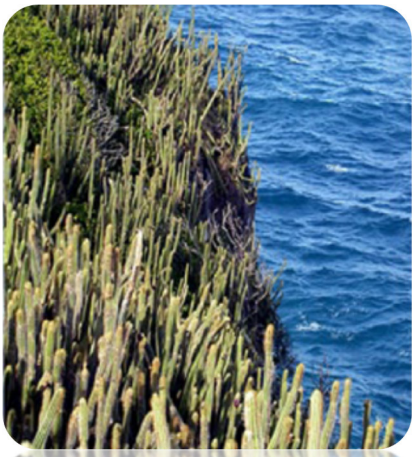
Government of Saint Lucia

REVISED SECOND NATIONAL BIODIVERSITY STRATEGY AND ACTION PLAN

Second NBSAP (2018-2025) for SAINT LUCIA



UNEP/ GEF FUNDED

REVISED SECOND NATIONAL BIODIVERSITY STRATEGY AND ACTION PLAN

Second NBSAP (2018 – 2025)

for
SAINT LUCIA

A Publication of the Department of Sustainable Development

Prepared in 2014 by:

AGRICO LTD.
AGRICULTURAL CONSULTANCY & TECHNICAL SERVICES LTD.

Revised in 2018 by:

PISS

Palm Integrated
Services Solutions

Preface

Saint Lucia's first National Biodiversity Strategy and Action Plan (NBSAP) served to stimulate actions on many fronts, having generally impacted positively on biodiversity; particularly with respect to restoration and, to a lesser extent, protection/preservation. However, in Saint Lucia despite the extensive implementation of a range of varied projects, the actions taken to implement the Convention on Biodiversity (CBD) were not sufficient to allow for the 2010 Biodiversity Target[1] to be achieved. The island therefore continued to witness declines in certain gene, species and ecosystem diversity, particularly with respect to the "dry" forest, as the intensity of the pressures on biodiversity in these ecosystems increased because of human actions. Nevertheless, the country was still able to boast of positive and favourable reversals in trends for species such as the Saint Lucia Parrot, the *Latanyé* palm, the Saint Lucia whiptail lizard and the black long-spined sea urchin.

A process for the revision of the first NBSAP started in 2008 and produced what was referred to as the Draft Second National Biodiversity Strategy and Action Plan (Draft Second NBSAP). The Draft Second NBSAP sought to address many critical biodiversity issues by focusing on re-orienting and scaling up actions to tackle the root causes of biodiversity loss. Nevertheless, subsequent to the formulation of the Draft Second NBSAP in 2008, there have been new and emerging issues at the international front. These include the twenty (20) Aichi Targets of COP 10 in 2010, the Nagoya Protocol on Access and Benefit Sharing (ABS) and the need for synergies amongst Rio Conventions and the related biodiversity conventions such as the Convention on International Trade in Endangered Species (CITES) and the Ramsar Convention on Wetlands.

Pursuant to the new and emerging issues at the national and international levels, the Department of Sustainable Development sought to (a) update the 2008 Draft Second NBSAP; and (b) prepare the Fifth National Report on Biodiversity for submission to the Secretariat of the Convention on Biological Diversity. The Fifth National Report was submitted in 2014. The review of the Draft Second NBSAP was completed in 2018 under the aegis of the Department of Sustainable Development. In the same year, the Sixth National Report was commissioned

The primary objective for the revision of the Draft Second NBSAP is the incorporation of biodiversity and ecosystem service values into the NBSAP that will assist the country in developing a revised Strategy, which is compliant with the following key targets:
Aichi Target 1: By 2020, at the latest, ***people are aware of the values of biodiversity*** and the steps they can take to conserve and use it sustainably.
Aichi Target 2: By 2020, at the latest***, biodiversity values have been integrated*** into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.
The revision will also seek to incorporate the Sustainable Development Goals as well as actions to achieve compliance with relevant biodiversity-related multi-lateral environmental agreements (MEAs).

[1] In April 2002, the Parties to the Convention on Biodiversity committed themselves to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on Earth.

The process for the revision of the Draft Second NBSAP involved extensive document review. In cases where documentation was limited or unavailable, institutional memory and oral history (*l'histoire*) were sought and utilised, particularly with regard to issues of traditional knowledge and cultural heritage.

The NBSAP revision was also informed by a series of stakeholder consultations at all levels: individual, community, agency, sector and national. The consultation process was promoted through several Public Service Announcements (PSAs) which sought to heighten the interest of parties and encourage their participation. The output of the stakeholder consultations formed, in the most part, the basis for the updating/revision of the NBSAP.

The extensive stakeholder consultations revealed that biodiversity contributes significantly to livelihoods, especially rural livelihoods. There is also recognition in the country that biodiversity underpins many important ecosystems services. There has, however, been inadequate effort at valuing the contribution of these ecosystem services to human wellbeing.

Other approaches that were used included

- **Results-Based Approach** which was used to
  - Provide realistic results.
  - Identify stakeholders, their needs and priorities.
  - Develop a monitoring and evaluation process, including identification of appropriate performance indicators.

- **Building on Conditions Precedent -**The aims and objectives of the first NBSAP were found to be still relevant to biodiversity management in Saint Lucia since they were aligned to the objectives of the CBD. Consequently, it was agreed that these objectives must, of need, be embodied in the Revised Second NBSAP and serve as reference points in the proposed results-based approach that is used in the Revised Second NBSAP.

There are also some key sector policies that have been developed that include conservation of biological resources as a major policy element. These include the National Environmental Policy and National Environmental Management Strategy (NEP/NEMS), which is considered the overarching environmental instrument for integrated national development planning, Agriculture Sector Policy and Strategy, the Water Policy and the Land Policy of 2007 and Draft Land Use Policy of 2016. Some of these policies have already been adopted by the Cabinet of Ministers and a few are currently being implemented. The Revised Second NBSAP thus gives cognisance to these policies, drawing on the principles enshrined therein.

- **Incorporating Situational Analyses** resulting from a number of events and changes have occurred since the Draft Second NBSAP was developed in 2008, *inter alia*:
  i. The recently adopted Strategic Plan for Biodiversity (2011-2020) and its associated goals, the twenty (20) Aichi Targets and indicators emanating from COP 10 in 2010; to ensure that the national targets, principles and main priorities take these into consideration.
  ii. Integration of Biodiversity into poverty eradication, national development, national accounting, economic sectors and spatial planning processes

iii. Integration of local communities into the discussions and decision making.
iv. Promotion of gender equality in achieving the three objectives[2] of the Convention.
v. Issues on the Nagoya Protocol on Access and Benefit Sharing.
vi. Issues of synergies amongst Rio Conventions and other biodiversity-related conventions and agreements such as CITES and Ramsar.
vii. Inclusion of the Sustainable Development Goals (SDGs), with a robust mechanism for monitoring and evaluating
viii. Cabinet Adoption of a National Adaptation Plan and Sector Adaptation Plans for Agriculture, Water and Fisheries

Saint Lucia's **NBSAP is a living document**, which will continue to evolve on the basis of experiences and reviews, as well as feedback received through consultation with stakeholders, especially with respect to its targets, strategic directions and actions. Be that as it may, the Revised Second NBSAP has sought to achieve consensus on a set of practical and realistic actions that reflect national aspirations for the conservation and sustainable use of biodiversity, in conjunction with other environmental goals in Saint Lucia.

The Revised Second NBSAP therefore provides a strategic approach which will serve to promote effective implementation of the CBD and the Second NBSAP, through a shared vision, mission and strategic goals and targets, (aligned to "the Aichi Biodiversity Targets") that will stimulate and fuel broad-based action by all stakeholders, especially **policy and decision makers**. The framework further provides a strategic platform for the development and strengthening of partnerships for implementation of supporting national, regional and international initiatives. It does not create legal rights or impose obligations under international law.

The Framework recognises that implementation of the Revised Second NBSAP is best designed in alignment with the three pillars of sustainable development namely, **economic, social and environmental/ecosystems.** Hence, transformative measures for biodiversity management supported by the Revised Second NBSAP will be implemented at all levels and evaluated against these three pillars of sustainable development, bearing in mind measures that will cut across all pillars, such as land and water resources management. The Framework is thus intended to promote links with, but in no way supersede, more specific regional and national instruments and plans across specific sectors that link to biodiversity management including: **physical planning, forestry, land use, water, agriculture and food security, tourism, coastal zone management, marine ecosystems, health and nutrition.** Addressing the issues of biodiversity management promotes an integrated, multi-stakeholder approach, straddling regional, national, sectoral, community and individual dimensions. Furthermore, a strategic programmatic approach is required, rather than an increase in stand-alone project initiatives.

[2] The objectives of this Convention, to be pursued in accordance with its relevant provisions, are (i) the conservation of biological diversity,(ii) the sustainable use of its components and (iii) the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.

The Revised Second NBSAP Framework thus advocates **inter-sectoral and inter-agency joint work programmes**, coupled with the electronic platforms and nodes of the Clearinghouse Mechanism (CHM) for easy knowledge and **information management and sharing**.

The revised NBSAP framework creates the strategic direction and process for ongoing management of biological resources for national sustainable development in Saint Lucia. This framework comprises 3 elements:

i. Transformative measures – necessary field interventions
ii. Catalytic/Facilitation measures – enabling environment
iii. Sustainable financing measures – financial resources to implement the transformative and facilitation measures

Each of these measures, in turn, contains a number of strategic actions when implemented together would contribute to sustainable biodiversity use and ecosystem resilience and to the Vision of the Revised Second NBSAP, i.e. ***Biodiversity is vital to better living,*** and to its 4 goals which are:

- To internalize and integrate biodiversity values into decision making and national accounting to stimulate/advance national development;
- To generate benefits for all citizens from biodiversity and ecosystem services for improved human wellbeing;
- To encourage and effect sustainable management and use of biodiversity and genetic resources; and
- To engender ongoing behavioural change through knowledge management and capacity building for enhanced implementation.

These goals are aligned to the Aichi Targets and each is complimented with a suite of targets. Further alignment of the national targets with the specifics and details of interventions, actions, time frames, beneficiaries, etc. will as far as possible be undertaken with a greater level of precision and commitment by the actors during the development of annual work plans. Hence issues such as specific ecosystems, species, geographic areas, etc. will be addressed within this level of planning.

The Revised Second NBSAP is guided by 4 strategic outcomes:

1. Biodiversity and ecosystems valued into national planning and development.
2. Biodiversity benefits generated for all citizens.
3. Genetic and biological resources managed and used sustainably.
4. Behavioural change effected through knowledge management and capacity development.

The Revised Draft Second NBSAP includes a **Communication, Education and Public Awareness** strategy **(CEPA)** intended to raise awareness, aid wider integration of biodiversity values, facilitate resource conflict resolution and stakeholder management, and package biodiversity information suited to each of the various publics (including economists, political leaders and policy makers,) who impact on or are impacted by biodiversity and ecosystem goods and services. In addition, the CEPA strategy undertakes to highlight and profile ecosystem services and biodiversity conservation in terms of their contribution to development, growth and equity to economists, political leaders and policy makers.

Further, to promote the much-desired synergy in the implementation of MEAs, and given the cross-cutting nature of many of the interventions to be undertaken, the modality for the implementation of the Revised Second NBSAP activities has considered a parallel process, with that for implementation of activities under the Strategic Plan for Climate Resilience (SPCR) and Climate Change Adaptation Policy (CCAP), blended with activities from the National Action Plan and Strategic Action Plan for combating land degradation (NAPSAP). In addition, provision has also been made for an implementation mechanism that would enable the updated NBSAP to achieve, as far as possible, the **integration of biodiversity considerations into relevant national strategies, plans, policies and programmes**.

Institutional arrangements for the administration and implementation of the Revised Draft Second NBSAP are based on recommendations from the stakeholder consultation process within the context of the existing mandates of the relevant government agencies and counterpart institutions/entities. Given that the responsibility for biodiversity management is shared, it is expected that elements of the Revised Second NBSAP will be "internalised and integrated" into implementation plans by the relevant sectoral ministries, agencies /organisations, communities and enterprises.

The programme for implementing the Revised Second NBSAP is predicated on the assumption that a National Biodiversity Coordinating Committee (NBCC) will be established. The NBCC will serve as the national biodiversity focal point for Saint Lucia and will provide policy guidance on all matters of biodiversity. The NBCC will be supported by the National Biodiversity Technical Committee (NBTC) that will meet more often and will be responsible for the technical details of and the monitoring and evaluation of the NBSAP.

The Biodiversity Unit which is currently housed in the Department of Sustainable Development will serve as the Secretariat for these bodies and will be responsible for the routine coordination of the NBSAP.

The Framework for the Revised Second NBSAP builds on the Draft Second NBSAP for Saint Lucia formulated in 2008-2009. The revised Framework runs from 2018-2025, and will be reviewed and modified, as required, every three to five years by a multi sectoral National Biodiversity Coordinating Committee.

It is a flexible framework which allows for the establishment of national targets and for enhancing coherence in the implementation of the provisions of the Convention and the decisions of the Conference of the Parties (esp. UN CBD COP 10 with regard to The Strategic Plan for Biodiversity 2011-2020 and associated Aichi Targets), including the programmes of work and the Global Strategy for Plant Conservation as well as the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of the Benefits Arising from their Utilization; and consistent with other national dictates under the Millennium Declaration, 2030 Sustainable Development Agenda, and the OECS St. Georges' Declaration (SGD), Green Economy initiatives, and national development policies and plans, such as, inter alia, SPCR, CCAP, NAP, SASAP, and NAPSAP.

One of the first actions to be undertaken as soon as the Revised Second NBSAP is approved by the Cabinet of Ministers is the conduct of an audit and gap analysis of all the agencies that are involved in the management of biodiversity and ecosystems services in Saint Lucia. This review / assessment should best be scaled down and in-house, with the objective to create conducive structures for the 2nd NBSAP implementation, as well as, for strategic planning towards the 3rd NBSAP.

The monitoring and evaluation process is expected to be a key component of each outcome area, within the Revised Second NBSAP, based on a seven-year action plan (2018-2025). Monitoring and Evaluation (M&E) will be conducted utilising the results-based management approach. The Results Framework provides performance and impact indicators for programme implementation along with corresponding means of verification. The Revised Second NBSAP contains an Indicative Monitoring and Evaluation Work Plan which identifies the type of M&E activity to be undertaken, the responsible parties for each of these activities and the time frame for the conduct of each activity.

For the purposes of the Revised Second NBSAP, a Strategic Environmental Assessment (SEA) was undertaken, as a Scoping Exercise, to ensure that particular attention is paid to biodiversity in Strategic Environmental Assessments that are undertaken in Saint Lucia. The Scoping of the SEA considered the implications of the activities in the Revised Second NBSAP on biodiversity and ecosystem conservation and on the creation of sustainable livelihoods. It also considered whether the interventions identified in the Strategy and Action Plan reflected the comments and recommendations of stakeholders and how these comments and recommendations were incorporated into the NBSAP. The Scoping also evaluated whether the NBSAP should provide opportunities to consolidate and implement biodiversity initiatives pursued by local stakeholders, NGOs and other partnerships.

Table of Contents

Table of Figures

List of Tables

List of Acronyms

ABS	Access and Benefit Sharing
ACAPG	Aupicon Charcoal and Agricultural Producers Group
ACP	Africa Caribbean Pacific
APR	Annual Project Report
AWP	Annual Work Plan
BD	Biodiversity (GEF TT)
BFM	Biodiversity Financing Mechanism
BIN	Biodiversity Information Network
BIP	Biodiversity Indicators Partnership
BLG	Biodiversity Liaison Group
BU	Biodiversity Unit
CAMMA	Canaries-Anse-La-Raye Marine Management Area
CANARI	Caribbean Natural Resources Institute
CARICOM	Caribbean Community
CBD	Convention on Biological Diversity
CBF	Caribbean Biodiversity Fund
CC	Climate Change
CCA	Climate Change Adaptation
CCAP	Climate Change Adaptation Policy
CCCCC	Caribbean Community Climate Change Centre
CCCRA	Caribsave Climate Change Risk Atlas
CEP	Caribbean Environment Programme
CEPA	Communications, Education and Public Awareness
CIDA	Canadian International Development Agency
CITES	Convention on International Trade in Endangered Species
CSO	Community Society Organisation
CRFM	Caribbean Regional Fisheries Mechanism
CMS	Conservation of Migratory Species of Wild Animals
CHM	Clearing House Mechanism
COP	Conference of the Parties
CW	Chemicals and Waste (GEF TT)
CYEN	Caribbean Youth Environment Network
DRM	Disaster Risk Management/Mitigation
DRR	Disaster Risk Reduction
DSD	Department of Sustainable Development
DVRP	Disaster Vulnerability Reduction Project
DWPT	Durrell Wildlife Preservation Trust
CITES	Convention on International Trade in Endangered Species of Fauna and Flora
CMS	Convention on the Conservation of Migratory Species
CR	Critical
CZM	Coastal Zone Management
CZMU	Coastal Zone Management Unit
CZMAC	Coastal Zone Management Advisory Committee
DSD	Department of Sustainable Development

EC	European Commission.
EE&A	Environmental Education and Awareness
EIA	Environmental Impact Assessment
EN	Endangered
EU	European Union
EUREP-GAP	European System Related to Good. Agricultural Practice.
FAO	Food and Agriculture Organization
FFI	Fauna and Flora International
FGD	Focus Group Discussion
FRA	Forestry Resource Assessment
GBO	Global Biodiversity Outlook
GDP	Gross Domestic Product
GE	Green Economy
GEF/SGP	Global Environment Facility / Small Grants Programme
GEO	Global Environment Outlook
GIS	Geographic Information Systems
GOSL	Government of Saint Lucia
GMO	Genetically Modified Organism
GTI	Global Taxonomic Initiative
IAS	Invasive Alien Species
IBA	Important Bird Area
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
ICT	Information and Communications Technology
ICZM	Integrated Coastal Zone Management
ICRAN	International Coral Reef Action Network
IDP	Integrated Development Planning
IFRI	International Forestry Resources and Institutes.
IICA	International Institute for Cooperation on Agriculture
IISD	International Institute for Sustainable Development
IMO	International Maritime Organisation
IPCC	Intergovernmental Panel on Climate Change
IR	Inception Report
IRIN	Integrated Regional Information Networks
ISO	International Standards Organization
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
IUCN	International Union for Conservation of Nature
IW	International Waters (GEF TT)
IWC	International Convention for the Regulation of Whaling
IWCAM	Integrating Watershed and Coastal Area Management
KfW	Kreditanstalt für Wiederaufbau [German Development Bank]
KI	Key Indicators
LAC	Limits of Acceptable Change
LBS	Land Based Sources
LD	Land Degradation (GEF TT)

LMO	Living Modified Organism
LEAF	Linking Environment and Farming
LEAP	Leadership Enhancement in Agriculture Program
MAFPFRD	Dept of Agriculture, Food Production, Fisheries and Rural Development
MARPOL	Convention on the Prevention of Marine Pollution by Dumping of Waste and other Matter
MDG	Millennium Development Goal
M&E	Monitoring and Evaluation
MEA	Multilateral Environmental Agreement
MoU	Memorandum of Understanding
MPA	Marine Protected Area
MRB	Dept responsible for Biodiversity
NBA	National Biodiversity Authority
NAP	National Adaptation Plan
NAPSAP	National Action Plan and Strategic Action Plan for UNCCD
NAPA	National Adaptation Program of Action
NBCC	National Biodiversity Coordinating Committee
NBME	National Biodiversity Management Entity
NBTC	National Biodiversity Technical Committee
NBSAP	National Biodiversity Strategy and Action Plan
NCA	Natural Capital Accounting
SLUNCF	Saint Lucia National Conservation Fund
NEC	National Environmental Commission
NEDS	National Export Development Strategy
NEMO	Saint Lucia National Emergency Management Organization.
NEP/NEMS	National Environmental Policy and National Environmental Management Strategy
NGO	Non-Governmental Organisation
NISS	National Invasive Species Strategy
NR	National Report (CBD)
NTFPs	Non-timber Forest Products
NCSTSD	National Council on Science and Technology for Sustainable Development
OAS	Organisation of American States
OECS	Development Organisation of Eastern Caribbean States
OECD/DAC	Organisation for Economic Co-operation and Development/ Development Assistance Committee
OPAAL	OECS Protected Areas and Associated Livelihoods Project
PA	Protected Area
PIR	Periodic Implementation Review
PMA	Piton Management Area
PoWPA	Programme of Work on Protected Areas
PPP	Public Private Partnership
PSA	Public Service Announcements
PSEPA	Point Sable Environmental Protected Area
RBM	Results-Based Management

RSO	Research and Systematic Observation
SALCC	Sir Arthur Lewis Community College
SASAP	Sectoral Adaptation Strategy and Action Plan
SAT	Soufriere Action Theatre
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice
SCP	Sustainable Consumption and Production
SDG	Sustainable Development Goals
SEA	Strategic Environmental Assessment
SEEA	UN System of Environmental Economic Accounting
SFA	Special Framework of Assistance – European Union
SFM	Sustainable Forestry Management
SGD	St George's Declaration of Principles for Environmental Sustainability in the OECS
SIDS	Small Island Developing State
SLASPA	Saint Lucia Air and Seaports Authority
SLFD	Saint Lucia Forestry Department
SLHTP	Saint Lucia Heritage Tourism Programme
SLHTA	Saint Lucia Hotel and Tourism Association
SLNT	Saint Lucia National Trust
SLM	Sustainable Land Management
SLR	Sea Level Rise
SMART	Specific, Measurable, Achievable, Relevant, Time-bound
SMMA	Soufriere Marine Management Area
SMMAssoc.	Soufriere Marine Management Association
SMME	Small, Micro and Medium Enterprise
SNA	System of National Accounts
SNC	Second National Communication on Climate Change
SOER	State of the Environment Report for Saint Lucia
SPCR	Strategic Plan for Climate Resilience
SPPA	Systems Plan for Protected Areas
SPAW	Specially Protected Areas and Wildlife (Protocol)
STI	Science, Technology and Innovation
TEEB	The Economics of Ecosystems and Biodiversity
TNC	The Nature Conservancy
TSS	Total Suspended Solids
TT	Tracking Tool (GEF)
UN	United Nations
UNCCD	United Nations Conference to Combat Desertification.
UNCLOS	United Nations Convention of the Law of the Sea
UNDP	United Nations Development Programme
UNECLAC	United Nations Economic Commission for Latin America and the Caribbean
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
UWI	University of the West Indies

V&A	Vulnerability Assessments
VAT	Value Added Tax
VCA	Vulnerability and Capacity Assessment
VU	Vulnerable
WASCO	Water and Sewerage Company Inc
WAVES	Wealth Accounting and Valuation for Ecosystem Services
WB	World Bank
WBT	White-breasted Thrasher
WCPA	World Commission on Protected Areas
WHC	World Heritage Centre (UNESCO)
WHO	World Health Organization
WIDECAST	Wider Caribbean Sea Turtle Network
WIPO	World Intellectual Property Organization
WTO	World Trade Organization
WWF	World Wildlife Fund

1.0 INTRODUCTION

1.1 Rationale

Saint Lucia is a small volcanic island located at latitude 13° 59' N, and 61° W, within the Eastern Caribbean. Considered a Small Island Developing State, its total land area is approximately 616 km^2. This small island, however, possesses a high degree of biodiversity, exhibited in the types of ecosystems and habitats, and also in the variety of biological resources present, some of which are endemic to the country. Biodiversity plays an important role in providing food, shelter, medicines and clothing, and also performs regulating and supporting services including nutrient cycling and the provision of sustainable livelihoods in agriculture, tourism and many other potential sectors.

Biological diversity is the variety of life on earth, from the simplest bacterial gene to the vast, complex rainforests, and human beings are an integral part of this diversity.

The 1st National Biodiversity Strategy and Action Plan (NBSAP) was completed and approved by the island's Cabinet of Ministers in September 2000. However, despite the extensive implementation of a range of varied projects, the actions taken to implement the Convention were not sufficient to allow for the 2010 Biodiversity Target[3] to be achieved. The island therefore continued to witness declines in certain gene, species and ecosystem diversity, particularly with respect to the "dry" forest, as the intensity of the pressures on biodiversity in these ecosystems increased. Nevertheless, the country was still able to boast of positive and favourable reversals in trends for species such as the Saint Lucia Parrot, the *Latanyé* palm, the Saint Lucia whiptail lizard and the black long-spined sea urchin.

According to Saint Lucia's Fourth National Report to the Convention on Biological Diversity, the first NBSAP served to stimulate actions on many fronts having generally impacted positively on biodiversity; particularly with respect to restoration and to a lesser extent, protection/preservation.

The NBSAP is a process by which countries can plan to address the threats to their biodiversity. As such they are the principal instruments for the implementation of the Convention on Biodiversity both at the national and at the global level. While the concept and understanding of an NBSAP continues to evolve, it remains relevant as shorthand for implementation of Article 6 of the Convention

[3] In April 2002, the Parties to the Convention on Biodiversity committed themselves to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on Earth.

By ratifying the Convention on Biological Diversity ('CBD' or 'the Convention'), States have agreed that biodiversity is a common concern of humankind and have committed themselves to conserving and sustainably using biodiversity and to fairly and equitably sharing the benefits arising from the use of genetic resources.

Article 6(a) of the CBD requires all Parties to the Convention to develop an NBSAP or its equivalent. The strategy is intended to be a roadmap for how each country intends to fulfil the objectives of the Convention in light of its specific national circumstances. The related action plan constitutes the sequence of steps to be taken to meet the goals of the strategy.

Prip, C; Gross, T; Johnston, S; Vierros, M (2010).*Biodiversity Planning: an assessment of national biodiversity strategies and action plans*. United Nations University Institute of Advanced Studies, Yokohama, Japan.

However, new and emerging issues, which had not been considered priorities, but which were increasing in significance, prompted the revision of the first NBSAP in 2008[4], together with the revised strategy and action plan, herein referred to as the second National Biodiversity Strategy and Action Plan (Second NBSAP). The Second NBSAP sought to address many of these critical issues by focusing on re-orienting and scaling up actions to tackle the root causes of biodiversity loss.

The main obstacles identified in the Second NBSAP continued to be limited capacity and, at times, inadequate political and administrative will, to ensure better resource allocation and development of the human resource. In addition, lack of sustained public education and sensitization at all levels was also identified as a challenge.

Subsequent to the formulation of the Second NBSAP in 2008, there have been new and emerging issues on the international front. These include the twenty (20) Aichi Target of COP 10 in 2010, the Nagoya Protocol on Access and Benefit Sharing (ABS) and the need for synergies amongst Rio Conventions and the related biodiversity conventions such as CITES and Ramsar.

Pursuant to the new and emerging issues at the national and international levels, the Dept of Sustainable Development sought to (a) update its revised 2008 NBSAP; and (b) prepare its Fifth National Report for submission to the Secretariat of the Convention on Biological Diversity.

1.2 Objectives of the Revised NBSAP

The 10th meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD COP 10) saw the adoption of the new Strategic Plan for Biodiversity 2011-2020 (Decision X/2) and its Aichi Biodiversity Targets. Decision X/2 explicitly invites parties to translate this overarching framework into ***updated and revised NBSAPs***.

[4]The European Union (EU), under the Special Framework of Assistance (SFA 2003) programme, which is targeted at Natural Resource Management, agreed to assist Saint Lucia in enhancing its biodiversity management portfolio.

The primary objective for the revision of the NBSAP is the incorporation of biodiversity and ecosystem service values into the NBSAP that will assist the country in developing a revised Strategy, which is compliant with the following key targets:

- Aichi Target 1: By 2020, at the latest, people are **aware of the values of biodiversity** and the steps they can take to conserve and use it sustainably.
- Aichi Target 2: By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.

It is felt that incorporating the values of biodiversity and ecosystem services into Saint Lucia's NBSAP can result in a multitude of related benefits ranging from **biodiversity mainstreaming** (ensuring that biodiversity is taken into account in other sectoral policies), to achieving **national outcomes** (e.g. meeting environmental objectives, supporting economic development, improved policy coherence and governance), to **improving human well-being** at local, national and global scales.

1.3 NBSAP Revision Process and Stakeholder Involvement

The process for the revision of the NBSAP involved a document review and a series of stakeholder consultations at all levels: National, sector, agency, community and individual. The output of the stakeholder consultations formed, in the most part, the basis for the updating/revision of the NBSAP. This updating and revision of the NBSAP will provide the guide for a national programme for biodiversity management in the country; and the preparation of the 5th National Report on Biodiversity to the COP.

1.3.1 Approach to NBSAP Revision Process

The approaches used in preparing the Revised Second NBSAP included the following:

- Use of a Participatory Approach

A stakeholder map, which identified the entire range of stakeholders at the national, sectoral, agency and community levels, was first created. Then, the stakeholders who were identified as key to biodiversity management and conservation were invited to consultations and focus group meetings throughout the country. Focus Group Discussions (FGDs) were used to facilitate consultations with public sector agencies involved in biodiversity and natural resources management. National and community level consultations were convened to further engage other agencies, organisations, community groups and individuals. Four national consultations were held in the four quadrants of the island: North, South, East and West. Additionally, community group discussions facilitated by cultural heritage groups were held in biodiversity-rich communities in the North-East and West-Central communities, respectively. The Stakeholder Analysis, Lists of participants and conclusions and recommendations from the various stakeholder consultations are presented in Annex 4.

One-on-one interviews and electronic message exchanges/discussions were other methods used to further engage stakeholders at an individual level. The FGDs and other methods were guided by a structured questionnaire and probe questions (This is available as Appendix 3 of the Stakeholder Report which is available under separate cover and summarized in Annex 4 here). A follow-up survey was conducted during the final review in 2018 and is also appended in Annex 10.

The consultation process was promoted through several Public Service Announcements (PSAs) prepared by the PEO Consultant, Accela Marketing, which sought to heighten the interest of parties and encourage their participation.

In some cases, where documentation was limited or unavailable, institutional memory and oral history (*l'histoire*) were sought and utilised, particularly with regard to issues of traditional knowledge and cultural heritage.

- Use of a Results-Based Approach

A results-based approach to programme management was utilised to formulate the biodiversity programme as part of the Second NBSAP. This approach was used to

  - Provide realistic results.
  - Identify beneficiaries, their needs and priorities.
  - Develop a monitoring and evaluation process, including identification of appropriate performance indicators.

- Building on Conditions Precedent

The aims and objectives of the previous NBSAPs were found to be still relevant to biodiversity management in Saint Lucia since they were aligned to the objectives of the CBD. Consequently, it was agreed that these objectives must of need, be embodied in the Revised Second NBSAP and serve as reference points in the proposed results based approach that is used in the Revised Second NBSAP.

There are also some key sector policies that have been developed that include conservation of biological resources as a major policy element. These include the National Environmental Policy (NEP), the Agriculture Sector Policy and Strategy, the Water Policy and the Land Use Policy. Some of these policies have already been adopted by the Cabinet of Ministers and a few are currently being implemented. The Revised Second NBSAP thus gives cognisance to these policies; drawing on the principles enshrined therein, in particular the NEP/NEMS, which is considered the overarching environmental instrument for integrated national development planning.

- Incorporating Situational Analyses

During the process of revising the Second NBSAP, consideration was given to the fact that a number of events and changes have occurred since the Second NBSAP was developed starting in 2008, *inter alia*:

i. The recently-adopted Strategic Plan for Biodiversity (2011-2020) and its associated goals, the twenty (20) Aichi Targets and indicators emanating from COP 10 in 2010; to ensure that the national targets, principles and main priorities take these into consideration.
ii. Integration of Biodiversity into poverty eradication, national development, national accounting, economic sectors and spatial planning processes, the Millennium Development Goals.
iii. Integration of local communities into the discussions and decision-making.
iv. Promotion of gender equality in achieving the three objectives[5] of the Convention.
v. Issues on the Nagoya Protocol on Access and Benefit Sharing.
vi. Issues of synergies amongst Rio Conventions and other biodiversity related conventions and agreements such as CITES and Ramsar.

1.3.2 Methodology

The methodology used for the revision of the Second NBSAP for Saint Lucia entailed the following:

i. A consultative process, throughout the country, to assess the accomplishments or activities related to biodiversity and ecosystems management undertaken at the national level since the Second NBSAP.
ii. Review of Second NBSAP to identify any issues that were raised, that are still pertinent and remain unaddressed and which will inform the revision of the NBSAP; and the identification of gaps and limitations, particularly with regard to emerging issues that are gaining prominence, and deemed critical to biodiversity.
iii. Identification of challenges faced in the implementation of the Second NBSAP and any lessons learned that will help in the design of the implementation framework for the Revised Second NBSAP.
iv. Review and consideration of how to incorporate the Global Strategic Plan for Biodiversity 2011-2020 and its Aichi Targets.
v. Recommendation of appropriate actions to address issues and challenges that have been identified.
vi. Elaboration of a framework for implementation of the Revised NBSAP.
vii. Pursuit of stakeholder endorsement of the Second NBSAP, including approval by the Cabinet of Ministers.

Further, during the process for the revision of the Second NBSAP, critical issues relating to the national obligations under the CBD and relating conditions and priority actions were identified, including:

- Preparation of an action plan with realistic targets aligned to the twenty Aichi Targets and measures for monitoring and evaluating progress towards attainment.

[5] The objectives of this Convention, to be pursued in accordance with its relevant provisions, are (i) the conservation of biological diversity,(ii) the sustainable use of its components and (iii) the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.

- Identification of mechanisms for integrating biodiversity values into national development planning, including at sector, community, business and individual level.

- Identifying the necessary implementation framework, with recommendations for strengthening the institutional arrangements necessary for coordinating the implementation of the revised Second NBSAP, including the clearing house mechanisms and mechanism for monitoring, evaluation and reporting with appropriate indicators;

- Identification of supporting capacity needs, technology needs and mechanisms for resource mobilization for implementation of the Revised Second NBSAP.

- The formulation of a more broad-based communications and education public awareness (CEPA) strategy to support the implementation of the revised NBSAP. The purpose of this CEPA is to promote public education and sensitization at all levels, and especially to assist in attaining an improvement in outlook at the policy making level, and enhance participation in conservation and sustainable use of biodiversity by private sector, communities, and individuals.

1.4 Other Emerging Issues

Subsequent to the formulation of the Draft Second NBSAP in 2008, there have been new and emerging issues at the global, regional and national level.

The revised Global Strategic Plan for Biodiversity (2011-2020) included twenty Aichi Targets of COP 10 in 2010, the Nagoya Protocol on Access and Benefit Sharing (ABS) and the need for synergies amongst Rio Conventions and the related biodiversity conventions such as CITES and Ramsar Convention on Wetlands. Ongoing changes in policy, governance, trading arrangements and other related events continue to take place since the Draft Second NBSAP and still need to be addressed.

Other impacting issues for biodiversity management include Climate Change, Disaster Risk Reduction, Invasive Species, Bio-Economics, Sustainable Development Goals, Sustainable Consumption and Production and Biodiversity Financing Mechanisms (BFM). Some of these issues are reflected in the current dialogue on biodiversity summarized below:

1. Outcomes of 7th Trondheim Conference on Biodiversity – Norway, May 2013
   - Ecology and Economy for a Sustainable Society
     - Invest in biodiversity for human well-being and development
     - Recognising and measuring the true values of biodiversity and ecosystem services
     - Understanding the interplay between ecology, economy and society
     - Aligning policies, incentives and business within safe ecological limits
2. Post 2015 Development Agenda Global/National

- 12 goals to manage transformative shift for sustainable development for prosperity
- Goal 9 – to manage natural resource assets sustainably, including by safeguarding ecosystems, species and genetic diversity

3. Green Economy: Global/National
    - Promotion of Sustainable Consumption and Production (SCP) through
    - Promoting sustainable environmental practices in tourism sector and strengthening linkages with other sectors
    - Modifying unsustainable practices in agricultural sector – especially agro-chemical use
    - Transforming energy sector
    - Developing and implementing a new transport policy
    - Building the cultural industries sector
    - Adjusting fiscal policy
4. Sustainable Financing
    - New Revenue Mechanisms
    - Improve Partnerships: Strategies and Fundraising
    - Strategic Marketing and Branding
    - Data Analysis and Synthesis- Application for Sustainable Finance
    - Business Plan Use
5. The Economics of Ecosystems and Biodiversity (TEEB): Mainstreaming the Economics of Nature/and alignment with Aichi Targets
    a. Make nature's values visible e.g.
        - How to invest in ecosystems for climate change adaptation
        - How biodiversity development policy and poverty alleviation
    b. Protected Areas offer value for money
6. SEEA – UN System of Environmental Economic Accounting allows for integration of natural wealth with assessment of economic performance; consistent with system of national accounts (SNA – GDP).
7. Cooperation and Collaboration

- Mechanisms for international development cooperation and transboundary or regional cooperation still require strengthening.
- Opportunities for south-south cooperation are being explored but this has been limited by funding.

These elements and issues will be considered in the FINAL Second NBSAP.

2.0 BACKGROUND

2.1 Biodiversity Status and Trends

Saint Lucia is home to a vast array of diversity among the genes, species and ecosystems, some of which can only be found here. The country's Fifth National Report to the CBD provides a detailed description of the status and trends of biodiversity in the country at the time of preparation of this Revised Second NBSAP. The following sections, however, provide an overview of biodiversity status and trends, setting the scene for the updated NBSAP and the rationale for the strategy and actions contained in the Plan.

2.1.1 Biodiversity, Society and the Economy

The island's rich biological resources are mainly used for food, livelihoods, industry and ecosystem services and are therefore critical for human well-being and socio-economic development.

PRINCIPAL ECOSYSTEMS

The following are the key ecosystems of importance to Saint Lucia:

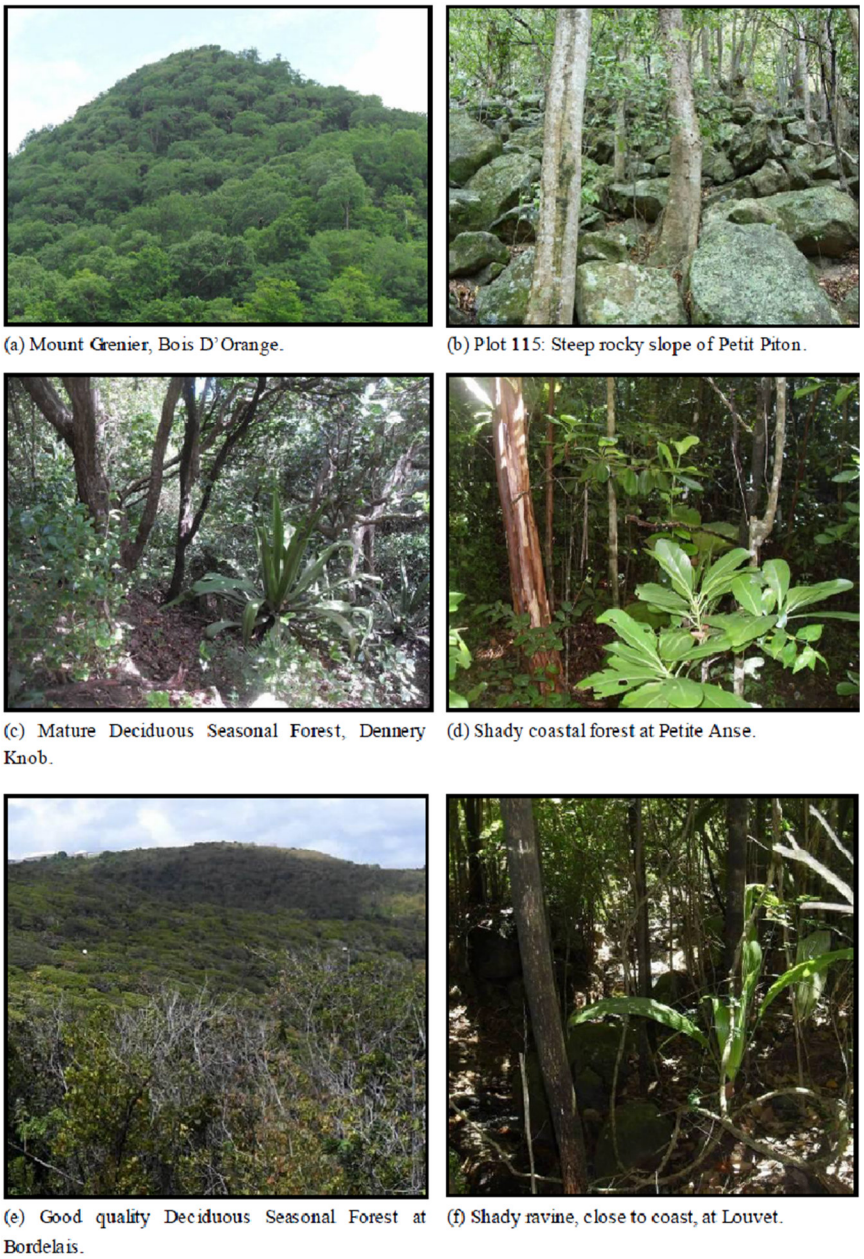
- Forest and Terrestrial Wildlife Ecosystems
- Coastal and Marine Ecosystems
- (Inland Waters) Fresh Water Ecosystems
- Agricultural (Agro-) Ecosystems

Saint Lucia's rugged terrain has resulted in the occurrence of a range of natural life zones which display heterogeneity and a rich diversity of ecosystems. Seventeen (17) major vegetation types with respect to forest cover, ranging from a very xeric littoral shrub land and mangroves on the coast to a lush rainforest and elfin shrub land in the high peaks have been identified[6]. About one third of the forest area is in government forest reserves, with the remainder under private ownership.

[6] Graveson, Roger (2009) The Classification of the Vegetation of Saint Lucia. National Forest Demarcation And Bio-Physical Resource Inventory Project Caribbean–Saint Lucia SFA 2003/SLU/Bit-04/0711/EMF/LC

The natural forested areas[7] make a significant contribution to the interception of rainfall allowing infiltration into the sub surface thereby contributing to sustaining base flows in the river systems beyond the rainy periods. The various habitats are also home to a diverse range of floral and faunal species.

Saint Lucia's coastal zone and marine ecosystems are characterised by mangroves, seagrass beds, coral reefs and beaches which not only play an increasingly important role in tourism but also are an integral component in natural coastal defence and ecology of the island. Coastal and marine resources also provide for livelihoods in fisheries in several rural communities and for recreation, sports and enjoyment, and overall source of employment for many people.



(a) Mount Grenier, Bois D'Orange. (b) Plot 115: Steep rocky slope of Petit Piton.

(c) Mature Deciduous Seasonal Forest, Dennery Knob. (d) Shady coastal forest at Petite Anse.

(e) Good quality Deciduous Seasonal Forest at Bordelais. (f) Shady ravine, close to coast, at Louvet.

Figure 1: Deciduous Seasonal Forests in Saint Lucia

Credit: Graveson

[7] The rainforest areas are dominantly the central regions of the island with cultivated areas surrounding these areas and extending outwards to the coastal regions.

The freshwater ecosystems, including land and water resources, are important to human livelihoods and wellbeing, providing habitats for many species including fishes, molluscs, amphibians, reptiles, insects, plants and mammals.

Figure 2 Marine resources with economic value
Credit: celebrationsinternationaltravel.com

Agricultural ecosystems provide habitats for a wide range of crop species including a wide variety of vegetables, horticultural and fruit crops. Livestock production has been focused largely in poultry and pigs, and, to a lesser extent, cattle and small ruminants. There have been some introductions of new genetic material, particularly with respect to horticultural crops and breeds of livestock.

History and culture are responsible, in many respects, for the peculiar patterns of land tenure, ownership and property rights that currently prevail in Saint Lucia. With the exception of the rainforest and montane forest formations, terrestrial environments are significantly impacted by human activity. Social, cultural and economic factors have also been identified as shaping the conservation, use and management of the island's biological resources.

Figure 3: Small holder cultivation of tomatoes in Saint Lucia

Credit FAO

A summary of the wide ranging and varied ecosystem services within the current national context is provided in **Table 1.**

Table 1: Key Ecosystem Services for Saint Lucia

Provisioning services	Regulating services	Supporting services	Cultural services
• food(including seafood and game), crops, wild foods, and spices • water production • pharmaceuticals, biochemicals, and industrial products • energy (hydropower, biomass fuels)	• carbon sequestration and climate regulation • waste decomposition and detoxification • purification of water and air • crop pollination • pest and disease control	• nutrient dispersal and cycling • seed dispersal • primary production • public health	• cultural, intellectual and spiritual inspiration • recreational experiences (including ecotourism) • scientific discovery

The Economy and Society

The country continues to pursue a path of economic diversification focused on the sustainable development of tourism and agriculture, fisheries and forestry, complemented by industries such as construction, manufacturing and Information and Communication Technology.

The island's small population (approximately 164,464) is concentrated largely along the coastal belt, where lowland agriculture and coastal resources are the main sources of livelihood. The rural areas of the island, particularly in the north-west, are rapidly becoming urbanised and approximately 60% of the population now reside along the north-west corridor, resulting in denser populations living in unplanned or informal settlements. Country data for 2011 show good social indicators, including low levels of maternal and infant mortality, universal primary and secondary education, low fertility, and increasing life expectancy. However, these exist alongside high and increasing levels of poverty – 25.1% in 1995 and 28.8% in 2005/06[8]. The Poverty Assessment identified the ripple effect of the decline in banana earnings into other areas of the economy, spreading poverty beyond the agricultural sector and contributing to increased poverty and vulnerability in rural communities. Important to note also, is the positive correlation demonstrated between the incidence of poverty and vulnerability to impacts of disasters, particularly that arising from the impacts of climate change and climate variability, rainfall changes (floods and drought), sea level rise and increased storm surge.[9]

Over the past decade-and-a-half, tourism has become the leading foreign exchange earner, contributing significantly to Gross Domestic Product and total exports of goods and services. In 2012, tourism contributed US$ 169 million directly to the GDP of Saint Lucia, representing a 13% contribution to the economy[10]. Furthermore, tourism contributes to the protection, preservation and enhancement of natural and cultural heritage in Saint Lucia. Tourism is also an important employer, representing 18.6% of employment. Tourism therefore, plays an important role in the economic, socio-cultural and environmental welfare of Saint Lucia. The tourism sector, however, continues to be challenged by the continued sluggish global economic recovery and loss of airlift, particularly from the US, the main source market.

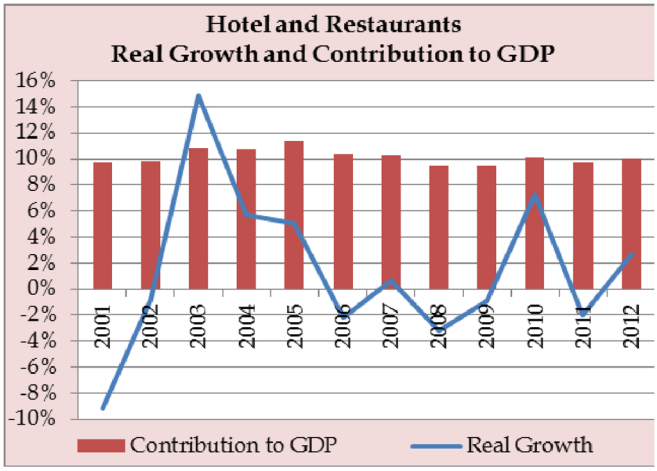


Figure 4: Trends in the tourism sector

Source: Saint Lucia Social and Economic Review, 2012

Saint Lucia's ability to derive long-term benefits from tourism is clearly dependent on the sustainable use of its natural resources and control of the negative impacts that tourism can have

[8] Saint Lucia Poverty Assessment Report (2005/06)
[9] UNISDR Global Assessment Report 2011: Revealing Risk, Redefining Development. Geneva, Switzerland.
[10] WTTC Country Report, 2012

on the environment. While traditionally, tourism has been seen to be destructive of the environment because of the tendency to build beach front properties, tourism now contributes to the protection, preservation and enhancement of natural and cultural heritage in Saint Lucia. The sector has been involved in numerous sustainable tourism initiatives focusing on greening the industry, such as in-house environmental audits as part of the Environmental Audits for Sustainable Tourism Project and the establishment and use of various environmental management programmes and systems including Green Globe 21, Blue Flag, ISO 14000 and Quality Tourism for the Caribbean. The Saint Lucia Heritage Tourism Programme was also instituted on the island to further advance the sustainable agenda at the local community level in the use their physical, cultural and heritage assets for tourism development, resulting in better stewardship of those assets whilst enhancing livelihood options.

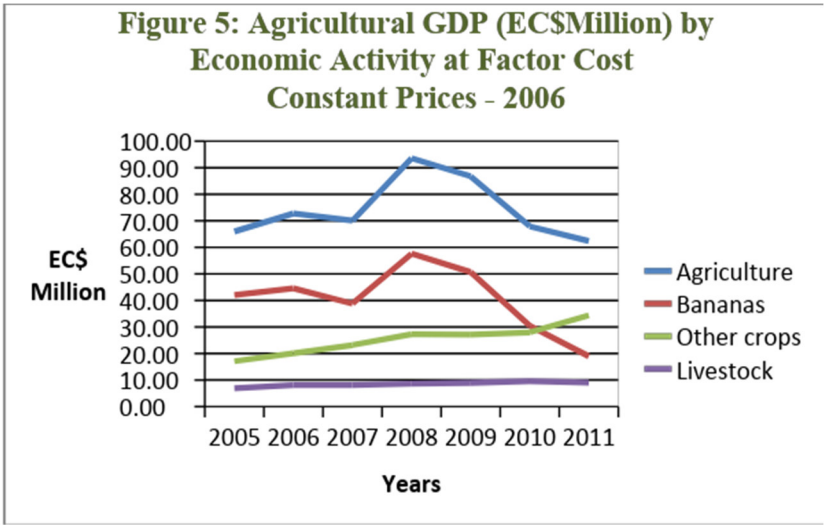


Figure 5: Agricultural GDP (EC$Million) by Economic Activity at Factor Cost Constant Prices- 2006

The context for biodiversity management in the agricultural sector is one in which ongoing declines in total crop production (**Figure 5**) continue to be reported. This is attributed largely to the decline in traditional crop enterprises, in particular permanent tree crops and bananas. It should be noted, though, that alongside the decline in acreages of the banana monocrop, an increase in production of other crop commodities was recorded; even following the passage of Hurricane Tomas, which also severely affected crop and livestock production.

The general decline in agriculture due to global trade issues such as the dismantling of the preferential access to the EU for ACP bananas, increase in cost of inputs, limited access to credit, the passage of Hurricane Tomas and outbreaks of diseases - the most recently introduced and devastating one being Black Sigatoka caused by the fungus *Mycosphaerella fijiensis* - has undermined farmer confidence in the industry and contributed to the abandonment of farms. Farm hectarage and number of producers decreased from approx. **2900 hectares** (1500 farmers) in 2010 to less than **2000 hectares** (950 farmers) in 2012. These resulted in many of the agricultural lands being left to fallow. The return to fallow of some farms may be considered a positive consequence for marine and fresh water resources, due to reduced pollution in water sources from agrochemicals. However, it is felt that the abandonment of farms may have had negative impacts on terrestrial resources including agricultural biodiversity. In some cases, agricultural land was converted to non-agricultural uses leading to fragmentation of habitats, and clearing of trees and ground cover with potential adverse impacts on the species and ecosystems.

Despite the pursuit of sustainable agriculture through the institution of good agricultural practices such as EUREP-GAP, agro-ecosystems continue to be under threat from changes in land use, driven by declines in population size of major species such as bananas and plantains. Other crop species recording population declines include coconuts, paw-paw, dasheen and tomatoes. Loss in honey production, due to Varroa mite (*Varroa destructor*) disease of queen bee, has also been reported.

There appears however, to be an increase in the cultivation of traditional crops such as cocoa and breadfruit by farmers and householders. Backyard gardening is heavily promoted by the Dept of Agriculture. "*Jardin Kweyol"* is being promoted by the Folk Research Centre to assist in poverty reduction initiatives.

Figure 6: Orchids being propagated by the Plant Tissue Culture Unit

Credit: Plant Tissue Culture Unit, Saint Lucia

The introductions of new hybrid varieties of crops such as sweet potato, sorrel and pineapples, as well as ornamentals such as orchids, are cause for concern, particularly with regard to the increasing use of biotechnology (e.g. tissue culture technology) and the implications for future management of agro-biodiversity. Reported increases in production of livestock species such as pigs, poultry and small ruminants (sheep and goat) are similarly of concern.

Businesses specializing in commercial natural herbal remedies are operating using a wide range of plant biological resources. Health and wellness treatments, including the use of herbal medicine continues to form an important part of the health services of Caribbean societies but has hitherto remained unrecognized and thus, under-valued. Alternative/complementary medicine, and health and wellness spa experiences, are an emerging niche market currently attracting a great deal of attention in the Caribbean Region and internationally, with great potential still to be tapped.

Sustainably managed fisheries is viewed as a cornerstone of the national economy; providing jobs, food security and business opportunities, particularly for persons who live in coastal communities and who have traditionally derived sustenance and livelihood from the sea. Further, the fishery sector is the number one provider of nationally produced protein important for food and nutrition security.

Coral reefs and wetlands remain under threat from developmental pressures. Declining fisheries, especially reef fisheries, is reported. This decline has been partly attributed to over-fishing and habitat destruction due to pollution of receiving waters (sediment and pesticides). Changing

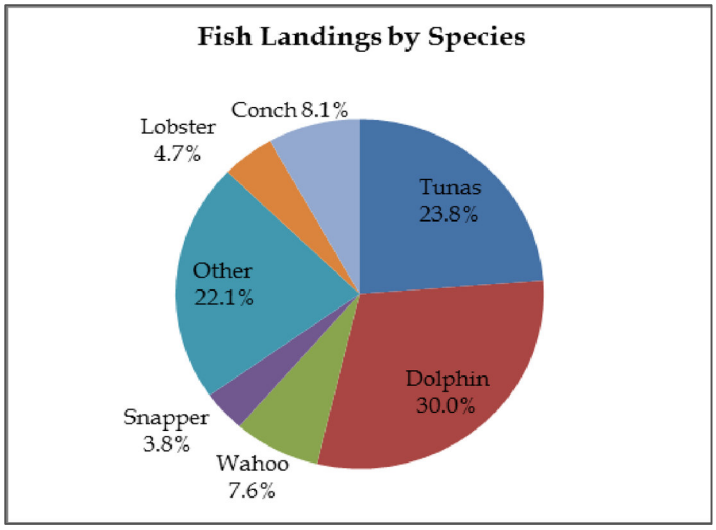


Figure 7: Fish Landings by Species

climatic conditions have also been considered as contributing in part to changing the migration patterns of for example, flying fish.

An analysis of fish landings by species revealed declines in the volume of tuna (18.4 percent), kingfish (23.1 percent) and flyingfish[11] (83.7 percent). On the other hand, increases were recorded in the volume of dolphin[12], black fish and other species landed. There is also concern regarding declining stocks of lobster and conch and seamoss farmers also report declining stock. Aquaculture is, however, being increasingly practiced as a farming method for imported *Tilapia* and shrimp.

Saint Lucia's relatively small manufacturing sector is characterized by Small, Micro and Medium Enterprises (SMMEs). Most of the output of these enterprises is geared towards local consumption, thus playing a traditionally major part in the alleviation of poverty and creation of wealth. The manufacturing sector over the last few years continued to be adversely impacted by the lingering effects of the global economic crisis and competitiveness issues, manifested in sluggish domestic and external demand. In addition, the performance of the sector was restrained by high operating costs, particularly energy, labour and rising imported prices of inputs. The closure of the coconut oil factory in 2011 has implications for opportunities for value added in the sector.

Saint Lucia being a Small Island Developing State (SIDS) with a vulnerable economy, places special importance on its forest and wildlife resources for the variety of products and services which they provide, and which support the spectrum of social and economic activities[13] of the island. Forest resources are not only crucial to maintaining key ecosystem functions such as the conservation of water and soil resources, but also provide key habitat protection for biological diversity. The forest sector also supplies some of the local demand for timber and many non-timber forest products (NTFP) and is an increasingly important contributor to the tourism sector through ecotourism, catering to both foreign and local visitors.

[11] The volume of flyingfish landed has been declining steadily over the last five years and in 2012 dropped further to 4.0 tonnes from a 22.0 tonnes in 2011.

[12] Coryphaena hippurus

[13] UNDP, 2010.Importance of biodiversity and ecosystems in economic growth and equity in Latin America and the Caribbean: an economic valuation of ecosystems.

Figure 8: Harvesting the L'encens tree

Credit: Globaltrees

The forestry sector continues to be managed from a conservation standpoint: The forest is used more for protection than production and selective felling of timber continues to be promoted, as opposed to clear felling. Sustainable harvesting is also promoted for non-timber forest products and the Forestry Department is currently working with Fauna and Flora International (FFI) in helping local communities to develop a sustainable harvesting programme for the l'encens tree, a globally threatened rainforest tree whose valuable resin is used for incense in religious ceremonies. This involves researching technologies for the extraction of incense from the bark of the l'encens tree without killing the tree.

While there has not been a recent update, anecdotal evidence speaks to a decline in the timber inventory with regard to some trees species, particularly since the damage wreaked by Hurricane Tomas in 2010. At the same time, emerging also are several species now recognized for potential economic opportunities: F. Prescott and Laurent Jn. Pierre (Personal communication) and a promotion of the Balembouche Estate on its website highlighted the historical cultivation and use of **jiquilete** (*Indigofera suffruticosa Mill.)* for dyes. Laurent Jn Pierre (Personal Communication) also detailed the following species that are used for making dyes in Saint Lucia:

- Jagua (*Genipa americana* L.)
- Bija (achiote) (*Bixaorellana L.*)
- Campeche (*Haematoxylum campechianum* L.)
- Rubia de Tintes o Granza (madder) (*Rubia tinctorum L.*),
- Henna, *Lawsonia inermis*
- *Renealmia alpinia* used to dye red plant fibres
-

Figure 9: Saint Lucia Racer Snake

Credit: FFI

In response to a local request, the FFI is also developing a new initiative to save the little-known Saint Lucia Racer, which is now claimed to be the world's rarest snake due to predation by Asian mongooses and other alien predators.

The spatial distribution of some of Saint Lucia's key marine and terrestrial biological resources is depicted in Figure 10. These include endemic birds, mangroves, turtles, parrots and protected forest reserves.

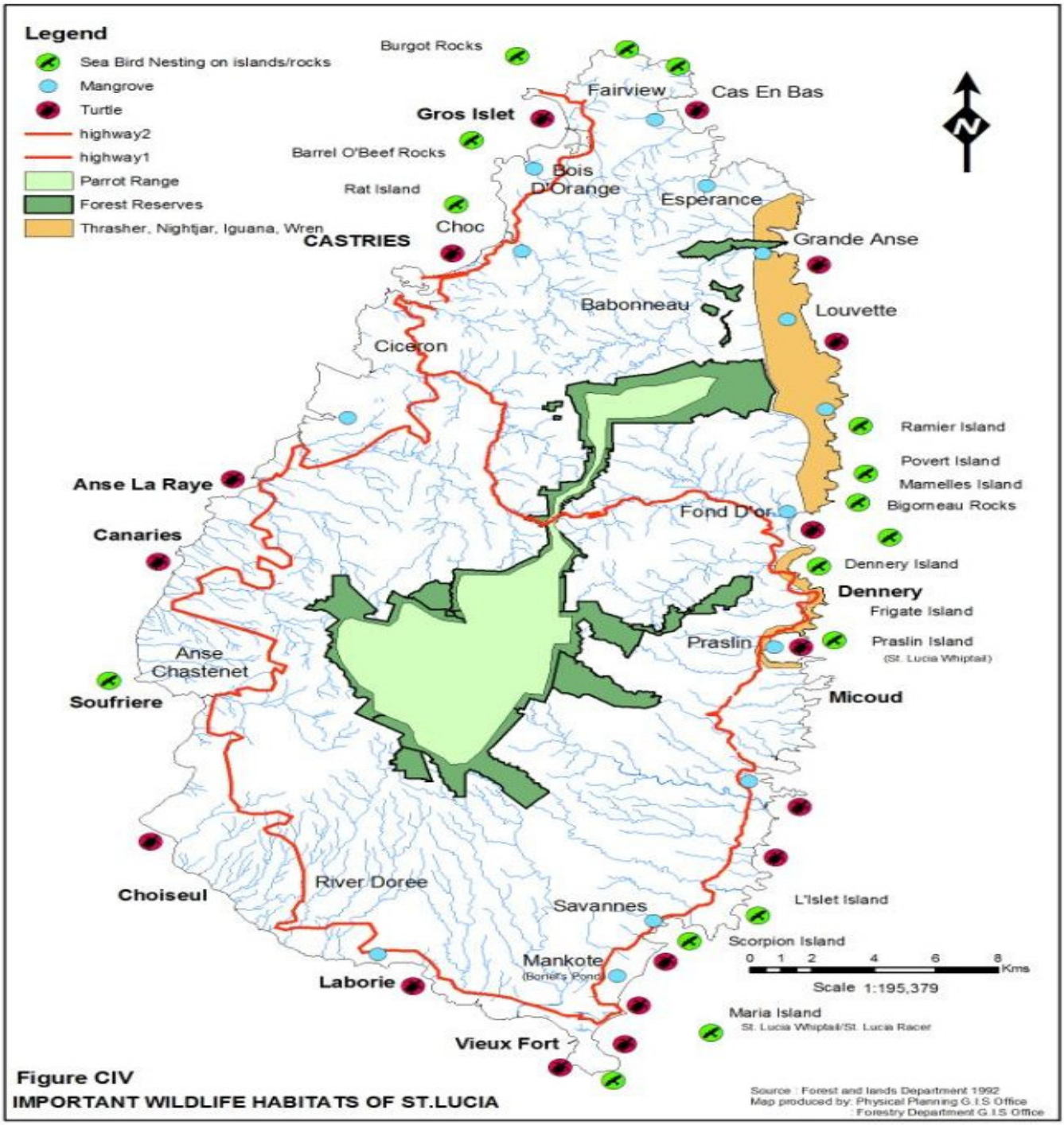


Figure 10: Important Wildlife habitats of Saint Lucia

Credit: Division of Forest and Lands Resources Development

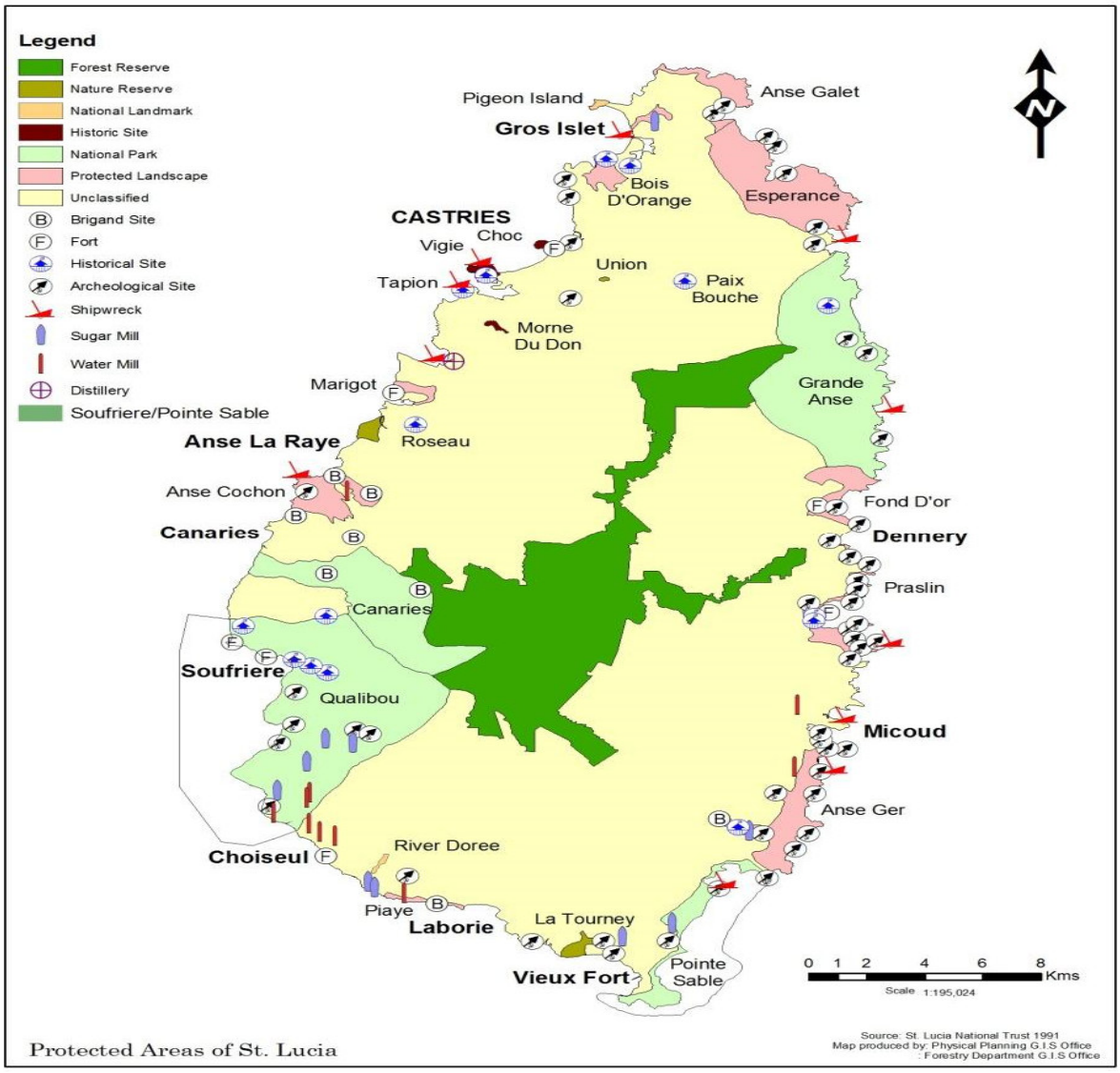


Figure 11:Protected Areas of Saint Lucia

Credit: Division of Forest and Lands Resources Development

The Saint Lucia National Trust has completed the revision of the Systems Plan for Protected Areas for Saint Lucia which seeks to conserve the island's natural and cultural resources for continued livelihoods support and for the socio-economic and recreational benefit of current and future generations of Saint Lucians and its visitors. The Trust is attempting to assess and strengthen the existing legislative framework for protected areas before submitting the Plan for Cabinet Approval in the 2016/2017 financial year. Figure 11 outlines protected areas in Saint Lucia. These areas range from historic and archaeological sites to forest and marine reserves and national parks.

Community-based and nature-based tourism initiatives are also on the rise. Eco South Tours, for example, is a private company in the South of the island whose members provide ecotourism activities including (a) Hiking along the Mankòtè Mangrove Trail; (b) Cultural activities/entertainment at Mankòtè Mangrove; (c) Study trips/tours of the Maria Islands Nature

Reserves; (d) A Native Fishing Tour; (e) Handicraft production, demonstration and sales; (f) Horse-back riding; and (g) Seamoss harvesting.

Figure 12: Livelihood opportunities practiced by Eco South Tours

Credit: Saint Lucia National Trust

The island's economy has the potential to benefit from the sustainable use of the agricultural produce for agro-processing; forestry and wood products for handicrafts and construction, as well as imported raw materials for garments, drinks, beverages, alcohol.[14]. At the same time, while potential for large-scale agricultural and food production for domestic consumption the potential for large-scale agricultural and food production for domestic consumption is limited, the tourism industry offers considerable potential for expanding consumption of locally-produced agricultural and other biodiversity-friendly goods and services.

Wealth Accounting and the Valuation of Ecosystem Services (WAVES) is a global partnership that aims to promote sustainable development by ensuring that natural resources are mainstreamed in development planning and national economic accounts.

This global partnership brings together a broad coalition of UN agencies, governments, international institutes, nongovernmental organizations and academics to implement Natural Capital Accounting (NCA) where there are internationally agreed standards and develop approaches for other ecosystem service accounts.

Saint Lucia's participation in the Wealth Accounting and Valuation of Ecosystem Services (WAVES) Project coordinated by the World Bank provides an opportunity for creating requisite mechanisms for valuing biodiversity to allow for integration into the country's economic development model. The WAVES project is aimed at promoting sustainable development worldwide through the implementation of comprehensive wealth accounting that focuses on the value of natural capital and integration of "green accounting" in more conventional development planning analysis.

[14]Canari, 2010.The Status of Sustainable Consumption and Production in Saint Lucia.

GENDER AND UNEMPLOYMENT

The CBD Secretariat promotes enhanced gender mainstreaming in the development of NBSAPS, noting in the opening text of the Convention, the vital role of women in conservation of biodiversity and encouraging the participation of women in policy making. In Saint Lucia over 40% of households are headed by women who have the main responsibility for the economic welfare of their families. Women's participation in the various economic sectors, either as farmers, fishers, agro-processors or small business operators is thus inextricably linked to biodiversity management and use.

Gender-differentiation of responsibilities in combating biodiversity loss is not very stark in Saint Lucia as it is in some other developing countries. Saint Lucian women are primarily caretakers. They often lead household /community management by controlling consumption patterns, cooking, managing household waste, and providing healthcare through traditional medicines. Some women are also natural resource managers and have developed thriving enterprises from biodiversity goods: example sea moss cultivation and production and broom-making. Men, on the other hand, tend to be exploiters of the biodiversity resources through illegal logging, poaching, hunting, sand mining and such other activities. The role and participation of men will be considered in developing plans for effective biodiversity management.

Generally, unemployment among women and youth is much higher than the corresponding level for men, especially those with a primary school education and with few marketable skills. It is imperative, therefore, that due consideration be given to ensuring increased livelihood opportunities do not promote the domination of any gender over others, but facilitate the overall participation of women, men and youth.

Biodiversity and Cultural Values and Human Health

According to Clarke *et al*[15], although there is still little data on how biodiversity affects people's well-being and health through cultural pathways, "*human health is sensitive to apparently trivial psychological stimuli, negatively affected by the risk of environmental degradation, and positively affected by contact with natural spaces"*. This suggests that well-being and health can become affected by changes to those aspects of biodiversity associated with human cultural values. Thus, a better understanding of these relations will be important for biodiversity conservation and public health.

Non-communicable diseases such as diabetes, hypertension, cardiovascular, asthma and cancer, many of which are attributed to poor nutrition/dietary and exercise regimes, continue to be among the top causes of mortality in the country. The Ministries of Agriculture, Health and Education have increased their collaborative efforts in recent years to highlight the nexus between agriculture, nutrition and health and to promote the use of local foods in the fight against non-communicable diseases. This collaboration is expected to increase awareness of agricultural biodiversity for healthy lifestyles and promote the sustainable use of agricultural biological resources.

[15] Clarke et al 2014 Biodiversity, cultural pathways, and human health - a framework http://www.sciencedirect.com/science/article/pii/S0169534714000238

2.1.2 Land Use and Environmental Management

TRENDS IN LAND USE

During the 2015 Global Forest Resources Assessment, Saint Lucia analyzed trends in land use and forest management. The results are shown in Table 2 and Figure 13 (using different colour coding). While there are minor mismatches in total land, a clear trend during the past 20 years assessed can be seen: built-up areas and bare/eroded ground increased at the expense of intensive farming. Other vegetation types remain relatively constant, but an increase in forest reserves is noteworthy. This was due to the gazetting of an additional 1295 hectares of forest reserve in 2007.

Similar trends are also reflected in the 2018 SASAP for the agricultural sector that noted, but did not quantify, the conversion of productive agricultural land to uses of higher economic return, such as residential use, commercial buildings, hotels and golf courses. However, no quantitative information is available on the spatial distribution of ecological integrity or species extinction risks.

Table 2: Land Use Change in Saint Lucia between 1989 and 2009

Description (Hectares)	**1989**	**2000**	**2009**
Bare Ground, Scrub & Eroded Land	0.6	0.5	2.7
Densely Vegetated & Mixed Farming	16.2	15.1	15.3
Forest Reserve	8.0	8.0	9.4
Golf Course		0.0	0.1
Grasslands		2.7	0.2
Intensive Farming	17.6	12.2	3.0
Mangrove		0.2	0.2
Natural Tropical Forest (outside reserves)	4.9	6.2	4.8
Other Vegetation	1.3	0.0	8.6
Water / Ponds	0.4	0.0	0.0
Scrub Forest	7.5	6.8	6.4
Built-up Area	5.4	9.0	10.1
Total	**61.9**	**60.6**	**60.8**

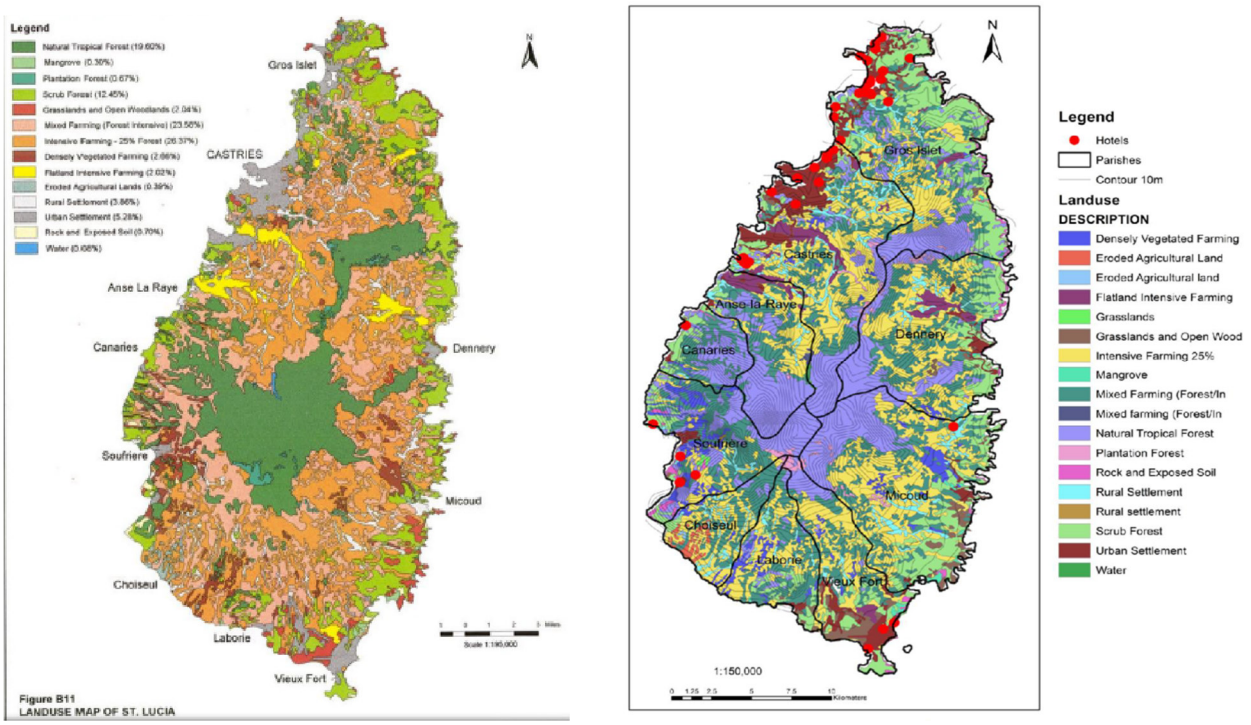


Figure 13:Trends in Land Use Change; Left map of 2000; Right map of 2015

(Source: GOSL 2011)[16], right map of 2015 (Source: CCCCC)[17]

PROTECTED AREAS

Notwithstanding the 1991 map in Figure 11 above, to date, the national inventory of protected areas remains fragmented. This is at least partly a result of fragmented responsibilities for designating a status of protection, which is possible under the Forest, Soil and Water Conservation Ordinance with Amendments, the Wildlife Protection Act, the Fisheries Act, the National Conservation Authority Act, the Saint Lucia National Trust Act, and the Revised Physical Planning and Development Act, as well as the Forest Bill of 2008, which is not enacted yet** and a draft Biodiversity Conservation and Sustainable Use Bill.

As for legislation, there is no overall institutional coordinating mechanism for protected areas management in Saint Lucia, and no single lead agency has been designated. In 1988, the Saint Lucia National Trust led the preparation of a 'System of Protected Areas in Saint Lucia' plan, which was first published in 1992 and revised in 2009. It remains widely regarded as a very thorough and professional document but has not been formally adopted by GOSL.

[16] GOSL (2011) Second National Communication on Climate Change for Saint Lucia. Prepared in fulfilment of its obligations under the United Nations Framework Convention on Climate Change (UNFCCC

[17] Impact assessment report and national adaptation strategy and action plan to address climate change in the tourism sector of Saint Lucia, Volume 1.

Not surprisingly, global databases have similarly incomplete and fragmented information or list proposed areas for protection, rather than actual reserves. Accurate quantitative data about the effectiveness of sustainable management practices in protected (or any other) are even scarcer.

In February 2004, the CBD Parties made a comprehensive and specific commitment towards protected areas by adopting the Programme of Work on Protected Areas (PoWPA). Saint Lucia developed it national PoWPA[18] involving stakeholder consultation and is among eight of the 13 Caribbean countries, who have submitted their PoWPA to the CBD. The plan clearly sees protected areas as an essential part of the process of securing a sustainable environmental, social and economic future for Saint Lucia. An ecological gap analysis was employed to generate a list of critical conservation targets for Saint Lucia's terrestrial and marine ecosystems. Subsequently a specific conservation goal, which represents the minimum level of protection that should be sought, was identified. Complete protection as conservation goal was agreed for the priority habitats: wetlands and off-shore islands (Table 3).

Table 3: Protection status, goal and gap of Saint Lucia's terrestrial, freshwater, coastal and marine ecosystems (summarized from PoWPA)

Ecosystem	Protection Goal %	Current protection %	Total Hectares Available	Conser-vation Goal (ha)	Current Protected Total (ha)	Current Gap (ha)	Proposed Protected Total (ha)
Evergreen forest	30%	60%	8,497.7	2,549.3	5,080.5	2,531.2	7,667.4
Semi Deciduous and Dry Deciduous Forest	50%	21%	5,549.3	2,774.7	1,153.8	-1,620.8	3,601.2
Lowland Mixed	30%	11%	29,727.4	8,918.2	3,397.9	-5,520.3	11,956.3
Xeric Scrub	80%	8%	1,926.2	1,541.0	156.1	-1,384.8	1,011.3
Terrestrial Total	**35%**	**21%**	**45,700.6**	**15,783.2**	**9,788.4**	**-5,994.8**	**24,236.1**
Riparian Vegetation	50%	16%	3,097.7	1,548.9	509.6	-1,039.3	1,809.6
High Elevation Watersheds	75%	63%	4,581.1	3,435.8	2,892.4	-543.4	4,528.0
Lowland Wetlands	100%	49%	84.8	84.8	41.2	-43.6	75.9
Upland Wetlands	100%	28%	27.1	27.1	7.5	-19.5	27.1
Riparian Corridors	75%	14%	4,713.8	3,535.3	662.9	-2,872.5	2,200.0
Freshwater Total	**69%**	**33%**	**12,504.4**	**8,631.8**	**4,113.6**	**-4,518.2**	**8,640.6**
Littoral Vegetation	50%	11%	267.2	133.6	28.6	-105.1	155.0
Offshore Islands	100%	58%	23.1	23.1	13.5	-9.6	22.2
Beach	30%	23%	113.0	33.9	26.0	-7.9	76.6
Mangrove	80%	37%	239.4	191.5	87.7	-103.9	147.7

[18] https://www.cbd.int/doc/world/lc/lc-nbsap-powpa-en.pdf

Ecosystem	Protection Goal %	Current protection %	Total Hectares Available	Conser-vation Goal (ha)	Current Protected Total (ha)	Current Gap (ha)	Proposed Protected Total (ha)
Rocky Shores	30%	17%	222.1	66.6	36.8	-29.9	145.1
Coastal Total	**52%**	**22%**	**864.8**	**448.7**	**192.4**	**-256.3**	**546.6**
Areas of Cold Upwelling	30%	0%	34,818.9	10,445.7	10.0	10,435.7	13,730.8
Coral Reef	80%	44%	692.7	554.2	303.1	-251.1	685.5
Lagoons	50%	20%	22.4	11.2	4.5	-6.7	14.7
Seagrass Beds	50%	14%	3,726.0	1,863.0	503.3	-1,359.7	2,456.7
Offshore Shallow Banks	30%	0%	102.0	30.6	0.0	-30.6	102.0
Marine Total	**33%**	**2%**	**39,361.9**	**12,904.6**	**820.9**	**8,787.6**	**16,989.7**

Protection is closest to the target for terrestrial ecosystems. In fact, for evergreen forests, the goal has been exceeded. For freshwater and coastal habitats less than half of the target area is currently under protection. The gap is widest for marine ecosystems: only 6.4% of the target area is currently protected **(Table 3).**

SUSTAINABLE MANAGEMENT OF ECOSYSTEMS AND BIODIVERSITY

Saint Lucia's National Environmental Plan and National Environmental Management Strategy (NEP/NEMS)[19] of 2004 are formal expressions of the nation's commitment to arrest and reverse trends of environmental degradation and to ensure that sound environmental management is fully integrated into the national development policy framework, in line with global and regional conventions and agreements, such as the Barbados Programme of Action for the Sustainable Development of SIDS and the St. George's Declaration of Principles for Environmental Sustainability in the OECS. The goal of the policy is to ensure that development is environmentally sustainable, while optimising the contribution of the environment to the economic, social and cultural dimensions of development. This is supposed to be achieved through four broad activity areas:

- Full implementation of the NBSAP
- Review of System Plan of Protected Areas, including the preparation of an indicative list of areas still requiring statutory protection
- Effective management of existing protected areas, with the implementation of management programmes in research, conservation, sustainable use, monitoring and evaluation, and public awareness

[19] http://www.climatechange.govt.lc/wp-content/uploads/2017/10/National-Environment-Policy-National-Environmental-Management-Strategy-NEP-NEMS-2004.pdf

➢ Effective enforcement of the provisions of the Wildlife Protection Act and other legislation relevant to ecosystem and species conservation.

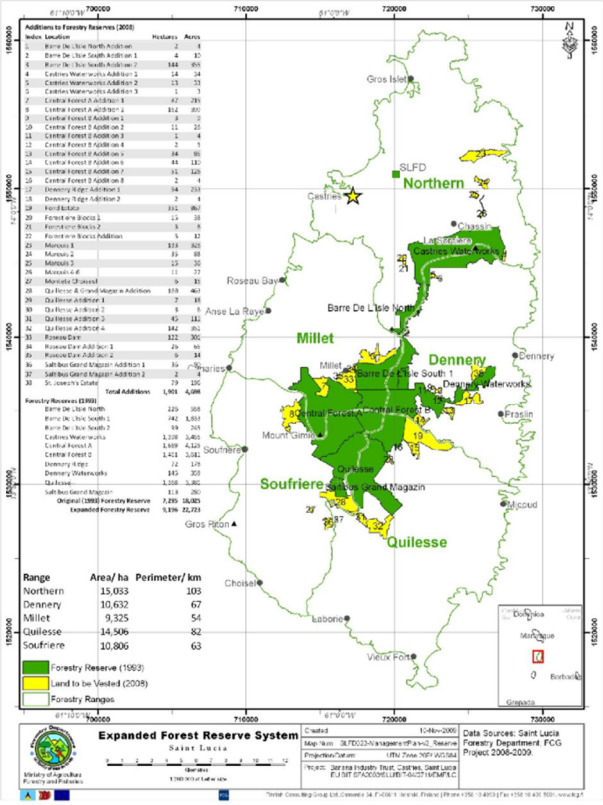


Figure 14: Expanded Forest Reserves

Protected areas are considered as designated for conservation of biodiversity and the forest reserves are designated for multiple use. In Saint Lucia, forest reserves are mapped areas in which a high level of sustainable management takes place (Figure 14). Between 1990 and 2015 multipurpose forests area has substantially increased from 1,700ha to 4,300ha, which is an indication of sustainability. The forested areas managed for the purpose of protection of soil and water increased from 7,400ha (1990) to 9,600ha (2015), while the forested areas managed for the purpose biodiversity conservation increased from 8,000ha (1990) to 9,600ha (2015) (FRA).

(Van Eynde,2009)[21]

During the same period, growing forest stock, which is a measure of carbon sequestration, has increased from 3.2 million cubic meters to 7.1 million cubic meters of broadleaved trees (2015 FRA). This suggests that the average total wood removal rate of 9,354m^3 per annum is sustainable.

At the same time, a slight reduction in natural forest and mangroves land coverage was observed, while the area of planted forest remained constant. This was accompanied by a reduction of canopy cover of more than 20% between the years 2000 and 2010 (FRA, 2015). As a result, native slow-growing species, such as the balata tree (*Manilkara bidentata*), are gradually replaced by those that can be harvested sooner, such as the Lesser Antillean endemic Maho kochon (*Sterculia caribaea*) and the introduced timber and reforestation tree blue mahoe (*Talipariti elatum*). This decrease in forest cover accounts for the increase in Bare Ground, Scrub & Eroded Land shown in Table 1) and underlines the importance of maintaining actual forest and canopy cover.

Bare ground gives rise to soil erosion and down-stream sedimentation as far as the coral reefs, which are very sensitive to sediment deposits. While only few fragmented datasets on erosion and sedimentation exist for Saint Lucia, estimates of total suspended solids (TSS) from the Eastern Caribbean region range from 2,600 t/yr of (with most contributed from Trinidad and Tobago) to 7

million tons per year for the North East-ern region that included Cuba, Jamaica and the Dominican Republic[20]. Qualitative observations suggest that even in the upper watersheds sedimentation is a problem: Siltation has reduced the capacity of the John Compton Dam by 30%.

In the Anse-La-Raye and Soufriere watersheds, a 2-3 fold increase of sediment deposits on coral reefs was associated with unpaved and degraded road network above[21]. In fact, a comparison of the actively managed versus unprotected sampling sites at the Soufriere Marine Management Area (SMMA) and the Canaries-Anse-La-Raye Marine Management Area (CAMMA) revealed that the creation of an MPAs led to short-term increases in fish biomass, particularly herbivorous fishes, but failed to halt the massive expansion of macroalgae at the expense of coral cover. This in turn will affect coral reef complexity and fish population in the long run. The researchers attributed this to terrigenous material and suggested that marine protected areas cannot be effective in conserving coral reefs with their associated fauna unless complemented by a reduction of runoff from terrestrial sources[22].

Outside of forest reserves virtually no quantitative date on sustainable land management practices exist. Qualitative observations indicate that management practices vary widely between different land owners, according to their priorities. Safe ecological limits for deforestation have not been established, but it can safely be assumed that any wood harvested should be replaced by another woody species to maintain ground cover and carbon sequestration. Generally, once the natural vegetation is cleared without replacement, whether by owner, developer or squatter, unsustainable practices prevail, except on isolated smallholding under organic management and at hotels, which take pride in their corporate responsibility. The CaribSave Partnership (2012) notes a national trend of declining soil quality and progressing erosion and land degradation[23].

In contrast to forest reserves, marine reserves are still poorly demarcated and good management practices are not enforced, with the exception of the 875ha SMMA, which forms part of the 2,909ha Piton Management Area (PMA; Figure 15).

[20] UNEP-CEP, 2010. Domestic and Industrial Pollutant Loads and Watersheds Inflows. Technical Report No. 52. Available at: http://www.cep.unep.org/publications-and-resources/technical-reports/cep-technical-report-no-52-en.pdf

[21] Bégin et al (2014) Increased sediment loads over coral reefs in Saint Lucia in relation to land use change in contributing watersheds. Ocean & Coastal Management 95, 35-45.

[22] : Bégin C, Schelten CK, Nugues MM, Hawkins J, Roberts C, Côté IM (2016) Effects of Protection and Sediment Stress on Coral Reefs in Saint Lucia. PLoS ONE 11(2): e0146855. doi:10.1371/journal.pone.0146855.

[23] CARIBSAVE Partnership, 2012. The Caribsave Climate Change Risk Atlas (CCCRA). Climate Change Risk Profile for Saint Lucia. Available at: www.caribsave.org

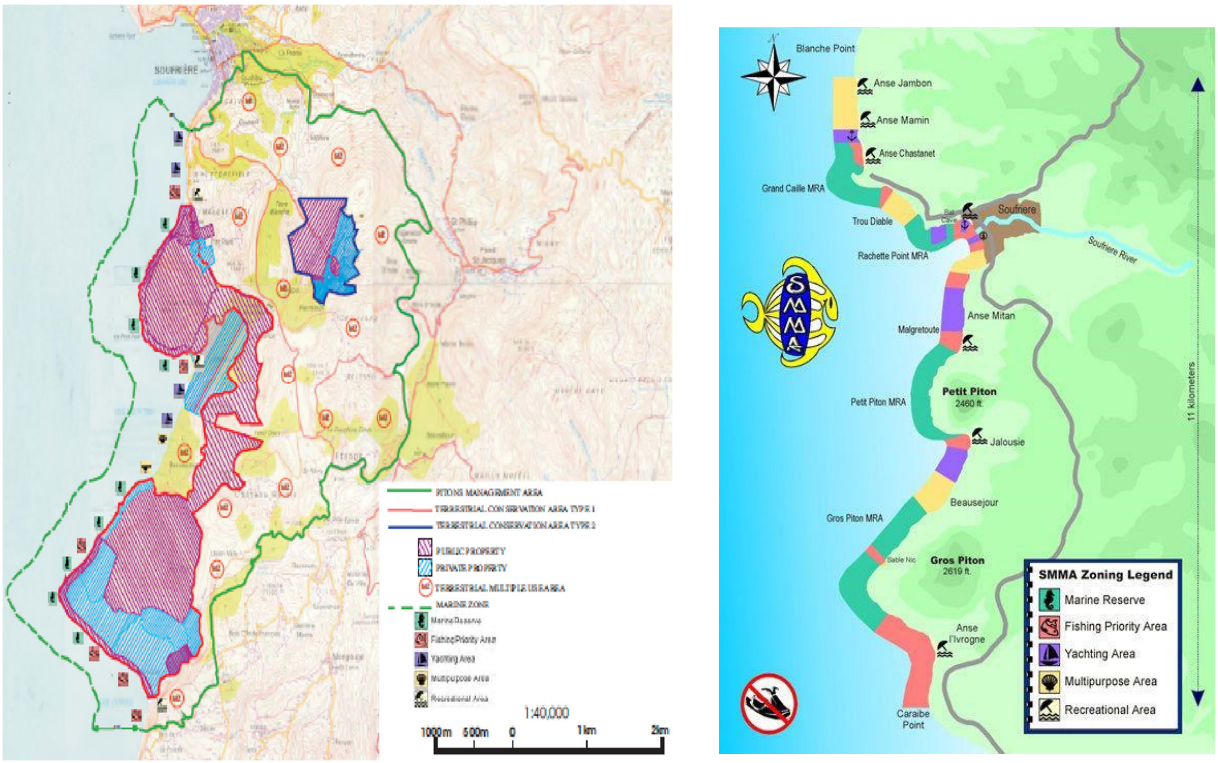


Figure 15:Zoning of Piton Management Area (left) and adjacent Soufriere Marine Management Area (SMMA)

A management plan has been established for the PMA: 1,567 terrestrial hectares are multiple use, 467ha are set aside for conservation, of which 341ha are publicly owned and 126ha privately. In 2013, the PMA was thoroughly surveyed to compare key features in their present state with those of 2004, when the PMA was inscribed in the list of UNESCO's World Heritage sites. Aspects examined were geology, topography, natural drainage, land use, ecosystems and biodiversity (including terrestrial and marine), cultural heritage, social and economic factors, and landscape character and quality. This survey informed a Limits of Acceptable Change (LAC) study[24], which issued clear recommendation on the extent and type of acceptable tourism development and other construction, and stressed the need for maintaining dense tree cover, conserving endemics and maintaining habitat integrity and connectivity and integrating adjacent agricultural areas. In the long term, the study calls for mapping the boundaries between the natural flora and the secondary forest and plantation habitat. Roger Graveson has recorded 246 indigenous flowering plants and prioritized and mapped about a dozen invasive alien plants on the Pitons[25].

[24] The Landmark Practice (2013) Landmark Ref: 2527 Limits of Acceptable Change Study for The Pitons Management Area, for Dept of Sustainable Development, Energy, Science and Technology (GOSL)

[25] Graveson, Smith & Rock (2012) Survey of Invasive Alien Plant Species on Gros Piton, Saint Lucia. Project No. GFL / 2328 – 2713-4A86, Mitigating the Threats of Invasive Alien Species in the Insular Caribbean

Outside marine management areas, GOSL tries to maintain sustainable fishing practices by regulating open/closed seasons, e.g. for lobster, sea urchins and turtles, as well as permissible fishing practices (restricted spearfishing, turtle fishing only in open ocean). However, loopholes in these regulations and the inability of the Fisheries Department to fully enforce regulation (Thomas Nelson, pers. comm., 2018) preempt the establishment of safe ecological limits for marine produce. A 2012 assessment noted over-fishing in most of the island's traditional fishing areas, except Anse-La-Raye and Canaries (Figure 16).
(marked in red) in Saint Lucia (CaribSave Partnership, 2012)

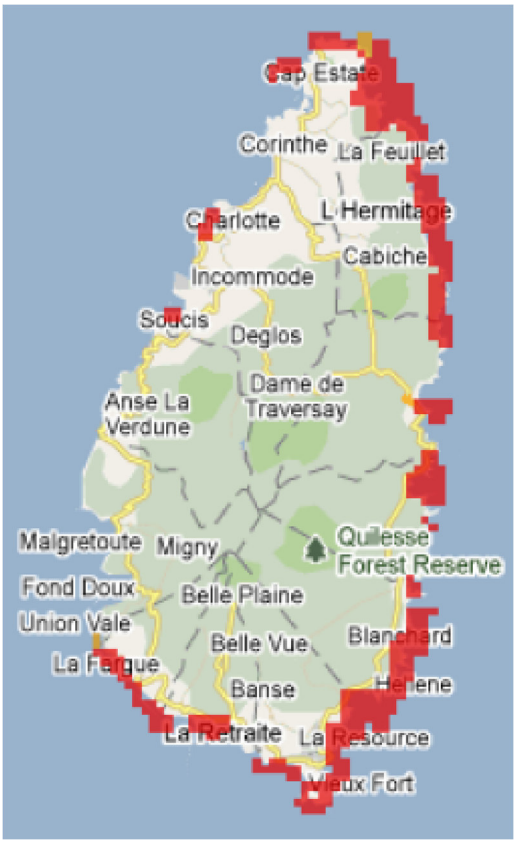


Figure 16: Areas of over-fishing

AREAS OF MAJOR THREATS TO ECOLOGICAL INTEGRITY AND KEY ECOSYSTEMS VULNERABLE TO CLIMATE CHANGE IMPACTS

The ecologically most at-risk areas are the:

- Iyanola region in Saint Lucia's NE, particularly the remaining deciduous dry forest (yellow areas earmarked to become a National Park in Figure 17)
- Maria Islands, which lie within the Point Sable Environmental Protected Area (PSEPA, Figure 17), for their wealth of endemic species and vulnerability to IAS and stochastic events
- High elevation life zones, such as elfin shrublands and the peaks of the Pitons, which form the last strongholds of globally threatened plants, but constitute a declining habitat in the face of climate change and global warming. It forms an irregular narrow band on the Mount Gimie range summits and does not lend itself to mapping[26]
- Probably under-investigated marine habitats.

[26] http://www.saintlucianplants.com/downloads/Vegetation%20Classification.pdf

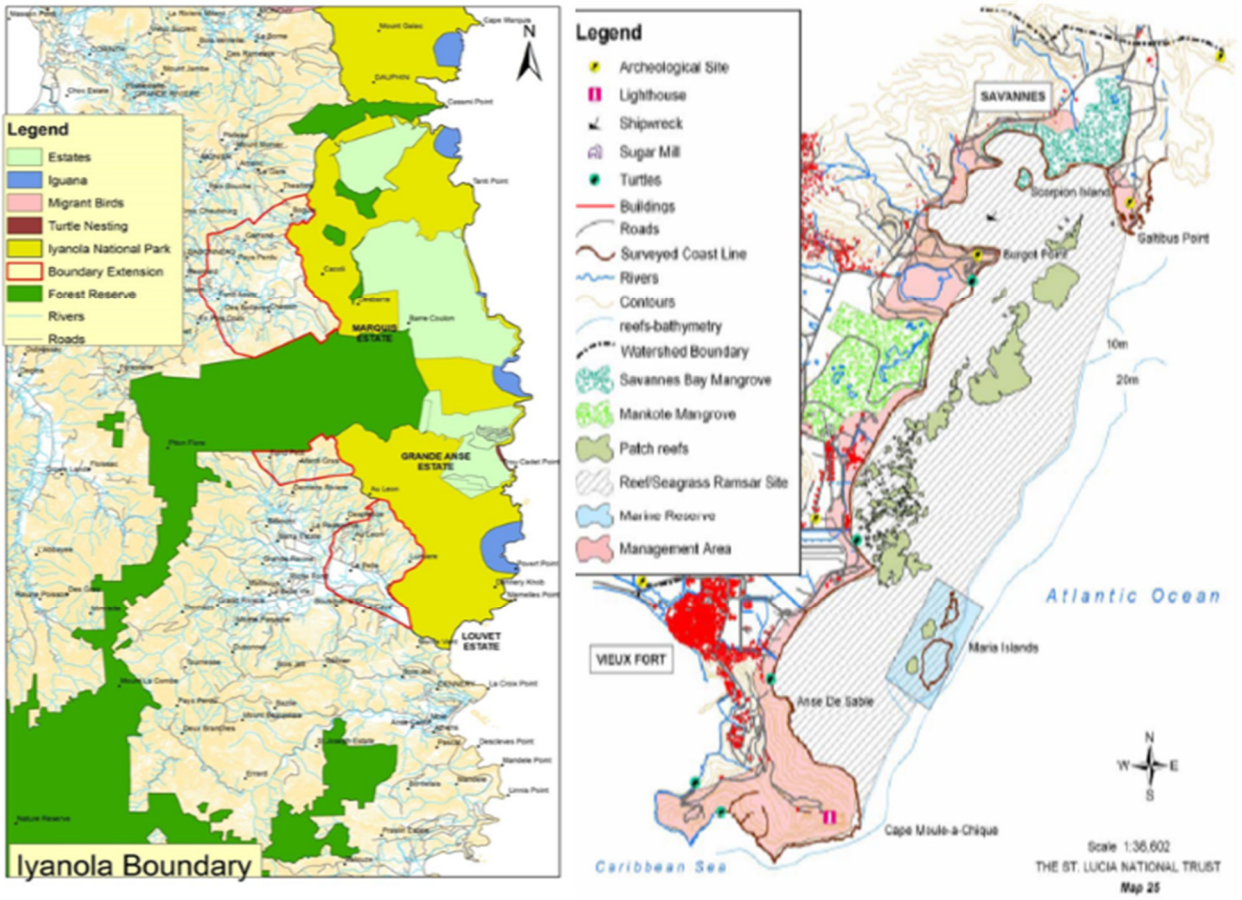


Figure 17: Proposed Iyanola National Park (left) and PSEPA with Maria Island (right)

Overall, as a result of climate change, annual precipitation is predicted to decrease, while average temperatures will continue to rise. This has implications for the island's water balance, aquifer recharge, reduced freshwater habitat size and increases the risk of drought. The susceptibility to drought has been mapped island-wide (**Figure 18**). Droughts can lead to wildfires (see **Figure 26**). At the same time, excessive rain events and storms are likely to become more frequent; these may cause direct destruction (e.g. of forests and beaches) and landslides. A landslide risk map is shown in Figure 18, a landslide inventory in **Figure 24**.

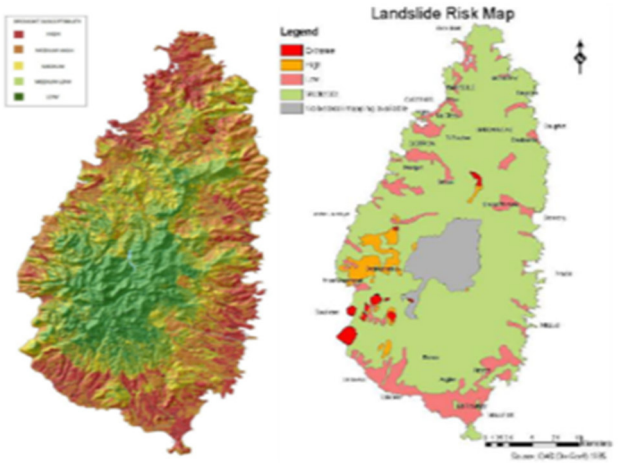


Figure 18: Drought susceptibility (left) and landslide risk map (right)

(*CaribSave Partnership, 2012)*

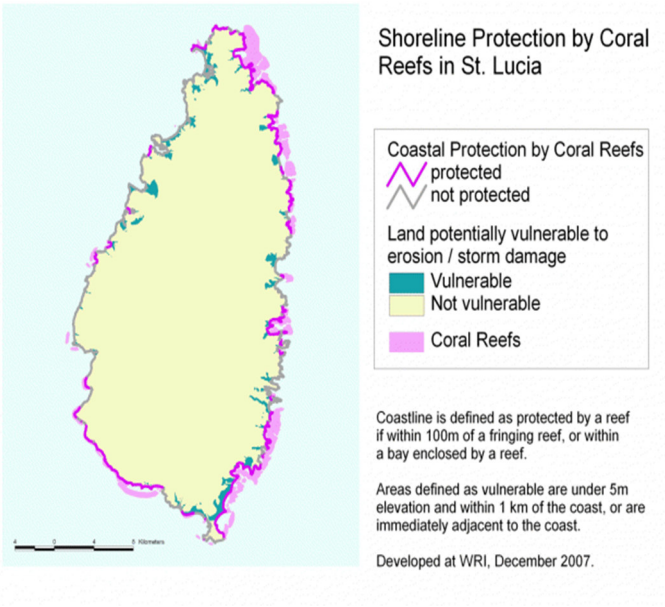


Figure 19:Vulnerable coastline and protection by coral reefs

(Credit: Burke et al., 2008)

As a SIDS, Saint Lucia has a relatively extensive coastline. Low-lying coastal areas are particularly exposed to the effect of climate change, particularly storm surges and sea level rise (SLR). Beaches have seen dramatic changes following storms, with serious implications for coastal flora and fauna, as well as tourism-based livelihoods. Fortunately, given its mountainous nature, just over 4% of Saint Lucia's coastline was classified as vulnerable to wave-induced erosion and storm damage, while 44% of coastline is protected by coral reefs **(Figure 19)**[27]. This underlines the importance of conserving coral reefs.

Even small changes in sea level can have a dramatic effect on the coastal fauna, such as marine turtles, iguanas and shore birds. A SLR of 1m-2 m was predicted to damage 6-10% of turtle nesting sites on the island[22]. Sea water intrusions will favour salt-tolerant plant expansion. However, mangroves are unlikely to benefit, given that they are competing with man for limited costal space.

Biodiversity is forecast to be impacted directly by rising temperatures. Elfin shrublands and cloud montane forest may shift to higher altitudes with ever decreasing available space, until there is nowhere else to go. Warmer sea-surface temperatures (SSTs) are a contributing factor in coral bleaching and may skew sex ratios of fish and higher average beach temperatures that of developing turtle eggs, reducing the reproductive capacity of such species.

Indirect effects on marine lifeforms may result from pH changes secondary to increased CO_2 uptake by warmer waters. This may enhance photosynthesis, but also results in ocean acidification and weakens the skeletal structure of calcifying organisms, such as corals[22]. As a result, marine ecological balances could shift from corals towards plants, with consequences for associated food webs and the above-mentioned physical protection of coastal zones.

Freshwater streams are the lifelines of watersheds and habitat-connecting channels that are vulnerable to direct anthropogenic change as well as climate change. About 59% of available freshwater is withdrawn, mostly for domestic use. A UNEP study found that 12 out of 14 criteria of integrated water resources management improved in Saint Lucia between 2007 and 2011, but international agreements and management instruments declined during that period[28].

[27] Burke et al., (2008) Coastal Capital – Economic Valuation of Coral Reefs in Tobago and St. Lucia. World Resources Institute.

[28] http://iwrmdataportal.unepdhi.org/Data.html?Country=Saint%20Lucia

PRIORITY AREAS FOR BIODIVERSITY CONSERVATION

Daltry (2009)[29] presented a prioritization of forested areas within and outside of forest reserves (Figure 20).

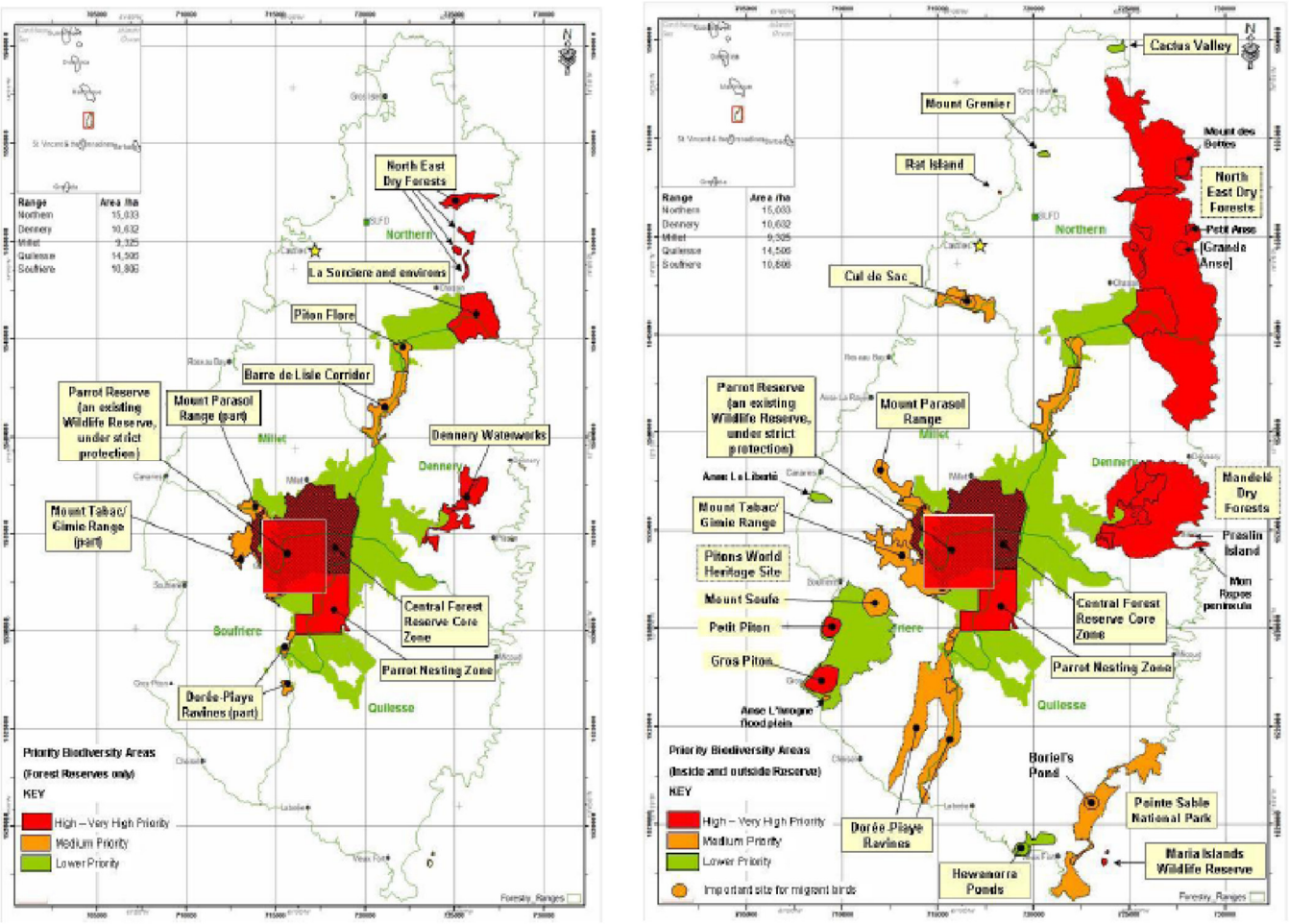


Figure 20:Priority areas for Biodiversity conservation

Left map: within the forest reserves; right map: outside of forest reserves

[29] Daltry, J. C. (2009) Biodiversity Assessment of Saint Lucia's Forest, with Management Recommendations, *National Forest Demarcation And Bio-Physical Resource Inventory Project*, Saint Lucia, SFA 2003/SLU/BIT-04/0711/EMF/LC, FCG International Ltd,

The right map largely coincides with Key Biodiversity Areas identified on the World Database of Key Biodiversity Areas[30] and encompasses all Important Bird Areas **(Figure 21)**

Figure 21:Key Biodiversity Areas

In 2009, The Nature Conservancy (TNC) facilitated a workshop to identify the gaps in the management of protected areas. The group identified and mapped the following high priority terrestrial and aquatic ecosystems and habitats for protection:

- ➢ High elevation watersheds
- ➢ Primary streams and riparian areas

[30] http://www.keybiodiversityareas.org/site/mapsearch

- Wetlands
- Beaches
- Rocky shores
- Mangroves
- Areas of cold upwelling
- Coral reefs
- Lagoons
- Seagrass beds and one
- Shallow off-shore bank, just south of Vieux Fort (**Figure 24**)

Figures 22-24 depict these areas in Saint Lucia.

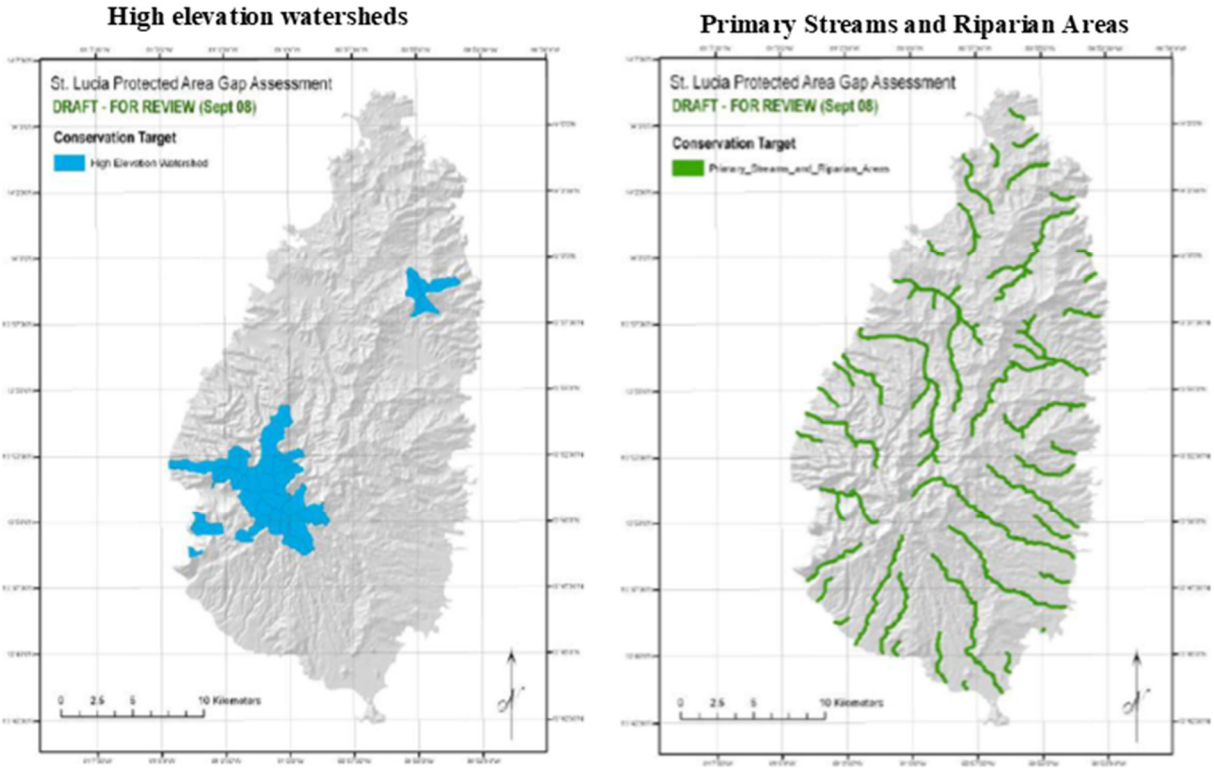


Figure 22: High elevation watersheds and Primary Streams and Riparian Areas

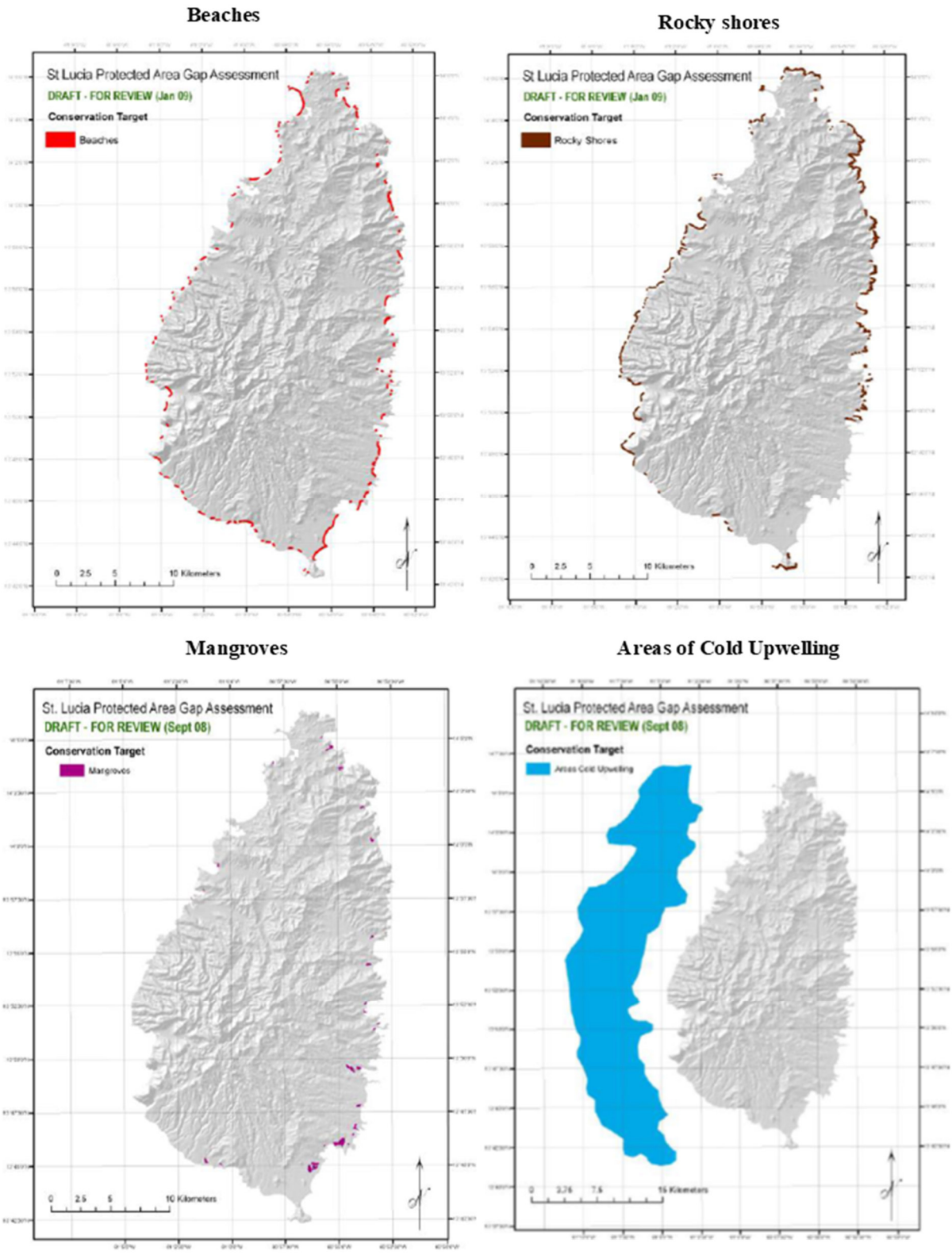


Figure 23:Protected Area Gap Assessment: Beaches, Rocky shores, Mangroves and Cold upwelling

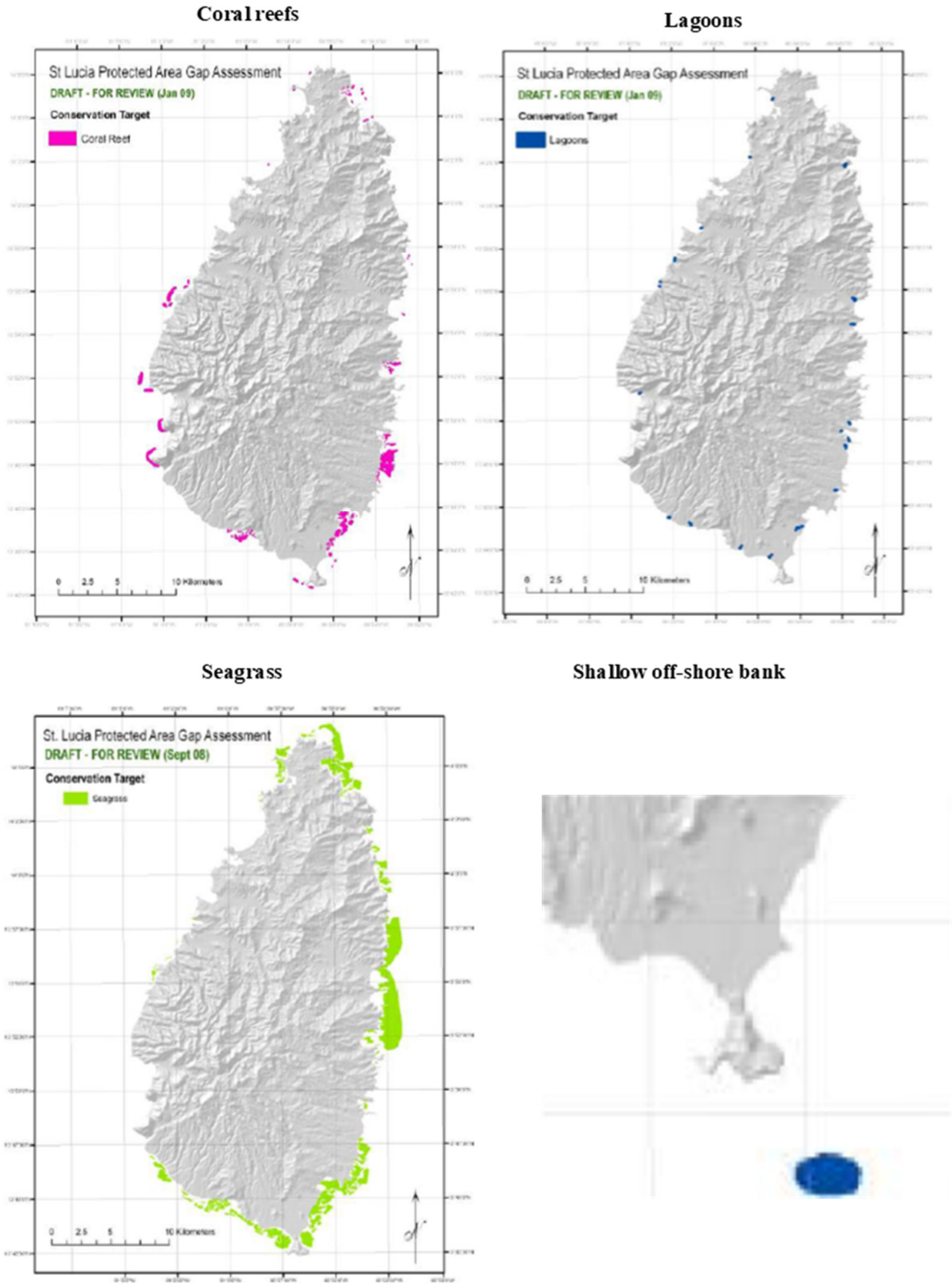


Figure 24: Protected Area Gap Assessment: Coral reefs, lagoons, seagrass, shallow off-shore bank

PRIORITY SPECIES

A total of 1278 animal and 64 plant species in Saint Lucia were assessed by IUCN[31]. Three animal species are considered extinct. Five marine aquatic and three terrestrial animal taxa are CR, 16 species are EN, and 41 VU (Table 4)[31].

Table 4: IUCN Assessment of Threatened Species in Saint Lucia

	Aquatic Species		Terrestrial Species		
Assessment	**Non-vertebrates**	**Vertebrates**	**Animals**	**Plants**	**Total**
Extinct	0	0	3	0	**3**
Critically Endangered (CR)	2	3	3	1	**9**
Endangered (EN)	3	8	3	1	**15**
Vulnerable (VU)	6	27	4	4	**41**
Total	**11**	**38**	**13**	**6**	**68**

Critically endangered are two corals, three marine fish species, one forest bird that is feared extinct, two terrestrial reptiles, and a tree. Endangered are six fish species, three coral species, one marine turtle, one sea bird, two forest birds, and two forest trees (Table 5). All these species should be conservation priorities.

Table 5: Critically Endangered and Endangered Species in Saint Lucia

	Aquatic Species	Terrestrial Species
CR	*Acropora cervicornis* (Staghorn Coral),	*Leucopeza semperi* (Semper's Warbler)*
	Acropora palmata (Elkhorn Coral)	*Cnemidophorus vanzoi* (Saint Lucian Whiptail)
	Epinephelus itajara (Atlantic Goliath Grouper)	*Erythrolamprus (=Liophis) ornatus* (Ornate Ground Snake / St Lucia Racer)
	Hyporthodus nigritus (Warsaw Grouper)	*Juniperus barbadensis* var. *barbadensis* (Barbados Cedar)
	Pristis pectinata (Smalltooth Sawfish)	
EN	*Anguilla rostrata* (American Eel	*Melanospiza richardsoni* (St Lucia Black Finch)
	Chelonia mydas (Green Turtle)	*Pouteria pallida* (Balata chyen)
	Epinephelus striatus (Nassau Grouper)	*Ramphocinclus brachyurus* (White-breasted Thrasher)

[31] http://www.iucnredlist.org/

	Aquatic Species	Terrestrial Species
	Millepora striata (Fire Coral)	*Swietenia mahagoni* (Small-leaved Mahogany)
	Montastraea annularis (Boulder Star Coral)	
	Montastraea faveolata (Mountainous Star Coral)	
	Pterodroma hasitata (Black-capped Petrel)	
	Rhincodon typus (Whale Shark)	
	Sphyrna lewini (Scalloped Hammerhead)	
	Sphyrna mokarran (Great Hammerhead)	
	Thunnus thynnus (Atlantic Bluefin Tuna)	

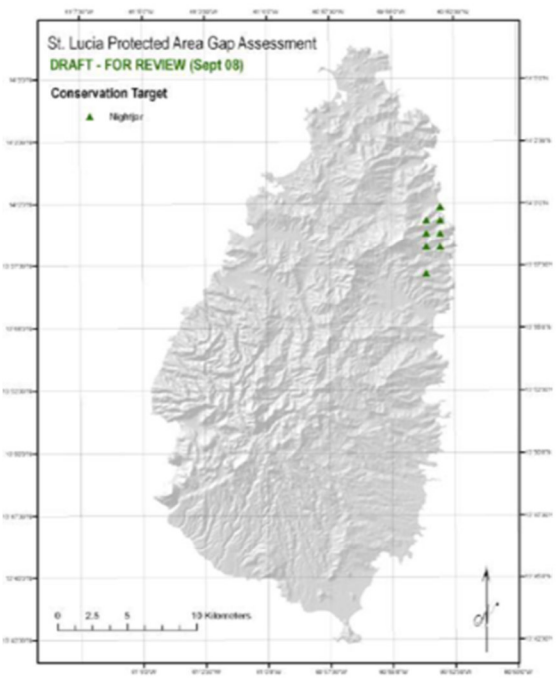
* widely believed extinct and requiring re-assessment

The above-mentioned TNC workshop also identified priority vertebrate species for protection **(Figures 25 and 26):**

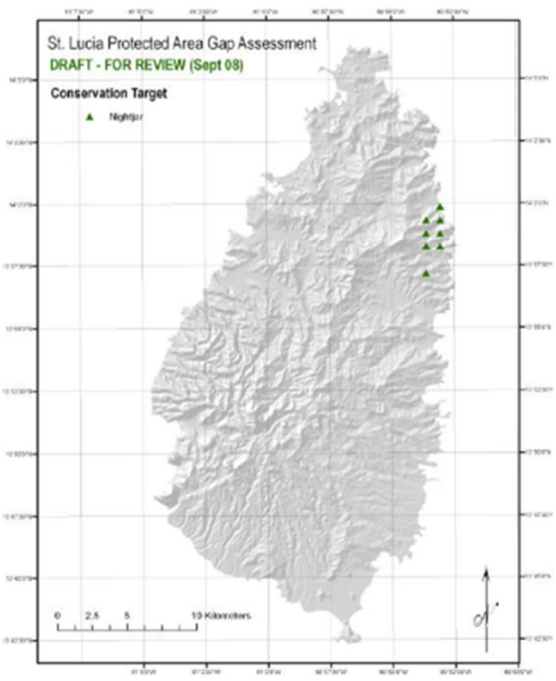
- ➢ Rufous Nightjar (*Caprimulgus rufus otiosus*)
- ➢ Forest thrush (*Cichlherminia lherminieri*)
- ➢ White-breasted Thrasher (*Ramphocinclus brachyurus*)
- ➢ House Wren (*Troglodytesaedon martinicensis*)

The IBA Factsheet also include as high priority birds: St Lucia Amazon (*Amazona versicolor*), St Lucia Oriole (*Icterus laudabilis*), St. Lucia Black Finch (*Melanospiza richardsoni*), and the Semper's Warbler (*Leucopeza semperi*), which is widely regarded extinct.

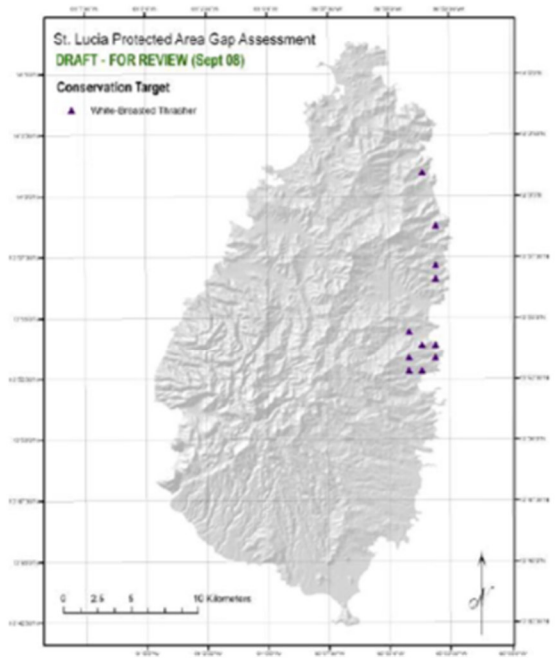
Nightjar



Forest Thrush



White-breasted Thrasher



Wren

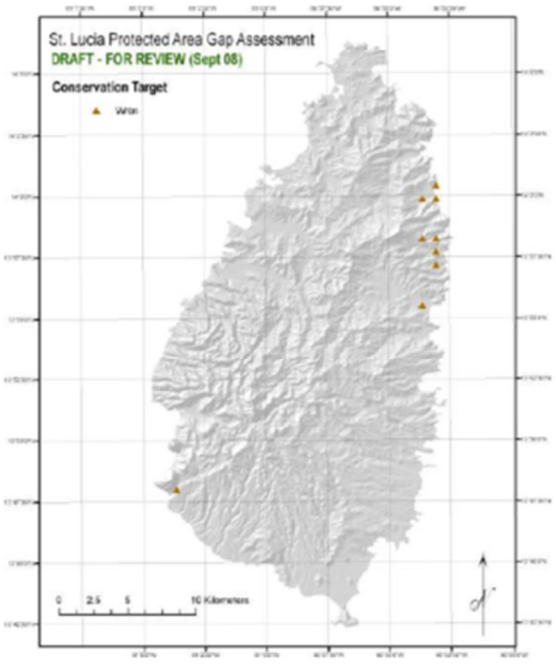


Figure 25: Priority Bird Species for Protection

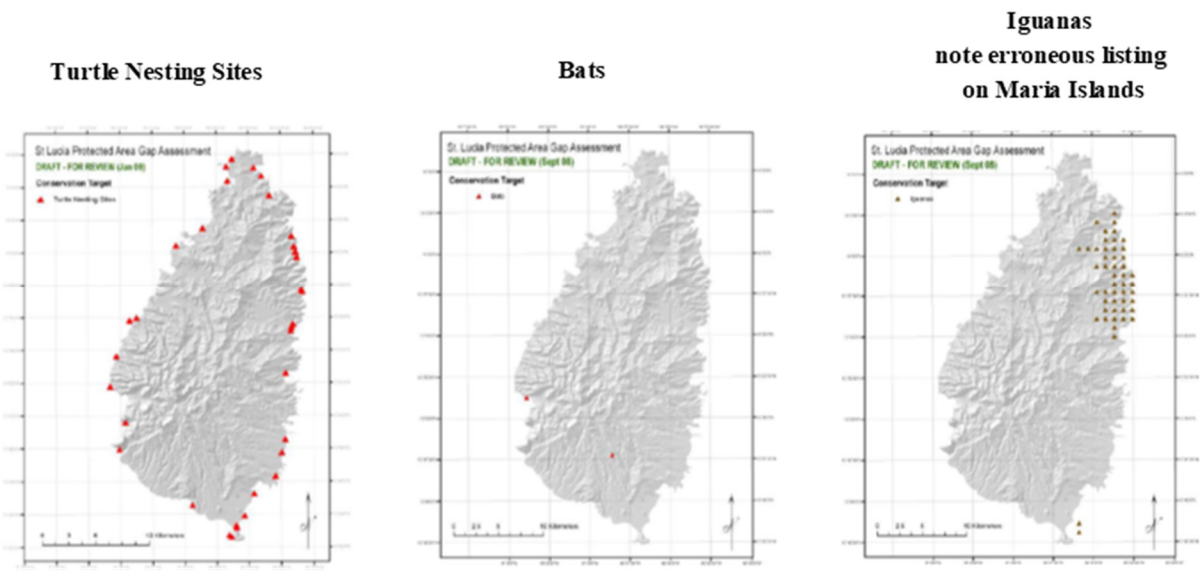


Figure 26: Other Priority Vertebrate Species for Protection

Van Eynde (2009) named high priority tree species: akoma *(Sideroxylon foetidissimum),* arkokwa (*Zanthoxylum flavum*), balata (*Manilkara bidentata*), bois rouge (Carapa guianensis), lowye kannel (*Aniba ramageana*), pencil cedar (*Juniperus barbadensis*), and *Bernardia laurentii.* As for, arkokwa (*Zanthoxylum flavum*), lansan (*Protium attenuatum*) and latannyé (Coccothrinax barbadensis). These species are over-exploited but not systematically mapped.

CONNECTIVITY OF HABITATS

The highest degree of connectivity is found in the evergreen forest: 94.3% of protected forests are connected, principally the Castries and Dennery Waterworks Reserve and Marquis continuum[32].

The North East Dry Forest Reserves of the Iyanola Region, between the Rivers Fond d'Or and Dauphin, are of high to very high connectivity value, especially for rare birds, such as the white breasted thrasher and nightjar, and as migration corridors for iguanas moving to and from their traditional nesting sites. Forest cover should especially be maintained along ravines and beaches, i.e. the *Coccoloba* fringe, where iguanas and hawksbill turtles nest[20, 33]. These areas coincide with IBA LC001 (Figure 19).
The North East Dry Forest (LC001) and the Mandele Dry Forest (LC004) are the only remaining habitats for the White-breasted Thrasher (WBT). Morton (2009)[34], citing Temple (2005), considers establishing connectivity between these two IBAs the single most important action that

[32] http://dopa-explorer.jrc.ec.europa.eu/country/LC

[33] Toussaint, A; John L.; Morton M. (2009) The Status and Conservation of Saint Lucia's Forest Birds, *National Forest Demarcation And Bio-Physical Resource Inventory Project*, Saint Lucia, SFA 2003/SLU/BIT-04/0711/EMF/LC, FCG International Ltd,

[34] Morton .M. (2009) Management of Critical Species, *National Forest Demarcation And Bio-Physical Resource Inventory Project*, Saint Lucia, SFA 2003/SLU/BIT-04/0711/EMF/LC, FCG International Ltd,

could be taken to protect the WBT from extinction" and recommends creating „stepping stones" of habitat that may allow connectivity between these two sub-populations.

The Barre de Lisle Corridor is of medium conservation importance[20], as it links the northern and southern parts of the Forest Reserve network and thus facilitates the movement of rainforest species between the northern and southern reserves. This corridor also lies at the centre of the Government Forest Reserve and coincides with IBA LC002, noted for its large number of threatened and endemic rainforest birds (**Figure 21**). Much of this corridor still lacks formal protection and significant portions of land are owned privately.

In terms of **habitat connectivity**, riparian areas with woody vegetation are a priority, as they can play a key role in providing corridors between alike forests fragment, e.g. evergreen or dry deciduous. There are 4,713.8ha of riparian corridors, of which only 14% are protected **(Table 3).** These are particularly important to iguanas and bats, the only group of native land mammals on Saint Lucia. Consequently, Clarke[35] proposes that state-owned rainforest lands should be contiguous with dry forest reserves, so that there is a corridor of native forest running from high elevation wet forest thorough mesic and dry forest to the coast. This would facilitate seasonal movements of fauna between forests and along altitudinal gradients, which is believed to be beneficial certain bats and migratory species. From Figure 19 it is also conceivable that it may aid mobility of the WTB. Maintaining forested riparian corridors along permanent streams can facilitate migration between fragmented Forest Reserves (see section 3.7.1 Strategies and Actions for Creating Connectivity, below).

2.1.3 Analysis of Causes and Consequences of Biodiversity Loss

A broad range of threats – considered as the big five – **habitat loss and fragmentation, over-exploitation, pollution (including noise), climate change and introduction of invasive species**, all present major threats to the ecosystems, biomes and species of Saint Lucia. According to the Critical Ecosystems Partnership Fund 2010 report, the diverse ecosystems and biodiversity of the Caribbean region are subject to many immediate and long-term threats from tourism development, mining, land development and agriculture, over-exploitation of resources and the impacts of climate change, among others.

One of the major threats, in Saint Lucia, to biodiversity and, ecosystems, is habitat destruction caused by inappropriate land use and uncontrolled development. Habitat change is occurring at a rapid rate and is expected to increase even further in the future with the increase in hotel plants, marinas and golf courses and other land developments earmarked for coastal regions, increase in housing and infrastructure, such as roads, which may impact dry forest areas. Studies of the habitat and range of the Saint Lucia Parrot helped the Forestry Department delineate its system of Forest Reserves so that fragmentation of this important bird's habitat could be limited and corridors could

[35] Clarke F.M. (2009) The Mammals of Saint Lucia, *National Forest Demarcation And Bio-Physical Resource Inventory Project*, Saint Lucia, SFA 2003/SLU/BIT-04/0711/EMF/LC, FCG International Ltd,

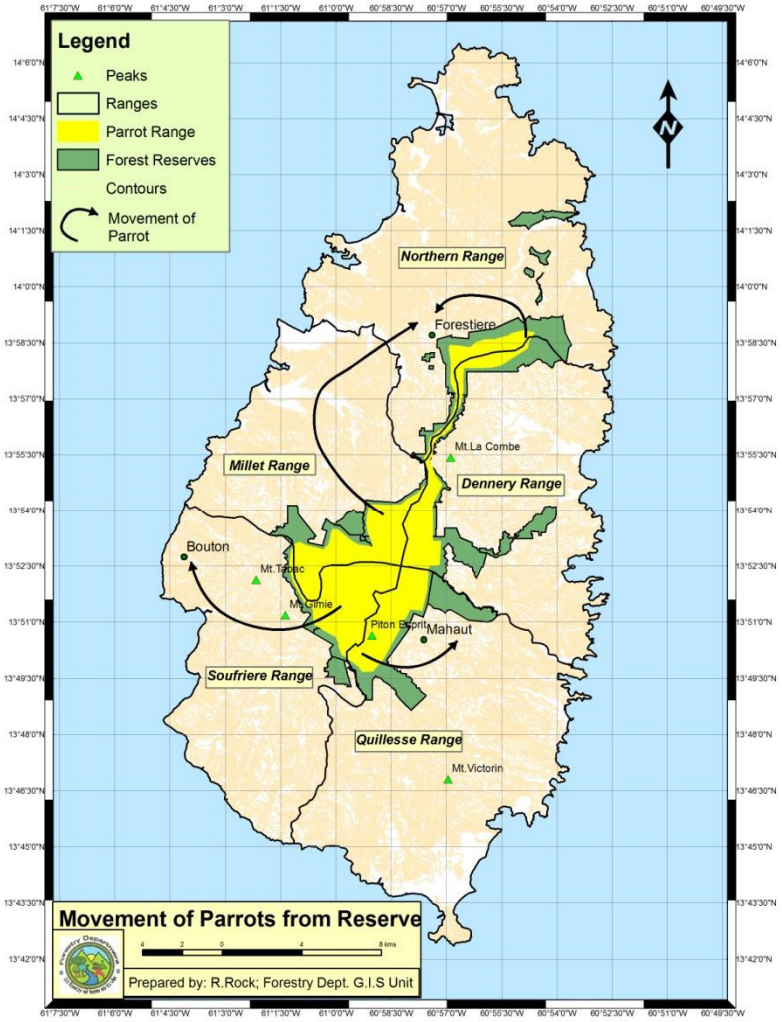


Figure 27: Movement of the Saint Lucia Parrot

Credit: Forestry Department

be established where possible.

Additionally, further growth in the tourism sector will demand more land and will consume more resources, such as energy and water. Growth of quarrying and its often negative impact on human and environmental health is also a concern. Uncontrolled development and agriculture are also taking a toll on fishing areas that are important as local food source and for tourism, employment and foreign exchange earnings. Still worthy of note is the fact that "dry bushlands" were the habitat least valued (out of six wildlife habitats) during a 2001 survey on attitudes towards wildlife and hunting. Nevertheless, Saint Lucians on the whole regard conservation of wildlife and habitats a high priority (John 2001).

Globally, **invasive alien species (IAS)** are recognised as the second most important threat to biodiversity and also impose enormous costs on agriculture, forestry, fisheries, and other enterprises; on human and animal health; as well as ecosystem services. Rapidly accelerating Trade, Tourism, Transport, and Travel – the infamous "four Ts" - over the past century have dramatically enhanced the spread of invasive species, allowing them to surmount natural geographic barriers.[36]

Invasive alien species (IAS), particularly vertebrate predators, also threaten biodiversity and the ecosystems through habitat destruction. With regard to IAS, feral pigs, pet species that have escaped or have been released into the wild, plants and pests and diseases of external origin are impacting biodiversity. For example, feral pigs (S*us scrofa*) because of their voracious and omnivorous feeding habits, cause substantial harm to native animals, plant recruitment and water

[36]Krauss, Ulrike (2010) Critical Situation Analysis (CSA) of Invasive Alien Species (IAS) Status and Management, Saint Lucia, 2010 carried out under the project Mitigating the Threats of Invasive Alien Species in the Insular Caribbean Project No. GFL / 2328 – 2713-4A86, GF-1030-09-03. Forestry Department Dept of Agriculture, Lands, Forestry and Fisheries (MALFF) Union, September 2010.

quality. Certain bird species, such as the quail doves (ruddy and bridled quail doves), which are known to nest close to the ground, are particularly vulnerable to predation by feral pigs. White-breasted thrasher chicks fledge before they fly and are thus vulnerable to predators on the ground (M Morton, pers. comm., 2013). Other species of concern include ground-dwelling reptiles, such as the endemic pygmy gecko and the endemic snakes, the Saint Lucia *Boa constrictor* and the Saint Lucia viper. Unconfirmed reports have linked a potential decline in the poisonous snake population to predation by feral pigs. Damage by feral pigs in the NE corridor was reported by pig hunters in 2009. However, there are mixed opinions about this situation because some people do not regard the pigs as feral, as they are owned by local people from nearby communities, and are being turned lose to forage (Dornelly 2012).

Biodiversity and Climate Change

Two large-scale bio-geological processes, carbon and water cycles that are crucial for life on Earth, are known to depend on biodiversity that can help enhance resilience to impacts of changing climate conditions.

Over-exploitation is another threat that impacts certain biological resources used for livelihoods, such as medicinal herbs, *Latanyé*, tree species used for lumber and/or charcoal. Indeed, with increasing costs of fuel for domestic use, the latter is poised to increase.

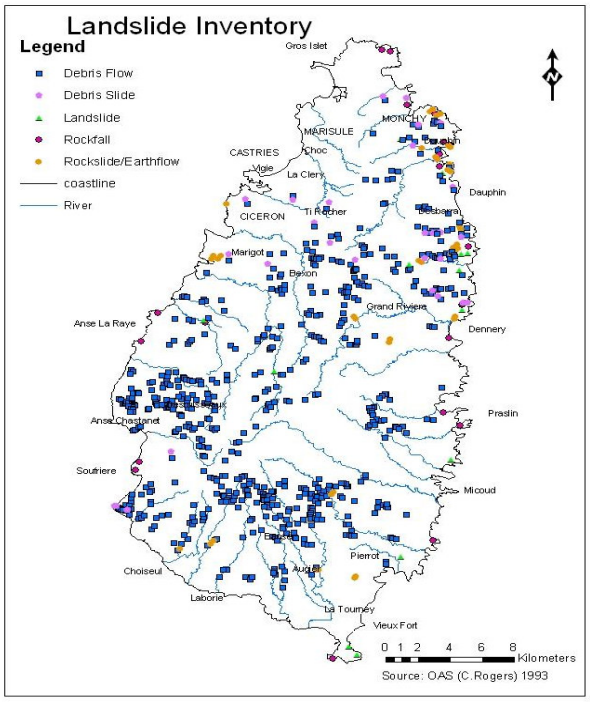


Figure 28:Landslide Inventory for Saint Lucia

Credit: Forestry Department

Climate change has had a notable impact on biodiversity. Changes in flowering seasons for agricultural crops have been observed and coral reefs have suffered bleaching in some areas of the country. Loss of large tracts of land, especially forest lands due to landslides, associated with weather-related events also contribute to habitat loss and fragmentation. **Figure 28** depicts landslide events for the island, with higher frequency in the coastal and southwestern regions.

To compound these impacts, there seems to be a general lack of awareness of the importance of ecosystem services and the cost of their loss; and as a result areas important for these services, example wetlands, forest reserves and other protected areas are undervalued. Policy and law in the island tend not to address the underlying causes of environmental issues, such as population increase. In addition, government and nongovernmental organizations charged with protecting the environment are hampered by a lack

of capacity, especially for monitoring and regulating. Thus, biophysical and policy interventions have to go hand-in-hand.

THREATS TO TERRESTRIAL AND FOREST BIODIVERSITY

Plant and animal genetic resources for agriculture are under threat from natural and anthropogenic factors, *inter alia* (a) climate-related hazards (flood, land slippage, drought, excessive rainfall– exacerbated by climate change), (b) invasive species (pests and diseases), (c) poor agricultural practices including improper use and disposal of agrochemicals resulting in pollution of habitats and substances toxic to biological resources, including humans, (d) unsustainable land use patterns leading to loss, alteration and or fragmentation of habitats and ecosystems, (e) underutilization of local cultivars and breeds and (f) praedial larceny.

Many of the stakeholders who were consulted during the process considered trade and marketing the greatest indirect threat to agro-biodiversity, especially aggressive global marketing campaigns aimed at changing consumer taste and consumption patterns. This, they believe, has resulted in a decrease in the demand for traditional crop and livestock products. Stakeholders also noted a number of inconsistencies in development objectives across sectors and even sub-sectors in agriculture that may threaten biodiversity conservation and the sustainable use of agricultural biological resources.

Subsistence agriculture has been on the decline since national initiatives have been focused on more competitive, profit generating production methods and species in accordance with government policies and the need to increase agricultural productivity to meet growing demands by the local population, tourism and manufacturing sectors. However, this has contributed to a substantial decline in biodiversity with regard to many traditional crop species.

Imported modern cultivars and breeds are replacing indigenous/native species. These imported exotics often require a special set of cultivation practices to optimize their productivity and are not always suited to the local environment. In many cases they result in higher agrochemical usage, which ultimately impacts negatively on the environment and on local biodiversity. The cultivation of new imported cultivars has occasionally resulted in the introduction or proliferation of pests and diseases (invasive species) that threaten the island's biodiversity.

According to the report on Important Bird Areas (IBAs) in the Caribbean-Saint Lucia, agricultural expansion (especially banana cultivation), residential, hotel and resort developments and roads are the main causes of deforestation and habitat degradation of Saint Lucia's dry forest, wet tropical forest, mangroves, littoral vegetation and wetlands and thus, the main threats to the IBAs.

Figure 29: White-breasted Thrasher on nest

Credit: Gunnar Kramer

The lack of formal protection of critical dry forest habitat, especially in privately owned land within the two IBAs that encompass the range of the White-breasted Thrasher (*Ramphocinclus brachyurus)*, poses a serious

threat to the populations of Saint Lucia's globally threatened or restricted-range birds (apart from *A. versicolor* and *R. brachyurus*). The two IBAs (North-east coast and Mandele Dry Forest, which encompass about 97.5% of the species of the Saint Lucian population are completely unprotected. Such protection would need to be an integral part of a sensitively designed strategic development plan for the east coast dry forests—a plan that takes into account the needs of this region's unique biodiversity and ecosystems.

Also, while most livestock are tethered, sheep, goats and cattle do have a localised impact, especially on the dry woodlands. These woodlands are also sometimes affected by dry-season fires lit by farmers and others. Of potentially greater impact to the island's biodiversity, however, are the alien invasive predators including mongoose, rats *Rattus spp*., pigs *Sus scrofa*, and Giant African snail *Achalina sp*.

The IAS study found some noteworthy, deliberate introductions which are implicated with significant biodiversity losses particularly among native birds, reptiles and amphibians. Examples include the cane toad (*Bufo marinus*) and the small Asian mongoose (*Herpestes javanicus*)[37], which have been identified as a cause for the probable extinction of the (Critically Endangered) ground-dwelling Semper's Warbler *Leucopeza semperi.* Nevertheless, some IAS plant introductions are also species of horticultural interest (e.g. *Heliconia wagneriana*) or for potential agricultural economic activity, e.g. lemon grass (*Cymbopogon citrates*) and leucaena (*Leucaena leucocephala*).

Increasing incidence of wildfires is also a concern for forest biodiversity loss. **Figure 30** shows the wildfire hazard map for the country prepared by the Department of Forestry. A report compiled by that department[38] indicates that of the total area that was burnt in the Millet range was 10.9 hectares (25.9 acres). Canaries was most affected with a total area of 5 hectares (12.4 acres). In general, the other areas affected were smaller patches of land between 0.5 and 2.5 hectares. Most of the wildfires were related to agricultural production systems of slash-and-burn to clear land for planting, or set by lit cigarette butts, foreign objects in the dry grass, or intentionally set by pedestrians. Notable in all the locations were the presence of species like *bamboo, Razor grass* and *Heliconia, Leucaena,*

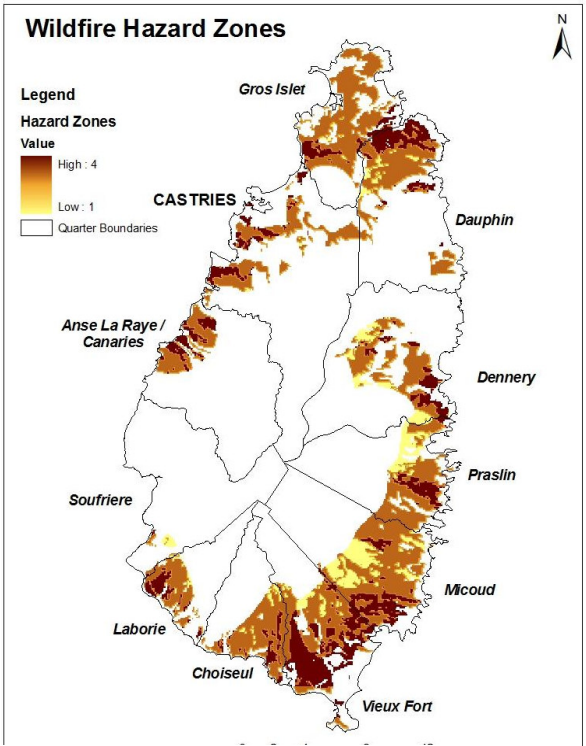


Figure 30: Wildfire Hazard Zones in Saint Lucia

Credit: Forestry Department

[37] Andrew, Gaspard Michael & Lyndon John (2010) National Invasive Species Strategy for Saint Lucia: Terrestrial Ecosystems Analysis. Carried out in support of the Critical Situation Analysis (CSA) under the project Mitigating the Threats of Invasive Alien Species in the Insular Caribbean Project No. GFL / 2328 – 2713-4A86, GF-1030-09-03. pp 33

[38]Charles, A. 2010.Status report on Wildfire Impact in the Millet in 2010.

Gliricida and coconut trees- species of high calorific content and foliar structure.
Hurricanes are also an ever-present threat: the last one to hit the island was Hurricane Tomas in 2010 and it[39] demonstrated that deforested areas are of high risk by both landslide and flow slide. Soil erosion and land degradation were perceived as major causes of biodiversity loss. Current land tenure patterns, land use classification based on soil type and other factors limit available land area and increase competition for land among various sectors, resulting in ongoing patterns of unsustainable land use. Unfortunately, the hazard maps for the country do not include the effects of loss of vegetative cover, or previous or current land use (naturally deforested area, land affected by bushfires, land previously cultivated, cleared/grubbed for proposed development).

Due to their low numbers and restricted geographic area, the Saint Lucia iguana is considered to be critically endangered, meaning "at extremely high risk of extinction in the wild." Now restricted to an area in the North East of the island, threats such as habitat loss, introduced predators (cats, dogs, rats, mongoose), introduced competitors, and loss of genetic integrity, have made survival of the Saint Lucia iguana a primary conservation concern for the Saint Lucia Forestry Department (SLFD)[40] which has formed a partnership with UK-based Durrell Wildlife Conservation Trust (Durrell) to work on the recovery of this unique population.[41]

The Biodiversity Assessment of the Forests undertaken in 2009 through SFA 2003 reported some vegetation types, especially elfin shrubland, cloud montane forests and montane forest that are susceptible to climate change. The semi evergreen seasonal forests are being threatened by farming; the deciduous forests are threatened by livestock grazing and fires. The littoral evergreen forest and shrubland are being destroyed by human settlements and tourism plant. Mangroves are threatened by manmade changes to water flow and cutting for charcoal.

The GEF-IWCAM final report[42] states that the main threats to sustainable management of the water supply and associated watershed and coastal management and protection are those related to: (i) the quality of the water in the watershed, and (ii) the reliable access and production of freshwater as a resource both to the human population and to biodiversity within the watershed/coastal ecosystem.

The issue of threats to transboundary migratory species which abound in Saint Lucia also requires special consideration. A single country alone cannot secure the survival of a transboundary migratory species. It requires collaboration on protection, management, harvest and law enforcement, as many of these species, which aggregate in certain sites are particularly vulnerable to overharvesting and poaching. Furthermore, the continued loss of habitats, as well as the construction of barriers such as roads, or intensive traffic or shipping in their migration corridors, cannot be managed by any single country for a transboundary migratory, species.

---

[39]UNECLAC, 2010.Macro Socio-Economic and Environmental Assessment of the Damage and Losses Caused By Hurricane Tomas: A Geo-Environmental Disaster Towards Resilience.
[40]Field research initiated in 2002 represents the first stage in developing conservation strategy.
[41]http://www.ciasnet.org/2013/01/03/
[42]The Global Environment Facility-funded Integrating Watershed and Coastal Areas Management (GEF-IWCAM) Project. 2011. Case Study of the GEF-IWCAM Saint Lucia Demonstration Project: *"Protecting and Valuing Watershed Services and Developing Management Incentives in the Fond D'Or Watershed Area of Saint Lucia."*

THREATS TO COASTAL AND MARINE BIODIVERSITY

The major threat identified in stakeholder consultations to coastal and marine biodiversity is habitat destruction due to pollution of receiving waters as a result of, *inter alia*, inappropriate dumping of all kinds of wastes into water courses; infiltration of agrochemicals into the waterways; and inadequate management of the buffer zone of rivers where livestock grazing and agriculture are commonly practiced to mention a few.

Other local threats as identified in the "Reefs at Risk in the Caribbean - Revisited" Report are associated with coastal development (coastal engineering, sewage discharge, urban runoff, construction and impacts from unsustainable tourism, beach nourishment); watershed-based sediment and pollution – from erosion, nutrient fertilizer runoff from agriculture; marine based pollution and damage including solid waste, nutrients, toxins from oil and gas installations and shipping; physical damage from ship anchors and groundings; overfishing/destructive fishing including unsustainable harvesting of fish or invertebrates, and damaging fishing practices.

43

Box 1: Threats to Marine and Coastal Resources in Saint Lucia

i. Invasive Species; e.g. Lionfish; seagrass (believed to be outcompeting local grasses and colonizing areas not previously colonized by grasses – need for further investigation)
ii. The potential impacts of Global Climate Change, such as sea level rises, increased seawater temperature and severe weather events, are likely to worsen existing stresses on Saint Lucia's fishery resources, particularly reef fish, pelagics (coastal and oceanic), shelf and slope demersals, flyingfish, queen conch (*Strombus gigas*), and spiny lobster (*Panulirus spp*.)[43]
iii. Anecdotal evidence of involvement of some communities in non-sanctioned activities such as bottom gillnet trawling; scope for more data collection.
iv. Fallout from decline in banana industry has resulted in the movement of farmers/farm workers to fisheries/tourism related activities, especially along the West Coast; such fishers are generally not registered and lacking training and tend to undertake non-traditional type fishing activities which are usually illegal; tend to undertake more opportunistic fishing.
v. Summertime activities of young persons, combined with high rate of youth unemployment involves unlicensed types of fishing – spear fishing/night fishing. There is need to encourage young persons to undertake a sustainable livelihood so that the status of the resource will remain balanced with the increasing number of resource users.

These local threats are further compounded by such global threats as: Thermal stress including warming sea temperatures which can induce widespread or "mass" coral bleaching; ocean acidification driven by increased CO_2 concentrations, which can reduce coral growth rates.

[43] Strategic Plan, Department of Fisheries, 2008

Threats to critical sites and migratory pathways for the Leatherback Turtle – (*Dermochelys coriacea*) include predation by pigs and dogs, as well as continued human harvesting of eggs and turtles, beach erosion, and low hatch success and these have significant impacts to leatherback turtle populations. Unsustainable harvesting of turtle eggs and fishery bycatch also pose a threat. Moreover, the current unprecedented slaughter of the leatherback turtles at the Grande Anse beach, combined with the wide-scale sand mining that has reduced nesting habitat on this beach by more than 50%, also speak to emerging threats to the species.[44] Hence, the potential for leatherback extirpation remains significant.

Major threats to mangroves include coastal development and, to a lesser degree, clear-cutting for charcoal production. The view that mangal systems are 'just mosquito-infested swamps' posing a health threat to nearby residents, is another reason for deforestation of these systems. Solid waste build-up and excess siltation in mangroves are yet further issues negatively impacting these systems. Nevertheless, a number of mangroves on the island have been declared Marine Reserves although enforcement of these marine reserves is nonexistent or weak at most.

2.1.4 National Constitutional, Legal and Institutional Framework

The biodiversity policy and planning framework is prescribed within a range of policies, strategies and plans defined for national sustainable development, economic development, poverty reduction, natural resources management, environmental management, and disaster risk management, among others. The legal, policy, and institutional framework in this regard, is complex, with a number of accompanying regulations and statutory instruments.

More recently, following the elaboration of the Second NBSAP, a revised Climate Change Adaptation Policy, incorporating key biodiversity issues, was elaborated in 2010. In addition, a national position on the concept of the Green Economy (GE) within the national economy has been developed, with the aim of promoting green jobs and improving the overall output of businesses in five key sectors. These include energy, tourism, transportation, agriculture and fisheries[45]. The Revised Systems Plan for Protected Areas (SPAA2) is being revised under the direction of the Saint Lucia National Trust with the aim of being submitted for Cabinet approval and incorporated into the national development plan.

Other more recent and relevant policies, strategies and plans impacting biodiversity management include:

- The Agriculture Sector policy 2009-2015 stresses conservation of the natural resource base.
- National Development Plan (work in progress)
- National Investment Policy
- National Export Development Strategy (NEDS)
- Value Added Tax (VAT)
- Integrated Watershed and Coastal Zone Management Plan

[44] Felix, M.L. 2013.Marine Turtles in Saint Lucia .pp 4.

[45] GOSL. 2014. Understanding and Operationalizing the Green Economy into National Development Planning in the Caribbean Context

- Coastal Zone Management Strategy and Action Plan Saint Lucia.
- National IAS Strategy (2012-2021) (NISS). It is expected to inform legislation, optimize institutional arrangements and foster public education.
- Saint Lucia Department of Forest and Land Resources Strategy 2015-2025
- National Adaptation Plan (NAP) and Sector Adaptation Plans (SASAPs) for Water, Fisheries and Agriculture

These instruments contribute, to a significant extent, to the pursuit of an overarching sustainable development and environmental management approach, but there remains a clear need for a more coherent framework that will integrate all the existing policies and provide a mechanism for creating the necessary synergies between the policies.

The following are the characteristics of the national policy context for sustainable development as has been substantiated by the Saint Lucia Sustainable Consumption and Production Study:

- lack of coordination between the various public sector agencies charged with designing and implementing environmental and natural resource policies and programmes;
- a multiplicity of laws, each dealing with different aspects of resource management, resulting in a compartmentalised approach to environmental management;
- limited appreciation of the economic and social benefits that can be generated through more sustainable modes of production and consumption;
- pricing policies and development decisions that do not take into account the value of environmental services or the costs of mitigating the effects of environmental degradation; and
- weak processes and institutions for engaging civil society in sustainable development initiatives

Importantly, the Study notes that the government tends to have more of a vested interest in boosting consumption as opposed to encouraging sustainable production and efficient, sustainable use of natural resources," as, in almost all sectors the government has a heavy reliance on import duties to generate the revenue needed to meet its recurrent expenditure and investment needs. Consequently, when considering policy or programme options, the government's overriding concern is whether the impact will be positive, or at least neutral, in terms of revenue generation. [46]

Aside from the inadequate policy space, the legal framework(s) to support that policy space is also inadequate. The legal framework for the implementation of the Second NBSAP, for instance, has still not yet been fully established. The two key pieces of legislation, i.e. the draft Biodiversity Conservation and Sustainable Use Bill and the Draft Environmental Management Bill which give authority to the proposed implementation measures in the NBSAP and NEP/NEMS, are still in draft. Be that as it may, the refining of the Draft Environmental Management Bill is in train and

[46] Caribbean Natural Resources Institute. 2010. The Status of Sustainable Consumption and Production in Saint Lucia. Strategic planning for sustainable development in the Francophone Caribbean: a capacity-building programme for sustainable production and consumption (OIF, IEPF and UNEP)

will serve to enhance the institutional framework for environmental management, including the impact and effect of climate change.

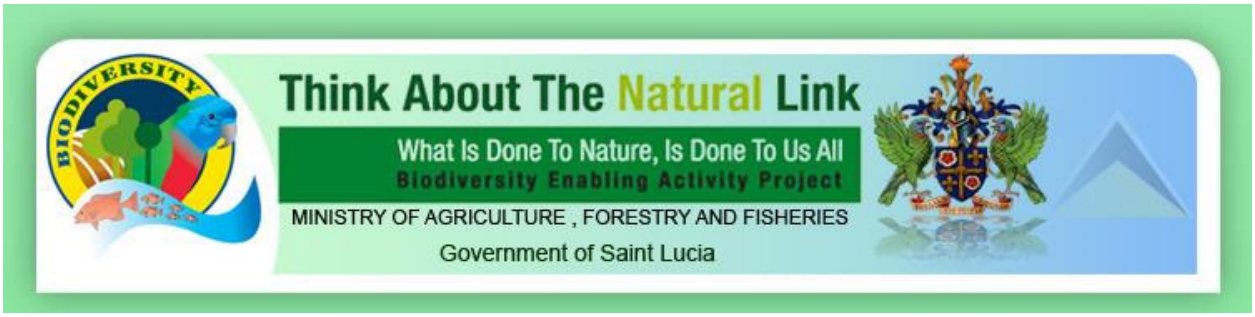
Pursuant to the principles espoused in the Nagoya Protocol on Access and Benefit Sharing regarding community empowerment for biodiversity access/bio prospecting; and the possibility of the concept of the Green Economy becoming enshrined in national legislation, the Biodiversity Conservation and Sustainable Use Bill also needs revisiting. The recommendations arising from the review of the Saint Lucia Systems Plan of Protected Areas in 2009 also need to be enshrined in the draft biodiversity bill.

One of the key requirements identified since the 1st NBSAP was the 'establishment of a coordinating body to guide implementing, monitoring and review' of the NBSAP. The requirement for such an entity or coordinating mechanism is yet to be realised, since the legal mandate for this proposed Biodiversity Authority is dependent on the enactment of the Biodiversity legislation. Further, complementarity with the National Environmental Commission (NEC[47]) has to be pursued, in order to ensure the most effective coordination and collaboration mechanism.

Despite the absence of a formal biodiversity coordinating entity, co-ordination among agencies has improved; albeit not to the extent required for effective biodiversity management. Coordination still remains largely at a technical level; and agency and community capacities for managing biodiversity, in areas such as appropriate technology for Sustainable Consumption and Production (SCP), Research and Systematic Observation (RSO), Monitoring and Evaluation (M&E), among others, need strengthening. Important also is that while technical coordination for biodiversity management has improved, the NBSAP is not regarded as a policy document; it has not received any political endorsement and is yet to be "owned" at the appropriate political level.

[47] The National Environmental Commission (NEC) was established in 2008 to coordinate environmental policies and plans, and to ensure multi-sectoral collaboration on environmental issues. This NEC has the potential to become an important actor in the promotion of the NBSAP. The proposed Environmental Management Bill is intended to serve as an umbrella law rather than to replace existing legislation, and will confirm existing legal mandates for environmental management, help to mainstream environmental management, and support integration and coordination through the operations of the NEC and other agencies.

2.1.5 Knowledge Management



A national Biodiversity Information Network **(BIN)** was established and operationalized in 2008. The BIN, however, needs ongoing maintenance. The use of the Biodiversity **Clearing House Mechanism (CHM)** and other biodiversity information management systems also needs to be regularly promoted by providers and users of biodiversity information, with ongoing focus on traditional knowledge. Finally, the work that had been initiated on the coastal mapping and forestry inventory needs to be completed so that the entire island's biodiversity resources are mapped.

Research and systematic observation (RSO) to enable scenario development for forecasting/predicting potential changes in biodiversity remains an important element of biodiversity management, particularly with regard to the identification of key indicators (KI) for effective management.

2.1.6 Communications, Education and Public Awareness

There is an array of agencies involved in public education work related to biodiversity. However, the NBSAP does not have a broader **CEPA** strategy that would coordinate these activities and realise the potential synergies. Consequently, while the PA process has served to raise awareness with regard to biodiversity, the process has not been sustained to evoke behavioural change. Similarly, while the process of extensive consultation in the formulation of the 1st and Second NBSAP has stimulated creative thinking for biodiversity planning across sectors, and strategies for knowledge management through the Biodiversity Clearing House Mechanism (CHM) have been articulated, the NBSAP does not outline strategies to communicate the NBSAP itself to the wider audience. Hence the stimulus has not been sustained to ensure that biodiversity is embedded into systems for national, sectoral and community planning.

2.1.7 Monitoring and Evaluation

The activities listed below have generated protocols for assessing and monitoring the status of selected species, in particular guidelines for conducting inventories and assessing population dynamics:

- Biodiversity Assessment of Forests, 2009
- Ecological survey, 2011 (survey of reef communities)
- Inventory of IAS, 2011/2012
- Annual Monitoring of Coral Reef Health (2016)

– Mangrove Assessment (2017)

Potential threats of IAS have also been recently assessed – iguanas and feral pigs- and an assessment of the economic value of IAS is being pursued. The sea urchin fishery is also being monitored and strengthened through assistance of the Fisheries Department. Sea Turtle monitoring has been established and assisted by the Fisheries Department but human resources in this regard have declined.

There is need for greater monitoring and quantitative measurement of targets in the NBSAP, as well as greater collaboration among agencies responsible for Biodiversity Management. The mainstreaming of biodiversity management into all national systems and processes will require scaling up of activities and hence the framework of the NBSAP should cater for monitoring and evaluation on a broader scale. For more detail, see heading *5.2.5. Exploring synergies – multipurpose indicators*, below.

2.1.8 Financing Biodiversity Management

The implementation of biodiversity activities and management practices has largely been supported by funding from donor agencies such as GEF, USAID, CIDA, OAS and the EU. There has been some commitment in the national budget for staffing of the Biodiversity Unit formerly in the Dept of Agriculture with a biodiversity coordinator (now Sustainable Development and Environment Officer III responsible for Biodiversity) and a few projects have been funded by the national government.

Mechanisms for financing biodiversity management in the country therefore need substantial strengthening so as to be more sustainable. Nevertheless, Saint Lucia is presently participating in the GEF-financed Sustainable Financing and Management of Caribbean Marine Ecosystems Project. One of the components of this five-year project is directed at establishing a system of long-term financing mechanisms to sustainably fund Protected Areas (PAs) as defined in the Revised Systems Plan for Protected Areas (SPPA2)[48]. Potential Funding mechanisms to generate financing for protected areas include (i) Protected areas user fees, (ii) Hypothecated tourism taxes and levies and (iii) Direct fundraising.

A Caribbean Biodiversity Fund (CBF) has been established as a United Kingdom-based charitable organization. The CBF is composed of five individual sub-accounts (one for each participating OECS country) of US$2.94 million each, with US$1.44 million from the GEF and the remainder from KfW[49] and The Nature Conservancy (TNC). These sub-accounts will be invested jointly. Initial sources of funds would include donations from the GEF, KfW, TNC, and others. Endowment returns will be monitored closely to ensure that each sub-account is credited for its share, and is disbursed directly into its respective National Protected Area Trust Fund on an annual basis based on agreed performance targets and co-financing from the Government and other sources.

[48] Haffey, D. (2009). A Systems Plan for Protected Areas in Saint Lucia.105pp. http://www.cbd.int/doc/pa/tools/A%20Systems%20Plan%20for%20Protected%20Areas%20in%20Saint%20Lucia.pdf.

[49] Kreditanstalt für Wiederaufbau or the German Development Bank

2.1.9 Strategic Environmental Assessment (SEA)

The process for the revision of the Second NBSAP considered a Strategic Environmental Assessment (SEA), which will facilitate the mainstreaming of strategic environmental issues, in particular the issues related to climate change and climate variability, sustainable land management (SLM), sustainable forestry management (SFM) and green economy, among others.

A strategic environmental assessment of the Implementation Plan in the Revised Second NBSAP has been undertaken. This SEA is presented in the appropriate section below.

SEA might be applied to an entire sector or to a geographical area. The SEA is therefore referred to as 'a family of tools that identifies and addresses the environmental consequences and stakeholder concerns in the development of policies, plans, programmes and other high level initiatives

Source: Guidelines on Biodiversity Inclusive Strategic Environmental Assessment

2.1.10 Vulnerable Groups

The critical role of biodiversity in sustainable development was recognized in the Rio+20 outcome dubbed "The Future we want." While the benefits provided by biodiversity are important to all people, some of these benefits are especially important to the traditional resource users (e.g. farmers, fishers, charcoal producers), the poor and vulnerable groups. These groups, including the rural poor, women, the elderly and the young, are in many cases most directly dependent on biodiversity and ecosystems. To them, **the goods and services provided by ecosystems underpinned by biodiversity often constitute social safety nets.** Further, women and men have been found to utilise ecosystem goods and services in different ways.

Vulnerability and adaptation (V&A) assessments conducted for the Second National Communication (SNC) on Climate Change, point to a seemingly growing trend in Saint Lucia for young males to play less of a meaningful role in society than females of the same group. Indeed, it is quite common to see the number of male to females drop in progression towards tertiary level education. Appropriate assessments and analysis of vulnerable groups will bring focus to these 'marginalised' young males as part of Saint Lucia's plan to utilize biodiversity in sustainable development.

2.2 Review of Draft Second NBSAP

2.2.1 Activities Undertaken and Progress Made

The Second NBSAP was formulated in 2008-2009 under the EU SFA 2003 Programme, as a revision of the 1st NBSAP. The Draft Second NBSAP provided quite a comprehensive coverage of issues at that time and was designed to be adaptive, iterative and cyclical, enabling it to be reviewed and modified and/or expanded as conditions evolved. Key components of the Draft Second NBSAP were:

1. An increased focus on the marginalized issue of traditional knowledge, as well as focus on emerging issues that were, at that time, gaining prominence: biosafety, invasive alien species, and intellectual property rights, among others.
2. Preparation of comprehensive draft national legislation on biodiversity management, including conservation.
3. Development of a functional information management platform linking relevant key agencies and stakeholders who could upload information and/or utilize the information for more data oriented decision making and planning.

A priority action for the Draft Second NBSAP was the development of a new vision, goal and targets for biodiversity management in the country for the period 2008-2018. In addition, targets were established for the 10-year action plan, with activities to be achieved within set timeframes. The Draft Second NBSAP also promoted an integrated planning approach to include mainstreaming of biodiversity management into national sector plans. It was envisaged that the outcomes of this generation of NBSAP would be:

a. Biodiversity objectives are mainstreamed into national development planning at all levels
b. Community participation and involvement in biodiversity management are maximised
c. Improved institutional framework and coordinating mechanisms for biodiversity management are supported by legislation
d. Effective monitoring and evaluation mechanisms are developed and implemented.

The matrix – Second *NBSAP at a Glance* – which summarises the structure, content and characteristics of the Draft Second NBSAP is presented in **Annex 1.**

Overall, the review revealed that substantial concrete activities and innovative thinking in biodiversity planning had been generated[50]. This has taken place not only within the conservation community, but also on a wider scale across the major economic sectors.

To this end, the stocktaking exercise has demonstrated that many biodiversity related activities are being implemented at all levels of society (national, sectoral, agency, community, household, etc.) which contribute inadvertently to the implementation of the NBSAP. This occurs as the island's rich biological resources are used for food, livelihoods, industry and ecosystem services that are critical for human well-being and socio-economic development. As examples:

- Invest Saint Lucia[51] is considering a range of biodiversity products and services as potential opportunities for investment in the country.
- In 2013, the Dept of Tourism embarked on a programme to improve the competitiveness of the rural economy through community-based eco/agro Tourism.
- The Saint Lucia Trade Export Promotion Agency has embarked on a community based programme on indigenous natural dyes and pigments.

A revised NBSAP must give consideration to valuing economic benefits for biodiversity and including this in national financial and economic planning and decision making.

[50] The NBSAP process has contributed to this to some extent

[51] INVEST SAINT LUCIA is Saint Lucia's first point of contact for international investors seeking information about setting up business in Saint Lucia.

During the process of revising the Second NBSAP, consideration was given to the fact that a number of events and changes have occurred since the Second NBSAP was developed in 2009, including; *Issues of synergies amongst Rio Conventions and other biodiversity related conventions and agreements such as CITES and Ramsar.*

Saint Lucia is party to at least 19 of such international agreements including MEAs. It is also party to one regional MEA (i.e. Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena Convention)), and the sub regional Treaty of Basseterre with its affiliated St. George's Declaration of Principles for Environmental Sustainability in the OECS (SGD). Primarily two Government ministries administer most if not all of the MEAs; they are the Dept of Agriculture, Fisheries, Physical Planning, Natural Resources and Co-operatives which (including the Forest and Land Resources Department and the Department of Fisheries); the Dept of Education, Innovation, Gender Relations and Sustainable Development; particularly its Department of Sustainable Development and the Environment Division (SDE). Saint Lucia is also a member of a number of international and regional fora that also have a bearing on national environmental policies.

Table 6: List of International Instruments and related national implementing organizations in Saint Lucia

Conventions	Status	Organisations
(1) Convention on Biological Diversity (CBD)	Party 28 June, 1993	DSD- Biodiversity Unit
(2) International Convention for the Regulation of Whaling (IWC)	Party 29 June, 1981	Dept of Agriculture- Department of Fisheries
(3) Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES)	Party 15 March, 1983	Dept of Agriculture - Forest and Land Resources Department & Department of Fisheries
(4) United Nations Convention of the Law of the Sea (UNCLOS)	Party 27, March, 1985	Dept of Agriculture -& Department of Fisheries; DSD
(5) Agreement for the implementation of Provisions of the Convention relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks	Party 9, Augus t, 1996	Department of Fisheries

Conventions	Status	Organisations
(6) Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena Convention)	Party 27, March, 1985	DSD
(7) Convention on Wetlands of International Importance especially as Waterfowl habitat (Ramsar Convention)	Party 19 June, 2002	Forest and Land Resources Department
(8) International Plant Protection Convention (IPPC)	Party	Dept of Agriculture
(9) Convention on the Prevention of Marine Pollution by Dumping of Waste and other Matter (MARPOL)	Party 23 Aug, 1985	Department of Fisheries, DSD
(10) Convention concerning the Protection of the World Cultural and Natural Heritage (WHC)	Party 14 Oct, 1991	DSD; Forest and Land Resources Department / Department of Fisheries;
(11) Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction	Party 26, Nov., 1986	DSD
(12) Convention on the Prohibition of Military or any Hostile use of Environmental Modification Techniques	Party 27, May, 1993	DSD
(13) Convention on the Prohibition of the Development, Production, Stockpiling, and Use of Chemical Weapons and on their Destruction	Party, 29 March, 1993	DSD
(14) United Nations Framework Convention on Climate Change (UNFCCC)	Party 14 June, 1993	DSD
(15) United Nations Convention to Combat Desertification (UNCCD)	Party 30 March, 1997	Forest and Land Resources Department

Conventions	Status	Organisations
(16) Protocol to the Cartagena Convention on Specially Protected Areas and Wildlife (CEP-SPAW Protocol)	Party 18 Januar y, 1990	Forest and Land Resources Department & Department of Fisheries
(17) St. George's Declaration of Principles for Environmental Sustainability in the OECS (SGD)	Party April,2 001	DSD; Department of Forestry & Department of Fisheries
(18) Caribbean Environment Programme / Protocol concerning Pollution from Land Based Sources and activities (CEP-LBS) Protocol	Party 2010	DSD
(19) Vienna Convention for Protection of Ozone Layer	Party 28 July, 1993	DSD
(20) International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)	Party 16 Jul 2003	Department of Agriculture
Paris Agreement	Party 22 April 2016	DSD

2.2.2 Lessons Learned from the Draft Second NBSAP

[1] The protracted revision process lead to interim versions that were either not known to some agencies or caused a level of confusion, as to which version was the valid one. As a result, actions from the revised NBSAP were not explicitly integrated into agencies' work plans. However, agencies that were involved in NBSAP review implemented many elements by default, testimony to the fact that biodiversity is, to an extent, already integrated into the work programmes of these agencies. Ideally, NBSAP review should be swift and thorough, followed by widespread publicity.

[2] Partly as a result of [1], stakeholders were not sufficiently aware of the provisions in the NBSAP to use the strategies and action plan effectively for their own programming. Thus, effective awareness-raising should be a top priority of the Department of Sustainable Development (DSD), as coordinating agency.

[3] The negative impact in [1] could further be reduced by enhanced communication between the DSD and the agencies that are tasked with on-the-ground interventions

[4] The presentation of policies and strategies to and approval by Cabinet, as well as the enactment of relevant legislation can lead to delays. For example, the Systems Plan for Protected Areas of 2009, the National Invasive Species Strategy (NISS) of 2011 and the Invasive Species Bill have yet to be formally adopted.

[5] Despite the above-mentioned challenges, the implementation of many elements is possible under agency work plans. A successful example is the increased use of native, and even rare, species in forest restoration.

The detailed analysis of the follow-up survey is appended in **Annex 10**.

2.2.3 Challenges and Opportunities for the NBSAP

Saint Lucia's processes for NBSAP development, implementation and updating have so far assisted the island in improving biodiversity knowledge and in identifying the main causes of biodiversity loss and the response measures needed to combat the loss. NBSAP development provides an opportunity to more meaningfully adopt the ecosystems approach, especially in the realm of sustainable consumption and production of biodiversity goods and services and deepen linkages amongst Rio Conventions and the related biodiversity conventions such as CITES and Ramsar to derive synergies.

Most natural resource and environmental projects now utilise an ecosystem approach for implementation, giving strong focus to maintaining the integrity of ecosystems and the services they provide. The concept of a system of protected areas in the SPPA2 gives recognition to the fact that one type of ecosystem is not separate from other natural ecosystems and, as such, the flow of services from one ecosystem to surrounding ecosystems must be considered. This, in turn, ensures that the full range of biodiversity components is adequately addressed.

The Draft Fisheries Plan already endorses an ecosystems approach, in conformity with the sustainable use of the available fishery resources. The Plan considers that environmental considerations go beyond the status of the targeted species by considering sustainability in a wider sense; that is, looking at the potential indirect impacts of fisheries on other elements of the ecosystem.

The application of an ecosystems approach to agro-ecosystems, for example, would be most effective as this would allow for better integration of food security values, as it would allow food security to be delivered alongside healthy ecosystems, which provide many other valuable services to humankind.

The Draft Second NBSAP did not address the burgeoning issue of valuing biological resources and natural capital and making the transition to a Green Economy, adoption of the Nagoya Protocol on Access and Benefit Sharing.

Thus, this revision of the Draft Second NBSAP will address, as a minimum, the following issues:

- Appreciation of opportunities in biodiversity management to overcome development issues of **poverty reduction** through livelihood development; e.g. rural development initiatives in arts and craft, eco-tourism with potential to expand;
- **Economic valuation of biodiversity resources** and incorporation into the economic development paradigm; particularly to record both the value of the ecosystems services, and the cost of degradation as pertains to reduced ecosystem service output;

- The potential value of the creation and **management of protected areas** to biodiversity management in a small island state such as Saint Lucia;
- The increasing trend in intensification of extreme climatic events and the inadequate integration of biodiversity considerations into **climate-change related activities**. There are no indicators and mechanisms to measure the impact of climate change and climate variability on habitat damage or loss such as forest degradation and its impact on biodiversity.
- Insufficient guidelines for the consideration of **biodiversity in environmental assessments** particularly in marine and coastal areas.
- The consideration of **risk mitigation initiatives** to protect biodiversity;
- **Sustainable use of genetic and biological resources**; overfishing and potential collapse of Inshore Marine Ecosystems
- Ensuring **access to Genetic Resources and Benefit Sharing** – both at the community and national level;
- Appreciation of the **special role women play** in ensuring that environment and development issues are sustainably harnessed for the continued health and wellbeing of their families and communities, as well as the considerable contribution of youth to sustainable development programmes.
- The requirement for substantially more human and financial resources than what is currently being allocated for biodiversity conservation and ecosystem management; Sustainable **management of ecosystem services** and biodiversity conservation has not been well presented in terms of its contribution to development, growth and equity to economists, political leaders and policy makers.
- Articulation of **coherent policies** and distinctive mechanism for coordination among sub-sectors and across sectors given that biodiversity management is a multi-sector mandate.
- Need for **sustained public awareness and education**.
- **Improved data management** (esp. collection and dissemination) as an imperative for improved coordination and collaboration for biodiversity management.

While the responsibility for natural resource management lies primarily with the national government, which, together with international donors, invests significant resources in natural resources management and conservation, this complexity of the challenge requires that civil society in all its various forms, including the private sector, national environmental groups, and small community-based organizations, must also fulfill a vital role as key advocates of and stewards for biodiversity and the benefits it provides for people.

3.0 The Revised National Biodiversity Strategy

3.1 Context for the Revised NBSAP

The 10th Conference Parties (COP) held in Nagoya, Japan, October 2010 adopted the strategic Plan for Biodiversity 2011 to 2020. The COP urged Parties and other Governments to review, update and revise, as appropriate, their national biodiversity strategies and action plans (NBSAPs) in line with this new Strategic Plan. A global review of Party NBSAPs revealed that many existing NBSAPs do not adequately address the underlying causes of biodiversity loss and that they fail in the challenge of mainstreaming ecosystems and biodiversity into economic planning and sectors. These have also been identified as major gaps in Saint Lucia's Draft Second NBSAP.

> Decision X/2(CBD COP 10) saw the adoption of the new Strategic Plan for Biodiversity 2011-2020) and its Aichi Biodiversity Targets, and explicitly invites Parties to translate this overarching framework into ***updated and revised NBSAPs***. The incorporation of biodiversity and ecosystem service values into NBSAPs will assist countries in developing revised Strategies, which are compliant with the targets.
>
> Responding to Nagoya: A new global framework for biodiversity

The extensive consultations that have been held throughout the country reveal that biodiversity contributes significantly to livelihoods, especially rural livelihoods. There is also recognition in the country that biodiversity underpins many important ecosystems services. There has, however, been inadequate effort at valuing the contribution of the ecosystem services to human wellbeing. In addition, Target 2 of the Biodiversity Strategic Plan (2011 to 2020) states that, "*By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems*."

Target 2 also requires the application of environmental economic valuation tools into general guidelines for economic appraisal of decision-making; and the integration of methods for valuing biodiversity and ecosystem services into guidelines for environmental impact assessment (EIA); strategic impact assessment (SIA); and spatial planning. Target 3 requires countries to develop a timetable for the preparation of assessments, for the development of action plans, and for implementing priority activities for the removal, phase out, or reform of harmful incentives. As previously explained, Saint Lucia is still lagging in processes to give effect to targets 2 and 3.

3.1.1 Incorporating Situational Analyses of MEAs

In 2012, at the CBD-COP 11 held in Hyderabad, India,[52] Saint Lucia produced a statement noting:

> *"... that it was particularly important for SIDS to have support, not only for Multilateral Environmental Agreements (MEAs) of the Rio Conventions but also the other biodiversity*

[52] 11th Conference of the Parties to the Convention on Biological Diversity (8-19th October, 2012)

related MEAs of the Biodiversity Liaison Group (BLG). Saint Lucia identified that SIDS are often challenged in meeting sufficient financial, human and technological resources necessary for MEA implementation. Saint Lucia noted that the CBD is part of the Biodiversity Liaison Group (BLG) established in 2004 consisting of six main biodiversity conventions (i.e. CBD, Convention on the Conservation of Migratory Species of Wild Animals (CMS), the Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES), International Treaty on Plant Genetic Resources for Food &Agriculture, Ramsar and the World Heritage Convention). We also noted that a number of Memoranda of Understanding exist among these MEAs (e.g. the MOU existing between CBD and CITES since 23rd March 1996). Saint Lucia identified the preparation of the revised National Biodiversity Strategic Action Plans (NBSAPs) as an opportunity for the CBD to support national MEA coordination. This should assist in helping SIDS in achieving implementation of the Strategic Plan for Biodiversity 2011-2020 and progress towards the Aichi Biodiversity Targets."

Therefore, in keeping with Decision X/2(CBD COP 10) a far more integrated and synergized approach to implementation of the other biodiversity related MEAs is important to Saint Lucia in its implementation of the CBD. It is noted that the challenges to implementation of the CBD are not particularly different from those related to its implementation of the other biodiversity related MEAs. Thus, this revised NBSAP offers an institutional framework for more efficient inter-agency collaboration on national planning, particularly for environmental planning and management. This would allow enhanced mainstreaming of the biodiversity agenda and the objectives of the various MEAs.

This revision to the Second NBSAP allowed for an assessment of the constraints and challenges perceived by administrators involved in implementation of CBD alongside the other MEAs in Saint Lucia. The **main limitations to implementation of CBD in Saint Lucia** can be summarised as:

- A lack of sufficient financial, human and technological resources for public institutions to implement the various requirements of CBD for sustainable biodiversity management.

- The lack of a multi-sectoral policy approach that factors in sustainable biodiversity conservation and which is of relevance to non-traditional stakeholders (e.g. the tourism sector, Ministries of finance/planning) and NGOs.

- Current local CBD implementation mechanisms do not generally allow for the direct and active participation of stakeholder major groups (e.g. civil society, private sector, academic). It is largely public sector civil servants that are involved directly in the convention and are key participants.

- Lack of synergistic measures and approaches for increased efficiency in implementation of the MEAs including CBD in Saint Lucia.

- Lack of biodiversity resource research capacity (e.g. baseline data for some taxon), and for effective monitoring and management.

- Lack of awareness of the objectives of the CBD and the value of biodiversity. There is a need for greater public awareness and engagement in the implementation of CBD's targets. Such a national public education strategy should identify key target audiences, messages, products and pathways. Target audiences should include policy makers and public officials who have the power to make biodiversity issues a national priority. A draft public awareness and education strategy for biodiversity was produced under the Second Enabling activity project. Some elements of the strategy were implemented, but not sustained due to limited funding.

- Inadequate local legislation to cover some of the policy based needs of the objectives of the CBD (e.g. ABS, IAS, Liability and redress) and inadequate availability of legislative drafting expertise. A Biodiversity Sustainable Use and Conservation bill has been drafted and is currently being reviewed to include emerging issues such as ABS and Biodiversity Financing.

In 2011, a National Portfolio Formulation Exercise (NPFE) was undertaken by means of a consultative process which involved stakeholders from the public, private and non-governmental sectors. This NPFE produced the following priorities of interest to CBD, and the other biodiversity related Conventions.

1. Programmatic approach

- Enhanced cooperation between Focal Areas: CBD; UNCCD; and UNFCCC (mitigation)

- Ensure environmental integrity of the Conventions and promote synergies under the common objective of sustainable development

- Strengthen joint efforts between agencies and use available resources more efficiently

2. Enhanced collaboration

- Promotion of complimentarity among NBSAP under the CBD, the NAPSAP of the UNCCD and collaboration among national focal points
- Development of joint work programmes and joint capacity-building activities, including training, and local workshops to promote synergy in implementation
- Facilitation of exchange of information and experience, including improving inter-accessibility of available web-based data
- Cooperation in communication, education and public awareness programmes
- Cooperation in the development of advice, methodologies and tools.

Cross sectoral themes identified between conventions included Research and monitoring, information exchange, technology transfer, capacity-building, financial resources, and public awareness.

Financial and Technical support for MEA implementation

"Caribbean countries [like Saint Lucia] tend to receive financial and technical assistance on the basis that they were less responsible for the creation of the environmental problems and have more limited resources to deal with these problems than the developed countries" (UNEP 2000)[53]. However, there is a significant difference in the financial support received from MEAs like the CBD that have access to GEF finance that supports national programme implementation and reporting on national achievements and those that do not (e.g. Ramsar, CITES). This issue of finance ultimately affects whether those MEAs without financial mechanisms (e.g. CITES, WHC, Ramsar, SPAW) achieve their strategic goals and objectives in resource poor developing SIDS like Saint Lucia.

Biodiversity related legislation and the MEAs

There is a need to identify legislative gaps that may occur in national legislation developed for the CBD and other biodiversity related MEAs (e.g CITES) as these may result in conflictive views and confusion in the general public. An example may be the efforts underway in Saint Lucia to eradicate an invasive green iguana (iguana spp.) which is regarded as a threat to the native or endemic green iguana (protected under the Wildlife Protection Act). CITES lists all iguana species under Appendix II yet some members of the green iguana species have been identified as invasive alien species in many countries (e.g. USA, Caribbean and some Pacific states).

Public Awareness on CBD and other biodiversity related MEAs

Lack of awareness of the various MEAs can be an issue especially by sectors impacted if inadequate public education and awareness is not done. Saint Lucia has made substantial progress in conducting public awareness campaigns for both CBD and CITES as MEAs. Such campaigns have been largely financed by the GEF and EU with co-financing by the Government of Saint Lucia. Issues regarding the need to safeguard endemic species from illegal wildlife smuggling, the threat of invasive alien species and the contribution of the island's ecosystems to sustainable development have been highlighted on television, radio programmes, panel discussions, newspaper publications and public exhibitions on various environmental celebration days (e.g. Earth Day, Ramsar Convention's -World Wetlands Day, Biodiversity Day).

[53] UNEP. (2000). Multilateral Environmental Agreements (MEA) implementation in the Caribbean, Report and Guidelines. Mexico City, Mexico.

Table 7:Summary of MEA Synergies for reporting purposes:

Impact Indicator	CBD	CITES/ CMS	FAO	GEF TT	UNCCD	UNDP	UNFCCC	WB	WHO
Water availability per capita					X	x	x	x	x
Change in land use	NR			LD	X		X		
Proportion of the population above poverty line				LD, SFM	X		X		
Childhood malnutrition and/or calorie intake per capita					X				(x)
The Human Developme nt Index as defined by UNDP					X	>2010			
Level of land degradation	NR			LD, SFM	X		X		
Plant and animal biodiversity	NR	X			X		X		
Aridity index	NR				X				
Land cover status	NR		X	SFM	X		X		
Carbon stocks above and below ground	NR			SFM, CC	X		(x)		
Land under SLM	NR			LD, SFM, CC	X		(x)		

3.1.2 Institutional arrangements related to implementation of the NBSAP and other biodiversity related MEAs

Primarily two Government ministries administer most, if not all, of the biodiversity related MEAs (See *table Table 6. List of Conventions and related national implementing organizations in Saint Lucia*).; they are the Dept of Agriculture, Fisheries, Physical Planning, Natural Resources and Co-operatives (including Water Resources Management Agency, the Forest and Land Resources Department and the Fisheries Division); the Dept of Education, Innovation, Gender Relations and Sustainable Development; particularly its Department of Sustainable Development (DSD). Therefore, their work programmes should reflect the incorporation and mainstreaming of the objectives of these MEAs.

However, it is acknowledged that effectively implementing these international agreements will ultimately contribute to Saint Lucia's pursuit of sustainable development and this is a small country with limited human, financial and technical resources. Therefore, any meaningful effort that can be made to build synergy both in implementing, and reporting on these conventions, would be regarded as useful indeed. Additionally, the separate implementation of these global instruments does not support the integrated approach to sustainable development which is called for in the Rio Declaration and SIDS-POA.

Forest and Land Resources Department

The Forest and Land Resources Department (commonly known as the Forestry Department) presented a strategy to "address the changing responsibilities of the Department and the demands on its resources" for the period 2015 to 2025. This strategy was developed through a participatory process inclusive of other governmental agencies (e.g. Dept of Sustainable Development, Energy, Science and Technology (MSDEST)), non-governmental organisations, and the public.

The Forestry Department is a lead agency with responsibility for terrestrial ecosystem resources and for the development and implementation of national policies in this regard. As such the Department is a key agency involved in implementation the CBD's protocols, programmes and objectives in Saint Lucia through the NBSAP. It also serves as the focal agency for other biodiversity related MEAs whose objectives are important to the success of the NBSAP (e.g. Ramsar, CITES). The Chief Forestry Officer and the Chief Fisheries Officer are appointed as the focal points to the SBSTTA.

This 2015-2025 strategy makes specific mention of the role of the Forestry Department in implementing the various MEAs and states under the Section [Strategy 5: Organisational strengthening] "[e) Implementing multilateral environmental agreements:
The responsibilities of the Department include meeting obligations with respect to Multilateral Environmental Agreements (MEAs) to which Saint Lucia is a Party; for example, the Convention on Biological Diversity (CBD), the Framework Convention on Climate Change, the United Nations Convention to Combat Desertification (UNCCD), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the Cartagena Convention. Senior members of the Department are assigned responsibility to act as focal points for various

agreements and to attend and formally represent Saint Lucia at meetings and Conferences of Parties. The Department needs to improve its capacity to fulfil this role in the following ways:

- Assessing the commitments associated with MEAs and developing strategies for meeting those commitments.
- Ensuring that Saint Lucia benefits appropriately from engagement with MEAs.
- Developing criteria for MEA focal points and building the capacity of sta to understand MEAs, work with national authorities to develop positions for implementing MEAs, and formally represent Saint Lucia at Conferences of Parties."

Included in these obligations as focal agency, is the reporting to the various MEAs. The Department is therefore well poised for ensuring synergistic execution of the NBSAP alongside the activities related to the other biodiversity related MEAs.

Department of Fisheries

The Department of Fisheries is responsible for all marine life and the management of marine reserves, other than those vested in the Saint Lucia National Trust. The mission of the Department is "to promote self-sufficiency through increased production of Marine and Aquaculture products, and to develop the fishing industry and implement measures to ensure its sustainability." This includes:

- Modernization of the fisheries infrastructure and fishing vessels;
- Use of improved fishing gear and methods;
- Regulation of fishing gear;
- Protection of marine biodiversity;
- Regulation of other marine based activities so as to mitigate negative impacts on the fishery sector and ensure the overall educational advancement of fishers;
- Development of appropriate fresh water marine aquaculture programs

Saint Lucia is party to the 1991 Agreement that established the Common Fisheries Surveillance Zones (CFSZs) for participating Member States of the OECS. This agreement allows for an authorized officer under the fisheries legislation of any given member state to be authorized anywhere within the common zones with corresponding authority. The common zones comprise the fishery waters, waters within the fishery limits and the Exclusive Economic Zones (EEZ) of the participating states and are established only for surveillance and enforcement of the fisheries acts. Saint Lucia is also party to the 2003 Agreement establishing the Caribbean Regional Fisheries Mechanism (CRFM) to promote and facilitate the responsible utilization of the region's fisheries and other aquatic resources for the economic and social benefits of current and future populations of the region (GOSL, 2006).

In addition to responding the regional mandate, the Department is responsible for implementation or responding to the following international biodiversity related MEAs as noted in *Table 6. List of Conventions and related national implementing organizations in Saint Lucia.*

Department of Sustainable Development

The DSD is the focal point for the **Convention on Biological Diversity and the Cartagena protocol on Biosafety.** It is responsible for the formulation and implementation of policies and legislation in support of environmental management, biodiversity management, inclusive of protected areas management and, by extension, implementation of the **UNESCO-World Heritage Convention**. It is also the lead focal agency responsible for international climate change negotiations, coordinating national climate change action and reporting national implementation under the **UNFCCC.** The portfolio also includes hazardous waste/chemicals management, oceans/coastal zone management and related policies, legislation, strategies and plans on the foregoing. The Department is also in the process of finalizing an Environmental Management Bill to govern its work, further to a Climate Change Bill and already has existing legislation pertaining to chemicals management. The specific international biodiversity related MEAs the DSD responds to are included in international biodiversity related MEAs, as noted in *Table 6. List of Conventions and related national implementing organizations in Saint Lucia.*

3.2 Rationale of the Revised Second NBSAP

The analysis and consultations conducted during the biodiversity assessment process substantiate that Saint Lucia, like most countries in the Caribbean Islands Hotspot, has built an economy classified as middle-income that is heavily reliant on ecosystem services, particularly for tourism, agriculture and fisheries. The various ecosystems provide vital freshwater resources; help to mitigate the impacts of hurricanes; regulate local climate and rainfall; prevent soil erosion and yield locally consumed non-timber forest products. Moreover, the Hotspot spans areas of ocean with many kilometers of productive coastal and near-shore habitats. The coastal and marine environments are essential for the tourism and fisheries sectors. Both terrestrial and marine ecosystems host unique assemblages of flora and fauna of high global importance.

The assessment also upholds that the island's ecosystems are particularly fragile, finite and under significant pressure. The effects of climate change and its disproportionate impacts on the island, combined with continued population growth, emphasizes the importance of maintaining what intact ecosystems remain, of strengthening their resilience, and of restoring degraded ecosystems. This imperative is not only critical for maintaining biodiversity but also has clear implications for the future welfare of the citizens of Saint Lucia.

Notably, the passage and impacts of Hurricane Tomas on Saint Lucia in 2010 highlighted the value of biological resources in the provision of ecosystem services to the country, the reliance of a small island state on these ecosystem services and the impact of a hydro-meteorological hazard compounded by the unsustainable activities of humans on the country's biodiversity, community resilience and overall national social and economic development.

The island continues to grapple with unremitting economic, social and environmental challenges resulting from the ongoing global economic downturn and financial crisis, which, coupled with the current national development planning architecture, constrains its ability to capitalize on more holistic approaches to development planning that seek to incorporate the concept of natural wealth into economic performance.

Opportunities however exist for employment creation and revenue generation, within the agenda of sustainable consumption and production and the green economy. The development and upscaling of the production of biodiversity-friendly goods and services, coupled with elements of local cultural heritage, creates a facility for empowerment of communities. Supported by the adoption of the Nagoya Protocol, which seeks to ensure equitable access and benefit sharing, these initiatives will better assure improved economic and social development at all levels.

The valuation of biodiversity and the incorporation of natural wealth into economic performance is a new process for Saint Lucia, as it is too much of the rest of the world. Concrete experience in applying such an approach to national accounting is limited[54]. While Saint Lucia recognises the urgent need to integrate issues of green economy and sustainable consumption and production into core policy and decision-making processes, the question that needs to be addressed is how biodiversity can be effectively valued and more fully integrated into development policies, and what are the requirements and (economic) instruments for doing so.

The rationale for incorporating biodiversity values into development strategies and practices is underlined by the fact that interventions required to increase ecosystem resilience invariably advance development objectives. Biodiversity management calls for natural resource management, buttressing food security, development of social and human capital and strengthening of institutional systems. Such processes, besides building ecosystem resilience and promoting sustainable livelihoods for individuals, communities and regions, are good development practice in themselves, and allow countries to buffer economic, natural and anthropogenic shocks and stresses. Hence, the inclusion of biodiversity issues/values in the design and implementation of development initiatives is vital to promoting economic wellbeing and enhance sustainable development.

Hence, the nexus between biodiversity management and sustainable development is the platform on which the Revised Second NBSAP Framework is constructed.

3.3 Guiding Principles, Priorities and Targets of NBSAP

Recognizing the principles established below, Saint Lucia's Revised NBSAP is a living document which will continue to evolve on the basis of experiences and reviews, as well as feedback received through consultation with stakeholders, especially with respect to its targets, strategic directions and actions. The Revised Second NBSAP has sought to achieve consensus on a set of practical and realistic actions that reflect national aspirations for the conservation and sustainable use of biodiversity, in conjunction with other environmental goals in Saint Lucia.

[54]SEEA – UN System of Environmental Economic Accounting allows for integration of natural wealth with assessment of economic performance; consistent with system of national accounts (SNA – GDP).

3.3.1 Guiding Principles for Revised NBSAP

The implementation of the Revised Second NBSAP will continue to be guided by the following principles provided in Box 2.

Box 2: GUIDING PRINCIPLES FOR 2ND REVISED NBSAP

i. **The NBSAP** seeks to address all three objectives of the Convention:
   - Conservation of biodiversity
   - Sustainable use of the components of biodiversity
   - Fair and equitable sharing of the benefits derived from utilization of genetic resources.

ii. **The NBSAP** will build on conditions precedent in the Second NBSAP, particularly with respect to the adoption of an ecosystems approach, as opposed to a species approach (e.g. water and land used as a habitat/living resource).

iii. **The NBSAP** must take into account the contribution of biodiversity and ecosystem services to human well-being (including having the basics for a good life, health, good social relations, security and freedom of choice and action), poverty eradication and national development as well as the economic, social, cultural and other values of biodiversity. It should also seek to maintain this fundamental contribution.

iv. **The NBSAP** is a strategic instrument for achieving concrete outcomes, and not a scientific study.

v. **The NBSAP** is jointly developed, adopted, owned and implemented by the full range of societal groups who may have interests, stakes or rights with regard to biodiversity - technical, political and functional.

vi. **The NBSAP** must derive measures to mainstream biodiversity into sectoral and cross sectoral policies and programs and promote harmonised and integrated implementation.

Additional principles will include:

i. **Valuation of Biodiversity**, so that it can be viewed/appreciated as *an asset for*, *rather than an impediment to* development, with regard to sustainable livelihoods (and thus is adequately reflected and addressed in development policies, including poverty reduction strategies and policies).

ii. **Incorporation of Disaster Risk Mitigation** (DRM) approaches and practices in biodiversity management to halt the loss of biodiversity, so as to ensure ecosystem resilience for providing ecosystem services sustainably.

UN System of Environmental Economic Accounting (SEEA) allows for integration of natural wealth with assessment of economic performance; consistent with system of national accounts (SNA – GDP).

iii. **Recognition of innovation**, knowledge and technology as important drivers of sustainable consumption and production.
iv. **Cooperation and Collaboration**: with respect to the development of mechanisms for international development cooperation and transboundary or regional cooperation, and explore opportunities for South-South cooperation.
v. **Promote co-management approaches** (e.g. PPPs) in the implementation of the NBSAP, particularly with respect to investment in the conservation and protection of resources, and also for deriving benefits from the sustainable use of biodiversity.

3.4 The Revised Second NBSAP Framework

The Framework for the Revised Second NBSAP builds on the Draft Second NBSAP for Saint Lucia formulated in 2008-2009. The revised Framework runs from 2018-2025, and will be reviewed and modified, as required, every three to five years by a multi sectoral National Biodiversity Coordinating Committee.

It is a flexible framework which allows for the establishment of national targets and for enhancing coherence in the implementation of the provisions of the Convention and the decisions of the Conference of the Parties (esp. UN CBD COP 10 with regard to The Strategic Plan for Biodiversity 2011-2020 and associated Aichi Targets), including the programmes of work and the Global Strategy for Plant Conservation as well as the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of the Benefits Arising from their Utilization; and consistent with other national dictates under the Millennium Declaration, 2030 Sustainable Development Agenda, and the OECS St. Georges' Declaration (SGD), Green Economy initiatives, and national development policies and plans, such as, inter alia, SPCR, CCAP, NAP, SASAP, and NAPSAP.

The monitoring and evaluation process is expected to be a key component of each outcome area, within the Revised Second NBSAP, based on a seven-year action plan (2018-2025). Monitoring and Evaluation (M&E) will be conducted utilising the results-based management approach. The Results Framework provides performance and impact indicators for programme implementation along with corresponding means of verification. The Revised Second NBSAP contains an Indicative Monitoring and Evaluation Work Plan which identifies the type of M&E activity to be undertaken, the responsible parties for each of these activities and the time frame for the conduct of each activity.

The Revised Second NBSAP therefore provides a strategic approach which will serve to promote effective implementation of the CBD and the Draft Second NBSAP through a shared vision, mission and strategic goals and targets, (aligned to "the Aichi Biodiversity Targets") that will stimulate and fuel broad-based action by all stakeholders, especially policy and decision-makers. The framework further provides a strategic platform for the development and strengthening of partnerships for implementation of supporting national, regional and international initiatives. It does not create legal rights or impose obligations under international law.

The Framework recognises that implementation of the Revised Second NBSAP is best designed in alignment with the three pillars of sustainable development, namely, economic, social/cultural and environmental/ecosystems; hence transformative measures for biodiversity management supported by the Revised Second NBSAP will be implemented at all levels, and evaluated against these three pillars of sustainable development, bearing in mind measures that will cut across all pillars, such as land and water resources management[55]. The Framework is thus intended to promote links with, but to in no way supersede, more specific regional and national instruments and plans across specific sectors that link to biodiversity management including: physical planning, forestry, land use, water, agriculture and food security, tourism, coastal zone management, marine ecosystems, health and nutrition. Addressing the issues of biodiversity management promotes an integrated, multi-stakeholder approach, straddling national, sectoral, regional, community and individual. Furthermore, a strategic programmatic approach is required, rather than an increase in stand-alone project initiatives.

The Revised Second NBSAP Framework thus advocates inter-sectoral and inter-agency joint work programmes, coupled with the electronic platforms and nodes of the CHM for easy knowledge and information management and sharing.

The Schema of the Revised Second NBSAP Framework is presented in Figure 31.

[55]V&A assessments conducted for Saint Lucia's SNC on Climate Change identified cross-cutting measures, such as land and water resources management, as important elements relevant to biodiversity management; as key for the tourism, and agricultural sector development, both sectors of which underpin the Saint Lucian economy and both of which suffered land and water related effects of the 2009/2010 drought and Hurricane Tomas of October 2010. Land and water quality is also important for maintaining healthy ecosystems.

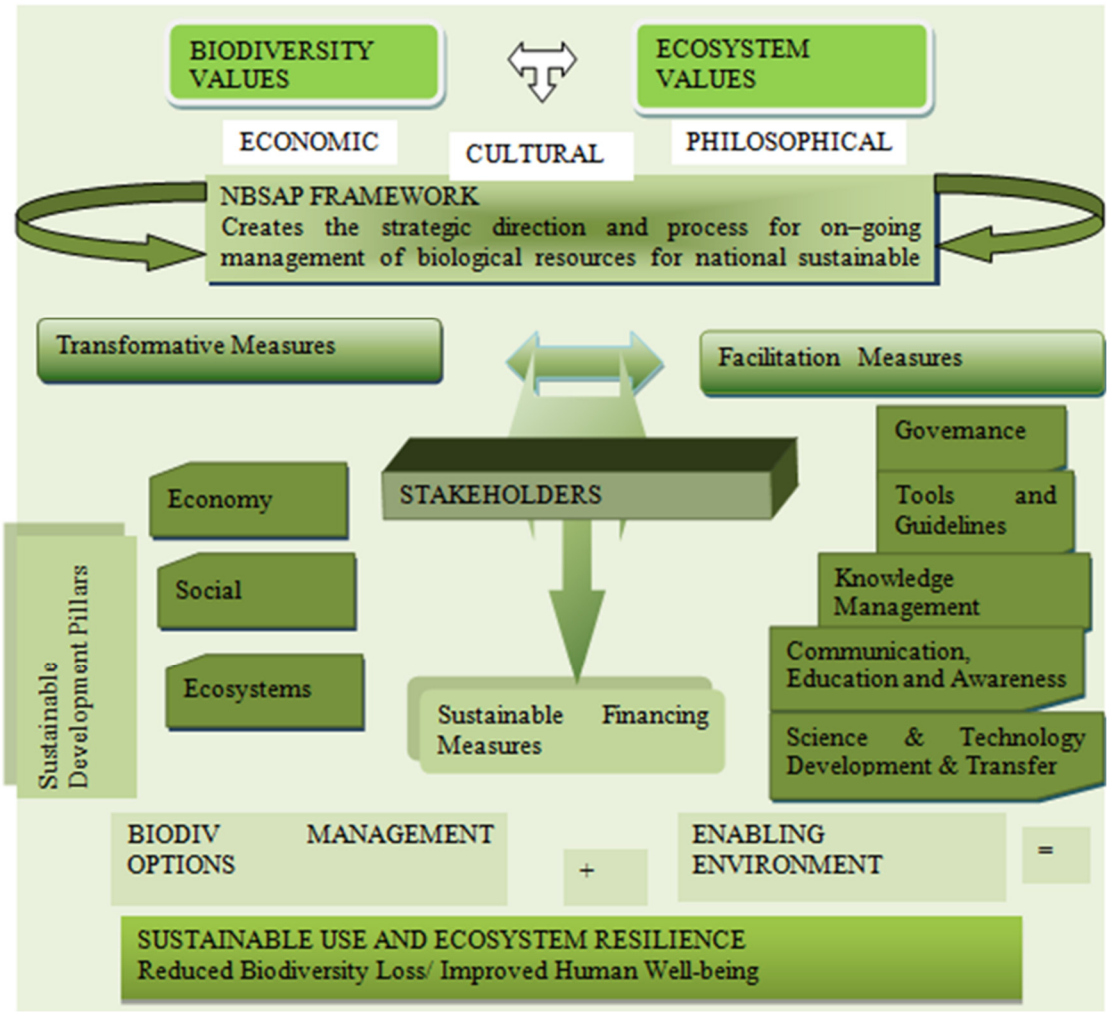


Figure 31:Schema of the Revised Second NBSAP Framework

Schema of the Revised Second NBSAP Framework[56]

Most importantly, the success of the Revised Second NBSAP depends on the extent of stakeholder[57] participation, at all levels of society, in the implementation of biodiversity management interventions. This includes conservation and sustainable use of biodiversity; conduct of supporting research and systematic observation; cooperating and collaborating in the facilitation interventions to provide the enabling environment; and monitoring and evaluation of interventions to determine best practices and lessons learned.

[56] Adapted from Chase, Vasantha (2015) Climate Change Adaptation Policy. Government of Saint Lucia

[57] Including women and other vulnerable groups

3.4.1 Priorities for Revised Second NBSAP

The stocktaking and review of the NBSAP identified gaps and limitations of the Draft Second NBSAP and proposed priority areas for the Revised Second NBSAP. The information gathered further assisted in the identification of opportunities for developing synergies with related programmes and for building on existing projects and national activities being carried out under the other relevant international conventions and national programmes in the implementation of the Revised Second NBSAP.

Priority issues addressed in the Revised Second NBSAP include:

1. A revised Vision to provide a clear commitment to incorporate values at this stage, as well as an overview of which type of values, and how they will be incorporated. The Vision must also demonstrate the essence of the stakeholder consultations, that is how critical biodiversity is to our current development, including our cultural heritage. Particular consideration to be given to the valuing of the economic benefits to be derived from biodiversity and including this in national financial and economic planning and decision making.
2. Scaling-up of activities and hence, the framework, of the NBSAP to cater for monitoring and evaluation on a broader scale: Measurable targets, and indicators within a clear monitoring and evaluation plan being principal in the implementation of the revised NBSAP with regard to measures and mechanism to ensure that the 20 Aichi targets are particularly well embedded with a well aligned suite of activities that can be effectively monitored for impact; especially to address declines in gene, species and ecosystem diversity, as pressures on biodiversity increased in intensity as a result of human actions.
3. Revision of Biodiversity Legislation to ensure that principles espoused in the Nagoya Protocol regarding community empowerment for biodiversity access and benefit sharing, bio prospecting legislation and the concept of the Green Economy become enshrined in national policy and legislation.
4. Deepening of biodiversity mainstreaming efforts towards more holistic policies to guide/regulate national development through policy (e.g. country's policy on sustainable development) and strategic planning instruments, with respect to issues such as sustainable land management, foreign and local investment, human cultural values and human health, *inter alia*.
5. More formal mechanisms to facilitate improved coordination and collaboration in implementation by the full range of societal groups who may have interests, stakes or rights with regard to biodiversity - technical, political and functional, and which seek complementarity with the existing framework for environmental
6. Further strengthening of agency and community capacities for managing biodiversity, in areas such as appropriate technology for SCP, RSO, M&E, among others.
7. A broadened CEPA strategy to ensure integrated and sustained awareness in order to evoke desired behavioural change.
8. Strengthening the Biodiversity Clearing House Mechanism (CHM) so that knowledge and information on biodiversity is available and easily accessible for national, sectoral and community planning.
9. Identification and support for sustainable mechanisms for financing biodiversity management in country.

10. Ensuring that the strategic environmental assessment process is the formalized, systematic and comprehensive process of identifying and evaluating the environmental consequences of proposed policies, plans or programmes to ensure that they are fully included and appropriately addressed at the earliest possible stage of decision-making on a par with economic and social considerations.

3.5 The Vision

The Revised Second NBSAP outlines the long-term vision for the state of biodiversity in the country. This is an inspirational statement that reflects the importance of biodiversity for people and is broadly shared across the country. The Vision outlined is for 2050 (as is the case for the Strategic Plan for Biodiversity 2011-2020) but is also aligned with other long-term national development plans.

The emerging emphasis on biodiversity and ecosystem services values[58] requires that the Vision provides a clear commitment to: (i) incorporating the valuation of biodiversity and ecosystems services into national development planning and poverty reduction strategies; (ii) continue the work begun in pursuing synergies between biodiversity related interventions, particularly as they relate to the other Rio Conventions, as well as (iii) demonstrate the essence of sustained stakeholder consultation and ongoing monitoring and evaluation, to ensure an NBSAP that is cyclical, iterative and adaptive.

Vision for Saint Lucia's Second Revised NBSAP

"Biodiversity is vital to better living: By 2050, the valuation of biodiversity and ecosystem services is firmly embedded in all the island's efforts at creating **resilient livelihoods, social systems and ecosystems** for **improved human-well-being** in pursuit of its sustainable development agenda"

Vision of Strategic Plan for Biodiversity 2011-2020: a world ***"Living in harmony with nature"*** where *"By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people."(*Source: COP 10 Decision X/2, the Strategic Plan for Biodiversity 2011-2020)

The revised Vision for the Revised Second NBSAP articulated below thus incorporates the core elements of the vision of the 2011-2020 Strategic Plan into the essence of the stakeholder consultation outcomes.

In addition, it is recognized that addressing the barriers to effective implementation of the previous NBSAP is not achievable just through the production of a new document, but through an NBSAP development and implementation process that builds capacity of national, and community stakeholders for effective implementation, monitoring and reporting. The Revised Second NBSAP therefore gives focus to particular issues of national development import, such

[58] The Vision of the Strategic Plan for Biodiversity 2011-2020 And The Aichi Biodiversity Targets is, "a world of "Living in harmony with nature" where "By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people."

as economic resilience, food and nutrition security, sustainable livelihoods, poverty reduction, sound management of natural resources (especially forests, land and water), environmental management (especially climate change and climate variability), infused with a disaster risk reduction approach.

GOALS AND OBJECTIVES/TARGETS OF REVISED NBSAP

Key to the implementation of the revised NBSAP is the alignment of the national strategic goals with that of the 2011-2020 Strategic Plan, to ensure that the 20 Aichi targets are particularly well embedded with a well-defined suite of activities that can be effectively monitored for impact. An overview of the strategic alignment is given in Annex 9.

The goals of the Revised Second NBSAP are four-fold and build on the above-mentioned principles and priority areas identified for the country at this time. **Table 8** elaborates the National (SMART) Targets grouped under the **four main goals or priority areas**:

Goal 1 To internalize and integrate biodiversity values into decision making and national accounting to stimulate/advance national development

Goal 2 To generate benefits for all citizens from biodiversity and ecosystem services for improved human well being

Goal 3 To encourage and effect sustainable management and use of biodiversity and genetic resources

Goal 4 To engender ongoing behavioural change through knowledge management and capacity building for enhanced implementation

The 5 Goals in the Post 2010 Strategic Plan for Biodiversity include:

i. Addressing the causes of biodiversity
ii. Reduce the direct pressures
iii. Improve the states of biodiversity
iv. Enhance the benefits to all
v. Enhance implementation

Kathrina Mannion, Defra Responding to Nagoya: A new global framework for biodiversity

The National biodiversity targets are aligned with the Aichi Biodiversity Targets, and venture to be as strategic, specific, measurable and ambitious as possible, yet realistic. The targets are already time-bound, consistent with the 2011-2020 Strategic Plan, though the various interventions to meet these targets will be undertaken within a strategic framework with short-, medium- and long-term interventions. Further alignment of the national targets with the specifics and details of interventions, actions, time frames, beneficiaries, etc., will as far as possible be undertaken with a greater level of precision and commitment by the actors during the development of annual work plans. Hence, issues such as specific ecosystems, species, geographic areas, etc. will be addressed within this level of planning.

Broad indicators for measuring attainment of targets are provided under the section on Monitoring and Evaluation, and similarly, these are expected to be fine-tuned during the preparation of work plans.

The objectives/SMART Targets for each of the Goals identified in **Table 8** are prioritized in terms of logical sequence of activities based on a level of priority accorded by the participants in the stakeholder Consultation process, and the ability to be readily assimilated within the programmes of the agencies that are currently involved in biodiversity management, in particular members of the NBSAP Steering Committee. These approaches are not mutually exclusive, but a hierarchy of decision-making. Hence, some of the objectives/targets and concomitant actions span across goals and are considered to be essential for the success of the Strategy. For example, the target related to the development of scientific and technological knowledge-sharing and application while outlined under Goal 4 is a critical element in the enhancement of awareness which however is outlined as a target under Goal 1. These will be described and discussed in the following chapter. A Schema of the Strategic Elements of the NBSAP is provided in **Figure 31**. The Log Frame supporting the NBSAP is provided in **Annex 2.**

Table8: National Biodiversity Strategy and Action Plan

National Strategic Goals	National Targets	Activity	Responsibility
Goal 1: To internalize and integrate biodiversity values into decision making and national accounting to stimulate/advance national development (Strategic Goals A and E)	1.1 All relevant sectors and publics (communities, schools, judiciary, politicians, businesses, resource users, financial institutions etc.) are well aware of biodiversity including goods and services, and how it can be sustainably managed to derive benefits. ♦ 1.2 The NBSAP's rationale, objectives and insights of values of nature are well embedded into other policy areas and sectors and plans to enable the contribution of biological resources to national development.	Implement the Biodiversity communication, education and public awareness Strategy (CEPA) to include new and emerging issues Familiarise staff of DoF and Department of Economic Development with the Economics of Ecosystems and Biodiversity (TEEB) Integrate WAVES software (Wealth Accounting and Valuation for Ecosystem Services) into national budgeting and planning.	DSD with forestry fisheries PCI Media Impact Coalition Media Association of St Lucia (MASL) Department of Economic Development DSD Department of Finance

National Strategic Goals	National Targets	Activity	Responsibility
	♦ 1.3 Improved legal and fiscal measures to support more effective biodiversity management are identified, implemented and enforced.	Finalise and enact Biodiversity Conservation and Sustainable Use Bill with legislative clauses and administrative systems for implementation of the Nagoya Protocol	DSD, Legislative Drafting, NBCC
		➢ Promote and coordinate harmonization and alignment of biodiversity related policies, plans, strategies ➢ Ratify the Nagoya Protocol ➢ Endorse the National Invasive Species Strategy (NISS) and the IAS Working Group	DSD, Division of Forestry, Fisheries, AG Chambers ➢DSD ➢Dept. for S&T and Innovation ➢SALCC ➢SLBS ➢UWI Open Campus
	♦1.4 Sustainable production and consumption are integrated into the use of all natural resources Mechanisms and measures for cooperation are formalised and harmonised plans and activities across sectors, agencies and stakeholders are in place for sustainable production and consumption, ensuring that the	• Strengthen agency and community capacities for managing biodiversity, in areas such as appropriate technology for SCP, RSO, M&E. • Develop and establish protocols to ensure standardized procedures for SCP, RSO, M&E • Develop, provide training in and implement	DSD, Division of Forestry, Fisheries, AG Chambers DSD, CSO,

National Strategic Goals	National Targets	Activity	Responsibility
	impacts of use of resources are well within ecological limits. 1.5 Traditional knowledge, innovations and practices of local communities relevant for the conservation and sustainable use of biodiversity are integrated into relevant decision making processes.	guidelines for SCP and use of resources • Promote the transition to a Green Economy • Create national policy which includes TK	 DSD, Folk Research Center, SLNT, CDF, Legal Officer
Goal 2: To generate benefits for all citizens from biodiversity and ecosystem services for improved human well being (Strategic Goals D)	♦ 2.1 Critical ecosystems that contribute to water sanitation and livelihoods are being restored and safeguarded. ♦ 2.2 Ecosystem resilience is enhanced through synergistic collaboration in the	➢Generate Ecosystem maps to identify key ecosystems of importance e.g. Forest and Wildlife Ecosystems Marine and Coastal/ Agri. Ecosystems/ ➢Generate Biodiversity maps to include species, location and identification of vulnerable /ecologically significant areas/hazards/protected areas ➢Identify and formalise incentives for private sector conservation/ investments in biodiversity	DSD, NBCC DSD, NBCC, Dept of Infrastructure, Physical Planning, Forestry, Fisheries DSD, NBCC, Dept of Finance

National Strategic Goals	National Targets	Activity	Responsibility
	implementation of MEAs and other relevant fiscal measures.	management/greening of business • Develop and implement Natural Resource Management and Adaptation strategy • Develop and incorporate guidelines for the consideration of biodiversity in impact assessments emphasizing the concepts of ecosystem function, ridge to reef and island management systems • Pursue training and capacity building in taxonomy	
Goal 3: To encourage and effect sustainable management and use of biodiversity and genetic resources (Strategic Goals B and C)	♦ **3.1** The rate of natural habitat loss is reduced and degradation and fragmentation, especially of forest, land and water is minimised.	➢Develop and utilize protocols for assessing and monitoring the status of selected species ➢ Develop and implement guidelines for conducting inventories, population assessments and monitoring of critical species identified in **Table5** and their habitats.	DSD, Forestry, Fisheries Durrel Wildlife FFI DSD, Forestry, Fisheries Durrel Wildlife FFI

National Strategic Goals	National Targets	Activity	Responsibility
	♦ **3.2** Overfishing is minimised through the use of sustainable management and harvesting practices ♦ Current and potential adverse impacts of climate change on threatened stocks, depleted species and vulnerable terrestrial, marine and fisheries ecosystems are reversed through	➢Train selected personnel in use of the guidelines ➢ Undertake re gular assessments for monitoring status of ecosystems ➢ Compile inventory and studies on undocumented ecosystems and species ➢ Identify list of national priority areas for research ➢ Collaborate with academia in research on biological resources in Saint Lucia ➢ Liaise with regional and international entities to exchange information and promote regional collaboration and harmonization ➢ Incorporate CCA/DRR measures in development planning at all levels to mitigate negative impacts of climate variability on biodiversity	Dept of Fisheries, Dept of Forestry, DSD, Forestry, Fisheries Durrel Wildlife FFI DSD, Dept Ed, Innovation, All ministries Dept Physical Planning, Dept of Infrastructure, DSD

National Strategic Goals	National Targets	Activity	Responsibility
	ecosystem based approaches. ♦ 3.3 Pollution from excessive use of fertilisers and harmful chemicals is reduced to levels that are not detrimental to ecosystem function and biodiversity loss. ♦ 3.4 A Systems plan for Protected Areas for the conservation At least 15% of terrestrial and inland water and 10% of coastal and marine areas are conserved. ♦ 3.5 Agriculture, fisheries including aquaculture and forestry biological resources are conserved, restored and	➢ Undertake research on changing temperatures, weather patterns rainfall etc and the impacts on marine/coastal and terrestrial biodiversity ➢ Pursue endorsement of organic agriculture policy ➢ Identify nontoxic agro chemical alternatives ➢ Support development of local agro inputs through research and livelihood development activities ➢ Submit SPAA for Cabinet approval consideration ➢Identify critical areas in need of restoration ➢ Restore critical habitats, including migratory corridors	Dept of Agri, Pesticide Board, Farmers Co-ops, RISE Legal Officer, PMA, Min of Agri, Physical Planning, SLNT, DSD, PMA, DSD, SMMA, SLNT, Min of Agri (Forestry, Fisheries, Physical Planning)

National Strategic Goals	National Targets	Activity	Responsibility
	sustainably managed ♦ GMOs/LMOs are effectively managed to minimise genetic erosion and safeguard genetic diversity. ♦ 3.6 Appropriate systems and mechanisms for prevention and management of priority invasive alien species are strengthened and operationalised.	➢ Identify and restore specific bio-cultural sites ➢ Implement the Biosafety Framework and enact Biosafety Law ➢ Develop and implement management plans for priority invasive species ➢ Convene the IAS Working Group	DSD, Biosafety Committee, SLBS, Customs, Foresty, MoA Fisheries, PMA, SLNT,
Goal 4: To engender ongoing behavioural change through knowledge management and capacity building for enhanced implementation (Strategic Goals E and A)	♦ **4.1** The NBSAP is endorsed by cabinet and systems are in place and operationalized for effective implementation using participatory and collaborative approaches. ♦ **4.2** Data management systems for biodiversity management are improved, particularly	➢ Submit NBSAP for Cabinet Approval ➢ Convene regular meetings of the NBCC ➢ Perform gap assessment of institutional arrangements and agree on agency workplans ➢ Implement actions in NBSAP ➢ Integration of biodiversity indicators in to the National	DSD DSD and NBCC DSD, NBCC DSD, Forestry, Fisheries, WRMA, Agriculture,

National Strategic Goals	National Targets	Activity	Responsibility
	with regard to systems for data gathering and widespread dissemination.	Environmental Information System ➢ Development protocols for collection, analysis and management of data.	Health DSD
	♦ **4.3** The National Clearing House Mechanism (CHM) is made operational and functional as the means for development of systems for policy, scientific and technological knowledge sharing, transfer, and application for effective management of biodiversity.	➢ Regular updates and content management of the Biodiversity website: biodiversity@govt.lc ➢ Establish link between biodiversity website and CBD international node, Govt website and other relevant platforms	DSD SLNT FRC CDF
	♦ **4.4** Appropriate systems and measures for the documentation and protection of traditional knowledge, practices and innovations related to biological resources are in place and subject to national legislation for societal use.	➢ Ratify Nagoya Protocol include clauses on TK in Biodiversity Bill ➢ Establish protocols for benefit sharing of genetic resources	DSD (GEF Focal) SLUNCF
	♦ **4.5** Mobilisation of sustainable financial resources for	➢ Provide Technical support to the Saint Lucia National Conservation Fund	

National Strategic Goals	National Targets	Activity	Responsibility
	effective implementation of the NBSAP activities and overall biodiversity management,	(SLUNCF) to mobilize resources ➢ Develop a Financing Strategy for the implementation of the NBSAP	

3.5.1 Strategies and Actions for Creating Connectivity

Connectivity, in the context of landscape ecology, is the degree to which the landscape facilitates movement of species among fragments of resources. Saint Lucia has taken isolated step towards creating connectivity. However, very few strategies for this purpose exist. The most notable exception was the expansion of the Marquis Forest Reserve during the implementation of the 1st NBSAP. Private land was acquired or leased to establish connectivity between GOSL-owned fragments of forest reserve. Lessons learned from this experience could be used to facilitate the incorporation of further private lands into connected habitats, be it by acquisition, lease, compensation for abandonment, or swapping parcels.

The few other relevant actions are typically project driven and not tied into any consolidated strategic approach. One example is a GEF SGP project on the Recovery of the White Breasted Thrasher in the North-East Corridor[59]; another a consultancy under the GEF full-size: Spatial Development and Conservation Plan for the Iyanola Region of Saint Lucia. This looks for the least disruptive option for a NE to SE road. The authors of the draft Land Use Plan (2018-2038) stipulate: "*Within the Forest Reserve, appropriate measures to ensure biodiversity connectivity and safe passage of animals across the road will be implemented*".

One output of a WB-funded watershed management project that was completed in 2017 was guidelines for watershed management planning[60]. Volume 2 stressed the importance of connectivity and stratification of riparian vegetation, woodlands and forests within watershed and recommended status indicators for monitoring.

Even less is known about the importance of connectivity in Saint Lucia's marine ecosystems. A study on fish migration in and near the SMMA observed limited migration and a strong homing

[59] http://gefsgpundpsaintlucia.org/projects/?entry=40

[60] Krauss U, Homscheid-Carstens S, Vargas B, Mitchel NAM, Grett J-P, Felix M-L (2017) Final Watershed Management Planning Guidelines. Develop Guidelines for Watershed Management Plan (WMP) Preparation and Development of One Watershed Management Plan for a Critical Watershed in Saint Lucia. GFA Consulting Group GmbH for the Water Resources Management Agency, Balata, Saint Lucia.

tendency in all 10 fish families investigated[61]. A teachers' training guide[62] for local educators emphasizes the connectivity of marine ecosystems didactically.

[61] Coreless et al. (1997) Assessing the potential for fish migration from marine reserves to adjacent fished areas in the Soufriere Marine Management Area, St. Lucia. GCFI 49:9.

[62] https://slunatrust.org/assets/content/documents/MPA_Manual-03122012.pdf

4.0 Strategic Elements of NBSAP

4.1 National Strategy

The Strategy establishes four concomitant Strategic Outcome areas derived from the four strategic goals, which set the focal areas for the formulation of strategic interventions/actions for realizing the broader strategic goals and targets. It also takes into account the recommendations emanating from the stakeholder Consultation process, as well as taking into account related and other recommendations articulated in the various background documents that were reviewed and/or prepared for the NBSAP. These **four outcome areas**, reflective of the four goals are:

1. Biodiversity and ecosystems valued into national planning and development.
2. Biodiversity benefits generated for all citizens.
3. Genetic and biological resources managed and used sustainably.
4. Behavioural change effected through knowledge management and capacity development.

Further, to promote the much desired synergy in the implementation of MEAs, and given the cross-cutting nature of many of the interventions to be undertaken, the modality for the implementation of the Revised Second NBSAP activities has considered a parallel process, with that for implementation of activities under the workplans of other biodiversity related MEAs as well as the SPCR and CCAP, and blended with activities from the NAPSAP, National Adaptation Plan and Sector Adaptation Strategies and Action Plans.

The Revised Second NBSAP will be delivered through **three strategic areas of intervention**, (i) **Transformative interventions, (ii) Catalytic/Facilitating interventions and (iii) Financing interventions**, each of which will, in turn, be delivered by a suite of actions/activities. The activities under the strategic areas of intervention represent the broad range and key elements of the actions required to deliver the concomitant outcomes for achieving the strategic goals, which in turn will be measured based on the national targets aligned to each goal.

Further, provision has also been made for an implementation mechanism that would enable the updated NBSAP to achieve as far as possible, the integration of biodiversity considerations into relevant national strategies, plans, policies and programmes.

Moreover, the strategy seeks to increase the country's participation in regional and global initiatives for biodiversity management, especially with regard to the Biodiversity Clearing House Mechanism (CHM).

The success of this strategy will depend on the availability of very significant funding. The grant provided by GEF, while sufficient to initiate the development of this Revised Second NBSAP and to mobilise some of the initial interventions, such as the CEPA, will not be nearly sufficient to sustain implementation of the interventions proposed over the next few years. The requirement for funding for Science &Technology research and capacity-building will be very significant, as will the demand for other resource requirements for investments in the transformative interventions. This will be a primary challenge for public officers responsible for biodiversity management.

4.2 National Actions to Achieve the Strategy (Action Plan)

A Schema of the strategic elements of the Revised Second NBSAP is provided in Figure 28 below.

The Strategic Goals of the Revised Second NBSAP are four-fold, i.e.

i. Internalise & integrate biodiversity and ecosystem values
ii. Generate biodiversity benefits for all citizens
iii. Effect sustainable management & use of genetic & biological resources
iv. Engender behavioural change through knowledge management and capacity building.

These four Strategic Goals will, in turn, be delivered by 3 strategic areas of interventions, i.e.

i. Transformative interventions
ii. Catalytic/Facilitating interventions
iii. Financial interventions

Each of these Interventions will result in a suite of activities and outputs.

4.2.1 Component 1: Transformative Interventions

The Transformative Interventions will be a suite of actions that will help to **mainstream biodiversity management** into national development planning through natural accounting processes; creation of livelihoods and biodiversity safe goods and services through sustainable production and use of biodiversity; and biodiversity conservation and preservation measures which will arrest further biodiversity degradation and help conserve ecosystems so that they can continue to deliver the range of services that they provide Saint Lucia and possibly increase the available ecosystem services provided.

These Interventions focus on the **implementation of tangible economic, social and ecosystems resilience-building measures at the community and national levels**. This component will be delivered through a number of activities across various sectors, aimed at securing investment in proven and innovative measures to sustainably use and manage biodiversity resources. Pilot demonstrations will be utilised to support the catalytic and replication dimension of the NBSAP.

VISION
Saint Lucia and Her People, Sustainably Use and Manage Biodiversity to Create Livelihoods, Social Systems and Ecosystems That Are Resilient to Internal and External Shocks

This component will be delivered primarily through the following broad actions:

1. Development and implementation of a Natural Capital accounting system for the incorporation of biodiversity and ecosystem services values into planning and budgetary process;
2. Enhancement of business interventions in biodiversity-friendly goods and services, including expansion of rural development initiatives in arts and craft, eco-tourism and other opportunities, that use of traditional knowledge within cultural pathways

and human health - natural medicines, herbal remedies, nutraceuticals, spa treatments, etc.; and

Strategic Goals

1. Internalise & integrate biodiversity and ecosystem values
2. Generate biodiversity benefits for all citizens
3. Effect sustainable management & use of genetic & biological resources
4. Engender behavioural change through knowledge management and capacity building

3. Investments in (a) the protection and conservation of species by maintaining and restoring critical habitats, including migratory corridors, through the establishment of protected areas; and (b) application of sustainable forest management and agricultural production practices that ensure economic viability while minimising risks to ecosystems.

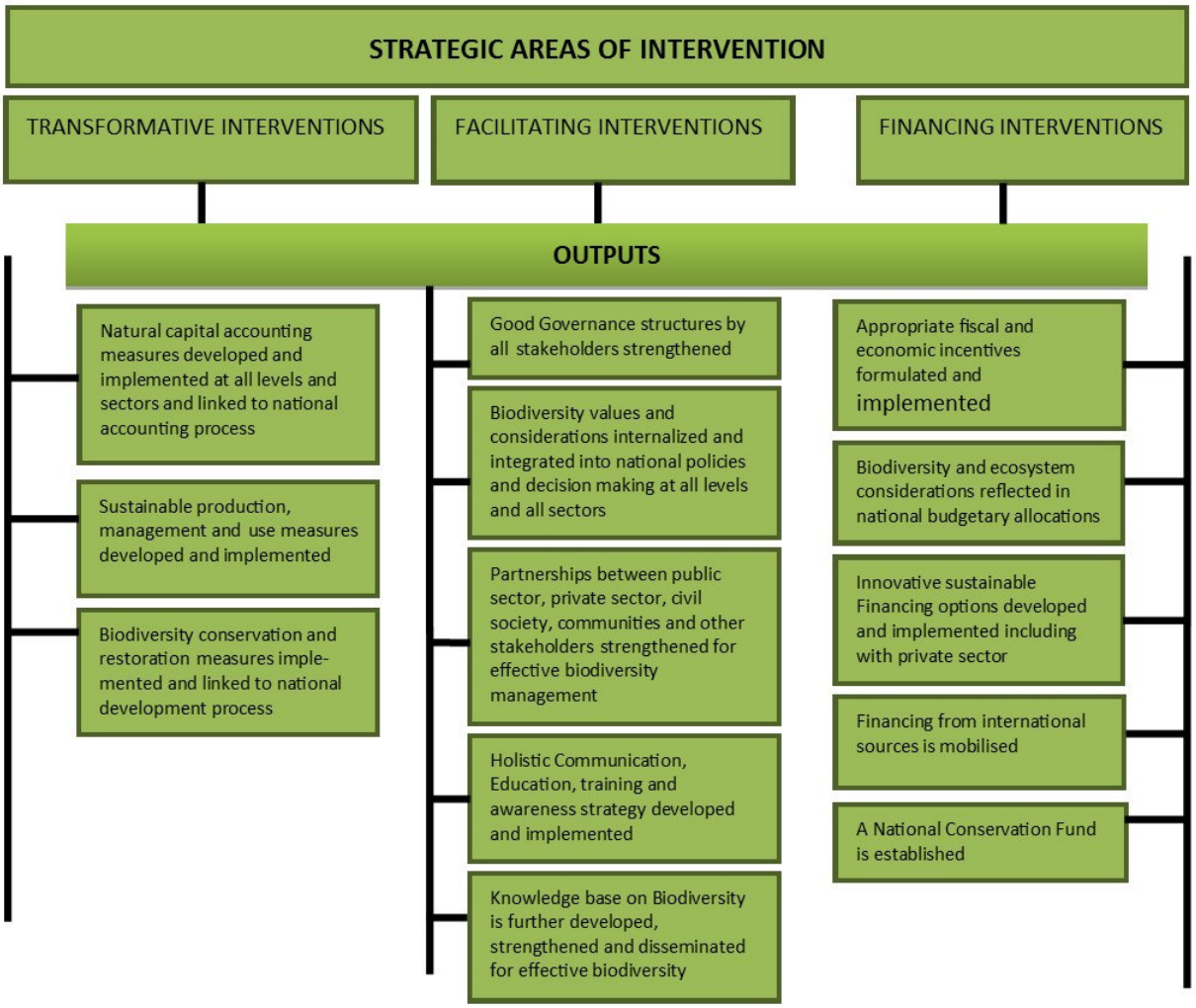


Figure 32: Schema of the NBSAP Strategic Elements

4.2.2 Component 2: Facilitation/Catalytic Interventions

The Facilitating Interventions provide a suite of actions that will help to establish the **enabling environment, appropriate institutional arrangements, and strengthened policy and legislative frameworks** necessary for the Transformative Interventions to take place. These Interventions will include appropriate governance systems and processes to guide biodiversity management in the country and to ensure inter-sectoral and inter-agency coordination; creation of appropriate partnerships between the public sector, private sector and civil society; a sustained communication, education and awareness programme on biodiversity issues and on the NBSAP itself; and the tools and platforms necessary for creating a repository of information and knowledge on the various aspects of biodiversity in Saint Lucia to guide management and decision making.

These Interventions seek to create an enabling environment to catalyse and/or facilitate the implementation of transformative interventions in Component 1. Actions will include:

1. Review and enhancement of the existing policy, legislative institutional and fiscal framework with particular regard to the Nagoya ABS Protocol. This will also include, among others, developing the relevant tools and guidelines for the application of science, technology and innovation (STI) in planning and development for biodiversity management; public awareness and sensitisation; and capacity building and training, to mention a few.
2. Building on the existing CHM framework for research and systematic observation and for data and information acquisition, knowledge management and sharing. In particular, data capture systems to support the process of natural capital accounting will be pursued.
3. Conducting targeted capacity building for specific groups at the community and sector level, to empower them with knowledge and skills for operating biodiversity friendly goods and services industries, and within a SCP context. Special emphasis will be placed on creating sustainable livelihoods for vulnerable groups, in particular, women and young males.
4. Design and implementation of a Communication and Outreach Strategy[63], targeting policy makers and other decision-makers, the general public and specific groups, including the vulnerable persons, about biodiversity management and sustainable consumption and production. The Strategy will aim to equip the various publics with the necessary knowledge and tools to take meaningful action to derive the potential benefits of biodiversity and genetic resources in Saint Lucia.

These actions will be supported by an implementation mechanism that would enable the updated NBSAP to achieve as far as possible, the integration of biodiversity considerations into relevant national strategies, plans, policies and programmes. The implementation framework seeks to obtain ownership for the Revised Final Second NBSAP at the Ministerial level in an effort to secure political buy-in. Given the spread of Ministerial mandates, it is recommended that the implementation of the NBSAP is undertaken by implementing agencies with responsibility for

[63] separate and distinct from the Communications, Education and Public Awareness (CEPA) activities of the NBSAP

Biodiversity management with the Department of Sustainable Development coordinating, mobilizing, enabling and facilitating as required.

The implementation modality also creates mechanisms for engagement of key stakeholders at a coordination level of Chief administrative officers, working with and through the National Biodiversity Coordinating Committee (NBCC) and the Committee of Permanent Secretaries, technical level of chief technical officers working with and through a National Biodiversity Technical Committee (NBTC) and the functional implementation level within the existing Biodiversity Unit, supported by relevant departments and functions within the Ministry responsible for Sustainable Development, working closely with implementing partners and engaging all relevant stakeholders.

4.2.3 Component 3: Financing Interventions

The Financing Interventions will focus on **activities that will generate sustainable financing options** to undertake the actions in the Transformative and Facilitating Interventions. These Interventions will also include a review and implementation of appropriate fiscal and economic instruments that will strengthen biodiversity management, and ensuring that ecosystem and biodiversity considerations are appropriately reflected in national budgets and not dependent on external sources of financing only.

National government revenue (GOSL's budgetary contribution) will be towards efforts in using biodiversity and genetic resources to build economic, social and ecosystem resilience in national development planning, through an integrated cross-sectoral approach. The scale and/or efficiency of many of the proposed interventions typically undertaken by the Government of Saint Lucia (GOSL) will also be enhanced through engagement with the private sector. The country will therefore be pursuing all opportunities for public-private partnerships, as well as other private sector partnerships with communities and vulnerable groups. Hence, appropriate fiscal and economic incentives will be formulated and implemented to support and promote private sector and civil society involvement.

The Cabinet-approved National Conservation Fund will be used as one of the mechanisms for mobilizing funding from external sources. Additional funding for biodiversity management-related interventions will be sought through available and on-going projects and programmes by the DSD in collaboration with the Dept. of Economic Development.

The Saint Lucia National Conservation fund is an independent grant making institution providing sustainable financing for conservation projects in Saint Lucia. Its establishment was approved by Cabinet in 2016 and it was established as a not for profit company under the Companies Act. It has 3 founding members and eight regular members; with government, community based organizations, and private sector representation.

Implementation

This section outlines how Saint Lucia can seek to achieve much of the expected outcomes of the Revised Second NBSAP by 2020 based on the principles of the Framework, national strategic goals and targets aligned to the Aichi targets. The implementation of the Revised Second NBSAP will require a suite of activities to deliver the desired outcomes under each of the main goals. These will build on conditions precedent, ensure synergies with ongoing related interventions and provide the basis for ongoing monitoring and evaluation. Throughout the consultation process, there were recurring themes, projects and interventions that facilitated the selection of the final suite of interventions outlined in Saint Lucia's Revised Second NBSAP. Additional activities will be introduced as appropriate. While implementation activities in the plan are indicative, they will be more specifically defined by the various actors in alignment with their programmes and activities.

Successful implementation of the Revised Second NBSAP will require cooperation and support by all stakeholders; **sustained** awareness-raising is therefore a crucial objective under all four strategic components. Hence, a key element of the communications strategy is the use of various mechanisms for getting the various actors to commit to implementation.

Another key aspect of the modality for the implementation of a number of the actions under the Revised Second NBSAP will be the pursuit of inter-linkages with related national, regional and global initiatives, as well as with activities or programmes of other biodiversity related MEAs in an effort to derive requisite synergies for cost-effectiveness and to provide necessary backstopping to national activities. Moreover, the incorporation of the Revised Second NBSAP into the National Development Plan and the Medium Term Development Strategy, which is currently being elaborated, and the implementation structure proposed, will seek to ensure that the various actors *will continue to do their part.* The pursuit of synergistic benefits is further reflected in the implementation framework for the NBSAP, which mirrors that of the SPCR and CCAP and integrates elements of these plans, as well as the NAPSAP.

The implementation of the activities under the Revised Second NBSAP will be executed in a phased manner, using the following commencement dates for implementation of actions and the fiscal year (April to March) approach:

Short-term activities	**2019-2020 commencement period**
Medium-term actions	**2020-2022**
Long-term actions	**2022 2025**

The implementation plan is provided in Tables 12, 13 and 14 in Annex 5. Each of the Interventions has a plan of its own. These plans are deliberately general in scope to allow for the work plan being developed on an annual basis to define the details over a broad range of activities that could be aligned with the programmes and activities of the various actors.

Table 8 under section 4.3 summarises ongoing activities towards attainment of the MEA. Aichi targets and SDGs. Not every stakeholder could be reached and not every workshop participant and/or respondent was in a position to contribute budget figures. Thus, the cost estimates shown here most likely represent a conservative estimate. Much of the listed funding is secured funding,

with a significant proportion of external donor funding. This reflects the financial commitments to biodiversity conservation and highlights the instrumental role of MEA collaboration.

4.3 Summary of MEA-, Aichi- and SDG-aligned NBSAP Strategies with Indicative Costing and Indicators

Table 8: Summary of MEA, Aichi- and SDG-aligned NBSAP Strategies with Indicative Costing and Indicators

Biodiversity related MEAs	UNCBD Aichi Goals & Targets	Indicator	NBSAP Priority Area	SDG(s)	Confirmed Indicative Cost (XCD)
	Strategic Goal A. Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society				***61,119.570***
All biodiversity related MEAs	Target 1. General awareness of biodiversity is achieved	• Level of awareness and consequent behaviour	Component 2: Roll out awareness campaign	1, 2, 3, 4, 8, 12, 14, 15, 16, 17; all others indirectly	34,123,250
	Target 2. Biodiversity is mainstreamed into development strategies and plans	• Number of strategies and plans	Component 2: Enhance Governance and MEA synergies; mainstreaming	1, 2, 3, 4, 5, 10, 14, 15	620,000
	Target 3. Biodiversity incentives are used in policy (negative avoided, positive applied)	• Number of incentive mechanisms • Total value of incentives		2, 6, 8, 9, 11, 12, 14, 15	Not reported
UNCCD, UNFCCC-REDD+, UNFF	Target 4. Sustainable (biodiversity-friendly) production and consumption are in place	• Total value of biodiversity-friendly • Percentage reduction in food imports	Component 1: Sustainable use of biodiversity	1, 2, 4, 5, 8, 9, 12, 14, 15	26,367,500
	Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use				***71,188,057***
UNCCD, UNFCCC-REDD+, Ramsar, LBS Protocol	Target 5. Rate of loss of all habitats are at least halved, fragmentation and degradation reduced	• Percentage coverage of priority habitats	All actions under Component 1: Transformative Interventions	1, 3, 4, 7, 8, 13, 14, 15	5,365,000
SPAW Protocol, CITES, Ramsar, UNFCCC	Target 6. Fish, invertebrates and aquatic plants are sustainable harvested	• Population levels over time remain stable of increase		1, 2, 3, 4, (6), 8, 12, 13, 14, 15, 17	3,420,611
LBS Protocol, UNFF, REDD+	Target 7. Areas under agriculture, aquaculture and forestry are managed sustainably	• Areas under organic agriculture • Forest cover		1, 2, 3, 6, 9, 11, 12, 14, 15	45,119.220

Biodiversity related MEAs	UNCBD Aichi Goals & Targets	Indicator	NBSAP Priority Area	SDG(s)	Confirmed Indicative Cost (XCD)
UNCCD, Ramsar, LBS Protocols	Target 8. Pollution and eutrophication are contained and controlled	● LBS Water quality parameters		3, 6, 8, 12, 14, 15	7,270,000
CITES, WHC, LBS & SPAW Protocols	Target 9: Invasive alien species identified, priority species controlled/eradicated, pathways contained	● Number of pathway control mechanisms operational ● Number of interceptions	Component 2: NISS implementation	2, 3, 7, 8, 13, 14, 15	3,650,000
UNFCCC, LBS Protocol (UNEP-CEP)	Target 10: Pressure from ocean acidification and climate change on coral reefs and other vulnerable ecosystems minimized	● LBS Water quality parameters ● Coral health (AGGRA) ● Percentage of coastline protected	Component 2: Enhance MEA synergies and climate change resilience	1, 2, 3 ,4, (6), 8, 13, 14, 15	4,050,000
UNFCCC, OECS-SGD					2,193,226
	Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity				***10,726,550***
Ramsar, UNEP-CEP	Target 11: 17% terrestrial and 10% of coastal and marine areas are conserved in networks of protected areas	● Protected area coverage disaggregated for terrestrial, coastal and marine areas ● Percentage of PAs with management plans in place	All actions under Component 1: Transformative Interventions Component 2: NISS implementation	14, 15	Not reported
CITES, CBD, World Heritage Convention, SPAW Protocol,				14, 15	5,400,000
CBD	Target 12: Extinction of all threatened species is prevented, conservation status is improved	● Population levels of threatened species		1, 2, 8, 9, 15	1,826,550
CBD	Target 13: Breeds/varieties of cultivated animals and plants and their wild relatives are maintained, strategies for genetic erosion are in place	● Population levels conservation priority species ● Number of conservation measures in place		2, 3, 12	3,500,000
	Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services				***5,400,000***
Ramsar, REDD+,UNCCD, LBS Protocol	Target 14: Ecosystems that provide water, health, livelihoods and well-being are restored and safeguarded	● Area under active conservation management	All actions under Component 1: Transformative Interventions	2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 14, 15, 17, 19	5,400,000

Biodiversity related MEAs	UNCBD Aichi Goals & Targets	Indicator	NBSAP Priority Area	SDG(s)	Confirmed Indicative Cost (XCD)
UNCCD, LBS Protocol, UNFCCCC, Ramsar	Target 15: Ecosystem resilience and carbon stocks from biodiversity are enhanced, at least 15% of degraded ecosystems are restored, promoting joint implementation of Rio Conventions	● Biological carbon stocks ● Percentage of degraded ecosystems restored		2, 3, 8, 15, 16, 17	Incorporated under other Targets
CBD	Target 16: Nagoya protocol on ABS is in force and operational	● Ratification of Nagoya Protocol ● Legislation enacted	Component 2: Implement Nagoya Protocol	2, 3, 8, 15, 16, 17	Not reported
	Strategic Goal E: Enhance Implementation through participatory planning, knowledge management and capacity building				***1,282,500***
CBD	Target 17: All Parties have an effective and updated NBSAP produced in a participatory manner	● NBSAP is Cabinet endorsed ● Methodology employed for NBSAP review is participatory and takes traditional knowledge and practices into consideration			9781.00
CBD	Target 18: Traditional knowledge, innovations and practices of ILC, customary use, are respected and integrated into the Convention, ILCs participate at all relevant levels		Component 2: Enhance Governance		67,500,000
CBD	Target 19: Biodiversity science and technology are improved, shared and applied	● CHM operational	Component 2: CHM		405,000
All biodiversity related MEAs	Target 20: A substantive increase in financial resources invested in biodiversity is achieved	● Total annual budget allocation (GOSL, private sector, NGOS, donors)	Component 3: Financing Interventions		810,000
Grand Total					**149,716,857**

5.0 SUPPORTING ELEMENTS OF THE NBSAP

5.1 Proposed Institutional Arrangements

Institutional arrangements for the administration and implementation of the Revised Second NBSAP are based on recommendations from the stakeholder consultation process within the context of the existing mandates of the relevant government and counterpart agencies. Given that the responsibility for biodiversity management is shared, it is expected that elements of the Revised NBSAP will be "internalised and integrated" into implementation plans by the relevant sector ministries, agencies/organisations, communities and enterprises.

Figure 31, which was formulated with input from stakeholders, is referenced here. The programme for implementing the Revised Second NBSAP is predicated on the assumption that a National Biodiversity Coordinating Committee (NBCC) will be made official. The NBCC will serve as the national biodiversity focal point for Saint Lucia and will provide policy guidance on all matters of biodiversity. The Committee will include representation of two national implementing entities, (i) Ministry with responsibility for Finance, Economic and National Development and (ii) Ministry with responsibility for sustainable development. This will facilitate the desired shift from the NBSAP being a technical document to engendering the right level of ownership. It should be noted that members of the proposed NBCC have met on two occasions since November 2017, and are committed to executing the duties of the NBCC

The proposed composition of the NBCC is provided in **Table 9** below.

Table 9:Proposed composition of the National Biodiversity Coordinating Committee

Organisation	**Department/Unit/Section**
Ministry with responsibility for Finance, Economic Affairs and National Development	**Finance and Economic Development Unit** **National Development Unit**
Ministry with responsibility for Biodiversity	**Department of Sustainable Development (Chair)** **National Biodiversity Unit (Secretariat)** **Forestry Department** **Water Resources Management Agency** **Science and Technology Division**
Dept of Agriculture, Fisheries, Physical Planning, Natural Resources and Cooperatives	**Department of Agriculture** **Department of Fisheries** **Department of Cooperatives** **Corporate Planning Unit** **Water Resource Management Agency** **Department of Forestry**
Dept of Physical Development and Housing	**Physical Planning Section** **Housing Department**
Dept of Health and Wellness,	**Food and Nutrition** **Environmental Health Division** **Gender Relations**
Dept of Education	**Sir Arthur Lewis Community College** **Curriculum Development Planning Unit**
Dept of Tourism	**St. Lucia Heritage Tourism Program** **Tourism Planning**
Dept of Equity	**Local Government** **Community Development Department**
Dept of Commerce and Industry	**Small Enterprise Development Unit**
Dept of Youth and Sports	**Department of Youth Development**
Invest Saint Lucia	**Investment Services**
Office of the Prime Minister	**National Emergency Management Organisation**
National Conservation Authority	
Civil Society organisations	**CYEN** **Saint Lucia Chamber of Commerce** **Saint Lucia Manufacturers Association**
	Saint Lucia National Trust
Agencies marked with will form the National Biodiversity Technical Committee (NBTC); along with other agencies on a “as needs” basis.	

Box 2:Proposed Members of Saint Lucia's National Biodiversity Technical Sub-Committee

1. Ministry of Finance, Economic Affairs and National Development
    a. Finance and Economic Unit
    b. National Development
2. Ministry of Sustainable Development, Energy, Science and Technology
    a. Sustainable Development and Environment Division
    b. Biodiversity Unit
3. Ministry of Agriculture, Food Production, Fisheries Rural Development and Cooperatives
    a. Department of Agriculture
    b. Department of Fisheries
    c. Department of Cooperatives
4. Ministry of Health and Wellness
    a. Food and Nutrition Department
    b. Department of Environmental Health
5. Ministry of Commerce
6. Invest Saint Lucia
7. Office of the Prime Minister
    a. National Emergency Management Organisation
8. Saint Lucia Chamber of Commerce
9. Office of Private Sector Relations
10. The Saint Lucia National Trust
11. Community Development Organisation
12. Other members on an 'as needed' basis

The NBCC will be supported by the National Biodiversity Technical Committee (NBTC) that will meet more often and will be responsible for the technical details of and the monitoring and evaluation of the NBSAP. The NBTC will be a multidisciplinary, multi-agency group that will advise on issues relating to biodiversity conservation, sustainable use, access and benefit sharing and will utilize scientific research and information management systems in performing its functions.

It is worth noting that the NBTC may appoint members on an 'as needed' basis. As such, in cognisance of the key role of the private sector in building economic resilience, and Saint Lucia's plans for their active engagement in the implementation of the Revised Second NBSAP, Invest Saint Lucia and the Chamber of Commerce will be represented on the Permanent NBTC.

Likewise, civil society is represented by the Saint Lucia National Trust, inclusive of its youth chapters and a Community Development Foundation.

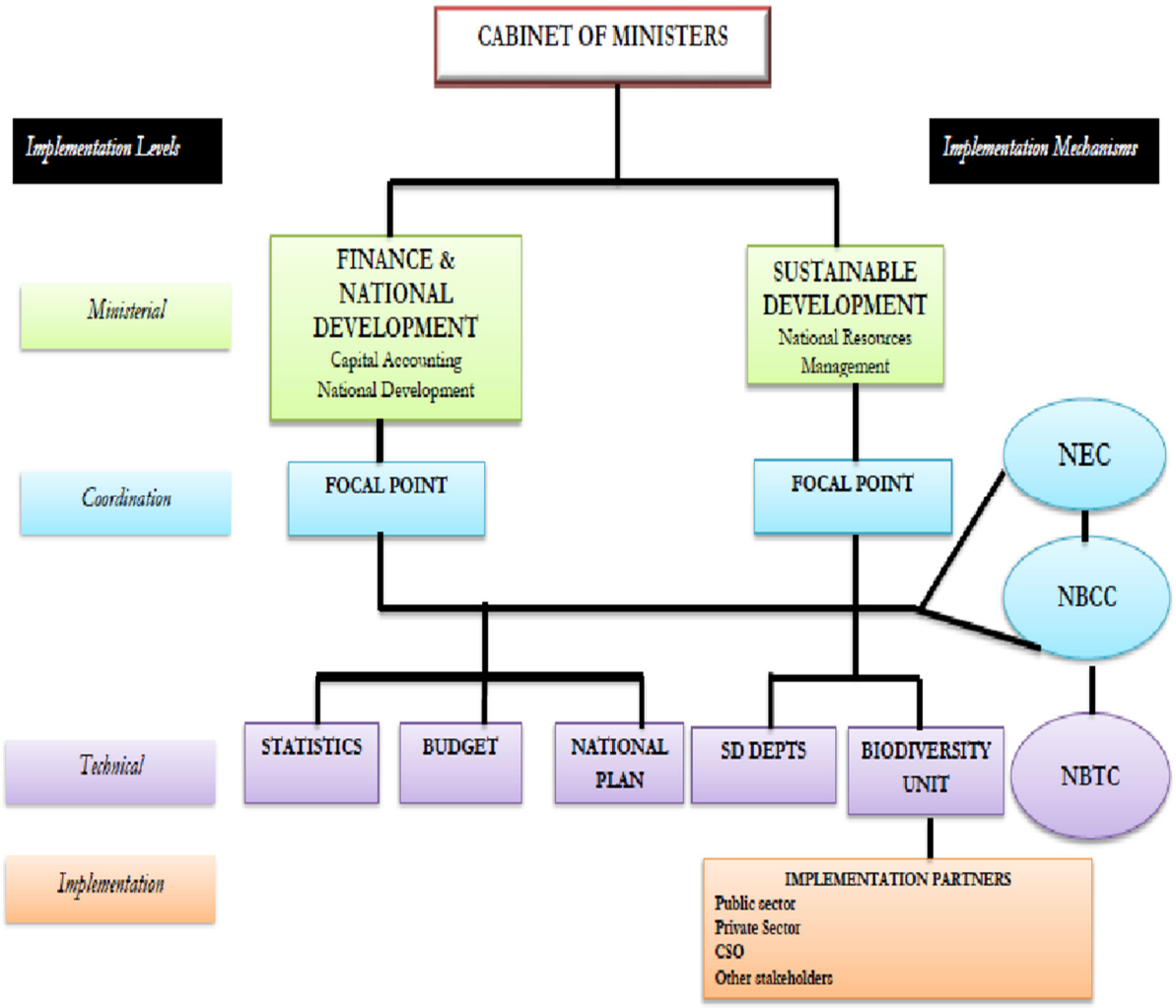


Figure 33:Hierarchy of Implementation agencies

The composition of both the NBCC and NBTC is purposed to engender equitable participation of the various sectors and societal groups in the biodiversity management dialogue and thereby facilitating more effective internalization and integration of biodiversity management issues at the sectoral, business and community level. More so, it provides a platform to facilitate knowledge management and, with the option to co-opt other members, to further extend the reach of knowledge sharing. Such members to be co-opted on the NBTC include the Dept of Education, for information transfer and integration into the education system and systems for science and technology generation and application and in relation to issues on gender; and the Ministries with responsibility for social equity and youth.

The Biodiversity Unit (BU) which is currently housed in the government agency responsible for Sustainable Development will serve as the Secretariat of the groupings and will be responsible for

the routine coordination of the NBSAP. The BU will be responsible for coordinating the implementation of the Revised Second NBSAP and shall collaborate with relevant stakeholders in executing this mandate.

One of the first actions that was slated to be undertaken as soon as the Revised Second NBSAP is approved by the Cabinet of Ministers is the conduct of an audit and gap analysis of all the agencies that are involved in the biodiversity and ecosystems services management in Saint Lucia. This review originally to be completed within six months and the enhanced institutional arrangement within eighteen months of the commencement of the implementation of the Revised NBSAP. However, given that there are no more than two years of implementation left under the 2nd NSBAP once it counts with Cabinet approval, this assessment should best be scaled down and in-house, with the objective to create conducive structures not only for the last months of 2nd NBSAP implementation, but more importantly, for strategic planning towards the 3rd NBSAP

5.2 Implementation Plans

5.2.1 Plan for capacity development for NBSAP implementation, including a technology needs assessment

The various processes for the assessment of biodiversity management and implementation of the CBD conducted towards the formulation of the 5th National Report and Revised Second NBSAP have identified some critical areas and requirements for biodiversity management for Saint Lucia. The capacity and technology options are detailed in a report[64] that is available under separate cover as a compendium to the Revised Second NBSAP. The capacity and technology assessments have therefore been based on the revised goals and targets (aligned to the Aichi targets) of the Revised Second NBSAP for the country, and the associated activities under the NBSAP.

The capacity and technological needs identified have been identified generally under the three implementation modalities/components or types of interventions for the Revised Second NBSAP, namely, Transformative, Catalytic/Facilitating and Financing Interventions and were therefore considered across sectors and agencies. The types of activities proposed under the relevant component were thus used to infer the capacity and technological requirements to achieve the stated goals and targets of the Revised Second NBSAP. It is however, envisaged that the specificity of these needs will be further elaborated through the process of development of Annual Work Plans as part of the implementation of the Revised Second NBSAP, and as the activities are better defined.

Implementation of the Revised Second NBSAP will involve biodiversity management actions across a range of sectors and activities. Thus, the principal element identified for effective biodiversity management, as determined from the stakeholder consultation process, is the communication of information to various target groups, for better understanding of the values and benefits of biodiversity and ecosystem services with regard to the three CBD objectives of conservation and protection, sustainable use and access and benefit sharing. The critical concern

[64] AGRICO Ltd. (2014) Report On Capacity and Technological Needs Assessment for Revised Second NBSAP

in this regard is the ability to modify behaviors, processes and practices that currently increase the risk of biodiversity loss and to adopt responses that promote sustainable management and use of biodiversity.

Important to note, also, is that technological needs in most instances will involve modifications in use of existing technologies, rather than the need for new technologies. In a number of cases technologies are already in use for responding to problems associated with sustainable land management, climate change adaptation and mitigation, agricultural food production, pest and disease control and pollution control, to name a few. These technologies are thus considered in terms of a re-packaging with increased emphasis on biodiversity management, and further requirements for modifications to meet changing circumstances and other future developments. The effectiveness of these technologies will also be dependent on various supportive legislative, institutional, human resource, and technological policies and measures.

Capacity-building within the Revised Second NBSAP Framework for biodiversity management is thus addressed at all three levels as outlined in Figure 34 below.

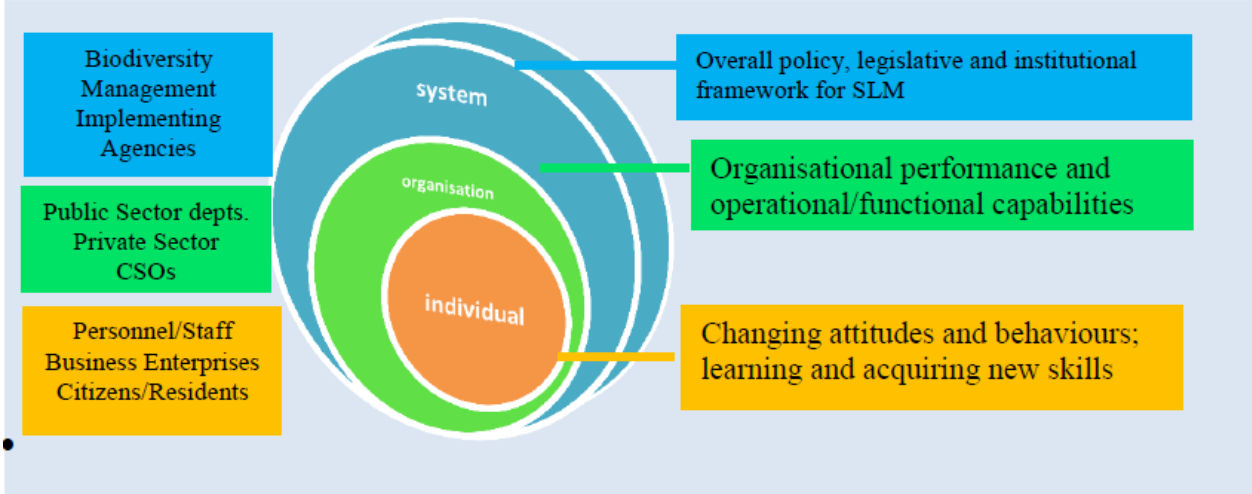


Figure 34:Biodiversity Management Capacity Building for Revised Second NBSAP Implementation in Saint Lucia

5.2.1.1 Capacity and Technological Requirements for Transformative Interventions

The Transformative Interventions (TIs) focus on investment for the implementation of **tangible economic, social and ecosystems resilience-building measures at the community and national levels**. These will be a suite of actions that will help to mainstream biodiversity management into national development planning through natural accounting process; creation of livelihoods and biodiversity safe goods and services through sustainable production and use of biodiversity; and biodiversity conservation and preservation measures which will arrest further biodiversity degradation and help conserve ecosystems so that they can continue to deliver the range of services that they provide Saint Lucia.

The analysis of the technologies to facilitate transformative interventions identifies a range of technologies across various sectors in proven and innovative measures to sustainably use and manage biodiversity resources. Technology needs embrace various physical and mechanical requirements for tangible investments in facilities and equipment for e.g. **laboratories for testing**, **plant propagation** and **agro-processing**; **water resources and coastal and marine monitoring equipment**; g**eographic information systems (GIS) equipment**. These technologies include ecosystem and climate-resilient technologies to promote sustainable consumption and production particularly in agriculture, fisheries and sustainable forestry, soil and water conservation, integrated pest and disease management (IPM), integrated nutrient management (INM) for example fertilizer pollution control and sustainable harvesting for habitat restoration.

Also to be considered is the use of appropriate "soft" management techniques as an example, the use of bio-engineering measures in riverbank stabilization. Soft technology requirements also include tools and techniques, guidelines and systems needed to put the technologies to effective use. **Information technologies and systems required to provide knowledge and information for decision-making are also critical**, with GIS deemed a principal tool for effective data collation, reformulation and analysis. In particular, data capture systems to support national indicator development, particularly with regard to the process of natural capital accounting and monitoring of biodiversity and ecosystems. With regard to emerging issues such as climate change and invasive alien species (IAS), new or improved systems must be established. Systems including equipment, protocols, processes and procedures are also required to support documentation of traditional knowledge (TK) and TK registers, and agreements Prior Informed Consent (PICs) and Mutual Agreement Terms (MATs) are also critical to ensure access and benefit sharing.

Supporting capacity requirements involves research and studies to identify innovative measures and adapt best practice, procedures and processes; increase stakeholder awareness and human resource capacity through training and skills development.

5.2.1.2 Capacity and Technological needs FOR FACILITATING Interventions

The Facilitating Interventions (FI) provide a suite of actions that will help to establish the enabling environment, appropriate institutional arrangements, and **strengthened policy and legislative frameworks necessary for the Transformative Interventions to take place.** These Interventions will include appropriate governance systems and processes to guide biodiversity management in the country and to ensure **inter-sectoral and inter-agency coordination**; **creation of appropriate partnerships between the public sector, private sector and civil society;** a sustained **communication, education and awareness programme** on biodiversity issues and on the NBSAP itself; and the tools and platforms necessary for creating a repository on information and knowledge on the various aspects of biodiversity in Saint Lucia.

Capacity enhancements for an appropriate supporting governance framework to promote a coherent policy environment[65] include management systems, mechanisms and processes for

[65] Promulgation of cross sectoral policies that will promote the adjustment of development policies in all sectors towards the inclusion biodiversity considerations in development, in the

review, formulation and reform, endorsement and ratification of the various **governance, policy, legal and regulatory instruments,** supported by training in the relevant areas of expertise. In addition, systems and resources to **support enforcement** across sectors are also required. The existing EIA process provides a likely platform to incorporate biodiversity considerations and address issues of enforcement of national codes and standards. It is nevertheless recommended that the SEA be incorporated within the EIA as an important tool for evaluating policies, programmes and projects.

Improved operations and management systems are also critical to capacity development for biodiversity management, given the need to implement critical ongoing interventions related to the endorsement and implementation of the **revised SPPA 2**, the **NISS and recovery plans for species** such as the **Saint Lucia Racer, Saint Lucia Whiptail and White-breasted Thrasher.** Such systems must however, utilize the application of international standards and certification systems that will lead to the use of best practices in biodiversity and ecosystem management and allow for preservation of the integrity and quality of biodiversity resources.

Functional administrative structures and mechanisms for pooling capacities and resources, as well as an appropriate management accountability frameworks are all required to foster desired linkages and emphasize collaboration and networking across sectors and agencies for harmonised planning, especially with regard to deriving synergies in implementation among Conventions and agreements. In addition, the strengthening of existing structures to promote coordinated monitoring and evaluation (M&E) for biodiversity management is needed, and the recommended approach in this regard is to build on the established mechanisms among agencies comprising the various environmental management committees.

Establishing an **effective M&E Framework** will require systems for, and skills training in, indicator development to provide practical and reliable indicators to monitor, measure and guide national performance for CBD implementation and implementation of the NBSAP. Associated skills and techniques in Results Based Management (RBM), cost-benefit analysis, consultation techniques, capacity assessments and risk assessments are also required. Functional monitoring and evaluation systems such as self-regulating mechanisms among key stakeholders, in particular, resource users, are also critical for sound operations and systems management. Protocols, processes and procedures for integrated data collection and management are required across departments and agencies.

Existing arrangements for biodiversity **information management and exchange** – the Biodiversity Information Network (BIN) and Clearinghouse Mechanism (CHM) - need to be formalised and strengthened to promote more effective linkages and compatibility with other supportive information platforms such as the GEONode platform for climate change information management and Land Registry Information System/National GIS for land information management.

---

best possible manner that will facilitate the conversion of investment in biodiversity management to derive economic and social benefits.

Mechanisms and measures to support Science, Technology and Innovation (STI) in terms of generating/identifying and transferring appropriate and cost-effective technologies, especially at the micro-level (e.g. backyard gardening, private forest land conservation measures, fishing technologies, etc.), are also important considerations. Mechanisms and protocols for collaboration in RSO to make knowledge available with regard to STI are also important.

Moreover, collaborative networks as a mechanism for **dialogue between researchers, technical personnel and resource users and managers** must be established to expand knowledge of sustainability options and facilitate resource users in accessing the requisite information products and services. Synergies in this regard can be pursued through regional and international networks.

There is need for training and resources to enhance technical advisory and extension services, to enable standards and best practices for biodiversity management interventions in critical ecosystems related to agriculture, forestry and fisheries. Specific skills training and development programmes include:

- Training required in principles and practices
- Improved skills of development economist and development finance personnel to undertake economic and social performance measurements with regard to the impact of biodiversity on development;
- Technical and engineering expertise (e.g. agricultural, geotechnical engineering) need to be strengthened
- Science based skills for monitoring, validating, analysis and modelling, e.g. conduct of SEAs

Of critical importance is the use of training modalities that would seek to create opportunities for training at all levels. Stakeholders identified these modalities as the most appropriate: training and demonstration for technology transfer, technical guidelines, pilot demonstration sites/projects and continuous skills development in relevant areas through the use of a "learning by doing" approach.

Critical to the development of the enabling environment for biodiversity management is the creation of appropriate mechanisms to promote proper engagement between technocrats and policy and decision makers, as well as communities, CSOs and public and private sector in public-private partnerships (such as co-management of protected areas and cost-sharing arrangements). In this regard, participatory and strategic planning tools and instruments such as GIS will be needed to promote more holistic planning. This in turn would need to be supported by measures for public, private and civil society group strengthening in advocacy, negotiating and leadership skills, as well as community project management capacity.

Systems and resources to launch an aggressive CEPA strategy are required if the objective of re-orienting the perspective of the citizenry towards sustainable use and management of biodiversity for economic and social benefits is to be realised. The development of advocacy and lobbying skills will need to be pursued both at the agency level and through the promotion of the re-establishment of NGOs and CSOs to increase the voice of civil society on biodiversity issues that impact livelihoods and human welfare.

5.2.1.3 Capacity and Technological needs for Financing Interventions

These Interventions will include, *inter alia*, a review and implementation of appropriate fiscal and economic instruments that will strengthen biodiversity management, and ensuring that ecosystem and biodiversity considerations are appropriately reflected in national budgets and not dependent on external sources of financing only.

Skills in **national budget proposal writing** must be improved, so that ministries may be able to demonstrate where new biodiversity-related initiatives have the capacity to affect a large part of the population through job creation, revenue generation and overall economic and social well-being in order to attract requisite budgetary support. Budgetary support/allocations would provide for **technical advisory services, extension services and financial support** for critical biodiversity management interventions such as the operations of the Biodiversity Unit.

Negotiating skills and expertise in donor proposal-writing need to be strengthened at all levels in order to facilitate mobilization of external resources, in the form of development funds that can legitimately be considered as incentives for facilitating certain aspects of biodiversity management. These funds can be put to effective use to improve organisational capacity, such as the development of national indicators, conduct of impact assessments, preparation of management plans and development of biodiversity management solutions. These resources can also be used at the community level to leverage grants, such as the GEF-SGP to enable resource users to strengthen skills and undertake tangible interventions.

Improvement in financing capacity to effectively manage biodiversity also requires that due consideration be given to the complementary element of investment. Existing credit and investment portfolios which already support sector development initiatives in general, must be tweaked to become more discerning of the need for investment in biodiversity management, which is viewed as a necessity to protect and safeguard the primary investment in itself (e.g. housing and infrastructure).

Appropriate fiscal administrative models[66] need to be developed, tested and implemented to support investment in biodiversity. Such models should consider finance and risk management structures and fiscal regimes, including incentives that take into account national development issues, so as to promote increased investment in biodiversity management.

Overall, the development of this new thrust under the Revised Second NBSAP for biodiversity management will necessitate the synchronized development of administrative systems, formal mechanisms and processes to facilitate access to incentives, credit and investment and training and human resource development that would empower all stakeholders to effectively invest in the sustainable use and management of biodiversity.

The detailed Capacity and Technological Needs Assessment is provided in **Annex 6.**

[66] Defining fiscal instruments and regimes – e.g. taxation and incentives- using normative descriptions for arriving at a taxation value for biodiversity resources that reflect the value of these resources to the economy as a whole and even within a wider global perspective

5.2.2 Communications, Education and Public Awareness

One of the concerns expressed during the series of stakeholder consultations for the Revised Second NBSAP was the lack of a sustained and continuous communications and education programme on the NBSAP itself and on biodiversity. Thus, the Revised Second NBSAP includes a CEPA strategy designed to raise awareness, aid wider integration of biodiversity values, facilitate resource conflict resolution and stakeholder management, and package biodiversity information suited to each of the various publics (including economists, political leaders and policy makers, to mention a few) who impact on or are impacted by biodiversity and ecosystem goods and services. Thus the CEPA strategy highlights and profiles ecosystem services and biodiversity conservation in terms of their contribution to development, growth and equity to economists, political leaders and policy makers.

To ensure that there is regular and sustained communication on the NBSAP itself, the CEPA will address the key messages of:

- What is different about the Revised Second NBSAP
- What has been done
- What is yet to be done

In addition, the CEPA will also facilitate the following activities:

i. An extended audio-visual feature that clearly documents and outlines the objectives, activities and outputs of the Revised Second NBSAP in an approachable format.
ii. A news feature in the press that appears every month on various aspects of the NBSAP
iii. Stepping up media appearances
iv. Video news and press releases generated from all NBSAP activities

There are several awareness messages being communicated to the Saint Lucian public. Saint Lucians have been urged to preserve the environment but the reasons have largely been related to:

- Environmental Responsibility
- Climate Change
- National Pride
- Tourism Product

As the NBSAP Project enters its next phase, a new kind of motivation for biodiversity conservation will be inculcated in the public. Thus the **Key Messages** that have been identified for the CEPA are:

- ➢ **The NBSAP has been updated and is about to begin!** Especially if you depend on Saint Lucia's natural resources for your livelihood, you need to get on board, have a say in shaping our stewardship of our biodiversity.
- ➢ Time to Go: GET WILD!
- ➢ Get on board, have a say in shaping our stewardship of our biodiversity.
- ➢ Biodiversity is vital to our economic prosperity and health
- ➢ **Biodiversity is key to our Green Economy -** We are sitting on a gold mine of natural resources and if we do not preserve, protect and productively use it, we and our generations to come will miss out on vital economic progress.

Target Audiences for the Messages will be:

i. Policy makers
ii. Financiers (Credit Unions, Banks (commercial and development)
iii. Farmers
iv. Fishermen
v. Hunters
vi. Agro processors
vii. Natural attraction tourism product operators
viii. Development & Construction agencies
ix. Medical community
x. Health and wellness operators
xi. Landscape artists
xii. School children and youth
xiii. General Public- Householders, Business Owners, Visitors

In order to specifically raise awareness of and encourage participation in the revision of the NBSAP, the following tools were recommended. Unfortunately, with the exception of the first 2 tools identified below, no other awareness activities were undertaken. Be that as it may, the CEPA proposes that the activities continue and/or be introduced during the life of the Revised Second NBSAP.

- Two (2) 30 second radio public service announcements (PSAs) in English and Kweyol
- Two (2) 30 second public service announcements (PSAs) in English and Kweyol
- One print/poster
- Facebook page
- Articles in the Saint Lucia National Trust Newsletter
- Segment for incorporation into the Folk Research Centre 1-hour segment on NTN. Called "The Bushman" highlighting uses and possible benefits and how to preserve them.
- A third television series will be produced focusing on biodiversity's impact on our physical and mental health)

Other **Below the Line Activities** proposed for the CEPA include:

i. Community outreach and town hall meetings at schools, community centers. Use of dramatic/comedic MC hosting by personalities such as Cokes; and Ice breakers such as:
    a) Name the Bush
    b) What's The Cure?
    c) This forum will be used to directly inform communities about the NBSAP and their role in enacting its objectives.
ii. Use of popular theatre e.g. Soufriere Action Theatre (SAT) during community outreach.
iii. Amending all existing public education materials to include the new slogan "Biodiversity is the Key to Our Prosperity"
iv. 17 libraries around the island to host an exhibition themed on the role of biodiversity in our socio-economic development.

The CEPA programme for the Private Sector

i. The creation of a **"Biodiversity Sustainable Seal" (BSS)** through a set of criteria determined by the NBCC. The Tasks will include designing the BSS, raising awareness about the benefits of having this seal (much like achieving and Green Globe, ISO standardization.) and offering positive PR to firms that achieve it.

The CEPA programme for the Community

i. Using the afore-proposed Below the Line approaches, the CEPA will focus attention on creating key advocates of and stewards for biodiversity and the benefits it provides for people.
ii. Help communities appreciate and identify new and existing enterprises linked to proper biodiversity stewardship.
iii. Feature entrepreneurs who are make productive and sustainable use of bio-diversity to provide for their families in a campaign that is directly related to Poverty Reduction.
iv. Create an 'Idea Tank' for new enterprise opportunities
v. Communicate about the shared benefits to satellite communities

Individuals, groups, communities are crucial in implementing the NBSAP. They will be brought on board by incentivizing them to:

i. Define/map all biological resources in their community, their status and provide updates
ii. Prepare a plan for ongoing management that can be supported through small grants, technical support, training, awards, etc.

Finally, there needs to be a continuous reminder of which species are endangered, at risk, recovering, thriving. It is recommended that a Stop Sign template be developed. This Stop Sign will go from Green to Red and indicate the species and its status with a brief bullet point description of why it is at that status.

5.2.3 Resource Mobilisation Plan for NBSAP Implementation

The success of any strategy depends on the allocation of resources for executing the various actions. Funding for most of the activities relating to management of biological resources in Saint Lucia is derived from external sources (grant funds) or local government revenue. Annual work plans and budgets are prepared by all agencies currently implementing programmes that impact on the management of natural resources. Resources allocated to these agencies are generally less than what was requested and in most cases are not sufficient for the conduct of effective programmes. The establishment of a coordinating mechanism is expected to result in more efficient use of the scarce resources since the roles and responsibilities of each agency would be clearly defined thus avoiding duplication and overlaps in the activities conducted.

An estimate of the cost of implementing the Revised Second NBSAP would require a financial analysis and more data and information. It is estimated that at least approximately 50% of the activities outlined in the Revised Second NBSAP are, or could be, funded by recurrent expenditure. It will therefore be necessary to source funding for the other activities under capital initiatives and projects from development partners, donor agencies and the local private sector.

The Government's budgetary contribution will be towards efforts to build economic, social and ecosystem resilience in national development planning. Co-financing will be achieved through a synergistic blend with financial resources made available under the national and related regional projects, particularly those in the design phase. This will, undoubtedly, allow for the upscaling of the NBSAP implementation activities.

A number of parallel projects are also expected to provide complementary funding. Components of the Iyanola Project, NISS implementation, other projects in the Department of Forestry and the Organisation of Eastern Caribbean States (OECS) have, through the process of consultation, committed to collaborative implementation of these projects with the NBSAP, in areas of complementarity. Key projects of regional significance are included for their complementarity with Saint Lucia's NBSAP, not the least of which are the Regional Strategic Plan for Biodiversity and other capacity development and information sharing initiatives. Additional regional collaborations should be explored through initiatives with CARICOM[67], UWI, FAO, IICA and other regional agencies.

5.2.4 Monitoring and Implementation Plan

The monitoring and evaluation process is expected to be a key component of each outcome area within the Revised Second NBSAP, based on a five-year action plan (2018-2025). Monitoring and Evaluation (M&E) will be conducted utilising the results based management approach. The Results Framework provides performance and impact indicators for programme implementation along with their corresponding means of verification. The process of effective Monitoring and Evaluation of the components of the Revised NBSAP will be an on-going process based on the following strategic directions:

- An effective coordinating mechanism with roles and responsibilities clearly defined and within the auspices of the Biodiversity Unit which has lead responsibility for executing the biodiversity management programme.
- The monitoring and evaluation process is participatory, consultative and aimed at evaluating the level of success in achieving the defined targets. Evaluation will be based on the status of implementation, through identification of gaps, measurement of impacts and the level of success in the application of best practices.

The M&E plan will include an inception report, programme implementation reviews, quarterly and annual review reports, and mid-term and final evaluations. The following sections outline the principle components of the M&E plan and M&E activities. The M&E plan for the Revised Second NBSAP will be presented and finalized in an Inception report following a collective fine-tuning of indicators, means of verification, and the full definition of implementation partners and Biodiversity Unit staff.

The indicative Monitoring and Evaluation Work Plan is provided in **Table 10.**

[67] e.g. funding for virtual regional forum on biodiversity which was decided upon at the CARICOM Preparatory Meeting for COP 11 in Trinidad in 2012

Table 10: Indicative Monitoring and Evaluation Work Plan for the Revised Second NBSAP

Type of M&E Activity	Responsible Parties	Time Frame
Programme Inception Workshop and Report	Programme Director/SDED Min of Finance/ MRB	Within first two months of programme start up
Measurement of Means of Verification of programme results.	• Min of Finance/ MRB/ Programme Director will oversee the hiring of specific studies and institutions/ agencies, and delegate responsibilities to relevant NBCC/NBTC	Start, mid and end of programme (during evaluation cycle); and annually when required.
Measurement of Means of Verification for Project Progress on output and implementation	• Oversight by Project Manager • NBCC/NBTC	Annually prior to ARR/PIR and to the definition of annual work plans
Annual Risk Review (ARR) and Programme Implementation Report (PIR)	• Programme Director • NBTC	Annually
Periodic Status/Progress Reports	• Programme Director • NBTC	Quarterly
Mid-term Evaluation	• Programme Director • NBTC • External Consultants (i.e. evaluation team)	At the mid-point of programme implementation
Final Evaluation	• Programme Director • NBTC/ • External Consultants (i.e. evaluation team)	At least 3 months before the end of programme implementation
Terminal Report	• Programme Director • NBTC/NBMC • Local Consultant	At least 3 months before end of programme
Audits	• Government • Accounting Department • Programme Director	Yearly
Field Visits	• Programme Director • NBTC/NBMC • Government Representatives	Yearly

The Key Indicators for Monitoring and Evaluation of the Revised Second NBSAP are provided in **Annex 3.**

An NBSAP Inception Workshop (IW) will be held within the first three (3) months of start-up with the National Biodiversity Coordinating Committee (NBCC) National Biodiversity Technical Committee (NBTC), relevant Government of Saint Lucia (GoSL) counterparts, and co-financing partners, as appropriate. A fundamental objective of this IW will be to help the NBSAP implementation partners understand and take ownership of the Revised Second NBSAP's goal and objectives, as well as finalize preparation of the first annual work plan on the basis of the results framework. This will include reviewing the results framework (indicators, means of verification, and assumptions), imparting additional detail as needed, and on the basis of this exercise, drafting the Annual Work Plan (AWP), with more precise and measurable performance indicators, and in a manner consistent with the expected outcomes for the Revised Second NBSAP. The workshop will also be used to define specific targets that are aligned to the Aichi targets for the first-year implementation progress indicators, together with their means of verification.

Day-to-day monitoring of implementation progress will be the responsibility of the Biodiversity Officer in collaboration with agencies with a mandate for biodiversity management. The Biodiversity Officer will inform the NBCC of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely and remedial fashion. The Biodiversity Officer will fine-tune the progress and performance/impact indicators of the NBSAP in consultation with the NBTC, as well as develop specific targets for the first-year implementation progress indicators together with their means of verification. These will be used to assess whether implementation is proceeding at the intended rate and in the right direction and will form part of the AWP. Targets and indicators for subsequent years will be defined annually as part of the internal evaluation and planning processes undertaken by the Biodiversity Unit.

Periodic monitoring of implementation progress will be undertaken by the NBCC through quarterly meetings of the NBCC/NBTC and the Biodiversity Unit, or more frequently, as deemed necessary. This will allow parties to take stock of and to troubleshoot any problems pertaining to the Revised NBSAP in a timely fashion to ensure the timely implementation of activities. The Biodiversity Unit, through the NBCC, in conjunction with other members of the NBTC, will, as appropriate, conduct yearly field visits to assess the impact of implementation on the ground, particularly with regard to the transformative interventions. Field Visit Reports will be prepared by Biodiversity Unit, and circulated no less than one month after the visit(s).

Annual monitoring will occur through the NBCC Reviews. Progress in implementation of the NBSAP will be subject to reviews by the NBCC at least once every year. The first such meeting will be held within the first twelve (12) months of the start of full implementation. The Biodiversity Officer will prepare an Annual Project Report (APR) and submit it to NBCC at least two weeks prior to the review, for the review and comments of the NBCC/ NBTC.

The Terminal Review will be held in the last month before the NBSAP expires. The Biodiversity Officer is responsible for preparing the Terminal Report and submitting it to the NBCC. It shall be prepared in draft at least two months in advance of the NBCC Review meeting. The terminal review will consider the implementation of the NBSAP as a whole, paying particular attention to whether the NBSAP had achieved its stated objectives and contributed to the broader objectives of the Strategic Plan of Action for Biodiversity. The Terminal Review will act as a vehicle through

which lessons learned and any actions that are still necessary can be captured to feed into the **3rd NBSAP**, particularly in relation to sustainability of the outcomes from NBSAP interventions.

PROJECT MONITORING REPORTING

The Logframe for the Revised Second NBSAP is provided in **Annex 2**. Following the launch of the FINAL Second NBSAP, the Biodiversity Officer will work in collaboration with partners responsible for biodiversity management to establish baseline status for these indicators.

5.2.5 Exploring synergies – Multipurpose Indicators

An indicator is a quantitative or qualitative variable that provides a simple and reliable means to measure achievement, to reflect the changes connected to an intervention, or to help assess the performance of a development actor. Indicators should be E-SMART

- Economic
- Specific
- Measurable
- Achievable
- Relevant
- Time-bound

The ideal indicators share the following characteristics:

- Robust indicators of environmental status or change
- Reflect a fundamental or highly valued aspect of the environment
- Provide an early warning of potential problems
- Easily monitored regularly; cost-effective
- Scientifically credible
- Easy to understand
- Where possible and appropriate, facilitate community involvement
- Used for long term monitoring, independent of specific projects
- Historic data exist: baseline and/or lessons learnt from the past
- Satisfies reporting to donors and relevant MEAs.
    - All Rio Conventions (UNCCD, UNFCCC and CBD) call for the exploration of synergies
    - the Ramsar Convention requests parties improve linkages with other MEAs, especially the Rio Conventions
    - The Mauritius Strategy for SIDs explicitly calls for multipurpose indicators

In addition to the obvious ecological indicators, CBD reporting is expected to cover certain economic and social parameters too.

Monitoring is expensive. Hence, synergies among MEAs and Project reporting should be sought and multipurpose indicators employed. An overwhelming number of multi-purpose indicators has been proposed, e.g. a list of 232 in the SDGs. The State of the Environment Report for Saint Lucia (SOER, 2015) proposed 148 indicators under the headings:

- Demography and population
- Economy
- Environmental Governance
- Oceans, and marine and coastal systems
- Forest systems
- Freshwater ecosystems
- Protected areas
- Land use management
- Waste management
- Chemicals use and management
- Climate change
- Ambient and indoor air quality and noise pollution

Biodiversity Indicators Partnership (BIP) is a global initiative to promote the development and delivery of biodiversity indicators. Its primary role is to serve the global user community by responding to the indicator requests of the CBD and other biodiversity-related Conventions, and for the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). Saint Lucia is a member of BIP and IPBES and has included its principles since the 5th National Report (2014).

The BIP Secretariat has produced a suite of currently 61 indicators that are mapped to both the Aichi Biodiversity Targets and the SDGs to support the identification of indicator synergies between the processes by national and regional governments[68]. The BIP Secretariat flags that this work in progress will be updated regularly, most likely by adding further indicators.

Country M&E and reporting is more easily driven by projects than MEA obligations, but the former can initiate and facilitate the latter. In that context, GEF tracking tools (TTs) aimed to build on synergies, move increasingly towards an ecosystem approach and include climate resilience under the focal areas Biodiversity (BD), Climate Change Mitigation, Land Degradation (LD), International Waters (IW) and Chemicals and Waste (CW). Overlaps of indicators between focal areas are thus deliberate, but GEF TTs have a bias towards governance compared to ecologic, economic and social impact indicators. The indicators are voluminous and are being revised frequently. Thus governments continue to be faced with the challenge of selecting the most E-SMART ones for their nation. **Table 11** provides a summary of recommended indicators for monitoring impact and success of NBSAP activities and is aligned with the above-mentioned harmonization initiatives. This table can be used to streamline the suite of indicators listed in Annex 3 and select the most E-SMART ones.

68

https://www.bipindicators.net/system/resources/files/000/002/291/original/Cross_mapping_4pp_A3_WEB.pdf?1527060479

Table 11: Recommended multi-purpose indicators for monitoring impact and success of NBSAP activities

Umbrella Topic	BIP Headline indicators	GEF Tracking Tool
Status and trends of the components of biodiversity	Trends in extent of selected biomes, ecosystems and habitats	BD
	Trends in abundance and distribution of selected species	BD
	Coverage of protected areas	BD
	Change in status of threatened species	BD
	Trends in genetic diversity	(BD)
Sustainable use	Proportion of products derived from sustainable sources	Sustainable Use of Plant and Animal Genetic Resources (BD)
	Ecological Footprint and related concepts	
Status of access and benefit sharing	Ratification of the Nagoya ABS Protocol	Nagoya / ABS in BD
Threats to biodiversity	Nitrogen deposition	IW, CW
	Invasive Alien Species (IAS)	BD
Ecosystem integrity and ecosystem goods and services	Marine Trophic Index	-
	Water Quality	IW, R2R in BD GEF-6
	Connectivity/fragmentation of ecosystems	BD, LD
	Health and well-being of communities	Managing the Human-Biodiversity Interface(BD)
	Biodiversity for food and medicine	
Status of traditional knowledge, innovations and practices	Status and trends of linguistic diversity and numbers of speakers of indigenous languages	Managing the Human-Biodiversity Interface(BD)
Status of resource transfers	Official development assistance provided in support of the Convention	Integration of Biodiversity and Ecosystem Services into Development and Finance Planning (BD)

5.2.6 Strategic Environmental Assessment of NBSAP

The Strategic Environmental Assessments (SEA), helps to streamline and focus the incorporation of environmental concerns (including biodiversity) into the decision-making process, often making project-level EIA a more effective process. Strategic Environmental Assessments are not presently undertaken in Saint Lucia. The Physical Planning Act does however require project-level EIA.

For purposes of the Revised Second NBSAP, the SEA was undertaken, as a Scoping Exercise, to ensure that particular attention is paid to biodiversity in Strategic Environmental Assessments that are undertaken in Saint Lucia. The Scoping of the SEA considered the implications of the Revised Second NBSAP on biodiversity and ecosystem conservation and on the creation of sustainable livelihoods. It also considered whether the intervention identified in the Strategy and Action Plan was reflective of the comments and recommendations of stakeholders. The Scoping also evaluated whether the NBSAP will provide opportunities to consolidate and implement biodiversity initiatives pursued by local stakeholders, NGOs and other partnerships.

Paramount in the SEA scoping that was undertaken of the Revised Second NBSAP are the principles of:

i. Conservation of biological diversity
ii. Sustainable use of its components, including provision of livelihoods to persons without jeopardising their future
iii. Fair and equitable sharing of genetic resources

a. The SEA scoping exercise of the Revised Second NBSAP sought to determine the extent to which the NBSAP will change prospects for biodiversity conservation and its sustainable use in Saint Lucia. The following general questions, with respect to biodiversity, were asked during the scoping exercise:

i. What are the NBSAP's objectives and how do these relate to biodiversity?
ii. How important is biodiversity to rural persons in Saint Lucia and their livelihoods?
iii. What are the likely impacts of the NBSAP on people who need and use biodiversity and ecosystem services?
iv. Does the NBSAP provide for interventions which are 'biodiversity friendly'?
v. Does the NBSAP provide for interventions which enhance positive benefits for biodiversity?
vi. Will current or traditional biodiversity uses and values be sustained/sustainable following implementation of the NBSAP?
vii. Does the NBSAP provide opportunities for protected areas and for species protection
viii. Does the NBSAP provide opportunities for stakeholder consultation

The SEA scoping has assured that the NBSAP is indeed consistent with policies and priority actions for biodiversity conservation, protection and sustainable use. This includes various

multilateral environmental agreements that Saint Lucia is party to, as well as any national policies for biodiversity or environmental protection, including the NEP/NEMS; various other resource management policies and plans in Saint Lucia; etc.

Like the pre-requisites of an SEA for extensive consultation, the revision of the Draft Second NBSAP was also subject to extensive consultation throughout the length and breadth of the island. The Revised Second NBSAP also provides opportunities to consolidate and implement biodiversity initiatives pursued by local stakeholders, the public and private sectors, and other partnerships. Opportunities for enhancing biodiversity have been identified through consultation and identified as an integral objective of the Revised Second NBSAP. The NBSAP also identifies interventions that provide opportunities to seek biodiversity enhancements that perform wider functions, e.g. by promoting ecotourism.

The SEA adopts an ecosystems approach due to recognition that biodiversity depends on healthily functioning ecosystems and processes that have to be assessed and managed in an integrated way. The NBSAP also promotes the "No Net Loss" principle through interventions that seek to maintain or enhance biodiversity in Saint Lucia.

There were challenges to the conduct of the scoping exercise:

i. The NBSAP provides broad directions; the proposed interventions were not specific enough to be subject to a SEA; therefore, a limited indication of potential effects with some detail only was provided in this case.
ii. Baseline data on the various biodiversity resources and ecosystems that will be impacted by the NBSAP is not readily available;
iii. There is a large volume of plans, policies and programmes (refer to Annex 7) that will impact on the NBSAP. It was not possible to categorically illustrate the effect of these plans, policies and programmes on the NBSAP and on biodiversity and ecosystems in Saint Lucia.

The results of the SEA Scoping exercise are presented in **Annex 7.**

ANNEXES

Annex 1- Draft Second NBSAP at A Glance

Draft Second NBSAP @ A GLANCE				
GOAL for 2008 – 2018 "Conservation and sustainable practices for use of biological diversity in Saint Lucia are effectively integrated into national development at all levels".				
EXPECTED OUTCOMES				
1. Mainstreaming biodiversity objectives in national development planning agenda				
2. Community participation in biodiversity initiatives				
3. Enhanced institutional and enabling framework for biodiversity management				
4. Effective M,E&R developed and implemented				
PROGRAMME AREAS	1. Planning and policy formulation 2. Research and monitoring/assessment 3. Conservation 4. Sustainable Use 5. Education and awareness 6. Monitoring and Evaluation			
SECTORS	Education	Agriculture	Fisheries	Industry & Manufacturing
	Tourism	Forestry	Transport	Health
THEMATIC AREAS	Land use and management	Sustainable development	Poverty reduction	ICT
	Environmental Management	Sustainable Development Goals	Disaster Management	National security & Border control

EXPECTED RESULTS	PROJECTS	TARGETS
Mainstreaming biodiversity objectives in national development planning agenda	Mainstreaming BioDiv conservation into tourism development	Integrating BioDiversity into sector specific and thematic areas through IDP
Adoption of ecosystems approach	Develop management plans for protected areas	Measures to reduce/halt erosion of species and genetic diversity within ecosystems
	Protection of species by maintaining critical habitats, and migratory corridors	
Improved knowledge management for BioDiv	Promotion of BioDiv research	Using scientific research and information systems to assess and monitor BioDiv
Capacity development and institutional strengthening	Promotion of BioDev conservation and protection through the greening of businesses	Capacity building at agency and community level for effective biodiversity management
Increased Public Awareness and Community Participation	Stimulate and mobilise communities to conserve or protect biodiversity within their environs	Enhancement of awareness of biodiversity including goods and services within all sectors of the local population (communities, schools, judiciary, politicians, businesses, etc.)
		Protection of traditional knowledge practices and innovations and associated biological resources
Enhanced institutional and enabling framework for BioDiv	Promotion of public involvement in policy change and development in BioDev conservation and protection	Improvement and implementation of legal measures for effective biodiversity management Establishment of BioDiv Scientific Committee [Establishment of a Biodiversity Trust Fund]
M,E&R of Draft Second NBSAP implementation	Implementation of the goal and programmes emanating from the Draft Second NBSAP within the ten (10) year time frame	Periodic review of implementation of Draft Second NBSAP against targets

Annex 2: LOGFRAME for the Revised Second NBSAP

	Intervention Logic	Indicators	Means of Verification	Assumptions
Impact/Goal	Sustainable use and management of biodiversity and genetic resources to derive resilient economic, social and eco – systems for improved human welfare and livelihood protection.	Economic systems: ▪ Number of "green" sustainable livelihoods ▪ National employment levels ▪ Number of incentives reformed Social systems: ▪ Trends in poverty in rural communities 2006-2014 ▪ Implementation of food and nutrition security plan ▪ Availability of water ▪ Trends in water quality ▪ Trends in outbreaks of public health and environmental related diseases Eco systems: ▪ Trends in land use and PA coverage ▪ Trends in soil loss: e.g. frequency and extent of landslide damage ▪ Trends in the abundance and distribution of critical ecosystems, habitats and species ▪ Trends in IAS	▪ Human Development Index – United Nations (UN) ▪ Sustainable Development Goals (SDG) – national goals ▪ Socio-Economic Review ▪ Annual National Budgets and Appropriation Bill ▪ Annual Reports of Ministries and Agencies ▪ Land use Maps	▪ Establishment of a legally mandated National Biodiversity Management Entity to coordinate and monitor the implementation of the NBSAP; ▪ Agencies and relevant parties implement the appropriate elements/ components of the NBSAP; ▪ Appropriate legislation is in place to give the NBSAP the necessary legislative and regulatory mandate; ▪ Appropriately trained personnel and capacities for STI and M&E supported; ▪ Funding is available to undertake activities; ▪ All stakeholders are sufficiently informed of their roles and responsibilities in Biodiversity management;

	Intervention Logic	Indicators	Means of Verification	Assumptions
		▪ Community processes for ecosystems approach		
Outcome/Purpose - **Transformation** - **Facilitation**	Biodiversity and ecosystems valued into national planning and development Biodiversity benefits generated for all citizens Genetic and biological resources managed and used sustainably Behavioural change effected through knowledge management and capacity development	▪ Operational National Biodiversity Management Entity and Biodiversity Unit ▪ National legislative framework for NBSAP revised by the middle of Year 2 and enacted. ▪ Natural capital accounting introduced into National Budget by Year 3 ▪ SPPA2 endorsed by cabinet by year 3; ▪ Increased level of investment in projects and programmes dealing with restoration, conservation & sustainable use of biodiversity resources ▪ The NBSAP CEPA is endorsed by second quarter of Year 1 and resources mobilized for at least 30% of its implementation by the end of year 2 ▪ Identifying income generating streams for	▪ Socio-Economic Review ▪ Annual National Budgets and Appropriation Bill ▪ Gazette ▪ Policy documents ▪ Annual Reports of Ministries and Agencies ▪ Private sector and CSO reports ▪ CHM	

	Intervention Logic	Indicators	Means of Verification	Assumptions
		the Saint Lucia National Conservation Fund ▪ Central repository for biodiversity data operational by 2015 and information shared among agencies through CHM platform		
Outputs	1. Strengthened governance structures 2. Appropriate Tools and Guidelines 3. Knowledge Management enhanced through CHM and RSO 4. Education and Outreach (including CEPA) on values of biodiversity goods and services to target sectors of local population 5. Science, Technology and Innovation utilized to create business opportunities in Bio friendly goods and services 6. Biodiversity protection, conservation, and sustainable consumption and production (SCP)	▪ Biodiversity Unit (BU) formally established in the MRB by end of Year 1 ▪ Quarterly meetings and annual reports of NBME/BU ▪ Relevant Biodiversity legislation revised to incorporate at least critical management issues by 2020 ▪ Key biodiversity related sectors' policy documents and sectoral initiatives incorporate NBSAPs rationale, objectives and insights of values of nature ▪ At least 2 methodologies used for natural capital accounting (e.g. PES and CES)	▪ Annual reports of Biodiversity Unit ▪ Consultants Reports ▪ Gazette ▪ Policy Documents ▪ CHM	

	Intervention Logic	Indicators	Means of Verification	Assumptions
	7. Sustainable Financing for biodiversity management	▪ Relevant Risk assessments initiated annually ▪ Management Plans for PAs under SPAA2 and critical species underway by year 5 ▪ At least one Public/Private Partnerships with CSOs and Private sector organizations established annually for biodiversity management activities, in collaboration with implementing agencies ▪ At least one critical ecosystem restored annually ▪ Investments in at least 2 new or reformed business enterprises that involve biodiversity friendly goods and services annually ▪ At least 10 persons are trained for relevant application of STI by the end of year 5 of implementing the NBSAP. ▪ Relevant TK registers produced		

	Intervention Logic	Indicators	Means of Verification	Assumptions
		▪ Relevant research agreements signed and implemented ▪ Biodiversity related Information disseminated to at least 5 target groups annually ▪ CHM updated regularly with at least 10 new records uploaded annually ▪ Ongoing mobilisation of donor funding where available ▪ Appropriate sustainable financing options tested within 5 years		
Activities/Process	Transformative Inventions: • Economic - Natural capital accounting - Sustainable consumption and production • Social - Food and nutrition security - Water quality - Health quality • Ecosystem - protection - restoration			The NBME though the Biodiversity Unit and other Committees ▪ provides policy guidance on all matters pertaining to Biodiversity management in Saint Lucia; ▪ is responsible for oversight and coordination of the implementation of activities covered under NBSAP; ▪ is responsible for collaboration and networking with global and regional biodiversity related organisations and initiatives;

	Intervention Logic	Indicators	Means of Verification	Assumptions
	- conservation Facilitation Interventions: - Policy and legislation and institutional frameworks - Financing Interventions: - Fiscal and economic incentives - Resource mobilization			▪ collaborates in the evaluation and implementation of cost recovery mechanisms to finance Biodiversity management activities in Saint Lucia; ▪ Monitors and evaluates the implementation of the NBSAP
Inputs	Financial Inputs are required for the following: Recurrent Costs Salaries and emoluments of staff of the BU x 7years Office Equipment Office Supplies x 7years Travel and Per Diem CBD Reporting	Capital Costs Institutional Strengthening Consultancies Conservation and restoration interventions Technical programmes CEPA implementation Training and Capacity Development Research Initiatives		

Annex 3: Key Indicators for Monitoring and Evaluation

National Targets/ Aichi Aligned	Outcomes	Outputs	Indicators	Means of Verification
Target 1.B: Achieve full and productive employment and decent work for all, including women and young people Sustainability Target 7.A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources Target 7.B: Reduce biodiversity loss, achieving by 2020, a significant reduction in the rate of loss	➢ Creation of sustainable livelihoods through use of biodiversity resources for vulnerable groups ➢ Demonstrated commitment at country level to sustainable development agenda ➢ Sustainable development principles espoused by country and endorsed at several levels of decision making and planning ➢ Establishment of PAs to minimise habitat loss and associated ecosystems and species decline		Impact Indicators: Economic systems: ▪ Number of "green" sustainable livelihoods ▪ National employment levels ▪ Number of incentives reformed Social systems: ▪ Trends in poverty in rural communities 2006-2014 ▪ Implementation of food and nutrition security plan ▪ Availability of water ▪ Trends in water quality ▪ Trends in outbreaks of public health and environmental related diseases Eco systems: ▪ Trends in land use and PA coverage ▪ Trends in soil loss: e.g. frequency and extent of landslide damage ▪ Trends in the abundance and distribution of critical ecosystems, habitats and species	▪ Human Development Index – United Nations (UN) ▪ Sustainable Development Goals (SDG) – national goals ▪ Socio-Economic Review ▪ Annual National Budgets and Appropriation Bill ▪ Gazette ▪ Policy documents ▪ Annual Reports of Ministries and Agencies ▪ Private sector and CSO reports ▪ CHM ▪ Land use Maps ▪ CHM

National Targets/ Aichi Aligned	Outcomes	Outputs	Indicators	Means of Verification
			▪ Trends in IAS ▪ Community processes for ecosystems approach	
1. Enhancement of awareness of biodiversity including goods and services by all sectors of the local population (communities, schools, judiciary, politicians, businesses, resource users, financial institutions etc.) 2.Incorporation of the NBSAP's rationale, objectives and insights of values of nature into other policy areas and sectors and plans to enable the contribution of biological resources to national socio-economic development 3. By 2015 improvement and implementation of legal measures for effective biodiversity management particularly with regard to Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization	➢ Biodiversity and ecosystems valued into national planning and development	➢ Strengthened governance structures ➢ Appropriate Tools and Guidelines ➢ Sustainable Financing for biodiversity management	▪ Legally mandated National Biodiversity Coordinating Committee established by end of Year 1 ▪ Revised legislation and regulation that incorporates relevant Biodiversity management issues ▪ Legislation enacted and actions taken to enforce laws and regulations ▪ Number of national/sectoral policy documents and initiatives which incorporate Revised NBSAP's rationale, objectives and insights of values of nature	

National Targets/ Aichi Aligned	Outcomes	Outputs	Indicators	Means of Verification
4.Establish cooperation and harmonised interventions and activities across sectors, agencies and stakeholders for sustainable production and consumption and keeping the impacts of use of resources well within ecological limits				
5. Safeguarding of critical ecosystems that contribute to water and sanitation; poverty reduction, for improved social welfare, particularly health, livelihoods and well-being, especially of vulnerable groups 6.Enhance ecosystem resilience and reduce negative impacts on biodiversity through collaboration in the implementation of other MEAs, including CCA, DRR and combating land degradation 7. Operationalize the Nagoya Protocol on Access	➢ Biodiversity benefits generated for all citizens	➢ Science, Technology and Innovation utilized to create business opportunities in Bio friendly goods and services	▪ Value of investment in restoration, conservation, etc. of biodiversity resources ▪ Number of CSOs and Private sector organizations involved in biodiversity management activities, in collaboration with implementing agencies ▪ No. of new or reformed business enterprises that involve biodiversity friendly goods and services and the value	▪ Related Project Reports ▪ Revised Systems Plan for Protected Areas implementation reports ▪ Business associations' reports

National Targets/ Aichi Aligned	Outcomes	Outputs	Indicators	Means of Verification
to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization subsequent to national legislation			of investment in these enterprises ▪ At least 15 officers are trained for relevant application of STI during the first 5 years of the NBSAP ▪ Monitoring and early warning systems in place that are integrated in actions by various agencies e.g. to effectively manage invasive species ▪ Risk Assessments and DRR contingency plans	
8. Reduce the rate of natural habitat loss by 50% and minimize forest degradation and fragmentation 9. Amendment / avoidance of overfishing and reversal of current and potential adverse impacts on threatened stocks, species and marine and fisheries ecosystems	➢ Genetic and biological resources managed and used sustainably	➢ Improved Biodiversity protection, conservation, and sustainable consumption and production (SCP)		

National Targets/ Aichi Aligned	Outcomes	Outputs	Indicators	Means of Verification
10.Reduce pollution and excessive use of fertiliser 11.Reduce Pollution and excessive use of fertilisers 12. Creation and management of protected areas for important terrestrial and inland water, coastal and marine biodiversity and ecosystem services 13.Conservation, restoration and/or sustainable production (management and use) of genetic and biological resources to improve status (safeguard genetic diversity and minimise genetic erosion) of biodiversity in agriculture, fisheries and forestry 14. Appropriately strengthened framework for prevention and management of invasive alien species		▪ Trade protocols and draft legislation approved to	▪ Value and/or amount of fertilisers and chemicals imported ▪ Coral Reef health ▪ Monitoring and early warning systems in place that are integrated in actions by various agencies e.g. to effectively	

National Targets/ Aichi Aligned	Outcomes	Outputs	Indicators	Means of Verification
		control and or penalize introduction of IAS NISS endorsed and system for implementation functional	manage invasive species ▪ Risk Assessments and DRR contingency plans	
♦ **15. Adoption and implementation of an effective, participatory and updated NBSAP** ♦ **16. Improved data management for biodiversity management.** ♦ **17. Development of scientific and technological knowledge sharing, systems and application for effective management of biodiversity** ♦ **18. Protection of traditional knowledge, practices and innovations and associated biological resources**	➢ Behavioural change effected through knowledge management and capacity building ➢ Knowledge Management enhanced through CHM and RSO ➢ Education and Outreach (including CEPA) on values of biodiversity goods and services to target sectors of the local population	➢ Central repository for biodiversity data operational and information shared among agencies through CHM platform ➢ The NBSAP CEPA is endorsed by second quarter of Year 1 and resources mobilised for 30% of its implementation by the end of year 2	▪ Ongoing mobilisation of donor funding where available ▪ Appropriate sustainable financing options tested within 5 years	▪ CHM ▪ Databases on ecosystems, species, genetic resources, habitats, processes and communities ▪ Hazard and vulnerability maps

National Targets/ Aichi Aligned	Outcomes	Outputs	Indicators	Means of Verification
19. Mobilisation of financial resources for effective implementation of the NBSAP		➢ Resources mobilized for the NCTF		

Annex 4: Stakeholder Analysis

In the conduct of the stocktaking exercise, stakeholders were consulted to the extent required to ensure that issues and concerns of importance are sufficiently reflected in the Revised Second NBSAP and 5th NR. Individuals and agencies representing a range of sectors, communities, etc. assisted, *inter alia*, in:

i. Documenting experiences and lessons learnt under previous enabling activities;
ii. Identifying national and sectoral priority issues to be addressed under the Revised NBSAP;
iii. Identifying modalities for the implementation of the Revised NBSAP.

Identification of Stakeholders for Biodiversity Consultations

Primary Stakeholders:

1. Groups / Agencies directly involved in Management of Biological Resources
   1.1 Dept of Agriculture,
      - ➢ Fisheries Division
      - ➢ Forestry Division
      - ➢ Department of Agriculture
      - ➢ IWCAM Project
   1.2 Dept of Economic Planning, etc.:
      - ➢ Sustainable Development Unit
      - ➢ EU/NAO
      - ➢ Economic Affairs
   1.3 Saint Lucia National Trust
   1.4 OECS-ESDU
   1.5 Piton Management Area
   1.6 Marine Management Authorities, e.g. SMMA
   1.7 Caribbean Public Health Agency
   1.8 National Conservation Authority

2. Resource Users
   2.1 Marine / Fresh Water Resources
      - Grand Anse Sea Turtle and Nature Defenders formerly Desbarra Turtle Watch Group
      - Tour Operators (Land and Sea)
      - Water Catchments' Groups

- Seamoss Producers

2.2 Terrestrial:
- Woodcutters
- Charcoal Makers
- *Latanyé* Broom-makers
- Farmers
- *Liane* Harvesters
- Arts and Craft Producers
- Pra-leen Producers

3. Regulatory Entities
- Attorney General's Chambers
- Dept of Justice
- Royal Saint Lucia Police Force
- Ministry responsible for agriculture and forestry
- Registry of Intellectual Property
- Authorised Officers designated under the various pieces of legislation

4. Providers / Services of Biodiversity Related Data and Information
4.1 Government Statistics Department
4.2 Ministry responsible for agriculture and forestry
4.3 Sustainable Development Unit
4.4 Government Information Service
4.5 Environmental Health Unit
4.6 Libraries and Documentation Centres (Public and Private)
4.7 OECS-ESDU
4.8 Saint Lucia National Trust
4.9 Media Houses
4.10 Utility Companies
4.11 Physical Development unit
4.12 Saint Lucia National Trust
4.13 SALCC
4.14 UWI
4.15 Folk Research Centre
4.16 Saint Lucia Tourist Board
4.17 Others (CARDI, CEHI, IICA, SLBS)

5. Users of Biodiversity Data and Information
5.1 Resource users
5.2 Educators
5.3 Consultants
5.4 Other persons from both public and private sector
5.5 Civil Society

6. Non-governmental Organisations, Community Based Organisations, Business, Media Houses, Public Relations Companies and Other Interests

6.1 Folk Research Centre
6.2 Soufriere Development Foundation
6.3 Laborie Development Foundation
6.4 Micoud Development Foundation
6.5 Caribbean Youth Environment Network (CYEN)
6.6 National Youth Council
6.7 Environmental Clubs
6.8 National Research and Development Foundation (NRDF)
6.9 Banana Industry Trust (BIT)
6.10 Southern Tourism Development Cooperative
6.11 Public Utility Companies (Lime, Digicel, LUCELEC, WASCO)
6.12 Media and Public Relations Companies

Print:
- Tropical Traveller
- Visions
- Business Focus
- STAR Publishing
- The VOICE newspaper
- The MIRROR newspaper

Television:
- National Television Network/Government Information Service
- Think Caribbean Television
- Daher Broadcasting Services
- Helen Television System
- Choice
- Calabash TV

Radio Stations:
- Radio 100 Helen FM
- Radio St. Lucia
- Rhythm FM Inc
- The Wave
- Praise FM

Public Relations Companies
- ACCELA MARKETING
- Right Angle Imaging

Other
- The Visitor Channel
- Paradise magazine

6.13 ALDET Centre
6.14 Hewanorra Organic Agricultural Mission

6.15 Saint Lucia National Commission for UNESCO
6.16 Inter-American Institute for Co-operation on Agriculture (IICA)
6.17 Diplomatic Corp:
- OAS
- French Embassy
- Venezuelan Embassy
- Mexican Embassy
- Cuban Embassy
- Taiwanese Embassy

6.18 Sandals Resorts
6.19 Julia Bird, Marie-Louise Felix and other interests

Secondary Stakeholders:

7. Public Sector and Quasi Government Collaborative Agencies
7.1 Saint Lucia Air and Sea Ports Authority / Ports of Entry Entities
7.2 National Emergency Management Organisation (NEMO)
7.3 National Farmers Association
7.4 Dept responsible of Equity
7.5 Banana Improvement Trust
7.6 Ministry responsible for Education
7.7 Ministry responsible for Physical Development
7.8 Ministry responsible for Health
7.9 Ministry responsible forTourism
7.10 Dept of Trade, Commerce and Consumer Affairs
7.11 Dept of Finance
7.12 City, Town and Village Councils
7.13 Customs and Excise
7.14 Saint Lucia Solid Waste Management Authority
7.15 Saint Lucia Fire Service

8. Representatives of Sectors and Businesses that Impact On or are Affected by Biodiversity (Linkages)
8.1 Tourism
8.2 Agriculture
8.3 Industry / Manufacturing
8.4 Health
8.5 WIBDECO
8.6 BIT / BPMU
8.7 National Taxi Association
8.8 Southern Development Foundation
8.9 Heritage sites (Mamiku Gardens, Diamond, Fond Doux, Rabot and others), nature trails

STAKEHOLDER ANALYSIS and PARTICIPATION PLAN

Stakeholder	Characteristics	Interests and Expectations	Implications of outputs on stakeholder	Opportunities and Threats	Risks and Assumptions
PRIMARY STAKEHOLDER 1. Natural Resource Management Agencies Dept of Agriculture, Food Production, Fisheries, and Rural Development (MoA)	Facilitates development of Agriculture Sector through sustainable management of natural resources including the biological resources within country Lead agency responsible for management of marine, freshwater and terrestrial resources Operates within government policies and is dependent on	Effective management and utilisation of natural resources and environment Food Security of the nation (quantity, quality, availability, accessibility) Promotion of sustainable use and benefits derived from use of	Enhance management of biodiversity and fulfil obligation of Convention on Biological Diversity and other environmental treaties and protocols Enhance food security of country through sustainable use of resources	Strengthen linkages and collaboration with other sectors and agencies to promote biodiversity management in line with economic, social and cultural development Encourage review and amendment of existing	Risk: - Limited human resources within MoA together with increased responsibility may lower priority given to implementing key biodiversity activities Assumptions: - MoA would get assistance from

Stakeholder	Characteristics	Interests and Expectations	Implications of outputs on stakeholder	Opportunities and Threats	Risks and Assumptions
	local revenue and funding from donor agencies to implement programme and budgets Some technical expertise within Dept	biological resources Implementation of Agriculture Sector policy and strategic plan, Fisheries and Forestry Management plans	Advance Agriculture Sector policy and strategic plan (as regards objective 6) Support implementation of Fisheries and Forestry management plans Incorporate traditional knowledge and emerging issues such as Biosafety, alien invasive species(AIS) into biodiversity programme	policies and legislation that impact or are relevant to conservation and utilisation of natural resources Opportunity: Promote need for valuation of biological resources	collaborative agencies in implementing NBSAP - Harmony between MoA policies and Biodiversity activities
Dept of Sustainable Development ▪ **Biodiversity** ▪ **SDED**	Focal Point and Secretariat for a number of multilateral	Ensuring that environmental management is	Promote natural resource	Opportunity to strengthen linkages	Assumption: - Dept has an environmental

Stakeholder	Characteristics	Interests and Expectations	Implications of outputs on stakeholder	Opportunities and Threats	Risks and Assumptions
▪ **WRMA** ▪ **Forestry** ▪ **Biodiversity**	Environmental Agreements (MEAs) and associated committees Lead agency responsible for management of freshwater and terrestrial resources Formulation and/or co-ordination of national strategies for economic development Facilitate execution of environmental portfolio although environmental management not formally stated in Dept's portfolios National liaison for European Union (EU) projects	integrated into development plans for the country Achieving objectives of SFA 2003 (NRM) and other EU funded projects Ensuring that Saint Lucia fulfils its obligations under the various MEAs	management strategies Contribute to achieving GOSL national strategic priorities Foster use of assessments such as Environmental Impact Assessments (EIAs) in development planning	among agencies involved in MEAs country has signed onto Emphasise need for umbrella environmental management organisation Opportunity to attract financing for biodiversity related projects Threat: Limited Human Resource at Sustainable Development Unit to implement and monitor	portfolio Risk: - Separation of biodiversity from economic planning and prioritisation of latter over the former

Stakeholder	Characteristics	Interests and Expectations	Implications of outputs on stakeholder	Opportunities and Threats	Risks and Assumptions
				biodiversity activities	
Non-governmental Organisations directly involved in Natural Resource Management	Provide support to lead agencies responsible for management of biological and other natural resources in Saint Lucia Receive subvention from Government but generally rely on funds from projects to implement activities Operate with a small core staff and some volunteers to oversee day to day operations of each agency Wide range of technical expertise on environmental/natural resource management	Effective conservation of marine, coastal and inland resources within their jurisdiction Harnessing resources (human and financial) for implementation of their respective programmes Influencing decision making on issues of relevance to biodiversity	Heighten focus on natural resource management especially biodiversity Highlight need to establish baseline data in support of assessment and monitoring of resources Place priority on review and restructuring institutional arrangements for biodiversity	Establish a more effective co-ordinating mechanism for executing strategies and programmes in support of biodiversity Mobilise support from external sources for relevant national programmes	Risks: - Overlapping and duplication of activities of each agency - Competition among agencies for resources from donor agencies Assumption: - Roles and responsibilities of key agencies clearly defined and outlined in memorandum of understanding or similar agreements

Stakeholder	Characteristics	Interests and Expectations	Implications of outputs on stakeholder	Opportunities and Threats	Risks and Assumptions
2. Resource Users Marine/fresh Water terrestrial	Largely dependent on the Country's natural resources for their livelihoods. Impact on such biological resources by their activities Some not fully sensitised to importance or need for conservation Sustainable utilisation of biological resources and other natural resources Some organised into groups	Sustaining their livelihoods Access to biological resource base (at their convenience) Other persons and groups within their geographic area will respect their rights to and need for these natural resources	Spearhead programmes aimed at regulating access and use of biological resources and habitats Highlight issues of benefit sharing and intellectual property especially with respect to traditional knowledge Require a more organised and co-ordinated approach to biodiversity management	May spawn conflict with other stakeholders as regards access to and benefit sharing of resources Conflicts may arise during efforts to establish protocols for sustainable management of resources Opportunities to enhance public awareness on issues pertaining to management of biological resources Potential for co-management strategies to be developed and implemented Opportunity to promote sustainable livelihoods concept	Assumption: - Stakeholders fully sensitised and willing participants in the area of biodiversity management Risks: - Resource users do not see themselves as custodians of the biological resources - conflicts among resource users for same resources

Stakeholder	Characteristics	Interests and Expectations	Implications of outputs on stakeholder	Opportunities and Threats	Risks and Assumptions
3. Regulatory Entities	Mainly Public Sector Primary functions may not be directly related to biodiversity but would support activities of agencies involved in NRM Limited number of personnel to develop and enforce legislation and hence generally need to prioritise protection and regulation of natural resources Regulation of activities that impact on natural resources	Use their mandates and provisions of legislation under their jurisdiction in support of biodiversity Ensure fair and just execution of responsibilities including those that impact on natural resource and environmental management	Need to sensitise personnel from these entities to biodiversity conservation and provisions of associated legislation Review of institutional arrangements and protocols may be necessary Cognisant of emerging issues such as biotechnology/genetically modified organisms (GMOs), alien invasive species and need to address these in biosafety and quarantine programmes aimed at protection of biological resources	Opportunity to regulate biodiversity related research - creation of new enterprises Opportunity for collaborative initiatives in support of biodiversity legislation enforcement. Conflict between enforcers and other stakeholders Ensure rights and benefits of custodians through intellectual property	Assumption: - Sufficient capacity to enforce legislation Risks: - Low priority accorded to protection of natural resources - Personnel may not be willing or mandated to include regulation of biological resources into their roles and responsibilities - Gaps and overlaps in responsibilities
4. Providers of Biodiversity information	Most have some level of technical expertise	Provision and dissemination of	Networking arrangements to be established for effective	Opportunity to collaborate with other providers	Risks:

Stakeholder	Characteristics	Interests and Expectations	Implications of outputs on stakeholder	Opportunities and Threats	Risks and Assumptions
5. Users of Biodiversity information	Wide range of interests	accurate data and information Networking with national, regional and international entities Access to accurate data and information	management of data and information Increase awareness of emerging issues of relevance to biodiversity management Increase awareness of and sensitisation on biodiversity issues	and users of biodiversity information Limited capacity (human and infrastructure/ equipment) to enter, store, analyse and disseminate information Advocacy at community and national level for biodiversity	- Limited resources/ capacity could have negative effect on consistency, accuracy and reliability of data and information Assumption: - Key data management agencies would commit to maintenance of data bases Assumption: Users would assist in collection and dissemination of information

Stakeholder	Characteristics	Interests and Expectations	Implications of outputs on stakeholder	Opportunities and Threats	Risks and Assumptions
6. Non-governmental Organisations,	Most are volunteer and advocacy groups	Social and economic	Increase awareness of and sensitisation on	Advocacy at community and	Risks: - Roles of agencies

Stakeholder	Characteristics	Interests and Expectations	Implications of outputs on stakeholder	Opportunities and Threats	Risks and Assumptions
Community based Organisations, Media and others with interest in biodiversity issues	Diversity of interests even with regards to biodiversity management Some include elements of environmental management in their programmes Some not familiar with the term "biodiversity"	development of the country Protection of the environment Protection and promotion of business and public interests	biodiversity issues Reorientation of some programmes to deal with emerging issues Co-ordinated mechanisms to be established to ensure effective management of biodiversity Highlight awareness of emerging issues and urgent need to address existing or potential problems and concerns related to management of biodiversity	national level for biodiversity Opportunity to collaborate on biodiversity issues Limited resources and capacity could impact on effective use of groups to deal with biodiversity issues	not clearly defined or communicated - Lack of cohesion in implementing programmes could impact on biodiversity management

Stakeholder	Characteristics	Interests and Expectations	Implications of outputs on stakeholder	Opportunities and Threats	Risks and Assumptions
SECONDARY STAKEHOLDERS 7. Public Sector and Quasi Government collaborative agencies	Some are regulatory but most facilitate socio-economic welfare/wellbeing of communities Most support environmental management	Social and economic development of the country Promotion of sustainable development practices Ensure that sector specific policies are articulated and adhered to	Reorientation of some programmes to deal with emerging issues Co-ordinated mechanisms to be established to ensure effective management of biodiversity Highlight awareness of emerging issues and urgent need to address existing or potential problems and concerns related to management of biodiversity Training and sensitisation on	Opportunity to collaborate on biodiversity issues Limited resources and capacity could impact on effective use of groups to deal with biodiversity issues Promote effective integrated watershed and coastal area management practices Limited institutional capacity to implement agency's programmes and even less if	Risks: - Roles of agencies not clearly defined or communicated - Lack of cohesion in implementing programmes could impact on biodiversity management - Responsibilities for biodiversity spread among various agencies so may have gaps and overlaps unless properly co-ordinated

Stakeholder	Characteristics	Interests and Expectations	Implications of outputs on stakeholder	Opportunities and Threats	Risks and Assumptions
			biodiversity required	biodiversity is not integral part of agency's mandate	
8. Representatives of Sectors and businesses that impact or are impacted by biodiversity	Policy makers have a lead role in development of these sectors Some dependent on biodiversity but may not necessarily contributed directly to management of biological or other natural resources Actions of some adversely affect biodiversity Service oriented	Economic development at national sector and or entity level Increase "Environmental consciousness" Enhance delivery of goods and services	Need to review and restructure to ensure compliance with biodiversity policies and regulations Policy/decision makers need to integrate biodiversity issues into national development strategies or business enterprises	Promotion of Environmental Impact Assessments and other instruments Creation of new/innovative opportunities for income generation form use of biological resources	Assumption: Entities are aware of biodiversity and impacts of their activities on the environment Risk: Little political will/support for biodiversity

CONSULTATIONS REPORT

National Consultations

Consultation in North
Key issues highlighted:

1. NBSAP is instrument for managing biodiversity in the country. Hence important to move beyond reporting and ensure monitoring with regard to successes, impacts, etc.
2. PS indicated that in order to measure impacts would need to report on threatened species (e.g. white breasted thrasher, leatherback turtle, Saint Lucia Racer Snake, Fat Pork; Green Iguana threat re IAS); as well as positive trends.
3. Root cause of biodiversity loss is habitat destruction and loss. State of hyper-activity in the land market still remains a threat; little ability to regulate in the absence of clear public policy regarding land use and development; current developments are in fact resulting in habitat conversion down to the level of the soil (e.g. Cas-en-Bas leveled for golf course); need to advocate for policies re land market regulation, that ensure proper land zoning and development planning within a land policy that recognizes the country's moral obligation to the future generation; (policies re land markets can be looked at in countries with similar characteristics and challenges, e.g. Surinam, Bermuda, USVI, Turks and Caicos;)
4. Disasters and associated climate change impacts also contribute to habitat destruction and loss, and consequently biodiversity loss. Important therefore, to attain nexus between biodiversity and DRM in revised NBSAP.
5. Key emerging DRM issue related to biodiversity is the issue of water and water rights; a global report indicates that by 2050 one third of the world's population would be without water- potential water security issue.
6. Pest and disease and changing consumer tastes also affect production of e.g. agro-biodiversity products resulting in declines. Need for germplasm banks to maintain/preserve local biodiversity.
7. Economic diversification still heavily focused on tourism, while there are several other areas for development of industries associated with biodiversity that are under-utilised – e.g. arts and crafts.
8. Issue is that products have remained quite traditional and do not appeal to current consumer taste; need to pursue product development and utilize multi-functionality of products to respond to the needs of various market segments. For example can use culture to impact consumer taste. Further, need to explore concept of global value chain.
9. Work being done by CFL with local biodiversity products, with cocoa stick producers and Fond St. Jacques Rain Forest Foods (granola cereal) needs to be explored for replication with other products e.g. farine/cassava. (Contact Dunstan Demille).

10. Need to demonstrate how biodiversity has been and continues to be critical to our development, including its infusion in our cultural heritage; create stronger linkage between conservation and economic gains.
11. Will need to generate scientific information for decision making, as opposed to just being suppliers of knowledge on biodiversity;
12. With respect to public sensitization, the concept of 'disruptive technologies" can also be applied to move/mainstream biodiversity into the realm of arts/music/culture; that could be used include folklore/religion/; scope to start using and redeveloping socio-cultural values (e.g. need to promote value for all life hence an environmental ethic is greatly influenced by a spiritual ethic);
13. More quantitative performance indicators need to be established; Need to address data and information gaps through measures for ongoing inventorying, Geo Node updates, regular monitoring and evaluation.
14. Development of functional information management system to link relevant key agencies and stakeholders that provide or utilize biodiversity related information and services and that would assist major stakeholders especially policy makers in decision making. How biodiversity information is packaged will also be important. Mapping of biodiversity already happening – coastal mapping, forestry;

15. Need for legislation to give legal standing to Nagoya protocol; must not to be to the detriment of persons (communities and resource users) who use the resources for say cultural/ traditional uses; Legislation is aimed largely to avoid over-exploitation that will prevent locals from deriving benefits of the resources.
16. Biodiversity Conservation and Sustainable Use Bill also to be implemented.
17. Objective ought to be design of a legislative regime that is consistent – suite of legislation that embraces the big picture; not isolated pieces of legislation.

18. Cognisant that law enforcement can be quite costly, especially for SIDS; need to find other means to incentivize/dis-incentivise., and for coordination and consistent response among various institutions.

19. Enforcement can be supported by community involvement; e.g. case of bio-security monitoring on Maria Island.

20. Community empowerment must go beyond knowledge and know-how; must ensure empowerment in all spheres including skills, rights (legal authority and responsibility), and rewards. Champions in communities must have a demonstrated drive and passion for the issue.

21. Components of various projects provide information for process:

    a. NISS to address IAS

b. Sustainable Financing Project – proposes income generating activities for a National conservation fund for Saint Lucia (including Biodiversity with respect to parks and protected areas)
c. Biodiversity and Climate Change Coalition
d. Draft Public Awareness Strategy on Biodiversity produced
e. National Development Plan – environment features prominently in plan – protection and biodiversity conservation (follow up with Dale Barnard); opportunity to be linked to short-term and budgeting process.
f. Post-Disaster – Rapid Disaster Assessments; assessments must be seen as part of data collection process; international systems for biodiversity assessment e.g. International Platform for Biodiversity and Ecosystem Services (IPBES)

22. Need to determine how to align elements of other agreements into NBSAP – SGD, MSI, BPOA II, CARICOM – Article 60 – Revised Treaty of Chaguaramas; Article 24.1 Protocol of Economic Union of Revised Treaty of Basseterre.

23. Biodiversity needs to be addressed at the highest constitutional level – constitutional right to a healthy environment; check status of constitutional review process to see how incorporated.

<u>Consultation in South</u>
Vieux Fort Fisheries Complex Conference Room

1. Most adult Saint Lucians have had a significant introduction to biodiversity through culture; ancestors storytelling have allowed to make connection with land and environment; children today lack that understanding of natural things as the origin of processed goods, hence scant regard for natural things and the associated environment. If there was such an understanding all would "tread lightly" on the earth.
2. Biodiversity needs to become part of our "DNA". Need for an ongoing national conversation on how to experience and manage biodiversity; e.g. snakes viewed as a hazard with a cultural reaction to kill.
3. Need to encourage research students to pursue local related studies; curriculum needs to integrate biodiversity within all subject areas;
4. Biodiversity loss recognized in following species and activities:
    a. Sea grapes at Sandy Beach - leaves affected by fungus (SLNT/MALFF to address)
    b. Almonds – declining availability
    c. *Gommier* – once used for boats/ now more for arts and craft.
    d. Screw pine – declining in availability for production of mats and bags in Choiseul area
    e. Basketry is becoming a dying trade – need for showcasing (possibly an Arts and Craft Festival in Choiseul) – contact Catherine Jn Baptiste

f. Traditional Knowledge in craft making also dying – when hosting regional/international conferences can showcase local arts and crafts; also need mechanisms to showcase the persons who maintain traditional knowledge.

5. IAS threat - Pathways for IAS – can consider US campaign "*Get Habitatitude*".
6. Climate change impact registered largely in wild fires during dry season.
7. Need to explore mechanisms to translate the knowledge on use of biodiversity products and services into livelihoods in our current time. E.g. what systems are needed, technology required, processes that can ensure competitiveness/ cost-effectiveness (cottage industry?); marketing (niche marketing);
8. Other potential products – bwa bande; Campeche from extraction of dye for colouring and flavouring; for use in pottery /basketry.
9. Mankoté mangrove has demonstrated ancillary benefits – horseback riding, bird watching and charcoal; conflict between SLNT and Gov't; used as nursery for fish – fish population declining.
10. Also need for incentives; award/reward scheme at national level for biodiversity business/person of the year. Other existing awards programmes in which can infuse biodiversity award: National Youth Awards; Media Awards; Chamber Awards;
11. The ministry with responsibility for Biodiversity should pursue the administering of biodiversity legislation across more than one sector – Forestry/Environment/Water;
12. Biodiversity Act should be one of the key instruments to protect land and land use. Need for enforcement mechanism.
13. Mechanism to legislate liaising with Dept of Physical Development re enforcement of KBAs, green space (e.g. FRC and adjacent lands in Castries); Zoning/Land Use Plan coming up again in biodiversity discourse. How can make this resonate as a priority issue?
14. Increased use of ICT will help in information dissemination – CHM. Need good data collection methodology to ensure scientific integrity of information for decision making.
15. Will require structural adjustment in order to sow seeds through implementation of the revised NBSAP; won't reap benefits in less than 10-20 years. Will need to do a re-culturing; national pride to be instilled.
16. Public Awareness can use cultural folklore characters such as "*Ossimmo*" – "Patron Saint of the Stupid" – can demonstrate our "stupidity" in how we reject biodiversity; can use social media, technology to go viral to appeal to young persons (Interesting at the first meeting with the President of the National Youth Council, it was felt that such animations by the youth would not go viral. I had to disabuse him of the notion).
17. Will need to convene a youth forum to derive strategy for promoting biodiversity use and management among young persons.
18. Radio Station Love FM – 103.9 provides good message diffusion in the south (Can follow up with DJ Hot Watts re promotion of biodiversity messages)

Consultation in East
Desruisseaux Multipurpose Centre
Consultation began at 10:30 am and ended approximately 1:00 pm.

1. Significant contribution of Rastafarian culture to biodiversity conservation ethos in Saint Lucia. Conservation culture now progressively being eroded due to adoption of foreign cultures.
2. Recognition of how the "*Kweyol"* language carries the culture; hence removing *Kweyol* from the development frame may have contributed to the displacement of biodiversity; communities have traditionally been custodians for biodiversity;
3. The NBSAP in its design must of need provide a mechanism for translation of the strategy to the custodians; must be defined and presented in a language that the custodians understand and relate to. Recommendation that there be a summary of NBSAP translated into Kweyol.
4. Will also need to address Clearing House Mechanism (CHM) with regard to the packaging of information for custodians, since *Kweyol* is more a spoken than written language.
5. Need to create communication mechanisms for ongoing engagement of stakeholders for information sharing, etc. can explore the art of storytelling/popular theater as options.
6. Radio Station Love FM in Vieux Fort provides good message diffusion in the south (Can contact DJ Hot Watts).
7. Documentation of best practices for sustainable use and conservation of biodiversity for transmission through oral history. Of high importance is the impact of solid waste on biodiversity.
8. CHM also important for development of linkages to business/industry
9. Increasing recognition of importance of biodiversity to mental health and spiritual rejuvenation; Burma measures "Gross Domestic Happiness" like GDP.
10. Impact of cultural changes on biodiversity loss being reflected in culturally used flora and fauna:
    a. *Guyave cannelle, shapote*, elongated calabash (used for salting fish); Gwi-Gwi; Hou lou lou – traditional tools and instruments made from natural resources
    b. Over exploitation of *Latanye*; also "*bois madam*" for broomsticks not readily available anymore; need for good regulatory framework.
11. Need for structures to harness, store and preserve traditional knowledge; Nagoya protocol to address this. Will need to work with the traditional "Medsan/ Femme Shay/etc." fast becoming an occupation of the past to document TK, especially with regard to dosages. To be supported by research (through links with TRAMIL and CAPSICUM);
12. The WHO has acknowledged that with the rising cost of conventional medicines, it will be impossible to achieve health for all without incorporating traditional medicine. Concerns, however, re the use of traditional medicines need to be addressed; in defining NBSAP will need some specificity on

traditional medicines; opportunities for bio-economics with venom from Fer-de-lance.

13. Revised Second NBSAP to address: organization strength; provide programmatic means for supporting clustering/ farmer groups; advocacy from groups to raise issues to political level.
14. Conserving cultural heritage should be a priority element of revised NBSAP.
15. Need to address capacity issues in public service. Cultural Policy
16. A cultural nugget that speaks to the loss of biodiversity vis a vis culture from our very own Nobel Laureate Derek Walcott in his book "Flight of the Pelican"

    "This is charity, that is the real foundation, the unavoidable necessity, not of doing good or even seen to be doing good; but charity as work, as duty. It is not our duty to give any more than it is our duty to receive. But once we lose the tribal duty of help, the Koudmain, we lose spirit, then country…. as we have lost the flight of the pelican"

17. CFL Farmers meeting presentation can be used for info
18. IAS of concern to this part of the island is the *Sargassum* Seaweed. Upsurge appeared to be related to change in sea currents. Opportunity to use for composting; will require research, technology, capital and market for final product.
19. Biodiversity Act should be one of the key instruments to protect land and land use

<u>Consultation in West</u>

Consultation began at 10:00 am and ended approximately 2:00 pm.

1. Fond St Jacques

Some ways by which Fond St Jacques dealt with issues arising from Hurricane Tomas.

- Water for irrigation – rain water harvesting is encouraged. Tanks were distributed to some farmers.
- Promoting the diversification of crops. However, issue of alternatives for livelihoods. Farmers in FSJ went back to cultivating Dasheen on the slopes because this is what brought in revenue. How can we demonstrate that cultivation of some species as a monocrop on vulnerable slopes may harm the community in the long term (say another Tomas disaster). Persons willing to take the risk for short term economic gain or to meet their food/livelihood needs.
- Australian government funded a Landslide Rehabilitation project: included the replanting of trees on forest slopes. Forestry Officer indicated success in the replanting exercise on government forest lands.

However, some residents in the community believe that the weight of the trees may have triggered the landslides in Fond St Jacques.

Recommendations

- Need an education and awareness programme for the area. Consensus that education and awareness should start with the young (a participant recalled his passion for the environment because his primary school teacher taught him about conserving the environment). (Discussion: Is that realistic, since some 30 years ago, Forestry Department spread the message of forest conservation. Aren't some of these trained youth in powerful positions today and are they making a difference?)
- Most persons plant crops for economic gain. Therefore, need a very good education drive to explain to persons that money is not all. We need a balance. We need to provide them with alternatives.
- Maybe FSJ can be marketed as a "water world" and sell the water from the springs / streams?
- Long term approach to changing attitudes. If one wants to change a nation, one must look at a 40-50-year process and must start with the young. However, one must also have other groups on board as well. "Children are taught but may not always apply what they have learned". This is sometimes due to the bad examples set by the adults (especially as home; "do as I say, not as I do"). They need the support of the adult generation if biodiversity management is to progress.
- Establishment of management plans for sites, not only for species and ecosystems.

"Development is most successful when driven from the bottom".

- Recommendation made for FSJ to have its own community development plan.

A management plan was prepared for Fond St Jacques as part on the reconstruction programme. However, the community felt they were not sufficiently involved in the process; the plan was just presented to them as a "fait accompli" and it did not address their situation adequately.

Also, the various sectors came to FSJ as separately, mostly all asking similar questions but each with their own agenda and each sector had an individual plan prepared. Residents became frustrated at being asked the same questions by each and felt a more effective approach would have been to organise one consultation with all the sectors to come up with a comprehensive integrated development plan for the community. This plan would need to take into account the livelihoods of community residents.

They believe that Government should work with the community to develop an effective management plan for the area. The following suggestions were made:

- Revisit success stories and experiences.
- Utilise the "Jar*din Kweyol*" concept (mixed farming / cropping).
- Provide government support to encourage persons to diversify (away from the monocrop farming).
- Financial agencies can support biodiversity management – need to make these institutions aware of the policies relating to biodiversity and environmental management.
- Best practice may be to combine laws and policies with support mechanisms (e.g. subsidies, penalties/sanctions).
- Need for training for Customs & Excise officers especially in relation to phytosanitary issues and trade in flora and fauna (border control).

2. Gender considerations

Participants mentioned differences in the use of some biological resources between women and men. One participant observed his grandmother used screw pine in basket making but his grandfather used *Hawardi*. Grandfather has to go into the forest to collect that plant.

3. Marine and freshwater resources
    - One participant noted that there was a lot of biodiversity off shore and also informed of plans to extend the marine management areas along the west coast (from the SMMA right up to Gros Islet).
    - It was observed that in river clearing, many of the contractors deposit the silt on the river banks; when rain falls the silt is washed back into the river.
    - It was also observed that some of the silt is deposited on the plants growing on the river banks which would result in damage or even destruction of these plants.
    - The concern of poor practices in important water catchments – both in the upper and lower areas - compromising the water quality in these catchments.

Recommendations

- Declare areas in the lower water catchments as protected areas, especially private lands.
- Increase awareness and advocacy. In Talvan residents brought an individual who had uprooted the plants following a tree planting exercise to the Police.
- Provide incentives. Experience again with Talvan where the community was able to negotiate lower rates for water as a result of their good practices in that catchment area.

Stocktaking

4. Invasive Alien Species (IAS)

One of the participants wanted information on importing a variety of cocoa. He was directed to the Plant Quarantine Unit since all plant and animal material to be imported in the country must first check with the Unit on the Phytosanitary requirements. Participants were reminded it was illegal to bring in material without declaring it. Participants were also informed of the risks to our local biodiversity from diseased or infested material (alien invasive species).

Some plants are invasive, many have the potential to be invasive. There was much discussion on what material should be considered invasive.

Experience with certain plants on Gros Piton that were brought into the area and are now out of control and impacting on native species.

Some persons believe certain plants look “nice” and want to carry them home and cultivate them. These may be invasive to our native species.

Experience with Barbados (M*el*) which is very aggressive. It eats the eggs of the local *Mel* and also other birds.

5. Multiple uses of certain species

Cocoa

- Pericarp (yellow portion) can be used as a shampoo
- White part is good for skin issues

- Some plants are important as a means of survival in the case of disasters, wars etc - where products normally purchased for health care and hygiene are not available. For example,

one can use Cane (Stalk) to keep teeth clean if there are no toothbrushes or tooth paste available.

- There is Screw pine in Bois Patat. Have 2 Varieties (green, yellow variegated).
- *Pomme dilienne* is getting scarce.
- A population of Whiptail lizards were translocated to Praslin island and Rat islet as a safeguard in case some disaster event occurs on Maria Islet. Not successful to date in Praslin island. There is a population on Rat Islet.

6. Harvesting practices

- Agouti project – ranch farming?
- Incense trees were found to be more abundant in Saint Lucia, very rare in the other islands of the Lesser Antilles.
- Project on incense trees; ideal method for tapping for incense. Propagation and planting of incense trees.

7. Experiences of fisher folk and perceptions on fishers and fishing practices

- One fisherman stated that fishes in his younger days were more plentiful and with more variety/species.
- Is of the opinion than pollution (chemicals, waste) are destroying the coral and fish need the coral to live and reproduce. If there is no good coral, then the fish will migrate elsewhere. He has seen population of fish such as sardine declining.
- The issue of climate change was also raised. One participant thought that CC was changing the course of the currents and that fish follow the currents.
- It was observed that there used to be seasons for different fish species but that is no longer the case.
- Participants were also of the view that with the increase in the boat and net population, overfishing might be taking place.
- Fishermen are using coconut leaves to sweep the ocean floor to harvest fish, even using dynamite but that these practices are destroying the marine habitats.
- Fishing nets are also destroying fish eggs.
- Also noted that movement of rocks for various reasons along the rivers are also destroying crayfish eggs and crayfish.
- It was also noted that fishermen are harvesting undersize fish with the methods used. They may not be able to sell them so throw them back into the sea but by this time the fish are already dead.
- Fibreglass boats and bigger engines (more horsepower) allow fishermen to go further out to sea. However, with these boats, the fish tend to spoil faster because the fibreglass draws more heat and sometimes the fishermen do not bring along sufficient ice to keep the fish.
- It is possible to buy a trawler (mother boat) with five pirogues. The trawler will drag the boats to the Fish Aggregating Devices (FADs). The pirogues will collect the fish and send them to the trawler to be placed on ice. Trawlers use less fuel but other factors may make it them less profitable. Persons who have invested in these trawlers and pirogues state they have not recovered their investment due to issues of theft, being in another country's territorial waters, etc.
- Participants thought that "Fish Fry Nights" are creating a demand for fish and may be resulting in overfishing. Need to manage this activity more sustainably.

Recommendations

- – increase sensitisation of fishers.

- It was suggested that it may be worthwhile collaborating with other countries such as Grenada/Grenadines as a potential source of fish.

8. Experiences of Rainforest Foods
   Representatives present indicated they use local food material for their Granola Mix except for the oats – which is imported. They have not been able to get a suitable substitute for the oats. They have tried Farine but it is expensive and will bring up the price of their products. Have they tried sweet potato chips, cassava?
   They utilise a sugar base and honey.
   They plan to add local fruits to the granola mix.
   They reinvest the revenue to order larger quantities. They sell to Glace Supermarket and Super J.

9. Other Comments

- Participants were of the view that some persons if they are aware of the culture, history and traditional knowledge on some of the biological resources, some may wish to learn how to use them (e.g. basket weaving).
- The issue of waste on our ecosystems and biological resources (generated a lot of discussion).
- Land Tenure
  - Much of the land is family land. It appears those people currently on such lands are not interested in planting long term crops or employing proper land conservation measures.
  - A recommendation was made for islandwide land zoning.
- Need to focus on how biodiversity contributes to life in general (e.g. livelihoods, poverty alleviation, economic development) and not only on conservation.
- Saint Lucia should explore production of own Atlas/Encyclopaedia on our biodiversity.
- Concern about NE quadrant plan because a lot of our biodiversity is located there. Want advocacy.

COMMUNITY CONSULTATIONS

Community Consultation – Monchy

Consultation began at 6:15pm and ended approximately 8:00pm.

1. Development tends to be overly dependent on the government; support given by the local population is usually limited.

2. Changing consumption patterns of citizenry impacting response to biodiversity.

3. Many persons still aware that the future of biological resources depends on having the ecosystem and its benefits for the persons of the country; chemistry between habitat, land and biodiversity.

4. Improvement of communication to understand the pros and cons of our own livelihood.

Biodiversity Status and Trends:
Species not seen much of:
Topi Tambu. Some participants did not know that fruit.
Campeche trees and their use as pillars for houses. Now using concrete blocks. Persons cut down the trees to clear and develop their property;
Crayfish in the rivers
Manicou
Crabs (land/mangrove?)
Bois Temp is dying; not wilting, no obvious disease, do not know the reason for this.

Species noticing more of:
Wild/ feral/stray dogs. These dogs are destroying livestock (mainly sheep and goats) in the community.
Many participants also observe a marked increase in the dog population as well as an increase in the breeds of dogs.
More diseases in the crops planted – "whatever you plant now has a malady"
Some farmers reported an increase in praedial larceny – increase in theft of produce especially by "jumbies".
Human population is increasing – increased year round demand for certain items e.g. sorrel and also increased consumption per individual.
There is almost year-round production or extended season of certain fruits and foods such as mangoes and breadfruit. May be a result of climate change?

Participants noted:

- A lack of knowledge of benefits of biodiversity by community residents;
- The presumption that everyone knows the value of biodiversity, appreciates it and would want to preserve it – is wrong;
- No longer have deep water pools ("basin") where one could dive in. These pools have been filled in with sediment and are now shallow. One reason cited was the cutting down of trees, the roots of which would hold the soil; now there is a lot of soil erosion and sediment since the trees are no longer plentiful;
- Use of pesticides and other agro-chemicals; affects water quality, fruit quality (banana cited);
    - When aerial spraying took place in the days of banana cultivation, there did not appear to have so much diseases; now we have to use more chemicals;

- At the same time a few decades ago, there was not so much use of chemicals and therefore less pests and diseases;
- earthworms and other beneficial organisms were more plentiful and active and plants thrived in the soil, "now the soil is tired or dead and nothing can survive"
- Story: a father and mother each brought home some lettuce, one from the supermarket, the other from a "backyard farmer". It was reported that the backyard one lasted longer.

- Some of the issues relating to biodiversity loss are a matter of economics. One participant wanted to know if one is getting more money from organics, why do we want to spend money on purchasing chemicals.
- Blasting of fish kills the fish, so fewer fish and also more poison entering our bodies from eating the "blasted" fish;
- VAT: One producer reported she used to make farine and was able to improve her process so as to meet the standards and certification especially the packaging to sell her product in the supermarket. Now with VAT, the cost of packaging has increased, the sales have declined and she is losing income. A request for subsidies for farmers on, for example, packaging;
- Another participant was of the opinion that local producers should be able to control their prices since the products are being produced in country and therefore be more competitive; Response: packaging however is imported so the issue remains the same
- Another participant suggested the reason items such as farine have become so expensive is that everyone wants to do the whole process – from planting to making the farine and stated that it may be more cost-effective if the cassava producer focuses on cultivating and harvesting the tubers and then sell the raw material to the farine producer who should concentrate on the processing and not on planting.
- Someone mentioned the use of stale urine in pest control;
- *Latanye* – residents in the community go to the seaside to harvest *Latanye* to make brooms. Monchy used to make a lot of brooms. Now not producing as much because it is too labour-intensive. Also, youth not interested in broom-making. It was noted that the *Latanye* plant has 2 "hearts" and one must know which and how to harvest to sustain the plant.
- Invasive Alien species: Leucaena *(Leucaena leucocephala*) was mentioned as an IAS. Management practices include cutting branches / tree before it fruits or flowers. Leucaena also used as forage for goats in the community.

Recommendations

i. Need to have or enforce nationally, standards and codes relevant to the protection and conservation of biodiversity;
ii. Need more research – studies and observations to enable us to justify / advocate for biodiversity management;
iii. More subsidies or measures for farmers to offset some of the increased expenses resulting from the implementation of VAT (e.g. on packaging);
iv. Encourage charcoal makers to replant trees in the forest when they harvest to make coals;
v. Discourage the planting of gardens too close to the water sources; use appropriate places and practices in cultivating / making your garden.

vi. Greater inclusion of civil society as partners playing monitoring role and representing interests of persons on the ground.

Key Recommendations from National Consultations

The general view coming out of the consultations was that the judicious approach to the revision of the NBSAP and preparation of the 5th National Report involved consideration of the following:

i) Incorporation of values, in particular the balancing of economic, cultural and philosophical values, into the revised NBSAP

ii) The presentation of a new vision for biodiversity management that ensures economic - plus benefits to obtain buy-in by the Government (Approval by Cabinet of Ministers) based on new and emerging issues and recommendations of key stakeholders for biodiversity management;

iii) The process needed to be supported by strong public education and sensitisation, with a strong focus on the policy makers/political directorate and public servants and communities; the SDED under its current biodiversity project would facilitate the process, including coordinating the support for public education and sensitization.

Other recommendations include:

1. Need for ongoing dialogue with biodiversity stakeholders to facilitate their empowerment for the sustainable use and conservation of biodiversity in the Saint Lucia, through workshops, etc.
2. Participants should return to their organization to share the information provided and build capacity of other members.
3. Facilitators should build capacity of the different organizations to: develop projects, to obtain funding from CEPF and other donors,

Lessons Learned

1. Icebreaker – KWIK KWAK was a useful tool to energize participants. Both physically and cognitively. The energizer folklore story telling with "call and response" was both relaxing, yet intellectually stimulating and heightened the interests, as well as generating nods and laughter among the participants. The exercise was very useful in situating participants into a biodiversity frame and highlighting the challenges of biodiversity management from a "grass roots" perspective.
2. The need to capture and heighten the interest of participants is critical at the early stage in order to stimulate prolific information gathering on activities and challenges faced by participants.
3. Consultations largely provide anecdotal evidence of biodiversity status and trends, which can be used as a lead to follow up re more quantitative assessments.

Conclusions

The consultative process to date has been designed to take into account accomplishments or activities completed over the past six years and address past and emerging issues that are

currently gaining prominence, such as biosafety, invasive alien species, and intellectual property rights/ABS and climate change, among others.

The development of the two components, namely Revision of the Second Draft National Biodiversity Strategy and Action Plan, the Fifth National Report will be very well informed by very broad consultations with key stakeholders, including the input of national and regional organisations involved in related projects and activities on Saint Lucia in particular, with respect to broader Environmental Management.

The way forward for defining the Revised NBSAP and formulating the 5th National Report has been informed by the broad range of consultations undertaken with key stakeholders, and the recommendations emanating thereof.

The consultative process is largely an on-going process, and it is envisaged that various stakeholders will continue to be consulted at the various stages as the process continues to unfold.

Annex 5: Transformative, Facilitating and Financing Interventions in the 2nd NBSAP

Table 12:Transformative Interventions in the Revised Second NBSAP

Elements of Enabling Environment	Component 1: Lead Implementing Agency(ies)	Transformative Interventions Short Term	Medium Term	Long Term
Economic Sustainability	➢ MRB ➢ Ministry with responsibility for Finance, Economics and National Development & Social Security ➢ Gov't Statistics Department	➢ Incorporate insights and values of Revised Second NBSAP and other biodiversity related MEAs into National Development Plan currently being developed		
	➢ MRB ➢ Other relevant Ministries ➢ Private Sector ➢ Dept of Finance	➢ Develop and implement Natural Capital accounting system and incorporation into budgetary process o TEEB STUDIES to demonstrate and capture the valuation of ecosystems and biodiversity		
	➢ Dept. of Agriculture ➢ Dept. of Tourism ➢ Invest Saint Lucia ➢ Dept. of Commerce ➢ Registrar of Intellectual Properties ➢ Dept of Social Transformation ➢ Private Sector ➢ SLHTP ➢ SLHTA ➢ Folk Research Centre	➢ Design and/or customise biodiversity business enterprises for equitable sharing of benefits derived from use of biological resources (agriculture, forestry and fisheries) ➢ Identify and Implement tourism sector initiatives/business enterprises that integrate biodiversity conservation ➢ Integration of traditional knowledge in biodiversity enterprises		
	Dept of Commerce	➢ Expand rural development initiatives in arts and craft, eco-tourism and other opportunities in biodiversity management to overcome		

Elements of Enabling Environment	Component 1: Lead Implementing Agency(ies)	Transformative Interventions Short Term	Medium Term	Long Term
	Dept of Agriculture, Rural Development and Cooperatives National Skills Development Centre OPSR SEDU, Dept of Commerce IICA Dept of Social Transformation Private Sector	development issues of poverty reduction through livelihood development		
	➢ Dept of Agriculture ➢ MRB ➢ Private Sector	➢ Identify and implement best practices for <u>sustainable agriculture</u> that minimise risks to biodiversity and ecosystems, while ensuring economic viability o Implementation of existing agricultural programmes such as GAPs, Certified Farmer Programme, Fair Trade; etc.		
	➢ MRB ➢ Dept of Health ➢ Dept of Social Transformation ➢ Private Sector ➢ FRC ➢ CAPSICUM ➢ TRAMIL ➢ Invest Saint Lucia ➢ Dept of Tourism ➢ SLHTA	➢ Expand outputs of 2004 Biodiversity Enabling Project to increase investment in biodiversity goods and services for <u>health and wellness</u>		
Social Sustainability	➢ Dept of Agriculture ➢ Dept of Tourism ➢ Invest Saint Lucia	➢ Establish and operationalize mechanisms for Community participation in biodiversity management using the sustainable livelihoods approach		

Elements of Enabling Environment	Component 1: Lead Implementing Agency(ies)	Transformative Interventions Short Term	Medium Term	Long Term
	➢ Dept of Social Transformation ➢ Dept of Commerce ➢ CSOs ➢ FRC ➢ IICA ➢ OPSR ➢ Private Sector			
	➢ Dept of Health ➢ Dept of Agriculture ➢ Dept of Social Transformation ➢ Dept of Education ➢ Private Sector ➢ SLHTA ➢ CSOs	➢ Integrate biodiversity and ecosystem considerations in epidemiological assessments in the health sector with reference to protection of water supply and management of disease source; and regulation services ➢ Recognise and promote dietary diversity, good nutrition and food security through traditional local cuisine and food cultures		
		➢ Integrate "value of nature" into health initiatives including mental health and non -communicable diseases		
Ecosystem Sustainability	➢ MRB ➢ Department of Fisheries ➢ Dept of National Development ➢ SLNT ➢ SLHTP ➢ Private Sector ➢ CSOs	➢ Develop and implement Management Plans for key ecosystems and priority species with emphasis on co-management o Endorse and implement the revised Systems Plan for Protected Areas for Saint Lucia as a component of	➢ Facilitate investments in creating and managing protected areas that will yield returns in societal benefits	

Elements of Enabling Environment	Component 1: Lead Implementing Agency(ies)	Transformative Interventions Short Term	Medium Term	Long Term
		the overarching national development plan for the country		
	➢ MRB ➢ Private Sector ➢ Dept of Commerce ➢ Dept of Health ➢ Dept of Agriculture ➢ SLHTA ➢ Dept of Tourism	➢ Develop and implement appropriate risk management strategies and interventions for IAS and GMOs		
	➢ MRB ➢ DCA ➢ NEMO ➢ Private Sector ➢ CSOs	➢ Incorporate CCA/DRR measures in development planning at all levels to mitigate / reduce negative impacts on biodiversity so as to increase resilience of ecosystems to climate variability phenomena and natural disasters		
	➢ MRB ➢ Department of Forestry ➢ SLNT ➢ Fisheries Department ➢ FRC ➢ Private Sector	➢ Protect species by maintaining and restoring critical habitats, including migratory corridors o Identification and restoration of specific bio-cultural sites for restoration		
	➢ MRB ➢ Fisheries Department ➢ DCA ➢ Private Sector ➢ CSOs	Develop and incorporate guidelines for the consideration of biodiversity in impact assessments (EIAs, SEAs, etc.) emphasising the concepts of ecosystem function and island systems management (ridge to reef)		
	➢ WRMA ➢ Dept of Health	➢ Integrate ecosystem management considerations		

Elements of Enabling Environment	Component 1: Lead Implementing Agency(ies)	Transformative Interventions Short Term	Medium Term	Long Term
	➢ MRB	into health policy currently being updated with respect to protection of water supply and management of disease source; and regulation services		

Table 13: Facilitating Interventions in the Revised Second NBSAP

Elements of Enabling Environment	Component 2: Lead Implementing Agency (ies)	Facilitating Interventions Short Term	Medium Term	Long Term
Governance	➢ MRB ➢ Dept wrf National Development ➢ Dept of Home Affairs ➢ Registrar of Intellectual Property ➢ FRC ➢ Dept of Social Transformation ➢ MOH ➢ MOA ➢ MOC ➢ Saint Lucia Fire Service ➢ Private Sector	➢ Endorse and implement proposed implementation structure for Revised Second NBSAP by middle of year 1 ➢ Promote and coordinate harmonization and alignment of supporting policies, plans, strategies (e.g. NEMS/NEPS, Biosafety Legislation, Waste Management, Food Security and Safety, Health sector and tourism sector land development policies, National Investment Policy, etc.) for an integrated implementation of NBSAP activities. ➢ Nagoya Protocol ratified, legislation implemented, systems established for implementation of Protocol; protocol implemented ➢ Policy on intellectual property developed for biological resources and traditional knowledge, practices and innovations associated with such resources		

Elements of Enabling Environment	Component 2: Lead Implementing Agency (ies)	Facilitating Interventions Short Term	Medium Term	Long Term
	➢ CSOs	➢ Implement and enforce other relevant regulations and other measures (e.g. codes, standards, guidelines) for natural resources management to ensure protection of biological diversity (including species covered under international agreements) ➢ Facilitate the re-formulation of a National Science and Technology Policy ➢ Develop collaborative partnerships with entities (national, regional, international) to build national capacity for identification of biodiversity components aimed at bio-prospecting, taxonomic identification, control of alien species, rehabilitation of critical habitats and other biodiversity related studies ➢ Establish and operationalize Biosafety Management Systems ➢ Endorsement and collaborative implementation of completed management plans including revised SPPA2, National Wildfire Management Plan, species recovery plans (e.g. white breasted thrasher, Saint Lucia Racer and Whiptail Lizard) with a focus on sensitive, biodiversity- rich areas		
	➢ MRB/DoF ➢ Customs Department ➢ MOA/DoA & DoF ➢ SLASPA ➢ SLHTA	➢ Facilitate implementation of NISS		
	➢ MRB/DoF ➢ Dept of Agriculture and Fisheries ➢ Central Statistics Dept. ➢ Private Sector	➢ Establish and implement synergistic approaches to CBD, RAMSAR, ITPGR, IPPC and CITES Conventions and other biodiversity related MEAs to which Saint Lucia is a signatory		

Elements of Enabling Environment	Component 2: Lead Implementing Agency (ies)	Facilitating Interventions Short Term	Medium Term	Long Term
Tools and Guidelines	➢ CSOs			
	➢ MRB/DoF ➢ SLNT	➢ Develop and implement a Capacity Building Strategy for implementation of the NBSAP, that addresses Global Taxonomic Initiative (GTI)		
	➢ MRB ➢ Dept of Economic Affairs ➢ NEMO ➢ Dept of Physical Development ➢ MoA/DoF ➢ Private Sector ➢ CSOs	➢ Develop, provide training in and implement guidelines for Sustainable production and consumption and use of resources to keep impacts well within ecological limits ➢ Generate Biodiversity maps to include species, location and identification of vulnerable areas/hazards ➢ Develop and utilize protocols for assessing and monitoring the status of selected species including identified indicators	➢ Incentives for private sector investments in biodiversity management/greening business adopted	
	➢ MRB ➢ DoF ➢ Dept of Agriculture	➢ Develop and implement guidelines for conducting inventories, population dynamics and monitoring of selected plant and animal species of significance to biodiversity conservation to ensure these factors are constantly monitored ➢ Train selected personnel in use of the guidelines		

Elements of Enabling Environment	Component 2: Lead Implementing Agency (ies)	Facilitating Interventions Short Term	Medium Term	Long Term
Knowledge Management	➢ MRB ➢ MOE ➢ SALCC	➢ Maintain, operationalise, and make the Biodiversity Clearing House Mechanism and information network well known		
	➢ MRB ➢ Dept of Public Service ➢ Library Services, Dept of Education	➢ Establish Repository of all biological resources research information		
Communication, Education and Awareness	➢ MRB	➢ Endorse and coordinate implementation of the newly developed broadened Biodiversity communication, education and public awareness Strategy (CEPA) to include new and emerging issues by		
	➢ MRB ➢ PCI Media Impact Coalition ➢ MOE ➢ Media Association of St Lucia (MASL)	➢ Coordinated implementation of a sustained and integrated structured public awareness – CEPA for NBSAP and Biodiversity management for greater awareness of values and wider integration of values to facilitate resource conflict resolution and stakeholder management; emphasis on packaging of information o Special school-based and faith-based strategic interventions for behavioural change aimed at children and youth, to be done with a slogan such as "Powered by example" including clean-up campaigns		
	➢ MRB ➢ Dept of Finance ➢ SALCC ➢ UWI Open Campus ➢ Committee of Permanent Secretaries	➢ Present sustainable management of ecosystem services and biodiversity conservation in terms of its contribution to development, growth and equity to economists, political leaders and policy makers		

Elements of Enabling Environment	Component 2: Lead Implementing Agency (ies)	Facilitating Interventions Short Term	Medium Term	Long Term
Science & Technology Development and Application	➢ Cabinet of Ministers			
	➢ MRB ➢ Dept. of Forestry ➢ Fisheries Department ➢ Dept. of Agriculture ➢ SLNT ➢ SMMA ➢ NEMO ➢ Customs Dept.	➢ Undertake regular assessments for monitoring of status of ecosystems to ensure proper management of ecosystem goods and services o Inventorying and studies on undocumented ecosystems and species identified as national priority for research o Assess potential threats resulting from accidental or intentional introduction of IAS and GMOs		
	➢ MRB ➢ Min. of ED ➢ SALCC ➢ CARDI ➢ UWI Open Campus	➢ Collaborative arrangements (national, regional and international) to enhance research/laboratory facilities o Foster involvement of academia in research on biological resources in Saint Lucia o Liaise with regional and international entities to exchange information on best practices, progress in implementing NBSAPs and avenues for regional collaboration and harmonization		
	➢ MRB ➢ Dept. for Science, Technology and Innovation ➢ SALCC ➢ UWI Open Campus ➢ SLBS	➢ Develop and establish protocols to ensure standardized procedures for SCP, RSO, M&E		
	➢ MRB ➢ CSOs	➢ Strengthen agency and community capacities for managing biodiversity, in areas such as appropriate technology for SCP, RSO, M&E, among others		
	➢ UWI ➢ Regional Agencies ➢ CSOs	➢ Develop new products and services from biological resources in collaboration with regional and international research institutions		

Table 14: Financing Interventions in the Revised Second NBSAP

Elements of Enabling Environment	Component 3: Lead Implementing Agency (ies)	Financing Interventions Short Term	Medium Term	Long Term
Financing	➢ Dept of Economic Affairs ➢ MRB ➢ Dept of Finance ➢ Private sector	➢ Biodiversity and ecosystem considerations reflected in national budgetary allocations ➢ Mobilise financing for biodiversity initiatives from international and other sources ➢ National Conservation Fund established and operationalised	➢ Formulate and implement appropriate fiscal and economic incentives to promote SCP and biodiversity conservation ➢ Develop and implement Innovative financing options for biodiversity management including with private sector	

Prioritized NBSAP Strategies – a Summary

Table 15: Prioritized List of Key NBSAP Strategies for Policy Makers and Decision Makers

	Priority Strategy	Desired Outcomes	Approach
Component 1: Transformative Interventions	➢ Sustainable use of biodiversity	➢ Long-term livelihoods	➢ Biodiversity-friendly good and services Nagoya Protocol and ABS
		➢ Biodiversity conservation targets met	➢ Management plans for threatened species
		➢	➢ NISS
		➢	➢ Management of protected areas
	➢ Integrated watershed management	➢ Clean water	Management of catchments
		➢ Conservation of coral reefs	➢ Ridge to reef approach
		➢ Protection of coastal zones	
	➢ Results Based Management (RBM)	➢ Harmonized and cost-effective implementation of the NBSAP	➢ Harmonized M&E plans using multi-purpose indicators
		➢ Cross-sectoral collaboration	➢ Cross-train staff
		➢ Science-based, transparent decisions	➢ CHMs

	Priority Strategy	Desired Outcomes	Approach
Component 2: Facilitating Interventions	➢ Enhance Governance	➢ Endorsement of 2nd revised NBSAP ➢ Implementation structures established, including incentives ➢ Enhanced ownership of stakeholders	➢ Cabinet endorsement ➢ Promote and coordinate harmonization and alignment of supporting policies, plans, strategies ➢ Develop and implement a Capacity Building Strategy for implementation of the NBSAP ➢ Apply biodiversity incentives in policy ➢ Participatory planning
	➢ Implement Nagoya Protocol	➢ Nagoya Protocol ratified ➢ Legislation enacted ➢ Implementation structures established	➢ Ratify legislation, enact legislation ➢ Cross-sectoral cooperation
	➢ Enhance MEA synergies	➢ Cost-effective M&E ➢ Enhanced implementation ➢ Enhanced climate change resilience	➢ Establish and implement synergistic approaches to Rio Conventions, Ramsar, ITPGR, IPPC , CITES and others
	➢ Facilitate implementation of the NISS	➢ Mainstreamed IAS management	➢ Enact IS Bill and endorse Regulations ➢ Cross-sectoral training
	➢ Enhance Biodiversity CHM	➢ Improved knowledge management ➢ Informed decision-making	➢ Establish Repository of all biological resources research information ➢ Upgrade, maintain and promote Biodiversity CHM information network
	➢ Roll out awareness campaign	➢ Enhanced public awareness and ownership of biodiversity assets	➢ Implement CEPA
Component 3: Financing Interventions	➢ Source increased budget allocation for biodiversity and ecosystem management	Funding is available for all priority interventions	➢ Budget of biodiversity and ecosystem management in national budgetary allocations

	Priority Strategy	Desired Outcomes	Approach
	➢		➢ Mobilise financing for biodiversity initiatives from international and other sources
	➢		Establish National Conservation Fund

Proposed costed action plan for 3 -year implementation of NBSAP (2018-2020)

Annex 6 Capacity and Technological Needs Assessment for Revised Second NBSAP

Elements of Enabling Environment	Transformative Interventions	Capacity and Technological Needs
Economic Sustainability	➢ Incorporate insights and values of Revised Second NBSAP into National Development Plan currently being developed .	➢ Research studies for valuation (economic, social, cultural, etc.) of critical ecosystems and species ➢ Systems for and training in development of National Indicators for monitoring Revised NBSAP and for incorporating the economics of natural wealth in the social and environmental dimension of decision making for national development planning ➢ Equipment, systems and training for generation of spatial data (GIS maps) on critical ecosystems and species; hazard maps, etc. ➢ Training and protocols/processes and procedures for Impact Assessments of development strategies/ plans/proposals – EIA's, SEA's, IAS, Climatic and Disaster Risk Assessments, etc. ➢ Models for scenario development ➢ Appropriate software and systems for modelling for scenario development ➢ Training in application of models for scenario development
	➢ Develop and implement Natural Capital accounting system and incorporation into budgetary process o TEEB STUDIES to demonstrate and capture the valuation of ecosystems and biodiversity	➢ Research studies for valuation (economic, social, cultural, etc.) of critical ecosystems and species ➢ Modifications to software, protocols, procedures and processes to incorporate natural capital accounting parameters into national accounting systems ➢ Training of statistical units in data collection and use of systems for natural capital accounting ➢
Biodiversity enterprises	➢ Design and/or customise biodiversity business enterprises for equitable sharing of benefits derived from use of biological	➢ Research on market potential and investment opportunities using local biological resources for sustainable socio-economic development. – (e.g. NTFPs; eco-agri products; eco-tourism

Elements of Enabling Environment	Transformative Interventions	Capacity and Technological Needs
	resources (agriculture, forestry and fisheries) ➢ Identify and Implement tourism sector initiatives/business enterprises that integrate biodiversity conservation	product; agri-food and fisheries - culinary; spa and wellness products; dyes and pigments, etc.) that promote equitable sharing of benefits derived from use of biological resources ➢ Studies on Limits of Acceptable Change (LAC) for targeted valued ecosystems and biodiversity sensitive areas: agriculture, forestry and fisheries; coastal and marine resources ➢ Value chain studies ➢ Development/Adaptive research to establish appropriate SCP technologies/methodologies for sustainable use and management of ecosystems and species of national importance; Ecosystem sensitive and climate resilient technologies for: o Agri-food (crop and livestock) o Fisheries production o Land management/soil and water conservation o Protected Areas management o Forest management o Integrated Pest and disease management (IPM) o Integrated nutrient management (INM) ➢ Development of Standards for SCP for selected bio-friendly goods and services ➢ SCP equipment and machinery ➢ Mechanisms for technology transfer of SCP technologies (e.g. farming systems approaches; learning by doing ;) ➢ Germplasm banks; seed and propagation facilities ➢ Processing facilities ➢ Pollution prevention and control technologies ➢ Training in value chain assessments ➢ Training of extension officers and producers in application and use of SCP technologies/ methodologies
	Expand rural development initiatives in arts and craft, eco-tourism and other opportunities in biodiversity management to overcome development issues of poverty reduction through livelihood development sub activities above	
	➢ Identify and implement best practices for sustainable agriculture, forestry and fisheries that minimise risks to biodiversity and ecosystems, while ensuring economic viability and food security o Implementation of existing agricultural programmes such as GAPs, Certified Farmer Programme, Fair Trade; etc.	

Elements of Enabling Environment	Transformative Interventions	Capacity and Technological Needs
		➢ Training in development of business plans for bio-friendly goods and services ➢ Training and protocols/processes and procedures for Impact Assessments of development strategies/ plans/proposals – EIA's, SEA's, etc. ➢ Tax and fiscal incentives for individuals and enterprises engaging in an identified set of SCP actions
	➢ Expand outputs of 2004 Biodiversity Enabling Project to increase investment in biodiversity goods and services for <u>health and wellness</u>	➢ Research on market potential and investment opportunities using local biological resources ➢ Value chain studies ➢ Development/Adaptive research to establish appropriate SCP technologies/methodologies for sustainable use and management of ecosystems and species of national importance; Ecosystem sensitive and climate resilient technologies for: o Product development o Processing o Waste management ➢ Studies on Limits of Acceptable Change (LAC) for targeted valued ecosystems and biodiversity sensitive areas: agriculture, forestry and fisheries; coastal and marine resources ➢ Development of Standards for SCP for selected bio-friendly goods and services ➢ SCP equipment and machinery
	➢ Integrate biodiversity and ecosystem considerations in epidemiological	➢ Equipment, systems and training for generation of spatial data (GIS maps) on critical ecosystems and species – esp. water resources ➢ Water pollution monitoring, and treatment technologies and equipment

Elements of Enabling Environment	Transformative Interventions		Capacity and Technological Needs
	assessments in the health sector with reference to protection of water supply and management of disease source; and regulation services		➢ Training and protocols/processes and procedures for epidemiological Assessments that integrate biodiversity considerations ➢ Models for scenario development ➢ Appropriate software and systems for modelling for scenario development ➢ Training in application of models for scenario development ➢ Training and resources for development of pollution prevention and control strategies ➢ Training and resources for enforcement personnel
	➢ Integration of traditional knowledge in biodiversity enterprises		➢ Training, equipment and resources to support Biodiversity Information Network/CHM ➢ Training, systems, equipment and resources to support documentation of traditional knowledge (TK) and TK registers, PICs and MATs
Social Sustainability	➢ Establish and operationalize mechanisms for community participation in biodiversity management using the sustainable livelihoods approach	Develop and/or strengthen community capacities for sustainable biodiversity management	➢ Training of and mechanisms, processes and resources for engaging public & private sector and CSOs participatory planning and project design ➢ Mechanisms and processes to translate recommendations from consultations/planning to interventions, policies for biodiversity management. ➢ Training and protocols/processes and procedures and systems for community residents for community level biodiversity data collection ➢ Community group strengthening in advocacy, negotiating and leadership skills ➢ Tax and fiscal incentives for individuals and enterprises engaging in an identified set of SCP actions

Elements of Enabling Environment	Transformative Interventions		Capacity and Technological Needs
	➢ Recognise and promote dietary diversity, food cultures, local cuisine and their contribution to food and nutrition security	Promote dietary diversity and good nutrition through traditional cuisine and food cultures	➢ Training, systems, equipment and resources to support and protect the identification, documentation of traditional knowledge (TK) and production of TK registers for biodiversity resources used in traditional cuisine and food cultures. ➢ Development/Adaptive research to establish appropriate SCP technologies/methodologies for sustainable use and management of ecosystems and species of national importance; Ecosystem sensitive and climate resilient technologies for: o Agri-food (crop and livestock) o Fisheries production o Land management/soil and water conservation o Protected Areas management o Forest management o Pest and disease control ➢ Development of Standards for SCP for selected bio-friendly goods and services ➢ SCP equipment and machinery ➢ Mechanisms for technology transfer of SCP technologies (e.g. farming systems approaches; learning by doing ;) ➢ Germplasm banks; seed and propagation facilities ➢ Food Processing facilities ➢ Training of extension officers and producers in application and use of SCP technologies/ methodologies ➢ Appropriate systems, mechanisms, processes, protocols and technologies for information management: esp. packaging, dissemination and transfer – CHM; social media; to promote better nutrition and dietary diversity

Elements of Enabling Environment	Transformative Interventions		Capacity and Technological Needs
Biodiversity and Ecosystem Sustainability	➢ Develop and implement Management Plans for key ecosystems and priority species with emphasis on co-management	➢ Facilitate investments in creating and managing protected areas that will yield returns in societal benefits	➢ Research studies for valuation (economic, social, cultural, etc.) of critical ecosystems and species ➢ Equipment, systems and training for generation of spatial data (GIS maps) on critical ecosystems and species: to include land use, water resources, protected areas, hazard maps, etc. ➢ Studies on Limits of Acceptable Change (LAC) for targeted valued ecosystems and biodiversity sensitive areas: agriculture, forestry and fisheries; coastal and marine resources ➢ Training and resources for development of Management Plans for Protected Areas ➢ Systems for and training in development of National Indicators for monitoring biodiversity and ecosystem services (habitats, species, genomes, etc) ➢ Training and protocols/processes and procedures for Impact Assessments of development strategies/ plans/proposals – EIA's, SEA's, IAS, Climatic and Disaster, Risk Assessments, etc. ➢ Mechanisms and processes to translate recommendations from consultations/planning to investment interventions for biodiversity management. ➢ Training in taxonomy and conservation strategies ➢ Training in Biosecurity Management
	➢ Develop and implement appropriate risk management strategies and interventions for IAS		➢ Training and protocols/processes and procedures for Impact Assessments of development strategies/ plans/proposals – EIA's, SEA's, IAS, GMO, Climatic and Disaster, Risk Assessments, etc. ➢ Training and resources for development and implementation of risk management strategies

Elements of Enabling Environment	Transformative Interventions	Capacity and Technological Needs
		➢ Training, equipment and resources for quarantine/enforcement personnel ➢ Training, equipment and resources to support Biodiversity Information Network/CHM for information exchange and dissemination
	➢ Incorporate CCA/DRR measures in development planning at all levels to mitigate / reduce negative impacts on biodiversity so as to increase resilience of ecosystems to climate variability phenomena and natural disasters	➢ Research studies for valuation (economic, social, cultural, etc.) of critical ecosystems and species ➢ Equipment, systems and training for generation of spatial data (GIS maps) on critical ecosystems and species: to include land use, water resources, protected areas, hazard maps, etc. ➢ Training, guidelines, protocols/processes and procedures for Impact Assessments of development strategies/ plans/proposals – EIA's, SEA's, IAS, Climatic and Disaster Risk Assessments, etc. that incorporate biodiversity considerations ➢ Training and resources for development and implementation of community-based risk management strategies that incorporate local and indigenous knowledge ➢ Models for scenario development ➢ Appropriate software and systems for modelling for scenario development ➢ Training in application of models for scenario development ➢ Training, systems, equipment and resources to support and protect the identification, documentation of traditional knowledge (TK) and production of TK registers for biodiversity resource use in DRR/CCA ➢ Training of and mechanisms, processes and resources for engaging public & private sector and CSOs participatory planning and project design

Elements of Enabling Environment	Transformative Interventions	Capacity and Technological Needs
		➢ Mechanisms and processes to translate recommendations from consultations/planning to interventions – policies, programmes, projects. ➢ Training and protocols/processes and procedures and systems for community residents for community level DRR related biodiversity data collection ➢ Community group strengthening in advocacy, negotiating and leadership skills ➢ Tax and fiscal incentives for individuals and enterprises engaging in an identified set of ecosystem resilience actions
	➢ Protect species by maintaining and restoring critical habitats, including migratory corridors, and bio cultural sites	➢ Research studies for valuation (economic, social, cultural, etc.) of critical ecosystems and species ➢ Systems for and training in development of National Indicators and monitoring of Critical habitats (e.g. IBAs KBAs, bio-cultural sites) ➢ Training and protocols/processes and procedures for Impact Assessments of development strategies/ plans/proposals – EIA's, SEA's, IAS, Climatic and Disaster, Risk Assessments, etc. ➢ Training in taxonomy and conservation strategies ➢ Habitat restoration technologies *inter alia*: o Soil and water conservation technologies o Pollution prevention and control technologies o Coastal engineering tools and techniques/beach nourishment o Reforestation tools and techniques o Seed and propagation technologies o Pest and disease control technologies ➢ Tax and fiscal incentives for individuals and enterprises engaging in an identified set of restoration activities

Elements of Enabling Environment	Transformative Interventions	Capacity and Technological Needs
	➢ Develop and incorporate guidelines for the consideration of biodiversity in impact assessments emphasising the concepts of ecosystem function and island systems management (ridge to reef)	➢ Studies on Limits of Acceptable Change (LAC) for targeted valued ecosystems and biodiversity sensitive areas: agriculture, forestry and fisheries; coastal and marine resources ➢ Training and guidelines, protocols/processes and procedures for Impact Assessments of development strategies/ plans/proposals – EIA's, SEA's, IAS, Climatic and Disaster, Risk Assessments, etc. that incorporate biodiversity considerations

Elements of Enabling Environment	COMPONENT 2: Facilitating Interventions			Capacity and Technological Needs
Governance	➢ Endorse and implement proposed implementation structure for Revised Second NBSAP by middle of year 1 o National Biodiversity Management Entity to establish formal linkages with NEC to facilitate NBSAP monitoring ➢ Promote and coordinate harmonization and alignment of supporting policies, plans, strategies (e.g. NEMS/NEPS, Biosafety Strategy, Waste Management, Food Security and Safety, Health sector and tourism sector land development policies, National Investment Policy, etc.) for an integrated implementation of NBSAP activities. ➢ Nagoya Protocol ratified, legislation implemented, systems established for implementation of Protocol; protocol implemented ➢ Implement and enforce other relevant regulations and other measures (e.g. codes, standards, guidelines) for natural resources			➢ Training in and resources for change management ➢ Systems, mechanisms, processes and resources to facilitate alignment/synergies in organizational administrative structures, missions and vision statements ➢ Equipment, facilities and designated/deployed personnel for management of NBME ➢ Management accountability framework ➢ Mechanisms, training and skills development for evaluating and reforming policies ➢ Public, private and civil society group strengthening in advocacy, negotiating and leadership skills ➢ Systems for and training in development of National Indicators for monitoring Revised NBSAP ➢ Training of and mechanisms, processes and resources for engaging public & private sector and CSOs participatory planning and project design and management

Elements of Enabling Environment	COMPONENT 2: Facilitating Interventions			Capacity and Technological Needs
	management to ensure protection of biological diversity (including species covered under international agreements) ➢ Policy on intellectual property developed for biological resources and traditional knowledge, practices and innovations associated with such resources ➢ Facilitate the re-formulation of a National Science and Technology Policy ➢ Develop collaborative partnerships with entities (national, regional, international) to build national capacity for identification of biodiversity components aimed at bio-prospecting, taxonomic identification, control of alien species, rehabilitation of critical habitats and other biodiversity related studies ➢ Establish and operationalize Biosafety Management Systems ➢ Endorsement and collaborative implementation of completed management plans including revised SPPA2, National Wildfire Management Plan, species recovery plans (e.g. white breasted			➢ Mechanisms and processes to translate recommendations from consultations/planning processes to interventions – policies, programmes, projects. ➢ Systems, mechanisms and processes for review/endorsement/ratification of the various governance, policy, legal and regulatory instruments

Elements of Enabling Environment	COMPONENT 2: Facilitating Interventions			Capacity and Technological Needs
	thrasher, Saint Lucia Racer and Whiptail Lizard) with a focus on sensitive biodiversity rich areas			
	➢ Facilitate implementation of the NISS			➢ Training, equipment and resources for quarantine/enforcement personnel ➢ Training, equipment and resources to support Biodiversity Information Network/CHM for information exchange and dissemination ➢ Mechanisms, processes and resources to support implementation of the CEPA
	➢ Establish and implement synergistic approaches to CBD, Ramsar, ITPGR, IPPC and CITES Conventions			➢ Training in and resources for change management ➢ Systems, mechanisms, processes and resources to facilitate alignment/synergies in organizational structures, missions and vision statements and reporting ➢ Mechanisms, training and skills development for evaluating and reforming policies ➢ Management accountability framework

Elements of Enabling Environment	COMPONENT 2: Facilitating Interventions			Capacity and Technological Needs
				➢ Public, private and civil society group strengthening in advocacy, negotiating and leadership skills ➢ Systems for and training in development of National Indicators and monitoring biodiversity and ecosystems ➢ Training of and mechanisms, processes and resources for engaging public & private sector and CSOs participatory planning and project design and management ➢ Mechanisms and processes to translate recommendations from research, consultations/planning processes to interventions – policies, programmes, projects. ➢ Training, equipment and resources to support Biodiversity Information Network/CHM for information exchange and dissemination ➢ Mechanisms, processes and resources to support implementation of the CEPA
	➢ Develop and implement a Capacity Building Strategy for implementation of the NBSAP, that addresses Global Taxonomic Initiative (GTI)			➢ Support for indigenous research and development activities for invasive alien species and

Elements of Enabling Environment	COMPONENT 2: Facilitating Interventions			Capacity and Technological Needs
				protected areas management as adopted in decision VIII/3. utilizing available educational and technical facilities as per: ○ Forest biological diversity ○ Marine and coastal biological diversity ○ Agricultural biological diversity ○ Access and benefit- sharing ➢ Mechanisms and processes to translate recommendations from research, consultations/planning processes to interventions – policies, programmes, projects. ➢ Systems for and training in development of National Indicators and monitoring biodiversity and ecosystems ➢ Training of and mechanisms, processes and resources for engaging public & private sector and CSOs participatory planning and project design and management ➢ Training, equipment and resources to support Biodiversity Information Network/CHM for information exchange and dissemination

Elements of Enabling Environment	COMPONENT 2: Facilitating Interventions			Capacity and Technological Needs
Tools and Guidelines	➢ Develop, provide training in and implement guidelines for Sustainable production and consumption and use of resources to keep impacts well within ecological limits ➢ Generate Biodiversity maps to include species, location and identification of vulnerable areas/hazards ➢ Develop and utilize protocols for assessing and monitoring the status of selected ecosystems and species including development of appropriate indicators	➢ Incentives for private sector investments in biodiversity management/greening business adopted		➢ Research studies for valuation (economic, social, cultural, etc.) of critical ecosystems and species ➢ Equipment, systems and training for generation of spatial data (GIS maps) on critical ecosystems and species: to include land use, water resources, protected areas, hazard maps, etc. ➢ Studies on Limits of Acceptable Change (LAC) for targeted valued ecosystems and biodiversity sensitive areas: agriculture, forestry and fisheries; coastal and marine resources ➢ Training, skills and resources for development of guidelines, protocols/processes and procedures for Impact Assessments of development strategies/ plans/proposals – EIA's, SEA's, IAS, GMOs, Climatic and Disaster Risk Assessments, etc. that incorporate biodiversity considerations ➢ Systems, protocols, procedures and training for development of National Indicators (NIs) and for data collection and analysis for
	➢ Develop and implement guidelines for conducting inventories, population dynamics and monitoring of selected plant and animal species of significance to biodiversity conservation to ensure these factors are constantly monitored ➢ Train selected personnel in use of the tools and guidelines			

Elements of Enabling Environment	COMPONENT 2: Facilitating Interventions			Capacity and Technological Needs
				assessment and monitoring biodiversity and ecosystems using NIs ➢ Biodiversity related monitoring equipment: e.g. meteorological monitoring; water resources monitoring – quantity and quality; ➢ Systems and training for land use planning; including remote sensing and satellite imagery ➢ Models for scenario development – e.g. climate change scenarios ➢ Appropriate software and systems for modelling for scenario development ➢ Training in application of models for scenario development ➢ Training, equipment and resources to support Biodiversity Information Network/CHM for information exchange and dissemination ➢ Systems, mechanisms and processes for development of appropriate tools and guidelines for the development/review/endorsement/ ratification of the various governance, policy, legal and

Elements of Enabling Environment	COMPONENT 2: Facilitating Interventions			Capacity and Technological Needs
				regulatory instruments including taxes, incentives, licenses ➢ Training and protocols, processes and procedures and systems for community residents for community level DRR related biodiversity data collection
Knowledge Management	➢ Maintain, operationalise, and make the Biodiversity Clearing House Mechanism and information network well known			➢ Training, equipment and resources to support Biodiversity Information Network BIN/CHM for information management, exchange and dissemination ➢ Mechanisms, processes and resources to support implementation of the CEPA to promote BIN/CHM
	➢ Establish Repository of all biological resources research information			
Communication, Education and Awareness	➢ Endorse and coordinate implementation of the newly developed broadened Biodiversity communication, education and public awareness Strategy (CEPA) to include new and emerging issues			Mechanisms, processes and resources to facilitate implementation of the CEPA for NBSAP and Biodiversity Management
	➢ Coordinated implementation of a sustained and integrated structured public awareness – CEPA for NBSAP and Biodiversity management for greater awareness of values and wider integration of values to facilitate resource conflict resolution and stakeholder management; emphasis on packaging of information to various publics (policy makers, schools, communities, etc.) o Special school-based and faith-based strategic interventions for behavioural change aimed at children			

Elements of Enabling Environment	COMPONENT 2: Facilitating Interventions			Capacity and Technological Needs
	and youth, to be done with a slogan such as "Powered by example", including clean-up campaigns.			
	➢ Present sustainable management of ecosystem services and biodiversity conservation in terms of its contribution to development, growth and equity to economists, political leaders and policy makers			
Science & Technology Development and Application	➢ Facilitate:			➢ Systems, protocols, procedures and tools and instruments to support indigenous research and development activities for: ○ Forest biological diversit ○ Marine and coastal biological diversity ○ Agricultural biological diversity ○ Access and benefit- sharing ➢ Development/Adaptive SCP research to establish appropriate technologies/methodologies for sustainable use and management of ecosystems and species of national importance; Ecosystem sensitive and climate resilient technologies for: ○ Agri-food (crop and livestock) production Fisheries production
	○ coordinated protocols and other tools and instruments for RSO	○		
	○ capacity building in the application and use of appropriate technology for SCP, RSO, M&E, among others	○		
	○ Develop new products and services from biological resources in collaboration with regional and international research institutions			
	➢ Collaborative arrangements (national, regional and international) to enhance research/laboratory facilities			

Elements of Enabling Environment	COMPONENT 2: Facilitating Interventions			Capacity and Technological Needs
	○ Foster involvement of academia in research on biological resources in Saint Lucia ○ Liaise with regional and international entities to exchange information on best practices, progress in implementing NBSAPs and avenues for regional collaboration and harmonization			○ Land management/soil and water conservation ○ Protected Areas management ○ Forest management ○ Pest and disease control ➢ Systems, mechanisms, processes and resources to facilitate synergies in organizational structures, facilities (e.g. labs), equipment use and designated/deployed personnel for RSO ➢ Systems, protocols, procedures and training for development of National Indicators (NIs) and for data collection and analysis for assessment and monitoring biodiversity and ecosystems using NIs ➢ Models for scenario development ➢ Appropriate software and systems for modelling for scenario development ➢ Training in application of models for scenario development
	○ Inventorying and studies on undocumented ecosystems and species identified as national priority for research			

Elements of Enabling Environment	COMPONENT 3: Financing Interventions			Strategic Environmental Assessment
	Short Term	**Medium Term**	**Long Term**	
Financing	➢ Biodiversity and ecosystem considerations reflected in national budgetary allocations ➢ Mobilise financing for biodiversity initiatives from international and other sources ➢ Identifying income generating streams for the National Conservation Fund	➢ Formulate and implement appropriate fiscal and economic incentives to promote SCP and biodiversity conservation ➢ Develop and implement Innovative financing options for biodiversity management including with private sector	The incentives must not impact on or degrade biodiversity and ecosystem. Existing or new incentives should be evaluated to ensure that they are coherent between in all sectors	➢ Systems, protocols, procedures and training for conduct of financial feasibility for various technologies ➢ Systems, protocols, procedures and training for evaluation of instruments and approaches for financing (i.e. fiscal and economic incentives) ➢ Mechanisms to mobilise donor funding ➢ Legislative framework to support SLUNCF and implementation of sustainable

Elements of Enabling Environment	COMPONENT 3: Financing Interventions			Strategic Environmental Assessment
	Short Term	**Medium Term**	**Long Term**	
				financing options ➢ Public funding for biodiversity including national budget line for Biodiversity Unit and related institutional structures

Annex 7: SEA SCOPING MAP OF Revised Second NBSAP

Elements of Enabling Environment	Transformative Interventions			Strategic environmental assessment
	Short Term	**Medium Term**	**Long Term**	
Economic Sustainability	➢ Incorporate Revised Second NBSAP into National Development Plan currently being developed ➢			An SEA is not legally mandatory in Saint Lucia The Revised Second NBSAP is predicated on an Ecosystems Approach to account for the value and protection of Saint Lucia's natural and cultural heritage and biodiversity. This helped, during the formulation of the Revised Second NBSAP, to identify the importance of different ecosystems that provide distinct services for a variety of stakeholders. It also allowed for the assessment of different management options and strategies. There was also much consultation throughout the breadth of the country for stakeholder dialogue on the interventions that needed to be undertaken through the revised NBSAP. In addition, stakeholders involved in the discussion process at the policy level provided the crucial contributions The SEA Scoping of the NBSAP was integrative, participative and interactive, proactively facilitating opportunities for improvements in policy-making, planning and decision-making in constructive ways. The SEA's A's main role has been to upstream environmental and social issues into higher levels of decision-making to improve the policy and planning decision contexts, within which projects will eventually be conceived and developed. Rather than assessing the direct or indirect impacts of policies, plans and programs on the environment, the rationale

Elements of Enabling Environment	Transformative Interventions			Strategic environmental assessment
	Short Term	Medium Term	Long Term	
				underlining this SEA has been to take advantage of the SEA advocacy role for better environmental and sustainable decision-making, influencing policy and planning culture and contexts. Safeguarding livelihoods is a theme in the Revised Second NBSAP; this is also an important objective of an SEA. The SEA Scope of the Revised Second NBSAP indicates that the Plan has identified policies and priority actions that are consistent with biodiversity and ecosystem conservation, protection and sustainable use. The Strategy and Action Plan also incorporates the Aichi Targets and the Nagoya Principles.
	➢ TEEB STUDIES to demonstrate and capture the valuation of ecosystems and biodiversity o Develop and implement Natural Capital accounting system and incorporation into budgetary process			The Revised Second NBSAP has proposed TEEB studies in order to identify the importance of biodiversity and ecosystem services so that opportunities to better manage natural capital is considered in national development policy priorities. The TEEB studies will focus on 5 questions: i. What is the natural capital in Saint Lucia and what is driving change? ii. Do we measure and understand our natural capital? iii. To what extent are biodiversity and ecosystem values integrated into decision making iv. What are the issues that need policy attention?

Elements of Enabling Environment	Transformative Interventions			Strategic environmental assessment
	Short Term	**Medium Term**	**Long Term**	
				v. What are the policy tools and decision options that offer solutions? One of the activities that will be undertaken in support of the TEEB is the Wealth Accounting and Valuation of Ecosystem services (WAVES), facilitated by the World Bank. Saint Lucia will also continue to participate in the UNEP Green Initiative.
Biodiversity enterprises	➢ Design and/or customise biodiversity business enterprises for equitable sharing of benefits derived from use of biological resources ➢ Expand rural development initiatives in arts and craft, eco-tourism and other opportunities in biodiversity management to overcome development issues of poverty reduction through livelihood development sub activities above ➢ Identify and implement best practices for sustainable agriculture that minimise risks to biodiversity and ecosystems, while ensuring economic viability o Implementation of existing agricultural programmes such as GAPs, Certified Farmer Programme, Fair Trade; etc.			Since the spatial location of the interventions or the area their influence are not known yet, action must be taken to ensure that any biophysical changes brought about by the creation of biodiversity businesses do not impact on ecosystems and the services already being provided by these ecosystems. Appropriate mechanisms need to be developed to avoid, mitigate or compensate potential negative impacts to these ecosystems Initiatives need to be designed to promote: i. the positive effects and mitigate the negative impacts of agricultural systems and practices on biological diversity and their interface with other ecosystems; ii. the conservation and sustainable use of genetic resources of actual and potential value for food and agriculture; and iii. the fair equitable sharing of benefits arising out of the use of genetic resources.

Elements of Enabling Environment	Transformative Interventions			Strategic environmental assessment
	Short Term	**Medium Term**	**Long Term**	
	➢ Expand outputs of 2004 Biodiversity Enabling Project to increase investment in biodiversity goods and services for health and wellness ➢ Integrate biodiversity and ecosystem t considerations in epidemiological assessments in the health sector with reference to protection of water supply and management of disease source; and regulation services			The integration of ecosystem management considerations should review and analyse any changes that are taking place or will take place to ecosystems that supply water; the role of water in the ecosystems and the hydrological cycles; and how the ecosystems can be managed to supply water more sustainably and to deal with water quality problems. Any outbreak of infectious disease must evaluate how biodiversity will affect the distribution of the infectious diseases and their outbreaks in Saint Lucia, taking into account socio-economics (population size, GDP, public health expenditure), geography (latitude and nation size), climate (precipitation, temperature) and biodiversity (bird and mammal species richness, forest cover, mammal and bird species at threat)
	➢ Identify and Implement tourism sector initiatives that integrate biodiversity conservation			If the initiatives identified for implementation will impact on valued ecosystems (e.g. coastal and marine resources) and their services (ecotourism in biodiversity sensitive areas), then this will trigger the need for EIAs.
Social Sustainability	➢ Establish and operationalize mechanisms for Community participation in biodiversity management using the sustainable livelihoods approach	Develop and/or strengthen community capacities for sustainable biodiversity management		The communities that will participate in the initiatives need to be involved from the stage of project design and their recommendations must be considered and included in the design. Where necessary, communities need to be strengthened with training and other capacity development mechanisms so that the livelihoods that they create are sustainable and the biodiversity

Elements of Enabling Environment	Transformative Interventions			Strategic environmental assessment
	Short Term	**Medium Term**	**Long Term**	
				resources and ecosystems are provided the opportunity for regeneration.
	➢ Recognise and promote dietary diversity, food cultures,, local cuisine and their contribution to good nutrition	Promote dietary diversity and good nutrition through traditional cuisine and food cultures		The promotion of better nutrition, and dietary diversity needs to ensure that biodiversity resources used in traditional cuisine and food cultures are sustainably harvested and/or cultivated specifically for commercial use. Local communities should be involved in the identification of biodiversity resources for dietary diversity and their intellectual property needs to be safeguarded pursuant to the Nagoya Principles. Any programmes designed to promote dietary diversity and local cuisine should use small scale farmers as conservators of biodiversity. Many of these farmers recognise several dozen different crop varieties, which they distinguish according to plant and tuber traits, as well as agronomic and culinary characteristics. This indigenous knowledge must be systematically recorded and stored.
Biodiversity and Ecosystem Sustainability	➢ Develop and implement Management Plans for key ecosystems and priority species with emphasis on co-management	➢ Facilitate investments in creating and managing protected areas that will yield returns in societal benefits		The Management Plans have not been developed as yet and so it is difficult to undertake a screening for SEA. Be that as it may, it is recommended that the Plans i. ensure "no Net Loss" of biodiversity and ecosystem services ii. provide a d policy basis for preserving ecosystem services and the use of ecosystem – based approaches (both of these are enunciated throughout the Revised Second NBSAP)

Elements of Enabling Environment	Transformative Interventions			Strategic environmental assessment
	Short Term	**Medium Term**	**Long Term**	
				The headline degradation of ecosystem services should also be considered as part of the SEA that needs to be undertaken of each Management Plan. These include: i. loss of habitats, fragmentation ii. loss of species diversity iii. loss of genetic diversity
	➢ Develop and implement appropriate risk management strategies and interventions for IAS			As invasive alien species are harmful organisms by definition, conducting a SEA of the NISS is necessary. Any plan to eradicate or control invasive alien species on islands (or other ecosystems) needs to consider the potential impacts of the proposed actions on island ecosystems and the people that depend upon them.
	➢ Incorporate CCA/DRR measures in development planning at all levels to mitigate / reduce negative impacts on biodiversity so as to increase resilience of ecosystems to climate variability phenomena and natural disasters			Existing DRR and CCA policies and programmes in Saint Lucia do not consider the impact on biodiversity and ecosystems. It is recommended that in the future, ecosystem based approaches be explicitly recognized as an integrated solution to disaster risk reduction and climate change. It is further recommended that local and indigenous knowledge, be recognized as central to informed risk assessments and policy decisions. Also, community based/community led initiatives that promote the use of ecosystem based approaches to DRR and CCA should be more strongly promoted and explicitly supported by national policies in the disaster risk reduction policies, programmes and projects.
	➢ Protect species by maintaining and restoring critical habitats, including migratory corridors, and bio cultural sites			Critical habitats have been identified for some bird and reptilian species. The SEA must however identify the area that was not occupied at the time of listing but is nonetheless determined to be essential to the

Elements of Enabling Environment	Transformative Interventions			Strategic environmental assessment
	Short Term	**Medium Term**	**Long Term**	
				conservation of the species and to support population expansion.
	➢ Develop and incorporate guidelines for the consideration of biodiversity in environmental impact assessments particularly in marine and coastal areas.			The EIA guidelines that are in place in Saint Lucia need to be amended to ensure that the schedule of projects to be subjected to an EIA include projects, programmes and plans with a potential negative impact on biodiversity. The definition of the term "environment" in national legislation should be reviewed so that it fully incorporates the concept of biodiversity, as defined by the CBD, such that plants and animals are considered at the genetic species/community and ecosystems habitats levels, and also in terms of ecosystems. The guidelines on biodiversity inclusive EIA can be obtained from the CBD Secretariat.

Elements of Enabling Environment	COMPONENT 2: Facilitating Interventions			Strategic environmental assessment
	Short Term	**Medium Term**	**Long Term**	
Governance	➢ Endorse and implement proposed implementation structure for Revised Second NBSAP by middle of year 1			In the review/endorsement/ratification of the various instruments, attention should be paid to: i. How are the interests/values of different stakeholders addressed in policy instruments (or contents)?

Elements of Enabling Environment	COMPONENT 2: Facilitating Interventions			Strategic environmental assessment
	Short Term	**Medium Term**	**Long Term**	
	➢ Promote and coordinate harmonization and alignment of supporting policies, plans, strategies (e.g. NEMS/NEPS, Biosafety Strategy, Waste Management, Food Security and Safety, Health sector and tourism sector land development policies, National Investment Policy, etc.) for an integrated implementation of NBSAP activities. ➢ Nagoya Protocol ratified, legislation implemented, systems established for implementation of Protocol; protocol implemented ➢ Policy on intellectual property developed for biological resources and traditional knowledge, practices			ii. How do different actors participate in and influence policymaking processes? Which groups dominate and which are marginalised? iii. What information is used or not used in policymaking? iv. How is policy implemented? To what extent is policy institutionalised to enable effective implementation? v. What are the impacts of policy? How are the impacts of policy evaluated and lessons fed-back to improve policy? vi. How is policy coordinated between different sectors and levels? vii. How can institutional co-ordination and mainstreaming be improved? viii. What factors and conditions facilitate policy and institutional change? ix. What practical approaches and tactics can be used to improve biodiversity governance Many of the proposed policies and governance instruments require community based conservation approaches. All attempts therefore have to be made to ensure that policies and legislation make provisions for local

Elements of Enabling Environment	COMPONENT 2: Facilitating Interventions			Strategic environmental assessment
	Short Term	**Medium Term**	**Long Term**	
	and innovations associated with such resources ➢ Establish and operationalize Biosafety Management Systems ➢ Endorsement and collaborative implementation of National Wildfire Management Plan with a focus on sensitive biodiversity rich areas			communities to be engaged in management decisions, and right to access and sustainable use of resources are devolved to the communities. In the event that mainstreaming biodiversity into economic sectors may result in further degradation of biodiversity resources and ecosystems, interventions have to be introduced to ensure that environmental assets are recognised as producers of welfare for the poor and revenue for national economies.
	➢ Facilitate implementation of the NISS			Stakeholders and the public need to be made aware of pests and invasive species and of the damage they cause. Raising the level of awareness of the civil society is therefore an indispensable step for political decisions and legislation to be taken. Hence the CEPA enshrined in the NISS needs to be resourced and implemented.
	➢ Establish and implement synergistic approaches to CBD, Ramsar, ITPGR, IPPC and CITES Conventions			Interventions need to ensure that the synergies take place at the level of: i. Institutional arrangements; ii. Information systems and reporting; iii. Planning; iv. Policy formulation; v. Capacity building; vi. Financing.

Elements of Enabling Environment	COMPONENT 2: Facilitating Interventions			Strategic environmental assessment
	Short Term	**Medium Term**	**Long Term**	
	➢ Develop and implement a Capacity Building Strategy for implementation of the NBSAP, that addresses Global Taxonomic Initiative (GTI)			The GTI pertains to invasive alien species and protected areas as adopted in decision VIII/3. So capacity in GTI in Saint Lucia needs to be built in i. Forest biological diversity ii. Marine and coastal biological diversity iii. Agricultural biological diversity iv. Access and benefit-sharing
Tools and Guidelines	➢ Develop, provide training in and implement guidelines for Sustainable production and consumption and use of resources to keep impacts well within ecological limits ➢ Generate Biodiversity maps to include species, location and identification of vulnerable areas/hazards ➢ Develop and utilize protocols for assessing and monitoring the	➢ Incentives for private sector investments in biodiversity management/greening business adopted		Actions need to be taken to ensure that the impacts on ecosystems and biodiversity resources are well within safe ecological limits. The Maps should list the species that have been recorded for the particular area, when the species was last recorded, what database the record is contained in, and flag if it is a threatened or protected species. The protocols need to ensure that i. The indicators consider the full complexity of the ecosystem

Elements of Enabling Environment	COMPONENT 2: Facilitating Interventions			Strategic environmental assessment
	Short Term	**Medium Term**	**Long Term**	
	status of selected species including identified indicators			ii. The identification of ecological indicators follow a defined protocol iii. The management and monitoring programmes are supported by science
	➢ Develop and implement guidelines for conducting inventories, population dynamics and monitoring of selected plant and animal species of significance to biodiversity conservation to ensure these factors are constantly monitored ➢ Train selected personnel in use of the guidelines			The monitoring programmes have to be properly designed; the database established; the methodology for each feature to be monitored has to be established; a review of the resources and equipment needed; a review of any legal aspects such as licenses that may be necessary; a system and methodology- for recording and storing data; a process for analysing and interpreting the data; and an implementation schedule
Knowledge Management	➢ Maintain, operationalise, and make the Biodiversity Clearing House Mechanism and information network well known			Any impacts would be related to having the appropriate information (e.g. development of appropriate indicators for monitoring changes in biodiversity); and if information was not packaged properly to adequately sensitized the various target audiences. The resources and information must meet universal standards for bio-friendly products and services; esp. re SCP - noting limits of acceptable change.
	➢ Establish Repository of all biological resources research information			
	➢ Foster involvement of academia in research on biological resources in Saint Lucia			

Elements of Enabling Environment	COMPONENT 2: Facilitating Interventions			Strategic environmental assessment
	Short Term	**Medium Term**	**Long Term**	
Communication, Education and Awareness	➢ Endorse and coordinate implementation of the newly developed broadened Biodiversity communication, education and public awareness Strategy (CEPA) to include new and emerging issues by			
	➢ Coordinated implementation of a sustained and integrated structured public awareness – CEPA for NBSAP and Biodiversity management for greater awareness of values and wider integration of values to facilitate resource conflict resolution and stakeholder management; emphasis on packaging of information o Special faith-based strategic interventions for behavioural change aimed at children and youth, to be done with a slogan such as "Powered by example." Including clean-up campaigns			The CEPA must set up the enabling conditions for collaboration so that policies, incentives and regulations across sectors encourage biodiversity conservation and sustainable use. The messages contained in the CEPA should: i. Be targeted to the right audience; ii. Include messages that are not too broad to act upon iii. Incorporate an understanding of the societal values, norms, customs and behaviors iv. Have a clear understanding of the key threats that are having an impact on biodiversity; v. Understand what the key drivers are that are causing the threats; vi. Appeal to the emotional side of the recipient; vii. Be based on a clear 'theory of change', or concise strategy, of how the communication efforts will change destructive behaviors;
	➢ Present sustainable management of ecosystem services and biodiversity conservation in terms of its contribution to development, growth and equity to economists, political leaders and policy makers			

Elements of Enabling Environment	COMPONENT 2: Facilitating Interventions			Strategic environmental assessment
	Short Term	**Medium Term**	**Long Term**	
				viii. Should be paired with incentives and remove barriers to motivate behavior change; and ix. Include efforts to sustain change over time
Science & Technology Development and Application	➢ Facilitate			
	○ 1 coordinated protocols and other tools and instruments for RSO			No Impact
	○ 2 capacity building in the application and use of appropriate technology for SCP, RSO, M&E, among others			
	○ Develop new products and services from biological resources in collaboration with regional and international research institutions			The products and services must not impact on or further degrade biodiversity and ecosystems

Elements of Enabling Environment	COMPONENT 3: Financing Interventions			Strategic Environmental Assessment
	Short Term	**Medium Term**	**Long Term**	
Financing	➢ Biodiversity and ecosystem considerations reflected in national budgetary allocations ➢ Mobilise financing for biodiversity initiatives from international and other sources ➢ Income generating streams for the National Conservation Fund identified and promoted	➢ Formulate and implement appropriate fiscal and economic incentives to promote SCP and biodiversity conservation ➢ Develop and implement Innovative financing options for biodiversity management including with private sector	The incentives must not impact on or degrade biodiversity and ecosystem. Existing or new incentives should be evaluated to ensure that they are coherent between in all sectors	The results of this screening study indicate that in Saint Lucia financing the conservation and sustainable use of biodiversity from different biodiversity-relevant sector funding flows (agriculture, forestry, fisheries, climate change, tourism etc.) provides a viable approach for complementing global biodiversity financing. An evaluation should be undertaken of the various instruments and approaches can be employed in Saint Lucia In addition an evaluation must also be undertaken of whether such approaches and mechanisms are foreseen to increase contributions from public as well as private funding sources to supplement the existing public funding specifically earmarked for biodiversity.

Annex 8: Policies, Plans, Strategies and Legislation Relevant to Biodiversity Management

Revisions to the national framework for conventions and agreements for Saint Lucia

- Saint Lucia is consistently participating in the COP of the MEAs it is Party to
- Saint Lucia is Party to the Sustainable Tourism Protocol under the Association of Caribbean States (ACS).
- Saint Lucia is now Party to the Land Based Sources of Marine Pollution (LBS) Protocol
- Saint Lucia is preparing to ratify the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Derived from their Utilisation
- As Party to the Cartagena Protocol on Biosafety and its Nagoya Protocol on Liability and Redress, the country is pursuing the management and regulation of genetically modified organisms
- Saint Lucia represented the Caribbean on the Bureau of the Intergovernmental Committee for Nagoya Protocol in 2011.
- Saint Lucia is regularly participating in technical meetings and capacity-building events of the CBD, such as the "Capacity-building workshop for Small Island Developing States to achieve Aichi Biodiversity Target 9 on Invasive Alien Species" in 2014 and the SBSTTA 22 and SBI2 meetings in 2018, all in Canada
- Saint Lucia hosted the 3rd Caribbean ABS Workshop in 2014

Non-binding agreements include:

a. United Nations Convention on Environment and Development
b. Barbados Plan of Action (BPOA)
c. Mauritius Strategy for Implementation
d. UN Post 2015 Agenda
e. Samoa Pathway
f. Sustainable Development Goals

The country also continues to pursue opportunities for realizing synergies among Rio Conventions- CBD, UNCCD, UNFCCC, Paris Agreement and others:

- **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)** - ensuring that international trade in specimens of wild animals and plants does not threaten their survival)
- **Convention on Migratory Species of Wild Animals (CMS)** for conservation of terrestrial, aquatic and avian migratory species, their habitats and migration routes, to ensure their favourable conservation status across their migratory ranges
- **Ramsar Convention on Wetlands** (Ramsar)- for conservation and wise use of all wetlands through local, regional and national actions and international cooperation
- **The International Treaty on Plant Genetic Resources for Food and Agriculture** (ITPGRFA) - for conservation and sustainable use of plant genetic resources for food and agriculture and the fair and equitable sharing of benefits derived from their use, for sustainable agriculture and food security.
- **Convention Concerning the Protection of the World Cultural and Natural Heritage** (WHC) for preservation of cultural and natural heritage of outstanding universal value. Decision 37COM5 request that NBSAP fully consider the importance of natural World Heritage sites to achieve the Aichi Biodiversity Targets.

Table 16: Policies, Plans and Strategies of Relevance to Biodiversity Management

Thematic Area	Biodiversity Related Policies, Strategies, Plans
Sustainable Development	♦ Draft Strategic Plan for Dept. of Sustainable Development ♦ Draft Energy Policy ♦ Sustainable Energy Plan ♦ Renewable Energy Plan of the Dept of Agriculture ♦ Revised Climate Change Policy and Adaptation Plan ♦ A national position on the concept of the Green Economy" (GE)
Economic Development	♦ National Vision Plan ♦ National Development Plan (work in progress) ♦ National Investment Policy ♦ National Export Development Strategy (NEDS) ♦ Value Added Tax (VAT)
Management of Natural Resources	♦ Systems Plan for Protected Areas (completed in 2009) incorporated into national development plan –has not been endorsed by Cabinet ♦ The Agriculture Sector policy 2009-2015 stresses conservation of the natural resource base. ♦ Integrated Watershed and Coastal Zone Management Plan ♦ Coastal Zone Management Strategy and Action Plan Saint Lucia. ♦ National IAS Strategy (2012-2021) (NISS) is currently under review by the IAS Working Group for finalization and endorsement by Cabinet. Nevertheless, it has started to inform legislation, optimization of institutional arrangements as well as public education. ♦ National Land Use Policy (2018) (Cabinet approved May 2018) ♦ Iyanola Draft Land Use Plan- under development
Environmental Management	♦ The National Environmental Commission (NEC) launched officially in 2008 was hoped to perform an integral role in facilitating inter-agency collaboration and coordination but remains defunct ♦ Implementation of a Framework for Environmental Management (CDB)
Disaster Management	♦ Revised Disaster Management Plan including the Fire Management Plan and Biosafety Emergency Measures,
Other	♦ Saint Lucia Nature Tourism Plan (Heritage Tourism Charter)

Table 17: New and Revised Biodiversity Enabling Legislation

Enabling Legislation	Mandated Agency	Status
Draft Biodiversity Conservation and Sustainable Use Bill. Gives effect in domestic law to the Convention on Biological Diversity as well as to provide for the conservation and sustainable use of biological resources generally and for related matters. Draft Regulations for Biodiversity Bill	Former Dept of Agriculture, Lands Forestry and Fisheries	ABS clauses in draft biodiversity conservation and sustainable use bill, to be fine-tuned to take into consideration specifics of Nagoya Protocol
OECS Harmonized Frame Environmental Legislation Draft National Environmental Management Bill	Dept responsible for sustainable development	Fine tuning of National Environmental Management Bill to include Climate Change issues
Water and Sewerage Act (2005) Provides for the management of water resources and to regulate the delivery of water supply services and sewerage services throughout Saint Lucia.	Department of Forestry	Water Resources Management Authority (WRMA) established in 2008
Revised Forest, Soil and Water Conservation Act (25/1946) (Amended, 2008) ● Management of forest resources ● Establishment of forest reserves and protected forests ● Protection of forests, soils, water and wildlife resources	Department of Forestry	Revised legislation submitted to the Attorney General's Chambers for review in 2009 and is pending approval.

Enabling Legislation	Mandated Agency	Status
● Management of water catchments ● Payment for environmental services		
Wildlife Protection Act, (9/1980) ● Conservation and management of wildlife. ● Designation of wildlife reserves	Department of Forestry	Revised legislation submitted to the Attorney General's Chambers for review in 2009 and is pending approval.
International Trade in Wild Fauna & Flora Act (GOSL, 2007) Makes provision for setting up the infrastructure to implement the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) with a view to ensuring that no species of wild fauna and flora become or remain subject to unsustainable exploitation.	Dept of Agriculture, Fisheries and Forestry • Department of Agriculture	Act is not yet enforced since a date of commencement has not been issued.
Invasive Alien Species Bill (IAS Bill) ● Management of the potentially harmful non-endemic species		Harmonisation with Plant Protection Act, (1988) and Regulations (1995)? ● Control of pests and diseases injurious to plants ● Prevention of the introduction of potentially harmful exotic species
Physical Planning and Development Control Act (2001) Chapter 5.12 Land use planning, development control, formulation and implementation of housing	Department of Physical Planning	

Enabling Legislation	Mandated Agency	Status
policy, environmental management, establishment and management of protected areas. Draft Regulations		
Containers Act (Draft) Control of the disposal of plastic containers both imported and locally produced.	Dept of Commerce and Consumer Affairs	
Tourism Incentives Act, No. 7 of 1996 amended by Act. No 36 of 2001 Provision for the orderly development of the tourism industry.	Dept of Tourism	
Yachts Licence Act, No. 5 of 1971 amended by Acts No. 7 of 1972 and No. 33 of 2001 Control of the operations, movement, etc. of yachts and pleasure craft in Saint Lucia's waters		
Water and Sewerage Company Act (2005). ● Production and supply of freshwater ● Maintenance of water production and supply infrastructure.	Water and Sewerage Company Inc. (WASCO),	
Draft Environmental Management Bill	DSD	
Climate Change Bill	DSD	

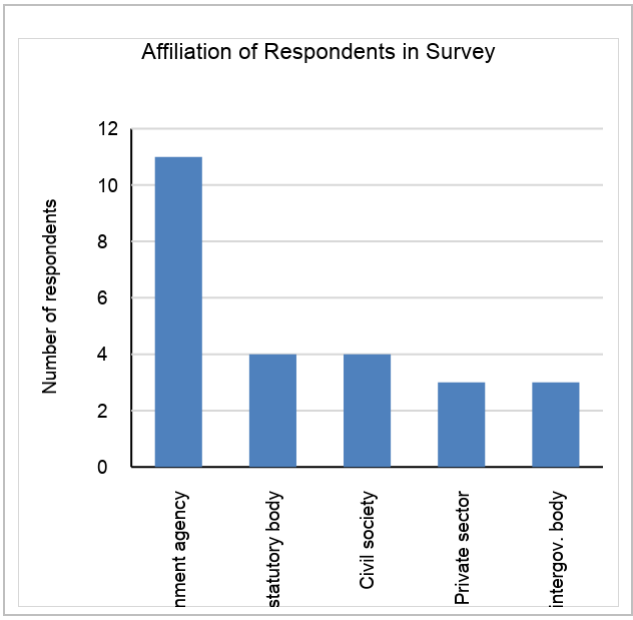
Annex 9: Alignment of Strategic Goals of NBSAP with Aichi Biodiversity Targets

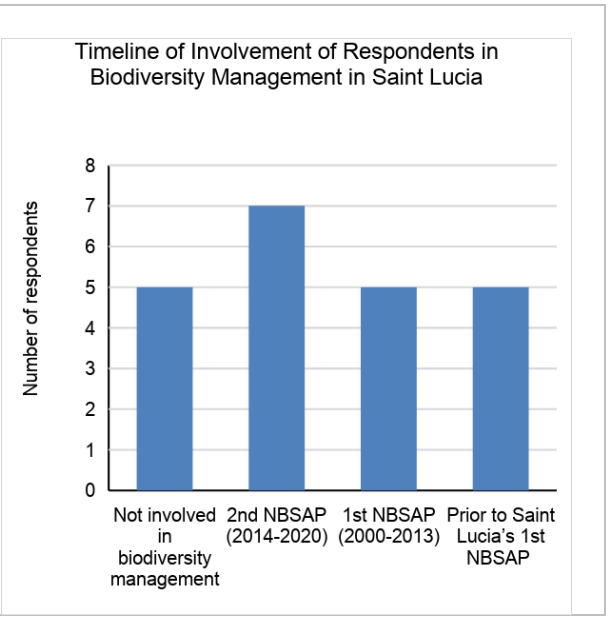
Please refer to heading "3.7 Goals and Objectives/Targets of Revised NBSAP" for contextual detail.

Revised NBSAP: Strategic Goals	**Link to Aichi Biodiversity Targets – Strat Goals**
• National Strategic Goal 1: To internalize and integrate biodiversity values into decision-making and national accounting to stimulate/advance national development	• Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
• National Strategic Goal 2: To generate benefits for all citizens from biodiversity and ecosystem services for improved human well being	• Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services
• National Strategic Goal 3: To encourage/ effect sustainable management and use of genetic resources	• Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use • Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity
• National Strategic Goal 4: To engender ongoing behavioural change through knowledge management and capacity building for enhanced implementation	• Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building •

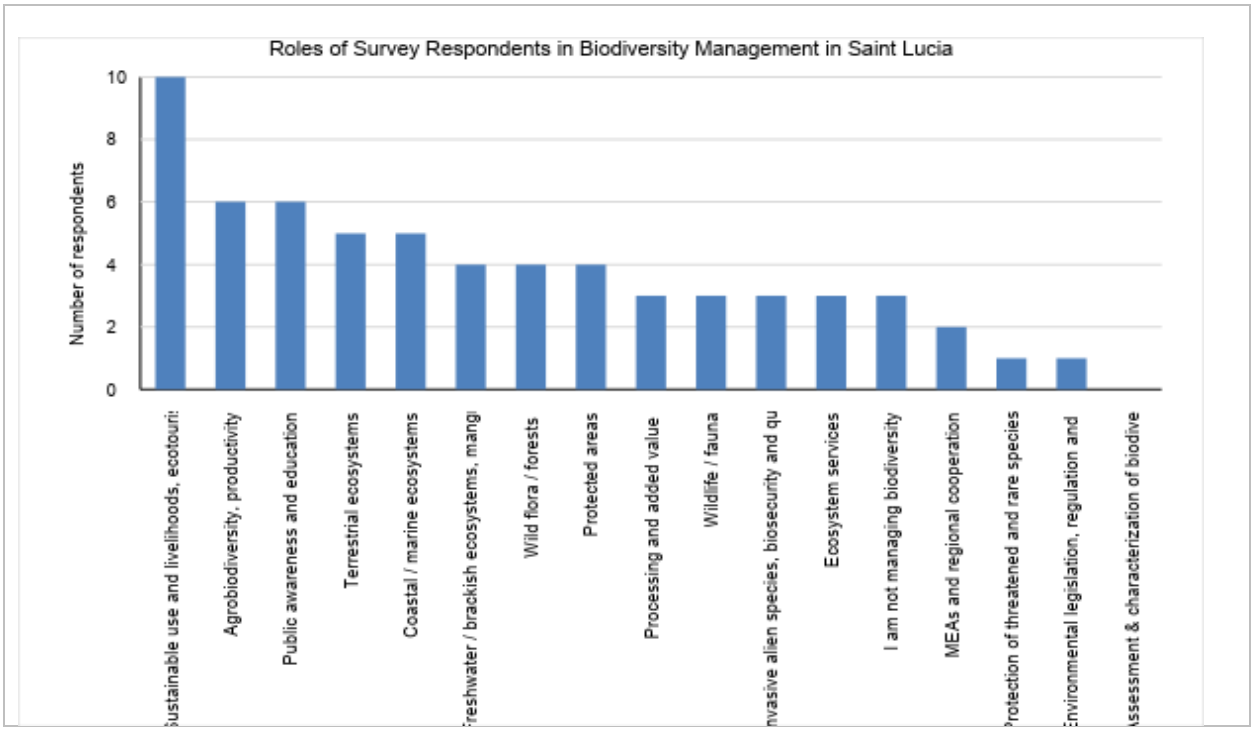
Annex 10 Follow-up Survey of 2018

A short questionnaire on SurveyMonkey[69] was used to capture experiences and viewpoints from a wide audience. The response rate was estimated at just below 13%. Respondents came mostly from Government agencies; NGOs, CBOs, civil society, the private sector as well as international and intergovernmental bodies were also represented. Most respondents had been involved in the implementation of the 2nd NBSAP. A substantial proportion had been involved during earlier phases. Five respondent did not see themselves as being involved in biodiversity management. The majority of those involved in biodiversity management are concerned with sustainable sue of biodiversity, followed by agrobiodiversity/productivity and public awareness. All ecosystems were represented, but it is noteworthy that nobody was bioprospecting, assessing or characterizing biodiversity.



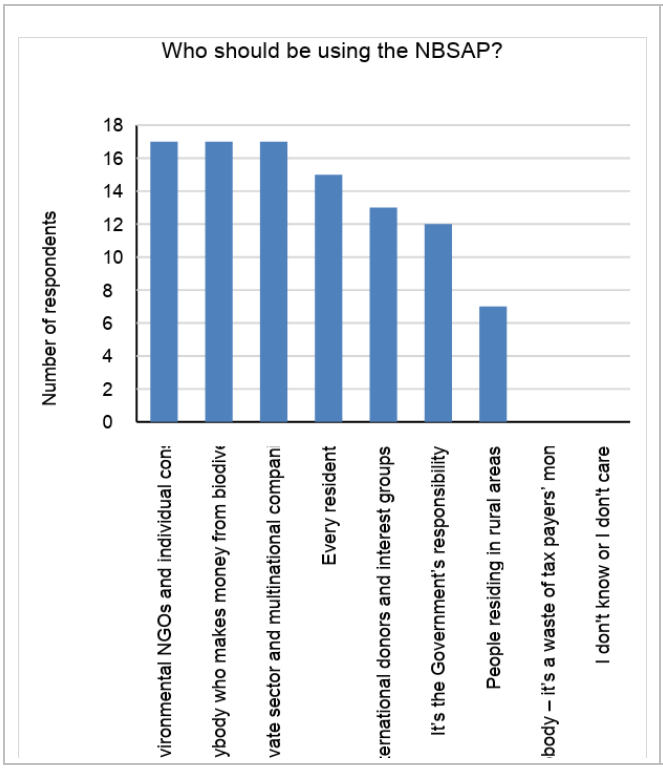


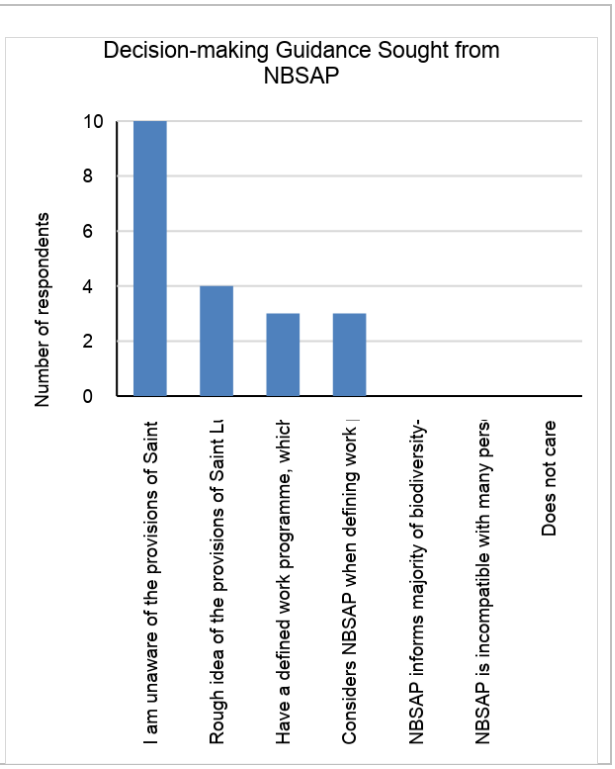
[69] https://www.surveymonkey.com/r/HX9R95F



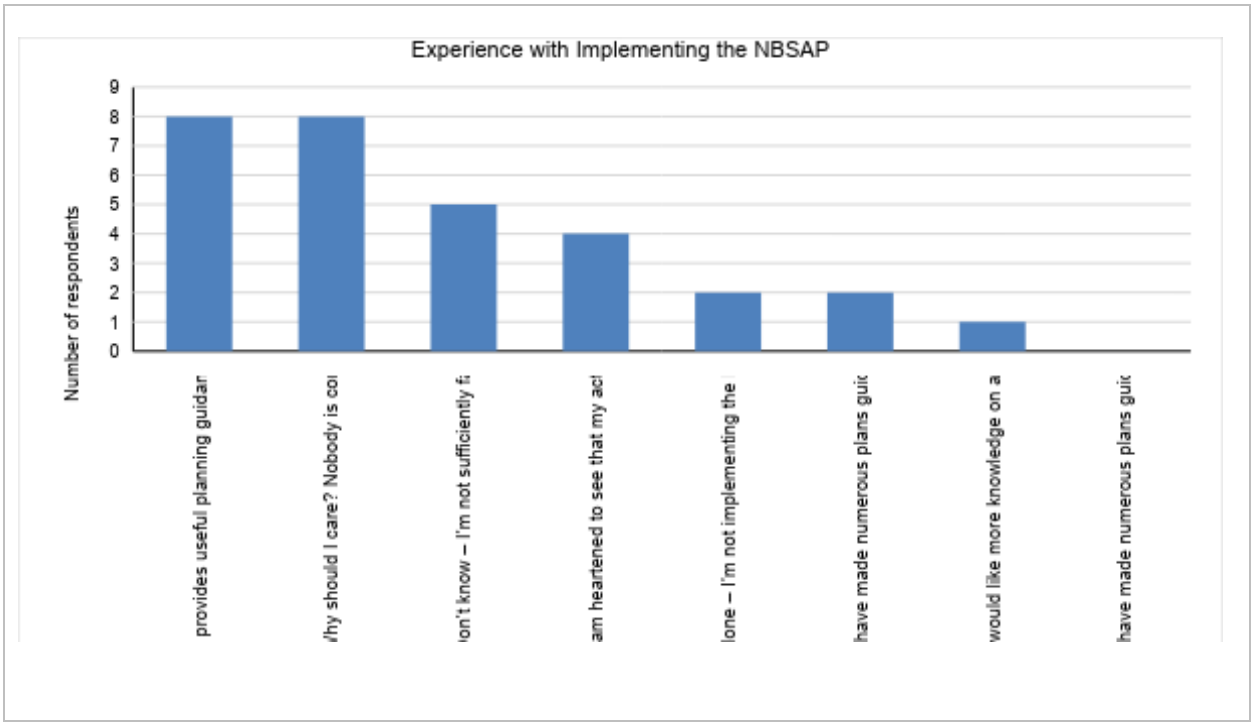
An equally high number of respondents felt that implementing/using the NBSAP was the task of environmental NGOs and conservationists, of anybody who made money from biodiversity, and of the private sector. The Government was perceived as having intermediate responsibility. In general terms, all of the respondents regarded NBSAP implementation as important.

However, only three respondents had sought planning guidance from the NBSAP, but none for the majority of their relevant actions, largely because respondents were insufficiently aware of its provisions. Nevertheless, there was a general perception that NBSAP provisions were compatible with people's personal or private goals.



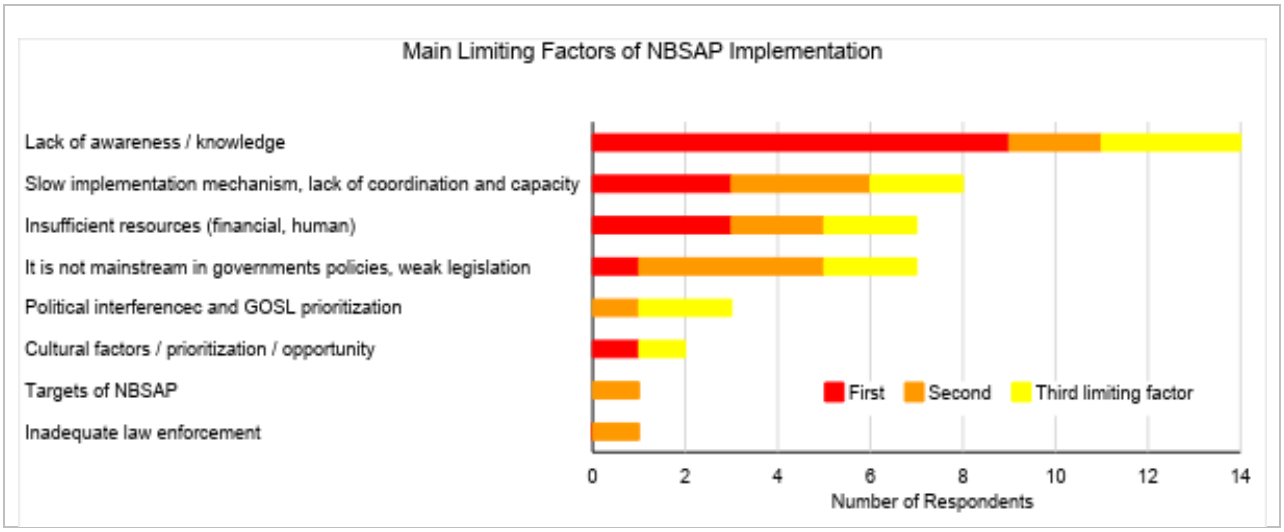


During actual NBSAP implementation, respondents fell into two distinct camps: one set appreciated the guidance provided by the NBSAP, while an equal number was indifferent for lack of incentives and/or enforcement. However, nobody felt that they successfully implemented a substantial proportion of NBSAP-guided plans. Again, widespread unfamiliarity with the provisions of the NBSAP was highlighted.



Consequently, the main factors perceived as limiting NBSAP implementation were (in that order of importance) lack of:

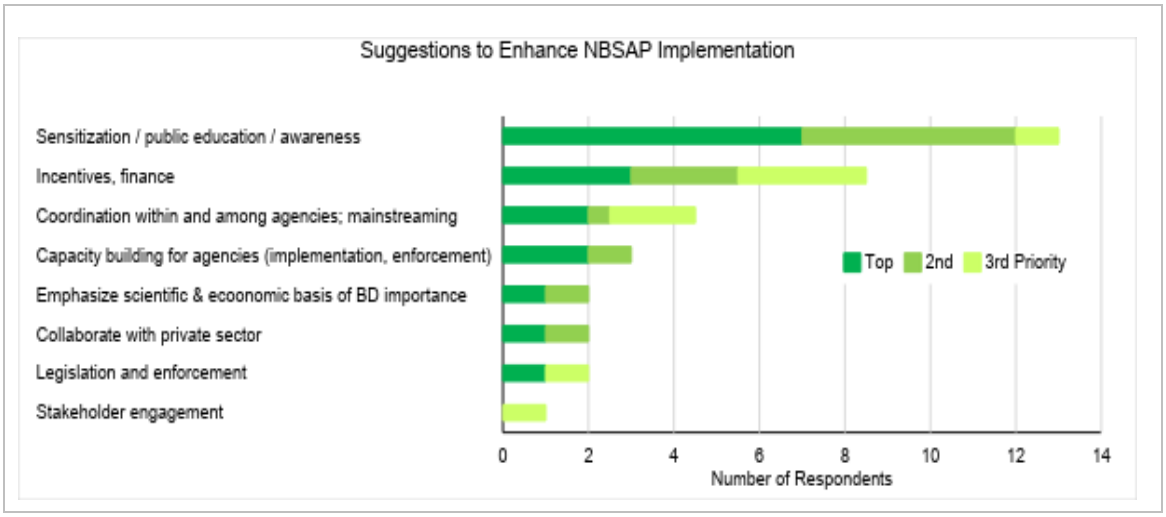
- ➢ awareness/knowledge
- ➢ coordination, capacity and effective mechanisms
- ➢ resources
- ➢ mainstreaming / legislation



Accordingly, the top priority remedial measures suggested were:

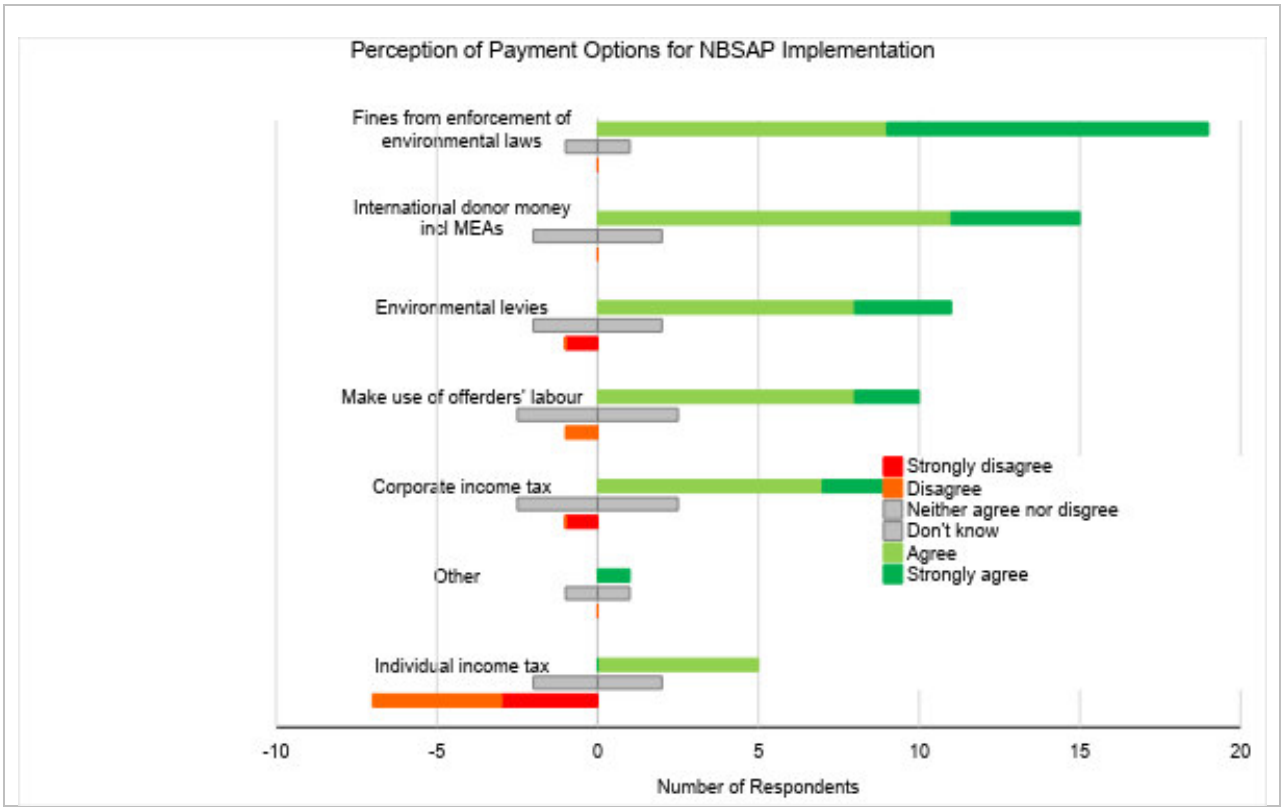
- ➢ Sensitization, public education and awareness-raising

- ➢ Finance and other incentives
- ➢ Increased coordination among and within agencies; mainstreaming
- ➢ Capacity-building within agencies



When asked who should pay for NBSAP implementation, fines from law enforcement scored the highest popularity, followed by international donor funding, including technical assistance through MEAs, and environmental levies. There was intermediate agreement with using offenders' labour, e.g. when these cannot pay fines and corporate tax. The majority of respondents rejected the use of individual income tax, but opinion varied widely. Other funding mechanisms suggested by respondents included:

- ➢ Ecosystem credits e.g. carbon credit
- ➢ Incentives for commercial and individual actions to align with desired interventions. These should primarily be non-monetary benefits, but can also include monetary


Perception of Payment Options for NBSAP Implementation
Fines from enforcement of environmental laws
International donor money incl MEAs
Environmental levies
Make use of offerders' labour
Corporate income tax
Other
Individual income tax
Strongly disagree
Disagree
Neither agree nor disgree
Don't know
Agree
Strongly agree
-10
-5
0
5
10
15
20
Number of Respondents