ST. LUCIA

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EXECUTIVE SUMMARY

The preparation St. Lucia's National Biodiversity Strategy and Action Plan (NBSAP) is significant in many respects.

St. Lucia, as a young developing nation, is committed to international co-operation in the field of conservation and sustainable development, and this document is another testimony of this commitment. In accordance with the provisions of the Convention on Biological Diversity (CBD), an outline has been prepared on policies and actions which are needed to conserve the country's biodiversity and use them sustainably. A number of programmes and projects have been identified and work is in progress to put in place the institutional mechanisms required for effective implementation. While some of the projects identified in the NBSAP will be funded as far as possible through national programs, it is envisaged that external funding will be needed to realise the larger projects. To this end, St. Lucia looks forward to the support and collaboration of regional and international partners in making this NBSAP a reality.

The NBSAP is also important because it is another expression of the country's collective awareness of the fact that the future of its people depends, to a very large extent, on its ability to manage its natural capital. The quality and uniqueness of St. Lucia as a tourism destination, its cultural identity, agriculture, fisheries and the health of so many other sectors rely on the maintenance of its biological diversity and on its ability to use it wisely, sustainably and creatively. This plan demonstrates that conservation is an integral part of development, and that development could not be lasting without the ecosystems, the species and the genes with which the country has been endowed, and which the people of St. Lucia have the responsibility to manage.

Five broad programme areas have been recommended including planning and policy formulation, research and monitoring, conservation, sustainable use and education and awareness, all of which are considered to be mutually reinforcing, thus requiring simultaneous implementation (see also section 8 of NBSAP for outline of 22 projects of national importance).

It is worth noting that the significance of the NBSAP is not only in its contents, but it is also, and perhaps more importantly, in the process by which it has been developed. Under the leadership of a Co-ordinator, the NBSAP Team has facilitated an innovative consultative process, which has involved a large number of stakeholders from various horizons. Owing to the support from the United Nations Environment Programme (UNEP)/Global Environmental Facility (GEF), St. Lucia has been able to mobilise its own national experts, and to build its own understanding of issues, needs and priorities. Consequently, the resulting document reflects the views, knowledge and expertise of all parties concerned and provides a realistic path for action.

INTRODUCTION

St. Lucia is a small island developing State of approximately 539 sq. km, which lies within the chain of Eastern Caribbean islands between latitudes thirteen (13°) and fourteen degrees (14°) north and longitudes sixty (60°) and sixty-one degrees (61°) west. It is located on the submerged ancient volcanic ridge connecting Martinique in the north to St. Vincent in the south. The island of St. Lucia is monolithic, comprising one main island with only a few nearshore satellite islets. Being a volcanic isle with a mountainous interior, the country's population and most of its economic activities are huddled along a narrow coastal strip, located on an equally narrow continental shelf.

In spite of its small size, St. Lucia is a diverse country. Surrounded by the Atlantic Ocean on the east and the Caribbean Sea on the west, its mountainous landscape and tropical location have endowed the country with a range of habitats both on land and in the sea. Diverse communities of plants and animals live in these habitats and several species, such as the St. Lucia parrot (*Amazona versicolor*) are found nowhere else in the world. St. Lucia is also diverse in the origin of its people. During the past four centuries of a sometimes turbulent history, the Amerindians were joined by people from Africa, South Asia and Europe. St. Lucia's diverse environment and rich cultural history have combined to make it an unusually beautiful and distinctive country.

As in other countries, a range of human activities threatens St. Lucia's biodiversity: agricultural, commercial and residential developments are transforming natural habitats. Freshwater and coastal ecosystems are stressed by high sediment loads and agricultural chemicals. The disposal of raw sewage and the inadequacy of many sewage treatment facilities pose significant risks to human health and natural systems. Some marine species, especially reef fishes and conch show signs of over-exploitation in several areas. Habitat transformation, pollution and over-harvesting are common factors contributing to the decline of biodiversity around the world.

St. Lucia's biological resources are part of its capital for development and the health of the country's economy, especially in agriculture, tourism and fisheries, is intimately tied to the health of its environment. These resources also form an intimate part of the country's natural and cultural heritage. St. Lucia, as all countries of the world, must, therefore, fashion its own strategy - reflecting its unique social, economic and environmental conditions to use sustainably and conserve its biological wealth.

In June 1992, representatives of over 175 countries gathered in Rio de Janeiro, Brazil for the United Nations Conference on Environment and Development. One of the most important agreements to emerge from this 'Earth Summit' was the Convention on Biological Diversity. The Convention was designed to help member countries reduce the loss of biodiversity and share in the benefits arising from new uses of genetic resources. St. Lucia, one of the first countries to sign the treaty at the Earth Summit ratified the agreement on 28th July, 1993.

To assist in the complex task of sustainable utilisation and conservation of biodiversity, the Convention requests all member countries to develop a national strategy and action plan. The purpose of this plan is to identify important problems, evaluate the most urgent and practical actions to remedy those problems and prepare a detailed plan of action to implement those remedies. While the Convention on Biological Diversity does not specify how these strategies and action plans should be developed, experience in other countries indicates that broad participation is likely to increase public support for proposed actions geared towards conservation and sustainable use of biological resources.

In November 1997, the Government of St. Lucia (GOSL) established a Steering Committee comprising representatives from relevant sectors, which began working on the development of the National Biodiversity

Strategy and Action Plan (NBSAP). A team of national experts was assembled under the direction of a Co-ordinator to assess the status of biological resources in St. Lucia and to identify important management, policy and information needs.

The first phase of work involved the preparation of comprehensive reports on main sectors and resources, to assess the current status of biological diversity, identify issues and propose preliminary directions. These background reports focus on the themes: socio-economic issues, agricultural biodiversity, forest ecosystems, marine and coastal ecosystems, freshwater ecosystems and tourism. Four public consultations were held involving a wide range of stakeholders, leading to a first and second broad-based national consultative meeting held in March and August 1999 respectively. It is on the basis of these studies and consultations, augmented by the contributions of individual experts and agencies and by the deliberations of the National Steering Committee, that the strategy and action plan has been prepared.

The NBSAP should therefore be read against the background of, and in conjunction with the Country Study Report, which provides detailed information on biological resources, issues and trends.

In general, the **Saint Lucia's Biodiversity Country Study Report**: -

- provided information which assisted in the development of the NBSAP
- contains existing information on the status of the nation's biodiversity in a form which is readily available to students, researchers and management authorities
- assembles existing information on the status of biodiversity which was previously dispersed
- provides baseline data for future studies
- includes a list of available documentation on biodiversity issues in St. Lucia
- and documents information on traditional ecological knowledge which was previously unrecorded.

The **National Biodiversity Strategy and Action Plan of St. Lucia** is intended to: -

- act as a guide for management authorities, developers and policy makers by making 'policy-type' statements based on nationally recognised gaps and needs
- provide a reference point for government, non government, community based groups and the general public, wishing to undertake biodiversity related projects (several nationally prioritised biodiversity related projects are outlined in the document)
- help garner support from donor agencies for the implementation of biodiversity related projects (due to the spirit of national consultation and participation from which the document was developed and the national prioritisation of needs in relation to biodiversity conservation, sustainable use and equitable sharing of benefits).

BACKGROUND

[See St. Lucia's Biodiversity Country Study Report for details on status and trends in biodiversity, value of biodiversity, legal and policy framework, institutional responsibilities and capacity, threats to biodiversity and its management, ongoing programmes, etc.]

Issues and Trends

St. Lucia's biological diversity and its current status can be characterised by the following:

- a relatively high diversity of species, as illustrated by the fact that there is a total of over 1,300 known species of plants (including seven endemics) and over 150 species of birds (including five endemics). Approximately 250 reef fish species and 50 coral species have been identified for the island;
- a genetic diversity which is largely the product of the country's history, with the introduction and use of a wide range of species, breeds and cultivars, and with the production of a number of cross-breeds;
- a high diversity of ecosystems, ranging from dry cactus scrubs to rainforest, and including mangroves and coral reefs;
- high natural fragility and vulnerability of these ecosystems, due mainly to their small size and to their scattered spatial distribution;
- high levels of natural productivity within most ecosystems;
- a significant contribution of this biological diversity to the local economy, with the possibility of increasing benefits in several areas, such as the use of plants for medicinal purposes and the development of heritage tourism;
- a diversity of property and management regimes, with all marine and many terrestrial ecosystems under public ownership, but with some terrestrial ecosystems placed almost entirely under private ownership (especially the dry forest formations);
- high levels of impacts from human activities, which have transformed many natural habitats and have resulted in the loss of some of the country's biological diversity;
- uneven distribution of impacts and threats among species and ecosystems;
- an insufficient knowledge of biological resources and their potential;
- the achievement of significant successes in several biodiversity conservation and management programmes (e.g. recovery of the St. Lucia parrot, protection of the Maria Islands Nature Reserve and its two endemic species, management of the Forest Reserve, and management of Marine Reserves).

Social, cultural and economic factors play a key role in shaping and determining the conservation, use and management of St. Lucia's biological resources. These factors can be summarised as follows:

Historical factors

Amerindian societies in the Caribbean were characterised by the diversity of indigenous plant and animal species upon which their systems of production were based. In contrast, the development of the plantation system in the 18th and 19th centuries was based on monoculture crops and on the use of many imported species. As a result, natural systems have been profoundly transformed, and rural landscapes bear little resemblance to the natural formations which existed prior to European colonisation. With the exception of the rainforest and montane forest formations, terrestrial environments have been radically transformed by human activity.

Economic factors

The economy of St. Lucia is built, and continues to depend to a large extent, on the production of goods and services for external consumption. Since the establishment of the plantation system, the main economic sector has been agriculture, with the production of cocoa and coffee, later replaced by sugar, and more recently by banana. Over the past twenty years, tourism has grown to rival agriculture as the largest sector of the economy. In the agricultural sector, bananas constitute the bulk of exports.

St. Lucia has shown slow but steady economic growth during the past decade. However, economic growth has not kept pace with population growth so per capita income has fallen slightly from US$2,653 to US$2,626 between 1993 and 1997. In 1996, St. Lucia's population was recorded as being 147, 180 (1996 Census) and in 1997, its Gross Domestic Product (GDP) was US$391 million (Economic and Social Review, 1997-Department of Statistics and Negotiating). A decline in banana markets is a major factor in this slow growth, while rapid expansion in the tourism sector has kept declines in the agricultural sector from depressing the entire economy. Unemployment is relatively high (16.7% in 1996), especially among young people.

The relationship between economic development and biodiversity is complex. The tourism and fishing sectors depend, to a significant extent, on the maintenance of that diversity, and most sectors could benefit from a more systematic exploration and promotion of sustainable uses of species and genetic resources. But economic needs also generate substantial negative impacts on the resource base, because of the need to transform natural habitats for agriculture, residential and commercial construction, and public infrastructures.

Cultural factors

St. Lucia has rich cultural traditions, and there is an important reservoir of traditional and popular knowledge, much of which is related to using and managing the country=s biological resources. Several activities, including the production of charcoal, lumber, furniture, dug-out canoes and utensils, depend on an intimate knowledge of elements of local biological resources. Small farming systems have incorporated several cultural influences and are based on a wide variety of species and cultivars. Folk medicine makes extensive use of local plants. There are therefore a number of positive linkages between people and the biological diversity which they use and depend on.

Cultural patterns and values have however evolved rapidly over the past decades, with a significant increase in consumption of imported goods, and the concentration of large sectors of the population in urban centres. Many St. Lucians appear not to be conscious of the importance of biological diversity, and of its current and potential impact on the quality of their lives. There are many cultural patterns, perceptions and attitudes

which impact negatively on the natural environment, and on the quality of the relationship that people can develop with it.

Social factors

St. Lucia's population is growing at 1.64% annually, a rate slightly higher than the global average of 1.4%, and now totals approximately 154,540. The United Nations estimates that St. Lucia's population will be approximately 200,000 in 2025. Most of this population growth is concentrated in Castries, along the northwest coast, and in other coastal areas (where many endangered species occur). In fact, more than 50% of the population is now found in Castries and Gros Islet. The population density of this area (over 700 people per square kilometre) is extremely high and puts serious pressures on water supplies, transportation, sanitation and sewage, and solid waste disposal. This rate of population growth is increased by the migration of rural people to the capital city area in search of employment. Because of these growth patterns, remaining natural areas and processes are under severe pressure in the Castries and Gros Islet districts.

Resource tenure and access

Most agricultural lands, and a majority of forest lands, are privately owned. Two significant trends can be observed: on the one hand, many larger farms are being sold and broken into smaller holdings, while, at the lowest end of the scale, small farms between 2 and 4 hectares in size are increasing. Tenure is governed by the Napoleonic code in which all family members can lay claim to the land. This tenurial system fragments family lands, provides few incentives for long-term sustainable land management, and drives land-poor rural residents to clear steep slopes and forest areas. This has adverse impacts on people living, and activities occurring, in the lower parts of the catchment areas, and is a major threat to biodiversity.

There are however large areas of the forest which are under public ownership and management, and the government has embarked on a programme of land acquisition, for the purpose of protecting and managing important watersheds. This programme will have a positive impact on the ability of the forestry administration to conserve and manage the biological diversity contained in these areas.

All marine and most coastal ecosystems are under public ownership and management, and have suffered from a *de facto* situation of open access. This situation has however changed over the past two decades, with the establishment of new legislation for the management of marine resources and areas (1984), and with the strengthening of the agencies responsible for marine resource management, notably the Department of Fisheries in the Ministry of Agriculture, Forestry, Fisheries and the Environment.

Institutional and legal context

The current institutional and legal context for biodiversity conservation and management is characterised by the following features:

- management responsibilities for biological resources are placed primarily within the Ministry of Agriculture, Forestry, Fisheries and the Environment, but there is no formal mechanism for coordination among its various departments concerned with biodiversity issues;

- sectoral management agencies are strong, and have clear mandates for the management of biological diversity in specific sectors (forestry and wildlife, fisheries and marine resources, and agriculture);

- research and data management programmes and activities are insufficient to meet the information needs for biodiversity conservation and use in the country;

- legal instruments for the conservation and management of publicly owned resources appear generally adequate, but mechanisms for conservation and management of biodiversity on private property are weak;

- a new Physical Planning and Development Act is being considered, which will replace the existing legislation concerning physical planning and development control. The new Act will include Regulations governing the conduct of Environmental Impact Assessments;

- even when adequate legal instruments are in place, enforcement is often lacking;

- the country has established a small number of innovative participatory and collaborative natural resource management arrangements which provide examples of institutional arrangements which may be suitable to other areas.

Policy context

The policy context within which biodiversity conservation and management programmes are designed and implemented is characterised by the following:

- generally, low priority is given to biodiversity issues, which are not mentioned in the main national planning and policy making instruments. This reality is reflected in insufficient funding for biodiversity programmes;

- there is no overall policy framework to guide the conservation and management of biological diversity, except for the plan for a System of Protected Areas, which was prepared in 1992 under the auspices of the St. Lucia National Trust, but which has not been formally approved by government;

- there is no overall land and resource use plan. There are physical development plans, at various stages of formulation, for specific regions;

- policy guidance on biodiversity issues is provided, primarily, by the legislation governing individual sectors (e.g. Fisheries Act; Wildlife Protection Act; Forest, Soil and Water Conservation Ordinance), and by the relevant sectoral management plans (1992-2002 Forest Management Plan);

- there are a number of other sectors where policies impact significantly on the country's biodiversity. Indeed, it can be observed that the status of that diversity is determined, to a large extent, by prevailing policies in other sectors, namely:

  * agricultural development policies, which determine land use patterns as well as the use of selected species and varieties;
  * taxation policies and fiscal incentives, which have an impact on land use patterns and on technologies used in various sectors;
  * development control policies and procedures, which regulate many aspects of the construction and industrial sectors;
  *tourism development policies, particularly in relation to land use;

- regional and international agreements also provide policy guidance and direction, sometimes in very specific terms. There are several Conventions to which St. Lucia is party and which relate to biological diversity (Register of International Treaties and Other Agreements in the Field of the Environment, 1996).

Conventions with a Biodiversity Component

- *International Convention for the Regulation of Whaling*
  Date of adoption: 2/12/1946
  Place of adoption: Washington D.C.
  Date of entry into force: 10/11/1948
  Date of entry of St. Lucia: 29/6/1981
  Amendment: 19/11/1956
  Responsible Government Department: Department of Fisheries

- *International Convention on Trade in Endangered Species of Wild Fauna and Flora*
  Date of adoption: 3/3/1973
  Place of adoption: Washington D.C.
  Date of entry of Convention: 1/7/1975
  Date of entry into force: 15/3/1983
  Date of entry of St. Lucia: 15/12/82
  Amendments: 22/6/1994, Bonn; 30/4/1983, Gabarone
  Responsible Government Department.: Department of Forestry/ Department of Fisheries

- *Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region and Protocol on Co-operation in Combating Oil Spills (Cartagena Convention)*
  Date of adoption: 24/3/1983
  Place of adoption: Cartegena de India, Colombia
  Date of entry into force: 11/10/1986
  Date of St. Lucia's signature: 24/3/1983
  Date of St. Lucia's ratification: 30/11/1984
  Responsible Government Department: Department of the Environment, MAFFE

- *United Nations Convention on the Law of the Sea*
  Date of adoption: 10/12/1982
  Place of adoption: Montego Bay, Jamaica
  Date of entry into force: 16/11/1994
  Date of St. Lucia's signature: 10/12/1982
  Date of St. Lucia's ratification: 27/3/1985
  Responsible Government Department: Department of Fisheries

- *Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter at Sea*
  Date of adoption: 29/12/1972
  Places of adoption: London, Mexico City, Moscow and Washington D.C.
  Date of entry into force: 30/8/1975
  Date of entry of St. Lucia: 23/8/1985
  Responsible Government Department: Department of Fisheries

- *Convention on the Prohibition of the Development, Production and Stockpiling of Biological and Toxin Weapons and on their Destruction*
  Date of adoption: 10/4/1972
  Place of adoption: London, Moscow and Washington D.C.
  Date of entry into force: 26/3/1975
  Date of entry of St. Lucia: 26/11/1986
  Responsible Government Department: Not available

- *Protocol on Specially Protected Areas and Wildlife to the Cartagena Convention*
  Date of adoption: 18/1/1990
  Place of adoption: Kingston
  Date of entry into force: Not yet in force
  Date of St. Lucia's signature: 18/1/1990
  Responsible Government Department: Department of Fisheries/Department of Forestry

- *Convention Concerning the Protection of the World Cultural and Natural Heritage*
  Date of adoption: 16/11/1972
  Place of adoption: Paris
  Date of entry into force: 17/12/1975
  Date of St. Lucia's ratification: 14/10/1991
  Responsible Government Department: Department of Forestry/Department of Fisheries

- *United Nations Convention on Biological Diversity*
  Date of opening for signature: 5/6/1992
  Place of adoption: Rio de Janeiro, Brazil,
  Date of entry into force: 29/12/1993
  Date of entry of St. Lucia: 28/7/1993
  Responsible Government Department.: Ministry of Agriculture, Forestry, Fisheries and the Environment

- *Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction*
  Date of Adoption: 13/1/1993
  Place of Adoption: Paris
  Date of Entry into Force: 29/4/1997
  Date of St. Lucia's signature: 29/3/1993
  Responsible Government Department: Ministry of Finance, Planning and Sustainable Development

- *Convention on the Prohibition of Military or any other Hostile use of Environmental Modification Techniques*
  Date of adoption: 10/12/1976
  Place of adoption: Geneva
  Date of entry in force: 5/10/1978
  Date of St. Lucia's ratification: 27/5/1993
  Responsible Government Department: Ministry of Finance, Planning and Sustainable Development

- *United Nations Framework Convention on Climate Change*
  Date of adoption: 9/5/ 1992
  Place of Adoption: New York
  Date of entry into force: 21/3/1994
  Date of entry of St. Lucia: 14/6/1993
  Responsible Government Department: Ministry of Finance, Planning and Sustainable Development

- *Vienna Convention for the Protection of the Ozone Layer*
  Date of adoption: 22/3/1985
  Place of adoption: Vienna
  Date of entry into force: 22/9/1988
  Date of entry of St. Lucia: 28/7/1993
  Responsible Government Department: Ministry of Finance, Planning and Sustainable Development

- *The Montreal Protocol on Substances that Deplete the Ozone Layer*
  Date of adoption: 16/9/1987
  Place of adoption: Montreal, Canada
  Date of entry into force: 1/1/1989
  Date of entry of St. Lucia: 28/7/1993
  Date of last report: 5/11/1997
  Responsible Government Department: Ministry of Finance, Planning and Sustainable Development

- *Basel Convention on the Control of Trans-boundary Movements of Hazardous Waste and their Disposal*
  Date of adoption: 22/3/1989
  Place of adoption: Basel, Switzerland
  Date of entry into force: 5/5/1992
  Date of entry of St. Lucia: 9/12/1993
  Date of last report: October 1/4/1996
  Amendment: 22/9/1995 (St. Lucia will, in due course, write to show their acceptance of this amendment)
  Responsible Government Department: Ministry of Finance, Planning and Sustainable Development

- *Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Stocks and Highly Migratory Fish Stocks*
  Date of adoption: 4/8/1995
  Place of adoption: New York
  Date of entry in force: Not yet in Force
  Date of St. Lucia's signature: 12/12/1995
  Date of St. Lucia's ratification: 9/8/1996
  Responsible Government Department: Department of Fisheries

- *Convention to Combat Desertification*
  Date of Adoption: 17/6/1994
  Place of Adoption: Paris
  Date of entry in force: 26/12/1997
  Date of entry into St. Lucia: 30/9/97
  Responsible Government Department: Department of Forestry

The following also represents the **principal environmental legislation of St. Lucia: -**

Legislation	Authority	Regulation
Agriculture Small Tenancy Act (1983) (No. 22 of 1983)	Enforcement of regulations requiring sound soil and water conservation practices on small land holdings	Regulations
Air and Seaport Act (1981) (Amendment) 1983; Regulations of 1985	Development and management of the nation's air and seaports	Regulations
Beach protection Act (1967) (No. 2 of 1967) (Amendment) (No. 9 of 1994)	Protection of beaches through permitting system for beach sandmining	None
Crown Lands Ordinance (1946)	Establishment of the Crown Land Committee to review and make recommendations on the allocation/use of crown lands	Regulations
Employers Occupational Health and Safety Act (1985)	Provision for inspection of food handling premises	None
Fisheries Act (1984)	Development and management of the fisheries	Regulations

Legislation	Authority	Regulation
(No. 10 of 1984) Fisheries Regulations SI (No. 9 of 1994)	sector	
Forest, Soil and Water Conservation Ordinance (Cap 25) (1946) (Amendment 1957,1983)	Management of forests Establishment of forest reserves and protected forests Development of soil and water conservation programmes to protect forested areas	Regulations
Housing and Urban Development Corporation Act (1971)	Assistance in planning and development of housing projects	None
Land Conservation and Improvement Act (1992) (No. 10 of 1992)	Provision for better land and drainage conservation	None
Land Development (Interim Control) Act (1971) (No. 8 of 1971) (Amendment) Act (1990)	Provision for land use planning and development control	None
Litter Act (1983) (No. 24 of 1983) (Amendment) Act (No. 15,1985) (No. 14, 1993)	Control of litter in public and private places	None
Marine Areas Act (1984)	Provision for territorial sea continental shelf Establishment of contiguous zone, economic zone and other related purposes Implementation of various provisions of the United Nations Conservation on the Law of the sea	None
Merchant Shipping Act (1981)	Introduction of the law of England with regards to Merchant Shipping and matters connected therewith including marine pollution	None
National Development Corporation Act (1971)	Promotion of economic growth/industrial development	None
Oil in Navigable Waters Act (Cap 91)	Provision against the discharge or escape of oil into the territorial waters of the colony	None
Pesticides Control Act (1975) (No. 7 of 1975)	Establishment of the Pesticide Control Board Control of import, use labeling and storage of pesticides	Regulations
Public Health Act (1975) (No. 8 of 1975)	Regulatory oversight for sewage, industrial and solid waste disposal Removal of nuisance and unsanitary conditions on premises (rubbish, night soil etc.)	Regulations
Plant Protection Act (1988) (No. 21 of 1988) Statutory Instrument (No. 66 of 1995) and Section Instrument (No. 71 of 1995)	Control of pest and diseases injurious to plants and prevention of the introduction of exotic species of the same	Regulations
Radioactive Minerals Act (1957)	Authorization for exploration or mining of minerals	None
Rodney Bay Development Act (1970)	Authorization of land improvements works at Rodney Bay Limited	None
Slum Clearance and Housing Ordinance (1946)	Housing of persons, acquisition management slum areas Re-development in improvement of unhealthy areas, demolition of unsanitary areas	Regulations
St. Lucia Solid Waste Management Authority Act (1996) (No. 20 of 1996) Environmental Levy Order SI 1996. (No. 68) and Tipping Fee Order SI 1996 (No. 69)	Establishment of the National Solid Waste Management Authority	None
Timber Industry Development Act	Development of Timber Industry	None

Legislation	Authority	Regulation
(1984)	Promotion of Timber Industry	
Tourist Industry Development Act (1981)	Promotion and development of tourist industry	None
Town and Country Planning Ordinance (Cap 175) (1946) and amended	Provision for Physical Planning and building control	Regulations
Water and Sewerage Authority Act (1984) (No. 18 of 1984)	Management of water supply and resources Development and control of sewage systems Protection of surface water supply intakes	Regulations
Wildlife Protection Act (1980) (No. 9 of 1980)	Provision for conservation of wildlife and recommendations for designation of wildlife reserves Enforcement of hunting regulations	None

Source: Planning Department, The Ministry of Finance, Planning and Sustainable Development, 1998.

GOALS AND OBJECTIVIES

The vision for the future of St. Lucia's biological diversity includes the following elements:

- the status of biological resources is known, the people of St. Lucia and visitors to the island are all aware of the value and importance of these resources, and respect for biodiversity is integrated within the nation's culture;
- governmental agencies, non-governmental organisations, the private sector and communities are conscious, active and responsible participants in the management of biodiversity, and the concerns for the management of biodiversity are taken into account within policy-making processes at all levels;
- the integrity of the country's biological diversity is maintained and, whenever possible, restored;
- biodiversity contributes optimally, through sustainable uses, to the social, economic and cultural development of the country, and to the physical, spiritual, and psychological well-being of all its people
- national, regional and international efforts aimed at conserving biological diversity are consistent, mutually-supportive, and effective.
- there exist some discrepancies between the national frameworks and instruments on the one hand, and the requirements of international agreements on the other.

The aim of the National Biodiversity Strategy and Action Plan is to optimise the contribution of biological diversity to the sustainable economic, social and cultural development of St. Lucia.

The objectives of the strategy and action plan are to: -

- conserve the country's diversity of ecosystems, species and genetic resources;
- promote sustainable uses of these resources in support of human development;
- encourage the equitable distribution of the benefits derived from the use of biodiversity;
- facilitate the participation of people and institutions in the management of biodiversity.

STRATEGY AND ACTION PLAN

An analysis of the issues and trends affecting St. Lucia's biological diversity reveals that they are the products of the patterns of development and management which have prevailed throughout the country's modern history. The vision for St. Lucia's biodiversity, as expressed in a previous section demands the adoption of a new approach to development, based on the principles of equity, sustainability and social justice.

A shift towards this **new approach** to development will require new management systems, at all levels, characterised by the following elements**:**

- *equity*: all stakeholders should have the opportunity to access the country's natural capital, and to generate benefits from the use of natural resources;
- *participation*: all sectors of society should have the opportunity to participate in the formulation and implementation of decisions which affect their lives and their future;
- *institutional collaboration*: management requires functional linkages and collaborative approaches among a wide range of institutions within government and civil society;
- *decentralisation and co-management*: whenever desirable and possible, management arrangements should be decentralised, and institutional collaboration should be governed by formal co-management agreements;
- *transparency*: the rationale for policies and decision, as well as the modalities of their implementation, should be accessible to all within society;
- *acceptance of change*: natural and human systems are constantly changing, and this reality must be accepted by all. There is no static condition, and change must be managed and built upon;
- *use of appropriate time frames*: management systems must recognise that the adoption of new management systems may take time, and that realistic time frames must be used in all interventions;
- *building of resilience*: there is need to build the capacity of systems and institutions to cope with and adapt to change;
- *enhancement of diversity*: in both natural and human systems, diversity is considered an asset and a guarantee of resilience and flexibility. It must therefore be maintained and enhanced whenever possible;
- *optimal sustainable use*: uses of biological resources must be sustainable. They must also be optimised, in order to ensure that they contribute as fully as possible to social and economic development;
- *increase in productivity*: in many instances, the conservation of biological diversity requires that systems be made more productive, to maximise benefits and reduce undesirable impacts;
- *respect for and reliance on experience and tradition*: in the design and implementation of new systems, there is need to build on the assets of the past, in a realistic manner;
- *innovation*: at the same time, there is need for new approaches and tools, and for technological innovation in all aspects of production and management;

- *flexibility in design and implementation*: management systems must not be rigid, and must be able to adapt to rapidly changing conditions;

- *provision of alternatives*: in cases where uses and practices are considered undesirable and may not be continued, there is need to offer realistic alternatives which guarantee, to the maximum extent possible, continued access to goods and services;

- *provision of benefits and incentives*: management must be based on voluntary compliance and self-enforcement, and is therefore helped by the provision of direct social and economic benefits and incentives to people;

- *initiative and use of forward planning*: management must not be reactive, it must be based on clear objectives and be able to anticipate issues and needs;

- *multi-disciplinarity and use of cross-sectoral approaches*: human and natural systems are so complex that their management needs to benefit from all skills and sources of knowledge, and should be based on an appreciation and understanding of that complexity;

- *preference for in situ conservation*: in all conservation activities, preference must be given, whenever possible, to maintaining species and genetic diversity in their natural state, rather than creating artificial conditions;

- *use of knowledge*: all management systems and activities must be based on the best available information, and appropriate measures must therefore be taken to ensure that such information is generated and made accessible;

- *precaution*: the management of natural systems must be guided by the precautionary principle, which demands that preference be given for uses and interventions which reduce risk and are least likely to provoke irreversible changes;

- *national interest, global responsibility*: all management systems must be guided by the national needs, but must also assume the country's responsibility to contribute to regional and international conservation objectives.

The National Biodiversity Strategy and Action Plan must be part of a broader national initiative aimed at achieving environmental and economic sustainability, enhancing the quality of the lives of all St. Lucians, and preserving the nation's natural capital. It is recognised that the objectives outlined previously will not be met, and that the programmes described in the NBSAP will not be realised, in the absence of a radical shift in attitudes and approaches, and without the definition of a new policy framework for environmental management and sustainable development in the country.

This policy framework must recognise the critical role played by natural resources in supporting social and economic development, and should therefore integrate the conservation imperatives within the broader development agenda. It must accept that the quality and sustainability of all development processes will depend on the proper conservation and management of the country's fragile natural assets.

Effective implementation of the NBSAP will therefore require:

- the formulation, on the basis of previous studies and plans, notably the National Environmental Action Plan (NEAP), of a national environmental policy;

- the establishment of a national policy and coordinating body to guide implementation, monitoring and review of that national policy;

- the formulation, adoption and implementation of a comprehensive land policy to guide spatial development, land use and terrestrial resource allocation.

In addition, the success of the NBSAP will depend on the simultaneous adoption and implementation of suitable policies and programmes in key sectors, notably:

- *watershed and water resources management*: there is need for a comprehensive national policy to guide the management of watersheds and water resources, and for the formulation and implementation of integrated management plans for critical watershed areas;

- *agriculture*: there is need for a progressive transformation of the agricultural sector, with the diversification of production, the reduction of negative environmental impacts, and the strengthening of linkages between agriculture and other sectors of the economy, notably tourism;

- *tourism*: as the fastest growing sector of the economy, tourism needs to be guided by policies which guarantee the integrity of the natural resource base, increase the sustainable use of natural and cultural resources in support of tourism development, create positive linkages with people and their culture, and enhance the relationship between tourism and other sectors;

- *fisheries*: there is need to manage and develop the sector through the modernisation of fishing techniques, facilities and gear, increased production, the advancement of the social status of fishing families and communities, and the enhancement of linkages with other sectors of the economy.

[For additional details of strategies and actions required for successful implementation of the NBSAP, see NBSAP Section 7-'PROGRAMME (Planning and Policy Formulation, Research and Monitoring, Conservation, Sustainable Use, Education and Awareness'), and Section 8-'IMPLEMENTATION' (Institutional Arrangements, Legal Instruments, Organisational Development and Capacity Building, Financing, Monitoring and Evaluation, Regional and International Co-operation].

The NBSAP has only recently (November 1999) been completed and submitted to the Cabinet of Ministers for approval. In recapitulation, the process leading to its development of the NBSAP involved: -

- Multiple planning/reporting meetings/workshops of the NBSAP Team
- Production of a Country Study Report by national consultants incorporating six sectors: Socio-Economic Issues; Agricultural Biodiversity; Forest Ecosystems; Marine and Coastal Ecosystems; Freshwater Ecosystems; and Tourism
- Four consultative meetings in various communities involving stakeholders from around the island at which a discussion paper was circulated and discussed
- Two broad-based national consultations
- Public awareness/sensitisation activities involving the mass media

It is the intention that some of the projects identified in the NBSAP will be funded through national programs; however, external funding will be needed to realise the larger projects. Consequently, the NBSAP has been forwarded to several donor organisations in the hope that they could review its contents and advice on opportunities for collaboration in the implementation of some of its key recommendations.

[See NBSAP Section 8-'PROJECTS' for the outline of 22 projects identified as national priority.]

COLLABORATION AND PARTNERSHIP

The development of the NBSAP involved an intensive process of research and consultation, which has allowed for the gathering of the views of all concerned parties and the development of a document which should provide an adequate basis for the expansion of national programmes in the field of biodiversity conservation and management.

Below is a list of organisations, which formed part of the **NBSAP Team**: -

Co-ordinator

- Department of Fisheries, Ministry of Agriculture, Forestry, Fisheries and the Environment

NBSAP Steering Committee

- Department of Environment, Ministry of Agriculture, Forestry, Fisheries and the Environment (Chairperson)
- Ministry of Tourism, Civil Aviation and International Financial Services
- Ministry of Health, Human Services, Family Affairs and Gender Relations
- Department of Agriculture, Ministry of Agriculture, Forestry, Fisheries and the Environment
- St. Lucia Bureau of Standards
- Department of Forestry, Ministry of Agriculture, Forestry, Fisheries and the Environment
- St. Lucia National Trust
- Sustainable Development Section, Ministry of Finance, Planning and Sustainable Development
- Physical Planning Section, Ministry of Finance, Planning and Sustainable Development

Consultants

♦ Socio-economic Issues	University of the West Indies-Outreach Programme
♦ Agricultural Biodiversity	Department of Agriculture, Ministry of Agriculture, Forestry, Fisheries and the Environment
♦ Forest Ecosystems	Department of Forestry, Ministry of Agriculture, Forestry, Fisheries and the Environment
♦ Marine & Coastal Ecosystems	Department of Fisheries, Ministry of Agriculture, Forestry, Fisheries and the Environment
♦ Freshwater Ecosystems	Department of Fisheries, Ministry of Agriculture, Forestry, Fisheries and the Environment
♦ Tourism	ACME Consultancy Services

♦ Geo Information System	Physical Planning Section, Ministry of Finance, Planning and Sustainable Development
♦ Cartrographer	Department of Forestry, Ministry of Agriculture, Forestry, Fisheries and the Environment
♦ Editor	Curriculum and Material Development Unit
♦ Facilitator/Rapporteur	Caribbean Natural Resources Institute
♦ Public Outreach Specialist	Government Information Service
♦ Guidance/Review	World Resources Institute

While a **review task force** was formed for the Country Study Report, the steering committee also formed part of the review committee based on their areas of expertise (not re-listed below). In order to cater to inter-sectoral linkages, the co-ordinator and paper authors assisted with the overall review of reports.

♦ Socio-economic Issues	*Ministry of Finance, Planning and Sustainable Development
♦ Agricultural Biodiversity	*Ministry of Agriculture, Forestry, Fisheries and the Environment *St. Lucia Rural Enterprises Project
♦ Forest Ecosystems	*Sir Arthur Lewis Community College
♦ Marine & Coastal Ecosystems	*Organisation of Eastern Caribbean States/Natural Resources Management Unit
♦ Freshwater Ecosystems	*St. Aloysius Boys' Primary School *Sir Arthur Lewis Community College
♦ Tourism	**St. Lucia Heritage Programme

As part of the **public outreach** component of the biodiversity project and in an effort to initiate discussion, four consultative meetings were held involving the biodiversity project team and stakeholders from various parts of St. Lucia. A discussion paper produced with the assistance of the international consultant, facilitator and other members of the project team was distributed prior to the sessions. The purpose of this discussion paper was to enable St. Lucians to become directly involved in the development of the NBSAP.
The paper highlighted key findings made thus far by the NBSAP project team and presented a draft vision statement for the National Biodiversity Strategy and Action Plan. This paper served as the basis for the national consultation on the National Biodiversity Strategy and Action Plan, which defined the goals, objectives, strategies, programmes, implementation mechanisms and projects that will form the core of the Strategy and Action Plan.

These consultative meetings were in preparation for the first national consultation in order to:

- ♦ Share and discuss the findings of the sectoral studies
- ♦ Identify issues, concerns and priorities

- Define the cultural, institutional and policy context within which the Strategy and Action Plan should be developed
- Define the vision, objectives and principles for the Strategy and Action Plan

At the first national consultation on March 30th 1999, the main elements of the NBSAP were defined. The second national consultation was held on August 5th, 1999 to present the draft NBSAP to stakeholders for finalization and endorsement.

The consultative meetings and the national consultations were attended by persons representing government, non-governmental organizations and community-based groups from around the island: -

Ministries of government

- Ministry of Agriculture, Forestry, Fisheries and the Environment
- Ministry of Finance, Planning and Sustainable Development
- Customs and Excise Department
- Ministry of Community Development, Culture, Local Government and Cooperatives
- Ministry of Tourism, Civil Aviation and International Financial Services
- St. Lucia Heritage Tourism Programme
- Ministry of Legal Affairs, Home Affairs and Labour
- Attorney General's Chambers
- Ministry of Education, Human Resource Development, Youth and Sports
- National Commission for UNESCO
- Sir Arthur Lewis Community College
- Ministry of Commerce, Industry ad Consumer Affairs
- Ministry of Communications, Works, Transport and Public Utilities
- Rural Economic Diversification Incentives Project
- Mabouya Valley Development Project
- Office of Disaster Preparedness
- Royal St. Lucia Police Force
- Fire Service

Statutory boards and corporations

- Bureau of Standards
- Housing and Urban Development Corporation
- National Development Corporation
- Parks and Beaches Commission
- Solid Waste Management Authority
- St. Lucia Air and Sea Ports Authority
- St. Lucia Livestock Development Company
- St. Lucia Electricity Services
- St. Lucia Water and Sewerage Authority
- Castries, Gros Islet and Anse la Raye Town and Village Council

Community and non-governmental organisations

- Anse la Raye Fishermen's Cooperative
- Association of Professional Engineers
- Dennery Watershed Management Action Force

- Derniere Riviere Water Catchment Group
- Folk Research Centre
- Gros Islet Fishermen's Cooperative
- Laborie Conservation Group ECHO-LAB
- Micoud Water Catchment Group
- National Council for the Advancement of Rastafari
- National Council for Transportation
- National Farmers Association
- National Research and Development Foundation
- National Youth Council
- Soufriere Fishermen's Cooperative
- Soufriere Marine Management Area
- Soufriere Regional Development Foundation
- Soufriere Water Taxi Association
- Southern Taxi Association
- St. Lucia Agriculturists' Association
- St. Lucia Animal Protection Society
- St. Lucia Arts and Crafts Association
- St. Lucia Chamber of Commerce, Industry and Agriculture
- St. Lucia Day Boat Charters Association
- St. Lucia Dive Association (Anbaglo)
- St. Lucia Game Fishing Association
- St. Lucia Horticulturists Society
- St. Lucia Hotel Vendors Association
- St. Lucia National Trust
- St. Lucia Naturalists' Society
- St. Lucia Teachers' Union
- St. Lucia Whale and Dolphin Watching Association
- Talvan Water Catchment Group
- Vieux Fort Heritage and Conservation Group

Private sector

- ACME Consultancy
- Cable and Wireless Telecommunications Ltd.
- Cox and Company
- Minvielle and Chastanet Limited
- Petroleum Dealers Association
- Rodney Bay Marina
- Sandals Resort
- Shoppers Paradise Pet Store
- St. Lucia Banana Corporation
- St. Lucia Distillers Ltd.
- Tropical Quality Fruits Company
- Windward Islands Banana Development Corporation

Regional and international organisations

- Caribbean Agriculture Research and Development Institute (CARDI), St. Lucia
- Caribbean Environmental Health Institute (CEHI), St. Lucia
- Caribbean Natural Resources Institute (CANARI), St. Lucia
- Caribbean common Market (CARICOM) Fisheries, Belize
- Inter-American Institute for Cooperation in Agriculture (IICA), St. Lucia
- Organisation of Eastern Caribbean States/Natural Resources Management Unit (OECS/NRMU), St. Lucia
- Rare Animal Relief Effort (RARE) Centre for Tropical Conservation, St. Lucia
- University of the West Indies (UWI), Trinidad

The implementation of the National Biodiversity Strategy and Action Plan will require effective collaboration with a range of regional and international partners, as recommended by Articles 5, 17, and 18 of the CBD.

The objectives of this collaboration will be:

- to guarantee the compatibility of St. Lucia's efforts with those of other countries and regions;

- to facilitate the sharing of skills and expertise;

- to generate support for national activities and institutions, notably in the areas of training, research and information management, and project implementation.

The implementing agencies will therefore maintain and enhance their linkages with international institutions involved in biodiversity (for example IUCN - the World Conservation Union and the United Nations Environment Programme), bi-lateral agencies interested in supporting the conservation and sustainable use of St. Lucia's biodiversity, external non-governmental organisations, regional institutions and programmes, and research and academic institutions. They will also establish and maintain linkages with the national initiatives of relevant international organisations, notably United Nations, Educational, Scientific and Cultural Organisation (UNESCO) and its National Sub-Commission on Science and Technology.

Many of the above-mentioned organisations have been identified as playing a key role in the implementation of the various projects outlined in the NBSAP **[see NBSAP section 8 'PROJECTS' for details].**

Apart from the consultations mentioned above, there was an intensive process of **public awareness/ sensitisation** as regards general biodiversity issues and the project specifically, involving various members of the project team. An outline is given below: -

- Press releases/articles/news items in the following newspapers: -The Voice, The Mirror and The Star; Radio Stations-Helen Television System, Daher Broadcasting Station; and Radio Stations-Radio St. Lucia, Radio 100 and Radio Caribbean International
- Government Information Service Informative Programme (aired on Radio St. Lucia, Radio 100 and Radio Caribbean International) –'Outlook'
- Government Information Service Interview Programme-'Interview'
- Radio St. Lucia Call-in Programme-'Constitution Park'
- Radio St. Lucia Creole Interview Programme with Lawrence Adonis
- Radio St. Lucia Creole Interview Programme with Charles Popo
- Radio Caribbean International Interview Programme-'Guess Who's in for Lunch?'
- Radio 100 Interview Programme-'Connections'

- Radio 100/Helen Television System Call-in Programme-'Straight Up'
- Biodiversity Trivia Quiz on Radio 100
- Biodiversity Trivia (information titbits on biodiversity issues and project) on Helen Television System

SCHEDULE

The NBSAP outlines five broad programme areas in order to achieve the aim and objectives of the strategy and action plan, all of which are considered to be mutually reinforcing, and thus require simultaneous implementation. The five areas include -Planning and Policy Formulation, Research and Monitoring, Conservation, Sustainable Use, Education and Awareness **[see section 7-'PROGRAMME' of NBSAP].** Likewise, the 22 projects outlined do not indicate a time frame for completion, as this is largely dependent on funding becoming available at the national, regional or international level. In addition, the projects were not laid out in order of priority as the latter will be determined by prevailing circumstances and also because at present, all the projects are construed to be of national priority for the country.

RESOURCE AVAILABILITY/ESTIMATED COSTS

The following is an outline of **projects and the estimated budget** taken from the NBSAP**.** While an outline of the five broad programme areas is also given, no costing is indicated **[see section 7-'PROGRAMME' and section 8 of NBSAP-'PROJECTS' for details of objectives of activities under various projects].**

Programme

Planning and policy formulation

The *objectives* of this programme area, which relates to the provisions of Articles 6, 15 and 19 of the CBD, are to:

- guide all actions in the field of biodiversity conservation and management;
- ensure that concerns for biodiversity conservation and management are properly integrated into other relevant policies and policy instruments.

Responsibility for coordination and implementation will rest with the Ministry of Agriculture, Forestry, Fisheries and the Environment (or its successor in title and authority for environmental matters), working in close collaboration with the Ministry of Finance, Planning and Sustainable Development, and all other relevant agencies at the governmental and non-governmental levels. Responsibility for legal review, notably as it relates to patents and property rights, will rest with the Attorney General's Chambers.

Research and monitoring

The *objectives* of this programme area, which relates to the provisions of Articles 7 and 12 of the CBD, are to:

- assess the status of biodiversity and understand the causes of biodiversity loss;
- provide the information needed for the formulation of programmes, actions, policies and priorities;
- contribute to the development of new knowledge on biological diversity at the local, regional and global levels.

Responsibility for coordination and implementation will rest with the Ministry of Agriculture, Forestry, Fisheries and the Environment (or its successor in title and authority for environmental matters).

Conservation

The *objectives* of this programme area, which relates to the provisions of Articles 8 and 9 of the CBD are to:

- maintain and enhance the genetic diversity within species;
- preserve rare, endangered and other important species;
- maintain representative samples of all ecosystems;
- restore degraded ecosystems whenever desirable and feasible.

Responsibility for coordination and implementation will rest with the Ministry of Agriculture, Forestry, Fisheries and the Environment (or its successor in title and authority for environmental matters). Responsibility for the design and implementation of specific activities will rest with each of the participating agencies. With respect to the establishment and management of protected areas, these responsibilities will be allocated as stipulated in the System of Protected Areas.

Sustainable use

The *objectives* of this programme area, which relates to the provisions of Articles 10 and 14 of the CBD, are to:

- generate revenue and benefits from the use of biological resources;
- ensure that patterns of resource use are sustainable;
- guarantee the equitable sharing derived from the access to and use of biological resources;
- maximise the contribution of biodiversity to the achievement of priority objectives of national development.

Responsibility for coordination and implementation will rest with the various participating agencies as appropriate.

Education and awareness

The *objectives* of this programme area, which relates to the provisions of Article 13 of the CBD, are to:

- ensure that policy formulation processes make effective use of all available information;
- create full awareness of the value and contribution of biodiversity to human development;
- provide materials in support of formal and informal education;
- encourage public participation in biodiversity conservation and sustainable use.

Responsibility for coordination and implementation will rest with the Ministry of Agriculture, Forestry, Fisheries and the Environment (or its successor in title and authority for environmental matters), working in close collaboration with a range of partners, including the Ministry of Education, the Government Information Service, media houses and other partners.

Projects [1$US = 2.6882 Eastern Caribbean (EC) Dollars]

Project 1: Policy, institutional and legislative review

Rationale. As demonstrated by the studies and consultations carried out as part of the process of formulation of the NBSAP, there is need for a comprehensive policy framework to guide biodiversity conservation and management, there are critical gaps and overlaps in institutional arrangements, and the legal framework is inadequate to achieve the objectives of the strategy and action plan.

Total Estimated costs. EC$ 85,000/US $ 31,620

Implementation and institutional arrangements. This project should be implemented under the auspices of the Ministry of Agriculture, Forestry, Fisheries and the Environment (or its successor in title and authority for environmental matters), by a broad-based committee established specifically for this purpose.

Project 2: Identification and selection of methods, tools, baseline variables, indicators and parameters needed for effective monitoring

Rationale. There is need for serious and effective monitoring of the status of biological diversity and the trends affecting its components, as this information is indispensable for management. Monitoring activities are typically based on carefully designed and selected instruments which provide the necessary information in the most effective and efficient manner. Considering this strategy and action plan's emphasis on participation, it is also essential to select parameters and indicators which can easily be understood and applied by non-scientists, and to devise mechanisms and activities which would document and use popular environmental knowledge.

Total Estimated costs. EC$ 900,000/US $ 334,797

Implementation and institutional arrangements. This project will be a joint effort between facets of all local agencies concerned with research and will be spearheaded by the Ministry of Agriculture, Forestry, Fisheries and the Environment (or its successor in title and authority for environmental matters), working in collaboration with all other ministries and agencies concerned with scientific research and monitoring in relevant disciplines. The project will be phased over 4 years from initial assessments to development of research policy to establishment of the national research focal point.

Project 3: Comprehensive inventory of terrestrial biological resources

Rationale. There is a pressing need to compile data on local floral and faunal diversity and terrestrial ecosystems, with a view to assessing their status and identifying existing and potential threats to their survival. Little work has been carried out in this area and hence ecological relationships between species and the impacts of human interactions are poorly understood. Such a project will yield important baseline data upon which to develop effective management strategies, taking into account social and developmental issues and concerns.

Total Estimated costs. EC$ 1.5 million/US $ 557,994

Implementation and institutional arrangements. This is a long-term initiative which will require a phased approach. It should be coordinated by the Department of Forestry, who should assume responsibility for the preparation of the project documents.

Project 4: Inventory of marine and coastal biodiversity

Rationale. In general, studies relating to biodiversity within coastal and marine areas focus on the wider Caribbean region rather than on specific islands. Hence, there is little, if any, information on the existence of indigenous, rare and endangered species in the coastal and marine areas of St. Lucia. In order to effectively protect and manage such biodiversity, there is first a need to conduct an inventory of biological resources in areas of potential interest. This inventory would provide baseline data essential to the monitoring and management of coastal and marine resources.

Total Estimated costs. EC$ 850,000/US $ 316,197

Implementation and institutional arrangements. This project will be co-ordinated by the Department of Fisheries.

Project 5: Assessment of the stocks of the Queen Conch, *Strombus gigas*

Rationale. The Queen Conch, *Strombus gigas*, locally known as lanbi, is an important commercial species. Fish landing data and surveys conducted by the Department of Fisheries indicate that population density is declining and that the population may become threatened if a suitable management strategy is not implemented in the very near future. It is thus necessary that the current status of the conch population, as well as the fluctuations over time, be determined island wide.

Total Estimated costs. EC$ 50,000/US $ 18,600 per year

Implementation and institutional arrangements. This project will be implemented by the Department of Fisheries in collaboration with fishing communities. In the formulation of new management arrangements, the option of establishing formal co-management agreements will be considered.

Project 6: Assessment and management of wetlands

Rationale. Wetlands, including mangroves and other formations, are severely under threat from a variety of impacts, including changes in drainage patterns, land reclamation, waste disposal, coastal erosion and wood harvesting. There is need to conserve the remaining samples of these habitats, and this can only be achieved if there is a strong rationale for that conservation.

Total Estimated costs. EC$ 80,000/US $ 29,760

Implementation and institutional arrangements. This project will be implemented jointly by the Ministry of Agriculture, Forestry, Fisheries and the Environment through its Departments of Fisheries and Forestry, working in collaboration with the St. Lucia National Trust, the Ministry of Communications, Works, Transport and Public Utilities, and the Ministry of Community Development, Culture, Local Development and Co-operatives. Communities living near wetlands and making use of these resources will also be involved.

Project 7: Assessment of freshwater biological resources

Rationale. Little is known about freshwater biological resources in St. Lucia, and freshwater ecosystems are possibly the most threatened on the island at this time. The real impacts of these factors (pollution, collapse or alteration of river banks, mining for sand and stones, sedimentation) are not properly documented and assessed, largely because of the absence of baseline data. There is a legitimate fear that biodiversity loss may only be realised when population numbers have fallen below those levels at which recovery remains possible.

Total Estimated costs. EC$ 80,000/US $ 29,760 per year over three years

Implementation and institutional arrangements. This project will be implemented by the Department of the Environment in collaboration with the Departments of Fisheries and Forestry.

Project 8: Inventory of biological resources of importance to agriculture

Rationale. St. Lucia is rich in plant and animal genetic resources, many of which can be exploited for social and economic benefits. The island also has genetic resources that are in danger of being lost due to misuse. The conservation and sustainable use of these resources cannot be planned and organised in the absence of appropriate information . An inventory of plant genetic resources would enable the country to know the resources that are threatened and those that offer potential for economic uses. The island also has other flora and fauna that are of significance to various economic sectors, notably agriculture and health. These include

arthropods and micro-organisms, many of which cause or transmit diseases. It is therefore essential that people be aware of the species present on the island.

Total Estimated costs. EC$ 1.4 million/US $ 520,795

Implementation and institutional arrangements. This project will be coordinated by the Department of Agriculture, in collaboration with relevant regional and international agencies.

Project 9: Study and determination of the carrying capacity of critical areas used for tourism and recreation

Rationale. The environments used for land-based eco-tourism and recreation activities vary from the use of forest and hiking trails to visits to waterfalls. These activities create a variety of environmental and user management challenges. One such challenge is that of determining the carrying capacity of critical areas used for eco-tourism and recreation activities, in order to prevent or minimise environmental impacts. Given the growing need for diversification of the St. Lucian economy, the existing trend of upgrading and developing new sites for eco-tourism and recreation will surely be maintained in the short and medium terms. To ensure that the environmental quality of sites and attractions is maintained and that their use is sustainable over the long term, three basic and related components of carrying capacity must be considered. These are: (1) management objectives, (2) visitor attitude and demand, and (3) impact of visitation and other uses on resources.

Total Estimated costs. This will be dependent on the number of sites covered.

Implementation and institutional arrangements. This project will be co-ordinated by the Department of Forestry, working in close collaboration with the Ministry of Tourism, the St. Lucia National Trust and the relevant NGOs and CBOs.

Project 10: Design of standards and guidelines of behaviour in nature tourism sites and attractions

Rationale. Human behaviour is the primary source of negative impacts on tourism sites and attractions in sensitive habitats. There is need to provide simple yet effective guidelines in order to guide behaviour and thus maintain a positive relationship between tourism and biodiversity.

Costs. To be estimated.

Implementation and institutional arrangements. This project will be implemented by the Ministry of Tourism in conjunction with relevant community groups, tour suppliers and destination management companies.

Project 11: Review of the national plan for a System of Protected Areas

Rationale. The national plan for a System of Protected Areas, which was developed in 1992, constitutes the most comprehensive planning instrument available in St. Lucia in the field of biodiversity conservation and management. It meets one of the main requirements of the CBD, and has served as an informal guide to many planning and natural resource management agencies and initiatives over the past few years. It can form the basis for the implementation of a significant portion of the NBSAP.

Total Estimated costs. EC$ 75,000/US $ 27,900

Implementation and institutional arrangements. This project will be implemented by the Ministry of Planning, the Department of the Environment and the St. Lucia National Trust.

Project 12. The economics of biodiversity loss and conservation

Rationale. While it is acknowledged that non-measurable values provide an important rationale for biodiversity conservation, it remains useful to determine the quantitative values of that diversity. Such information can be critical in the design and implementation of advocacy and management programmes. It can also assist in guiding the identification of policy instruments, by determining and quantifying the economic causes of problems, as well as the measures that can assist in achieving conservation and management objectives.

Total Estimated costs. EC$ 85,000/US $ 31,620

Implementation and institutional arrangements. This project will be coordinated by the Ministry of Agriculture, Forestry, Fisheries and the Environment, working in collaboration with other relevant organisations.

Project 13: Training

Rationale. In order to implement the NBSAP and to meet the broader challenges of natural resource management and conservation in St. Lucia, there is need for a concerted effort to build, acquire and enhance the necessary skills among a range of organisations. When skills are needed but not available on-island, there may also be need to acquire them.

Total Estimated costs. EC$ 45,000/US $ 16,740 for the formulation of the training strategy; other costs to be determined on the basis of the contents of the strategy and specific needs identified.

Implementation and institutional arrangements. This project will be implemented jointly by the Ministry of Agriculture, Forestry, Fisheries and the Environment (or its successor in title and authority for environmental matters) and the Ministry of Education, Human Resource Development, Youth and Sports.

Project 14: Establishment of management programmes for the protection of the endemic and rare species of birds

Rationale. There are a few threatened bird species in St. Lucia that require immediate and active intervention to ensure their survival. A major hindrance however is the fact that not enough is known about these species to make effective management recommendations. This situation is particularly difficult for species whose range occurs outside protected areas (forest reserves). The species to be studied include the White-breasted Thrasher (*Ramphocinclus brachyrus*), Rufous Nightjar (*Caprimulgus rufus*), St. Lucia Oriole (*Icterus laudabilis*), House Wren (*Troglodytes aedon*) and the St. Lucia Blackfinch (*Melanospiza richardsoni*).

Total Estimated costs. EC$ 850,000/US $ 316,197

Implementation and institutional arrangements. This project will be implemented by the Department of Forestry, working in close collaboration with local communities. The institutional arrangements for the management of the reserves will be determined as a result of the participatory planning process mentioned above.

Project 15: Establishment of a turtle monitoring programme

Rationale. Following several years during which there has been a moratorium on the harvesting of marine turtles, the Government of St. Lucia is currently considering the possibility of re-introducing a system of

close season, which responds to the demands of fishers and some members of the general public. This decision is based on the arguments that: (a) the turtle populations have recovered and could tolerate some level of exploitation, and (b) neighbouring islands do not have moratoriums, thus reducing the effectiveness of conservation efforts of these migratory species. There is need to monitor and evaluate the impact of this measure, and to provide the basis for the formulation of future management programmes.

Total Estimated costs. EC$ 150,000/US $ 55,799

Implementation and institutional arrangements. This project will be implemented by the Department of Fisheries in collaboration with community groups.

Project 16: Establishment of a photographic and videographic data base on biodiversity

Rationale. Photography and videography are indispensable tools for monitoring and management. They also serve education and public awareness activities, providing the materials to illustrate and communicate information about biological diversity. The collection and management of photographic and videographic data require special facilities and skills which can best be provided if they are assembled in one location. In the absence of such skills and facilities, biodiversity-related programmes are less effective, and the quality of their outputs suffers.

Costs. To be estimated.

Implementation and institutional arrangements. This project will be coordinated by the Ministry of Agriculture, Forestry, Fisheries and the Environment, working in collaboration with other relevant organisations.

Project 17: Education, public awareness and participation

Rationale. The objectives of the National Biodiversity Strategy and Action Plan cannot be achieved in the absence of a full level of awareness among all members of the public. In addition, all citizens need to be equipped with the knowledge and skills that will allow them to contribute to the conservation and management of the country's biodiversity. Formal and informal means of education and communication must therefore be used.

Total Estimated costs. EC$ 200,000/ US $ 74,399

Implementation and institutional arrangements. This project will be coordinated by the Ministry of Agriculture, Forestry, Fisheries and the Environment, St. Lucia National Trust and other relevant agencies.

Project 18: Upgrading of national herbarium, and creation of sub-collections

Rationale. The National Herbarium of St. Lucia is administered by the Department of Forestry. It presently has a collection at least 1,300 species of native flora species which are stored in four metal filing cabinets in an air conditioned room. The herbarium also has a medium sized deep freezer which is used for storage of field collected flora samples. There is no separation between the floor area where the filing cabinets are located, the freezer and the working and drying area. Presently, the herbarium is managed by a forest officer who has no formal training in herbarium management, but has learnt through experience. This same officer acts as curator, technician and collector, and therefore is the custodian of the collection. There is no other significant plant collection on the island, neither does St. Lucia have its own published flora. The main reference work are regional studies which are incomplete and somewhat outdated, especially as some of the botanical names used are no longer valid. The National Herbarium will become an invaluable source of

information on St. Lucia's indigenous flora to a wide range of user groups from schools to research institutions.

Total Estimated costs. EC$ 850,000/US $ 316,197

Implementation and institutional arrangements. This project will be co-ordinated by the Department of Forestry in close collaboration with the relevant NGOs, the Sir Arthur Lewis Community College and the University of the West Indies, St. Augustine Campus.

Project 19: Development of artificial habitats for coastal and marine resources

Rationale. There is need to replace lost habitats and thus prevent or halt the loss (by death, migration, and loss of fecundity) of certain threatened and important marine species such as lobsters, reef fish, conch, sea urchin and coastal pelagics.

Total Estimated costs. EC$ 150,000/US $ 55,799

Implementation and institutional arrangements. This project will be implemented by the Department of Fisheries.

Project 20: Evaluation of the medicinal and culinary properties of herbs

Rationale. A number of herbs have traditionally been used for medicinal and aromatic purposes. There are other species which are not currently used in the country, but which are known to other societies for their medicinal and culinary uses. There would be much to gain from a systematic investigation of the current and potential uses of these herbs.

Total Estimated costs. EC$ 76,000/US $ 28,272

Implementation and institutional arrangements. This project will be implemented by the Department of Forestry, in collaboration with the St. Lucia National Trust and other relevant organisations.

Project 21: Promotion of organic farming

Rationale. The use of organic methods has a positive impact on biodiversity, as it reduces the negative impacts associated with the use of agro-chemicals, and encourages the use of more local species and varieties, thus increasing the chance of contributing to the conservation and dissemination of cultivars. Produce from organic farms are known to be better for human health. Organic farming offers the additional benefit of using organic waste in the production system. These methods are relatively well known, but there are a number of obstacles to their acceptance by a larger number of farmers, including the lack of awareness of the benefits of organic farming, the absence of a strong demand from the consumer, and the weakness of marketing arrangements.

Costs. To be estimated.

Implementation and institutional arrangements. This project will be implemented under the auspices of the Department of Agriculture, acting in collaboration with the Ministries of Education and Commerce and with relevant community organisations, notably the National Council for the Advancement of Rastafari.

Project 22: Increasing and managing plant diversity for sustainable rural livelihoods

Rationale. There are a number of plant species which provide useful goods and services to people, as well as the basis for sustainable uses that can bring benefits to people while maintaining diversity. The propagation of these species can bring the additional benefits of enhancing the use of marginal lands, assisting in the beautification of public areas and landscapes, and improving soil conservation.

Costs. To be estimated.

Implementation and institutional arrangements. This project will be co-ordinated by the Department of Forestry, working in close collaboration with the Department of Agriculture and with relevant NGOs and community groups.

It is recognised that **training** and additional **manpower** are needed for the successful implementation of the NBSAP and general realisation of obligations under the Convention on Biological Diversity. Training is thus required to: -

- strengthen the capacity of organisations to participate in the management and conservation of biological diversity;
- reduce the dependency of St. Lucian organisations on external expertise to conduct biodiversity-related work.

Domains and fields in which training will be given priority include the following: -

- herbarium management;
- taxonomy;
- ecosystem management and restoration;
- research and monitoring techniques.

In accordance with the provisions of Articles 11, 20(1), 20(6) and 21(4) of the CBD, a number of principles will guide the **financing** of biodiversity conservation and management programmes:

- financing must be seen in the broader context of the economic policies and instruments that will be used to promote biodiversity conservation and sustainable use;
- user fees will constitute an important source of revenue, but will also be designed as incentives for conservation and sustainable use;
- all sectors and stakeholders have a role to play in contributing to the cost of biological diversity conservation and management;
- because of the status of these resources, the financing of biological diversity conservation and management however remains a very special responsibility of the state;

- the international community has a key role to play in supporting St. Lucia's effort to manage its biological resources.

A number of instruments will therefore be put in place and utilised, including fees, grants, licenses, permits and taxes. While the "polluter pays" principle may also be applied, with the imposition of fines, measures will be taken to prevent it from being used by offenders as a license to impact negatively on biological resources.

Agencies responsible for the implementation of the National Biodiversity Strategy and Action Plan will also explore the desirability and feasibility of establishing a funding mechanism, which could be devoted solely to biodiversity or could encompass a broader environmental mandate, which could assist greatly in the generation and management of resources for the implementation of the strategy and action plan.

The possibility of establishing a funding mechanism for community initiatives in biodiversity conservation will also be explored, with particular attention to the option of capitalising such a fund through a partnership between government, the private sector and donor agencies.

MONITORING AND EVALUATION

As stipulated in Articles 7 and 14 of the CBD, monitoring and evaluation will be an integral part of the implementation of the National Biodiversity Strategy and Action Plan. The following elements will therefore be put in place:

- indicators of sustainability, equity, effectiveness and efficiency;
- a national data base on biodiversity, covering areas such as: geographic coverage of critical systems, habitats and species populations, trends and threats;
- monitoring programmes at the national and local levels;
- participation of communities and non-governmental partners in the design and implementation of monitoring programmes;
- periodic evaluation of impacts of management;
- periodic publication of reports on the state of the environment, with an identification of trends and issues for the future.

In order to meet the expressed need for improved coordination, the Government of St. Lucia will establish, under the auspices of the Ministry of Agriculture, Forestry, Fisheries and the Environment (or its successor in title and authority for environmental matters), a mechanism which will have the responsibility:

- to coordinate the implementation, monitoring and review of the National Biodiversity Strategy and Action Plan, including the mobilisation of funding;
- to oversee, support, and, whenever appropriate, conduct activities and programmes to study, and monitor the status of, biological diversity;
- to design and implement national awareness and education programmes;
- to provide support to governmental and non-governmental agencies participating in the implementation of the National Biodiversity Strategy and Action Plan.

This mechanism could be constituted as a permanent or *ad hoc* committee, and should comprise representatives of government agencies, non-governmental organisations, community-based organisations, scientific bodies and natural resource user groups.

In the event that a National Environmental Commission or similar body is established, the mechanism created to coordinate the implementation of this National Biodiversity Strategy and Action Plan should be placed under its umbrella.

SHARING OF NATIONAL EXPERIENCE

Appropriate hardware and software have been purchased under the ClearingHouse Mechanism component of the project. As a more viable alternative to creating a new website (given staff and financial constraints), the website of the Ministry of Agriculture, Forestry, Fisheries and the Environment is being structured such that a biodiversity component is included. The Ministry's website address is www.slumaffe.org.

To facilitate the operation of this site, the Ministry's webmaster has participated in various training courses, including a two-day training course organized by the Razor Group Interactive Company in the United States in December 1999, in "NetObjects Fusion 4.0 Fundamentals and NetObjects Fusion 4.0 Advanced Topics" (funded through the NBSAP/CHM Project). The site will be constantly updated by the Webmaster, based on information supplied by relevant organisations, channelled through the Project Coordinator. The Project Coordinator can also be contacted directly regarding biodiversity issues at biodiversity@slumaffe.org.