



Caribbean Community
Climate Change Centre



IMPACT ASSESSMENT AND NATIONAL ADAPTATION STRATEGY AND ACTION PLAN TO ADDRESS CLIMATE CHANGE IN THE TOURISM SECTOR OF SAINT LUCIA VOLUME II



Prepared for the
Caribbean Community Climate Change Centre
Belmopan, Belize
and the
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to address Climate Change in the Tourism Sector of Saint Lucia
Volume II

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For more information visit:

- The Global Climate Change Alliance website: <http://www.gcca.eu/>
- The African, Caribbean and Pacific Secretariat website: <http://www.acp.int/>
- The Caribbean Community Climate Change Centre website: <http://www.caribbeanclimate.bz>
- Ministry of Sustainable Development Energy, Science and Technology: Sustainable Department Environment Division website: <http://sustainabledevelopment.govt.lc/>

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Executive Summary

Saint Lucia experiences several stresses with the onset of climate change, issues related to droughts during unusually extended dry periods and significant flooding and subsequent damage from tropical systems have been high on the agenda.

These challenges along with the significance of the tourism sector to the Saint Lucian economy and its exposure to climatic threats, the country is vulnerable to large-scale global economic and environmental shocks and stresses. Given the challenges faced, the Government of Saint Lucia sought funding to address climate change impacts on the tourism sector and mainstream climate change adaptation measures into national development through this project.

Funding was received through the Caribbean Community Climate Change Centre (CCCCCs) from the European Union under the Global Climate Change Alliance (EU GCCA) Caribbean Project. The EU GCCA Project aims to assist participating countries to develop the capacity to design and implement climate change adaptation policies and measures. The following analyses were completed for Saint Lucia in order to inform both Volumes of this Final Report: 1. Final Impact Assessment and 2. National Adaptation Strategy and Action Plan (NASAP) report. The Impact Assessment involved several assessments, these included:

1. Climate Analysis and Projections
2. Tourism Sector Assessment
3. Economic Assessment
4. Policy and Legislative Assessment

These assessments were informed by stakeholder consultations, a literature review and historical climate and tourism data. Limitations for these assessments were largely associated with the inadequacy or absence of data sets that would improve the analyses conducted.

The results of the assessments helped to inform the development of the National Adaptation Strategy and Action Plan (NASAP) recommended for the tourism sector in Saint Lucia. This was developed in consultations with the Stakeholders in May and July 2015.

Impact Assessment

The results of the climate analysis indicated that the annual mean temperature of Saint Lucia is projected to increase irrespective of scenario, model or methodology used. GCMs suggest that the mean annual temperature over Saint Lucia will increase by 0.3 to 1.2°C by the 2030s and 0.5 to 2.1°C by the 2060s, relative to 1970-99 with warming occurring at a faster rate in the north of the island than in the south by the 2030s (1.313 versus 1.231°C).

Through the 2030s median changes in rainfall projections deduced from GCMs are all negative, which may suggest drier conditions. RCM ensemble mean suggests decreases in annual rainfall by greater than 5%. Consistent with the GCM projections, the PRECIS RCM suggests a decrease in rainfall intensity towards the end of the century. The RCM, however, suggests that this decrease in rainfall intensity may be accompanied by a decrease in mean dry spell length.

RCM ensemble means suggest an increase in wind speeds annually by up to 0.06 m/s. Hurricane intensity over the north tropical Atlantic is likely to increase (as indicated by stronger peak winds and more rainfall), but not necessarily hurricane frequency. Caribbean sea levels are projected to rise by up to 0.24 m by mid-century under the A1B scenario.

Global warming describes the steady increase in average atmospheric and ocean temperatures. This basic change has far reaching consequences as the climate system is extremely complex and interlinked.

Increasing temperatures, sea level rise, more intense hurricane events, and rainfall extremes translate to a greater chance of drought and flood events. These physical changes then create a full spectrum of impacts for the ecosystems that support human life, the built environment, health and way of life.

Saint Lucia's tourism sector has a number of inherent characteristics that make it very vulnerable to these threats, including fragile natural systems, existing high environmental impacts and development pressures of the built tourism structures, focused coastal tourism development, limited human and financial resources, limited access to technology, an open economy, and propensity to extreme weather events.

It cannot be overemphasized that climate change is not just an environmental issue, it is equally an economic issue, a disaster management issue, a food security, a human health issue, and a quality of life issue – this makes climate change everyone's business and a cause for concern and action at the individual, community, organizational, and country level. In some areas the tourism community is taking steps to implement sound environmental practices within the operations of their tourism facilities. Although this is a most welcoming move, the entire tourism community needs to follow suit.

While the impacts of climate change are diverse and costly, they can also be manageable, in most cases, through implementation of well-established best management practices and strengthening of existing legislation, policies, institutions, and programmes.

The main legislation guiding the tourism sector (primarily dealing with incentives) are the Tourism Incentives Act, 1996 and the Tourism Stimulus and Investment Act, 2014. However, tourism is affected by a vast array of legislative instruments including the Physical Planning Act, which governs the siting of hotels. However, whilst provision for EIA is contained in this Act, no EIA regulations have been promulgated to effectively deal with this issue (through draft EIA regulations have been proposed but not approved by Cabinet). The Public Health Act and its regulations also affect sanitation, public health measures, etc. However, they are not adequate or comprehensive regulations to address pollution issues in the country – this gap would also affect the tourist sector. Ecotourism and related activities would also relate to the legal and institutional aspects in other sector e.g. Forest, Soil and Water Conservation Ordinance and the Rules. The Wildlife Protection Act and Saint Lucia National Trust Act are also relevant. The Beach Protection Act affects the issue of beaches, which is highly relevant to the tourism sector. Any improvement in the legislative structure affecting national resource management will be directly relevant to the tourism sector. So draft legislation such as the draft Forest Act, the draft Environmental Management Act, the draft EIA

regulations will enhance the regulatory framework for the tourism sector if they are approved by Cabinet and enacted or in the care of the legislation promulgated by the appropriate Minister.

Despite the existence of some legislation, misuse of land, water, mangrove, swamps and other natural resources has proceeded largely unchecked in Saint Lucia for years. There are still significant gaps in the policy and legislative framework. In addition, there exist a comprehensive number of institutions. Some of the key agencies include Forestry Department, NEMO, CZMU, Solid Waste Management Authority, Physical Planning Department, the Environment Health Unit etc. Many of these key institutions need to be strengthened both in terms of staffing and technical capacity.

The urgency for the tourism sector to address the issues faced, is related to the threat to the facilities, the environmental services, and the natural resource based attractions for visitors. This is in addition to the impact of climate change in the source countries on people's desire and affordability for vacations in Saint Lucia. Warmer winters, anxiety and fears of violence and disease, loss of the appeal of natural attractions, such as the marine environment, and weak incomes will further discourage demand for vacations in Saint Lucia.

National Adaptation Strategy and Action Plan

The aim of the NASAP is to address the anticipated adverse effects of climate change on the tourism sector discussed in the findings. The strategy covers a 5 year period 2016-2021 and outlines three national outcomes for the tourism sector.

1. Improved, policy, legal, regulatory, and institutional framework for the tourism sector
2. Improved technical and institutional capacity for the tourism sector
3. Enhanced and improved training and awareness in relation to climate change and the tourism sector

Expected results (output) are presented along with the actions to meet the defined objectives. The timeline for each activity is given, along with an indicative cost, where possible, and the responsible agencies (lead and partner). The table below outlines a summary budget for the three strategic outcomes. The objectives within each outcome have multiple activities, some of which have only been costed for partially.

OUTCOMES	NO. OF OBJECTIVES	INDICATIVE COSTS US\$
Outcome 1 Improved, policy, legal, regulatory, and institutional framework for the tourism sector	10	535,000
Outcome 2 Improved technical and institutional capacity for the tourism sector	28	2,476,000

OUTCOMES	NO. OF OBJECTIVES	INDICATIVE COSTS US\$
Outcome 3 Enhanced and improved training and awareness in relation to climate change and the tourism sector	3	415,000
TOTAL	42	3,421,000

The implementation of the NASAP for the tourism sector has to be monitored and evaluated will be done on an annual basis in conjunction with all lead and partner agencies referred to in the NASAP. This is important for transparency and accountability. The Ministry with responsibility for Tourism is expected to take the lead, in collaboration with partner agencies, as necessary.

Recommendations were also made for changes in Tourism and other supporting sectors to be monitored. A monitoring programme should be developed and it is expected that the Ministry with responsibility for Tourism will prepare evaluation reports for submission to the relevant authority.

1 National Adaptation Strategy and Action Plan

1.1 Introduction

The recommended National Adaptation Strategy and Action Plan (NASAP) for the tourism sector, presented in this Chapter, are based on the requirements of the terms of reference and the results of the analyses presented in the impact assessment, Chapters 2 to 7.

According to IPCC (2014), adaptation is “*the process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects*”. The objective of the NASAP is to provide recommendations that can address adverse effects of climate change that particularly impact the tourism sector. Some cross sectoral recommendations have also been made based on overlaps.

Taking advantage of opportunities and good planning, early adaptation action has been shown to save money and lives. Adaptation strategies are needed at the local, national, regional, and international level. However, adaptation activities are context-specific and tend to be local, that is, at the district, regional or national levels in a country (Paavola and Adger 2005). This is because communities possess different vulnerabilities and adaptive capabilities; they tend to be impacted differently, thereby exhibiting different adaptation needs.

The strategic plan presented below covers a 5 year period 2016-2021 and outlines three national outcomes for the tourism sector. Expected results (output) are presented along with the actions to meet the defined objectives. The timeline for each activity is given, along with an indicative cost where possible, and the responsible agencies (lead and partner).

1.2 Strategic Objectives

Several adaptation strategies have been identified for Saint Lucia’s Tourism Sector, as informed by the findings from the Impact Assessment done for Saint Lucia. The strategies were denoted under four main headings:

- Policy
- Legislation
- Capacity (Physical/ Infrastructural, Institutional and Technical)
- Training and Awareness Building

These were used to define the following strategic outcomes:

1. Improved policy, legal, regulatory and institutional framework for the tourism sector
2. Improved technical and institutional capacity for the tourism sector
3. Enhanced and improved training and awareness in relation to climate change and the tourism sector

1.3 Implementation of the Strategy

The NASAP for the tourism sector in Saint Lucia requires that the Ministry of Tourism Heritage and Creative Industries lead, support and collaborate with partner agencies, as appropriate, in seeking to implement the action items set out in this Strategy and Action Plan.

Several activities have been recommended under each outcome. It is anticipated that the activities will be implemented over a five year period. Operational plans will need to be developed with appropriate phasing to ensure that the activities planned are completed. Each of the three outcomes has a slate of activities to be undertaken over the five year period.

Further, to collaborative development of this Strategy and Action Plan, it is recommended that the document be shared with all the partner agencies and awareness and capacity building programmes be undertaken. Buy-in is needed from the Committee of Permanent Secretaries and the Cabinet of Ministers to accept the imperative for endorsing and implementing the National Adaptation Strategy and Action Plan for the Tourism Sector.

To the maximum extent possible, elements of the NASAP should be integrated into the existing and proposed cooperation programmes of Saint Lucia's bi-lateral and multi-lateral partners.

It is recommended that further funding be sought for specific aspects of the NASAP, where these cannot be accommodated within the respective Ministry/agency budgets.

1.4 Monitoring and Evaluation

Monitoring and evaluation is critical to ensure that the activities in the NASAP are successfully completed on target and that transparency and accountability are maintained. This will entail the monitoring of the actual implementation of the NASAP, and also evaluating and assessing the cause of any changes, both external and internal to the NASAP, to determine what corrective actions, if any, are needed.

Monitoring results can then be incorporated into future planning and improvement of the NASAP. Therefore, an implementation monitoring plan will have to be developed to monitor the progress of activities and submit the same to the necessary authority for approval.

Monitoring and evaluation will be done on an annual basis in conjunction with all lead and partner agencies referred to in the NASAP. The Ministry with responsibility for Tourism is expected to take the lead, in collaboration with partner agencies, as necessary.

Recommendations were also made for changes in Tourism and other supporting sectors to be monitored. A monitoring programme should be developed, and some of the key indicators that can be used to determine changes may include:

- Increased beach monitoring activities
- Reduced damage to reef from anchorage

It is expected that the Ministry with responsibility for Tourism will prepare evaluation reports for submission to the relevant authority.

1.5 Outcomes

Under each outcome, a table has been developed with the recommendations for action, responsible agency, potential funding, and timeframe. There are certain funding bodies that have specific funding objectives and therefore the potential sources of funds recommended in the table are based

on these objectives. The Ministry of Tourism, Heritage and Creative Industries (MTHCI) would need to explore various funding opportunities as those recommended in the table are not exhaustive.

Strategic Outcome 1

1. Improved policy, legal, regulatory and institutional framework for the tourism sector.

Outputs

By the end of this strategic planning period, it is expected that the following is achieved:

Directly Tourism Related

1. Recommended guidelines to new hoteliers improved;
2. Easy or creative ways for tourists to “offset” their vacation carbon emissions (e.g. by donating money to fund local reforestation or renewable energy initiatives or by spending a few hours engaged in re-forestation work locally etc.) established.

Support to the Tourism Sector

3. A National Land Use Plan (NLUP) developed
4. Planning laws/regulations amended
5. Forward Planning Unit within the Ministry responsible for Physical Planning developed
6. Fines for violations of the Beach Protection Ordinance as well as Marine Protected Areas increased
7. Local capacity in coastal zone management and engineering strengthened
8. Regulations related to sewage treatment plant construction and maintenance upgraded and enforced
9. Territory’s energy portfolio diversified to include alternative energies (e.g. wind, solar and geothermal)

OUTCOME 1 - Improved policy, legal, regulatory and institutional framework for the tourism sector

Table 1.1: Objectives, Activities, Timelines, Funding and Responsible Agencies for Outcome 1

	OBJECTIVE	ACTIVITIES	TIMELINE	FUNDING		RESPONSIBLE AGENCIES
				INDICATIVE COSTS (US\$)	POTENTIAL SOURCE OF FUNDING	
	Directly Tourism Related					
1.	To improve the recommended guidelines to tourism operators to more effectively address climate change	Use more energy efficient cooling systems as well as proper maintenance Incorporate “green” design into buildings – e.g. natural cooling systems, green roofs, and designs that maximize natural lighting. Review requirements of Building Code to ensure that “green” designs are included in building codes, monitor and enforce requirements for “green” designs.	Medium-term On-going	\$50,000	Caribbean Development Bank (CDB)	LEAD: Ministry of Sustainable Development, Energy, Science and Technology (MSDEST); Ministry of Tourism, Heritage and Creative Industries (MTHCI). PARTNER: Ministry of Physical Development, Housing and Urban Renewal (MPDHUR)-Development Control Authority (DCA).
2.	To develop easy or creative ways for tourists	Develop public awareness programs for tourists; develop	Medium term	\$60,000	MTHCI	LEAD: MTHCI Partner: MSDEST and Ministry

	OBJECTIVE	ACTIVITIES	TIMELINE	FUNDING		RESPONSIBLE AGENCIES
				INDICATIVE COSTS (US\$)	POTENTIAL SOURCE OF FUNDING	
	to “offset” their vacation carbon emissions ¹	pilot projects to encourage participation of tourists.				of Finance, Economic Affairs and Social Security (MFEASS)
	Support to the Tourism Sector					
3.	To revise and implement the recently drafted National Land Use Plan (NLUP)	<p>Review NLUP to ensure it addresses a range of concerns, inclusive of watershed degradation, potential impacts of saline intrusion, and sea level rise.</p> <p>Consult on NLUP</p> <p>Obtain Cabinet approval of NLUP</p>	Short-term	\$120,000	CDB	<p>LEAD: MPDHUR - DCA.</p> <p>PARTNER: MSDEST, Ministry of Agriculture, Food Production, Fisheries, Co-operatives & Rural Development (MAFPFCRD), MTHCI, Invest Saint Lucia</p>

¹ (e.g. by donating money to fund local reforestation or renewable energy initiatives or by spending a few hours engaged in re-forestation work locally etc.).

	OBJECTIVE	ACTIVITIES	TIMELINE	FUNDING		RESPONSIBLE AGENCIES
				INDICATIVE COSTS (US\$)	POTENTIAL SOURCE OF FUNDING	
4.	To amend and enact the planning laws/regulations	<p>Institute a land compensation programme for land owners within already established setback areas.</p> <p>Institute a demolition fund and this is currently a loop hole in Act, so once an illegal construction is done Physical planning has no power over its operations.</p> <p>Formally integrate Hazard Vulnerability Assessments into the development planning process.</p> <p>Require a permit for the land clearing to by farmers to ensure preventative measures that reduce sedimentation.</p> <p>Modify set-backs with regard to the construction of coastal hotels, in light of climate change and the queens' chain and high water mark. Integrated Coastal Zone Model for OECS can be used as a guide.</p> <p>Where feasible, establish "no build areas" for critical public infrastructure, e.g. in highly flood prone areas.</p>	Medium to long term	\$70,000	CDB	<p>LEAD: MPDHUR - DCA</p> <p>PARTNER: MSDEST, MAFPCRD, Ministry of Legal Affairs - Legislative Drafting Unit, Ministry of Infrastructure, Port Services and Transport (MIPST)</p>

	OBJECTIVE	ACTIVITIES	TIMELINE	FUNDING		RESPONSIBLE AGENCIES
				INDICATIVE COSTS (US\$)	POTENTIAL SOURCE OF FUNDING	
5.	To establish a Forward Planning Unit within the Ministry responsible for Physical Planning	Set up a Separate Unit for Forward Planning to deal with the development of policy and plans including the national and local area land use plans and zones.	Medium-term	TBD	Government of Saint Lucia	LEAD: MPDHUR - DCA
6.	To increase fines for violations of the Beach Protection Ordinance as well as Marine Reserves	<p>Review of the current fines and recommend increases.</p> <p>Consult on draft recommendations.</p> <p>Review draft recommendations with Attorney General's Office.</p> <p>Prepare Cabinet Submission to approve changes in fines and penalties.</p> <p>Enforce as appropriate</p>	Short-term	\$40,000	CDB	<p>LEAD: MAFPCRD</p> <p>PARTNER: National Conservation Authority (NCA), MIPST, Saint Lucia Port Services and Transport Authority (SLASPA), MSDEST, Saint Lucia National Trust (SLNT)</p>
7.	To increase local capacity in coastal zone management and engineering.	<p>Provide training opportunities locally and overseas to staff and other stakeholders in coastal zone management and engineering.</p> <p>Establish one trained coastal</p>	Short to medium term	<p>\$50,000</p> <p>Salary TBD</p>	CDB	<p>LEAD: MSDEST</p> <p>PARTNER: MPDHUR</p>

	OBJECTIVE	ACTIVITIES	TIMELINE	FUNDING		RESPONSIBLE AGENCIES
				INDICATIVE COSTS (US\$)	POTENTIAL SOURCE OF FUNDING	
		engineer to be operating within the Coastal Zone Management Unit (CZMU)				
8.	To upgrade and enforce regulations related to sewage treatment and maintenance.	<p>Review current regulations and make amendments to ensure that connections are made to the central sewer where possible or measures are followed with the appropriate septic tank and private treatment construction and maintenance.</p> <p>Consult on draft regulations with public and private sector agencies.</p> <p>Develop mechanisms for the enforcement of regulations.</p> <p>Establish training sessions (in conjunction with the Police) for the training of enforcement officers.</p> <p>Produce training manuals to guide Enforcement Officer and</p>	Short-term	\$70,000	CDB	<p>LEAD: MSDEST</p> <p>Ministry of Health, Wellness, Human Services and Gender Relations (MHWHSGR) (Environmental Health Dept.)</p>

	OBJECTIVE	ACTIVITIES	TIMELINE	FUNDING		RESPONSIBLE AGENCIES
				INDICATIVE COSTS (US\$)	POTENTIAL SOURCE OF FUNDING	
		Police men about the legislation.				
9.	To diversify the energy portfolio to include alternative energies (e.g. wind, solar, and geothermal).	<p>Complete and Enact the Draft Electricity Services Supply Bill and enact the Draft Environment Management Act. Both drafts deal with alternative, renewable energy sources.</p> <p>Implement 21 policies and incentives for renewable energy (RE) (undertake pilot projects for renewable energy) – This includes financing available for tourism properties wishing to do RE.</p> <p>Include in tourism policy to encourage new and existing hotels to invest in renewable energy and undertake energy efficient designs and practices.</p>	<p>Short-term</p> <p>On-going</p>	\$70,000	<p>CDB/ German Government</p> <p>GEF Small Grants Programme (IDB)</p>	<p>LEAD: MSDEST</p> <p>Partner: MTHCI</p>
Note: On-going Immediate Short term= 1-3 yrs Medium= 3-5 yrs Long term= > 5 yrs						

Strategic Outcome 2

Improved technical and institutional capacity for the tourism sector.

Outputs

By the end of this strategic planning period, it is expected that the following is achieved:

Directly Tourism Related

1. Marketing undertaken to help reduce coastal impacts, construction of tourism properties on beaches, and reliance on beaches
2. Stress in the coastal waters and coral bleaching reduced
3. Impacts of coastal hotel developments along the coastline determined
4. Lion Fish Derby's established as underwater tourist attraction and as a major means to control this predator
5. Damage to reef from anchorage reduced
6. Sea level rise modeling conducted for Saint Lucia
7. The carrying capacity for key tourism attractions determined to enhance decision making for beach users
8. Relationship to learn Technology for Sargassum as a biofuel established

Support to Tourism Sector

9. Beach monitoring activities improved
10. Coral reef health better monitored and established marine reserves effectively managed
11. Mangroves as a key coastal defense feature monitored for preservation
12. Data to support a validated sea level rise model collected
13. Hazard vulnerable coastlines that require urgent attention identified
14. Climate Change Strategy and Action Plan for the Fisheries Sector developed
15. Climate change Strategy and Action Plan for the Forestry Sector developed
16. Data on all the water resources in Saint Lucia gathered
17. Additional sources of water from groundwater identified
18. Water Sector Master Plan developed to govern country priority activities across the island with emphasis on climate change impacts
19. Sewage treatment and coastal water quality improved
20. Water availability for agricultural purposes improved
21. Dry land farming by Ministry responsible for Agriculture more effectively used
22. Coastal water quality monitoring enhanced
23. Capacity of emergency response health services increased
24. Asset management of WASCOs distribution network and map improved
25. Water and Sewerage Plan developed to guide the use of resources and prioritised plans for the sector
26. A National Wastewater Strategic Plan developed
27. Infrastructure for water capture and storage enhanced in the tourism sector via the intervention of incentives
28. Incentives that foster conservation and energy efficient practices and investments in renewable energy explored and developed.

29. Wastage in the Government sector reduced

OUTCOME 2 - Improved technical and institutional capacity for the tourism sector

Table 7.2: Objectives, Activities, Timelines, Funding and Responsible Agencies for Outcome 2

	OBJECTIVE	ACTIVITIES	TIMELINE	FUNDING		RESPONSIBLE AGENCIES
				INDICATIVE COSTS (US\$)	POTENTIAL SOURCE OF FUNDING	
	Directly Tourism Related					
1.	To enhance marketing to help reduce coastal impacts reduce reliance on beaches	Develop an incentive packages and develop events to attract summer family vacationers to include: ² <ul style="list-style-type: none">Tourism re-branding and advertising;Expand to new niches; Expand the tourism product developing tours and community tourism.	Short-medium term	40,000	Tourism Enhancement Fund	LEAD: Saint Lucia Hotel and Tourism Association (SLHTA) PARTNER: Invest Saint Lucia, Saint Lucia Trade Export Promotion Agency (SLTEPA), SLNT, Coastal Zone Management Unit (CZMU), MSDEST, MPDHUR
2.	To reduce stress on coastal waters and coral reefs from bleaching	Develop alternative underwater attractions to reduce the stress on reef systems. Put in place new attractions and implement alternative tours.	Medium Term Medium Term	40,000 TBD	Pilot Program for Climate Resilience (PPCR) – Disaster Vulnerability Reduction Project (DVRP) European Union (EU)	LEAD: MAFPCRD Department of Fisheries PARTNER: Anbaglo- Saint Lucia Divers Association, MTHCI, SLHTA

² Reframe Saint Lucia as more than just a winter getaway.

	OBJECTIVE	ACTIVITIES	TIMELINE	FUNDING		RESPONSIBLE AGENCIES
				INDICATIVE COSTS (US\$)	POTENTIAL SOURCE OF FUNDING	
					EU/ CCCCC	
3.	To determine impacts of coastal hotel developments along the coastline	Develop a programme that will determine the impacts of coastal hotel development in Saint Lucia. ³	Medium-term	150,000	Tourism Enhancement Fund / National Conservation Trust Fund	LEAD: MSDEST PARTNER: MPDHUR - DCA MAFPFCRD - Department of Fisheries, in association with MTHCI and SLHTA
4.	To establish Lion Fish Derby as major means to control this predator	Establish a Lion Fish Derby Festival that would represent the launch of a yearly event and day for awareness about the issues regarding negative impacts of the lion fish and solutions being undertaken Continue quarterly Derby and involve and train fishing communities around the island. Monitor and collect data to reduce the lion fish population and use data to guide decision making.	Short-term On-going	30,000 (per event) 3,000	Tourist charges for lion fish excursion Tourist charges for excursion	LEAD: MAFPCRD - Department of Fisheries PARTNER: In association with Anbaglo- Saint Lucia Divers Association, MTHCI

³ Programme will segment coastline as project study areas where coastal process, water quality, coral reefs and other key impacts will be determined. Where other factors/sources are major challenges, these will be identified. Results of this project can guide Physical Planning and Development Control Authority with respect to the carrying capacity and decision making.

	OBJECTIVE	ACTIVITIES	TIMELINE	FUNDING		RESPONSIBLE AGENCIES
				INDICATIVE COSTS (US\$)	POTENTIAL SOURCE OF FUNDING	
5.	To reduce damage to reef from anchorage	Conduct sensitisation of boat and yacht users about anchorage locations and use of the buoy system Installation of Mooring buoys to provide alternative anchoring options.	Short-term Short-term	3,000	PPCR-DVRP	LEAD: SLASPA, MAFPCRD - Department of Fisheries and MTHCI PARTNER: MSDEST-SDED, Soufriere Marine Management Authority (SMMA), Soufriere Regional Development Foundation (SRDF), Pitons Management Area Office, NCA, SLNT, Fisheries
6.	To conduct Sea level rise modelling for Saint Lucia	Utilising the limited existing data use statistical downscaling to conduct sea level rise model. This will give indicate results that will guide tourism decision making.	Short-term	120,000	CCCCC	LEAD: MSDEST PARTNER: MTHCI
7.	To determine the carrying capacity for key tourism attractions to enhance decision making for beach users	Identify the significantly utilised tourism attractions (e.g. Soufriere, beaches) and execute a project to determine the carrying capacity for three priority areas.	Medium-term	100,000	CCCCC/ PPCR-DVRP	LEAD: MSDEST PARTNER: MTHCI
8.	To establish relationship to learn Technology for Sargassum as a biofuel	Establish a learning relationship with Guadeloupe to facilitate knowledge transfer for new technology to use Sargassum as an	Medium-term	70,000	CCCCC/ PPCR-DVRP	LEAD: MSDEST PARTNER: MTHCI

	OBJECTIVE	ACTIVITIES	TIMELINE	FUNDING		RESPONSIBLE AGENCIES
				INDICATIVE COSTS (US\$)	POTENTIAL SOURCE OF FUNDING	
		alternative energy source (biofuel). The possibility of this should be explored prioritising tourism entities located on such beaches as priority for use of biofuel.				
	Support to Tourism Sector					
9.	To increase effectiveness of beach monitoring activities	<p>Hire wardens to monitor key public beach sites.</p> <p>Training of beach wardens on the laws and how to appropriately monitor beach activities.</p> <p>Develop Management Plan beach profiling</p>	<p>Short-term</p> <p>Short-term</p> <p>Short-term</p>	<p>Salary</p> <p>10,000</p> <p>25,000</p>	<p>Government of Saint Lucia</p> <p>PPRC-DVRP</p> <p>PPCR-DVRP</p>	<p>LEAD: MAFPCRD - Department of Fisheries (for beach profiling), MIPST (For Sand)</p> <p>PARTNER: NCA, SMMA, SRDF, Pitons Management Area Office, NCA, SLNT</p>
10.	To determine coral reef health in existing Marine Reserves to determine effectiveness of existing management	Develop a coastal study and tender, The aim of the study is to examine coral reef health and identify reasons if degradation is taking place and recommendations. ⁴	Short-term	150,000	<p>Caribbean Community Climate Change Centre (CCCCC) /</p> <p>UK Department For International Development (DFID)</p>	<p>LEAD: MAFPCRD - Department of Fisheries</p> <p>PARTNER: SMMA, SLNT, Anbaglo Dive Association, MSDEST-CZMU</p>

⁴ This is in order to determine the effectiveness of reserves in preserving coral reef health and fish stock. The results will guide decision making.

	OBJECTIVE	ACTIVITIES	TIMELINE	FUNDING		RESPONSIBLE AGENCIES
				INDICATIVE COSTS (US\$)	POTENTIAL SOURCE OF FUNDING	
11.	To monitor mangroves as a key feature for coastal defence and to serve as a habitat for key species	To develop and undertake a Mangrove Study of all the existing areas mangrove areas examining change over time. ⁵	Short-term	\$100,000		LEAD: MAFPFCRD - Department of Fisheries PARTNER: MAFPFCRD - Department of Forestry
12.	To collect and monitor data to eventually conduct a validated sea level rise model (requires 20-30yrs data)	Expand beach profiling for particularly sensitive coastlines that are undergoing erosion outside of developmental activities. Bathymetry data, surge and tide data, current data. Data would need to be compiled over a 20-30 year period.	Medium-Long term	TBD Yearly	CCCCC / Department for International Development (DFID) / Netherlands Directorate-General for International Cooperation (DGIS)	LEAD: MSDEST PARTNER: MAFPFCRD, Caribbean Institute for Meteorology and Hydrology (CIMH), MPDHUR, Anbaglo-Saint Lucia Divers Association, Universities, NCA.
13.	To determine hazard vulnerable coastlines that require urgent attention	Identify key coastlines where Hazard and vulnerability mapping is required due to losses ⁶ .	Long-term	100,000	CCCCC/ IDB/ World Bank	LEAD: MPDHUR PARTNER: in association with MAFPFCRD - Department of Fisheries MSDEST, MIPST, NCA, National Emergency

⁵ Compare the present to the thematic study on mangroves that was done in 2005. The results and recommendations should guide decision-making related to development tourism in particular.

⁶ This is particularly recommended for the southern coastline prior to the existing anticipated tourism development plans.

	OBJECTIVE	ACTIVITIES	TIMELINE	FUNDING		RESPONSIBLE AGENCIES
				INDICATIVE COSTS (US\$)	POTENTIAL SOURCE OF FUNDING	
						Management Organisation (NEMO) and Invest Saint Lucia
14.	To develop a Climate Change Strategy and Action Plan for the Fisheries Sector	Engage consultant Prepare CC Strategy and Action Plan for Fisheries Sector ⁷ Consult on CC draft Strategy and Action Plan	Medium term	80,000	CCCCC / European Union (EU) / PPCR-DVRP	LEAD: MAFFPCRD - Department of Fisheries PARTNER: MSDEST
15.	To develop a Climate Change Strategy and Action Plan for the Forestry Sector	Engage consultant Prepare CC Strategy and Action Plan for Forestry Sector ⁸ Consult on draft CC Strategy and Action Plan	Medium term	80,000	CCCCCs / European Union (EU) / PPCR-DVRP	LEAD: MAFFPCRD - Department of Forestry PARTNER: MSDEST
16.	To gather data on all the water resources in Saint Lucia	Undertake a Comprehensive Study of the 37 Watersheds and all water resources in Saint Lucia.	Medium-term	\$250,000	CCCCC / European Union / PPCR-DVRP	LEAD: MSDEST - Water Resources Management Agency (WRMA) PARTNER: MSDEST - Water and Sewerage Company Inc. (WASCO)

⁷ This Plan will outline actions in order of priority

⁸ This Plan will outline actions in order of priority

	OBJECTIVE	ACTIVITIES	TIMELINE	FUNDING		RESPONSIBLE AGENCIES
				INDICATIVE COSTS (US\$)	POTENTIAL SOURCE OF FUNDING	
17.	To identify additional sources of water from groundwater to supplement the short supply.	Decide on a section of the island to start groundwater exploration. ⁹ Tender Project and Engage Consultants.	Medium-term	\$250,000	CCCCC / European Union / PPCR-DVRP	LEAD: MSDEST - WRMA PARTNER: MSDEST - WASCO
18.	To develop a Water Sector Master Plan to govern country priority activities across the island with emphasis on climate change impacts	Engage consultant following the completion of the Comprehensive Study of all Water Resources in Saint Lucia Prepare Water Sector Master Plan for Saint Lucia ¹⁰ Consult draft Water Sector Master Plan	Long-term	\$150,000	CCCCC / European Union / PPCR-DVRP	LEAD: MSDEST - WRMA PARTNER: MSDEST - WASCO, Public Utilities, MPDHUR
19.	To improve sewage treatment and coastal water quality as a result	Conduct a Feasibility Study to determine the infrastructural requirements for tertiary level municipal sewage treatment facilities to cover the island's needs.	Short-term	\$150,000	Inter-American Development Bank (IDB) /	LEAD: MSDEST - WRMA PARTNER:, MSDEST - WASCO Public Utilities,
20.	To improve water availability for farming	Conduct a Feasibility Study to find amicable solutions to the water	Short term	\$50,000	Global Water partnership (GWP)-	LEAD: MAFPFCD - Department of Agriculture

⁹ To start with explorations that can supply the tourism centres. This would reduce the trucking issues during the drought season.

¹⁰ , The Master Plan will outline actions in order of priority. This should address the use of ground water and desalination water.

	OBJECTIVE	ACTIVITIES	TIMELINE	FUNDING		RESPONSIBLE AGENCIES
				INDICATIVE COSTS (US\$)	POTENTIAL SOURCE OF FUNDING	
	and irrigation purposes especially with climate change issues experienced	challenge and the Agriculture Sector – to include a review of the Water Tank Initiative, and the rules with respect to the use of rivers for agriculture.			Caribbean / CDB / IDB / World Bank/ UNDP	PARTNER: MSDEST - WASCO, MSDEST - WRMA
21.	To promote dry land farming systems by the Department of Agriculture	<p>Documentation of best practices in dry land agriculture across the Caribbean</p> <p>Conduct capacity building and training of agricultural extension staff in sustainable and appropriate dry farming practices</p> <p>Conduct research and development, particularly in the area(s) of crop breeding for drought /disease resistant varieties</p> <p>Set up demonstration plots showcasing dry farming techniques</p> <p>Facilitate farmers training and knowledge transfer through</p>	<p>Short term</p> <p>Short term</p> <p>Ongoing</p> <p>Short-term</p> <p>Short-term</p>	<p>\$5,000</p> <p>\$80,000</p> <p>TBD</p> <p>20,000</p> <p>20,000</p>	<p>International Fund for Agricultural Development (IFAD)/ Food and Agriculture Organisation (FAO)/ United States Agency for International Development (USAID)</p>	<p>LEAD: MAFPCRD - Department of Agriculture</p> <p>PARTNER: MSDEST - WASCO, MSDEST - WRMA, MAFPCRD - Department of Forestry</p>

	OBJECTIVE	ACTIVITIES	TIMELINE	FUNDING		RESPONSIBLE AGENCIES
				INDICATIVE COSTS (US\$)	POTENTIAL SOURCE OF FUNDING	
		farmer field schools				
22.	To enhance a coastal water quality monitoring	<p>Conduct a needs assessment audit of the Environmental Health Department Laboratory and the Department of Fisheries in Saint Lucia - identify gaps in equipment and staffing. An MOU can be made between the two agencies to rationalise resources and monitoring activities.</p> <p>Following results of needs assessment. Address weaknesses.</p> <p>Develop a Monitoring Strategy and establish baseline Monitoring Programme</p> <ul style="list-style-type: none"> • Develop Standard Operating Procedures • Develop Quality assurance policy • Collect Data • Adopt usage of global water standards (WHO) for Saint Lucia • 	<p>Immediate to short term</p> <p>Short term</p> <p>Short term</p>	<p>40,000</p> <p>TBD(Depending on needs)</p> <p>\$30,000</p>	<p>GWP-Caribbean/ CDB/ IDB/ World Bank</p> <p>UNDP</p>	<p>LEAD: MHWHSGR - Environmental Health Department, and MAFPFCD - Department of Fisheries</p> <p>PARTNER: MPDHUR, DCA, MSDEST - WRMA</p>

	OBJECTIVE	ACTIVITIES	TIMELINE	FUNDING		RESPONSIBLE AGENCIES
				INDICATIVE COSTS (US\$)	POTENTIAL SOURCE OF FUNDING	
23.	To increase capacity of emergency response health services	Strengthen emergency medical services including mass casualty/ rapid spread of diseases. Establish public health nurses / teams at key ports as a disease control measure	Medium-term	TBD TBD	Pan American Health Organisation (PAHO) / World Health organisation (WHO)	LEAD: MHWHSGR - Environmental Health Department PARTNER: NEMO, SLHTA
24.	To improve asset management of WASCOs distribution network and map. ¹¹	Conduct a feasibility study for gathering GIS related information on Water distribution system, determine the placement of equipment, the technology to be used and costing of equipment and improvements to revenue. Purchase meters and install along network. Quantify total losses and assess leakage within Distribution network/ Reservoirs. Address areas that show high leakages.	Short term Short term Short term Short term	100,000 TBD (based on number # of meters required) - TBD (Depending on pipes etc. that need changing)	GWP-Caribbean/ CDB/ IDB/ World Bank UNDP	LEAD: MSDEST - WASCO PARTNER: MSDEST - WRMA

¹¹ To better capture leakages to improve water management of water supply

	OBJECTIVE	ACTIVITIES	TIMELINE	FUNDING		RESPONSIBLE AGENCIES
				INDICATIVE COSTS (US\$)	POTENTIAL SOURCE OF FUNDING	
25.	To develop a Water and Sewerage Plan to guide the use of resources and make prioritise plans for the sector	Develop a Water and Sewerage Plan	On-going	-	PPCR –DVRP Additional Funding EU	LEAD: MSDEST - WASCO, MSDEST -WRMA PARTNER: MSDEST, Public Utilities
26.	To develop a National Wastewater Strategic Plan	Develop a National Wastewater Strategic Plan	On-going	\$200,000	PPCR –DVRP Additional Funding EU	LEAD: WASCO, WRMA PARTNER: SDED, Public Utilities
27.	To develop incentives to enhance infrastructure for water capture and storage in the tourism sector	Expand existing PPCR-DVRP project to explore the possibility of additional surface storage to meet demand particularly in the tourism sector. Develop incentives for the tourism sector to invest in rainwater harvesting for use in pool topping, toilet flushing, sewage treatment and recycling, irrigation/gardening, washing dive equipment etc.	Short-term	\$50,000	PPCR-DVRP	LEAD: WRMA in association with MTHCI PARTNER: WASCO, MSDEST
28.	To explore and develop incentives that foster conservation and energy efficient practices and investments in	Develop incentives to encourage water conservation, renewable energy and energy efficiency in hotels and related tourism	Short to Medium term	TBD	CCCCC EU IDB/Climate	Lead: MIHCI Partner: MSDEST, Ministry of Commerce , Invest Saint

	OBJECTIVE	ACTIVITIES	TIMELINE	FUNDING		RESPONSIBLE AGENCIES
				INDICATIVE COSTS (US\$)	POTENTIAL SOURCE OF FUNDING	
	renewable energy.	entities. ¹²			Investment Fund	Lucia
29.	To reduce wastage in the Government sector	Water Audit of Government buildings to determine where there are high leakages/wastage.	Medium Term	TBD	GWP- Caribbean	LEAD: MIPST PARTNER: WASCO, WRMA, MSDEST

Note: On-going **Immediate** **Short term= 1-3 yrs** **Medium= 3-5 yrs** **Long term= > 5 yrs.**

¹² For example: incentives for importers/sales companies/hoteliers to bring in low flush toilets, low flow shower heads and taps, automatic shut off taps and for hotels to institute rainwater harvesting for toilet flushing, pool topping, rinsing of dive equipment, gardening; sewage treatment, recycling and irrigation, etc.

Strategic Outcome 3

Enhanced and improved training and awareness in relation to climate change and the tourism sector.

Outputs

Directly Tourism Related

1. Awareness about climate issues especially within the hotel and tourism sector stakeholders improved.
2. Personnel within NGOs in resource management, monitoring skills and reef management, where applicable, trained.

Support to Tourism Sector

3. An effective education campaign focused on training farmers, improved farming practices to include climate smart agricultural practices and water conservation measures established.

OUTCOME 3 - Enhanced and improved training and awareness in relation to climate change and the tourism sector

Table 7.3: Objectives, Activities, Timelines, Funding and Responsible Agencies for Outcome 3

	OBJECTIVE	ACTIVITIES	TIMELINE	FUNDING		RESPONSIBLE AGENCIES
				INDICATIVE COSTS	POTENTIAL SOURCE OF FUNDING	
Directly Tourism Related						
1.	To improve awareness about climate issues especially within the hotel and tourism sector.	Develop a public awareness programme for the tourism sector stakeholders regarding climate change issues and threats.	Medium-term	TDB	CCCCC EU IDB/Climate Investment Fund	LEAD: MTHCI PARTNER: SLHTA
2.	To increase the trained personnel within tourism NGOs	Establish human resource and training expertise to manage resources, water quality, reef protection etc. for the Non-Government Organisations (NGOs) such as SMMA. Training in: Resource Management Water Quality Monitoring Reef Protection	Short to medium term	TBD TDB TDB TDB	GEF Small Grants	LEAD: MTHCI, Ministry of Education, Human Resource Development and Labour (MEHRDL) PARTNER: SMMA, SRDF, Southern Tourism Development Corporation (STDC), Pitons Management Area Office, WRMA, MAFPCRD - Department of Fisheries, University of the West Indies (UWI)

	OBJECTIVE	ACTIVITIES	TIMELINE	FUNDING		RESPONSIBLE AGENCIES
				INDICATIVE COSTS	POTENTIAL SOURCE OF FUNDING	
Support to Tourism Sector						
3.	To develop and implement an education campaign focused on training farmers, improved farming practices to include climate smart agricultural practices and other water conservation measures.	<p>Develop a technical manual and toolkit for implementing climate smart agricultural practices.</p> <p>Set up demonstration plots showcasing climate smart farming practices, inclusive of cost-effective, appropriate water conservation methods, drought-resistant crop.</p> <p>Develop a Farmer Field School curriculum targeted at the promotion and transfer of climate smart agricultural practices.</p>	<p>Short term</p> <p>Short – medium term</p> <p>Short term</p>	<p>US\$20,000</p> <p>US\$240,000</p> <p>US\$5,000</p>	CCCCC, Inter-American Institute for Cooperation on Agriculture (IICA), Technical Centre for Agricultural and Rural Cooperation (CTA), CARIBSAVE, USAID, FAO	<p>LEAD: MAFPCRD - Department of Agriculture</p> <p>PARTNER: MSDEST-SDED, MSDEST - WRMA, MSDEST - WASCO, Caribbean Agricultural Research and Development Institute (CARDI), IICA and Agricultural Department of Sir Arthur Lewis Community College (SALCC)</p>
Note: On-going Immediate Short term= 1-3 yrs Medium= 3-5 yrs Long term= > 5 yrs.						

2 Summary Budget

The following table (**Error! Reference source not found.**) includes a summary budget for the three Strategic bjectives. The objectives within each outcome have multiple activities, some of which have only been costed for partially.

Table 2.1: Summary Budget for Outcomes 1, 2 and 3

OUTCOMES	NO. OF OBJECTIVES	TIME PERIOD	INDICATIVE COSTS US\$
Outcome 1	0	Immediate	-
Improved, policy, legal, regulatory, and institutional framework for the tourism sector	1	Ongoing	-
	4	Short Term	300,000
	4	Medium Term	160,000
	1	Long Term	70,000
Sub Total	10		535,000
Outcome 2	1	Immediate	70,000
Improved technical and institutional capacity for the tourism sector	3	Ongoing	203,000
	10	Short Term	913,000
	11	Medium Term	1,040,000
	3	Long Term	250,000
Sub Total	28		2,476,000
Outcome 3	0	Immediate	-
Enhanced and improved training and awareness in relation to climate change and the tourism sector	0	Ongoing	-
	1	Short Term	265,000
	2	Medium Term	150,000
	0	Long Term	-
Sub Total	3		415,000
TOTAL	42		3,421,000

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Appendix I – Stakeholders Consulted

Focus Group Sessions

Name	Organisation
Ann Marie Barnett	Environmental Solutions Limited (Consultant Team)
Hugh Cresser	
Naula Williams	
Mervin Williams	
Dawn Pierre-Nathaniel	Ministry of Sustainable Development, Energy, Science and Technology- Climate Change Team
Susanna Scott	
Cletus Thomas	
Judith Ephraim	Ministry of Sustainable Development, Energy, Science and Technology-Energy Science and Technology
Francillia Solomon	Ministry of Sustainable Development, Energy, Science and Technology-Biosafety
Barrymore Felicien	Ministry of Sustainable Development, Energy, Science and Technology- Public Utilities
Jannel Gabriel	Ministry of Sustainable Development, Energy, Science and Technology- Biodiversity
Sylvie Raymond	Ministry of Sustainable Development, Energy, Science and Technology –Forestry division
Deepa Girdari	Ministry of Tourism, Heritage and Creative Industries
Anne Margaret Adams	
Cletus Alexander	Ministry of Agriculture, Food Production, Fisheries, Cooperatives and Rural Development
Vernantius Descartes	Ministry of Infrastructure, Port Services and Transport-Meteorological Services Department
Justin Sealy	Water and Sewerage Company (WASCO)
Terrence Gilliard	Water Resources Management Authority
Mervin Engliste	
Farzana Yusuf-Leon	
Donovan Williams	Anbaglo
Eget Marty	Anbaglo
Daina George	Saint Lucia National Trust (SLNT)
Wenn Gabriel	Ministry of Health, Wellness, Human Services and Gender Relations
Claudius Prospere	

Name	Organisation
Xyster Edmund	
Ivaline Joseph	Saint Lucia National Emergency Management Organisation (NEMO)
David Hippolyte	National Conservation Authority (NCA)
Tricia Cepal	Attorney General's Chambers
Jasmine Weekes	Ministry of Physical Development, Housing, and Urban Renewal
John Calixte	Ministry of Finance, Economic Affairs, Planning and Social Security
Carl Hunter	Saint Lucia Hotel and Tourism Association (SLHTA)
Dave Headly	Invest Saint Lucia
Mandy Saint Rose	MSDEST - Pitons Management Area Office
Lauranius Lesfloris	Saint Lucia Solid Waste Management
Michael Bob	Soufriere Marine Management Association
Walter Francois	Soufriere Regional Development Foundation
Loraine Nicholas	Organisation of Eastern Caribbean States (OECS)
Norma Cherry-Feverier	
Lester Arnold	
Rupert Lay	
Chamberlain Emmanuel	
Donalyn Vittet	Saint Lucia Tourism Development Programme
Anderson Reynolds	Southern Tourism Development Corporation (STDC) -
Julius James	
Donovan Williams	
Tedburt Theobalds	
Dylan Tobierre	
Wayne Harrow	

Venue: Archdiocesan Pastoral Centre, East Winds, Gros Islet

Date: July 27th 2015 9:00 a.m

Registration Form (North)

Name	Organisation
Ann Marie Barnett	Environmental Solutions Limited (Consultant Team)
Huge Cresser	Environmental Solutions Limited (Consultant Team)
Mervin Williams	Environmental Solutions Limited (Consultant Team)
Naula Williams	Environmental Solutions Limited (Consultant Team)
Deepa Girdari	Ministry of Tourism, Heritage And Creative Industries
Dawn Pierre- Nathoniell	Ministry of Sustainable Development, Energy, Science and Technology- Sustainable Development and Environment Division
Maier Sifflet	
Roselieu Augustin	Saint Lucia Tourist Board
Miguel Trim	Ministry of Social Transformation, Local Government and Community Empowerment
Joanna Rosemond	Saint Lucia National Trust
Donovan N Brown	Anbaglo - Saint Lucia Divers Association,
Xysta Edmund	Ministry of Health, Wellness, Human Services and Gender Relation
Jasmine Weekes	Ministry of Physical Development, Housing, and urban Renewal
Mervin Williams	
Justin Sealy	Water and Sewerage Company (WASCO)
Farzana Yusuf-Leon	Ministry of Sustainable Development, Energy, Science and Technology- Water Resource Management Agency
Norma Cherry-Fevrier	Organisation of Eastern Caribbean States
Macricia Auguste- Bushell	Ministry of Finance-Department of Planning and National Development
Thomas Nelson	Ministry of Agriculture, Food Production, Fisheries, Cooperatives and Rural Development- Department of Fisheries
Sarita Williams- Peter	

Venue: Debbie's Restaurant, Laborie

Date: 28th July, 2015 9:00 am

Registration Form (South)

Name	Organization/ Agency
Hugh Cresser	Environmental Solutions Limited (Consultant Team)
Ann Marie Barnett	Environmental Solutions Limited (Consultant Team)
Naula Williams	Environmental Solutions Limited (Consultant Team)
Dawn Pierre-Nathaniel	Ministry of Sustainable Development, Energy, Science and Technology – Sustainable Development and Environment Division
Jannel Gabriel	
Raina Bergasse	
Cantarra Cooper	
Deepa Girdari	Ministry of Tourism Heritage and Creative Industries
Darnley Lebourne	Coconut Bay Beach Resort and Spa
Elvis David	ATLAS
Quanley Marieatte	
Craige Herdel	
Sherina Edward	
Melicia Flavien	Choiseul/Saltibus Constituency office
Andre Toyenx	Ministry of Infrastructure Port services and Transport-Meteorological Services Department
Twain Edward	Laborie/Augier Constituency Council
Julius James	Southern Tourism Development Corporation (STDC)
Vincent Clarke	Eco South Tours
Craig Henry	Saint Lucia National Trust
Cletus Alexander	Ministry of Agriculture, Food Production, Fisheries, Cooperatives and Rural Development

Appendix II – Representative Concentration Pathways

In the IPCC Fifth Assessment Report (AR5), outcomes of climate simulations that use new scenarios (some of which include implied policy actions to achieve mitigation) referred to as “Representative Concentration Pathways” (RCPs) are assessed. These RCPs represent a larger set of mitigation scenarios and were selected to have different targets in terms of radiative forcing at 2100 (about 2.6, 4.5, 6.0 and 8.5 Wm^{-2}). They are defined by their total radiative forcing (cumulative measure of human emissions of greenhouse gases from all sources expressed in Watts per square metre) pathway and level by 2100. The scenarios should be considered plausible and illustrative, and do not have probabilities attached to them.

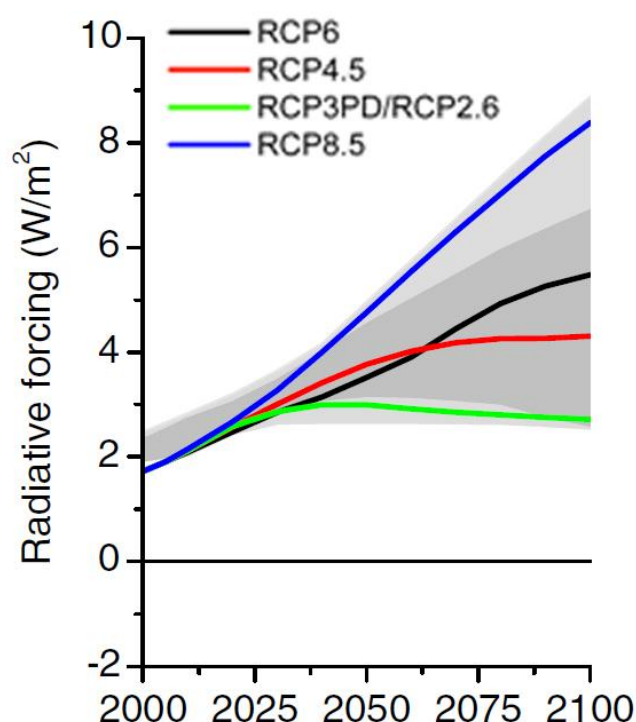


Figure A.1: Radiative Forcing of the Representative Concentration Pathways. Taken from van Vuuren et al (2011). The light grey area captures 98% of the range in previous IAM scenarios, and dark grey represents 90% of the range.

Table A.1: Descriptions of the Representative Concentration Pathway (RCP) Scenarios.

RCP	Comments	Radiative Forcing Behaviour
RCP2.6	Lowest	Peaks at 3 Wm^{-2} and then declines to approximately 2.6 Wm^{-2}
RCP4.5	Medium-low	Stabilization at 4.5 Wm^{-2}
RCP6	Medium-high	Stabilization at 6 Wm^{-2}
RCP8.5	Highest	RF of 8.5 Wm^{-2} by 2100 but implies rising RF beyond 2100

The SRES scenarios resulted from specific socio-economic scenarios from storylines about future demographic and economic development, regionalization, energy production and use, technology, agriculture, forestry and land use (IPCC, 2000). The RCPs are new scenarios that specify concentrations and corresponding emissions, but not directly based on socio-economic storylines like the SRES scenarios. The four RCP scenarios are identified by the 21st century peak or stabilization value of the RF derived from the reference model (in Wm^{-2}). Table A.1 provides a summary of the RCPs.

Appendix III - Review of Ministries Policy and Legislation

Ministries

Ministry of Tourism, Heritage and Creative Industries

The Ministry of Tourism, Heritage and Creative Industries ' mission is to "encourage the delivery of quality, authentic and distinctive destination experiences and creative products and services, with a clear focus on the needs of residents, visitors and the environment, which will contribute to year-on-year growth" ¹³

Saint Lucia Tourism Development Programme

The Programme is responsible for implementing the Saint Lucia Tourism Competitiveness Action Plan. The Programme offers public liability insurance to persons wishing to work through them of US\$2 million coverage to which the insured persons contribute a small amount.

St. Lucia Tourist Board

The St. Lucia Tourist Board is a statutory body responsible for developing all aspects of the industry. It operates four promotional websites <http://www.stlucianow.com>, <http://www.stluciajazz.org/>, <http://www.inntimatestlucia.org/>, and <http://www.stlucia.org/>. The Tourist Board has offices in the United States (five offices plus a public relations firm), Canada (one office) and one office responsible for the UK and Europe. The Board is established by the Tourist Industry Development Act.

Ministry of Agriculture, Food Production, Fisheries, Cooperatives and Rural Development (MAFPFCRD)

The mission of the Ministry is to sustain a diversified national income database from Agriculture and Fisheries and enhance the integrity of rural livelihood systems: by generating the capacity for efficiency and the competitive production and marketing of respective goods and services¹⁴. The MAFPCRD provides technical and regulatory support services in the management and conservation of land and marine resources to farmers and other stakeholders. The vision of the Ministry is, "A Vibrant, service-oriented, stakeholder focused, environmentally responsible organization facilitating integrated services aligned to a dynamic food and agricultural system." The mission is, "To promote a diversified national income base from agriculture and fisheries and to enhance food security and livelihood systems by generating the capacity for efficiency and competitive production and marketing of respective goods and services¹⁵."

Agricultural Division

¹³ <http://www.govt.lc/ministries/tourism-heritage-and-creative-industries>

¹⁴ <http://www.govt.lc/ministries/agriculture-food-production-fisheries-and-rural-development>

¹⁵ <http://malff.com/>

The mission of the Agricultural Division is to develop the Agricultural sector to ensure increased production of quality food and other commodities through environmentally sustainable management practices for the benefit of the entire population¹⁶.

Fisheries Department

The mission of the Fisheries Department (FD) is to provide effective and efficient services in promoting sustainable development of Saint Lucia's fisheries sector through participatory management and sustainable use of the fishery resources. The FD measures beach slope and width at regular intervals at numerous sites around Saint Lucia¹⁷.

Forestry Department

The Forestry Department "is the principle agency responsible for managing forest and wildlife resources" on Saint Lucia. The mission statement is to "Protect and conserve the natural resources for the protection of the environment and to obtain maximum utilization consistent with sustainable development with regards to the welfare of the rural communities and the country as a whole."¹⁸.

Ministry of Sustainable Development, Energy, Science and Technology (MSDEST)

The mission of the Ministry is to lead the process of achieving sustainable development through the facilitation of an integrated and participatory approach to governance; the promotion of environmental management and innovative technologies; building capacity to adapt and mitigate the impacts of climate change; and demonstrating the value of building a green economy¹⁹.

Biodiversity Unit

The Biodiversity Unit is a small unit comprising four persons: Sustainable Development and Environment Officer/Biodiversity Coordinator, Biosafety Implementation Project Coordinator, Project Coordinator for the revision of the National Biodiversity Strategy and Action Plan (NBSAP) and the preparation of the national report, and a clerk/typist. The responsibilities of the unit include among other things, the coordination of activities for the conservation, restoration and sustainable use of Saint Lucia's biodiversity²⁰.

Coastal Zone Management Unit

The objective of the Coastal Zone Management Unit is to foster the holistic, integrated and optimal use of coastal spaces and resources in order to maintain their sustained enjoyment by present and future generations.

Energy, Science and Technology Unit

¹⁶ <http://agriculture.govt.lc/ministries/agriculture-food-production-fisheries-and-rural-development/agricultural-division>

¹⁷ <http://agriculture.govt.lc/ministries/agriculture-food-production-fisheries-and-rural-development/fisheries-department>

¹⁸ http://malff.com/index.php?option=com_content&view=article&id=49&Itemid=56

¹⁹ <http://www.govt.lc/ministries/sustainable-development-energy-science-and-technology>

²⁰ <http://forestryeeunit.blogspot.com/2014/06/biological-diversity.html>

The objective of the Energy, Science and Technology Unit is to promote the development of Renewable Energy and Energy Efficiency and to create a conducive environment for Science and Technology at the national level.

Forestry Department

The Forestry Department manages forest resources and land in Saint Lucia. The mission is to “Protect and conserve the natural resources for the protection of the environment and to obtain maximum utilization consistent with sustainable development with regards to the welfare of the rural communities and the country as a whole²¹.”

Land Conservation Board

The Land Conservation Board administers the Land Conservation and Improvement Act and is concerned with land use, land conservation and improvement of land. The Board can also issue a Protection Order to restrict cultivation of crops.

National Water and Sewerage Commission (NWSC)

NWSC serves as an independent regulator within the water sector. The Vision of the NWSC is to “be regarded among the best regulatory agencies in the Caribbean region by being successful at fairly, predictably and transparently balancing the interests of all stakeholders.” The mission statement is, “The National Water and Sewerage Commission is committed to acting in a transparent and predictable manner in order to ensure that the highest quality of water and sanitation services are supplied to customers throughout Saint Lucia at fair and reasonable prices, while also acting to maintain the financial viability of the service providers and encourage investment in the sector by ensuring that investors recover their efficiently incurred costs in addition to a reasonable return on their investments²².”

Saint Lucia Solid Waste Management Authority

“The Saint Lucia Solid Waste Management Authority (SLSWMA) was established in 1996 under Act No. 20 of 1996 (repealed and replaced by the Waste Management Act No 8 of 2004). The Authority was established with the goal of improving existing standards of public health and environmental quality through more efficient waste management.” The mission statement is “to enhance Saint Lucia’s environmental integrity and the health of her people through the provision and management of an integrated system of public education and awareness and for the collection, treatment, recycling and disposal of solid and hazardous waste.”²³

Sustainable Development and Environment Division

The objective of Sustainable Development and Environment Division is to foster and promote sustainable development at the national level, through research, networking and reporting, chemicals management while promoting sustainable use of coastal zones, behavioural and

²¹ http://malff.com/index.php?option=com_content&view=article&id=49&Itemid=56

²² http://nwsc.org.lc/?page_id=36

²³ http://www.slswma.org/index.php?option=com_content&view=category&layout=blog&id=15&Itemid=126

attitudinal changes towards environmental management and continuous resilience building in the face of climate change.

The Sustainable Development and Environment Division is one of the agencies responsible for the management of Saint Lucia's ecological resources and for environmental policy development. Some of its key responsibilities are:

- Fulfil reporting requirements under relevant Multilateral Environmental agreements (MEAs)
- Enhance inter-agency collaboration in environmental management
- Develop national/institutional capacity for environmental management
- Promote the sustainable use of our marine and coastal resources
- Strengthen policy and legislative frameworks for environmental management
- Foster improved environment integrity, human health and wellbeing by implementing initiatives that promote the sound use and management of chemicals and the proper disposal of waste substances

Water Resource Management Agency

The mandate of the Water Resource Management Agency (WRMA) is to enable the sustainability of economic growth, human development and the environment, by promoting and facilitating the efficient and effective management of Saint Lucia's water resources²⁴. The WRMA is the agency responsible for the management of water and for monitoring and measuring water resources, developing watershed management plans and water master plans and allocation schemes²⁵.

The WRMA's mission is "the management of Saint Lucia's water resources. Adhering strongly to the principles of integrated water resources management, the Agency, which will comprise a cadre of committed and scientifically competent personnel, will utilise the most appropriate technology and engage in participatory approaches and strategic partnerships to enhance collaboration among public and private sector, and civil society interests in promoting the sustainability of water resources²⁶".

Water and Sewerage Company

The Water and Sewerage Company (WASCO) is a government owned company that is mandated by law to develop and manage water supply and sewerage services in Saint Lucia. WASCO is the primary provider of both residential and commercial water²⁷.

Ministry of Physical Development, Housing and Urban Renewal

The Ministry of Physical Development, Housing and Urban Renewal's mission is to, "foster sustainable improvement in the quality of life of all Saint Lucians, through effective integrated planning, coordination, implementation and monitoring of physical/ spatial, technological, economic, environmental and social development activities." Its vision is, "The achievement of

²⁴ <http://www.govt.lc/www/publications/Annual-Report-2014---2015-Final-Version.docx>

²⁵ http://www.malff.com/index.php?Itemid=57&id=50&option=com_content&view=article

²⁶ <http://www.govt.lc/ministries/sustainable-development-energy-science-and-technology/water-resource-management-agency>

²⁷ <https://www.cdema.org/DroughtPlan.pdf>

overall sustainable development through judicious and appropriate short, medium and long term holistic and integrated physical planning in the public interest²⁸.”

Physical Planning Section

The mission of the Physical Planning Section is to “foster sustainable improvement in the quality of life of all Saint Lucians, through effective integrated planning, coordination, implementation and monitoring of physical/ spatial, technological, economic, environmental and social development activities.” The vision is, “The achievement of overall sustainable development through judicious and appropriate short, medium and long term holistic and integrated physical planning in the public interest²⁹.” The Physical Planning Section is responsible for physical planning and development of Saint Lucia’s terrestrial resources through forward development planning and development control.

Ministry of Finance and Economic Affairs

The mission statement of the Ministry of Finance and Economic Affairs is, “To oversee and coordinate the planning and management of the country’s financial and economic resources, including those from external sources, utilising suitable consultative mechanisms to deliver a high quality of service to the public, and to contribute to the formulation of appropriate policies, in order to accelerate social and economic development³⁰.”

Ministry of Health, Wellness, Human Services and Gender Relations

The mission of the Ministry of Health, Wellness, Human Services and Gender Relations is, “To provide quality care to individual, families and communities regardless of race, religion, socio economic status or political affiliation. To provide leadership and direction in the creation of an environment in which empowered institutions can be created, guided and nurtured for the provision of holistic health and services to the entire population³¹.”

National Emergency Management Organisation (NEMO)

The National Emergency Management Organisation’s (NEMO’s) vision statement is, “A nation highly resilient to hazard impacts and adaptable to hazard risks.” The mission statement is, “The role of the National Emergency Management Organisation [NEMO] is to develop, test and implement adequate measures to protect the population of Saint Lucia from the physical, social, environmental and economic effects of both natural and man- made disasters. Its responsibility is to ensure the efficient functioning of preparedness, prevention, mitigation and response actions³².”

National Environment Commission (NEC)

The main responsibilities of the National Environment Commission are to advise the Minister with responsibility for the Environment on “environmental and relevant sustainable development issues and to promote an integrated and coordinated approach to addressing environmental issues”³³

²⁸ <http://www.govt.lc/ministries/physical-development-housing-and-urban-renewal/physical-planning-section>

²⁹ <http://www.govt.lc/ministries/physical-development-housing-and-urban-renewal/physical-planning-section>

³⁰ <http://www.govt.lc/ministries/finance-and-economic-affairs>

³¹ <http://www.govt.lc/ministries/health-wellness-human-services-and-gender-relations>

³² <http://www.nemo.gov.lc/home/AboutUs/MissionStatement.aspx>

³³ <http://www.govt.lc/www/publications/Annual-Report-2014---2015-Final-Version.docx>

Saint Lucia Meteorology Service

The Saint Lucia Met. Service's mission statement is, "To provide timely and accurate weather information so as to mitigate loss of life and property and to contribute to the socio-economic development of our country and the world at large." The Saint Lucia Met. Service started operations in 1968 and has two stations located at the extreme north and south of the island³⁴.

National Conservation Authority

The National Conservation Authority was established by the National Conservation Authority Act, 1999 to replace the Parks and Beaches Commission. The Authority is responsible for the maintenance of public beaches, parks and recreational areas. The Authority falls under the Ministry of Social Transformation, Local Government and Community Empowerment.

The Authority's mission statement is to "identify, manage, conserve and generally provide stewardship over natural assets including beaches, coastal, protected and other declared or designated areas, in a sustainable manner and to provide ancillary amenities thereby contributing to the social and economic development of Saint Lucia." The vision statement is to "be recognized as the leading local agency chartering the course for sustainable use of our natural assets for recreational, economic and social benefits of users."

Non-Governmental Organization

Caribbean Natural Resources Institute

Caribbean Natural Resources Institute (CANARI) is a regional technical institute for natural resource governance in the Caribbean and its head office is based in Trinidad and Tobago. CANARI's mission statement is "Promoting and facilitating equitable participation and effective collaboration in the management of natural resources critical to development in the Caribbean islands, so that people will have a better quality of life and natural resources will be conserved, through action learning and research, capacity building, communication and fostering partnerships³⁵."

Saint Lucia Hotel and Tourism Association

The vision statement of the Saint Lucia Tourism and Hotel Association (SLHTA) is "To be the leading catalyst for developing Saint Lucia as the best island destination in the world." The mission statement is, "The premier private sector tourism organization in Saint Lucia, providing sound and dynamic leadership for its members; functioning as the principal intermediary for tourism service providers, and, creating an influential lobby on tourism development issues³⁶." The SLHTA's membership includes small properties, large hotels, high-end boutique hotels and luxury villas, independent restaurants and food and beverage distributors, airlines, travel consultants, destination management companies and tour operators, yachting and maritime sub-sectors, ground transportation and cruise sub-sectors, utility companies, statutory corporations and otherwise unrepresented service providers, a representative at large for banks, professionals, educational, training institutions and other allied members and the Director of Tourism³⁷.

³⁴ <http://www.slumet.gov.lc/about.html>

³⁵ <http://www.canari.org/about-us.asp>

³⁶ <http://www.slhta.com/about-us-2/vision-and-mission-statements/>

³⁷ <http://www.slhta.com/about-us-2/slhta-board-of-directors/>

Saint Lucia National Trust

The Saint Lucia National Trust (SLNT) was established by the Saint Lucia National Trust Act, 1975. The objectives of the Trust are:

- a) *The listing of buildings, objects and monuments of prehistoric, historic and architectural interest and places of natural beauty with their animal and plant life;*
- b) *The listing of objects of prehistoric, historic and archeological interests;*
- c) *The compilation of photographic and architectural records of the above;*
- d) *To locate and to promote the preservation of buildings and objects of archeological, architectural, historic, artistic or traditional interest and the establishment of museums;*
- e) *To promote and preserve for the benefit and enjoyment of the State of submarine and subterranean areas of beauty of natural or historic interest and to preserve (as far as possible) their natural aspect, features, animals and plant life;*
- f) *To list flora and fauna in the areas mentioned in paragraph (e) and to promote their conservation;*
- g) *To make the public aware of the value and beauty of the State's heritage as set out above;*
- h) *To pursue a policy of preservation, and to act in an advisory capacity;*
- i) *To acquire property for the benefit of the State;*
- j) *To attract funds by means of subscription, donations, bequests and grants for the execution of the above objects and to administer the Trust property for the furtherance and achievement of the above objects.*

The SLNT manages Morne Island and others.

Policy and Legislative Review

Policies and Plans

Agricultural Policy and Strategy, 2006

The mission statement of the Agricultural Policy is, "To develop the agricultural sector to ensure increased production of quality food and other commodities through environmentally sustainable management practices for the benefit of the entire population"³⁸

Coastal Zone Management Policy, 2004

The vision of the Coastal Zone Management (CZM) Policy includes the following:

- There is a national consensus on the importance of the coast, its place in the social, economic and cultural development of the country, and the need to manage its resources and to use them sustainably.
- There is an overall policy framework for coastal development and management that provides guidance to the public sector, civil society organisations and all citizens, and that contributes directly to the achievement of the objectives of this policy.
- Comprehensive policies in all related sectors, and notably in land use and management, in watershed management, in tourism and heritage tourism development, and in pollution control have been adopted and implemented.
- There are environmental guidelines and standards, particularly for the purpose of monitoring and maintaining water quality, and these are enforced.

³⁸ http://www.mindbank.info/download_file/2164/8ec4c8e56eb26d6b6a79216d5de6a71f7c04b64b

The objectives of the CZM Policy are to:

- Maintain the integrity and productivity of the coastal zone and resources therein.
- Optimise the contribution of the coastal zone to social and economic development through the sustainable use of resources and the equitable sharing of benefits.
- Harmonise uses of the coastal zone and provide a framework for the management and resolution of resource use conflicts.

The CZM Policy suggests the formation of an interagency Coastal Zone Management Advisory Committee (CZMAC) and a Coastal Zone Management Unit (CZMU). The CZMC would be responsible for:

- Identifying coastal zone management and development issues.
- Proposing and formulating policies.
- Facilitating communication and co-ordination among key actors.
- Guiding and supervising the programme components.

Revised Integrated Coastal Zone Management Strategy, 2008

The vision/goal of the revised Integrated Coastal Zone Management Strategy is, “A biologically diverse, healthy and productive coastal and marine environment that benefits all Saint Lucians and which is maintained and enhanced through an integrated, holistic and multisectoral approach to national and regional planning and development.”

The Strategy proposes changes to the management structure outlined in the CZM Policy with the formation of a Coastal Zone Management Function (CZMF) which will be a cross-cutting functional area within the MSDEST “**not** requiring a separate structure, autonomy or legislation for its existence” thus the CZMU will be the CZMF.

Figure 1. Three-Tiered Structure for Management of the Environment

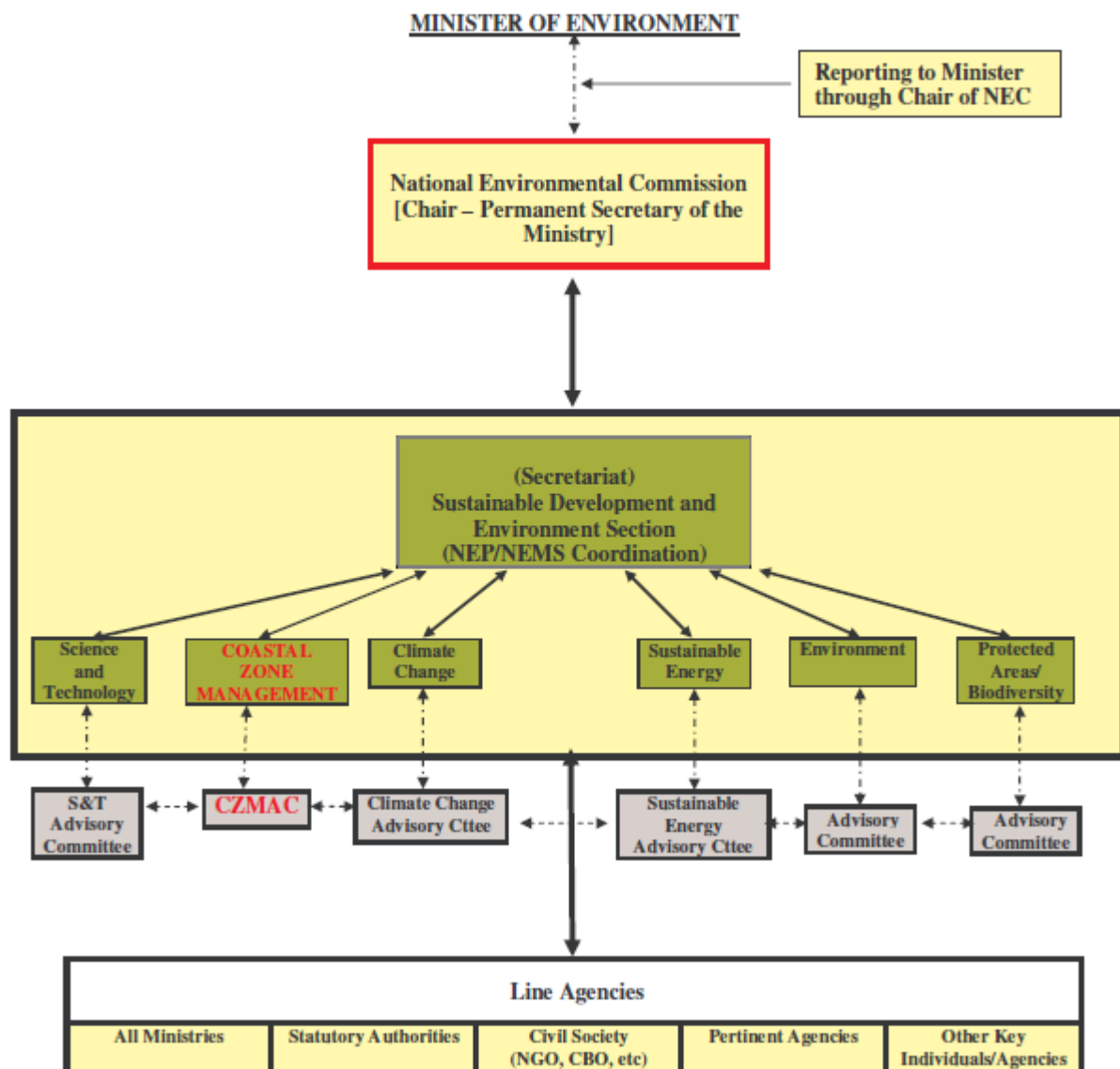


Figure 1: Three-Tiered Structure for Management of the Environment

The revised Strategy makes recommendations for the new functions and composition of the CZMF and the CZMAC.

The objectives of the revised Strategy are:

1. Development and/or Implementation of Appropriate Planning Frameworks to Guide the Management and Development of Saint Lucia's Coastal Zone.
2. Development of Pollution of Control and Waste Management Mechanisms.
3. Managing the use of Coastal and Marine Resources and their Associated Habitats.
4. Establish Appropriate Decision Support Systems for Strategic Interventions in Coastal and Marine Management.
5. Secure Adequate Financial Resources for the Implementation of ICZM in Saint Lucia.

National Agricultural Policy, 2009 - 2015

The vision of the Agricultural Policy is, “A vibrant agri-food chain or system that provides adequate supplies of safe, high quality, nutritious food and non-food products and services, at stable and affordable prices, that assure financial security to producers and is socially and environmentally responsible thereby, promoting development in rural areas and conservation of resources.”

The policy goal is “To promote economic development, generate employment and enhance the viability of rural communities” and it has seven broad objectives:

1. To increase the efficiency and competitiveness of the island’s agriculture.
2. To promote the generation, adaptation and adoption of improved and appropriate technology.
3. To expand the agricultural production and market base.
4. To rationalize the use of land in the country.
5. To enhance national food security.
6. To generate new opportunities for employment and income generation in rural areas.
7. To protect, conserve and ensure sustainable use of natural resource.

National Biodiversity Strategy and Action Plan, 2000

The vision of the National Biodiversity Strategy and Action Plan (NBSAP) includes:

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

The aim of the NBSAP is “to optimize the contribution of biological diversity to the sustainable economic, social and cultural development of Saint Lucia.” The objectives of the NBSAP are to:

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

It is to be noted that there is a revised NBSAP which is awaiting approval by Cabinet. Once approved it will replace the National Biodiversity Strategy and Action Plan.

National Climate Change Policy and Adaptation Plan, 2002

The aim of the National Climate Change Policy and Adaptation Policy (NCCPAP) "is to foster and guide a national process of addressing the short, medium and long term effects of climate change in a co-ordinated and holistic and participatory manner in order to ensure that, to the greatest extent possible, the quality of life of the people of Saint Lucia, and opportunities for sustainable development are not compromised.

The Objectives of this policy are to:

1. Foster the development of processes, plans, strategies and approaches to:
 - Avoid, minimise or adapt to the negative impacts of climate change on Saint Lucia's natural environment including ecosystems, species, genetic resources, ecological processes, lands and water;
 - Avoid, minimise or respond to the negative impacts of Climate Change on economic activities;
 - Reduce or avoid damage to human settlements and infrastructure caused by Climate Change;
 - Avoid or minimise the negative impact of climate change on human health;
 - Improve knowledge and understanding of climate change issues in order to obtain broad-based support for, and participation in climate change activities;
 - Conduct systematic research and observation on Climate Change related factors in order to improve forecasting and to supply the necessary planning and response measures
2. Foster the development and application of appropriate legal and institutional systems and management mechanisms for planning for and responding to climate change;
3. Foster the development of appropriate economic incentives to encourage public and private sector adaptation measures.³⁹

The NCCPAP recognizes that climate change is likely to negatively affect the Tourism sector and identifies the potential impacts as damage to tourism infrastructure in coastal areas; revenue loss due to changes in natural resources and attractions; reduced supplies of water and food; reduced visitor arrivals due to higher frequency of extreme weather events.

The Saint Lucia Climate Change Adaptation Policy, 2015

The Saint Lucia Climate Change Adaptation Policy (CCAP) is intended to replace the NCCPAP, however, it builds on many of its principles and elements. "The CCAP provides a framework for addressing the impacts of climate change, in an integrated manner, across all key sectors."

The aim of the CCAP is "to foster and guide a national process of addressing the short, medium and long term effects of climate change in a co-ordinated, holistic and participatory manner in order to ensure that, to the greatest extent possible, the quality of life of the people of Saint Lucia, and opportunities for sustainable development, are not compromised."

The vision of the CCAP "is that Saint Lucia and her people, their livelihoods, social systems and environment are resilient to the risks and impacts of climate change."

The six objectives are:

1. Creating the strategic direction and process for on-going climate adaptation and resilience-building;

³⁹ http://www.preventionweb.net/files/13471_nccpolicyadaptation27june200302.pdf

2. Creating the appropriate enabling policy, legislative and institutional environment;
3. Mainstreaming climate change and climate variability into development processes, strategies and plans;
4. Engaging in and supporting capacity and awareness building activities that promote climate change adaptation and mitigation responses;
5. Providing the necessary incentives and economic instruments for on-going adaptation and resilience-building; and
6. Identifying/establishing and accessing, mechanisms for on-going adaptation and resilience-building.

National Emergency Management Plan, 2007

Under the National Emergency Management Plan are several sectoral (and other) plans for many hazards. There are intended to be seven documents for the hospitality sector, but only two exist, one of which is – The Saint Lucia Hospitality Industry Crisis Management Plan Hurricane Plan. The Hurricane Plan states the activities to be undertaken before the cyclone, when an Alert is issued and after the crisis. An Appendix to the Hurricane Plan is Engineering Guidelines for Incorporating Climate Change into the Determination of Wind Forces on Buildings and Other Structures⁴⁰. Some other plans related to climate change issues are below:

Hazard Mitigation Plan

The main objective of the Plan is to provide a framework for strategic coordination and prioritization and implementation of hazard mitigation programmes, projects and activities.

2.1.1.1 Hazard Mitigation Policy, 2007

The Hazard Mitigation Policy includes Climate Change as a hazard and states that the Government of Saint Lucia, in collaboration with its social partners will, *inter alia*, encourage non-coastal development; adopt integrated natural resources management; adopt measures to protect coastal areas and increase resilience of coastal ecosystems and resources; develop a comprehensive national land use and management plan which will incorporate natural hazard and climate change concerns and will guide the location of developments in the coastal zone; develop and implement poverty reduction programmes for coastal communities which will be built around sustainable resource use and management. The government will accelerate the implementation of the National Land Policy; seek to develop or strengthen a national adaptation strategy for the forestry sector to address climate-related impacts⁴¹.

Water Management Plan for Drought Conditions, 2009

The Water Management Plan for Drought Conditions was approved by Cabinet in 2009. The plan highlights the inadequacy of the capacity and design of the island's water supply infrastructure to supply the demands of the public. The Plan outlines the way member agencies of NEMO should respond to a drought, starting with the convening of the Drought Task Force whose members include, *inter alia*, tourism related members – the executive director of the SLHTA, a representative

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<http://www.nemo.gov.lc/home/DisasterManagement/NationalEmergencyManagementPlan/SectorPlans.aspx>

⁴¹Government of St. Lucia Hazard Mitigation Policy of the St. Lucia National Emergency Management Plan

from the Ministry of Tourism. There are several supporting documents to the Plan and these include a Hospitality Crisis Management Unit Plan and a National Water Policy⁴².

National Environmental Policy and Management Strategy, 2014 revision

The vision of the revised National Environmental Policy and Management Strategy is, “Saint Lucia is a beautiful, clean, verdant and sustainably developed island state which respects and enhances the natural and built environment and conserves and shares the world’s treasures with genuine appreciation and stewardship by all.”

The mission statement is, “The Government of Saint Lucia will lead the process of achieving sustainable development by:

- Facilitating an integrated and participatory approach to governance
- Promoting environmental management and innovative technologies
- Building human and financial capacity to monitor and manage environmental risk
- Promoting sustainable consumption and production
- Building capacity for climate change adaptation
- Demonstrating the value of building a green economy.

The seven outcomes which will be pursued for the period 2014-2019 are:

1. Improved policy, legal regulatory and institutional framework for sustainable development.
2. Diversity and productivity of ecosystems and ecological processes maintained.
3. Improved management of the natural and built environment, with a focus on adapting to, and mitigating the impacts of, climate change and reducing the risk of disasters.
4. Improved systems for managing waste and controlling pollution so as to enhance environmental health for optimised quality of life for citizens, and protection of terrestrial and marine resources, and of the atmosphere.
5. Improved generation and manage scientific data for establishment of a knowledge platform to underpin environmental management initiatives.
6. Improved knowledge and awareness, attitudes and behaviours among all sectors (private, government and civil society).
7. Integrated management and development of marine and ocean resources.

The seven strategic objectives of the revised Management Strategy (NEMS) are:

- A policy-driven and pro-active approach to environmental management will be employed, within a framework of integrated development planning, and with an improved and more effective policy process;
- Full integration of environment and development objectives, concerns and actions at the macro and micro levels;
- Appropriate institutional arrangements developed, with institutional collaboration, social participation and partnerships, and with the sharing and decentralisation of environmental management responsibilities whenever desirable and feasible;
- Improved capacity to manage the environment and the various processes that impact on it to be built at all levels within government, the private sector and civil society;
- Appropriate, fair, effective and efficient instruments of environmental management to be developed and used, including financing mechanisms and technologies;

⁴² <https://www.cdema.org/DroughtPlan.pdf>

- Cultural and attitudinal change to be promoted, leading to a greater sense of ownership of and responsibility towards the environment, an awareness of issues and an understanding of causes and possible solutions;
- Enhanced knowledge of environmental management to be promoted. Improved access to and use of information, allowing knowledge to serve as the basis for environmental policy making and programming.

Outcomes to be realized for 2014-2019 are:

1. Improved policy, legal regulatory and institutional framework for sustainable development.
2. Diversity and productivity of ecosystems and ecological processes are maintained.
3. Improved management of the natural and built environment, with a focus on adapting to, and mitigating the impacts of, climate change and reducing the risk of disasters.
4. Improved systems for managing waste and controlling pollution so as to enhance environmental health for optimised quality of life for citizens, and for protection of terrestrial and marine resources, and the atmosphere.
5. Improved generation and manage scientific data for establishment of a knowledge platform to underpin environmental management initiatives.
6. Improved knowledge and awareness, attitudes and behaviours among all sectors (private, government and civil society)
7. Integrated management and development of marine and ocean resources.

National Forestry Action Plan, 1993

The National Forestry Action Plan has the overall objective of conserving and managing the natural resources for the protection of the environment and obtaining maximum utilization consistent with sustainable development and with regard to the welfare of rural communities. The priority objectives are⁴³:

- Forestry in Land Use - To allocate appropriate land to secure a resource base for sustainable forestry and allied activities to ensure the protection of the environment, particularly watersheds, and to provide diversity for opportunities to generate income for the rural population.
- Conservation of Forest Ecosystems - To conserve biological diversity and natural forest ecosystems through the establishment of protected areas, and to maximize their contribution to national development.
- Fuelwood and Energy - To sustain fuelwood resources and alternative energy sources within the constraints attendant on the preservation of the environment.
- Forest Based Industrial Development - As far as possible develop the management of the limited forest resources for maximum social and economic benefit.
- Institutions - To bring policies and laws in line with national natural resource policies, develop an institutional framework capable of carrying out development requirements and to ensure maximum participation of the public and nongovernmental organizations (NGOs).

National Land Policy, 2007

The purpose of the land policy is to “provide policy guidelines for land use and management in Saint Lucia, in order to effectively strike a balance between environmental integrity versus successfully meeting the social and economic needs of the increasing population. The guidelines emphasize

⁴³ <http://www.fao.org/docrep/x5652e/x5652e02.htm#3.%20national%20forestry%20action%20plan>

sustainability, while still considering the wide range of demands placed on Saint Lucia's limited resources.

The overall land use and sustainable development goal is to create a system which focuses on conservation and sustainability, while still providing clear accessibility to the people of Saint Lucia⁴⁴

The strategic objectives of the Policy are to: Enhance the contribution of land to economic development, including poverty reduction, food security, and employment and revenue generation opportunities for all citizens; Facilitate the provision of adequate public services to all, notably in health, education, public utilities, recreation and transportation; Provide opportunities for all citizens to have access to adequate shelter; Minimise the risk of loss of life, degradation of land resources and other assets from the impacts of hazards and disasters; Establish and maintain patterns of land use and development that are responsible and sustainable, and that maintain options for future uses; Encourage the development and functioning of efficient land markets; Conserve the country's biological diversity; Support the rehabilitation, restoration and management of degraded lands; Maximize the effectiveness and efficiency of land management institutions, systems and procedures; Provide a framework for the management, resolution or avoidance of conflicts related to land and its uses; Develop and promote a positive cultural relationship between people and the land.

National Tourism Policy, 2003

The vision of the National Tourism Policy is, "that Saint Lucia be recognized internationally as having a unique competitive and high quality products that meet the expectations of visitors who will be sustained by a well-trained and customer-focused workforce and where the benefits generated by tourism are widely shared⁴⁵."

The Policy has eight national goals:

1. To establish tourism as a strategic economic development priority
2. To expand local participation directly or indirectly in the tourism sector;
3. To continuously improve the quality of the tourism experience and product;
4. To stimulate and facilitate additional investment in the upgrading, expansion and diversification of the tourism infrastructure and production base;
5. To strengthen the backward and forward linkages between tourism and agriculture and other sectors of the economy;
6. To project a positive and unique identity of Saint Lucia in tourism generating markets;
7. To improve the public's perception of and attitude towards tourism;
8. To participate actively in and take full advantage of regional and international initiatives.

Climate change is not considered directly in the Policy, but there is a commitment to environmental protection in an effort to improve the quality of the tourism product.

National Water Policy, 2003

The objectives of the National Water Policy are:

- a. To foster the adoption of an integrated approach to the management of water resources.

⁴⁴ http://www.mindbank.info/download_file/2164/8ec4c8e56eb26d6b6a79216d5de6a71f7c04b64b

⁴⁵ http://www.mindbank.info/download_file/2164/8ec4c8e56eb26d6b6a79216d5de6a71f7c04b64b

- b. To enable people to lead healthier and more productive lives through improved management of water resources and increased and sustained access to water supply and sanitation and water-based services.
- c. To increase and sustain the contribution made by water resources to the development of the agriculture and food sector.
- d. To increase and sustain the contribution made by water resources to the development of the industrial sector.
- e. To increase and sustain the contribution made by water resources to environmental sustainability and the conservation of biological diversity.
- f. To ensure efficient and equitable allocation of water among competing uses.

The Water Policy identified four challenges to the sustainability of water resources management as:

- 1. Financial Sustainability
- 2. Institutional Sustainability
- 3. Operational Sustainability
- 4. Technical Sustainability

Saint Lucia National Fisheries Plan, 2013

The vision of the Saint Lucia National Fisheries is, “To support strong partnerships between civil society, private sector and public sector, and advance a sustainably governed fisheries sector that will enhance profitability and contribute to food security.” The long-term strategic goal is, “To foster medium to long term economic prosperity in the fisheries sector through the promotion of sustainable fisheries and effective fishing techniques that will result in fishers and fish farmers meeting and exceeding national wage standards while maximising the potential long term economic value of the available aquatic resources to the people of Saint Lucia.”

The mission statement is, “DOF (Department of Fisheries) will collaborate with all stakeholders including fish marketing entities, fisher and fish farmer organisations, and environmental and other fishery sector related agencies to achieve the long term strategic goal by developing the mechanisms and actions required to define, implement and monitor the policies, strategies, norms, regulations, and other instruments needed to ensure the sustainable use of available water resources.”

There are seven objectives and these are: institutional strengthening; strengthening stakeholder input into the decision making process; improving the average incomes of fish catchers; fisheries management; Aquaculture; on-shore ancillary support; and marketing.

Tourism is mentioned as a cross cutting issue and is seen as both an opportunity and as a cause of potential issues for the fishery sector, namely as a strong market for high value and high quality fisheries and aquaculture production, but at the same time as competition for fishers. Another cross-cutting issue is climate change which can potentially result in changes in the distribution and availability of fish species among other things.

Saint Lucia National Vision Plan, 2008

The Saint Lucia National Vision Plan was created to be the developmental road map for the island. It is a “framework through which the entire island can share in a common vision, positioning Saint Lucia at the economic and social heart of the Windward Islands.

The Vision Plan presents a two pronged, but related, approach to the economic growth of Saint Lucia. The Vision Plan first builds on the government's 'Live local – work local' initiative and ensures that future investment is spread throughout the island – providing benefits to local communities – not only in the creation of local jobs, but also through the circulation of wealth at the local level.

Secondly, by encouraging tourism development at a regional level, the pressures experienced by the existing development of the North-West Quadrant would be relieved, the pattern of workforce migration that has been experienced over the past few years would be reduced, and additional business opportunities within the regions would be created.”⁴⁶

Saint Lucia Tourism Strategy and Action Plan, 2005

Tourism is a primary economic driver for Saint Lucia and Saint Lucia's Tourism Strategy has placed focus on marketing the distinctive qualities of the island⁴⁷. The five objectives of the plan are:

1. Destination marketing
2. Tourism awareness
3. Physical planning
4. Product development
5. Human resource development

Strategy and Action Plan: Draft Report Saint Lucia Tourism Benchmarking and Competitiveness Assessment

The Strategy and Action Plan: Draft Report Saint Lucia Tourism Benchmarking and Competitiveness Assessment was developed with a sustainable tourism development framework. The Report identified Saint Lucia's strengths and the important role tourism plays in the economy. It also identified that Saint Lucia's value for money proposition is limited compared to Mauritius and Barbados – both of whom are “perceived as providing more products and quality experiences”. The Report identified the top five challenges facing tourism development in Saint Lucia as:

1. Infrastructure
2. Product line development and facilities
3. Marketing
4. Human resources capacity
5. Institutional Framework

Strategic objectives to solve the five challenges identified have been outlined.

The vision for Tourism development from the National Vision Plan (2008) is< ““Our vision is that Saint Lucia be recognized internationally as having unique competitive and high value products that meet the expectations of visitors who will be sustained by a well-trained and customer focused workforce and where the benefits generated by tourism are widely shared”.

The Vision Plan defines four quadrants and 11 regions which should be used as the basis in order to identify clusters or hubs with critical mass for tourism development.

⁴⁶ http://www.mindbank.info/download_file/2164/8ec4c8e56eb26d6b6a79216d5de6a71f7c04b64b

⁴⁷ http://www.mindbank.info/download_file/2164/8ec4c8e56eb26d6b6a79216d5de6a71f7c04b64b

Water Resources Management Agency Strategic Plan 2012 to 2017

The vision of the Water Resources Management Agency Strategic Plan is, “To manage the water resources of Saint Lucia in an efficient, sustainable and equitable manner that is consistent with the social, economic and environmental needs of current and future generations as well as with the country’s regional and international obligations.” The mission statement, “The Water Resource Management Agency is committed to the management of Saint Lucia’s water resources. Adhering strongly to the principles of integrated water resources management, the Agency, which will comprise a cadre of committed and scientifically competent personnel, will utilise the most appropriate technology and engage in participatory approaches and strategic partnerships to enhance collaboration among public and private sector, and civil society interests in promoting the sustainability of water resources.”

The overall goal of the strategic plan is to “strengthen the capacity of the WRMA to fulfil its mandate.” The four strategic objectives are:

1. Strengthening the WRMA Institutional Framework for increased coordination and implementation of its mandate;
2. Water Resources Planning and Management;
3. Communication, Outreach and Advocacy; and
4. Monitoring and Evaluation.

Draft National Forest Policy, 2008

The vision of the National Forest Policy is, “for the effective protection and management of Saint Lucia’s forests, soils, water supplies and biodiversity resources to ensure their sustainable contribution to the social and economic development of present and future generations.” The goal of the National Forest Policy is to conserve and manage the forest resources of Saint Lucia for protection of water, wildlife and soil resources and to sustain the forests’ contribution to the country’s socio-economic development and the livelihood of rural stakeholders. A National Forest Management and Conservation Plan and local forest management plans will be developed.

The objectives of the National Forest Policy are to:

- Conserve and enhance the quality and productivity of the country’s forest resources (natural and man-made) for ensuring a sustained flow of goods and services;
- Encourage and foster the participation of stakeholders in planning and decision-making for effective protection, management and development of the forests and wildlife;
- Educate and maintain a high level of public consciousness regarding the functions of and benefits to be derived from appropriate forest and wildlife conservation (wise use and protection);
- Conduct research and investigation into all aspects of the flora and fauna of the forests and the influence of forest cover on maintenance of water and soil resources, so as to provide the basis for informed management and development action.
- Establish and maintain effective institutional arrangements and innovative financial structures to ensure the efficient implementation of this policy and relevant legislation, plans and programmes that emanate from it.

The strategic directions of the Policy include development planning in collaboration with stakeholders and partners to prepare a National Forest Conservation and Management Plan and

local forest management plans and in accordance with the provisions of the Physical Planning and Development Act; forest land use for economic development (includes incentives for nature tours); and environment and natural resource management, hazard mitigation and disaster management to conserve biodiversity “while minimizing and mitigating the impacts of invasive alien species and climate change on the country’s natural resources.”

Draft Forest Management Strategic Plan

The Draft Forest Management Strategic Plan is being used in the absence of a Management Plan.

Existing Legislation

St Lucia has many laws which affect protected areas development and management. Protected areas are key for helping to conserve biodiversity; for watershed preservation and also for climate change mitigation and adaptation⁴⁸. Saint Lucia’s natural beauty is also a part of its tourism product so legislation for protection of land and sea areas is important. Legislation that allows for the declaration of protected areas are marked with an asterisk.

Agricultural Small Tenancy Act, 1983

The Agricultural Small Tenancy Act provides for the effective management of small farm holdings and for enforcement of the following: Sound soil and water conservation; Good agricultural and land management practices on land leased for agricultural purposes.

Beach Protection Act, 2002

The Beach Protection Act provides for the protection and control of beaches and the seashore and for purposes connected therewith. The Act specifically makes it unlawful for any person to dig, take or carry away for building or construction purposes or for providing ballast for a vessel, any sand, stone, gravel, etc. from any beach, seashore or floor, or to move such materials along a public road., except under and in accordance with a license from the Director of Public Works. The Act is administered by the Department of Public Works, Ministry of Infrastructure, Port Services and Transport.

Disaster Management Act, 2006

The Disaster Management Act provides for disaster management and related matters in Saint Lucia. The Act establishes the National Emergency Management Organisation (NEMO) and appoints a Director.

Disaster Preparedness and Response Act, 2000

The Disaster Preparedness and Response Act provides for a more effective organisation of the mitigation of, preparedness for, response to and recovery from emergencies and disasters. Part VI of the Act allows for the designation of specially vulnerable areas for the purposes of mitigation of, preparedness for, response to and recovery from emergencies and disasters by delimiting such areas under this section. The Act states that a special area precautionary plan may be drafted for a specially vulnerable area and the plan may include:

- strategies, policies and standards for development and for maintenance of structures in the specially vulnerable area or any proposed specially vulnerable area;

⁴⁸ http://www.iucn.org/news_homepage/events/unfccc2/?11506/Protected-Areas-as-natural-solutions-to-climate-change

- standards for environmental impact assessment for contemplated development in the specially vulnerable area;
- provisions designating any part of the specially vulnerable area as a prohibited area for navigation or for the purpose of removing vegetation, sand, stones, shingle or gravel.

Electricity Supply Act, 1994

The Electricity Supply Act is an Act, “to retain the grant of an exclusive licence to the Saint Lucia Electricity Services Limited, for the exercise and performance of functions relating to the supply of electricity including the calculation of charges for the supply of electricity, the independent review of such charges and connected matters and for imposition of a fee on fuel purchased for the generation of electricity⁴⁹.”

A new Electricity Supply Services Bill has been developed and is intended to replace the Electricity Supply Act.

Fisheries Act, 1984*

The Fisheries Act is intended to promote and regulation fishing and fisheries in the fishery waters of Saint Lucia. The Act provides for the declaration of marine reserves for various purposes, including special protection for flora and fauna in danger of extinction; and preservation of areas of natural beauty. Regulations under the Act prohibit the discharge of any poison, noxious substance or pollutant into fresh, estuarine or marine waters of Saint Lucia.

Fisheries Regulations, 1994

The Fisheries Regulations *inter alia*, establishes a Fisheries Advisory Committee and states its composition and functions. The Regulations state the application of the Regulations and deals with other issues such as safety, foreign fishing licences, fish processing establishment licences, fishery conservation measures among other things.

International Trade in Wild Fauna and Flora (CITES) Act. 2007

This Act implements the provisions of the CITES Convention and makes the Convention part of the laws of Saint Lucia.

Forest, Soil and Water Conservation Ordinance, 1946*

The Forest, Soil and Water Conservation Act provides for conservation of the forest, soil and water resources of Saint Lucia. The Act is administered by the Department of Forestry of the Ministry of Agriculture, Food Production, Fisheries, Co-operatives and Rural Development, and makes provision for the following: Management of forest resources; Establishment of the Forest Reserve and Protected Forests; Protection of forest, soil and water; Management of wildlife resources; and Management of water catchments. The Act allows private landowners to enter into agreements with the Government for the management of private lands as forests for conservation purposes, and for that private landowner to be compensated.

Land Conservation and Improvement Act, 1992*

The Land Conservation and Improvement Act provides for the conservation of land in Saint Lucia and the establishment of a Board to be known as the Land Conservation Board to administer the Act. It confers on the Board, extensive powers in matters of land development, conservation and

⁴⁹ <http://www.govt.lc/legislation/electricity-supply-act-cap-9-02->

management, and provides the Board with the power to make regulations for the following purposes:

- i. protection against storms, storm waters, winds, rain, stones, floods, landslides, drought and airborne emissions;
- ii. the preservation of soil and vegetation, ridges, valleys and hilly tracks;
- iii. the prevention of landslides and the formation of ravines and torrents, and the protection of land against erosion or the deposition thereof of soil, sand, stones, gravel and noxious material;
- iv. the maintenance of the water supply in springs, rivers, canals and any other source;
- v. the maintenance and carrying out of drainage works;
- vi. the protection of transmission lines, pipelines, bridges, roads, culverts, hydraulic structures and the protection of any other property or lines of communication;
- vii. the preservation of soil fertility, scenic beauty, cultural and other unique characteristics;
- viii. the promotion of the most efficient and economic utilisation of land; and
- ix. The preservation of public and environmental health.

The Act gives the Board the power to declare Crown lands and private lands as conservation areas. In the latter case, the land owner has to be compensated for loss of use.

National Development Corporation Act

The National Development Corporation Act establishes the National Development Corporation. The function of the Corporation is to stimulate, facilitate and promote investments opportunities for foreign or local investors in the following economic activities: tourism, hotel development, agriculture business, entertainment or any other activity which, in the opinion of the Minister will be conducive to the economic development of Saint Lucia. Under the Act, the corporation may request the Minister of Finance to declare an area as a special development area under the Special Development Areas Act. The Corporation is empowered to carry out site and other development works and buildings and other activities in any special development area.

Montreal Protocol (Substances the Deplete the Ozone Layer) Act, 2001

The Montreal Protocol (Substances the Deplete the Ozone Layer) Act is an Act, “to bring into force in Saint Lucia the provisions of the Montreal protocol (Substances that Deplete the Ozone Layer) signed in Montreal on the 16th day of September, 1987.” Subsidiary legislation is the Substances the Deplete the Ozone Layer (Control) Regulations, 2001.

National Conservation Authority Act, 1999*

The National Conservation Authority Act establishes the National Conservation Authority. The Act focuses on providing, managing and developing recreational facilities and the functions of the Authority include:

- (a) to conserve the natural beauty and topographic features of Saint Lucia;
- (b) to remove derelict objects from a beach or a protected area;
- (c) to control, maintain or develop a beach or protected area or a public access to a beach or protected area;
- (d) to provide, as it think fit, a lifeguard service on a beach in Saint Lucia;

- (e) to secure sanitary conditions on a beach or protected area;
- (f) to maintain or assist in maintaining beach facilities;
- (g) to advise the Minister on-
 - (i) the construction of beach and ancillary recreational facilities;
 - (ii) the control of the construction in any protected area on any beach, of huts, booth, tents, sheds, stands, stalls, bath houses, shops or other structures (whether movable or immovable);
 - (iii) the removal of anything from the ocean bed which is likely to cause encroachment by the sea; and
 - (iv) the protection of the coastline of Saint Lucia from erosion or encroachment by the sea;
- (h) to beautify a public place and a protected area with fauna and flora;
- (i) to advise the Minister on an area to be declared as a protected area;
- (j) to enter into written agreement with the owners or occupiers of land for the right of access to a protected area..

Excluded from the power of the Authority are any building or land under the management or control of the Saint Lucia National Trust or any other environmental management organization as recognized by the Minister with responsibility for the environment.

Physical Planning and Development Control Act, 2001*

The Physical Planning and Development Act makes provisions for the development of land, the assessment of the environmental impacts of land and for other powers to regulate the use of land and for related matters. The agency charged with the administration of the Act is the Ministry of Physical Development, Housing and Urban Renewal (MPDHUR). The Physical Planning Section of the MPDHUR is mandated to undertake the following: carry out surveys and research required for land planning and building purposes; Prepare development plans to guide development activity; Receive and consider applications for the granting of planning permission; To undertake forward planning as it relates to physical development; Development control; Consideration of planning applications for processing and the granting of planning permission; Executing data surveys and research required for land planning and building purposes. Under the Act, protected areas may be allocated or be declared an Environmental Protection Area.

The Act is being revised and the Building Code is under review. The Building Code will be expanded to include climate change aspects such as sea level rise, temperature variance, water issues, green initiatives, and severe weather events. Environmental Impact Assessment Regulations are being developed and would impose a greater level of coordination between all of the partner agencies.

Public Health Act, 1975

The Public Health Act is an Act to consolidate and amend the law relating to public health in Saint Lucia and for connected matters.” The Act empowers the Minister to establish a Public Health Board and the Act defines its functions.

Subsidiary legislation is the Public Health Regulations which include, *inter alia*, Communicable and Notifiable Diseases; Water Quality Control, Apartments, Guest Houses and Hotels; Swimming Pools; Disposal of Offensive Matter; Mosquito Control Statutory Instrument; and Sewage and Disposal of Sewage and Liquid Industrial Waste Works.

Saint Lucia National Trust Act, 1975

The Saint Lucia National Trust Act provides for the establishment of a body corporate to be known as the National Trust, with responsibility for the promotion and conservation of areas of natural, historical and cultural interest⁵⁰.

Tourism Incentives Act, 1996

The Tourism Incentives Act is an Act, “to encourage the development of the Tourism Industry by providing relief from income tax and to provide for related matters.” The Act is being revised.

Tourism Stimulus and Investment Act, 2014

The Tourism Stimulus and Investment Act is an Act, “to facilitate the further development of the tourism sector and to provide for special incentives, tax relief and exemptions for proposed, new and existing tourism projects and for related matters.” Exemptions listed under the Act include income tax, value added tax, other taxes, and corporate tax.

Waste Management Act, 2004

The Waste Management Act (WMA) establishes the Solid Waste Authority and vests solid waste management facilities in the Authority. The WMA is an Act to provide for the management of waste in conformity with best environmental practices and to provide for matters incidental thereto.

Water and Sewerage Act, 2005

The Water and Sewerage Act is an Act “to provide for the management of water resources and to regulate the delivery of water supply services and sewerage services throughout Saint Lucia and for related matters⁵¹.” The Act establishes the Water Resources Management Agency for the purpose of managing water resources and. The right to water is vested in the Crown and the Act, *inter alia*, provides for protection of water quantity or quality; designation of gathering grounds; and protection of defined area around gathering grounds. Currently, the Act is being reviewed and amended.

Subsidiary legislation includes the Water Resource Management Regulations, 2006, and the Water and Sewerage Water Resource Management (Fees) Regulations, 2009, the Water and Sewerage (Service Levy) Order, 2008, the Water and Sewerage (General Provisions) Regulations, 2008, Water and Sewerage (Appeals Tribunal) Regulations, 2008, Water and Sewerage (Tariff) Regulations, 2008.

Wildlife Protection Act, 1980*

The Wildlife Protection Act provides for the protection, conservation and management of wildlife in Saint Lucia and makes it illegal to hunt, capture, buy, sell, import/export, or keep captive any wildlife unless authorized by the Forestry and Land Department; attempt to trade in anyway whatsoever eggs, young or any part belonging to wildlife and protected wildlife; destroy or damage a nest of protected wildlife. The Minister may declare any area of land or water to be a wildlife reserve.

⁵⁰ http://www.slunatrust.org/assets/content/documents/SLNT_Act.pdf

⁵¹ nwsa.org.lc/wp-content/uploads/2014/03/Water-and-Sewerage-Act-Cap-9-03-2008.pdf

Pending Legislation

Draft Biodiversity Conservation and Sustainable Use Bill, 2008

The draft Biodiversity Conservation and Sustainable Use Act is an Act “to provide for the conservation and sustainable use of biological resources and for related matters.” The Act establishes a Biodiversity Scientific Authority and states its functions and its membership.

Draft Biosafety Act, 2014

The draft Biosafety Act is an Act, “to regulate genetically modified organisms, to implement the Cartagena Protocol on Biosafety and for related matters.” The Act establishes the Biosafety Committee and lists its composition and functions, and states the Competent National Authorities. The Act makes the Biodiversity Unit the national focal point for biosafety for Saint Lucia and specifies its functions as well as the functions of the Chief Sustainable Development and Environment Officer and other officers.

Draft Electricity Supply Services Bill

The Electricity Supply Services Bill and accompanying Regulations is almost complete and will allow for electricity generation from renewable sources such as solar, wind, geothermal, and waste to energy alternatives⁵².

Draft Environment Impact Assessment Regulations,

Draft Environmental Impact Assessment Regulations have been prepared to specify the criteria for undertaking Environmental Impact Assessment.

Draft Environment Management Act, 2014

The draft Environmental Act is an Act, “to provide for the allocation of administrative responsibilities for environment management, the undertaking and coordination of environmental management and related activities.” The Act has sections dealing with *inter alia*, Administration, Coastal Zone Management Plan, Pollution Control, Environmental Management and Monitoring, Environmental Information, Investigation, Procedures and General Penalties, and Environmental Trust Fund.

The Act establishes the Department of the Environment, and the constitution and functions of the National Environmental Commission.

The purposes of the Act are to provide for:

- (a) the allocation and coordination of administrative responsibilities for environmental management within the State;
- (b) the prevention and mitigation of pollution of the environment, including the control of hazardous substances, the management of wastes and response to environmental accidents, for the purposes of protecting human health and maintaining the quality of the environment;
- (c) the conservation of energy and the development of renewable energy resources;
- (d) the integration of environmental management and monitoring.
- (e) Subsidiary legislation under this Act is the draft Pollution Regulations, 2014.

⁵² <http://sustainabledevelopment.govt.lc/news/new-legislation-to-liberalize-energy-market>

Draft Forest Act, 2008

The draft Forest Act is an Act “to repeal and replace the Forest Water and Soil Conservation Act Cap.7.09 and for related matters.” The Act establishes the Forestry Department and states its functions which include, *inter alia*:

- a) sustainable management of forests in Crown lands or in forest reserves and the effective conservation of those forests;
- b) directing and controlling the exploitation, in a rational manner, of forest resources by the introduction of adequate systems for renewal of those resources;
- c) preparing and implementing a national forest management and conservation plan;
- d) promoting the conservation and development of forests on private lands;
- e) promoting, establishing and maintaining a forest research programme with a view to -
 - i. enhancing forest management and development;
 - ii. identifying and obtaining silvicultural data to be used in ensuring the preservation or improvement of financial yields of species important to the national economy;
 - iii. encouraging re-afforestation of suitable lands;

Draft National Utilities Regulatory Commission Bill

The National Utilities Regulatory Commission Bill is being drafted.

Draft Wildlife Protection Act, 2008

The draft Wildlife Protections Act is an Act, “to amend the Wildlife Protection Act, Cap. 6.03.”

Relevant Regional and International Conventions

Saint Lucia has ratified the following International Conventions:

Convention	Signature/Ratification/ Accession Date
Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena Convention)	November 30, 1984
Cartagena Convention & Oil Spills Protocol	November 30, 1984
Cartagena Convention – Specially Protected Areas and Wildlife Protocol	April 25, 2000
Cartagena Convention – Land Based Sources of Marine Pollution	Not signed or ratified/ acceded
United Nations Convention on Biological Diversity (CBD)	July 28, 1993
Cartagena Protocol	June 16, 2005
Nagoya Protocol	
United Nations Convention to Combat Desertification (UNCCD)	July 2, 1997
United Nations Framework Convention on Climate Change (UNFCCC)	June 4, 1993
Kyoto Protocol to UNFCCC	August 20, 2003
Ramsar Convention	June 19, 2002
George’s Declaration of Principles for Environmental Sustainability	November 2000
Montreal Protocol on Substances that Deplete the Ozone Layer	July 28, 1993
International Convention for the Prevention of Pollution from Ships (MARPOL)	July 12, 2000
Basel Convention	December 9, 1993
Rotterdam Convention	January 25, 1999
Stockholm Convention	October 4, 2002

United Nations Framework Convention on Climate Change (UNFCCC)

The UNFCCC is one of the “Rio Conventions” adopted at the “Rio Earth Summit”. The other two Rio Conventions are the CBD, and the UNFCCC. The single protocol to the UNFCCC is the Kyoto Protocol.

“The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.

Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner”⁵³.

Kyoto Protocol

The Kyoto Protocol (KP) was adopted on Dec 11, 1997 but entered into force on Feb 16, 2005. The Kyoto Protocol commits industrialized countries to stabilize greenhouse gas (GHG) emissions on the principles of the UNFCCC. The KP sets binding emission reduction targets for 37 industrialised countries and the European community in its first commitment period, the Doha Amendment established the second commitment period (Jan 1, 2013 – 2020) but has only been ratified by 19 countries as of Nov 14, 2014, Saint Lucia has commenced the process of ratification. Under the KP is the Clean Development Mechanism (CDM) which allows emission-reduction projects in developing countries to earn certified emission reduction (CER) credits which can be traded, sold, and used by industrialized countries to meet a part of their emission reduction targets under the KP⁵⁴.

Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region

The Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena Convention) has three protocols – the Protocol to the Convention for the Protection and Development of the Marine Environment Co-operation in Combating Oil Spills in the Wider Caribbean Region; Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region Concerning Specially Protected Areas and Wildlife (SPAW Protocol); and Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region Concerning Land-Based Sources of Marine Pollution (LBS Protocol). “The Cartagena Convention is a comprehensive, umbrella agreement for the protection and development of the marine environment. In addition to general obligations and institutional arrangements, the Convention lists the sources of pollution which have been determined by the Contracting Parties to require regional and national actions for their control: pollution from ships, dumping, land-based sources and sea-bed activities together with airborne pollution. The Convention also identifies environmental management issues for which cooperative efforts are

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http://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf

⁵⁴ http://unfccc.int/essential_background/kyoto_protocol/items/6034.php

necessary: specially protected areas and wildlife, cooperation in cases of emergency, environmental impact assessment, and scientific and technical cooperation”⁵⁵.

Article 12 of the Convention speaks to Environmental Impact Assessment and for the Contracting Parties to “undertake to develop technical and other guidelines to assist the planning of their major development projects in such a way as to prevent or minimize harmful impacts on the Convention area” as part of their environmental management policies; for “each Contracting Party to assess within its capabilities, or ensure the assessment of, the potential effects of such projects on the marine environment, particularly in coastal areas, so that appropriate measures may be taken to prevent any substantial pollution of, or significant and harmful changes to, the Convention area”; “each Contracting Party shall, with the assistance of the Organisation when requested, develop procedures for the dissemination of information and may, where appropriate, invite other Contracting Parties which may be affected to consult with it and to submit comments.”

United Nations Convention on Biological Diversity (CBD)

The CBD is one of the “Rio Conventions” adopted at the “Rio Earth Summit”. The other two Rio Conventions are the United Nations Framework Convention on Climate Change (UNFCCC), and the United Nations Convention to Combat Desertification (UNFCCD). The protocols under the CBD are the Cartagena Protocol (Biosafety) and the Nagoya Protocol (Access to Genetic Resources and Benefit Sharing).

The objectives of the CBD are, “the conservation of biological diversity, the sustainable use of its components and 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.”⁵⁶

Cartagena Protocol

The *Cartagena Protocol on Biosafety to the Convention on Biological Diversity* is an international treaty governing the movements of living modified organisms (LMOs) resulting from modern biotechnology from one country to another. It was adopted on 29 January 2000 as a supplementary agreement to the Convention on Biological Diversity and entered into force on 11 September 2003. The Cartagena Protocol establishes an Advance Informed Agreement (AIA) procedure to ensure that countries are provided with the information necessary for them to make informed decisions before agreeing to the importation of LMOs into their countries⁵⁷.

The Nagoya – Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety

The Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety is a protocol whose objective “is to contribute to the conservation and sustainable use of biological diversity, taking also into account risks to human health, by providing

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http://www.cep.unep.org/cartagena-convention/Cartagena%20Convention%20English%20Booklet.pdf/at_download/file

⁵⁶ <http://www.cbd.int/convention/articles/default.shtml?a=cbd-01>

⁵⁷ <http://bch.cbd.int/protocol/background/>

international rules and procedures in the field of liability and redress relating to living modified organisms”⁵⁸.

Nagoya Protocol

The *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity* is an international agreement which aims at sharing the benefits arising from the utilization of genetic resources in a fair and equitable way, 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, thereby contributing to the conservation of biological diversity and the sustainable use of its components. It was adopted by the Conference of the Parties to the Convention on Biological Diversity at its tenth meeting on 29 October 2010 in Nagoya, Japan. The Nagoya Protocol will enter into force 90 days after the date of deposit of the fiftieth instrument of ratification⁵⁹.

United Nations Convention to Combat Desertification (UNCCD)

The Objective of the UNCCD is to⁶⁰: “combat desertification and mitigate the effects of drought in countries experiencing serious drought and/or desertification, particularly in Africa, through effective action at all levels, supported by international cooperation and partnership arrangements, in the framework of an integrated approach which is consistent with Agenda 21, with a view to contributing to the achievement of sustainable development in affected areas.

Achieving this objective will involve long-term integrated strategies that focus simultaneously, in affected areas, on improved productivity of land, and the rehabilitation, conservation and sustainable management of land and water resources, leading to improved living conditions, in particular at the community level.”

Article 7 of the UNCCD addresses the Institutional framework for Latin America and the Caribbean States and requires country Parties to establish and/or strengthen national focal points and set up a mechanism to coordinate the national focal points.

Ramsar Convention

The Ramsar Convention is a convention on wetlands of international importance especially as waterfowl habitat⁶¹. Ramsar sites are wetlands of international importance under the Convention on

⁵⁸ <http://bch.cbd.int/protocol/nkl/article1/>

⁵⁹ *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity* is an international agreement which aims at sharing the benefits arising from the utilization of genetic resources in a fair and equitable way, 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, thereby contributing to the conservation of biological diversity and the sustainable use of its components. It was adopted by the Conference of the Parties to the Convention on Biological Diversity at its tenth meeting on 29 October 2010 in Nagoya, Japan. The Nagoya Protocol will enter into force 90 days after the date of deposit of the fiftieth instrument of ratification.

⁶⁰ <http://www.unccd.int/en/about-the-convention/Pages/Text-Part-I.aspx#art2>

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<https://www.google.com.jm/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0CB4QFjAA&url=https%3A%2F%2Ftreaties.un.org%2Fdoc%2Fpublication%2FUNTS%2FVolume%2520996%2Fvolume->

Wetlands signed at the city of Ramsar, Iran in 1971. Under the Convention, wetlands have a broad definition and include areas of “marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres.”

The mission of the Ramsar Convention is “the conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world”⁶².

St. George's Declaration of Principles for Environmental Sustainability

The St. George's Declaration on Principles for Environmental Sustainability in the OECS is an important agreement for the conservation of natural resources in the sub-region. In this agreement, the Member States of the OECS persuaded that the effective management of environmental resources at local, national, regional and international levels is an essential component of sustainable social and economic development, including the creation of jobs, a stable society, a buoyant economy and the sustaining of viable natural systems on which all life depends.

Principle 11 addressed the sustainable use of natural resources and outlines among other things that Member States should manage terrestrial, marine and atmospheric resources, organisms and ecosystems in an appropriate manner to obtain the optimum sustainable productivity, while maintaining the integrity of natural and ecological processes and inter-relationships between such systems and processes. Further, States should develop a schedule of development activities for which environmental impact assessment will be required as part of project definition and design and the results of which will be considered in determining whether and how a project will proceed.

Montreal Protocol on Substances that Deplete the Ozone Layer

The Montreal Protocol on Substances that Deplete the Ozone Layer “was designed to reduce the production and consumption of ozone depleting substances in order to reduce their abundance in the atmosphere, and thereby protect the earth's fragile ozone Layer.”⁶³

International Convention for the Prevention of Pollution from Ships (MARPOL)

“The International Convention for the Prevention of Pollution from Ships (MARPOL) is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes. The Convention includes regulations aimed at preventing and minimizing pollution from ships - both accidental pollution and that from routine operations - and currently includes six technical Annexes. Special Areas with strict controls on operational discharges are included in most Annexes.”⁶⁴.

The Annexes include: Regulations for the Prevention of Pollution by Oil; Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk; Prevention of Pollution by Harmful Substances

996-I-14583-English.pdf&ei=Xad7VPnxO6WR7AbKnoDQAQ&usg=AFQjCNGol-m1jMixN7RjIE-1qgcFuJaurQ&bvm=bv.80642063,d.ZGU

⁶² <http://www.ramsar.org/about/the-ramsar-convention-and-its-mission>

⁶³ http://ozone.unep.org/new_site/en/montreal_protocol.php

⁶⁴ <http://www.imo.org/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-%28MARPOL%29.aspx>

Carried by Sea in Packaged Form; Prevention of Pollution by Sewage from Ships; Prevention of Pollution by Garbage from Ships; and Prevention of Air Pollution from Ships.

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal

The overarching objective of the Basel Convention is, “to protect human health and the environment against the adverse effects of hazardous wastes. Its scope of application covers a wide range of wastes defined as “hazardous wastes” based on their origin and/or composition and their characteristics, as well as two types of wastes defined as “other wastes” - household waste and incinerator ash.”

The provisions of the Convention center around the following principal aims:

- the reduction of hazardous waste generation and the promotion of environmentally sound management of hazardous wastes, wherever the place of disposal;
- the restriction of transboundary movements of hazardous wastes except where it is perceived to be in accordance with the principles of environmentally sound management; and
- a regulatory system applying to cases where transboundary movements are permissible.

The first aim is addressed through a number of general provisions requiring States to observe the fundamental principles of environmentally sound waste management (article 4). A number of prohibitions are designed to attain the second aim: hazardous wastes may not be exported to Antarctica, to a State not party to the Basel Convention, or to a party having banned the import of hazardous wastes (article 4). Parties may, however, enter into bilateral or multilateral agreements on hazardous waste management with other parties or with non-parties, provided that such agreements are “no less environmentally sound” than the Basel Convention (article 11). In all cases where transboundary movement is not, in principle, prohibited, it may take place only if it represents an environmentally sound solution, if the principles of environmentally sound management and non-discrimination are observed and if it is carried out in accordance with the Convention’s regulatory system.⁶⁵”

Rotterdam Convention

The objectives of the Rotterdam Convention are ⁶⁶:

- “to promote shared responsibility and cooperative efforts among Parties in the international trade of certain hazardous chemicals in order to protect human health and the environment from potential harm;
- to contribute to the environmentally sound use of those hazardous chemicals, by facilitating information exchange about their characteristics, by providing for a national decision-making process on their import and export and by disseminating these decisions to Parties.

The Convention creates legally binding obligations for the implementation of the Prior Informed Consent (PIC) procedure.

⁶⁵ <http://www.basel.int/TheConvention/Overview/tabid/1271/Default.aspx>

⁶⁶ <http://www.pic.int/TheConvention/Overview/tabid/1044/language/en-US/Default.aspx>

The Convention covers pesticides and industrial chemicals that have been banned or severely restricted for health or environmental reasons by Parties and which have been notified by Parties for inclusion in the PIC procedure.”

Stockholm Convention on Persistent Organic Pollutants

The Stockholm Convention on Persistent Organic Pollutants is, “a global treaty to protect human health and the environment from chemicals that remain intact in the environment for long periods, become widely distributed geographically, accumulate in the fatty tissue of humans and wildlife, and have harmful impacts on human health or on the environment ⁶⁷”.

The objective of the Convention is to protect human health and the environment from persistent organic pollutants.

⁶⁷ <http://chm.pops.int/TheConvention/Overview/tabid/3351/Default.aspx>

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