

Towards the Development of a Coastal Zone Management Strategy and Action Plan for Saint Lucia



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ACRONYMS

AGC	Attorney General Chambers
ARC	Atlantic Rally for Cruisers
CAMMA	Canaries Anse la Raye Marine Management Authority
CEHI	Caribbean Environmental Health Institute
CBOs	Community Based Organisations
CZMAC	Coastal Zone Management Advisory Committee
CZMU	Coastal Zone Management Unit
DCA	Development Control Authority
DOF	Department of Fisheries
EU	European Union
GOSL	Government of Saint Lucia
ICZM	Integrated Coastal Zone Management
IWCAM	Integrated Watershed and Coastal Area Management
LBS	Land Based Sources
LDF	Laborie Development Foundation
NEC	National Environment Commission
NEMS	National Environment Management Strategy
NEP	National Environment Policy
NEMO	National Emergency Organisation
NGOs	Non Governmental Organisations
NWCCP	North West Coast Conservation Project
NWCMA	North West Coast Management Authority
MAFF	Ministry of Agriculture, Forestry and Fisheries
MPDEH	Ministry of Physical Development, Environment and Housing
MOT	Ministry of Tourism
PMA	Piton Management Area
PSMA	Pointe Sable Management Area
SIDS	Small Island Developing States
SLASPA	Saint Lucia Air and Sea Ports Authority
SLBS	Saint Lucia Bureau of Standards
SLHTP	Saint Lucia Heritage Tourism Programme
SLHTA	Saint Lucia Hotel and Tourism Organisation
SLNT	Saint Lucia National Trust
SLSWMA	Saint Lucia Solid Waste Management Authority
SLRPF	Saint Lucia Royal Police Force
SMMA	Soufriere Marine Management Authority
WRMU	Water Resource Management Unit
WASCO	Water and Sewage Company Incorporated

INTRODUCTION

DOCUMENT OUTLINE

This document outlines the stages in the development of a coastal zone management programme for Saint Lucia. It is divided in three sections. The first section reviews the first coastal zone management project in Saint Lucia - the North West Coastal Conservation Project that developed a coastal zone management framework for the island – and how this framework contributed to the establishment of a second coastal zone project assigned the task of preparing a coastal zone related policy and guidelines document.

In the second section of this paper, a draft Coastal Zone Management Strategy and Action Plan is presented. The purpose of this draft CZM Strategy and Action Plan is to facilitate improved management of coastal and marine resources in Saint Lucia. Under the draft CZM Strategy and Action Plan, strategic approaches necessary to facilitate implementation of the CZM Policy document are proposed, as well as actions necessary for achieving integrated coastal zone management in Saint Lucia.

The last section of this paper proposes a draft regional (local) action plan for the four regions recommended under the CZM Policy document: the Northwest Coastal Region; Central West Coastal Region; Northeast Coastal Region and the Southwest to Southeast Coastal Region due to their differing degrees of stressors.

SAINT LUCIA OVERVIEW

The island of Saint Lucia is located within the chain of islands in the Eastern Caribbean at 14° north and 61° west latitude (Figure 1). It is 616 sq km (238 sq miles) in area, 43.4km (27miles) long and 23.5km (14miles) wide, with a total coastline of 158 km.

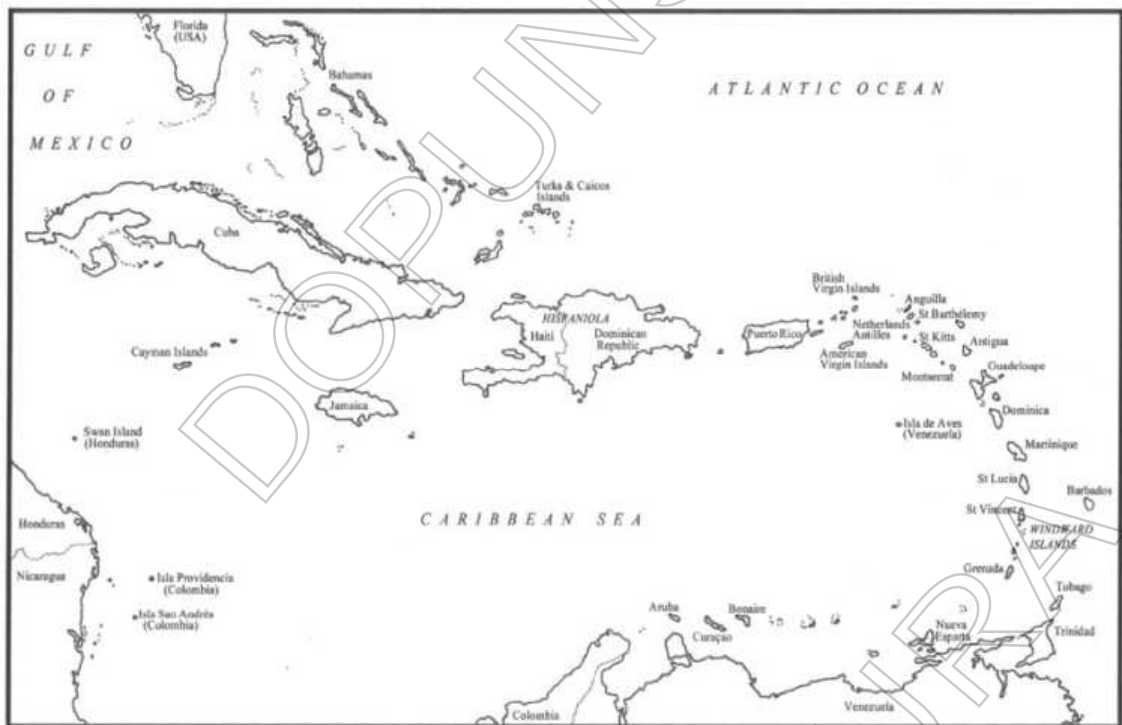
Like many of its neighboring islands, Saint Lucia is of volcanic origin, evident by the island's rugged interior. Surrounded by the Atlantic Ocean and the Caribbean Sea, the island's tropical location has endowed it with a number of habitats, and rich terrestrial and marine biodiversity. Geologically, this island is young, not exceeding 50 million years. Its tallest peak, Mount Gimie, extends 959 meters above sea level.

Like most of the other Windward Islands, Saint Lucia was first settled by the Arawak Indians from in about 200 A.D., who were later replaced by the more domineering Carib Indians around 800 A.D.

The first documented European settlement on the island was that of the notorious buccaneer Francois le Clerc, a.k.a. Jambe de Bois, who established a base on a small islet off the north-west coast called Pigeon Island. Although the initial attempts at colonization of the Saint Lucia in the early 1600's were largely a failure, by the end of the century both the French and English had successfully established settlements on the island and were both claiming sovereignty over it. This conflict between the British and French lasted for the next 150 years, until it was finally ceded to the British in 1814. The island remained under the British crown until it became independent within the British Commonwealth in 1979. However, the influence of the French on the island is apparent by the French Creole which is spoken by most of the island's population and the French names of most of the island's villages and communities.

The island's climate can be described as tropical marine with an average temperature of 27°C and relative humidity of 75%. Saint Lucia experiences its dry season usually between the months of January to April, with the rainy season extending from May to August. There are strong north easterly winds, which provide a cooling effect that facilitate the existence of microclimates, varying with height, location and orientation. There is a high risk of hurricanes from June to early October and threats of tropical storms with high winds and heavy rains through to November.

The terrestrial ecosystem includes five types of forest which contain more than 1,310 species of flowering plants, cycads, and gymnosperms belonging to 143 families, with 17 listed as endemic. The island also has a total of 37 watersheds, eight of which (Marquis, Dennerly, Roseau/Millet, Soufriere, Woodlands/Grace, Troumassee, Desruisseau/Canelles and Patience/Fond), are classified as major sources of surface water (Figure 2).



Source: <http://saba.caribseek.com/>

Figure 1: Map of the Wider Caribbean Region

The island's coastal and marine ecosystems also contains a diversity of habitats that are biologically diverse and include sea grass beds, coral reefs, mangrove forests and other wetlands, beaches and dry scrub forest.

Saint Lucia's population is estimated at 162, 311 and is growing at a rate of 1.28% per annum (GOSL 2001). The majority of the island's inhabitants (90%) acknowledge themselves as Black and of African descent. People of East Indian heritage make up 6%

of the total population, whilst Caucasians account for only 1% of the island's total population. The remaining 3% of the population are of mixed ethnic backgrounds.

Saint Lucia, like most small island developing States (SIDS) has what can be characterized as a developing economy with an estimated 3.3% GDP growth rate (GOSL, 2001). During the 1980's the island's economy was driven by the agricultural sector, particularly through banana production. However, during the 1990's, changes in the European Union (EU) import preference regime and increased competition from Latin American bananas resulted in a shift in the island's main economic sector from agriculture to a service driven sector, dominated by the tourist industry which contributed 73% to the island's GDP in 2002.

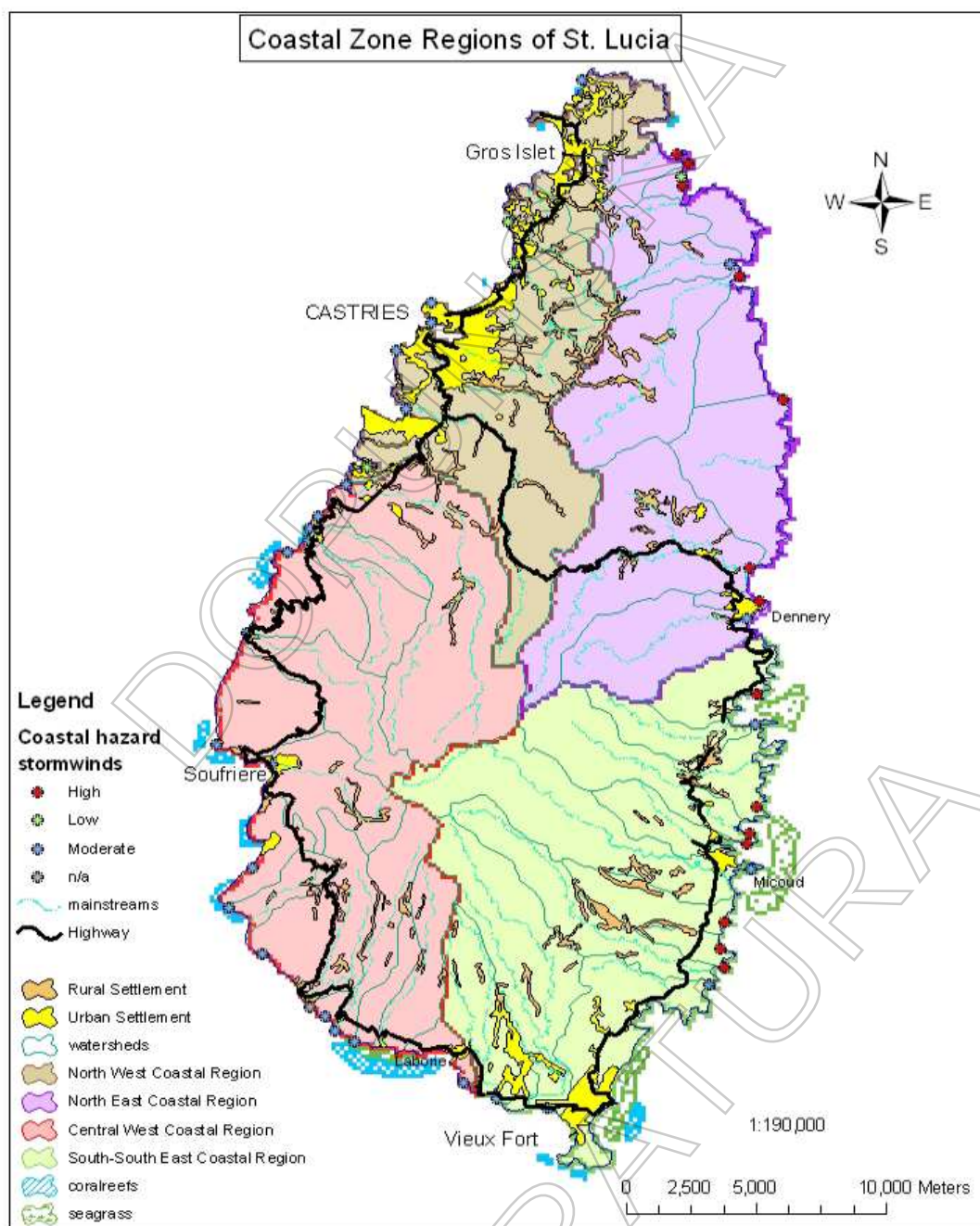
Due to the island's rugged topography most of the 162, 311 inhabitants have settled along the narrow coastal strip (GOSL, 2001). The capital city of Castries is the most densely populated community with an estimated 319 persons per square mile followed by the town of Gros Islet, with an estimated 103 persons per square mile (GOSL, 2001) (Figure 2).

PART 1 – FROM NORTH WEST COAST CONSERVATION MANAGEMENT PROJECT TO THE CZM STRATEGIC AND ACTION PLAN PLANNING PROCESS

1.0 INTRODUCTION

Saint Lucia's coast, like other coastal areas around the world, has always been a magnet for urban development. However, with a growing population, as well as the growth of new economic sectors, the development of the island's narrow coastal strip continues to increase. For the most part, such development has been characterized by haphazard, unplanned and undirected planning evident by the growing threat to the sustainability of fragile coastal and marine ecosystems. For example, between 1995 and 2001, reefs along the central west coast, particularly those bordering the town of Soufriere, lost an average of 47% of coral reef cover in shallow waters and 48% in deeper waters (State of the Environment Report, 2005). Much of the loss in coral cover can be attributed to increased levels of suspended particles attributed to poor land use (State of the Environment Report, 2005). The vulnerability of coastal and near shore resources may be further increased by climate change and global warming.

Despite efforts by the Government of Saint Lucia (GOSL) to curb the deterioration of the island's coastal and marine resources through the adoption and implementation of institutional arrangements that address varying components of coastal zone management, increased conflict persist amongst users for the limited space of the island's coastal strip, and deterioration of the coastal and marine resources continues.



Source: Ministry of Physical Development, Environment and Housing, Government of Saint Lucia

Figure 2: Coastal Zone Regions of Saint Lucia

In the following section (1.1), a review of the stages that led to the development of the Coastal Zone Management in Saint Lucia: Policy, Guidelines and Selected Projects document is undertaken. The section highlights the progress of the island towards the development of a coastal zone management programme, formalized by the adoption of the CZM Policy document by the Cabinet of Ministers in 2004. Under CZM Strategic Planning Process, outlined in section 1.2, the process and steps necessary in developing and adopting a Coastal Zone Strategy and Action Plan for Saint Lucia are presented. Both sections underline the importance of a coordinated and integrated approach towards the development of policy documents.

1.1 TOWARDS THE DEVELOPMENT OF A COASTAL ZONE MANAGEMENT POLICY

In 1994, in an effort to begin to address the issue of the continuous deterioration of the island's coastal and marine resources, the Government of Saint Lucia initiated the development of a coastal zone management framework for the island, through a two year project entitled the North West Coastal Conservation Project (NWCCP). The NWCCP sought to develop an integrated planning and management programme to address environmental and development pressures within the project area, as well as facilitate the long term restoration, protection, maintenance and sustainable use of coastal resources. Due to the success of the NWCCP, the Government of Saint Lucia sought to extend the project. In 1997 the project was extended to assess the contaminant inputs and loadings in riverine and coastal systems, so as to develop recommendations and an action plan for the study area and its related watersheds.

One of the major recommendations of the NWCCP to the Government of Saint Lucia included the establishment of a national Coastal Zone Management Unit (CZMU) within the public sector, along with a multi-sectoral advisory committee to address coastal zone management related issues.

In 2001, the Government of Saint Lucia, with assistance from the European Union, embarked on an initiative aimed at establishing institutional arrangements which would facilitate the future development and management of the island's coastal zone. A Coastal Zone Management Project, housed in the Ministry of Agriculture, Forestry and Fisheries (MAFF) was established and assigned the task of preparing a coastal zone related policy and guidelines document (Figure 3).

Cognizant that the successful development of any CZM framework is dependent on collaboration and consultation with government agencies responsible for regulating the use of coastal and marine resources, a Coastal Zone Management Working Group (CZMWG) was established to guide the process (Figure 3). The CZMWG comprised key agencies with an interest in integrated coastal zone management, including:

- Coordinator Coastal Zone Management Project (Chair)
- Department of Fisheries, MAFF
- Department of Forestry, MAFF
- Sustainable Development and Environment Unit, MPDEH
- Physical Planning, MPDEH
- Planning and Statistical Unit, MAFF
- Water Resources Unit, MAFF
- Research and Development Unit, MAFF
- Environmental Health Department, Ministry of Health
- Maritime Desk, Saint Lucia Air and Sea Port Authority

Further recognizing the importance of sensitizing the public on coastal and marine related issues, a number of sensitization and awareness activities were undertaken including publication of brochures, flyers, call-in programmes, and radio and television panel discussions. Two national consultations were held, in addition to one-on-one meetings with stakeholders, to allow for the input of as many persons as possible towards the development of a CZM framework (in total 109 persons contributed to its development).

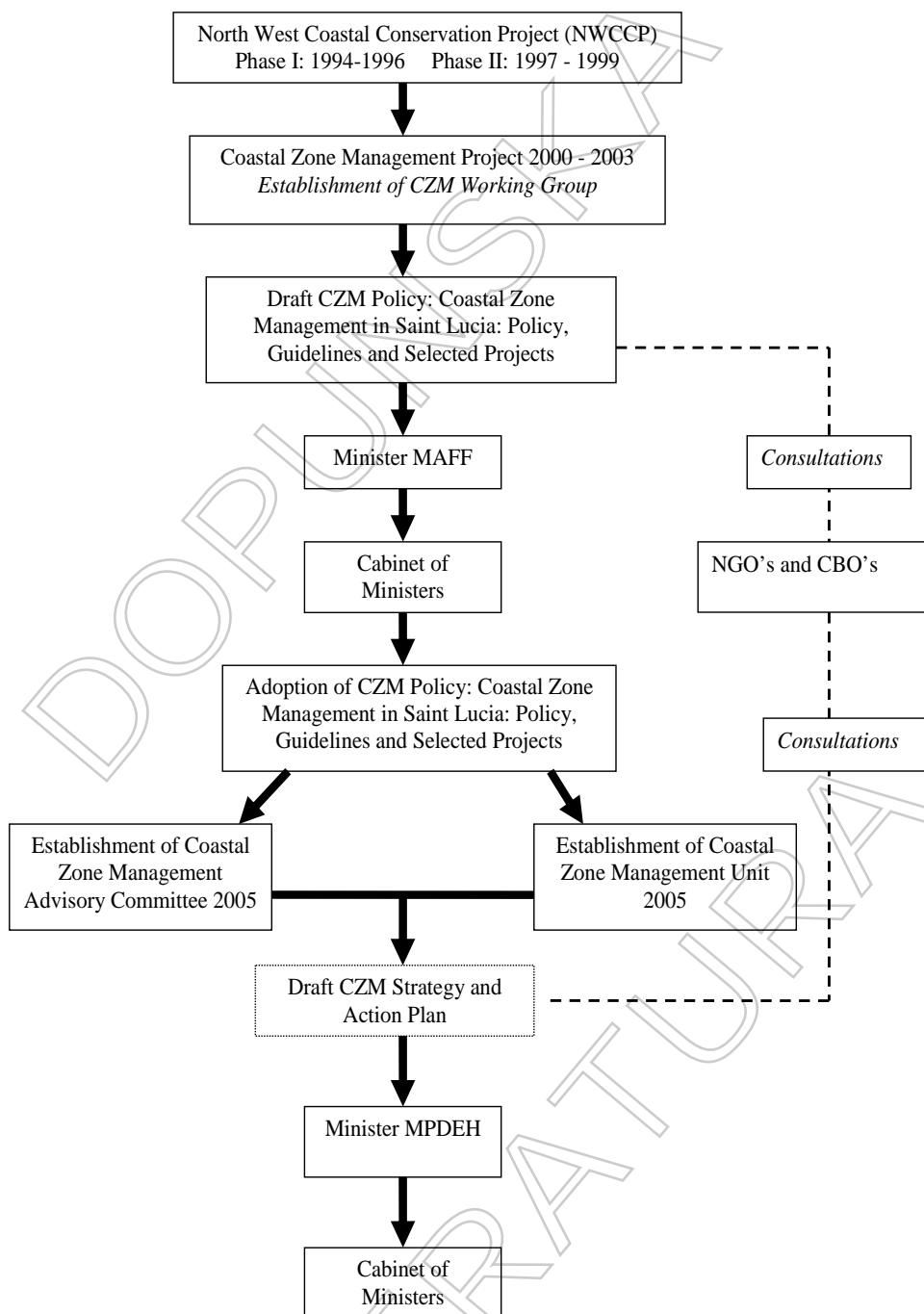


Figure 3: Flow Chart Depicting the Stages of the Development of Saint Lucia's CZM Programme

The main output of this process was a CZM policy: *Coastal Zone Management in Saint Lucia: Policy, Guidelines and Selected Projects*. This policy was approved and adopted by the Cabinet of Ministers in 2004 and aims to guide CZM in Saint Lucia (see Annex for full text of the policy document). Whilst the Policy document describes the coastal zone as a transition zone between the land and sea which is influenced by both, for administrative purposes the Policy document also provides a more specific definition which states that the coastal zone for Saint Lucia lies between the 100ft contour, or where a cliff area adjacent to the sea exceeds this, 75ft inshore from the cliff edge, and 1 mile offshore (Coastal Zone Management in Saint Lucia: Policy, Guidelines and Selected Projects, 2004).

The CZM policy document provides a framework for strategies and actions, pertaining to:

- The development of required institutional and management arrangements through the establishment of a Coastal Zone Management Unit (CZMU). In January, 2005, such a Unit was established within the Sustainable Development Section of the Ministry of Physical, Development Environment and Housing. The role of this unit is to:
 - Serve as the Secretariat of the Coastal Zone Management Advisory Committee (CZMAC) responsible for, amongst other things, proposing and formulating coastal zone related policies.
 - Provide technical input and advice to relevant planning and management agencies on matters pertaining to coastal development and management.
 - Collect, manage and disseminate data and other information on coastal resources, issues and processes.
 - Create and enhance public awareness of coastal zone management issues and programmes.
 - Conduct selected programmes and activities directly relevant to coastal zone management and development

- Areas of focus for region specific development and management plans (Coastal Zone Management in Saint Lucia: Policy, Guidelines and Selected Projects, 2004).

It is the latter that this document to expand and detail.

1.2 COASTAL ZONE MANAGEMENT STRATEGIC AND ACTION PLAN PLANNING PROCESS

To develop a Coastal Zone Strategy and Action Plan for Saint Lucia, in a manner that is integrative and collaborative, the following was undertaken as research towards the development of this document:

Review of Part 2 of the CZM Policy “Framework for Strategies and Actions: Towards Policy Implementation”

Part 2 of the Coastal Zone Management Policy document for Saint Lucia outlines strategies and actions for region-specific development and management plans.

To understand and identify the severity of issues within Saint Lucia’s coastal zone and to determine whether the proposed strategies and actions are currently applicable to the identified regions, a review of the proposed framework was undertaken by the CZMAC. Once identified as relevant, the proposed actions were prioritized as high, medium or low for the four regions identified (see Part III of document).

Development and administration of a CZM Stakeholder Questionnaire

To develop a medium-to-long term strategy and action plan specific to each region, a stakeholder questionnaire was developed based on the framework for strategies and actions outlined in the Policy document. The focus of the questionnaire was island-wide, addressing issues such as watershed management, physical planning and development, agriculture, fisheries and coastal tourism. However, to allow for easier identification of

priority areas within the four identified regions, the questionnaire was divided into five sections, consisting of questions specific to the four regions identified in the policy document as well as a general section.

The questionnaire was administered to a number of stakeholders, including the CZMAC and other relevant government agencies, community based organizations, and non governmental organisations. The questionnaire sought to, amongst other things, identify and prioritize areas of concern within each region. Respondents were asked to make recommendations relating to management measures and actions necessary to address pertaining issues.

A total of 17 respondents completed the questionnaire, however it should be noted that the number of persons who responded to the various sections ranged from 11 to 17. Most of the respondents felt that policy makers and the general public were not adequately sensitized towards coastal zone management issues.

All the respondents felt that there is a need to further regulate the island's coastal zone and 71% indicated that, existing legislation is often inadequate and outdated especially in relation to the fines quoted and suggested that there may be a need to develop 'umbrella' legislation to integrate all CZM specific legislation. The development and implementation of national land use and zoning plans are felt to be integral components to successful coastal zone management on the island. Respondents also indicated that there is a need to establish formal interagency collaborative mechanisms through the establishment of memorandum of understanding, as the management and development of the island's coastal zone cannot occur on a sectoral basis.

More specifically, deteriorating water quality, deteriorating coastal and marine habitats, and increasing conflict were identified as the priority issues along the island's north-west coast with sewerage followed by sedimentation and ballast water and hull fouling cited as the factors contributing to the deterioration of the region's coastal water quality. Whilst the tourism industry was identified as the most economically viable, many of the

respondents felt that this sector was being promoted at the detriment of traditional sectors such as agriculture and fishing. Special development areas along this region which were recommended include Pigeon Island and Marigot Bay.

Along the central west coast, respondents listed issues in order of priority as: deteriorating coastal habitats, increasing conflict, uncontrolled and unplanned development and deteriorating water quality. Coral reefs were identified as the habitat under the greatest threat in this region, whilst the fishing industry was identified as the most economically viable sector. Environmentally sensitive and culturally important areas identified in this region include the Pitons, Soufriere Marine Management Area and the Canaries/Anse le Raye Management Area.

With reference to the north-east coastal region the issues identified, once again listed in order of priority were: uncontrolled and unplanned development, deteriorating water quality and watershed management. Respondents to this section of the questionnaire felt that watersheds were currently at the greatest risk of deterioration followed by mangroves and river and coastal systems.

The agriculture and fishing industry were identified as the most economically viable within this region.

Environmentally sensitive and culturally important areas identified in this region include Grande Anse, Fond D'Or and Louvette.

Finally the priority issues identified for the south-west to south-east coast included: deteriorating coastal habitats and deteriorating water quality, followed by uncontrolled and unplanned development and over exploitation of nearshore fisheries resources. Sedimentation followed by sewerage were identified as major threats to mangrove forest and sea grass beds. Environmentally sensitive and culturally important areas identified in this region include Pointe Sable National Park.

Review of proposed and existing environmental policies and strategies

The Government of Saint Lucia, through its continued commitment towards sustainable development, is working towards the development and implementation of the necessary institutional frameworks required for achieving sustainable development on the island. To ensure that the CZM Strategy and Action Plan reflect an integrative and holistic approach, and to avoid duplication of efforts with other governmental agencies that have coastal mandates, a review of key policies and strategies was undertaken:

- *National Environment Policy and National Environmental Management Strategy:*
The Cabinet adopted *National Environmental Policy (NEP)* and the *National Environmental Management Strategy (NEMS)* are formal expressions of the Government of Saint Lucia's commitment to arrest and reverse trends of environmental degradation and ensure that sound environmental management is fully integrated into the national development policy framework.
- *Proposed National Land Policy:* The proposed *National Land Policy* seeks to guide the use, management, development and administration of land resources in Saint Lucia to optimize the contribution of land to sustainable development. It is envisaged that this policy will guide the development of a land use plan to further facilitate effective CZM in Saint Lucia.
- *Saint Lucia National Climate Change Policy and Adaptation Plan:* Being a small island State, Saint Lucia is very vulnerable to the effects of climate change and global warming, especially as they relate to increased storm activity and sea level rise. As such, the aim of this policy is to foster and guide a national process of addressing the short, medium and long term effects of climate change in a coordinated, holistic and participatory manner.
- *Water Policy for Saint Lucia:* Temporal scales are much smaller on islands such as Saint Lucia, than on a large continental land masses. In light of the aforementioned, the Cabinet approved a Water Policy for Saint Lucia, which seeks to sustain

economic growth, human development and environmental sustainability by promoting and facilitating the use and management of freshwater resources in an efficient, sustainable and equitable manner. It is envisaged that this policy will facilitate the implementation of the CZM Policy through addressing many of the inland concerns and issues.

- *National Biodiversity Strategy and Action Plan:* The island's biological diversity is important to the people and economy of Saint Lucia. The agricultural, fisheries and tourism sectors, for the most part, concentrated along the island's coast, all utilize and are dependent on Saint Lucia's biological diversity. In light of this, the *National Biodiversity Strategy and Action Plan* has been developed to optimize the contribution of biological diversity to the sustainable economic, social and cultural development of Saint Lucia.
- *Proposed National Policy and Strategic Plan for the Development of the Agricultural Sector in Saint Lucia:* The Government of Saint Lucia is presently in the process of developing a *National Policy and Strategic Plan for the Development of the Agricultural Sector in Saint Lucia*, which will guide the development of the necessary mechanisms for a more focused and targeted approach to the long-term development of the agricultural, forestry and fisheries sectors.

Given the dependence and inter-linkages of management and development systems on a small island, the CZM Strategy and Action Plan has been developed in such a manner that complements and integrates with these various relating policies.

The remaining actions and activities highlighted under this section will be undertaken in the upcoming months when the draft Coastal Zone Strategy and Action Plan is presented to the CZMU, Ministry of Physical Development, Environment and Housing:

Presentation of draft CZM Strategy and Action Plan to CZMAC for review

The draft CZM Strategy and Action Plan will be presented to the CZMAC for their review and consideration. The objective of presenting the draft CZM Strategy and Action Plan to the CZMAC for their review is to allow for further refinement of the proposed Strategy and Action Plan, as well as provide suggestions and recommendations by which the proposed framework could complement and build upon existing policies and strategies within their own agencies.

Presentation of draft CZM Strategy and Action Plan to the four regions of the island

Cognizant of the Government of Saint Lucia's commitment towards involving communities in decision-making, the draft CZM Strategy and Action Plan will be presented to communities and other relevant bodies/agencies/persons within the four regions for their comments and inputs.

Formal consideration of draft CZM Strategy and Action Plan

Once the draft CZM Strategy and Action Plan document has been presented to the relevant governmental and non-governmental stakeholders and the document has been amended to reflect their suggestions and recommendations, the draft document will be presented to the Minister of MPDEH for final comments before submission to the Cabinet of Ministers for their consideration.

PART II- DRAFT COASTAL ZONE MANAGEMENT STRATEGY AND ACTION PLAN

In this section, a draft Coastal Zone Management Strategy and Action Plan for Saint Lucia is proposed. The section commences by outlining the purpose for a CZM Strategy and Action Plan, followed by the vision and goal.

The strategic approaches and seven actions regarded as necessary in working towards integrated coastal zone management in Saint Lucia are presented. The implementation of policy and strategy documents are often very challenging for SIDS, particularly as they often lack capacity (human and financial resources). Cognizant of such challenges, recommendations for the successful implementation of this draft CZM Strategy and Action Plan for Saint Lucia are also proposed.

2.0 PURPOSE OF THE CZM PLAN

The wider purpose of this strategy and action plan is to facilitate improved management of coastal and marine resources at the national level in Saint Lucia, and to ensure that economic growth is balanced with sound environmental management. Also incorporated in this strategy and action plan are suggested strategies that will facilitate the implementation of the CZM Policy.

Management of Saint Lucia's coastal and marine resources is not an easy task and can only occur successfully through an integrative and collaborative approach that incorporates a long-term vision of the island's coastal zone into sector based development programmes.

2.1 THE VISION/GOAL OF THE PLAN

Given the expected development of the island's coastal zone within the next ten years, driven by the open market regime of the Caribbean Single Market Economy, the Coastal

Zone Management Strategy and Action Plan embraces a mission that encompasses a number of elements that relate to the CZM Policy for Saint Lucia including legal and institutional arrangements, coastal resources, society and socio-economics. In this regard, the vision for Saint Lucia's coastal zone includes:

A biologically diverse, healthy and productive coastal and marine environment that benefits all Saint Lucians and which is maintained and enhanced through an integrated, holistic and multisectoral approach to national and regional planning and development.

The development of coastal zone specific legislation is an important component towards successfully guiding coastal zone management in Saint Lucia. Although legislation pertaining to coastal zone management exists, for the most part, it is scattered amongst a number of different governmental agencies often making it difficult to determine the agency responsible for certain components of the island's coastal zone. In light of the aforementioned, there is a need to review existing coastal legislative frameworks to identify gaps and overlaps that exist within the current legislative framework and provide recommendations addressing these issues (for example the development of CZM specific legislation). Such 'umbrella' legislation if adopted will allow for improved management approaches as well as, collaborative and integrated management and development of the island's coastal and marine resource.

2.2 STRATEGIC APPROACHES TO SUCCESSFUL IICZM

Integrated Coastal Zone Management is often considered a challenging endeavour due to the large myriad of activities occurring in the coastal zone - which itself is a dynamic transition zone - as well as the large number of agencies with possible overlapping mandates. The coastal region, more so than any other region on an island, shows the interlinkages between terrestrial and marine ecological processes. More specifically, the interaction of activities occurring in the upper reaches of watersheds has direct influence on activities along the coast and this within very short temporal scales.

The interlinkages of environmental systems from ridge to reef is more accentuated on small islands, such as Saint Lucia, than on large continental land masses. This is due to the small size of these islands, and thus the close proximity of ecosystems, a feature which accentuates the linkages between and/or among habitats. In light of this, the successful implementation of a coastal zone management programme in Saint Lucia is dependent on the adoption of an Island Systems Management (ISM) approach where the island is viewed as one inter-dependent coastal entity. Recognition of this geoecological reality also leads to a regional (local) approach to management. This regional approach would allow the island to be divided into practical regions, where region specific needs and priorities can be effectively determined and addressed. Neither of the two approaches proposed above can be successfully implemented without the support and participation of the general public. The strategic approaches along with the justification for their use are detailed below:

- *Island Systems Management:* For the most part, island systems are considered highly complex due to the concentration of a wide variety of natural resources within a fairly limited area, emphasizing the linkages and interdependence between these systems, and thus, creating the need for a flexible system of management. One of the most relevant examples used today to demonstrate island systems is the threat of land based sources of marine pollution.

Deforestation, poor agricultural practices, uncontrolled and unplanned development, a lack of adequate sewage and grey water treatment facilities, and poor solid waste management practices, all contribute to the degradation of the island's coastal resources (State of the Environment Report, 2005).

Island Systems Management (ISM) recognizes the need for a holistic approach in regulating the use of island resources. The ISM concept seeks to eliminate sectoral boundaries through the establishment of a multisectoral, multidisciplinary mechanism which links a partnership arrangement of public and private sectors,

non-governmental organizations and community-based organizations, in the decision-making process. The ISM philosophy can be described as a boundary-less system, focusing on issues (e.g. degrading water quality, unplanned and uncontrolled development) and problem areas (e.g. mangroves and wetland destruction) through the adoption of a multidisciplinary, multisectoral and multifaceted approach towards management and development (Chase and Nichols, 1996).

In light of the above, the narrow transitional zone between land and sea known as the coastal zone cannot be managed in isolation of the terrestrial and marine activities that impact on this zone, made even more apparent by the shorter temporal and spatial scales experienced by islands, a result of islands small size. Thus, the impact of a torrential downpour on coastal habitats will be evident almost immediately after the downpour compared with a few hours or days on a large continental landmass.

Thus, the successful implementation of the CZM Strategy and Action Plan is dependent on the adoption of an issue-based approach towards management. As has been stated previously, such approaches are not confined within narrowly defined boundaries, but instead adopt a holistic approach through addressing issues such as waste management, that span across ecosystems and geographic regions. Furthermore, such a strategy needs to be adaptive, so past experiences will be used to guide future management and development decisions along the island's coast.

- *Regional Approach:* Although, as has been stated above, an ISM approach is recommended for achieving CZM in Saint Lucia, it is necessary to recognize that there are varying degrees of stresses affecting resources within different coastal areas/regions. This has been highlighted in the overview of the CZM Stakeholder

Questionnaire.¹ For example, whilst some areas, such as the capital city of Castries, are highly physically developed and experience many stresses, a result of unplanned or poorly planned development, other areas, such as those along the island's north-east coast, remain relatively isolated and undeveloped.

In light of the above, it would be prudent to invest in a regional planning approach; one that takes into consideration environmental, cultural, social and economic needs specific to communities/regions.

- Public involvement and participation: Effective CZM cannot occur in isolation of local government and community involvement. Many of the impacts to the island's coastal and marine resources are a direct result of activities occurring within small localized communities. Thus, there is a need to involve and collaborate with local communities in the development and implementation of a CZM action plan for Saint Lucia. Studies have shown that by involving the public in the formulation and development of public policies there is usually increased ownership of the policies, as well as increased compliance, and as a result resources slated for enforcement can be out towards community programmes.

Past successes such as the implementation of the Soufriere Marine Management Area² (SMMA) has shown the importance of involving local communities in management and development decisions that directly impact their livelihoods. In light of this success, the successful implementation of any coastal zone management programme is dependent on a high level of involvement and participation by the resource users and stakeholders.

¹ In order to develop this draft CZM Strategy and Action Plan a coastal zone management stakeholder questionnaire was developed and administered to government agencies, community groups and NGO's. The questionnaire sought to identify priority areas of concern along Saint Lucia's coastal zone.

² The Soufriere Marine Management Area established in 1994 consists of 11km of zoned coastal area that is successfully managed by a multi-stakeholder board of directors which comprises of representatives from key resource user groups.

2.3 FROM STRATEGY TO ACTION: TOWARDS ACHIEVING ICZM IN SAINT LUCIA

Overview

Many of the actions required for achieving ICZM on a SIDS like Saint Lucia need to be implemented and adopted at the national level. Also, as has been indicated previously, a number of governmental agencies share responsibility for the management and development of the island's coast and, as such, many of the actions identified below are the responsibility of a number of governmental agencies. However, the Coastal Zone Management Unit, along with the CZMAC, will facilitate the formulation, co-ordination and adoption of many of these actions.

It should also be noted that the successful implementation of these national institutional frameworks and mechanisms outlined below will, in turn, guide the implementation of corresponding local (community/village) actions addressed in Part III of this document.

First Action: *Achieve a holistic and integrated approach to management and development*

Rationale

For the most part, development in Saint Lucia has been characterized as unplanned and/or poorly controlled. This approach towards development has resulted in a wide range of problems including: erosion, deforestation, deteriorating riverine and coastal water quality, degraded coastal and marine resources, flooding, and destruction of beach front developments during storms. The lack of appropriate land use and zoning plans have resulted in *ad hoc* development, evident in the north of the island, where more than half of the population has settled. As has been recommended under the *National Environment Policy*, there is a need to establish a National Environmental Commission which will

guide, integrate and coordinate policies and programmes in all areas of environmental management.

The Government of Saint Lucia, recognizing that the current unplanned and/or poorly planned approach to development needs to be curtailed, adopted the *Physical Planning Act No. 29 of 2001*, which makes provision for the development of land, regulation of use of land, and environmental impact assessments (EIAs). However, although EIA regulations have been drafted, no regulations under the *Physical Planning Act* have been enacted. Currently, EIA's are required to accompany any proposed development submitted to the Development Control Authority (DCA) for their consideration. The lack of established EIA regulations may make it difficult to monitor and regulate environmental impacts during and after construction of coastal developments.

There is also a need to control the type and level of development that occurs along the island's coast through the adoption of regional land use plans that integrate the environmental, historical and cultural characteristics of many of the island's regions.

Tasks

The success of the CZM Strategy and Action Plan will be dependent on simultaneous adoption and/or implementation of related policies and programmes. For example, the MPDEH (under which the CZMU lies) will:

- Adopt an Integrated Development Planning Approach towards the management and development of the island's coastal resources.
- Support the implementation of the following policies and strategies:
 - National Environmental Policy and National Environmental Management Strategy
 - Saint Lucia National Climate Change Policy and Adaptation Plan
 - Water Policy for Saint Lucia
 - National Biodiversity Strategy and Action Plan
 - Coastal Zone Management in Saint Lucia: Policy, Guidelines and Selected Projects

- Proposed National Land Policy
- Proposed National Policy and Strategic Plan for the Development of the Agricultural Sector in Saint Lucia
- Revised System Plan for Protected Areas for Saint Lucia

Second Action: Development of Pollution Control and Waste Management Mechanisms

Rationale

One of the biggest threats to the integrity of Saint Lucia's coastal zone is land-based sources of marine pollution. Pollution from non-point sources, in the form of untreated or partially treated sewerage, sediments, agrochemicals and industrial by-products, are contributing to the deterioration of riverine and coastal water quality. The improper disposal of raw and partially treated sewage in coastal waters, and point source pollution such as wastewater from industries and spoils from construction, also need to be adequately addressed.

Coastal water quality in areas where data are available, not only in densely populated areas but also in small coastal communities, is showing signs of pollution.

Notably, the continued pollution of these coastal waters has negative implications for nearshore fishery resources, river systems and ultimately human health and the water-based tourism sector.

Inappropriate solid waste disposal results in the accumulation of plastic bottles and other wastes in many of the island's harbours and bays during periods of heavy rains. To date, Saint Lucia lacks formal recycling plants for plastics or other such materials. Further, solid waste generated from the expanding cruise tourism industry has increased in the last few years and it is necessary that port reception facilities are established to collect and dispose of such waste.

Tasks

The Government of Saint Lucia will:

- Implement the *Global Programme of Action for the Protection of the Marine Environment from Land Based Activities*.
- Ratify the *Protocol Concerning Pollution from Land-based Sources and Activities to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (LBS Protocol)*.
- Give effect to the articles under the LBS Protocol through the development, adoption and implementation of LBS legislation.
- Finalize, adopt and implement the draft *Marine Pollution Act*
- Undertake sewage needs assessment for the island of Saint Lucia with an aim to identifying specific pollution control mechanisms and needs required to curtail the impact of inadequate sewage treatment on the island's coastal and marine resources.
- Establish a comprehensive coastal water quality monitoring programme.
- Restrict and regulate the use of pesticides and fertilizers in the agricultural sector so as to limit the input of nitrogen and phosphorous into the coastal and marine environment.
- Develop standards/guidelines for (a) waste management for hotels (b) harbours, ports and marinas (c) for management, treatment, recycling and disposal of waste water. Such standards are required to regulate waste water quality expelled into the coastal and marine environment from these facilities.
- Promote and encourage the development and implementation of Environmental Management Systems in all businesses (private and government).
- Promote and encourage composting and basic recycling practices by way of an incentives and disincentives scheme to reduce the high density of non-biodegradable waste that gets washed into the coastal area.

Third Action: Managing the use of coastal and marine resources and their associated habitats

Rationale

Saint Lucia's economy is heavily dependent on coastal and marine resources and their associated habitats.

The coastal tourism sector relies on clean and healthy coastal waters, pristine beaches and healthy coral reefs. However, many of coastal tourism activities contribute to the deterioration of many of the island's coastal and marine resources; these include physical damage to reefs by snorkelers and divers, boat anchoring, and the introduction of pollutants into coastal waters from coastal hotels and restaurants.

The construction of marinas to serve the yacht tourism sector, continue to result in the clear-cutting of mangroves and other wetlands. Construction of marinas also negatively impact on coral reefs, seagrass beds and other nearshore habitats.

Coastal construction and dredging activities have contributed to the sedimentation and pollution of coastal habitats. In addition, uncontrolled beach replenishment and the creation of new beach areas to satisfy the tourism market is becoming a growing trend. Although legislation exists to regulate sand mining along the island's river banks and beaches, the legislation is outdated with inadequate fines for persons who are found to be in violation of the law. Due to this legislative lacuna, sand mining activities persist, and are especially more prevalent along the east coast of the island due to its remoteness.

Many of the island's coastal communities are still heavily dependent on nearshore fisheries. However, this sector is threatened by poor water quality and deteriorating fishery habitats. Efforts, such as the establishment of marine reserves to facilitate replenishment of fisheries and protection of critical fishery habitats, have thus far been largely unsuccessful as many of the marine reserves boundaries have not been demarcated and do not have appropriate management plans in place.

Although there are legislative frameworks in place that address the sustainable use and management of the island's coastal and marine resources, surveillance and monitoring is often difficult to undertake due to limited human and financial resources.

Tasks

The Government of Saint Lucia will facilitate the implementation of the following task:

- Review, adopt and implement the plan for *A System of Protected Areas for St. Lucia* to ensure that the island's critical areas relating to culture and natural resources are protected (currently underway).
- Revise, adopt and implement the *Fisheries Management Plan for Saint Lucia*.
- Undertake carrying capacity studies on the impact of the tourism sector, particularly the SCUBA and snorkeling industry on the island's coral reefs, so as to determine the degree to which coastal tourism activities are impacting the island's coastal resources.
- Develop and implement regulations under the *Physical Planning and Development Act (29/2001)* for development control mechanisms such as, environmental impacts assessments, zoning plans, building codes, buffer zones, set backs and green space.
- Identify finances to be used towards better surveillance and enforcement of legislation along the island's coastal zone.
- Conduct an inventory of the state of the island's coastal and marine resources so as to obtain baseline data on current state of the island's coastal resources and be able to monitor the evolution of their state.

Fourth Action: Development and/or Implementation of Appropriate Institutional Frameworks to Guide the Management and Development of Saint Lucia's Coastal Zone

Rationale

There are numerous legislative instruments that address planning and environmental issues. However, the establishment of these has been brought about through a reactive approach rather than a proactive one, and for the most part the existing legislation is sector-specific. Thus, there is a need to streamline existing legislation pertaining to the following issues: the sustainable use of resources of the coastal and marine areas; managing human activities in such areas so as to ensure that development does not cause harm to human health or the environment, and ensuring that all activities are within the “carrying capacity” of fragile coastal and marine ecosystems.

Many of the existing sector-specific legislation do not foster a coordinated approach to planning and development in an environmentally sustainable manner. This results in overlaps and gaps in the system that often create conflict and/or confusion over the precise jurisdiction of respective agencies. In 2001, an Institutional Review of Saint Lucia was undertaken and recommended the establishment of a National Environment Commission (NEC), which would be responsible for the harmonization of all approval, licensing, permitting, monitoring and enforcement activities where they impact upon the environment or natural resources (Legal and Institutional Review of Environmental Management in Saint Lucia, 2001). Notably, this review also stated that the CZMAC would be one of the sub-committees functioning under the NEC. It is envisaged that the recently adopted National Environmental Policy (NEP) and National Environment Management Strategy (NEMS) will allow for the implementation of the necessary institutional framework for the establishment of the NEC (National Environmental Policy, 2005).

Although the CZM Policy establishes a Coastal Zone Management Advisory Committee, which is cross-sectoral and responsible for proposing and formulating policies to guide

management and development of Saint Lucia's coastal zone, the lack of legislation mandating the existence of such a committee has resulted in the under-utilization of the CZMAC and the persistence of a sectoral approach towards ICZM.

Tasks

The Government of Saint Lucia will:

- Formally mandate the role and function of the Coastal Zone Advisory Committee including the level of representation required by government agencies which sit on the committee.
- Review existing CZM related legislation so as to make recommendations regarding whether there is a need to develop new ICZM specific legislation.
- Support the implementation of a National Environmental Commission as articulated under the NEMS, through which the CZMAC will serve as one of the sub-committees, which will be mandated to guide, integrate and coordinate policies and programmes in all areas of environmental management.

Fifth Action: Securing Sufficient Financial Resources for the Implementation of ICZM in Saint Lucia

Effective management and development of Saint Lucia's coastal and marine space is dependent on development and implementation of the necessary institutional frameworks that will allow for an integrative and collaborative approach towards ICZM. However, as is often the experience, once many of the necessary institutional frameworks have been developed - often with the assistance of external grants - there is insufficient local capacity (financial and human resources) available to allow for implementation. Successful implementation of the CZM Strategy and Action Plan and other related strategies and programmes will require the commitment of the Government of Saint Lucia. Like most SIDS, Saint Lucia lacks the financial and human capacity to independently implement a CZM Strategy and Action Plan, and thus, external resources from international funding and donor agencies will have to be identified.

Tasks

The Government of Saint Lucia will:

- Establish a sub committee to review opportunities and develop proposals for securing external assistance from development assistance agencies and institutions in support of coastal and marine programmes.
- Design and implement a system whereby the collection of existing and new user fees, taxes, fines, levies and surcharges are channeled into components of the CZM programme.
- Develop new innovative ways of funding CZM related actions and programmes.
- Encourage and facilitate greater community involvement and participation in coastal zone related programmes so as to encourage greater community ownership and responsibility in CZM related issues.

Sixth Action: Data Collection and Management to Guide Management Decisions

Rationale

Insufficient priority is given to the collection and management of relevant data as there is a severe lack of information on coastal processes in the local environment, to allow for informed planning and management decisions.

Scientific information is needed to guide the sustainable use of coastal resources, to protect the environment and, to improve the quality of life at a national scale. This need is becoming more evident as the complexity of the relationships among the environment, resources, and the economic and social well being of people becomes fully realized and changes and long-term threats are discovered. In the absence of adequate data, decisions are made that may have irreversible consequences threatening the resource base over the medium to long-term.

There is thus a need to implement measures that will result in a change of attitude among management authorities and decision-makers about the importance of the collection and

management of data, as well as the importance of using resultant information to guide management and development decisions.

Tasks

The Government of Saint Lucia will:

- Work towards the establishment of a reliable data and monitoring programme that will be used to guide management and development decisions on the island's coastal zone.
- Develop a protocol that would guide and focus research to be carried out on coastal/marine biodiversity, so as to facilitate the development of a complete outlook on the condition of relevant systems and determine trends.
- Select indicators that are consistent with past and present studies, allowing for comparability over time.
- Enhance data management practices in relevant agencies so that better use of data in guiding management decisions can be made.
- Establish benchmarks associated with recommended indicators, as these would serve as baselines/benchmarks or points of reference from which to assess coastal and marine biodiversity change.
- Undertake studies on the socio-economic status of coastal communities including the collection of data on the social organizations of coastal communities and dependencies on coastal resources.
- Identify high risk areas, that is, areas that are under high risk of natural hazards such as lowlands prone to floods and unstable slopes prone to landslides.

Seventh Action: Empowerment of the local population with regards to the significance of coastal and marine resources

Rationale

Coastal zone management in Saint Lucia cannot occur effectively without the support of the local population.

Traditionally, Saint Lucia has not had a very engaged or empowered population. In many instances, the local population has contributed to the deterioration of the island's coastal and marine resources through poor land use practices such as poor waste disposal methods and deterioration of watersheds. With increased sensitization through the media on the importance of environmental systems, as well as with the establishment of many community environmental groups that work towards rehabilitating their coastal areas, there has been a slight shift in people's attitudes towards the significance of a productive and healthy environment.

Nonetheless, successful implementation of the CZM Strategy and Action Plan will require some inherent changes in the behaviors and attitudes of the local population. In particular, there is a need to develop an increased sense of ownership of and responsibility towards the environment to increase understanding of issues, causes and possible solutions, and to encourage and reward positive and adequate behaviour at all levels.

Tasks

The CZMU, in collaboration with other governmental and non-governmental organizations, will work towards empowering Saint Lucians so that they have a true role in ICZM programmes and become committed to its successful implementation and will:

- Establish public awareness, education and sensitization programmes addressing the need to sustainably manage and develop the island's coastal and marine resources.

- Increase mandates and devolution of responsibilities to local communities and governments with regards to ICZM programme development and implementation.
- Promote high-level public involvement, and facilitated dialogue, in decision making with regards to the development and implementation of CZM programmes.
- Establish community-based and co-management arrangements to facilitate effective resource use and conservation.
- Mobilize communities in the conservation of resources and rehabilitation of degraded areas.

2.4 IMPLEMENTATION OF THE INTEGRATED COASTAL ZONE MANAGEMENT STRATEGY AND ACTION PLAN

The implementation of the ten-year CZM Strategy and Action Plan requires that the Coastal Zone Management Unit, Ministry of Physical Development, Environment and Housing and the CZMAC be vested with the mandate, authority and resources required for overseeing the implementation of this Strategy.

To ensure effectiveness, transparency and accountability, the implementation of the Coastal Zone Management Strategy and Action Plan will be reviewed every three years. In particular, the action plan and frameworks that are part of this strategy will be evaluated, and new activities will be included as necessary.

Although the Government of Saint Lucia is committed to providing the resources necessary for the implementation of this Strategy, additional assistance will need to be sought from international donors, civil society and the private sector as has been articulated under the fifth action.

PART III- REGIONAL ACTION PLANS

3.0 INTRODUCTION

The subsequent sections of this document put forward actions for implementation at the regional level. Given that there are differing degrees and/or types of stresses along different areas on the island it was proposed in the Policy, Guidelines and Selected Projects document that the island be divided into four regions: the Northwest Coastal Region, Central West Coastal Region, Northeast Coastal Region and the Southwest to Southeast Coastal Region (Figure 2). The subsequent sections/tables provide actions, list agencies with principal responsibility for implementation, as well as co-operating agencies. Priority levels specific to each region are indicated, as well as timeframes for implementation of a specific action. Priority level has been designated as 1, 2 or 3, where 1 signifies a high priority, 2 a medium priority and 3 a low priority. Regarding the time frames allocated for implementation of specified actions during the ten-year duration of this action plan short-term indicates the action will be addressed within the first 3 years, medium term between 4-7 years and long-term 8-10 years.

3.1 NORTHWEST COASTAL REGION (POINT DU CAP TO TROU ROLLARD, MARIGOT)

Regional Profile

Located on the leeward side of the island, and washed by the gentle waters of the Caribbean Sea, this region is characterized by naturally protected harbours and bays (Figure 2).

The capital city of Castries, the island's main commercial center which surrounds the island's largest naturally protected harbour, Castries harbour is located within this region (Figure 2). This harbour, regarded as one of the busiest ports in the Eastern Caribbean averaged 16, 358 gross tonnage in 2004 (SLASPA, 2005). The George F.L. Charles

International Airport, one of the island's two airports, which caters primarily to regional travelers, is also located within the capital city of Castries.

The town of Gros Islet, once a traditional fishing village and now the largest of the island's three towns is found within the northwest coastal region (Figure 2). Gros Islet has developed to become the major hub for the tourist industry on the island, with more than half of the island's hotel properties located within this town. The Rodney Bay Marina, the larger of two marinas located on the island, has been the finishing point of the Atlantic Rally for Cruisers (ARC), an annual transatlantic sailing race which commences in Las Palmas de Gran Canaria for the past 20 years. The second marina, located within Marigot Bay, a naturally protected bay surrounded by lush red mangrove forest, has been designated as a marine reserve under the Fisheries Act of 1984.

More than half of the island's 162,311 residents live in this region due to availability of jobs in the commercial and tourism sectors, as well as other amenities such as government services, shops, banks, restaurants, beaches etc.

Historically, this region has been very important and is characterized by many forts and soldiers barracks from the eighteenth and nineteenth centuries. One of these, the Pigeon Island National Landmark, is located on a small islet north of the capital city, connected to the mainland island by a causeway constructed in the 1970's.

Cul de Sac Valley, one of the three agricultural valleys on the island is also found within this region. Although much of the land in the valley is being converted for use in the commercial and manufacturing sectors, banana production is still prominent and practiced by small-scale farmers.

The island's recently built cricket stadium, noted as one of the best stadiums in the Caribbean is also located within this region. It should be noted that Saint Lucia qualified to host one of the semi-final games in the up-coming cricket world cup in 2007 and it is envisaged that this event will dramatically increase the number of visitors to the island

during that period, propelling an onslaught of physical development within this region which is already evident.

Issues and Constraints

Although recognised as the most physically developed amongst the four identified regions on the island, the northwest coastal region is plagued by many issues that have over the years had negative impacts on the integrity of the coastal and marine environment along the north-west coast. For the most part, the lack of comprehensive development and zoning plans have resulted in unplanned and poorly planned development, with little or no infrastructure in place to address environmental health concerns such as waste treatment and disposal. Poor river and coastal water quality, deteriorated coral reefs and seagrass bed areas, wetland degradation, an overexploited nearshore fishery, as well as rapidly decreasing recreational and public space, characterize this region. More recently, there has been increasing conflict amongst resource users for use of space within the limited coastal area.

The Vision

The existence of comprehensive policies that encompass integrated development and planning particularly through; efficient forward planning and development control procedures, adequate waste and treatment disposal mechanisms, healthy coastal and marine resources and a population that is involved and engaged in the implementation of this CZM Strategy and Action Plan.

Regional Goals

The actions identified for this region in this action plan seek to address many of the issues and constraints highlighted above and include:

- The adoption of an integrative and holistic approach to guide development in this region;
- The establishment of appropriate pollution and waste control mechanisms;
- The rehabilitation and restoration of degraded coastal and marine resources;

- The development and implementation of mechanisms to address and mitigate against natural and environmental disasters;
- The empowerment of the local population with regards to the significance and management of coastal and marine resources;
- The proliferation of socio-economic benefits to the local community from the commercial, manufacturing and tourism sector;
- The development and implementation of a framework that addresses the resolution and avoidance of conflicts related to the myriad of activities occurring along the northwest coast.

NORTH WEST COAST REGIONAL GOALS AND ACTION PLANS

Adoption of an integrative and holistic approach to guide future development in the Northwest Coast

Rationale

As has been previously indicated, the lack of adequate physical planning and development controls in this region has accentuated the deterioration of many of the region's coastal and marine habitats. Expansion of the residential and tourism sector, more specifically coastal tourism, is occurring very rapidly on the island, especially in light of the upcoming World Cup Cricket in 2007. To date, very little attention has been placed on risk and disaster management issues in this region, considering that this area happens to be the most densely populated on the island. There are currently no institutional frameworks in place that require setbacks and which state what type of developments are allowed along particular areas. Hence, it is imperative that certain institutional and legislative frameworks are adopted and implemented to allow for an integrative and holistic approach towards development along the northwest coast region.

Expected Results

Within this action plan's ten-year time frame, the northwest coastal region will have:

- Implemented a regional land use and zoning plan based on a *National Land Use Policy*;
- Adopted an Integrative Development Planning approach to guide development in the northwest coast region;
- Identified and demarcated recreational areas and beach space, particularly within Rodney Bay and Pigeon Island to cater to the myriad of activities and to address conflict among users and uses.
- Incorporated risk and hazard management plans into regional development plans
- Accumulated geographic data of the northwest coast to guide long term environmental planning of the region.
- A population that is sensitized to the need for a regulated and planned development of the northwest coast.

Action Framework

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Timeframe
<i>Adoption of an integrative and holistic development planning approach to guide development and management within the north west coast</i>	Adopt an Integrated Development Planning approach, to guide all forms of development in this region	MPDEH	MAFF, MOT, Ministry of Communications and Works	1	Long-term
	Adopt and implement a north west regional land use and zoning plan based on the <i>National Land Use Policy</i>	MPDEH	MAFF, Ministry of Communications and Works, MOT	1	Medium-term

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Timeframe
	Incorporate risk and hazard management plans into regional development plans	MPDEH	NEMO	1	Medium-term
	Develop guidelines and/or standards for the siting, planning and management of residential, industrial, commercial and agricultural zones	MPDEH	MAFF, SLBS, MOT	1	Short-term
	Identify and demarcate recreational and beach areas, particularly within Rodney Bay and Pigeon Island	MPDEH	Ministry of Communication and Works	1	Short-term
	Develop and implement appropriate waste management infrastructure to regulate commercial, residential and manufacturing developments	MPDEH	WASCO	1	Long-term
	Undertake carrying capacity studies on the cumulative impacts of	CZMU	MPDEH, DOF, MAFF, MOT	2	Medium-term

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Timeframe
	development on the coastal and marine resources within the north west coast				
	Accumulate geographic data of the north west coast to guide long range environmental planning of the region	MPDEH		1	Medium-term
	A population that is sensitized to the need for a regulated and planned development of the north west coast	MPDEH	CZMU, GIS, CBOs, NGOs, MOT, DOF Environmental Health	1	Long-term

Implementation of adequate pollutant and waste management mechanisms to cater to the northwest coast

Rationale

Pollutants and other waste materials present severe problems to the coastal zone along this region. The improper disposal of raw and partially treated sewage in coastal waters, along with other point source pollution, such as wastewater from industries and spoils from construction sites are all negatively impacting on the environmental health of the northwest coast. During periods of heavy showers the Castries Harbour is inundated with plastic bottles, a result of poor solid waste disposal practices by much of the population. Runoff also contributes to high levels of sediment in the

Choc and Cul de Sac bays during heavy rainfall. Notably, these issues have negative implications on the already over-exploited nearshore fishery resource, river systems and ultimately the human health of the persons who use the beaches in this region for recreation.

Expected Results

Within this action plan's ten-year time frame, the northwest coastal region will have:

- Established appropriate sewage treatment and disposal systems to effectively service this region, particularly Gros Islet and Castries environs.
- Developed and implemented legislation to ensure that port, marina and harbour developments incorporate waste disposal facilities.
- Improved solid waste management, particularly in the capital city of Castries.
- Developed and implemented basic recycling and other waste management programmes – targeted at public involvement.
- Developed procedures and/or standards for the collection, handling and disposal of hazardous waste at the country's main port.
- Implemented a public awareness programme geared to the general public regarding the effects of waste and other pollutants on the coastal zone.

Action Framework

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Timeframe
<i>Establishment of adequate pollutant and waste management mechanisms</i>	Develop and implement relevant guidelines and or/standards as they relate to various effluents	SLBS	Environment Health Department, WASCO, MPDEH	1	Medium-term

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Timeframe
	Establish appropriate sewage treatment and disposal systems that will cater specifically to the Castries basin.	WASCO	Castries City Council, Ministry of Communications, Works, Transport and Public Utilities	1	Long-term
	Ensure that all commercial entities and households within the north-west coast are linked to a sewage disposal and treatment plant or have adequate septic tank facilities	Ministry of Physical Development, Environment and Housing	Ministry of Communications and Works, WASCO	2	Long-term
	Require, through the appropriate institutional framework that all harbour, ports and marina facilities along the north-west coast are equipped with appropriate waste and sewerage disposal facilities.	SLASPA	MPDEH, AGC	2	Long-term
	Create an incentive and discentives schemes to encourage existing ports and harbours to establish appropriate management systems.	Ministry of Finance, International Financial Services and Economic Affairs	SLASPA	2	Medium-term

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Timeframe
	Implement a public awareness programme geared to the general public regarding the effects of waste and other pollutants on the integrity of the north west coastal zone	CZMU	DOF, Environmental Health Department	1	Short-term
	Improve solid waste management beginning with the capital city of Castries	SLSWMA	Castries City Council, Environmental Health Department	1	Short-term
	Increase the capacity of the Beausejour Sewerage Treatment Plant	WASCO		2	Long-term

Rehabilitation and restoration of degraded coastal and marine resources

Rationale

Saint Lucia has a rich biological diversity of marine and coastal resources, which are important to the north west coastal region artisanal fisheries sector. The growth of the coastal tourism sector has resulted in an increased density of snorkelers and SCUBA divers on the region's coral reefs. Apart from serving as important resources for the fisheries and SCUBA industry, coral reefs in this region also provide shoreline protection to many beach front properties including hotels and restaurants. However, compared to other regions on the island, the coastal and marine resources along the northwest coast are very degraded, a result of poor water quality and indiscriminate fishing and yachting practices. Further, most of the mangroves and other wetlands in this region have been cleared to make way for coastal development projects.

Expected Results

Within the ten year time-frame of this action plan, the northwest coast will have:

- Addressed the problem of deteriorating river and coastal water quality within this region, particularly that of the Cul de Sac, Choc and Castries Rivers.
- Planted coral colonies and transferred keystone species e.g. *Diadema* sp. to degraded areas.
- Established artificial coral reefs and reef balls where appropriate to rehabilitate degraded coral reef areas.
- Employed soft methods (e.g. beach replenishment, dune restoration, prohibition of extractive practices) and where necessary, hard engineering methods, to address problems of eroding coastlines.
- Developed and implemented a comprehensive beach and coral reef monitoring programme along the north-west coast.
- Demarcated and established a management regime for existing protected areas in this region.
- Developed a public awareness program on the ecological, environmental, economic and social importance of the marine and coastal resources found along the north west coast

Action Framework

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Timeframe
<i>Rehabilitation and restoration of degraded coastal and marine resources</i>	Mapping of coastal and marine resource along the north west coast	CZMU	DOF, MPDEH	1	Medium-term
	Address the problem of deteriorating river and coastal water quality, particularly that of the Cul de Sac, Choc and Castries Rivers	CZMU	Ministry of Health, MAFF, DOF, WRMU	1	Long-term
	Demarcate and establish a management regime for existing protected areas in this region.	SLNT	DOF, Forestry Department	2	Long-term
	Plant coral colonies and transfer keystone species such as e.g. <i>Diadema</i> sp. to degraded areas	DOF	CZMU	2	Long-term
	Establish artificial coral reefs and reef balls where appropriate to facilitate the recruitment of coral and reef fish species	DOF	CZMU, SLASPA	2	Long-term

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Timeframe
	Employ soft methods (e.g. beach replenishment, dune restoration, prohibition of extractive practices) and where necessary, hard engineering methods, to address problems of beach erosion	Ministry of Communications, Works, Transport and Public Utilities	MPDEH	1	Medium-term
	Develop a public awareness program on the ecological, environmental, economic and social importance of the marine and coastal resources found along the north west coast	CZMU	DOF, Forestry Department	1	Medium-term
	Develop an intensive monitoring programme on the coastal and marine resources within the northwest coast	CZMU	DOF	2	Long-term

Development and implementation of mechanisms to address and mitigate against natural and environmental disasters

Rationale

Saint Lucia, like all other SIDS is at high risk of natural and environmental disasters. In light of the above threats, it is pertinent that disaster management plans are developed for the island's north-west coast, especially given the fact that more than half of the island's population has settled along this region. The National Emergency Management Office (NEMO) is the agency on the island charged with the responsibility to develop, test and implement adequate measures to ensure the efficient functioning of preparedness, mitigation and response actions regarding both natural and manmade disasters. However, it is also important that the island put in place certain planning and development mechanisms such as zoning, land use and development plans that can assist in mitigating against the impacts of certain natural disasters.

Expected Results

Within the ten-year time-frame of this action plan, the northwest coast will have:

- Developed and implemented a northwest coast disaster management plan.
- Established a national disaster emergency fund with joint private and public sector support.
- Developed a national vulnerability atlas which identifies high risk and disaster prone areas along the northwest coast.
- Incorporated risk and hazard management plans into regional development plans for the northwest coast.
- Developed a northwest coast evacuation plan.
- Considered the impacts of climate change such as the possibility of sea level rise and an increase in the occurrence of large storms and hurricanes on the northwest coast region.
- A population that has been sensitized towards the impacts of natural and environmental disasters on the northwest coast region.
- Conservation of coastal and marine habitats within the northwest coast.

Action Framework

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Timeframe
<i>Development and implementation of mechanisms to address and mitigate against natural and environmental disasters</i>	Develop and implement a northwest coast disaster management and mitigation plan.	NEMO	MPDEH, Ministry of Communications and Works, DOF, St. Lucia Chamber of Commerce, MAFF	1	Short-term
	Develop a national vulnerability atlas which identifies high risk and disaster prone areas along the northwest coast	MPDEH	NEMO, Ministry of Communications and Works	1	Medium-term
	Develop a north west coast evacuation plan	NEMO	Ministry of Social Transformation, Culture and Local Government, St. Lucia, Chamber of Commerce, SLHTA, Ministry of Communications and Works	1	Short-term
	Incorporate risk and hazard management plans into regional development plans for the northwest coast	MPDEH	NEMO	1	Medium-term
	Consider the impacts of climate change and global warming on the northwest coast region	MPDEH	NEMO	2	Long-term

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Timeframe
	A population that is sensitized towards the potential threats of natural and environmental disasters	NEMO	CZMU	1	Long-term
	Conservation of coastal and marine habitats within the north west coast	CZMU	DOF, Forestry Department	2	Long-term

Implementation of conflict resolution mechanisms to addressing the increasing conflict amongst resource users along the northwest coast

Rationale

In the last few years with the growth of the coastal tourism industry, there has been increasing conflict amongst resource users regarding the use of coastal and marine resources along the northwest coast. Traditionally, there has been conflict amongst fishers and yachters in this region regarding the placement of fish pots (traps) along yachting lanes and between fishers and beach front hotels regarding the use of beach seine nets to target coastal pelagics. However, there is increasing conflict amongst coastal tourism resource users: yachters and jet skiers, jet skiers and recreational users and SCUBA divers and glass boat bottom operators. This issue is heightened by the fact that, at present, zoning of uses along this region, the most densely populated and intensively used by a large number of resource users, has not occurred.

Expected Results

Within this action plan's ten-year time-frame, the northwest coast will have:

- Developed and implemented a North West Coast Management Authority to manage resource uses in this region.
- Zonation of the nearshore area to cater to a myriad of activities and avoid conflict among users and uses.
- Provided a forum for addressing, negotiating and where necessary mitigating disputes among resource users through a transparent process such as the formulation of a North West Coast Management Authority.
- Promoted high level public involvement where ever possible in decision making with regards to CZM specific issues along the north-west coast.
- Created and demarcated recreational areas (beach and swim areas), trap fishing areas, boating routes, jet ski areas, marine reserves etc.
- Developed and implemented a comprehensive management system, including a fee system to support maintenance of facilities (e.g. moorings and/or anchorages) and services (e.g. area rangers).
- Adopted and implemented a north-west coast regional land use and zoning plans based on the *National Land Use Policy*.
- Increased surveillance and monitoring of activities occurring along the north west coast

Action Framework

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Timeframe
<i>Implementation of conflict resolution mechanisms to address the increasing conflict amongst resource users in the north west coast</i>	Develop and implement a North West Coast Management Authority to manage resource use in this region	CZMU	DOF, MPDEH, SLASPA, Min of Tourism	1	Long-term
	Zonation of the nearshore area to cater to a myriad of uses and avoid conflict among users and uses.	MPDEH	CZMU, Min of Tourism, DOF, SLASPA	1	Medium-term

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Timeframe
	Provide a forum for addressing, negotiating and when necessary mediating disputes among resource users through a transparent process through the proposed North West Coast Management Area	CZMU	Min of Tourism, CZMU, DOF, SLASPA, NWCMA	1	Short-term
	Promote high level public involvement and facilitated dialogue where ever possible in decision making with regards to CZM specific issues pertaining to this region	CZMU	CBOs, NGOs, Ministry of Social Transformation, Culture and Local Government	1	Short-term
	Create and demarcate of recreational areas (beach and swim areas), trap fishing areas, boating routes, jet ski areas, marine reserves etc.	NWCMA	Min of Tourism, CZMU, DOF, SLASPA	2	Medium-term

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Timeframe
	Develop and implement a comprehensive management system, including a fee system to support maintenance of facilities (e.g. moorings and/or anchorages) and services (e.g. area rangers).	NWCMA	Min of Tourism, CZMU, DOF, SLASPA	2	Medium-term
	Adopt and implement a north-west coast regional land use and zoning plans based on the <i>National Land Use Policy</i>	MPDEH	MAFF, MOT, Ministry of Communications and Works	1	Medium-term
	Increase surveillance and monitoring of activities occurring within the north west coast	NWCMA	SLRPF	2	Medium-term

Empowerment and capacity building of the local community with regards to coastal zone issues

Rationale

Successful management of the coastal and marine resources along the northwest coast of Saint Lucia cannot occur without the support of the local community. Saint Lucia however, does not have a history of a very empowered and engaged population with regards to environmental management. Attitudinal change by much of the local population with regards to the activities occurring along the northwest coastal area is required.

Expected Results

Within the ten-year time-frame of this action plan, it is expected that the local population of the northwest coast will have:

- Understood the rationale for a coastal zone management regional action plan for the northwest coast.
- Contributed to the implementation of the northwest coast regional action plan.
- Attitudinal change with regards to their involvement in environmental management.

Action Framework

Specific Objective	Action	Principal Responsibility	Co-operant	Priority	Timeframe
<i>Empowerment and capacity building of the local community with regards to coastal zone issues</i>	Promote high level public involvement and facilitated dialogue in decision making with regards to CZM specific issues pertaining to the north west coastal region	CZMU	CBOs, NGOs, Ministry of Social Transformation, Culture and Local Government	1	Medium-term

Proliferation of socio-economic benefits to local communities from the commercial and tourism sectors

Rationale

The commercial and tourism sectors are the two most economically important sectors along the northwest coastal region. Thus, these sectors should contribute to the management and sustainable development of the northwest coastal region. Benefits accrued from the presence of these and other sectors along the northwest coastal zone should also spill over into the city of Castries, as well as, to the local communities in this region.

Expected Results

Within the ten-year time-frame of this action plan, the northwest coast should have:

- Involved the private sector in coastal zone management along the northwest coast.
- Increased support of small scale business schemes proposed by local communities by financial institutions
- Developed public infrastructure (jetties and public parks) to support economic activities in the coastal zone along the north west coastal region.
- Increased recreational and green space available to locals for use.

Action Framework

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Timeframe
<i>Proliferation of socio-economic benefits to local communities from the commercial and tourism sectors</i>	Increase support of small scale business schemes proposed by local communities by financial institutions	Financial Institutions		1	Short-term

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Timeframe
	Provide technical assistance and other incentives to business ventures, especially small and micro businesses in the areas of eco and heritage tourism	SLHTP	Ministry of Finance and Economic Affairs, St. Lucia Chamber of Commerce,	1	Short-term
	Identify recreational and beach areas for the local population along the north-west coast	CZMU	Ministry of Social Transformation, Culture and Local Government, MPDEH	1	Short-term
	Benefits accrued from the tourism, commercial and manufacturing sector are put back into the management and development of the north west coast through the creation of recreational and public spaces	Ministry of Finance and Economic Affairs	SLHTA	1	Medium-term

3.2 CENTRAL WEST COASTAL REGION (ROSEAU BAY TO CHOISEUL VILLAGE)

Regional Profile

Located on the leeward side of the island, this region is characterized by rugged mountains and tropical forest that extend towards the interior of the island. Small, quaint fishing villages whose shores are washed by the waters of the Caribbean Sea also define this region. The three fishing villages of Anse la Raye, Canaries and Choiseul, which offer a glimpse into Saint Lucia's way of life some thirty years ago, are found along this region. Unlike the northwest coast which is very physically developed, the rate of development in this region has been slower (Figure 2)

This region is regarded as geologically significant, comprising of Mount Gimie, the island's tallest peak at 3145 feet above sea level, the Pitons and the Sulphur Springs. Due to the presence of a dormant volcano located within the town of Soufriere, the town and surrounding environs is known for its rich agricultural soils, which once supported a thriving cocoa industry in the early 1900's.

The town of Soufriere holds special significance to the island of Saint Lucia being environmentally, culturally and historically important (Figure 2). Soufriere is home to the Sulphur Springs, advertised as one of the world's few drive-in volcanoes. The famous Diamond Falls (warm water waterfall) and associated botanical gardens are also found within this town as well as the recently inscribed World Heritage Site, Gros and Petit Piton. The award winning Soufriere Marine Management Authority (SMMA) and the Canaries Anse la Raye Management Area (CAMMA), also located within this region, are two examples of formalized co-management arrangements between the Government of Saint Lucia and resource users that have been created to address resource user conflict. The Management Areas are divided into five zones: marine reserves, fishing priority areas, yacht mooring areas, recreational areas and multiple use areas.

With an improved road network between the capital city and Soufriere, and an increase in the cruise tourism and the coastal tourism sectors, the number of visitors to the town has increased in the last few years. In light of the above, the tourism sector has now replaced the agricultural and fisheries sector, in Soufriere, as the main stay of the economy. Soufriere consists of many small-scale high end properties that promote themselves as eco-tourism resorts, as well as many heritage tourism sites and community initiatives.

The island's largest agricultural valley, the Roseau Valley, still used primarily for banana production is also located within this region.

Issues and Constraints

Poor agricultural practices as well as poor land use practices in the upper watersheds are contributing to deteriorating river and coastal water quality. During periods of heavy rainfall Roseau river and bay become discolored with sediment which eventually settles onto coral reefs in the region. With the inscription of the Pitons as a World Heritage Site and an improved road network, further physical development of this region is expected. However, the lack of a comprehensive land use and zoning plan and regulations to guide development of the region may result in the increased deterioration of coastal and marine habitats.

It should also be noted that many communities within this region have been identified as high risk for natural and environmental disasters.

The Vision

A region whose development is guided by, and is in keeping with, the environmental, historical and cultural significance of this region and which also contributes to the economic development of the local communities.

Regional Goals

This regional action plan seeks to adopt a proactive approach towards the sustainable development of the central west coast by identifying the following strategic goals:

- The adoption of regulated and planned development that is in keeping with the environmental, historical and cultural significance of the region;
- The establishment of appropriate pollution and waste control mechanisms.
- The development and implementation of mechanisms to address and mitigate against natural and environmental disasters;
- The adoption of an Integrated Watershed and Coastal Area Management (IWCAM) approach to guide management of the central west coast;
- Management of the use of coastal and marine resources to ensure their conservation, sustainable use and restoration;
- The empowerment of the local population with regards to the significance of coastal and marine resources;
- The proliferation of socio-economic benefits to the local community from the commercial, manufacturing, agriculture and tourism sector.
- The development and implementation of a framework that addresses the resolution and avoidance of conflicts related to the myriad of activities occurring along the central west coast.

CENTRAL WEST COAST REGIONAL GOALS AND ACTION PLANS

Adoption of regulated and planned development that is in keeping with the environmental, historical and cultural significance of the region

Rationale

Although, for the most part, physical development in this region has been slow, when compared to the northwest coast region, a result of the region's rugged topography, it is necessary that regional development and land use plans are established to ensure that the integrity of the region is maintained. Whilst there is room for further development in the villages of Anse la Raye, Canaries and Choiseul and the town of Soufriere, such development should be carried out in a manner that will ensure that the environmental and cultural integrity of these communities are maintained.

Expected Results

Taking into account the integrative and coordinated approach used to develop this action plan, it is expected that during its ten-year time-frame, the central west coast will have:

- Implemented an Integrated Development Planning approach to guide the sustainable use of the region's coastal and marine resources.
- Developed and implemented a regional land use plan that is based on a *National Land Use Policy*.
- Incorporated risk and hazard management plans into the regional development plans.
- Developed guidelines to regulate development within this region that is in keeping with traditional architecture and compatible with the present environment
- Enhanced waterfront areas of Anse la Raye, Canaries and Choiseul villages with a view to maintaining their quaint village appearance.
- Improved agricultural land use practices, farming techniques and infrastructure to minimize land degradation and enhance soil productivity.
- Accumulated geographic data of the central west coast to guide long term environmental planning of the region.
- A population that is sensitized to the need for regulated and planned development of the central west coast.

Action Framework

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Timeframe
<i>Adoption of regulated and planned development that is in keeping with the environmental, historical and cultural significance of the region</i>	Implement an Integrated Development Planning approach to guide the sustainable use of the region's coastal and marine resources	MPDEH	MAFF, MOT, Ministry of Finance and Economic Affairs	1	Long-term
	Adopt and implement a central west coast regional land use and zoning plan based on the <i>National Land Use Policy</i>	MPDEH	MAFF, MOT, Ministry of Communications and Works	1	Short-term
	Incorporate risk and hazard management plans into regional development plans	MPDEH	NEMO	1	Medium-term
	Develop guidelines to regulate development within this region that is in keeping with traditional architecture and environment	MPDEH		1	Medium-term

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Timeframe
	Enhance waterfront areas of Anse la Raye, Canaries and Choiseul villages with a view to maintaining their quaint village appearance	MPDEH	SLASPA, Ministry of Social Transformation, Culture and Local Government	2	Long-term
	Promote easy marine access to villages	SLASPA	Village Councils	2	Medium-term
	Accumulate geographic data of the central west coast to guide in long range environmental planning of the region	MPDEH		1	Medium-term
	A population that is sensitized to the need for a regulated and planned development of the central west coast	MPDEH	CZMU, GIS, CBOs, NGOs, MOT, DOF Environmental Health	1	Long-term

Establishment of appropriate pollution and waste control mechanisms

Rationale

The biggest pollutant identified in this region is sediment. Sedimentation, a result of indiscriminate land use practices in the upper watersheds is having negative impacts on coral reef habitats and the nearshore fishing sector. It should also be noted that the communities in this region do not have sewerage treatment and disposal facilities in place, and for the most part untreated sewage is often released into the marine environment adding to the increasing stressors on this region's coastal resources. Further, the indiscriminate dumping of solid waste into gutters and rivers has impacted the region's coastal and marine resources.

Expected Results

Within this action plan's ten-year time-frame, the central west coast will have:

- Conducted beach and reef clean-up activities so as to remove any solid waste that may have accumulated along the region's beaches and on the coral reefs.
- Improved solid waste management beginning with communities located in close proximity to waterways.
- Established appropriate sewage and other waste treatment and disposal systems to effectively service the central west coast region.
- Developed and implemented basic recycling and other waste management programmes- targeted at public involvement.
- Developed standards to prevent impacts on surface water, and set backs from water sources established for sewage treatment plants, pit latrines and septic tanks.
- Implemented replanting programmes using native species to the region.
- Implemented a public awareness programme geared to the general public regarding the effects of waste and other pollutants on the coastal zone.

Action Framework

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Time-Frame
<i>Establishment of appropriate pollution and waste control mechanisms</i>	Establish appropriate sewage and other waste treatment and disposal systems to effectively service the central west coast region	WASCO	Ministry of Communications, Works, Transport and Public Utilities	2	Long-term
	Conduct beach and reef clean-up activities so as to remove any solid waste that may have accumulated along the region's beaches and on the coral reefs	SMMA and CAMMA	Dive Operators, DOF, Community Groups	2	Short-term
	Improve of solid waste management beginning with communities located in close proximity to waterways	SLSWMA	CZMU, Ministry of Environmental Health	1	Short-term
	Implement replanting programmes using native species to the region	Forestry Department		1	Medium-term

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Timeframe
	Implement a public awareness programme geared to the general public regarding the effects of waste and other pollutants on the coastal zone	CZMU	DOF, Environmental Health Department	1	Short-term
	Develop standards for the placement and construction of septic tanks for residential developments	SLBS	Environmental Health Department, MPDEH	2	Short-term

Development and implementation of mechanisms to address and mitigate against natural and environmental disasters

Rationale

The topography of this region makes it very susceptible to land slips and flooding. The town and villages located along the central west coast are also susceptible to damage from storm surges associated with large storms and/or hurricanes. In light of the above, it is important that mechanisms are adopted that make provision for the welfare and safety of the local population in case of hurricanes, earthquakes, fires, floods or other disasters. There is also a need to develop plans for the effective clean-up of the region's coastal and marine biological diversity in the event of a large oil spill or other environmental disaster.

Expected Results

Within this action plan's ten-year time-frame the central west coast will have:

- Developed and implemented a central west coast disaster management plan.
- Established environmental standards/guidelines for cleaning oil and other hazardous substances from fragile habitats (e.g. beaches and coral areas).
- Developed a national vulnerability atlas which identifies high risk and disaster prone areas along the central west coast.
- Incorporated risk and hazard management plans into regional development plans for the central west coast.
- Considered the impacts of climate change on the local population and habitats along the central west coast region.
- A population that has been sensitized towards the impacts of natural and environmental disasters on the central west coast region.
- Conservation of marine and coastal habitats in the central west coast.

Action Framework

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Timeframe
<i>Development and implementation of mechanisms to address and mitigate against natural and environmental</i>	Develop and implement central west coast disaster management and mitigation plan	NEMO	MPDEH, MAFF, DOF, MOT, Ministry of Communications and Works, Ministry of Health, Ministry of Finance and Economic Affairs	1	Short-term

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Timeframe
	Establish environmental standards/guidelines for cleaning oil and other hazardous substances from fragile ecosystems (e.g. beaches and coral reefs)	CZMU	DOF, SLASPA, SLBS	2	Medium-term
	Develop a national vulnerability atlas which identifies high risk and disaster prone areas along the central west coast	MPDEH	NEMO	1	Medium-term
	Incorporate risk and hazard management plans into regional development plans for the central west coast	MPDEH	NEMO	1	Medium-term
	Consider the impacts of climate change and global warming on the population and habitats along the central west coast	MPDEH		2	Medium-term
	A population that is sensitized towards the potential threats of natural and environmental disasters	CZMU		1	Long-term
	Conservation of marine and coastal habitats in the central west coast	DOF	SMMA, CAMMA, CZMU	1	Short-term

Adopted an integrated watershed and coastal area management (IWCAM) approach to guide management of the central west coast

Rationale

Two important watersheds (Roseau/Millet and Soufriere) are located within the central west coast (Figure 2). In the last few years these watersheds have been severely impacted due to the indiscriminate land-use practices occurring in the upper reaches, increasing exploitation of the rivers and wetlands. Flow rates of many of the rivers within this zone during the dry season are minute, whilst these same rivers are known to flood their banks causing flooding of river flood plains and surrounding communities, during periods of heavy rainfall. Poor land use practices (such as farming along river banks and on steep slopes) and deforestation occurring within the upper reaches of the watersheds result in runoff of sediments onto coastal areas and associated habitats. The Roseau dam, the island's only dam and associated reservoir, servicing the entire northwest coast region is located within the central west coastal region.

Expected Results

Within this action plan's ten-year time-frame the central west coast will have:

- Developed and implemented a regional land use plan that is based on a *National Land Use Policy*.
- Created a land acquisition programme with an aim of protecting critical areas within the watersheds.
- Declared new and updated existing conservation areas and/or forest reserves.
- Demarcated all forest reserves and conservation areas within the central west coast.
- Identified and demarcated buffer zones along river banks along the central west coast.
- Established replanting programmes using native species to the region.
- Rehabilitated degraded river systems by vegetating banks and recreating micro-habitats within riverbeds.

- Promoted alternative forms of agriculture which will not contribute to watershed deterioration.
- A population that has been sensitized towards the need for adopting IWCAM in the region.

Action Framework

Specific Objective	Action	Time frame	Co-operants	Priority	Time Frame
<i>Adoption of an integrated watershed and coastal area management (IWCAM) approach to guide management of the central west coast</i>	Develop and implement a regional land use plan that is based on a <i>National Land Use Policy</i>	MPDEH		1	Medium-term
	Rehabilitate degraded river systems by vegetating banks and recreating microhabitats within riverbeds.	WRMU	Forestry Department	2	Long-term
	Establish a land acquisition programme with an aim of protecting critical areas within watersheds within the central west coast region	WRMU	MPDEH, Forestry Department	2	Long-term
	Declare new and update existing conservation areas/forest reserves along the central west coast	Forestry Department	SLNT	1	Long-term
	Demarcate all forest reserves and conservation areas along the central west coast	Forestry Department	SLNT, MPDEH	1	Long-term

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Timeframe
	Identify and demarcate buffer zones along river banks in the central west coast	Forestry Department	WRMU	1	Medium-term
	Establishment of replanting programmes using species native to the area.	Forestry Department		1	Medium-term
	A population that has been sensitized towards the need for adopting IWCAM in the central west coast region	WRMU	CZMU, Forestry Department	1	Long-term

Management of the use of coastal and marine resources to ensure their conservation, sustainable use and restoration

Rationale

As has been previously stated the coral reefs along the central west coast are important to this region for a number of reasons including: the SCUBA and snorkel industry; the fisheries sector; and as a natural storm barrier protecting the region's coastal villages. However many of the coral reefs along this region are being threatened by a number of sources including: storm and hurricane damage, sedimentation, yacht anchoring, indiscriminate setting of fish pots/traps, as well as, inexperienced and careless diving, all resulting in increased stress to coral reefs, which result in them becoming more susceptible to diseases and incidences of bleaching.

Expected Results

Within this action plan's ten-year time frame the central-west coast will have:

- Created more "no anchor zones" and an increased placement of moorings in coral reef and sea grass bed areas.

- Addressed indiscriminate fishing practices along the central west coast.
- Undertook carry capacity studies on the impact of SCUBA divers and snorkelers on the region's coral reefs.
- Addressed deteriorating river and coastal water quality.
- Adopted an IWCAM approach to resource management in this region.
- Developed and enforced buffer zones as they relate to coastal development.
- Developed and implemented a comprehensive coral reef monitoring programme.
- A population that has been sensitized towards the importance of coral reef habitats to the economy of the island.

Action Framework

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Time Frame
<i>Manage coastal and marine biological resources to ensure their conservation, sustainable use and restoration</i>	Increase the number of “no anchor zones” and placement of moorings in coral reef and sea grass bed areas	SMMA & CAMMA	SLASPA, DOF, CZMU	2	Medium-term
	Address indiscriminate and illegal fishing practices along the central west coast	DOF	SMMA, CAMMA	1	Short-term
	Address deteriorating river and coastal water quality	CZMU	DOF, MAFF, Forestry Dept. WRMU, CAMMA, SMMA	1	Long-term
	Adopt an IWCAM approach to resource management in this region	WRMU	CZMU, DOF, MAFF, Forestry Department	1	Long-term

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Timeframe
	Mapping of marine and coastal resources within the central west coast	CZMU	DOF, Ministry of Communications and Works	2	Long-term
	Designation and demarcation of marine reserves	DOF	SMMA,CAMMA	2	Short-term
	Develop and implement a comprehensive coral reef and beach monitoring programme	SMMA & CAMMA	DOF, CZMU	1	Long-term
	Conduct reef clean-up activities so as to remove any solid waste and/or sediments that may have accumulated along the region's beaches and on the coral reefs	SMMA and CAMMA	Dive Operators, DOF, Community Groups	2	Short-term
	Planting of coral colonies and transfer of keystone species e.g. Diadema sp. in degraded areas	DOF	CZMU	2	Long-term

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Timeframe
	A population that has been sensitized towards the importance of coral reef habitats to the economies of the central west coast	CZMU	SMMA & CAMMA, DOF	1	

Empowerment of the local population with regards to the significance of coastal and marine resources

Rationale

Successful management of the coastal and marine resources along the central west coast of Saint Lucia cannot occur without the support of the local community. Whilst Saint Lucia is not usually known for having a very engaged and empowered local population when it comes to environmental issues, the success of the SMMA has resulted in an attitudinal change towards environmental management in the town of Soufriere and the surrounding environs. There is thus a need to work towards obtaining the same successes achieved in Soufriere throughout the other communities along the central west coast.

Expected Results

Within this action plan's ten-year time-frame, it is expected that the local population of the central west coast will have:

- Understood the rationale for a coastal zone management action plan for the central west coast.
- Contributed to the implementation of the central west coast action plan.

- Attitudinal change with regards to their involvement in environmental management.

Action Framework

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Time Frame
<i>Empowerment of the local population with regards to the significance of coastal and marine resources</i>	Establish community based and other management arrangements to facilitate effective resource conservation and sustainable use	CZMU	DOF, Forestry Department, Ministry of Education	1	Medium-term
	Delegate management responsibility in selected domains of coastal management to community and local government agencies	Ministry of Social Transformation, Culture and Local Government	CZMU, MAFF, DOF, Forestry Department	2	Long-term
	Promote high level public involvement where ever possible in decision making with regards to CZM specific issues pertaining to this region	CZMU	CBOs, NGOs, Ministry of Social Transformation, Culture and Local Government	1	Long-term

Proliferation of socio-economic benefits to the local community from the commercial, manufacturing and tourism sector

Rationale

Although fishing and agriculture are still regarded as important to the economies of the central west coast, the contribution of the tourism sector to the economy is expected to grow in the next few years, a result of the designation of the Pitons as a World Heritage Site in February, 2005. It is imperative that the local community of Soufriere and the surrounding environs benefit from the influx of visitors to this region. The Saint Lucia Heritage Tourism Programme (SLHTP) established to contribute to the economic development of Saint Lucia, through the promotion of nature/heritage tourism is one of the programmes created by the Government of Saint Lucia to achieve this goal.

Expected Results

Within this action plan's ten-year time-frame, the central west coast will have:

- Involved the private sector in coastal zone management within the central west coast.
- Increased support of small scale business schemes proposed by local communities from financial institutions.
- Provided technical assistance and other incentives to business ventures, especially small and micro business in the areas of eco and heritage tourism.
- Encouraged financial institutions to support non-traditional business development in the coastal zone.

Action Framework

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Time Frame
<i>Proliferation of socio-economic benefits to the local community from the commercial and tourism sectors</i>	Involve the private sector in coastal zone management within the central west coast	Relevant Government Agencies and the St Lucia Chamber of Commerce		1	Short-term
	Increased support of small scale business schemes proposed by local communities by financial institutions	Financial Institutions		2	Short-term
	Provide technical assistance and other incentives to business ventures, especially small and micro business in the areas of eco and heritage tourism	SLHTP		1	Short-term
	Encourage financial institutions to support non-traditional business development in the coastal zone	Financial Institutions		1	Medium-term

Development and implementation of a framework that addresses the resolution and avoidance of conflicts related to the myriad of activities occurring along the central west coast

Rationale

The Technical Advisory Committee of the Soufriere Marine Management Authority, for the most part, has been successful in resolving many of the conflicts amongst resource users within the SMMA. However, there are increasing disputes amongst resource users outside of the SMMA. Conflict amongst resource users continues to be an issue within CAMMA, especially in the Anse Cochon Bay. The institutional arrangements under the CAMMA need to be reviewed and revised, if necessary, to allow for the development of mechanisms that will work towards successful dispute resolution.

Expected Results

Within this action plan's ten-year time-frame, the central west coast will have:

- Reviewed the current institutional arrangements of the Canaries Anse la Raye Marine Management Area.
- Provided a forum for addressing, negotiating and when necessary adjudicating disputes through a transparent process along the central west coastal region.
- Strengthened the technical and enforcement capacity of all regulatory agencies involved in coastal zone management in the central west coast region.
- Strengthened the revenue generation capacity of the SMMA and CAMMA.
- Adopted and implemented a central west coast regional land use plan based on the National Land Use Policy

Action Framework

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Time Frame
<i>Development and implementation of a framework that addresses the resolution and avoidance of conflicts related to the myriad of activities occurring within the central west coastal region</i>	Review and revise the institutional arrangements of the Canaries Anse la Raye Marine Management Area	DOF	MOT, SLASPA, MPDEH, SMMA	1	Short-term
	Provide a forum for addressing, negotiating and where necessary adjudicating disputes through a transparent process along the central west coast region	CZMU	Min of Tourism, CZMU, DOF, SLASPA, SMMA, CAMMA	1	Short-term
	Promotion of high level public involvement and facilitated dialogue where ever possible in decision making with regards to CZM specific issues pertaining to this region	CZMU	MAFF, DOF, Forestry Department, Ministry of Social Transformation, Culture and Local Government	1	Short-term

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Time Frame
	Strengthen the technical and enforcement capacity of all regulatory agencies involved in coastal zone management in the central west coast region	Relevant Agencies, DOF, SLRPF, etc		1	Short-term
	Strengthen the revenue generation capacity of the SMMA and CAMMA.	SMMA TAC		1	Medium-term
	Adopt and implement a central west coast regional land use plan based on the National Land Use Policy	MPDEH	MAFF, MOT, Ministry of Communications and Works	1	Medium-term

3.3 NORTHEAST COASTAL REGION (POINT DU CAP TO MANDELE POINT, DENNERY)

Regional Profile

The northeast coast region is located on the windward side of the island (Figure 2). The environmental characteristics of this region have, for the most part, been defined by the Trade Winds which blow off the Atlantic Ocean washing onto the region's coast. The region's vegetation is dominated by dry scrub forest and xerophytes, home to many of the island's 17 listed endemic plant species. Geologically, in comparison to the central west coast, this region consists of older rocks predominantly basaltic in composition, heavily folded and of the Eocene age. The island's central ridge, which consists of the Barre D'Isle Forest Reserve, is also located along this region.

Compared to the other regions, the north east coast is sparsely populated, with a few isolated communities, primarily due to a poor road net work (Figure 2). Small-scale agricultural production is practiced in many of the communities. The Mabouya Valley, the only one of the three agricultural valleys located along the island's eastern coast is located within this region and is primarily under banana cultivation. Like the other valleys on the island, this valley is important for banana cultivation. More recently the Mabouya Valley and its surrounding watershed, the Fond D'Or watershed, have been identified as pilot projects sites for the following regional projects: the Integrated Watershed and Coastal Area Management (IWCAM) Project; and the Caribbean Regional Environment Programme.

The village of Dennery, an important fishing community is located in the southern end of this region.

Many of the beaches and mangroves along the north east coast have been designated as marine reserves under the *Fisheries Act (10 of 1984)* due to their importance as turtle nesting sites and nurseries for the spiny lobster and other targeted fish species. To date, many of these reserves are still to be demarcated.

Although, for the most part, the beaches in this region are wider and generally more “attractive” than those along the west coast of the island, the potential for the development of large beach front hotels are less attractive to developers due to the high wave energy experienced along the Atlantic coast. However, the region does offer good potential for eco and community based tourism activities, (such as the Grande Anse Turtle Watching Group³), the establishment of national parks and expansion of the manufacturing sector.

Issues and Constraints

Due to this region’s remoteness a result of the poor road network, the beaches are a target for illegal sand miners, as was indicated from an inventory of the island’s beaches undertaken in 1996-1997 (OECS-NRMU 1998). Illegal slaughtering of sea turtles during the turtle nesting season is also more prominent along this region when compared to other regions along the island’s coast, due to the region’s remoteness.

Poor land use practices a result of deforestation in the upper reaches of the watersheds and the use of pesticides along waterways has resulted in deteriorating river and coastal water quality.

The Vision

A region with a healthy and productive coastal zone, which serves as an important contributor to the economic and social livelihoods of the surrounding communities, as well as, continues to serve as an important system for maintaining the island’s biodiversity.

³ The Grande Anse Turtle Watching Group, a community based organization from the neighboring Desbarras community, offers turtle watching tours along the Grande Anse beach, a marine reserve, during the sea turtle nesting season during the months of May to August.

Regional Goals

The goals identified for the north east coastal region in this action plan seek to address many of the concerns identified above and include:

- The adoption of regulated and planned development that is in keeping with the environmental significance of the region.
- The establishment of appropriate pollution and waste control mechanisms.
- The development and implementation of mechanisms to address and mitigate against natural and environmental disasters.
- The adoption of an Integrated Watershed and Coastal Area Management (IWCAM) approach to guide management along the north east coast.
- Management of the use of coastal and marine resources to ensure their sustainable use, conservation and restoration;
- The empowerment of the local population with regards to the significance of coastal and marine resources; and
- The proliferation of socio-economic benefits to the local community from the agricultural, fisheries, manufacturing and tourism sectors

NORTH EAST COAST REGIONAL GOALS AND ACTIONS PLANS

Adoption of regulated and planned development that is in keeping with the environmental and historical significance of the region

Rationale

Development in this region, for the most part, has been slow primarily due to the lack of a widespread road network and has lead to many referring to the region as the island's last frontier. The north east coast is also home to a large percentage of the island's endemic species. Development along the north-east coast is expected to increase during this action plan ten-year time-frame. Thus, there is a need to ensure that adequate institutional mechanisms are put in place to regulate future physical development.

Expected Results

Through the adoption of an integrative approach, this Regional Action Plan during its ten-year time-period will have:

- Developed and implemented a regional land use plan that is based on a *National Land Use Policy*.
- Incorporated risk and hazard management plans into the regional development plan for the north east coast.
- Implemented appropriate waste management infrastructure to accompany existing and new commercial and residential development along the north-east coast.
- Improved agricultural practices, farming techniques and infrastructure to minimize land degradation and enhance soil productivity, especially along the Mabouya Valley.
- Accumulated geographic data of the north east coast to guide in long range environmental planning of the region.
- A population that is sensitized to the need for a regulated and planned development of the north east coast.

Action Framework

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Time Frame
<i>Adoption of regulated and planned development that is in keeping with the environmental and historical significance of the region</i>	Develop and implement a regional land use plan that is based on a <i>National Land Use Policy</i>	MPDEH	MAFF, SLNT	1	Medium-term
	Incorporate risk and hazard management plans into regional development plans	MPDEH	NEMO	1	Medium-term

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Time Frame
	Improve agricultural practices, farming techniques and infrastructure to minimize land degradation and enhance soil productivity along the north-east coast	MAFF		1	Long-term
	Require appropriate waste management infrastructure to accompany commercial and residential development	MPDEH		1	Medium-term
	Accumulate geographic data of the north east coast to guide in long range environmental planning of the region	MPDEH		1	Medium-term
	A population that is sensitized to the need for a regulated and planned development of the north east coast	MPDEH	CZMU, GIS, CBOs, NGOs, MOT, DOF Environmental Health	1	Long-term

Establishment of appropriate pollution and waste control mechanisms

Rationale

Poor agricultural land use practices along the region's watersheds have resulted in the pollution of river and coastal systems. There is also a need to curb the indiscriminate dumping of solid waste along river banks which inevitably ends up in the rivers and along the region's beaches. Many of the beaches along the north east coast are littered with drift wood, pieces of discarded fishing nets and other garbage that has been dumped by sea faring vessels into the Atlantic Ocean and eventually washes onto the island's beaches.

Expected Results

Within this action plan's ten-year time-frame the north east coast will have:

- Improved solid waste management beginning with communities located in close proximity to waterways.
- Implemented incentives and disincentive programmes aimed at lowering the risk of agrochemicals and sediment reaching waterways.
- Developed and implemented basic recycling and other waste management programmes- targeted at public involvement.
- Developed standards to prevent impacts on surface water, and set backs from water sources established for sewage treatment plants, pit latrines and septic tanks.

Action Framework

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Time Frame
<i>Establishment of appropriate pollution and waste control mechanisms</i>	Establish appropriate sewage disposal and treatment systems to effectively service the region	WASCO	Ministry of Communications, Works, Transport and Public Utilities	2	Long-term
	Improve solid waste management, beginning with communities located in close proximity to waterways	SLSWMA	CZMU, Ministry of Environmental Health	1	Medium-term
	Implement incentive and disincentive programmes aimed at lowering the risk of agrochemicals and sediment reaching waterways	MAFF		1	Medium-term
	Develop and implement basic recycling and other waste management programmes – targeted at public involvement	SLSWMA	CZMU, St. Lucia Chamber of Commerce, GIS	2	Short-term

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Time Frame
	Develop and implement a public awareness programme geared to the general public regarding the effects of waste and other pollutants on the integrity of the coastal zone of the north east coast	CZMU	DOF, Environmental Health Department, GIS, CBOs, NGOs	1	Short-term
	Develop standards for the placement and construction of septic tanks for residential developments that are not able to be serviced by a sewerage treatment plant	SLBS	Environmental Health Department	1	Short-term

Development and implementation of mechanisms to address and mitigate against natural and environmental disasters

Rationale

Very little is known about disaster prone areas in this region due to the remoteness of the north east coast. However, the village of Dennery is at high risk of flooding as it is only a few feet above sea level and also susceptible to wave damage, a result of its close proximity to the Atlantic Ocean. The beaches and coastal areas in this zone are also threatened by oil spills and other hazardous waste accidents from sea faring vessels traversing through Saint Lucia's national waters. In light of the above, it is important that mechanisms are adopted that make provisions for the welfare and safety of the local communities in the wake of hurricanes, earthquakes, fires, floods or other disasters. There is also a need to develop plans for the effective clean-up of the region in the event of a large oil spill or other environmental disaster.

Expected Results

Within this Action Plan's ten-year time-frame the north east coast will have:

- Established environmental standards/guidelines for cleaning oil and other hazardous substances from fragile ecosystems (e.g. beaches and coral areas).
- Developed and implemented a north east coast disaster management plan.
- Developed a national vulnerability atlas which identifies high risk and disaster prone areas along the north east coast.
- Incorporated risk and hazard management plans into regional development plans for the north east coast.
- Considered the impacts of climate change on the coastal and marine resources of the north east region.
- A population that has been sensitized towards the impacts of natural and environmental disasters on the north east coast region.

Action Framework

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Timeframe
<i>Development and implementation of mechanisms to address and mitigate against natural and environmental</i>	Develop and implement north east coast disaster management and mitigation plan	NEMO	MPDEH, MAFF, DOF, MOT, Ministry of Communications and Works, Ministry of Health, Ministry of Finance and Economic Affairs	1	Short-term
	Develop a national vulnerability atlas which identifies high risk and disaster prone areas along the north east	MPDEH	NEMO	1	Medium-term
	Incorporate risk and hazard management plans into regional development plans for the north east coast	MPDEH	NEMO	1	Medium
	Consider the impacts of climate change and global warming on the population and habitats along the north east coast	MPDEH		2	
	A population that is sensitized towards the potential threats of natural and environmental disasters	CZMU		1	
	Conservation of marine and coastal habitats along the north east coast	DOF	CZMU, Forestry	1	Short-term

Adopted an integrated watershed and coastal area management (IWCAM) approach to guide management of the north east coast

Rationale

This region contains a number of watersheds that have been important to the island's agricultural industry. However, poor land use practices such as deforestation and poor agricultural practices are resulting in the deterioration of many of the region's watersheds which also impact on the integrity of the north east coastal habitats. Thus, in an attempt to better identify options for managing the island's watersheds, the Fond D'Or watershed has been identified as the pilot site for the UNEP-GEF, Integrated Watershed and Coastal Area Management (IWCAM) Project, facilitated regionally by the Caribbean Environmental Health Institute (CEHI).⁴

Expected Results

Within this action plan's ten-year time-frame the north east coast will have:

- Implemented and produced a lessons learnt document from the IWCAM demonstration project of the Fond D'Or watershed.
- Developed and implemented a regional land use plan that is based on a *National Land Use Policy*.
- Established a land acquisition programme with an aim of protecting critical areas within the watersheds.
- Demarcated all forest reserves and conservation areas along the north-east coast so as to control deforestation in the region.
- Identified and demarcated buffer zones along river banks to prevent persons from clearing river banks along the north east coast
- Established replanting programmes using native species to the region.

⁴ The objective of the Project is to strengthen the capacity of the Caribbean countries to implement an integrated approach to the management of watersheds and coastal areas. The long-term goal is to enhance the capacity of the countries to plan and manage their aquatic resources and ecosystems on a sustainable basis.

- Rehabilitated degraded river systems by vegetating banks and recreating micro-habitats within riverbeds.
- A population that is sensitized towards the need for adopting an IWCAM approach to management along the north east coast.

Action Framework

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Time Frame
<i>Adoption an integrated watershed and coastal area management (IWCAM) approach to guide management of the north east coast</i>	Implement and produce a lessons learnt document from the IWCAM demonstration project of the Fond D'Or watershed	To be determined	To be determined	2	Long-term
	Develop and implement a regional land use plan that is based on a <i>National Land Use Policy</i>	MPDEH		1	Medium-term
	Establish a land acquisition programme with an aim of protecting critical areas within watersheds.	WRMU	Forestry Department, MPDEH	2	Long-term
	Identify, declare and demarcate forest reserves along the north east coast	Forestry Department	WRMU	1	Medium-term
	Establish replanting programmes using species native to the area.	Forestry Department		2	Medium-term

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Time Frame
	Identify and demarcate buffer zones along river banks	WRMU	Forestry Department	1	Medium-term
	Rehabilitate river systems by vegetating banks and recreating microhabitats within riverbeds.	WRMU		2	Medium-term
	Promote alternative forms of agriculture such as intercropping	MAFF		2	Medium-term
	A population that is sensitized towards the need for adopting an IWCAM approach to management along the north east coast	WRMU	CZMU, Forestry Department, GIS, CBOs, NGOs	1	Long-term

Management of the use of coastal and marine resources to ensure their conservation, sustainable use and restoration

Rationale

The north east coast is recognised as a biologically diverse area, containing a number of coastal and marine habitats. The coastal scrub forest provides a habitat for the white breasted thrasher one of the island's endangered species. The region's mangroves apart from acting as nurseries for lobsters, and other reef fishes, also provide a habitat for a number of bird species. The white sea urchin and whelk fishery are also very important coastal fisheries in this area. As has been indicated previously, the beaches along this region are important nesting grounds for sea turtles particularly the leatherback turtle. Hence, it is important that these ecosystems are managed sustainably so as to ensure the continued existence of resources for future generations.

Expected Results

Within this action plan's ten-year time-frame, it is expected that the local population of the central west coast will have:

- Undertook an inventory of coastal and marine resources along the north east coast.
- Established regular beach cleaning activities to address marine based pollution occurring along the north east coast.
- Increased surveillance of the marine and coastal resources along the north east coast.
- Demarcated existing marine reserves.
- A population that has been sensitized towards the importance coastal and marine resources to the region.

Action Framework

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Time Frame
<i>Manage coastal and marine biological resources to ensure their conservation, sustainable use and restoration</i>	Undertake inventory of coastal and marine resources along the north east coast	CZMU	DOF, Forestry Department	1	Long-term
	GIS mapping of coastal and marine resources along the north east coast	CZMU	MPDEH	1	Long-term
	Employ soft methods (e.g. beach replenishment, dune restoration, prohibition of extractive practices) and where necessary, hard engineering methods, to address problems	Ministry of Communications, Works, Transport and Public Utilities	MPDEH	1	Long-term
	Declare and/or demarcate conservation areas and/or forest and marine reserves	SLNT	Forestry Department, DOF	1	Medium-term

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Time Frame
	Establish regular beach cleaning activities to address marine based pollution occurring along the north east coast.	CZMU	SLNT, DOF, Ministry of Communications and Works, NGOs, CBOs	1	Short-term
	Restoration and/or rehabilitation of coral reefs, especially as it relates to water quality with reference to agricultural pesticides.	CZMU	DOF, MAFF, WRMU	2	Long-term
	A population that has been sensitized towards the importance coastal and marine resources to the region	CZMU	DOF	1	Long-term

Empowerment of the local population with regards to the significance of coastal and marine resources

Rationale

Successful management of the coastal and marine resources along the north east coast of Saint Lucia cannot occur without the support of the local community. With the assistance of existing community based organizations, such as the Desbarras Turtle

Watch Group and the Mabouya Valley Environmental Youth Group, there is a need to work towards empowering local communities located along the north east coast.

Expected Results

Within this action plan's ten-year time-frame, it is expected that the local population of the north east coast will have:

- Understood the rationale for a coastal zone management action plan for the north east coast.
- Contributed to the implementation of the north east coast action plan.
- Attitudinal change with regards to their involvement in environmental management.

Action Framework

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Timeframe
<i>Empowerment of the local population with regards to the significance of the coastal and marine resources</i>	Establish community based and other management arrangements along the north east coast to facilitate effective resource conservation and sustainable use	CZMU	DOF, Forestry Department, Ministry of Education	1	Medium-term

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Time Frame
	Mobilize communities as it relates to conservation of resources and rehabilitation of degraded areas	Ministry of Social Transformation, Culture and Local Government	CZMU, MAFF, DOF, Forestry Department	1	Long-term
	Delegate management responsibility in selected domains of coastal management to community and local government agencies	Ministry of Social Transformation, Culture and Local Government	CZMU, MAFF, DOF, Forestry Department	2	Long-term
	Promote high level public involvement where ever possible in decision making with regards to CZM specific issues pertaining to this region	CZMU	CBOs, NGOs, Ministry of Social Transformation, Culture and Local Government	1	Medium-term

Proliferation of socio-economic benefits to the local community from the commercial, manufacturing and tourism sector

Rationale

Presently agriculture and fishing are considered the most economically viable sectors along the north east coast. However, it is expected that other sectors, such as the tourism and manufacturing sectors, are going to become important to the economies of this region within this action plan's ten-year time-frame. In light of the above, there should be mechanisms in place to ensure that the communities located within this region reap the benefits from the further development of this region.

Expected Results

Within this action plan's ten-year time-frame, the north east coast will have:

- Involved the private sector in coastal zone management along the north east coast.
- Increased support of small scale business schemes proposed by local communities by financial institutions
- Provided technical assistance and other incentives to business ventures, especially small and micro business in the areas of eco and heritage tourism;
- Encouraged financial institutions to support non-traditional business development in the coastal zone

Action Framework

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Timeframe
<i>Proliferation of socio-economic benefits to the local community from the commercial, manufacturing and tourism sector</i>	Involve the private sector in coastal zone management within the north-east coast	Relevant Government Agencies and the St. Lucia Chamber of Commerce		1	Short-term
	Increase support of small scale business schemes proposed by local communities by financial institutions	Financial Institutions		2	Medium-term
	Provide technical assistance and other incentives to business ventures, especially small and micro business in the areas of eco- and heritage tourism	SLHTP		1	Short-term
	Encourage financial institutions to support non-traditional business development along the north east coast	Financial Institutions		1	Medium-term

3.4 SOUTHWEST AND SOUTHEAST COASTAL REGION (MANDELE POINT TO PIAYE)

Regional Profile

Compared to the other three regions, that border either the Caribbean Sea or the Atlantic Ocean, this region borders both bodies of water (Figure 2). Generally, the southwest and southeast coastal region is defined by gently sloping hills with vast expanses of open areas. Rainfall averages to this region are 1450mm compared to the central region of the island, which averages 3450mm in a year. Due to its drier climate, the south west and south east coastal region consists primarily of dry scrub forest and xerophytes vegetation. The island's largest town, Vieux Fort is located to the very south of the island and provides a link between the east and west coasts of the island. The island's main international airport, Hewonarra International Airport, as well as the island's second largest commercial port is also located within this region.

Notwithstanding, the fishing, agriculture and manufacturing sectors are recognised as the most economically viable sectors in this region. The fishing villages of Praslin and Micoud are located to the east of the town of Vieux Fort (Figure 2). The fishing village of Laborie is located to the west of Vieux Fort. Incidentally, although the fishing sector is not the most important sector in the town of Vieux Fort, it has the largest recorded landings of fish on the island (DOF, 2004).

Saint Lucia's RAMSAR sites, the Mankote and Savannes Bay Mangrove, are located within this region and form part of the larger proposed Pointe Sable National Landscape. The goal of the proposed Pointe Sable National Landscape is achieving a balance between the conservation and economic development of the area. The Pointe Sable National Landscape consist of a number of habitats including mangroves, sea grass beds and coral reefs, which are very important to the thriving fisheries sector in this region (Figure 2). Also contained within this proposed national landscape is the Maria Island Nature Reserve and surrounding marine reserve. Two of the island's better known

endemics; the Saint Lucia whiptail (*Cnemidophorus vanzoi*) and the Saint Lucia racer (*Liophis orantus*) are located on the Maria Island Nature Reserve.

The gently sloping topography of this region, as well as its close proximity to the island's international airport and shipping port makes it very appealing to potential investors in both the manufacturing, commercial and tourism sectors. Thus, heightened development to this region is expected within the ten-year time-frame of this action plan.

Issues and Constraints

The south-west and south-east coastal region is also faced with many challenges. Poor agricultural practices in the upper watersheds, as well as, unplanned and uncontrolled development are resulting in deteriorating river and coastal water quality, which may negatively impact on the important coastal fisheries. Illegal sand mining along river mouths and beaches is also regarded as a major issue along this region. Illegal harvesting of the white sea urchin and spiny lobster during the closed fishery period continues to be a problem, especially within the town of Vieux Fort and its surrounding environs.

There is also concern that increased development to this region may occur at the expense of the health of the coastal and marine habitats which amongst other things: act as storm barriers to coastal communities; provide wood for charcoal production used for cooking; are important fisheries habitats for lobster, reef and sea urchin resources; and are important areas of recreation to the local population.

The Vision

A region which has adopted the concept of integrated development planning in achieving economic and social development and which is cognizant of the role that a healthy and productive coastal and marine environment plays in achieving this goal.

Regional Goals

This regional action plan seeks to address the existing pressures on coastal and marine resources, as well as ensure that adequate institutional arrangements are put in place to

guide future development along the south west and south east coastal region. The regional goals for this action plan include:

- The adoption of an integrative and holistic approach towards land use planning;
- The establishment of appropriate pollution and waste control mechanisms;
- Protection and sustainable use of coastal and marine resources;
- Development and implementation of mechanisms to address and mitigate against natural and human induced disasters;
- The empowerment of the local population with regards to the significance of coastal and marine resources; and
- The proliferation of socio-economic benefits to the local community from the commercial, manufacturing and tourism sector.

SOUTH WEST COAST AND SOUTH EAST COAST REGIONAL GOALS AND ACTIONS PLANS

Adoption of an integrative and holistic approach towards land use planning

Rationale

It is anticipated that land use within this region will change considerably within the ten-year time-frame of this action plan, and the challenge will be to balance the economic development of this region with the environmental conservation of many of its habitats and biodiversity. Such a challenge can only be successfully realised through the development of institutional arrangements that will allow for the creation of land use and zoning plans within this region.

Expected Results

Taking into account an integrative approach in this action plan's ten-year time-frame, the southwest and southeast coast will have:

- Developed and implemented a regional land use plan that is based on a *National Land Use Policy*.
- Incorporated risk and hazard management plans into the regional development plans.
- Adopted appropriate waste management infrastructure along the south west and south east coast in place to accompany existing and new commercial and residential development.
- Improved agricultural practices, farming techniques and infrastructure to minimize land degradation and enhance soil productivity.
- A population that is sensitized to the need for regulated and planned development along the south west and south east coast

Action Framework

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Time Frame
<i>Adoption of an integrative and holistic approach towards land use planning</i>	Develop and implement a regional land use plan that is based on a <i>National Land Use Policy</i>	MPDEH		1	Short-term
	Incorporate risk and hazard management plans into regional development plans	MPDEH	NEMO	1	Medium-term

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Time Frame
	Adopt appropriate waste management infrastructure in place to accompany existing and new commercial and residential development	MPDEH	WASCO, Environmental Health Department	1	Long-term
	Improve agricultural practices, farming techniques and infrastructure to minimize land degradation and enhance soil productivity	MAFF		1	Long-term
	Accumulate geographic data on the south west and south east coast to guide in long range environmental planning of the region	MPDEH		1	Medium-term
	A population that is sensitized to the need for regulated and planned development along the south west and south east coast	CZMU	GIS, CBOs, NGOs, MOT, DOF, Environmental Health Department	1	Long-term

Establishment of appropriate pollution and waste control mechanisms

Rationale

Poor agricultural and land use practices along many of the watersheds located in this region has resulted in the pollution of many river and coastal systems with sediment and pesticides. There is also the need to curb the indiscriminate dumping of solid waste onto river banks which inevitably ends up in the rivers along the region's beaches. Disposal of untreated or partially treated liquid waste directly into many of the region's coastal bays have contributed to the degradation of many coastal habitats which are important to the nearshore fishery sector.

Expected Results

Within this Strategy's ten-year time-frame the south west and south east coast will have:

- Improved solid waste management beginning with communities located in close proximity to waterways.
- Implementation of incentives and disincentive programmes aimed at lowering the risk of agrochemicals and sediment reaching waterways.
- Identified appropriated technologies and solution for sewerage needs in this region.
- Established sewerage treatment plants that cater to the southwest and southeast coastal region;
- Developed and implemented basic recycling and other waste management programmes- targeted at public involvement;
- Developed standards to prevent impacts on surface water, and set backs from water sources established for sewage treatment plants, pit latrines and septic tanks.
- A population that is sensitized to the need for pollution and waste control mechanisms along the south west and south east coast.

Action Framework

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Time Frame
<i>Establishment of appropriate pollution and waste control mechanism</i>	Establish appropriate sewage disposal and treatment systems to effectively service south west and south east coast	WASCO	Ministry of Communications and Works	2	Long-term
	Improve solid waste management, beginning with communities located in close proximity to waterways	SLSWMA	CZMU, Ministry of Environmental Health	1	Short-term
	Develop and implement basic recycling and other water management programmes – targeted at public involvement	SLSWMA	CZMU, St. Lucia Chamber of Commerce, GIS	2	Medium-term
	Create an incentive and discentives schemes to encourage existing ports and harbours to establish appropriate management systems.	Ministry of Finance, International Financial Services and Economic Affairs	SLASPA	1	Medium-term

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Time Frame
	Develop standards for the placement and construction of septic tanks for residential developments that are not able to connect to a sewerage line	SLBS	Environmental Health Department, MPDEH	2	Short-term
	A population that is sensitized to the need for pollution and waste control mechanisms along the south west and south east coast	MPDEH	CZMU, GIS, CBOs, NGOs, MOT, DOF Environmental Health	1	Long-term

Protection and sustainable use of the coastal and marine resources

Rationale

As has been stated previously, many of the region's coastal and marine resources are threatened by pollution from poor land use practices, as well as, a lack of/or inappropriate sewerage treatment. However, there are other threats to these coastal and marine resources. Many rivers and beaches in this region have been mined illegally for use in the construction industry. In some areas, mangroves trees are illegally cut for use in charcoal production. Illegal dumping of solid waste into mangroves is yet another negative impact on the region's coastal systems. A number of efforts have been made to curtail the destruction of these coastal habitats, including efforts in 1986 when a number

of the region's mangroves were declared Marine Reserves under the Fisheries Act. However, monitoring and surveillance of mangrove areas have proven difficult as the island's marine reserves have never been legally delineated and/or are located on private lands. Coral reefs are also threatened by indiscriminate fishing practices and by large storm surges which cause breakage of many fragile coral species.

Expected Results

Within this action plan's ten-year time-frame the southwest and southeast coast will have:

- Approved and established the Pointe Sable National Landscape.
- Created a Pointe Sable Landscape Management Authority to guide the sustainable development of this region.
- Increased surveillance and enforcement in protected areas along the south west and south east coast.
- Established structures such as reef balls and other artificial reef structures, where appropriate, to encourage coral larval settlement.
- Introduced incentive and disincentive schemes targeted at private landowners of wetland areas to guide development of these lands.
- Established regular beach clean-up activities.
- Developed and implemented a comprehensive monitoring program for the coastal and marine resources within the southwest and southeast coastal region.
- Addressed indiscriminate and illegal fishing practices along the south west and south east coasts.
- Developed a public awareness programme sensitizing persons to the importance of marine and coastal resources along the south west and south east coast.

Action Framework

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Time Frame
<i>Protection and sustainable use of the coastal and marine resources</i>	Approve and establish the Pointe Sable National Landscape	Cabinet of Ministers		1	Medium-term
	Create a Pointe Sable Landscape Management Authority to guide the sustainable development of this area	SLNT		1	Medium-term
	Declare and demarcate conservation areas and/or forest and marine reserves along this region	SLNT	DOF, Forestry Department	1	Medium-term
	Introduce incentive and disincentive schemes targeted at private landowners of wetland areas to guide development of these lands	Ministry of Finance and Economic Affairs	MPDEH	1	Long-term
	Mapping of coastal and marine resources along the south west and south east coast	CZMU	DOF, Ministry of Communications and Works, Forestry Department	1	Medium-term

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Time Frame
	Employ of soft methods (e.g. beach replenishment, dune restoration, prohibition of extractive practices) and where necessary, hard engineering methods, to address problems.	Ministry of Communications, Works, Transport and Public Utilities	MPDEH	1	Medium-term
	Develop and implement replanting programmes particularly of mangrove species	Forestry Department		1	Short-term
	Develop a land acquisition programme with an aim of protecting critical wetland areas	MPDEH	Ministry of Finance and Economic Affairs, Forestry Department	2	Long-term
	Establish regular beach cleaning activities to address marine based pollution occurring along the east coast.	CZMU	Ministry of Communications and Works, DOF, CBOs, NGOs	1	Short-term

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Time Frame
	Develop a comprehensive monitoring programme for the south west and south east coast	CZMU	PSMA, DOF, Forestry, SLNT	2	Medium-term
	Address indiscriminate and illegal fishing practices	DOF	PSMA	1	Medium-term
	Develop a public awareness programme sensitizing persons to the importance of marine and coastal resources to the south west and south east coast	CZMU	DOF, Forestry, LDF, PSMA, GIS	1	Medium-term

Development and implementation of mechanisms to address and mitigate against natural and human induced disasters

Rationale

This region is also threatened by natural and human induced disasters. In the past hurricanes and tropical storms have caused serious damage to the communities within this region destroying homes and agricultural crops.

Expected Results

Within this action plan's ten-year time-frame the southwest and southeast coast will have:

- Developed and implemented a southwest and southeast coast disaster management plan.
- Developed a national vulnerability atlas which identifies high risk and disaster prone areas along the southwest and south east coast.
- Incorporated risk and hazard management plans into regional development plans for the southwest and southeast coast.
- Developed a southwest and southeast coast evacuation plan.
- Considered the impacts of climate change on the southwest and southeast coast.
- A population that has been sensitized towards the impacts of natural and human induced disasters on the northwest coast region.

Action Framework

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Timeframe
<i>Development and implementation of mechanisms to address and mitigate against natural and environmental</i>	Develop and implement south west and south east coast disaster management and mitigation plan	NEMO	MPDEH, MAFF, DOF, MOT, Ministry of Communications and Works, Ministry of Health, Ministry of Finance and Economic Affairs	1	Short-term

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Time Frame
	Develop a national vulnerability atlas which identifies high risk and disaster prone areas along the south west and south east coast	MPDEH	NEMO	1	Medium-term
	Incorporate risk and hazard management plans into regional development plans for the south west and south east coast	MPDEH	NEMO	1	Medium
	Consider the impacts of climate change and global warming on the population and habitats along the south west and south east coast	MPDEH		2	
	A population that is sensitized towards the potential threats of natural and environmental disasters	CZMU		1	
	Conservation of marine and coastal habitats along the south west and south east coast	DOF	Pointe Sable Landscape, CZMU, Forestry	1	Short-term

Empowerment of the local population with regards to the significance of coastal and marine resources

Rationale

Successful management of the coastal and marine resources along the southwest and southeast coast of Saint Lucia cannot occur without the support of the local community. Saint Lucia however, does not have a history of a very empowered and engaged population with regards to environmental management. Attitudinal change by much of the local population with regards to the activities occurring along the southwest and southeast coastal area is required.

Expected Results

Within this action plan's ten-year time-frame, the southwest and southeast coast will have:

- Understood the rationale for a coastal zone management action plan for the southwest and southeast coast;
- Contributed to the implementation of the southwest and southeast coast regional action plan.
- Attitudinal change with regards to their involvement in environmental management.
- Established community based and other management arrangements to facilitate effective resource conservation and sustainable use.
- Delegated management responsibility in selected domains of coastal management to community and local government agencies.

Action Framework

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Time Frame
<i>Empowerment of the local population with regards to the significance of coastal and marine resources</i>	Establish community based and other management arrangements to facilitate effective resource conservation and sustainable use	CZMU	DOF, Forestry Department, Ministry of Education	1	Medium-term
	Mobilize communities as it relates to conservation of resources and rehabilitation of degraded areas	Ministry of Social Transformation, Culture and Local Government	CZMU, MAFF, DOF, Forestry Department	1	Long-term
	Delegate management responsibility in selected domains of coastal management to community and local government agencies	Ministry of Social Transformation, Culture and Local Government	CZMU, MAFF, DOF, Forestry Department	2	Long-term

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Time Frame
	Promote high level public involvement where ever possible in decision making with regards to CZM specific issues pertaining to this region	CZMU	CBOs, NGOs, Ministry of Social Transformation, Culture and Local Government	1	Medium-term

Proliferation of socio-economic benefits to the local community from the commercial, manufacturing and tourism sector

Rationale

As has been stated previously, growth in the tourism, commercial and manufacturing sectors is expected to occur within this region within the ten-year time-frame of this strategy. The expected economic growth in this region should also trickle down to the community level.

Expected Results

Within this action plan's ten-year time-frame, the southwest and southeast coast will have:

- Involved the private sector in coastal zone management within the southwest and southeast coast.
- Increased support of small scale business schemes proposed by local communities by financial institutions
- Provided technical assistance and other incentives to business ventures, especially small and micro business in the areas of eco and heritage tourism;

- Encourage financial institutions to support non-traditional business development in the coastal zone

Action Framework

Specific Objective	Action	Principal Responsibility	Co-operants	Priority	Time Frame
<i>Proliferation of socio-economic benefits to the local community from the commercial, manufacturing and tourism sector</i>	Involve the private sector in coastal zone management within the southwest and southeast coast	Relevant Government Agencies and St. Lucia Chamber of Commerce		1	Short-term
	Increase support of small scale business schemes proposed by local communities by financial institutions	Financial Institutions		2	Short-term
	Provide technical assistance and other incentives to business ventures, especially small and micro business in the areas of eco and heritage tourism	SLHTP		1	Short-term
	Encourage financial institutions to support non-traditional business development in the coastal zone	Financial Institutions		1	Medium-term