conservation and management of freshwater resources.

Belize also lacks the institutional framework to adequately protect its freshwater resources. An inland water unit has been established at the Fisheries Department, but it lacks financial support. Other institutions with roles in water resources management include the Department of Environment and Forest Departments, which also lack the resources and personnel to protect and manage the freshwater resources. At the NGO level, most initiatives towards conservation are not focused at the protection of the freshwater resources, but instead promote its protection as a part of wilderness conservation.

Unplanned development is often a threat to freshwater resources, sometimes leading to erosion, soil loss, deforestation and pollution of water bodies. The threat of contamination of water resources from the loss of vegetation is increased by the loss of natural vegetation; for example, the loss of most of the Mountain Pine Ridge Forest Reserve as a result of infestation with the Southern Pine Bark Beetle (Dendroctonus frontalis). This reserve is a major part of the upper Belize River watershed, which is the primary freshwater resource base for almost half the population of Belize. As a direct loss of vegetation cover within watersheds, the impact of floods during storm events often affects communities and properties bordering these watersheds.
National Actions

The introduction of legislation for water resources management is still at its initial stages of development; draft legislation has been promulgated but requires further action. It is expected that through regional support from project funds being sought (e.g. the PROSIGA Project), the further development and enactment of water resources protection legislation will be conducted.

The Government of Belize has established a system of protected areas, which also serves to sustain watersheds and promote the use of regulatory measures, community participation and forest management as strategies for the management of fresh water resources. Water quality standards have also been established.

The Government has developed some decision-making tools, including forecasting models. It has also strengthened national capacities for effective decision-making and institutional and inter-sectoral co-ordination. These initiatives are still considered inadequate as the whole issue of consultation and collaboration, even between and among the various government agencies, remains fragmented and is not treated with the degree of importance it deserves. Procedures to monitor and respond to impacts on water resources have been undertaken.

With respect to appropriate technology, the Government has promoted the use of rainwater collection systems, cost-effective sewerage disposal systems, desalination systems and recycling wastewater programmes.

A pro-tem water commission was appointed in 1992 and given the task of preparing recommendations on water institutions and legislation. Several studies later, and with the financial support of FAO, Water Resources Management, legislation was adopted in early 2001.

3.4.2 Degradation and Depletion of Coastal Resources

Coastal Zone Management

The coastal zone of Belize displays the highest concentration of development in the country. Although the greater proportion of the population lives in coastal areas, development is not limited to residential activities. Rapid industrial and agricultural expansions have occurred in this zone, some causing negative impacts on the ecosystem, while some may not prove to be sustainable because of the nature of the area. The last decade has seen a rapid increase in the both the number of tourism-related development projects, and the growth of the aquaculture industry, particularly in the proliferation of shrimp farms.

There have been a number of initiatives designed to manage the Belize Coastal Zone. Comprehensive research and monitoring programmes for coastal and marine resources are being developed, and the Government has developed national
capabilities to ensure sustainable harvesting and processing of fisheries. The GOB has also developed and implemented educational and public awareness programmes promoting the sustainable use of coastal and marine resources. In addition, management strategies including economic/fiscal instruments, enabling legislation, non-binding guidelines and public participation for coastal and marine resources have been established. With respect to the coastal and marine zone, new systems for coastal zone planning have been developed and/or existing ones strengthened. Furthermore, through the Environmental Impact Assessment process, the planning of development within the coast and throughout the country has been strengthened.

The Coastal Zone Management Authority and Institute (CZMAI) is a statutory body established through legislation in April 1998. The establishment of this body was the result of many years of research, review and consultations which, among others, made a key recommendation that a single agency be created for the sole responsibility of managing the coastal zone. The Belize Coastal Zone Management Act defined the “coastal zone” as including all areas bound by the shoreline up to the mean high-water mark on its landward side and by the outer limit of the territorial sea on its seaward side, including all coastal waters. The Act also addresses the issue of overlaps in legislation, fragmentation of institutional management and the need to strengthen existing institutions through development of human resources. It was an attempt to coordinate the existing legislation affecting the management of the coastal zone.

Pollution (including Trans-boundary sources)

The Government has developed and/or strengthened programmes and policies to address the following issues:

- Oil spills
- Land-based sources of marine pollution
- Water quality
- Effluent standards.

Pollution of Seas

The Basel Convention, MARPOL and the Cartegena Convention (Oil Spills Protocol) have all been ratified as a means of addressing the management of waste. Regulations and public participation have been developed by the government to ensure the sustainable management of waste.

Port/marina reception facilities have not been established in accordance with Annex V of MARPOL 73/78 at this time; neither have systems to ensure compliance with the use of port/reception facilities by small pleasure and recreation craft and large commercial craft been developed.
Belize has ratified UNCLOS and the Cartagena Convention and has adhered to the ICRI and the Global Programmes of Action for the Protection of the Marine Environment from Land-based Activities.

3.5 VULNERABILITY TO NATURAL DISASTERS AND OTHER PHENOMENA

The coastal zone of Belize may occupy as much as forty percent of the national territory. Most of this is comprised of the Coastal Plains, where elevations are at or below sea level. The coastal plain extends up to fifty kilometers wide north of the Belize River, but narrows considerably in the south of the country. Most of the more than eleven hundred offshore islands or cayes are also at sea level (many are completely over-washed by the sea at high tides). These cayes also form part of the coastal zone. The entire coastal zone is vulnerable to natural disasters, such as hurricanes, which produce higher than usual high water levels. Belize has been hit or seriously affected by four catastrophic hurricanes over the past three years.

3.5.1 Climate Change, Sea Level Rise and Flooding

The United Nations Framework Convention on Climate Change projects a sea-level rise of about fifty centimetres during the next one hundred years, which implies that almost all of the cayes and about forty percent of the Belize mainland would be under water. The entire social and economic situation of the country would change. Since such a change would be gradual, it is expected that adjustments would occur along with the change process, and might only be noticeable over the long run. These same flat coastal areas are also subject to flash flooding and sustained inundation after heavy rainfall.

3.6 SOLID WASTE MANAGEMENT

Solid waste is currently being disposed of at dumps that are inappropriately sited throughout the country, in backyards or by illegally dumping along roadsides, empty properties, seashores, riverbanks and other environmentally sensitive areas. It is estimated that Belize produces approximately 112,000 tons of solid waste annually from domestic households and commercial establishments; this results in a production of approximately two pounds of solid waste every day per person. Current solid waste disposal practices are incompatible with proper environmental protection measures.

In 1997, an agreement for a Technical Assistance Project, funded by the Japanese Government, was signed between the Ministry of Tourism and the Environment and the IDB for the preparation of a National Solid Waste Management Plan (SWMP). The main objective of this project was the preparation of a Solid Waste Management Plan, which includes the:

(i) Preparation of a regional site design for 3 waste disposal sites,
(ii) Preparation of an implementation plan for the proper execution of the solid waste management project

(iii) Preparation of a comprehensive public awareness programme aimed at improving the solid waste management situation in Belize.

The National Solid Waste Management Project has identified several options for the proper management and disposal of solid waste, including the identification of a suitable site for the construction of a sanitary landfill to serve the western highway corridor.

The final part of phase three involves the preparation of an Environmental Impact Assessment that has recently been finalized, including the preliminary designs for waste facilities.

*Actions Implemented to Manage Solid Waste*

**i) The Solid Waste Management Authority**

The Solid Waste Management Authority was implemented as a direct result of the Solid Waste Management Project. This authority was established by the Solid Waste Management Authority Act, December 2000 and is charged with the responsibility to oversee the management of solid waste collection, recycling and all solid waste management issues within the country; the Authority is governed by a Board appointed by the Minister responsible for the Environment. The Board is comprised of five members headed by a Chairman. The Chief Executive Officer is to be hired to oversee the overall management of solid waste throughout the country.

Government has also privatized the collection and disposal of solid waste from major population centers, thus improving solid waste management in Belize. There are currently plans for continued improvement of solid waste management in Belize.

**ii) Commitments to Earth Summit**

One of the commitments made at the Earth Summit was the principle that people are entitled to a healthy and productive life in harmony with nature. Solid waste management fits within this and other principles of the Rio Declaration. Other ideas such as the ‘polluter pays’ principle, the requirement for nations to enact effective environmental laws as well as the pursuit of better technology to manage these problems are also in line with this principle.

At the meeting of the Ministers of Environment on social development (ECLAC 2000), the Ministers of the region agreed to combat the deterioration of the urban environment. The management of solid waste was specifically identified as
insufficient throughout the region. Belize’s solid waste management project is, therefore, its commitment to the fulfillment of these obligations.

**iii) Constraints and Challenges**

Perhaps two of the most important factors that would impact or decide on the success of the SWMP are the availability of resources (financing) in order to implement the expected output of the project, as well as the availability of an efficient management mechanism. If these two components can be guaranteed, the project will be deemed to succeed. If one or both of these components are either absent or deficient, then the project will fail. Furthermore, due to the nature of the services offered by the project, there is no room for failure. In other words, the potential negative impacts that could result from failure of this project would have serious environmental and economic consequences to the country. Project failure or lack of adequate management could lead to a disintegration of the final sanitary landfill into a dump, and to eventual collapse of the solid waste management structure throughout the country.

The identification of adequate financial and human resources to implement this project, which is long overdue, is, therefore, critically important to Belize’s sustainable development. The enactment of legislation to levy a 1% environmental tax was seen as a financing mechanism both for the Solid Waste Management Authority and for the management of the Department of the Environment. It is, reported, however, that not all taxes collected under this piece of legislation are allocated to the intended beneficiaries.

Unfortunately, the continuation of this project may not be guaranteed due to financial and other constraints; the managerial components and mechanisms have, therefore, not been put in place. If the project is not reactivated, the achievements made towards sustainable development in the country could be undermined and Belize could be accused of being in contravention of the Rio Declaration. The Belize Audubon Society, in its *Environmental Agenda: 2002 and Beyond, April 2002*, states that “the indecision with respect to the site for the sanitary landfill has delayed the progress of the Solid Waste Management Project.”

**iv) Mitigatory Measures**

Currently, the Solid Waste Management Project has been halted by the Government of Belize due to a lack of funds; this necessitates a continuation of the process that seeks sustainability for the project.

However, Government has established the Solid Waste Management Authority Board, which has as its aims, the development of a solid waste management system for the country. Furthermore, the system of collection and disposal of waste from the major municipalities will be continued and expanded. As rural
centers expand, the collecting services are also expanded, resulting in a beneficial service to the community.

The Government has not proposed the use of clean technologies, but has developed and/or supported existing recycling programmes for paper, plastic and metal scraps. Recycling programmes for glass, oil and hazardous chemicals have not yet been developed. Members of the business sector are involved in reuse or recycling programmes for paper, aluminum cans and scrap iron. Public awareness campaigns support these initiatives.

Information systems and baseline data have been developed with respect to waste management and pollution control. The Government has not formulated national laws with respect to banning of the importation of hazardous waste from OECD states. A draft hazardous waste regulation does exist but requires follow-up to implementation.

v) The Way Forward and Lessons Learnt

Government recently enacted a 1% environmental tax. Revenue generated from this tax was previously aimed at funding the solid waste management project as well as other environmental efforts. The enactment of this financing mechanism was conducted only after years of research and consultation. Hence, it is fundamentally important for the Government of Belize to pursue the full implementation of the solid waste management project as a project of national interest, and in partial fulfillment of its obligations under the Rio Declaration. Any change in this policy must be seriously considered as the implications for the country may be environmentally detrimental.

With significant efforts and resources having been dedicated to the solid waste management project, and further resources being allocated for the collection of waste in municipalities, the establishment of an organized and well-managed solid waste system is the only alternative to addressing Belize’s solid waste problems.
3.7 BIODIVERSITY MANAGEMENT

The need for the management of biological diversity was acknowledged when Belize joined the other parties in signing the United Nations Convention on Biological Diversity. Many reports and evaluations described Belize as having a pristine environment. The reality indicated that it was coming under increasing pressure as a result of development activities. The development impacts were not being documented or analyzed and tangible evidence was already being observed, even though no inventory was being undertaken. National (public) forests were disappearing from the northern part of the country, except for the Rio Bravo Conservation and Management Area, managed by the non-government organization, Programme for Belize (PfB), and other privately-owned forest lands. The northern logging community was moving into the south for raw materials. The growing use of traditional medicinal plants was already having impact since some of the retailers in the markets claimed that it was getting more difficult or that they had to travel longer distances to collect samples from the forests. Other non-timber forest products such as palms for thatch roof and vines for craftwork were also getting scarce and more difficult to find. Only palmetto poles, which grow in the extensive wetland areas, remained easily available.

Wetlands are unique and special ecosystems, which require adequate protection and management. To the housing developer, these are areas to be drained or filled and subdivided to erect new housing communities. The aquaculture industry is increasingly utilizing important wetland habitats to drain wastewater from production ponds. Biodiversity management, therefore, requires that all ecosystems be considered for sustainable use since the future of the country depends on these same resources.

3.8 STATUS OF PROTECTED AREAS

Status of Protected Areas: Belize is similar to any other small developing country in that it tends to utilize its natural resources during the process of development. The development process can be made sustainable if it is achieved through conservative or efficient of the natural resources, or by introducing mitigation measures to offset the real and potential negative impacts resulting from the development activities.

Two different publications describing the vegetation cover of Belize between 1981 and 1994 describe a trend that could be interpreted as proof of development causing negative environmental impacts. In 1981 forest land in Belize was categorized as described below.

Table: - Forest Land Category in Belize

<table>
<thead>
<tr>
<th>Forest Land Category</th>
<th>Area (acres)</th>
<th>% of Land Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closed forest (broadleaf)</td>
<td>3,904,196</td>
<td>68.9</td>
</tr>
<tr>
<td>Open forest (woodland &amp; pine)</td>
<td>243,457</td>
<td>4.3</td>
</tr>
<tr>
<td>Mangrove &amp; swamp</td>
<td>594,568</td>
<td>10.5</td>
</tr>
<tr>
<td>Open &amp; grassland</td>
<td>522,469</td>
<td>9.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5,264,692</strong></td>
<td><strong>92.9</strong></td>
</tr>
</tbody>
</table>

Source: Country Environmental Profile, April 1984
During the 1981 study-period, none of the forest land or vegetation classification systems had been adopted for the country. Various systems, including those developed by Hartshorn et al and Charles Wright, were used in various studies. However, almost fifteen years later, with the establishment of the Land Information Centre (LIC) in the Ministry of Natural Resources (MNR), different land classification systems had been developed, based on the earlier models. With the application of Geographic Information Systems and digitized data, the Land Information Centre was able to design a reliable system of vegetation classification.

The Table below describes the state of the forest resources in 1994.

Table: Forest Classes, Areas and Percentages in 1994

<table>
<thead>
<tr>
<th>Forest Classes</th>
<th>1994</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Area (ha)</td>
<td>Percentage</td>
</tr>
<tr>
<td>Broadleaf forest</td>
<td>1,419,000</td>
<td>65.12</td>
</tr>
<tr>
<td>Open broadleaf forest</td>
<td>12,031</td>
<td>0.55</td>
</tr>
<tr>
<td>Pine forest</td>
<td>57,625</td>
<td>2.64</td>
</tr>
<tr>
<td>Open pine forest</td>
<td>7,307</td>
<td>0.34</td>
</tr>
<tr>
<td>Thicket and other degenerated broadleaf forest</td>
<td>84,838</td>
<td>3.89</td>
</tr>
<tr>
<td>Herbaceous and scrub, secondary growth after clearing</td>
<td>18,858</td>
<td>0.87</td>
</tr>
<tr>
<td>Bamboo and riparian vegetation</td>
<td>11,527</td>
<td>0.53</td>
</tr>
<tr>
<td>Coastal strand vegetation</td>
<td>2,483</td>
<td>0.11</td>
</tr>
<tr>
<td>Mangrove, medium and tall</td>
<td>7,820</td>
<td>0.36</td>
</tr>
<tr>
<td>Mangrove, dwarf</td>
<td>23,460</td>
<td>1.08</td>
</tr>
<tr>
<td>Saline swamp vegetation with palmetto and mangrove</td>
<td>34,487</td>
<td>1.58</td>
</tr>
<tr>
<td>Marsh swamp</td>
<td>41,963</td>
<td>1.93</td>
</tr>
<tr>
<td>Total forested areas</td>
<td>1,721,398</td>
<td>79.00</td>
</tr>
</tbody>
</table>

Source: Environmental Statistics for Belize, 2000

Since the two tables were derived using different land classification methods, they cannot be compared directly. However, the difference in the total areas under forest cover during the two periods is immediately noticeable. Reasons for these changes in the land area under forest cover can be attributed to the major expansion in the agricultural sector during the study period, accompanied by similar expansions in urban and rural subdivisions all over the country. During the last two decades, Belize experienced considerable growth in shrimp farming, and increases in the areas cultivated for citrus, bananas and sugar cane. All are evidence of economic development, and all apparently at the cost of natural resources. While this kind of development was underway, however, protection of the natural resources was being addressed, as demonstrated in the increased designation of land (including marine areas) as protected ecosystems.
Since its participation in that first Earth Summit on Sustainable Development in Rio de Janeiro in June 1992, Belize has embraced the principles of Agenda 21 and the Statement on Forest Principles. Development policies have been implemented with the need for environmental protection incorporated into various regulations and operational procedures. The country has also acceded to a number of other related Conventions that seek to protect the environment while development is underway. Analysis of the Environmental Indicators for Belize concerning the principles of Agenda 21 will reveal that development in this country has not always been at the cost of environmental degradation. The establishment and maintenance of a National Protected Areas System (including terrestrial and marine ecosystems) is tangible demonstration of the adherence to more than one of the principles of Principle 20.

The following examples:
- Chapter 9: Protecting the Atmosphere;
- Chapter 11: Combating Deforestation; and
- Chapter 15: Conservation of Biological Diversity

all demonstrate compliance with the principles of sustainable development.

The trend over the last two decades has been to increase the amount of land dedicated to this kind of sustainable use. At the middle of the 1980s, the proportion of the country in protected areas totaled 34%; the year 2000, this had increased to about 44%. Some of the initiatives for the protection of certain ecosystems by giving them the status of National Parks had come from local communities. The National Parks Systems Act that was legislated in 1981 was developed through the active participation and support of one of the leading non-government organizations, the Belize Audubon Society.

3.9 ACTIONS TAKEN TO ADDRESS THE ISSUES

Land Resource Management and Land Use Management

The Ministry of Natural Resources, the Environment and Industry is that section of the government entrusted with responsibility for land management and land use. The Ministry has recently revised several chapters of the national land legislations with the intention of achieving the improvement in land management and use. The chapter related to Aliens Land Holding has been repealed and its provisions for land management and use are now embedded in the National Lands Act. Other related chapters provide for resolution of boundary disputes, Lands Acquisition (Promoters), Land Acquisition (Public Purposes), Land Adjudication, Land Reform (Security of Tenure) Land Surveyors and Land Utilization.

The Land Utilization Act prescribes a transparent process for the acquisition and development of parcels of land and for some control over transactions involving changing ownership of land. Since the beginning of the last decade of the twentieth century, the
MNREI has been implementing a number of bilateral projects designed to address some of the ailments of the sector. These projects (some of which have been completed and others on-going) complement activities already started by the ministry. Projects of this sort include The Forest Planning and Management Project (FPMP), the Natural Resources Management and Protection Project (NARMAP), the Land Administration Project (LAP) and the Land Management Project (LMP) about to be initiated. Technical assistance and funds for these projects have been provided by the governments of the United States and of the United Kingdom, the United Nations Development Programme and the World Bank.

In order to reduce conflicts between land uses and to ensure the optimal and sustainable use of land, the Government has also prepared, implemented and reviewed land use plans. Registration Areas, Special Development Areas, Special Attention Areas are zoning strategies that have been applied for planning purposes. Land Information Systems, Conservation Information Systems and Geographic Information Systems are all technological tools that have been incorporated into the decision-making process of the ministry in order to try to resolve some of the issues.

Appropriate forms of land tenure have been encouraged as well. In order to prevent/reduce soil degradation, Belize has implemented policies to encourage the use of soil conservation methods, to control freely roaming animals, and to regulate the cutting of trees. The Government has improved land administration and promoted awareness of the need for integrated land-use practices.

In order to encourage the sustainable and integrated use and management of land and its natural resources, the Government has formulated and implemented laws for park and protected areas systems and has rationalized land-use/resource management; however, the economic instruments introduced to encourage sustainable and integrated land use have not yet been applied to all areas or ecosystems in need of such support. Beaches, for example, are not currently included in these efforts.

While certain parts of the country such as Belize City, San Pedro and the City of Belmopan have housing development controls, not all of the country has similar mechanisms. A national housing strategy or plan is not yet in place. The Government has, however, intervened by providing sites and services, credit and houses. Increased awareness and strengthening of physical planning offices has occurred through training and the use of decision-making tools, such as Environmental Impact Assessments, the Land Utilization Authority and the National Environmental Appraisal Committee.

**Forest Management**

The Forest Department is the government agency responsible for the management of the country’s public forest estate. It also monitors activities in privately owned forested lands. Two major categories comprise the estate: *forest reserves and national parks*. The first are managed according to the traditional multiple-use principles, while the latter group is subdivided into four categories of natural resources that are preserved because of their value for wildlife habitat, protection of critical or sensitive ecosystems, habitats for medicinal plants, aesthetics, recreational opportunities, or geographic features. The
national forest estate includes broadleaf, pine, mangrove, riparian and combination of the other forests.

Boundaries of some of the forest reserves in the northern, western and southern districts were adjusted in order to free up more land for agricultural purposes. In many cases the lands that were eventually de-reserved were already occupied and being farmed by squatters. Management plans were developed and adopted, using the consultation process for at least three of the forest reserves. Institutional strengthening was a major focus of the project with training provided for a number of the forest department’s staff members. Specially-developed in-country training courses were delivered and ex-country enrollment in universities was funded.

3.10 MAIN ACCOMPLISHMENTS

?? The revision of the land management laws are recent, so the impact would not yet be measurable
?? The significant technological advancements in the MNREI, such as the establishment, development and operation of the Land Information Centre
?? The improved registration and revenue tracking system resulting from the Land Administration Project
?? The recently completed computerized network of the office system
?? The improved coordination between the units of the Lands and Surveys Department, which translated to greater efficiency.

These have been brought about through the Ministry’s recognition of the need for improvement, followed up by the securing of external assistance in the form of bi-lateral projects to provide technical assistance and other services. Local government funds and consultant services have also been utilized in accomplishing the changes.

Compact (UNDP/GEF)

Two years ago, approval was granted by the UN Foundation for a programme of Community Management of Protected Areas Conservation (COMPACT) to operate in six World Natural Heritage sites, under the overall management of the UNDP Small Grants Programme (SGP). The Belize Barrier Reef World Natural Heritage Site (WNHS) was selected by the UN Foundation as one of the programme sites. This project would be undertaken as a joint venture by three NGOs: Programme for Belize, Belize Enterprise for Sustainable Development (BEST) and the Association of National Development Agencies (ANDA).

The overall idea of this project was to strengthen sustainable development within communities that would impact on the world heritage sites and the barrier reef ecosystem in general. COMPACT would demonstrate how community-based initiatives can significantly increase the effectiveness of biodiversity conservation by complementing and adding significant value to existing conservation programmes at the selected World Natural Heritage Sites/Biosphere Reserves and globally significant coral reefs.
COMPACT’s goal is to provide incentives and sets of conditions which increase the local benefits and attractiveness, of conservation and sustainable resource use in and around protected areas. This is expected to be achieved by demonstrating constructive ways of involving local communities in the conservation and sustainable use of biodiversity in and around the most significant protected areas.

*PACT*

The creation of the Protected Areas Conservation Trust (PACT) is a timely response to the need to sustainably manage protected areas and forest reserves through border entrance fees. This is an additional charge to the airport and departure tax used for conservation purposes, which came into effect in mid 1996.

The Protected Areas Conservation Trust (PACT) is Belize’s local funding mechanism that offers financial support to community-based organizations, non-governmental organizations and government agencies. The management of this mechanism is continuously being strengthened and improved, and it now includes a revolving fund, which seeks local sources of funding as well as external sources of funding.

Certain of the achievements are presented in the summary table below, which also seeks to address compliance and compatibility.
The first major task was the formulation of the National Biodiversity Strategy and Action Plan (NBSAP), which evolved after several months for consultants’ drafting of reports, countrywide public consultations and review. During the process it was revealed that although Belize was endowed with a high level of diversity in plant and animal species and habitats in relatively healthy conditions, there were a number of activities and factors, which threatened the sustainable use, and conservation of those same species and habitats. The National Biodiversity Strategy sought to address those threats and recommended the establishment of a National Biodiversity Office to coordinate the conservation efforts.
The National Biodiversity Strategy provides a long-term framework for Belize to conserve and sustainably use its biological resources. It outlines priorities for action based on what is realistically achievable, with the assumption that successful conservation of the biodiversity will be achieved if community participation is maximized and equitable distribution of benefits is ensured. This national effort to produce the first Biodiversity Strategy could also be used to demonstrate that the wide stakeholder participation in such planning processes can make a difference in Belize’s sustainable development.

The formulation of the National Biodiversity Action Plan was preceded by the Stocktaking and Assessment exercises which identified gaps and analyzed cross-sectoral issues, which impact directly on Belize’s biological diversity.

Table 3: Summary of Fulfillment of Ex-situ Objectives and Actions Under the NBSAP

<table>
<thead>
<tr>
<th>ACTION OR OBJECTIVE</th>
<th>FULFILLMENT</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conservation of plant species via botanic gardens, public parks, school gardens, seed storage</td>
<td>Land for botanic garden designated but not fully operational, some public parks &amp; school gardens but no seed storage</td>
<td>The botanic garden is not operational although there exists private initiatives</td>
</tr>
<tr>
<td>National Herbarium</td>
<td>Established</td>
<td>Collection expanding but little management resources</td>
</tr>
<tr>
<td>Adopt the National Protected Areas Systems Plan</td>
<td>Being utilized by agencies but there has been no official adoption</td>
<td>Committee assigned to review NPASP but not yet completed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Formal policy on protected areas is being formulated by an appointed body</td>
</tr>
<tr>
<td>Complete management plans for all protected areas</td>
<td>Incomplete – advance on this has been limited</td>
<td>Most terrestrial protected areas still do not have management plans</td>
</tr>
<tr>
<td>Promote ex-situ conservation of medicinal plants</td>
<td>Not fulfilled</td>
<td>If there has been any actions, it is ad hoc &amp; voluntary</td>
</tr>
<tr>
<td>Further develop legislation to improve in-situ conservation</td>
<td>Not fulfilled</td>
<td>Some actions, such as re-designation of certain protected areas are underway</td>
</tr>
<tr>
<td>Develop ex-situ conservation policy</td>
<td>Nothing under this objective accomplished</td>
<td></td>
</tr>
<tr>
<td>Develop sustainable agriculture policy</td>
<td>None</td>
<td>Some activities being carried out by private initiatives</td>
</tr>
<tr>
<td>Include agro-forestry, plantation forestry &amp; sustainable harvesting of timber as requirements for purchase of leasehold lands</td>
<td>Not fulfilled</td>
<td></td>
</tr>
</tbody>
</table>
Table 4: Summary of In-Situ Fulfillment of Objectives and Actions Under the NBSAP

<table>
<thead>
<tr>
<th>ACTION OR OBJECTIVE</th>
<th>FULFILLMENT</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish Biological Corridor Systems</td>
<td>Not completed</td>
<td>Planning process is in advanced stage of completion</td>
</tr>
<tr>
<td>Conserve medicinal plants in-situ (Terra Nova Forest Reserve as pilot project)</td>
<td>Terra Nova has been used as pilot project but is highly threatened</td>
<td>Terra Nova Forest Reserve is threatened due to agriculture policy &amp; incursions</td>
</tr>
<tr>
<td>Revise protected areas legislation to make de-reservation process more transparent</td>
<td>Not fulfilled</td>
<td>This is a focal point being proposed by the National Protected Areas Policy Committee</td>
</tr>
<tr>
<td>Increase capacity of resource managers and users</td>
<td>Very little fulfillment (ad hoc)</td>
<td></td>
</tr>
<tr>
<td>Improve the Forest Department’s technical capabilities</td>
<td>Not fulfilled</td>
<td>Efforts in fulfillment limited by resource availability</td>
</tr>
<tr>
<td>Document forest and wildlife resources &amp; conduct research focused at conservation of biodiversity</td>
<td>In process</td>
<td>Most actions are being accomplished under this objective</td>
</tr>
<tr>
<td>Implement new forest licensing system</td>
<td>Discussions in process</td>
<td></td>
</tr>
<tr>
<td>Increase human and other resources at the Mountain Pine Ridge Forest Reserve</td>
<td>In process but only after Pine Beetle infestation</td>
<td></td>
</tr>
<tr>
<td>Concessions for natural resource exploitation to allocate funds for conservation</td>
<td>Not fulfilled</td>
<td></td>
</tr>
</tbody>
</table>

3.11 THE WAY FORWARD

Land problems will always be around, but the application of transparent systems, the perception that all have equal opportunity and access to owning land, consistency in taxation on leases and properties, as well as enforcement of the laws for all persons, companies or organizations will contribute to the resolution of some of the land management/land use issues that currently affect sustainable development.
IV. EMERGING CRITICAL ISSUES

4.1 BACKGROUND

Belize has made considerable progress in the social well-being and living conditions of its people. Life expectancy at birth has increased from 67 years in 1981 to 70 years in 1999, infant mortality decreased from 35 per 1,000 births in 1981 to 21 per 1,000 in 1999; housing, electricity and potable water have become increasingly available to the general public, both in urban and in rural areas.

In spite of impressive macro-economic growth, expressed in per capita income, GDP and growth rate, it is widely acknowledged that there has been serious social deterioration in some sectors. In health, although there are significant improvements in basic indicators, the health infrastructure continues experiencing severe inequities in terms of the population’s access to services, resource allocation and management. There also is an overemphasis on secondary as opposed to primary health care, in spite of pronouncements about a shift in direction.

In education, while official statistics estimate the adult literacy rate at 75.1%, based on Standard V completion rates, the Literacy Council has estimated the adult functional literacy rate at 42.5%, based on a reading and comprehension survey. Lower income groups, such as youth and female heads of households, are the worst sufferers and thus perpetuate the poverty cycle, as they are unable to take advantage of available social and economic opportunities.

Although gender equality in Belize has made noticeable strides in recent years,---many women now hold senior management posts in the public, private and NGO sectors, females now outnumber males in the country’s secondary and tertiary institutions, for instance---gender roles operate from within a male-dominated and entrenched culture. The youth (below the age of 24), who make up over 60% of the population, are the most affected.

Poverty remains a serious problem for Belize, particularly in the rural areas where 43% are considered poor; the figure in the urban areas is estimated at 21%, but masks the incidence of extreme poverty in pockets in certain neighborhoods in Belize City, especially. The national unemployment rate, considered a manifestation of poverty, according to the Central Statistical Office of the Ministry of Budget, was estimated at 12.8%; again, when disaggregated, the figures show that the female unemployment rate was 20.3%, compared to 9% for men. It is widely believed that the figures are much higher for the youth and for those living in poor urban areas. The 2000 census figures show a preliminary unemployment rate of 11%, but the ratios for women, youth and inner city poor are expected to persist.

Criminality in Belize has risen to unprecedented levels, both in terms of frequency and of severity, over the last decade. This heightened degree of violence has been attributed to lack of employment opportunities, the increased availability and abuse of alcohol, drugs
and weapons, the weaknesses of the state institutions, such as the police and the correctional system, and a breakdown in the family structure.

National consultations have identified the following as **Emerging Critical Issues:**

- **Society, Human Rights and Culture**
- **Economic Vulnerability**

### 4.2 SOCIETY AND HUMAN RIGHTS

#### 4.2.1 Family/Community/Traditional Values

The family is universally considered the cornerstone of society and which largely determines or has a bearing on a child’s development and well-being from birth to adulthood. The family has a profound influence on an individual’s happiness, providing love, support and a reference point. As the economic provider, the family is responsible for the child’s education, health and in instills in her/him a sense of values that will guide the child throughout life and will to a great extent define responses to people and to life in general. In effect, the child’s experiences in the family setting will determine the type of adult into which he/she matures; in turn, the types of families created determine the kind of community and society we live in.

Although many families function well as a unit in Belize, there is no doubt that there is a problem, as more and more families break down, with the resulting negative impacts, such as school drop-outs, teen pregnancies, substance abuse, violence (very often, deadly). This family dysfunction is due to many factors, the chief of which are: migration, separation/divorce and a preponderance of single-parent families.

Migration is one of the more acute causes of family breakdown. Very often, parents (mostly the fathers) leave home for extended periods of time seeking employment and leaving the mother to take care of the house and the children alone. Too often also, one parent, then the other, migrates out of the country seeking more and better opportunities, leaving the child (sometimes children) in the care of grandparents (who oftentimes are already advanced in age and are physically incapable of adequately caring for them. Children, in all likelihood, feel a sense of abandonment and resentment, which are sometimes manifested in erratic and uncontrollable behaviour. UNICEF reports that “the preponderance of single-female-parent homes, men siring children by a variety of women, and failing to support the offspring and the mother either emotionally or financially; the migration of parents to the U.S., abandoning their children to the care of others, and, in many cases, to survive on their own; adolescents having children; and the reported common-place abuse, both sexual and physical, which occurs in the home have all served to render a sizeable number of Belizean families dysfunctional.”
Although Belizeans profess to be Christians (over 60% report being members of the traditional Christian religions), divorces and legal and other separations are very common; also, because of the widespread nature of informal, non-legalized nature of family unions, it is difficult to obtain accurate data on separations. It is well-known, however, that separations are common and children are often the victims of the negative consequences.

The effect of out-of-union births and single parent families combines to create severe problems for the children affected. One of the major problems of single-parent families is poverty. Too often these are female-headed households, small houses, with several children, inadequate facilities and very little financial resources. In most cases, there is inadequate, sporadic or no child support on the part of the father and the woman is forced to leave the home to work full-time, at minimal wages; very often also, the children are left in the care of older (but young) siblings or unattended. The results are devastating for the children and create a chaotic society.

Children raised in broken homes, particularly boys, are more likely to use drugs, commit crimes and to suffer emotional and behavioural problems.

The Belizean society appears to be disintegrating, losing its moral and family values, unwilling to sacrifice and undisciplined. Crime, of all types, is rampant and innocent, law-abiding people (who are the vast majority) are beginning to feel defenceless and angry. Society is clamoring for positive action on the part of the authorities.

4.2.2 Gender and Development

Agenda Principle 20: Women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development.

More that twenty years ago, very few females were active in the public service. Women filled more posts in the field of teaching, and occupied clerical posts in the public service. One woman became a pioneer by competing for office and being elected in the national elections, to be given the post of Minister of Education in one of the early PUP governments prior to Belize achieving its independence. It took more than twenty years before a political party saw fit to take concerted effort to foster more active and effective involvement of women in the public service. In 1998, the PUP government appointed a woman as a minister of Government and another as a Minister of State. Two other women were named Speaker of the House of Representatives and President of the Senate. These latter two appointments set a precedent for Belize. The reversal of the situation continued with more females being placed in senior management or administrative positions within government. Currently, about 25% of the Chief Executive Officers (the most senior public officer posts), are occupied by females. The proportion for females is slightly higher at the level of Heads of Department, at about 28%.
Several different publications reported on the discrepancy between the wages received by males and females. This anomaly continues to be addressed, with wages and salaries in the public service, and increasingly in the private sector and NGO community (where women play a very significant management role), are paid according to fixed and objective job descriptions and performance indicators. The government has only recently passed legislation addressing the inconsistencies of male vs female wages in the unskilled labor force by mandating equal pay for equal work in the agriculture and household labor markets and in the service industries.

The Central Statistics Office reports that higher number of females than males enroll in secondary and tertiary level educational institutions and a higher percentage complete the curricula.

A 1996 Analysis of Social Indicators, published in 1998, reported on the trend displayed in gender in education. The “Secondary Gross Enrollment” Indicator estimated for 1996 showed that 5,211 males representing 36 % of the total number of males between the age of 13 and 17 years of age were enrolled compared to 5,701 or 43.3 % females of the same age group. The Indicator for “Labour Force with greater than Primary Education” showed that 12,295 or 23.8 % of the males achieved this level while 10,085 or 43.5 % of the females accomplished the same level of education. The indicator for the “Adult Literacy Rate” showed similar percentages for males and females at 70.3 %. The report advises that the set of Social Indicators had been completed and utilized for internal planning, but also related to the international conventions that Belize had acceded to by signing. Belize had participated in the United Nations Conference on Population and Development, the World Summit for Social Development, and the Fourth World Conference on Women. Belize also ratified the treaties on the Rights of the Child, the World Summit Goals for Children and the Narino Accord.

4.2.3 Traffic

Road traffic in Belize has multiplied several times over the past 10 years; traffic accidents in 1999 were the country’s 3rd leading cause of death, after heart disease and pneumonia (Abstract of Statistics, Belize 1999, Central Statistical Office) and the leading cause of death among men 15-44. Traffic deaths in the year 1999 numbered close to 100. Accidents and fatalities in water and air transportation are very infrequent, so that major emphasis must be placed on road traffic.

The Central Statistical Office reported that there were 31,760 motor vehicles registered in the country in 1999, representing an increase of 10.6% over 1998, but the Cayo and Belize Districts registering a significant 28.9% and 12.6%, respectively, over the same period. In 1999, 6,597 new vehicles were imported into Belize, which now has a people: vehicle ratio of 7.5:1, one of the highest in the world.
National consultations have identified insufficient information on traffic laws and proper driving practices, inadequate enforcement and lack of proper traffic and safety signs as major contributors to what is now considered a major catastrophe. It is suggested that the Traffic Department embark on a major public information campaign on traffic laws and proper driving practices, that an improved signage system, using international signs, be installed countrywide, that the number of traffic wardens be substantially increased and that traffic patrols be instituted to enforce traffic laws on all the major roads and highways.

Over 50% of Belize’s population is of driving age (17 years or above), 39.1% are under the age of 14 (many of them driving without a valid driver’s permit) and it is estimated that a large percentage of traffic accidents and subsequent deaths involve this age group. Policy-makers and planners are now proposing that driver education form part of the core courses at all high schools and that all applicants for drivers’ permits must first present evidence of having completed such a course or its equivalent before being granted permits. As an incentive, the insurance companies may want to consider reducing vehicle insurance premiums for people who successfully complete an approved driver education program.

4.2.4 Migration

Belize is still home to over 30,000 legally registered or illegal immigrants, mainly from the neighboring republics of Guatemala, El Salvador and Honduras, who migrate in the most part for economic reasons. Several attempts have been made by successive governments, with assistance from UN agencies like the UNHCR, to regulate the flow and the status of immigrants through initiatives like amnesty programs, the latest being in 1999 when over 15,000 households were processed for permanent residency status.

Although the migration pattern has slowed down considerably over the past 5 years, authorities still complain of unregulated migration within the context of the carrying capacity of Belize, the taxing of the country’s natural resource base as a result of unsustainable agricultural production practices and of its social services such as schools, hospitals and prison systems due to the increased population.

Enforcement authorities must struggle with the problem of dealing with undocumented immigrants on a daily basis at land border points while maintaining civility and respecting the human rights of those already in Belize. Public consultations have called for limits on the number of immigrants allowed to remain in Belize, but this has been remained difficult to enforce, even when deportation measures are implemented, due to the length and porous nature of Belize’s international borders.

Belize’s National Human Development Report, 1999 notes that Belize has the highest population growth rate in the Caribbean (2.1% as at April of 1999) and that during the 1990s there has been unplanned community growth throughout the countryside largely as a result of the influx of the Central American populations.
The Report further points out that “there is no clear population policy to allow for planning of such areas as schools, health clinics, environmental programmes, education, immigration and language policies, continued improvement of demographic data collection (emphasizing some areas such as social indicators) and other responses to demographic changes.” The Report recommends that Belize needs to approve a comprehensive population policy, which should:

- allow for social and development planning in such areas as the optimum deployment of infrastructure, education and health services
- adopt an environmentally sound land use development
- identify industrial growth areas
- development education, immigration and language policies
- provide environmental programmes
- continue improving demographic data collection (emphasizing some areas such as social indicators)
- provide appropriate responses to demographic changes.

4.2.5 Health

Regional Programmes

One of the major outcomes of the twelfth RESSCA conference held in Panama during from August 28-30, 1996 was the resolution by the participating Ministers to develop a sub-regional plan for Health and Environment in Sustainable Human Development. The action plans for health and environment in sustainable human development should have been prepared for Central America and the other countries of the sub-region, and should address certain areas of concern. Matters to be addressed included the following:

- provision of potable water
- waste water and excreta disposal
- quality of surface, ground water, coastal and recreational waters
- solid waste management
- food quality and safety
- urban and rural land use and distribution
- elimination of insects, rodents and other disease vectors
- air quality in homes, at work places and in the general environment
- health and safety in the workplace
- industrial, residential and transport noise pollution
- chemical products in the environment
- exposure to radioactivity
- the secondary effects of transportation
- travel and tourism
- natural disasters and industrial and nuclear accidents

The first principle of the Rio Declaration states that human beings are the centre of the concerns for sustainable development, and that they are entitled to healthy and
productive lives in harmony with nature. Agenda 21 further elaborates on this principle by explaining that the linkage between health, environment and socio-economic improvements require inter-sectoral efforts. Sound development is not possible without a healthy population; yet most developmental activities have varying degrees of adverse effect on the environment, which, in turn, cause or exacerbate some health problems. Conversely, it is the lack of development that adversely affects the health conditions of sections of the population. The National Action Plan on Health and Environment for Sustainable Human Development is part of the strategy to address this dilemma.

United by their collective commitment of the governments and societies of the Americas to implement Agenda 21, and the mandates emanating from sub-regional meetings of the Heads of Governments and the Summit of the Americas in 1995, the Ministers responsible for Health, the Environment and Development adopted The Pan American Charter on Health and Environment for Sustainable Human Development as a guideline for future actions. The Pan-American Charter served as a renewed political commitment and an explicit statement of principles and priorities for directing the socio-economic development process for long-term human well-being, based on proper use and care of the natural environment.

RESSCA is the Conference of the Ministers of Health and Environment of the Central American sub-region. This conference serves to bring the responsible Ministers together annually to discuss regional and sub-regional issues that affect health, environment and development.

Regional Goals for Sustainable Human Development recognize the reality of national sovereignty and the uniqueness of each country’s situation. The Pan American Charter for Health and Environment and the Central American Vision for Environmental Health both offer frameworks within which to address sustainable development from an environment and health perspective. The action plan for the implementation of the Pan American Charter implies the broad strategy while the Central American Vision for Environmental Health provides the sustainability concept which has to focus on each country’s conditions, needs and social dynamics.

National Programmes

Developmental actions within countries eventually lead to betterment of peoples’ lives. These country actions, shared insights, active collaboration and international support contribute to regional and finally global development. The core concept is sustainable human development. The National Goal of the action plan is to bring about properly controlled changes in the physical and social environments, that through development, can protect and promote human health when they:

?? use resources in ways that limit demand, minimize waste and protect the integrity of nature
provide equitably and efficiently for people’s needs for employment, education, food, shelter, protection against environmental hazards and a stake in society
avoid, reduce, or mitigate pernicious living conditions and the detrimental effects of economic development
avoid and reduce risk to, and foster the well-being of vulnerable groups such as children and youth, women, the elderly and those who live in urban and rural poverty
avoid and minimize exposure to hazards in occupation, transportation and residence
improve physical and social infrastructure that safeguard the community’s health and
help people to cooperatively advance their well-being.

Table: Population Growth Over the Decades

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Birth rate</th>
<th>Mortality rate</th>
<th>Growth p.a.</th>
<th>Natural Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>192,877</td>
<td></td>
<td></td>
<td>2.6 %</td>
<td>33.8 %</td>
</tr>
<tr>
<td>1996</td>
<td>221,120</td>
<td></td>
<td></td>
<td>2.7 %</td>
<td>19.4 %</td>
</tr>
<tr>
<td>2000</td>
<td>248,800</td>
<td>25.1/1000</td>
<td>5.7/1000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Population Census 2000

The National Workers Health Plan 1996-2000 was designed to protect the health and safety of workers and to engender a work culture and ethic that is conducive to national development. This plan was prepared by the Ministry of Health, in collaboration with the Pan American Health Organization, the Ministry of Labour, the Trade Unions and the Social Security Board. The NAP-HE should help to identify resources to implement the NWHP.

The National Goal articulated in the National Development Strategy 1996-2000 is to manage the internal affairs of the country and promote the kind of socio-economic development which positions the country favourably in the international economy while ensuring improvements in the general level of welfare of its citizens.
The National Health Plan 1996 - 2000 represents a national effort to bring about a new approach to health service delivery. It promotes the active participation of various sectors at both the central and local levels in identifying adequate solutions to problems and in establishing priorities for action. The vision is for a national health care system based on equity, affordability, accessibility, quality, and sustainability in effective partnership with all sectors and levels of government and the rest of society in order to develop and maintain an environment conducive to good health. The NHP is implemented through eight (8) programmatic areas, one being environmental health. The Environmental Health Programme is to contribute to the development and maintenance of a clean, safe, and healthy environment. The expected results of the programme are:

- the control of malaria and dengue
- strengthening the capacity of the Ministry of Health to support the implementation of the National Workers Health Plan
- effective monitoring of food safety, water supply quality and sanitation
- control of the transmission of canine rabies and prevention of human death and
- the improvement of solid waste management.

The Way Forward

There are still gaps in the planning and implementation process, despite the wide variety of ongoing activities and activities in the pipeline. Both the National Health and the National Environmental Action Plan seek to improve solid waste management, and both also seek to reduce and control disease vectors and environmentally-related diseases. However, a comprehensive rural water supply and sanitation programme does not exist, even though the goal is for complete coverage by 2005. While urban sanitation is significantly low, there is no programme to improve this situation.

4.3 ECONOMIC VULNERABILITY

4.3.1 Energy

The energy needs of Belize continues to increase. The expansion in the electrical service is fast catching up with distribution to local and remote communities. This increases the demand for generation and supply of electrical energy. The single supplier of this utility has begun the process of converting from the consumption of fossil fuel to the utilization of hydro-electric power. To date, demand still exceeds supply, and there does not appear to be an immediate solution. All of the fossil fuel is imported, with prices dependent on the whim of the suppliers. Most of the diesel generators have been phased out of service, and the grid switched over to that powered by the Mollejon hydro-electric generators located on the Macal River in western Belize. This system has never been able to supply the
entire demands of the country, a situation made more difficult because areas are being linked to the grid that were not projected in the original plan. It was intended that the first dam would be supplemented by a second storage dam that would increase water storage capacity and, therefore, sustain the operation of the Mollejon facility for a few more weeks or months during the dry season. None of the projections indicate that Belize’s electrical energy needs will be met by this particular facility, even with the additional storage dam. In fact at this time, a greater amount of energy than that produced by the hydro-electric generator is being purchased from Mexico. Even with this external supply, parts of the country experience power shortages for short periods daily. This is an unsatisfactory situation as has already been demonstrated on a number of occasions when the Mexican suppliers disconnected Belize when they had problems with meeting their own needs. It was expected that there would be lower utility bills with the switch over to hydro-electric power, but that has not materialized. In fact, the cost of power from Mexico to the utility company is much lower than that which it produces, but these savings are used to cushion their own high production costs and are not necessarily passed to the consumer.

There is need to expedite the option of utilizing other methods of generating electrical energy. The rapid increase in the demand for power dictates that feasible solutions be evaluated and financing sought to bring such on stream as quickly as possible. The option of co-generation from the sugar factory appears to be one of the more socially acceptable, economically viable and environmentally friendly, and negotiations are underway to conduct the feasibility analyses.

The solution to the problem appears to be a system utilizing a combination of power generation methods linked into the common grid, but much research needs to be done before the answers become available.

4.3.1.1 Hydroelectric
4.3.1.2 Co-generation
4.3.1.3 Imports

4.3.2 Globalization

Belize is a member of the Association of Small Island Developing States (AOSIS), and like all the other members of this group, experiences a state of economic vulnerability. This is a situation primarily caused by the very narrow industrial base that sustains the development of the country. For almost fifty years now, this country has depended on the agricultural sector as the main pillar of its economic development. The introduction of sugarcane about fifty years ago was the first step in the process of diversifying from the lumber industry that had dominated the activities of the colony for more than three hundred years. That situation changed with the introduction of sugarcane to the colony, creating a change in its economic activity. Further diversification into agriculture came with the establishment and growth of the citrus and banana industries. Today this sector perennially employs about thirty percent of the national labour force, and
annually contributes an average of about twenty percent to the Gross Domestic Product through the generation of foreign exchange. Almost fifty years after agriculture emerged as a prime mover of the economy, the sector continues to diversify with other commodities like beans, corn and rice being grown in quantities suitable for local retail sales. Papayas, and for a few years, cacao were able to find niche markets. At this time, papaya production continues to grow slowly. Other crops such as soybeans and sorghum continue to widen the agricultural spectrum, and while the enterprises are private-sector driven, the government provides technical assistance in development (financial concessions or tax incentives) and in facilitating entrance into the foreign markets. The fishing industry, considered a part of the agricultural productive sector, similarly continues to grow in significance and value. This sector is well organized for external trade by the establishment of cooperatives that function to access markets, sustain prices, access technical and financial assistance. The exports of shellfish, like lobster and conch, and fin-fish continue to increase in volume and value. The country is self-sufficient in meet and poultry production, but even here care has to be taken that the local market is not inundated by the imports of similar products other, more capital-intensive countries. The Ministry of Agriculture, Fisheries and Cooperatives monitors the situation closely and will occasionally allow imports if the situation warrants such remedial action.

The behavior of agriculture in economic development is demonstrated in the table below.

**Table: Gross Domestic Product at Factor Cost (Bz $ m) & Percentage GDP at Current Prices**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture (includes fisheries)</td>
<td>$ 77.7</td>
<td>$ 161.9</td>
<td>$ 160.4</td>
<td>$ 196.6</td>
</tr>
<tr>
<td>Forestry</td>
<td>$ 4.7</td>
<td>$ 15.4</td>
<td>$ 23.0</td>
<td>$ 17.0</td>
</tr>
<tr>
<td>Agriculture (includes fisheries)</td>
<td>19.8 %</td>
<td>19.2 %</td>
<td>17.2 %</td>
<td>18.5 %</td>
</tr>
<tr>
<td>Forestry</td>
<td>1.2 %</td>
<td>2.3 %</td>
<td>2.5 %</td>
<td>1.6 %</td>
</tr>
</tbody>
</table>

Source: Abstract of Statistics – Belize, 1999

However, the continued economic growth of country is at risk. All three commodities have had the protection of guaranteed markets in the either the United Kingdom, the United States or the European Union for several years. The term “globalization” has become synonymous with increased competition, declining prices and loss of preferential arrangements in the markets, all of which are disadvantageous to the small developing countries. The political leaders, in partnership with the business sector, continually seek to make arrangements to secure the markets for these produce. The other agricultural crops are not produced on scales suitable for export, and should be considered more as import substitutes than an as export commodities. These are also at risk because the low level of profits does not leave much of a surplus for reinvestment or for starting over if they are lost through natural disasters. Very real evidence of this threat has been demonstrated in the northern and southern districts of the country after these areas were impacted by four hurricanes in three years. Heavy rains, run-off and
persistent flooding caused extensive damage to household properties and agriculture after Mitch, Keith, Chantal, and Iris passed near enough to or over parts of the country that recovery from the impact is still not complete.

Belize’s economic vulnerability is also the result of its status as a consumer country. Imports and consumption are higher than exports. While being self-sufficient in basic foodstuffs like beans, rice and corn, meats, milk and poultry; and being a producer and exporter of a few agricultural commodities, almost all other products are imported. As described already, the loss of preferential trade agreements would have serious economic impact on the value of the agricultural exports. Prices are already low because of the increased competition from other larger countries placing their produce in the same markets, and would fall lower with the loss of the trade agreements.

Other international and regional arrangements that pose threats to the continued economic development of Belize and other developing countries include the Doha Declaration of Qatar of 2000, the North American Free Trade Agreement, and the Free Trade Area of the Americas, currently being negotiated. These remove or reduce constraints, thus making it more difficult for the smaller producer countries to compete in the international markets because of the economy of scale. The bigger developing countries such as Mexico, Argentina and Brazil are becoming more competitive due to their higher volume of agricultural production. The adoption or institution of these trade arrangements/agreements will also erode the tax base. Belize imposes import taxes or duties on certain items; these will have to be reduced or removed entirely in order to make the system work. Belize relies heavily on this source of revenue generation for the financing of recurrent expenditures and local capital projects. Reduction in revenue translates to slowing the rate of development.

Another factor contributing to the greater competitiveness of these (bigger developing) countries are their (relatively and sometimes considerably) lower production costs resulting from lower labour and energy (fuel) costs. On the other hand, Belize as a consumer, imports almost all the fuel used in the industries. Belize also enjoys an average labour cost that is the second highest in Central America (after Costa Rica), thus making it more difficult to attract manufacturing or assembly enterprises that are labour intensive or consume high levels of electrical or other types of fuel.

At the global level the major issue facing Belize (and other small developing countries in the region) is that of trade. Three significant developments in the 1990s have set the agenda: The Uruguay Round of negotiations within the framework of the GATT (General Agreement on Trade and Tariffs) that established the World Trade Organization (WTO) in 1994, the Rio Summit of 1992 and the World Food Summit of 1996.
Uruguay/GATT/WTO

These placed agriculture and other trade commodities in a new context of multilateral and bilateral trade relations and with new challenges that go beyond the agricultural and rural sectors. The new framework pushes towards global trade liberalization, the elimination of trade preferences, the reduction of trade barriers, reduced restrictions on international capital flows, improved communications and information technology.

As a signatory to the WTO agreement in 1995, which requires that all non-tariff barriers to trade, such as import licensing, be lifted, Belize must explore avenues to support its exports which, like the case in most small, vulnerable economies, suffer from economies of scale, the technology gap and insufficient investment capital.

Rio Summit and World Food Summit

These highlighted the need for new approaches to development in general and for agricultural and rural development at the regional and global levels specifically. The Rio Summit focused on the critical issues of sustainable development, poverty alleviation, food security and employment generation in rural areas, effective management and use of natural resources and the environment, and linking these to openness and trade liberalization. The World Food Summit emphasized, inter alia, the basic human rights of accessing food and reducing hunger and poverty, allocation of investment resources to alleviate food shortages and poverty, increased people participation and distribution of food and human resource development.

The 1990s also witnessed the creation and acceleration of regional trading blocks and arrangements around the world. In this regard three major regional frameworks and arrangements have significant implications for Belize’s economy and its agricultural and rural sectors: These are:

- NAFTA (North American Free trade Agreement), the CBI (Caribbean Basin Initiative) and the likely Free Trade Area of the Americas (FTAA)
- The deepening and widening of integration in CARICOM (Caribbean Community)
- Improved economic and trade relations among the countries of Central America.
NAFTA, CBI, FTAA, CARICOM

NAFTA went into effect in 1994 and specifies that Mexico will have free access to the U.S. A. market for sugar, citrus, and other fruit and vegetables within the next 11 years. This implies that the current preferential access of Belize’s exports to the U.S.A. may slowly be eliminated. As an exporter of citrus products and of various fruits and vegetables, Mexico will gradually have a competitive advantage over other exporting countries to the large and lucrative U.S.A. and Canadian markets. In addition, although Mexico imports sugar, it also exports it and the potential exists for Mexico to become a large net exporter in the future. The NAFTA reality implies that Latin American and Caribbean countries will need to improve production efficiencies and competitiveness to access the same NAFTA markets. Given the importance sugar to the Belizean economy, failure to adapt to these changing market patterns could result in massive economic and social transformations in Belize.

Under the CBI Belize enjoys duty-free access for several exports to the U.S.A., the most important being citrus concentrate. It is projected, however, that with NAFTA these benefits will very likely be eroded in the long-run, unless future trade agreements provide “more favorable” benefits to Belize and other Caribbean countries. Duty-free market access for other commodities such as papayas, peppers, fish products, dried fruits and other ‘niche’ products will similarly be threatened when the CBI agreement ends.

The FTAA is still at the proposal stage but, when operational in 2005, it will become the largest trading bloc in the world, with a combined GDP of U.S.$8 trillion and a market size of almost 800 million people. In anticipation of this there is increasing pressure bearing down on Belize to increase its openness, implement economic reforms and become a more competitive small country in the huge FTAA market.

Within CARICOM, efforts are under way to deepen and widen regional integration. As a member of this body and a signatory to the Common External tariff (CET), Belize reduced its tariffs in 1996 to the level of 40% on agricultural products set under the CET arrangements; this schedule is below what would be required to compensate for removal of import licenses. As a result Belize’s agriculture sector is being impacted on two sides: exports to CARICOM countries, including fish, citrus, beans, peanuts, etc., already see their preferential treatment eroded since CET is committed to reducing tariffs in phases on agricultural products and, at the same time, import-competing activities face greater competition from cheaper imports from other countries due to lower import tariffs.

On the other hand, as a member of CARICOM and its geographic location in Central America and next to Mexico, Belize is ideally poised to take advantage of this unique situation by developing closer diplomatic, trading and commercial ties with these neighbors. It is already participating in Presidential Summits for
Central America and Mexico and benefiting from various regional projects and programs executed by multilateral and technical assistance agencies. Belize must, however, be aware, that while its agriculture could benefit from market opportunities in these countries, it could also be affected by cheaper imports of food products.

In its Report No: 01/096 TCP-RLC of December 2001, **Background Formulation Studies**, the FAO concluded that “as far as trade and agriculture are concerned, there is a race in time between increasing productivity and improving marketing skills on the one hand, and trade policy on the other. If agricultural change is too slow, the sector could be drastically reduced in the next decade or two.”

### 4.3.3 Tourism

An integrated Tourism Development Policy has not yet been formulated. The Government of Belize has, however, put measures in place to ensure that tourism development and environmental management are mutually supportive. It has promoted public awareness/education for sustainable tourism and has adopted integrated planning policies to ensure sustainable tourism development.

The Government has formulated policies for general tourism, eco-tourism, cultural tourism, and marine-based tourism, including diving, yachting and cruise ships. Policies have not been formulated for recreational fishing. Tourism management strategies include the use of economic/fiscal instruments, public participation and regulatory measures.

Measures have been adopted to protect the cultural integrity of Belize, and the Government has developed policies to increase local ownership within the tourism sector. Incentives exist in the tourism sector to foster sustainable approaches to waste management.
V. EDUCATION

The most recent National Census was completed in 2000. The data collected during that exercise is still being analyzed by the Ministry of Budget Management’s Central Statistical Office. One analysis of the status of the Belizean population in regards to the literacy rate revealed that almost 20% of the population reported that they had no formal education at all. In fact the analysis of the Census 2000 data disclosed that the literacy rate for Belize was nearer to 70% than the 92% that is generally believed to prevail. There are several factors that account for this major shift. For the last two or three decades Belize has been the destination of immigrants from the Central American nations of Guatemala, Honduras and El Salvador. These immigrants have been either economic or political refugees due to the situation in their home countries. In the case of Guatemalan and Honduran immigrants, their main reason for coming was to find employment and better living countries. Those from El Salvador left their home due to the civil war that raged for so many years. Even though that war is now over and the process of rebuilding is well underway, most of them have chosen to remain; the better living conditions with better access to health and educational services are much more attractive than in their own countries. Many of these immigrants, of all ages, did not have access to educational facilities. Many have also achieved residency status, with their children born as citizens of this country. The estimates of immigrants have always been considered inaccurate, because it was known that a far greater number of immigrants arrived and resided in the country compared to the official numbers. Illegal entry into this country is extremely easy since the entire western border of the country is land, with very little monitoring and surveillance conducted or possible. The immigrants settled in communities on the fringes of the cities and towns or along the southern highway where they found land to practice their subsistence agriculture, vegetable production or manufacture of lime. One community, Valley of Peace, was actually established through the intervention of the United Nations High Commission for Refugees (UNHCR) who set up office in the country to facilitate the transition and settlement of these refugees.

The influx of immigrants placed additional burdens on both the health and educational systems. Two censuses ago the population of Belize was estimated at about 180,000 persons. Some estimates determine that as much as 30,000 immigrants probably arrived in this country during the decade. This created a significant impact considering the proportional increase to the population they represented. Although present illegally in the country, Rural Health Delivery Services and Primary Health Care facilities were overwhelmed by their attendance. Even today, the public hospitals in and around Belmopan City (the capital), and the municipalities of Dangriga and San Ignacio daily show crowds largely comprised of first or second generation immigrants. Most of the older immigrants were already well past the school age when they first arrived, and brought along their lack of formal elementary and primary education. According to international standards, those not completing the fifth standard of elementary school are determined to be illiterate. When these people were officially counted among the population of Belize, their number influenced the degree of literacy that was recorded. Schools in the western and southern districts are crowded with large numbers of immigrant children enrolled and seeking education.
Educational needs at the urban and rural levels have traditionally been addressed by a church-state partnership. Almost all the religious denominations have invested in construction and maintenance of structures to accommodate the children and teachers, so that there is access to schools in almost every city, town and village throughout the country. Sometimes the buildings double as churches, and function as hurricane shelters in case of natural disasters. Salaries of teachers and supply of books and other materials are mostly met jointly. There are a few completely private schools, as well as a few that are solely government-operated.

Belize has strengthened institutional arrangements and administrative capacity in order to integrate environment and economic policy into national planning, but more effort is required in this area. Environmental agencies have been established, but lack adequate financial and staff resources. Awareness and involvement of NGOs, CBOs and the public in the national decision-making process has increased and the implementation of sustainable development programmes has occurred. However, adequate resources for the enforcement of environmental regulations do not exist. The Government has not enacted comprehensive domestic legislation required for the implementation of international environmental conventions.

The Government has established national information nodes on sustainable development to encourage the development of SIDSNET, and to facilitate the exchange of experience among SIDS.
VI. REFERENCES


