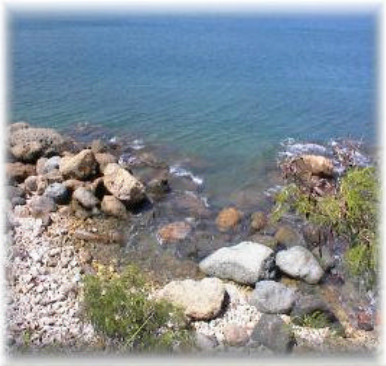


SAINT LUCIA

COMPENDIUM OF ENVIRONMENTAL STATISTICS

2001

A Collaborative Effort of The Government Statistics Department
and The Sustainable Development & Environment Department
of the Ministry of Physical Development, Environment and Housing

SAINT LUCIA'S COMPENDIUM OFENVIRONMENTAL STATISTICS 2001

Environmental Statistics

PREFACE

This is the first compendium of Environmental Statistics for St. Lucia This is a collaborative effort between the Government Statistics Department and the Sustainable Development and Environment Department of the Ministry of Physical Development, Environment and Housing. The report was compiled from data existing within Government Ministries and Agencies, Non Governmental Organizations and data produced by the Statistics Department. The data covers areas such as Human Settlements, Land Use, Agriculture, Forestry, Coastal Zone and Marine Resources, Water Resources, Energy, Air, Climate and Tourism.

The Government of St. Lucia would like to express its gratitude to the United Nations Statistics Division/Caribbean Project on "Strengthening Capacity in the compilation of Statistics and Indicators for Conference Follow-up in the CARICOM Region". Special thanks to Professor Thomas Polfeldt of Statistics Sweden for his useful advice.

The Government Statistics Department intends to continue to publish this report in collaboration with the Sustainable Development and Environment Department of the Ministry of Physical Development, Environment and Housing and therefore looks forward to the continued support of all the Agencies who have contributed to this effort.

Notification of any errors or omissions as well as suggestions for improvement of this publication should be directed to the Government Statistics Department, Chreiki Bldg, Micoud Street, Castries, St. Lucia at Telephone (758) 4523716, Fax (758) 4518254, email statsdept@candw.lc or Ministry of Physical Development, Environment and Housing (Sustainable Development and Environment Department), Greaham Louisy Bldg, Castries Waterfront St. Lucia at Telephone (758) 4684458, Fax (758) 4588506 or email sdestaff@planning.gov.lc.

Acknowledgements

We would like to recognize the efforts of those persons who participated in the preparation of this report.

Collection of data was managed by Ms. Jeanne Louis and Ms. Donnalyn Charles with the assistance of Mrs. Sherma Joseph.

Preparation of Maps by Sherma Lawrence.

The Report was compiled by Ms. Jeanne Louis and ably assisted by Ms. Donnalyn Charles and Ms. Olympia Joseph.

ST. LUCIA'S COMPENDIUM OF ENVIRONMENTAL STATISTICS, 2001

List of Contents

Chapter 4 Agriculture

Chapter 5 Forestry, Wildlife, Biodiversity

Chapter 6 Coastal Zone

Chapter 7 Water Resources

Chapter 8 Energy

Chapter 9 Transport

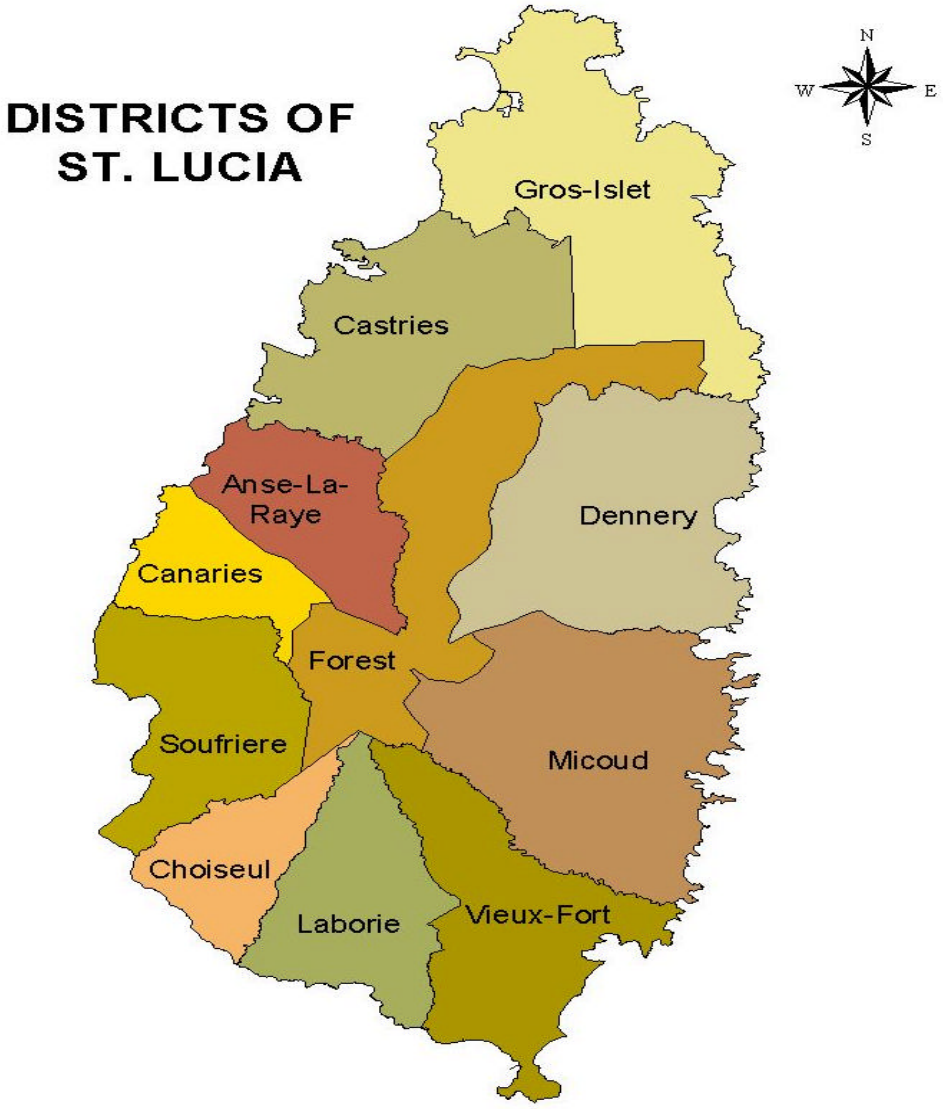
Chapter 10 Air and Climate

Chapter 11 Natural Hazard

Chapter 12 Tourism

Chapter 13 Solid Waste

1.0 COUNTRY INTRODUCTION



Saint Lucia is a small, lush, tropical developing state and is the second largest of the Windward Islands. It is located between 13° 43' and 14° 07' North and 60° 05' West. It has an area of 240 square miles (616 sq. km) and lies 24 miles South of Martinique and 21 miles North of Saint Vincent.

The Island is of volcanic origin as evidenced by its mountainous terrain, with the highest peak being Mount Gimie (3,145 feet). Most spectacular are the Pitons, two conical-shaped forest clad mountains rising sheer out of the sea; Petit Piton (2,619 feet) and Gros Piton (2,461 feet). In the mountainous interior lies the National Rain forest sheltering a wide variety of tropical plants and birds including the indigenous St. Lucia Parrot (Amazona Versicolor), wild orchids, giant ferns and verdant fields.

St. Lucia has been inhabited since long before colonial times and its cultural treasures are a fascinating mélange of its rich past and its many different traditions.

Table1.1
Gross DomesticProduct for St.Lucia, 1995-2001

CONSTANT PRICES (1990 = 100) (millions of EC$)							
SECTOR	**1995**	**1996**	**1997**	**1998P**	**1999P**	**2000P**	**2001PJ**
Agriculture, Livestock, Forestry, Fishing	119.40	120.34	98.77	101.86	83.90	86.04	65.07
-Bananas	80.43	76.72	52.14	55.00	41.05	40.50	23.59
-Other Crops	24.02	25.68	26.71	25.56	21.14	22.11	19.13
-Livestock	5.71	7.49	8.39	9.12	6.67	7.67	8.46
-Fishing	6.86	8.33	9.57	10.40	13.45	14.34	12.66
-Forestry	2.38	2.12	1.96	1.78	1.59	1.42	1.23
Mining and Quarrying	5.17	5.15	5.73	5.83	6.72	7.66	5.52
Manufacturing	75.06	69.97	69.74	68.91	71.77	69.87	66.95
Construction	90.91	87.30	87.64	96.82	109.22	104.21	99.05
Electricity and Water	39.65	40.13	43.12	46.65	49.96	53.58	55.53
Electricity	30.86	31.29	34.24	37.66	40.85	44.34	46.11
Water	8.79	8.84	8.88	8.99	9.11	9.24	9.42
Wholesale and Retail Trade	144.97	145.38	150.10	151.74	156.18	146.20	124.10
Hotels and Restaurants	119.32	128.47	142.05	145.40	151.57	155.61	139.20
Transport	113.73	117.19	119.10	122.42	128.79	127.14	119.34
-Road Transport	74.64	76.84	81.40	83.03	85.04	86.90	87.05
-Air Transport	15.23	14.78	15.83	16.14	17.50	18.03	16.16
-Sea Transport	23.86	25.57	21.87	23.25	26.25	22.21	16.13
Communication	89.10	94.09	93.53	96.18	102.13	107.75	120.50
Banking and Insurance	91.88	98.29	105.73	110.99	120.79	124.42	127.54
Banking	79.20	85.49	91.73	96.19	105.14	107.98	110.04
Insurance	12.68	12.80	14.00	14.80	15.65	16.44	17.50
Real Estate and Owner Occupied Dwellings	73.31	74.23	75.21	78.62	81.45	83.39	85.36
Producers of Government Services	135.83	135.97	136.53	138.57	140.27	142.09	143.66
Other Services	48.34	50.82	52.42	53.99	55.72	57.55	53.33
Less:Imputed Banking Service Charge	(76.82)	(82.82)	(88.94)	(93.77)	(99.45)	(104.13)	(106.09)
TOTAL	**1069.85**	**1084.51**	**1090.73**	**1124.21**	**1159.02**	**1161.38**	**1099.03**
Rate of Growth (%)	1.69%	1.37%	0.57%	3.07%	3.10%	0.20%	-5.37%

P=Provisional, PJ=Projected

Source: Government StatisticsDepartment (St.Lucia)

HUMAN SETTLEMENTS

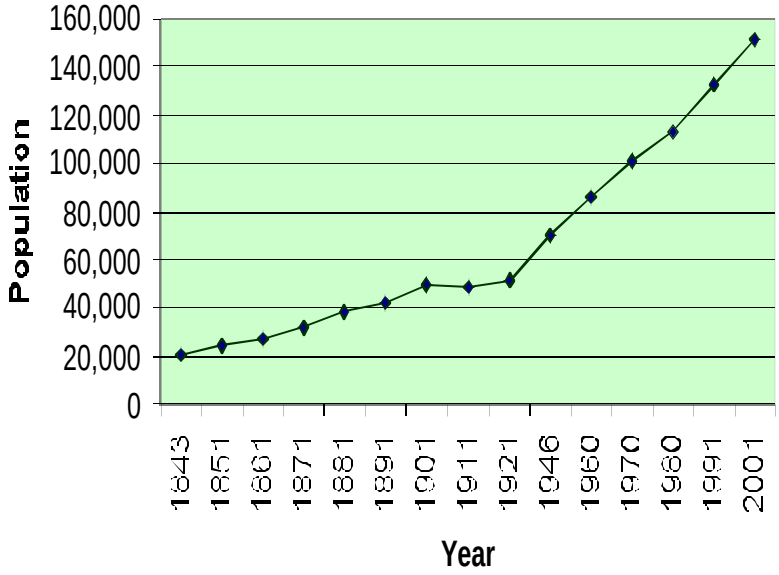
2.0 HUMAN SETTLEMENTS

There is a complex relation between the Human Settlements and the environment. As the population grows, it exerts pressure on the environment by increasing the demand for natural resources such as land and water. There is also an increased demand for infrastructure and utilities. Resources need to be managed sustainably to prevent their misuse and eventual depletion.

Table 2.1
Censuspopulationfrom1843-2001

Year	Population
1843	20,694
1851	24,185
1861	26,674
1871	31,610
1881	38,551
1891	42,220
1901	49,883
1911	48,637
1921	51,505
1946	70,113
1960	86,108
1970	100,893
1980	113,409
1991	133,308
2001	151,143

Figure 2.1
Censuspopulation1843- 2001



Source:GovernmentStatisticsDepartment

Table2.2
Population by District1970 - 2001

DISTRICT	Population			
	1970	1980	1991	2001**
Gros Islet	6,113	10,164	13,505	19,409
Castries	40,450	42,964	51,994	60,390
Dennery	8,851	9,652	11,168	12,537
Micoud	10,145	11,934	15,088	15,892
Vieux Fort	8,108	10,957	13,140	14,561
Laborie	6,023	6,885	7,491	7,329
Choiseul	6,167	6,498	6,405	5,993
Soufriere	7,250	7,295	7,683	7,337
Anse La Raye/	4,769	4,971	5,035	5,954
Canaries	1,939	2,085	1,799	1,741
Total	**99,815**	**113,405**	**133,308**	**151,143**

** Preliminary results Census 2001

Source: Government Statistics Department

St. Lucia is divided into ten administrative districts, with most of themajorvillagesandtownslocatedalongthecoast.. During the intercensal period 1991-2001, the population grew by 13.4% compared to 17.5%between 1980-1991. The Fastest growing district is Gros Islet with an increase of 43.7% in 2001. Castries is the most populated district with a population of 60,390 which accounts for 40% of the population followed by Gros Islet with 13%.

Population density measures the number of inhabitants per unit of surface area. Factors such as population growth and interval migration contribute to changes in population densities. Higher population densities results in increased levels of solid and liquid waste per unit area and in turn increases the risk for environmentally conditioned diseases such as gastroenteritis and dengue fever, caused by contaminated water, polluted air or improper waste disposal. It also increases the demand for housing, water and other infrastructure.

Table2.3
PopulationDensitybyDistrict1970-2001

DISTRICT	Area^	Density per square km.			
	(sq.km.)	1970	1980	1991	2001**
Gros Islet	101.5	60	100	133	191
Castries	79.5	509	540	654	760
Dennery	69.7	127	138	160	180
Micoud	77.7	131	154	194	205
Vieux Fort	43.8	185	250	300	332
Laborie	37.8	159	182	198	194
Choiseul	31.3	197	208	205	191
Soufriere	50.5	144	144	152	145
Anse La Raye/	46.9	143	150	146	164
Canaries					
Total	**539**	**185**	**210**	**247**	**280**

^Excludes Forest Reserve Area

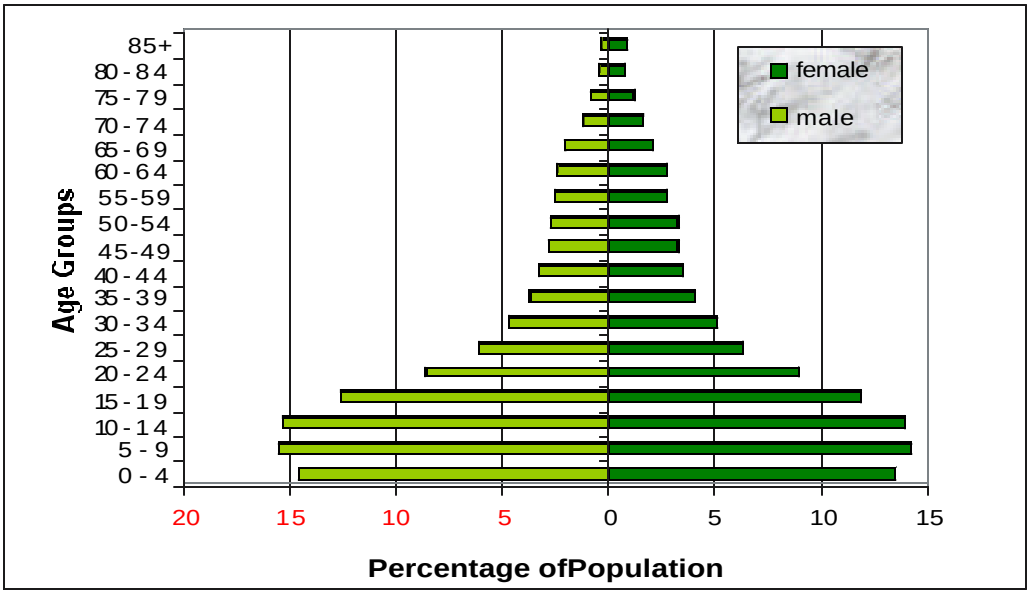
** Preliminary results Census 2001

Source: Government Statistics Department

In 2001, St. Lucia's population density was 280 persons per square kilometer. The districts of Castries and Vieux-Fort had densities above the national average, with 760 and 332 person respectively. The district of Soufriere was the least densely populated with 145 persons per square kilometer. The districts of Laborie, Soufriere, Choiseul and Canaries recordeddeclingpopulationgrowthand density during 2001 census.

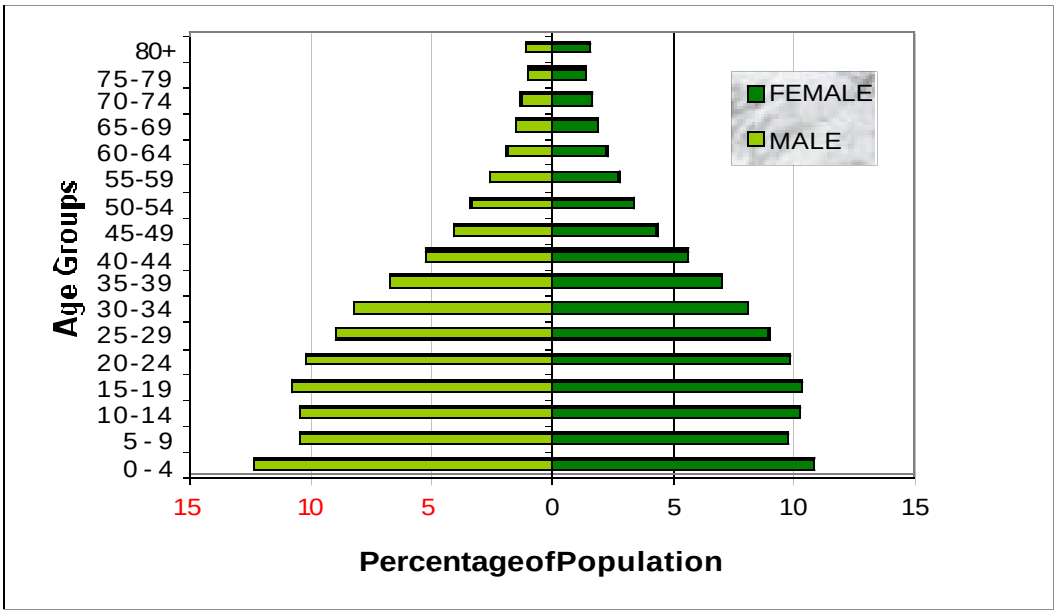
The population pyramid below indicates a gradual shift from a rapidly growing population in 1991, with a large number of persons in their pre-reproductive ages, to an almost stable population in 2001, (where the population pyramid has thickened) with a population that is more evenly distributed between the pre-reproductive and reproductive age groups.

Figure 2.4a
Population Pyramid for1991



Source:GovernmentStatisticsDepartment

Figure2.4b
PopulationPyramidfor2001



Source:GovernmentStatisticsDepartment

Table 2.5
Selected Population Indicators 1995 - 2000

	1995	1996	1997	1998	1999	2000
Estimated Mid-year Population	145,437.00	147,062.00	149,666.00	151,952.00	153,703.00	155,966.00
Population Growth Rate	1.93	1.12	1.77	1.53	1.15	1.47
Live Births	3,705.00	3,299.00	3,444.00	2,950.00	2,906.00	2,843.00
Deaths	940.00	950.00	981.00	976.00	963.00	939.00
Infant Mortality Rate	11.60	16.70	17.40	16.30	14.10	13.40
Total Fertility Rate	2.90	2.50	2.60	2.10	2.10	2.10
Male Life Expectancy	68.80	69.50	70.60	70.60	69.50	69.50
Famale Life Expectancy	74.20	73.70	73.00	72.40	73.20	73.20

Source: Government Statistics Department

Table2.6
DistributionofHouseholds byTypeofTenure,1970-2001

Type	1970	1980	1991	2001
		Percentage of Households		
Owned	63.8	64.7	72.4	74.7
Squatted	0.1	0.3	0.2	0.2
Rented - Private	26.3	23.4	21.2	17.1
Rented - Gov't	-	1.5	1.3	1
Leased	1.1	1.1	0.3	0.1
Rent Free	6.8	6.8	4	5.4
Other	0.01	0.3	0.5	0.5
Not Stated	1.8	1.9	0.7	1
Total Households	**21,753**	**24,810**	**33,079**	**41,481**

Source: Saint Lucia Government Statistics Department

Table2.7
DistributionofHouseholds byTypeofDwelling,1991 and 2001

Material	1991	2001
	Percentage of Households	
Undivided Private House	83.1	80.1
Part of Private House	9.7	9.3
Flat, Apartment, Condominium	3.3	6.2
Townhouse	0.2	0.5
Double House/Duplex	1.8	0.5
Combined Business & Dwelling	1.3	2
Barracks	0.4	0.4
Other	0.2	0.2
Not Stated	-	0.8

Source: Saint Lucia Government Statistics Department

Betweenthe 1991and2001Censusestherewasanincrease in the numberof households owning the buildingstheyresidein; therewas an increaseof2.3percentmovingfrom 72.4 to74.7percent.

Households rentingdecreasedby4.4percentfrom22.5percentin1991to18.1percent in2001.Therewasadeclineto3percentinhouseholdslivinginundividedprivatehouses and anincreaseof2.9percentinhouseholdslivinginflats,apartmentsorcondominiums.

Table2.8
Distribution of Households bySource of WaterSupplyandDistrict, 1999 and 2001

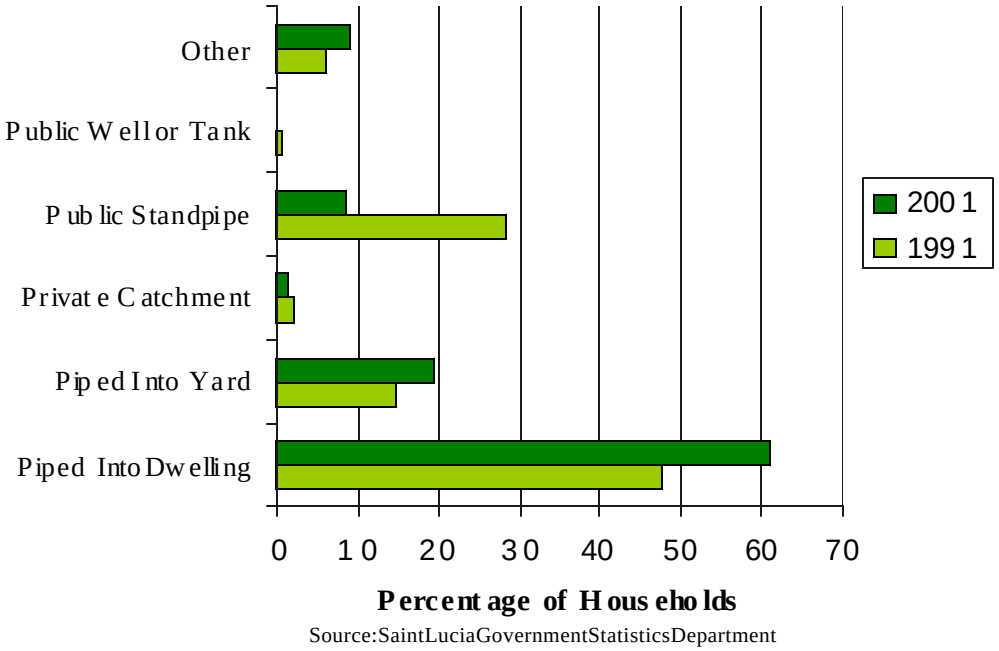
DISTRICT	Piped Into Dwelling		Piped Into Yard		Private Catchment		Public Standpipe		Public Well Or Tank		Other	
	1991	2001	1991	2001	1991	2001	1991	2001	1991	2001	1991	2001
	Percentage of Households											
Castries	61.20	68.70	10.80	16.10	2.10	1.40	20.10	3.90	0.80	0.20	4.90	9.70
Anse La Raye	21.20	39.80	7.10	21.50	1.10	0.50	62.00	21.80	1.10	0.20	7.40	16.20
Canaries	32.10	39.90	1.20	8.80	1.20	4.00	62.70	44.70	0.80	0.20	2.00	2.30
Soufriere	50.40	54.70	7.40	17.40	2.90	5.50	31.00	16.80	0.30	0.40	7.90	5.30
Choiseul	29.00	48.20	13.10	23.80	4.00	3.40	33.10	13.90	1.90	0.20	18.90	10.50
Laborie	31.80	56.50	16.60	22.40	5.80	3.30	38.30	8.90	0.70	0.50	6.80	8.30
Vieux Fort	39.40	55.00	22.90	25.60	2.00	0.60	26.50	8.10	0.60	0.10	8.50	10.60
Micoud	36.30	52.70	35.20	30.60	0.50	1.50	17.60	5.20	0.30	0.10	10.10	9.80
Dennery	30.40	41.70	18.60	29.40	0.30	1.10	48.90	18.50	0.20	-	1.70	9.20
Gros Islet	55.50	75.00	9.00	8.90	2.70	2.30	29.10	7.00	0.40	1.20	3.30	5.60
Total Island	**47.70**	**60.80**	**14.90**	**19.50**	**2.10**	**1.20**	**28.30**	**8.50**	**0.70**	**0.30**	**6.30**	**9.20**

Source: Saint Lucia Government Statistics Department

Households whose source of water supply is water piped into dwelling and yard increased by 17.7 percent from 62.6 percent in 1991 to 80.3 percent in 2001. Households using standpipes as their source of water supply decreased by 19.8 percent from 28.3 percent in 1991 to 8.5 in 2001.

The district of Canaries had the largest number of households using standpipes as their source of water supply followed by Anse La Raye and Dennery; 44.7 percent, 21.8 percent and 18.5 percent respectively.

Figure2.8
Housing: SourceofWaterSupply1991and2001



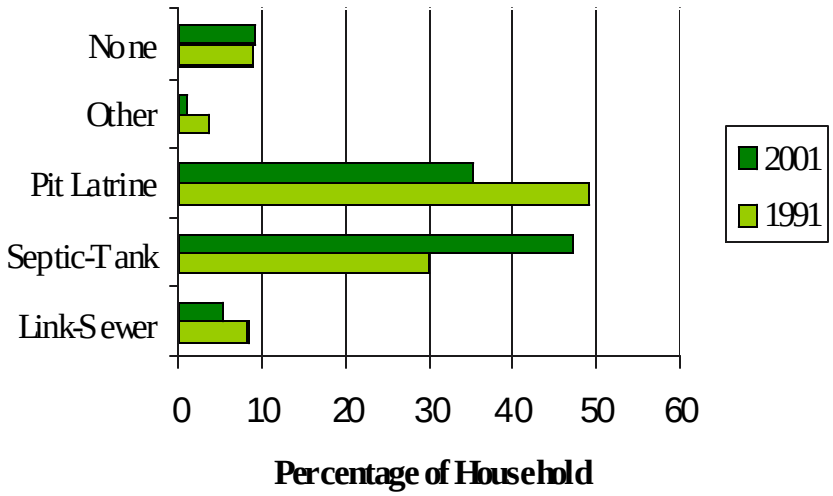
Source:SaintLuciaGovernmentStatisticsDepartment

Table2.9
DistributionofHouseholdsbyToiletFacilities and District, 1991 and 2001

DISTRICT	Linked to Sewer		Septic Tank		Pit Latrine		Other		None		Not Stated	
	1991	2001	1991	2001	1991	2001	1991	2001	1991	2001	1991	2001
	Percentage of Households											
Castries	13.10	9.10	31.90	50.90	49.10	31.80	2.30	0.90	3.50	4.40	-	2.90
Anse La Raye	3.70	0.70	8.40	29.30	49.20	36.60	17.50	0.50	21.20	30.20	-	2.70
Canaries	1.00	1.30	23.20	35.30	8.90	9.00	25.80	0.80	41.10	53.20	-	0.40
Soufriere	0.80	0.60	42.50	53.90	28.80	23.30	14.40	2.40	13.40	18.80	-	1.00
Choiseul	0.30	0.80	15.30	38.20	64.30	49.10	4.50	0.40	15.60	11.00	-	0.40
Laborie	1.00	0.40	22.70	42.70	64.10	46.10	0.80	0.10	11.40	8.90	-	1.80
Vieux Fort	3.10	1.50	29.20	46.30	53.20	40.20	1.00	1.50	13.60	9.70	-	0.90
Micoud	0.20	1.30	25.60	42.60	53.00	44.30	1.90	0.80	19.20	10.40	-	0.60
Dennery	1.40	1.20	15.90	29.70	46.80	47.20	9.60	2.80	26.30	18.00	-	1.10
Gros Islet	5.00	8.90	43.30	59.90	45.90	26.10	0.60	0.20	5.30	3.20	-	1.60
Total Island	**8.40**	**5.30**	**30.00**	**47.20**	**49.10**	**35.30**	**3.70**	**1.00**	**8.90**	**9.20**	**-**	**1.90**

Source: Saint Lucia Government Statistics Department

Figure2.9
Housing: Toilet Facilities 1991 and 2001



Source:SaintLuciaGovernmentStatisticsDepartment

The toilet facilities used by most of the households are Septic Tank and Pit Latrines, 47.2 percent and 35.3 percent respectively. The use of septic tanks has increased by 17 percentage points from 30 percent of the households in 1991 whilst pit latrines has decreased by 13.8 percentage points from 49.1 percent in 1991.
The increase in households using septic tanks was greatest for the district of Choiseul, with an increase of 22.9 percent, from 15.3 percent in 1991 to 38.2 percent in 2001.

The percentage of households with no toilet facilities increased for the district of Canaries, Anse La Raye and Soufriere. Canaries increased by 12.1 percent to 53.2 percent in 2001 from 41.1 percent in 1991 and Anse La Raye increased by 9 percent to 30.2 percent in 2001 from 21.2 percent in 1991. Soufriere increased by 5.4 percent from 13.4 in 1991 to 18.8 percent in 2001.

The district of Dennery experienced a decline in households with no toilet facilities, however this figure was still relatively high at 18 percent. Households linked to the sewer declined for the whole island from 8.4 percent in 1991 to 5.3 percent in 2001

The data in table 2.7, Distribution of households by source of water supply and 2.8, Distribution of households by toilet facilities reveals a link between the households' access to water in their dwellings and the type of toilet facilities used.

Table2.10
DistributionofHouseholds byMaterial ofOuterWall1991and2001

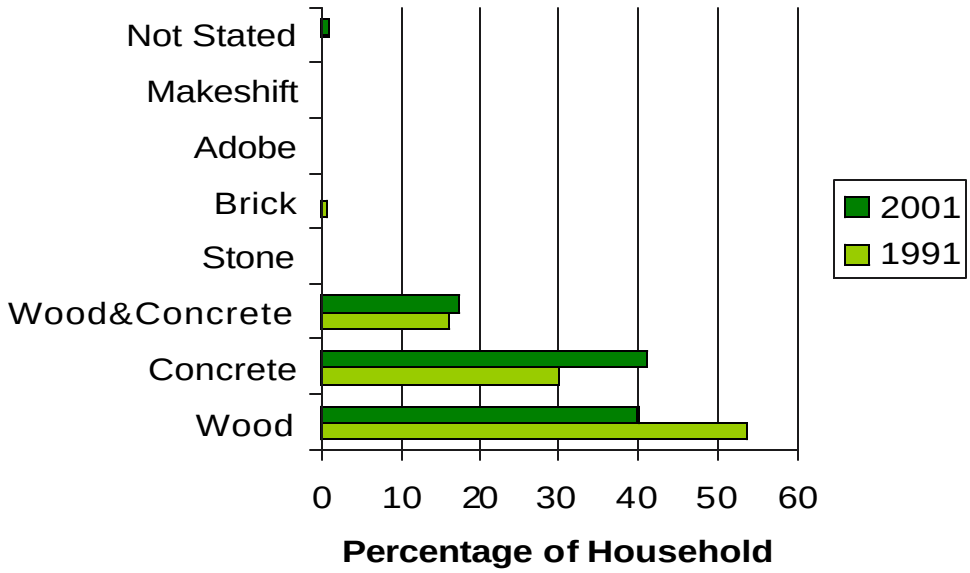
MATERIAL	1991	2001
	Percentage of Households	
Wood	53.50	39.90
Concrete	29.70	41.00
Wood & Concrete	16.00	17.50
Stone	0.10	0.10
Brick	0.50	0.30
Adobe	0.00	0.00
Makeshift	0.20	0.20
Not Stated	0.10	0.90

Source: Saint Lucia GovernmentStatistics Department

Between 1991 and 2001 there was a significant change in the type of material, which was used most for the construction of the outer walls of dwellings. The material used most was concrete followed by wood and a combination of wood and concrete.
Dwellings with outer walls built in concrete increased by 11.3 percentage points to 41 percent in 2001 from 29.7 percent in 1991. Dwellings with outer walls in wood declined by 13.6 percentage points from 53.5 percent in 1991 to 39.9 percent in 2001.

There was an increase of 1.5 percent in dwellings built with the combination of wood and concrete. The proportion of dwelling s with their outer walls constructed with stone, bricks, makeshift or other materials were very small; 1.5 percent.

Figure2.10
Housing: Material forOuter Walls1991and2001



Source:SaintLuciaGovernmentStatisticsDepartment

A Poverty Assessment Survey was conducted in St. Lucia in 1995. the Report defined poverty as "the absence, not only of food, but of other goods and services that are deemed necessary for functioning in a society. The survey indicated that 19.7% of households and 25.1 % of the population were poor.

There is a strong correlation between poverty and the environment. Poor persons are both victims and agents of environmental degradation. The poverty profile below was extracted from the Poverty Assessment Report; it gives the main characteristics of the poor in St. Lucia.

Poverty Profile of St. Lucia

- The monthly Poverty Line and the Indigence Line were estimated at EC$156.37 and $83.55 respectively.
- 18.7 percent of households and 25.1 percent of the population were poor.
- 5.3 percent of households and 7.1 percent of the population were indigent in that their expenditures were inadequate to cover their dietary requirements.
- 17.4 percent of households headed by males and 20.4 percent of households headed by females were poor.
- 16.3 percent of the urban population and 29.6 percent of the rural population were poor.
- The Poverty Gap for the country was 8.6 percent, but 6.6 percent for the urban population and 9.9 percent for the rural population.
- If the Poverty Line of the NAT, or if the non-food expenditure of the 4th decile were used, estimated poverty would have been much higher at 37.7 and 31.4 percent respectively, which seem inflated relative to the conditions known to exist in St. Lucia as compared to countries with such higher levels of poverty.
- The working poor were concentrated in Agriculture and in Manufacturing. The poor involved in the Agricultural Sector, particularly the Banana Industry, Face the risk of loss of income resulting from a declining Banana Industry. A stagnated Manufacturing Sector also presents some concern among the urban poor employed in this sector.
- High levels of teenage pregnancy exist in St. Lucia and this exacerbates poverty.
- The lowest quintile[a] had the highest average number of children 2.7, one less than the highest quintile.
- The two lowest quintiles spent more than half of all expenditure on food.
- The lowest quintile had a lower participation rate in the labour force and a higher unemployment rate than the highest quintile, but the working poor were not different in their hours of work.
- 51.6 percent of those leaving home continued to make a contribution to the household.

- Most heads of poor households had had access to primary school education but the heads of households in the higher quintiles had a higher level of education.
- Poor households were less likely to have their children enrolled in pre-schools, thereby setting the stage for differential educational attainment very early in life.
- The poor did not seem to be specifically favoured by the arrangements for educational subsidies.
- The data on child health suggest that St. Lucia has achieved almost universal immunization of children in respect of tetanus, polio, tuberculosis, measles, and diphtheria.
- While family planning services were available in a number of communities, they were not fully utilized by the poor; there were negative attitudes to the use of such services.
- Garbage and human waste disposal were major problems in a number of communities.
- There is a general lack of proper toilet facilities and potable water supply in most poor communities.
- While the poor lived in their own homes, the quality of housing was very inadequate in terms of the amenities available; 20.8 percent of households in the lowest quintile had no form of toilet facilities, and 29.2 percent of the lowest quintile were dependent on kerosene for lighting.
- Twenty-one percent of the poor owned land. A higher percentage of the rural poor owned land as compared to the urban poor.

a The monthly average expenditure of the sampled households were sorted in ascending order, then divided into five equal groups of quintiles.
Source: Poverty Assessment Report, 1996

The Poverty Reduction Fund was established by an act of parliament in 1998. Its overall mission is to reduce poverty through improvements in socio – economic conditions and increase in access to and quality of basic infrastructure across St. Lucia in a sustainable manner, including environmental consideration.

The Poverty Reduction Fund helps to reduce poverty in St. Lucia by:

- Providing better services and infrastructure to the poor and needy, with the active participation of and management by communities.
- Providing assistance to improve living conditions, promote community participation and improve health and education infrastructure.
- Providing training and assistance to improve the employment capacities and opportunities of needy persons.
- Creating social assistance interventions to help groups who are disadvantaged, such as the physically challenged, the youth and the elderly.

Source:PovertyAssessmentReport,1996

Table2.11
CausesofDeath,1995-2000

ANALYSISBY CAUSE (Numbers)	1995	1996	1997	1998	1999R	2000P
INFECTIVE AND PARASITIC DISEASES	61	55	67	60	69	46
NEOPLASMS	101	108	102	99	92	113
ENDOCRINE, NUTRITIONAL & METABOLIC DISEASES AND IMMUNITY DISEASES	47	49	47	47	46	45
DISEASES OF BLOOD AND BLOOD FORMING ORGANS	8	3	4	2	6	5
MENTAL DISORDERS	3	2	4	4		1
DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS	23	23	26	27	25	18
DISEASES OF THE CIRCULATORY SYSTEM	373	417	349	370	350	351
DISEASES OF THE RESPIRATORY SYSTEM	72	61	87	91	95	67
DISEASES OF THE DIGESTIVE SYSTEM	36	28	40	33	24	25
DISEASES OF THE GENITOURINARY SYSTEM	24	26	21	26	21	20
COMPLICATIONS OF PREGNANCY, CHILDBIRTH AND THE PUERPERIUM	1		1		2	2
DISEASES OF THE SKIN & SUBCUTANEOUS TISSUE	1	1	4	1	2	1
DISEASES OF THE MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE		1		1	1	1
CONGENITAL ANOMALIES	3	1	7	6	3	3
CERTAIN CONDITIONS ORIGINATING IN THE PERINATAL PERIOD	39	41	49	41	39	34
SIGNS, SYMPTOMS AND ILL-DEFINED CONDITIONS	99	93	122	116	148	143
EXTERNAL CAUSES	49	41	51	52	58	64
Total	**940**	**950**	**981**	**976**	**981**	**939**

Source: Ministry of Health

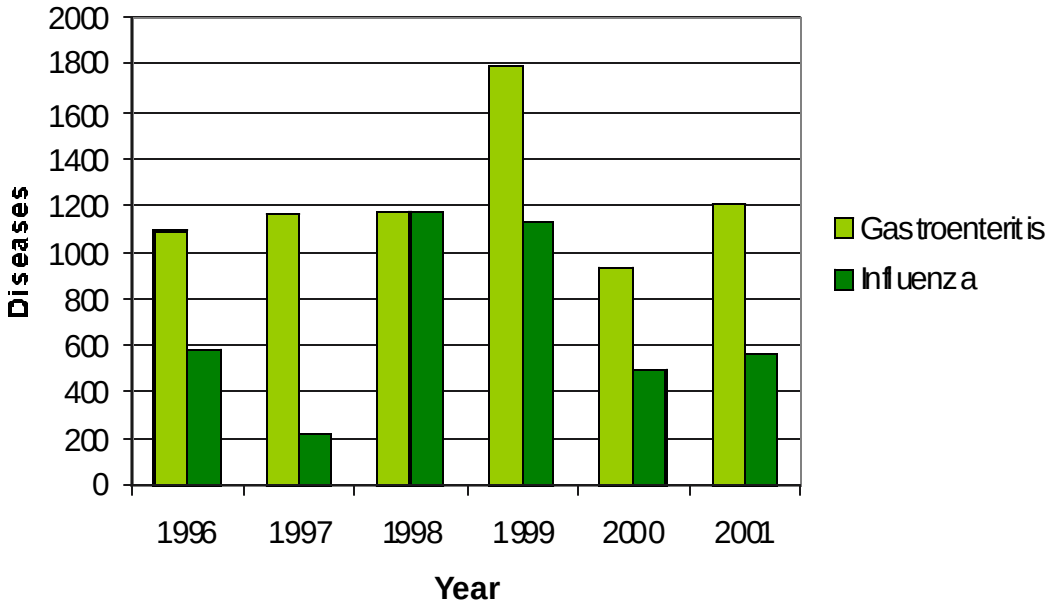
Table2.11
Communicable/NotifiableDiseases, 1996 - 2001

Type	1996	1997	1998	1999	2000	2001
Cholera	0	0	0	0	0	0
Dengue Fever	6	14	10	24	4	60
Dysentery	17	17	0	6	4	4
Gastroenteritis	1089	1164	1173	1797	936	1200
Influenza	578	221	1170	1133	501	564
Malaria	0	0	0	1	2	3
AIDS	11	12	10	16	2*	9
HIV infection	17	42	22	54	23*	78
Typhoid					3	2

*STD Clinic wasclosed for the last quarter of 2000, there may have been under reporting.
Source: Ministryof Health & Human Services.

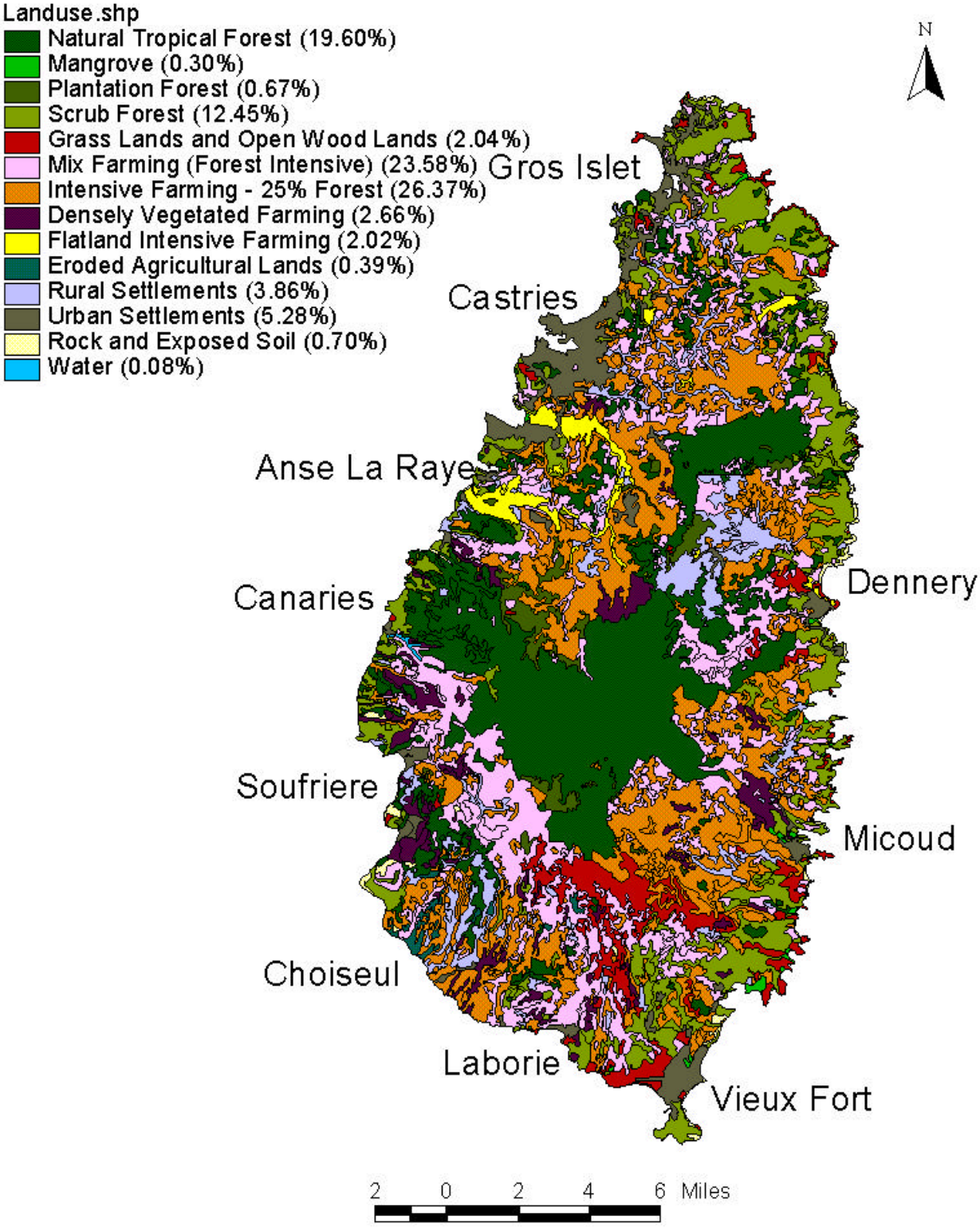
The most significant environmentally related disease reported in St. Lucia was Gastroenteritis, with 1200 cases reported in 2001. This represented an increase of 28.2 percent over the 936 cases reported in 2000. The highest number of cases in the past six years was 1797 cases in 1999. There were 564 cases of Influenza reported.
In 2001 there was a huge increase in the incidence of Dengue Fever; 60 cases were reported compared to 4 cases in 2000 and 24 in 1999.
There were 3 cases of malaria, 2 cases of typhoid Fever and no cases of cholera reported in 2001.
St. Lucia has also experienced a steady increase in the number of HIV infections reported.

Figure2.11
Reported cases of GastroenteritisandInfluenza,1996 - 2001



LAND USE

3.0 LAND USE



LANDUSE MAP OF ST. LUCIA

Source: Agricultural Census 1996
Map produced by Physical Planning G.I.S Office
Forestry Department G.I.S Office

Table3.1
Land Use, 1996

Type	Use (% of total land area)
Natural Tropical Forest	19.60
Mangrove	0.30
Plantation Forest	0.67
Scrub Forest	12.45
Grass and open woodlands	2.04
Mixed farming (forest intensive)	23.58
Intensive farming (25% forest)	26.37
Densely vegetated farming	2.66
Flatland intensive farming	2.02
Eroded agriculture lands	0.39
Rural settlements	3.86
Urban settlements	5.28
Rocks and exposed soil	0.70
Water	0.08
Total	**100.00**
Total Land Area Km.Sq	616.00

Source: Biodivesity Report, 1998

Table 3.2
Land UseChanges,1977and1989

Type	Area (hectares)		
	1977	1989	Difference
Forest	16,737	12,572	-4,165
Scrub Forest	12,677	7,515	-5,162
Grass and open woodlands	1,302	2,666	1,364
Sub-total	**30,716**	**22,753**	**-7,963**
Intensive agriculture	14,498	17,576	3,078
Mixed agriculture	6,306	16,205	9,899
Sub-total	**20,804**	**33,781**	**12,977**

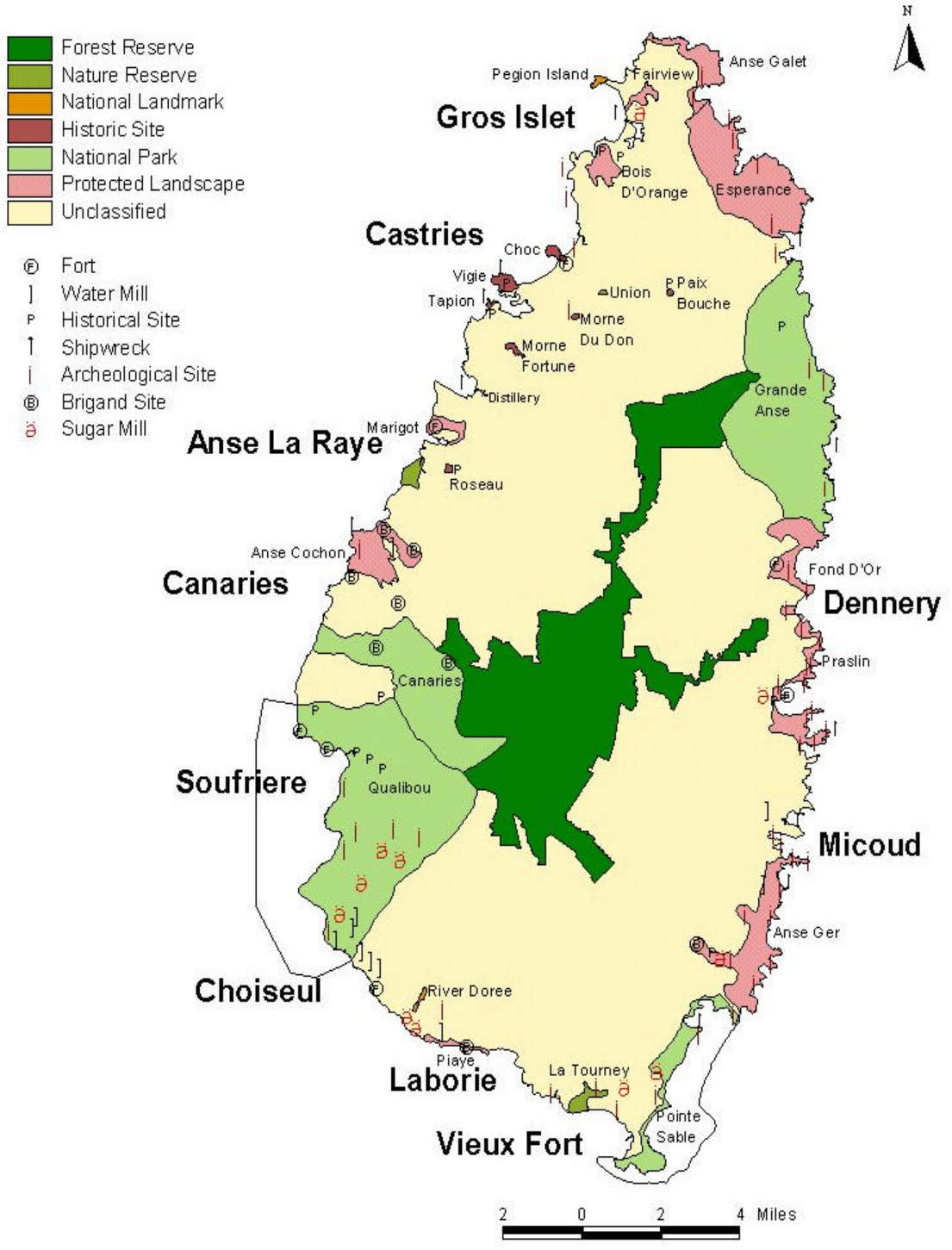
Source: Biodiversity Report, 1998

Table3.3
Agricultural Land Use, 1996

	In-country Land Use Classification	1996		Biodiversity (Quality of Land Use Category)
		Land Area (Kmsq)	% of total land area	
Arable land				
	Productive land Agricultural land	173.54	28.10	Medium
	Cultivated land	157.85	25.60	Medium
	Temporary crops and fallow	18.49	3.00	Low
Land under permanent crops	Permanent crops	139.35	22.60	Medium
Permanent meadow and pasture	Grassland	15.69	2.50	High
Other land	Forest and woodlands	27.56	4.50	High
	All other land	6.63	1.10	Low
Total land in Agriculture		**207.73**	**33.70**	

Source: Biodiversity Report, 1998

Land Capability



PROTECTED AREAS OF ST. LUCIA

Source: St.Lucia National Trust 1991
Map produced by: Physical Planning G.I.S. Office
: Forestry Department G.I.S. Office.

Table3.4
Land Capability

Class	Land Area (hectares)	% of Total	Potential Uses	Limitations
I	1,615.3	2.65	Cultivation of food crops, bananas, plantain, sugar cane	Very little
II	575.7	0.94	Cultivation of food crops, bananas, plantain, sugar cane, ginger	Slope erosion, drainage, shallow soils, fertility
III	732.6	1.20		
IV	477.0	0.78	Limited food crops or other fruit tree crops, Pasture	Slope drainage, stoniness, fertility, root restriction
V	2,331.0	3.82		
VI	10,314.8	16.90	Permanent tree crops, forest: timber and charcoal, agroforestry plantation systems, some annual crops	Slope erosion, fertility, stoniness, acidity, land slippage
VII	40,900.2	67.01		
VIII	4,090.6	6.70	Forest/wildlife reserve, national park	Slope, salinity, erosion, no agricultural potential

Source: Biodiversity Report, 1998

Table3.5
Protected Areas

Site	Area (acres)
Pigeon Island National Landmark	41
Choc green space	0.5
Marigot	33.13
Half Moon Battery	
Morne Fortune Historic Sites	
Apostles Battery	1
Prevost Redoubt	2.45
Cells, Guardroom & Stables	1
Powder Magazine	3.61
Military Cemetary	2.09
Inniskilling Monument	3.04
Fous Island	49.79
Lapins Island	0.4
L'Islet A Ranier	0.2
Rouche Island	3
Dennery Island	4
Fregate Island	0.92
Liverpool Rocks	1.17
L'Islet Islands	1.39
Maria Islands Wildlife Reserve	27.48
Anse La Liberte	138
Anse Galet	62
Total Area	**376.17**

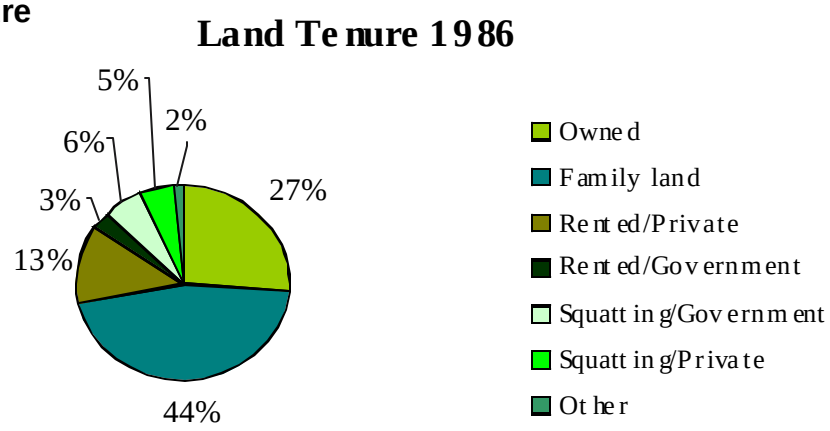
Source: St. Lucia National Trust

Table 3.6
Land Tenure, 1986 and 1996

Land Tenure	1986		1996	
	No. of Parcels	%	No. of Parcels	%
Owned	3611	26.70	4701	30.40
Family land	6132	45.30	7094	45.90
Rented/Private	1717	12.70	1558	10.10
Rented/Government	383	2.80	682	4.30
Squatting/Government	790	5.80	614	4.00
Squatting/Private	680	5.00	399	2.60
Other	217	1.60	420	2.70
Total	**13530**	**100.00**	**15468**	**100.00**

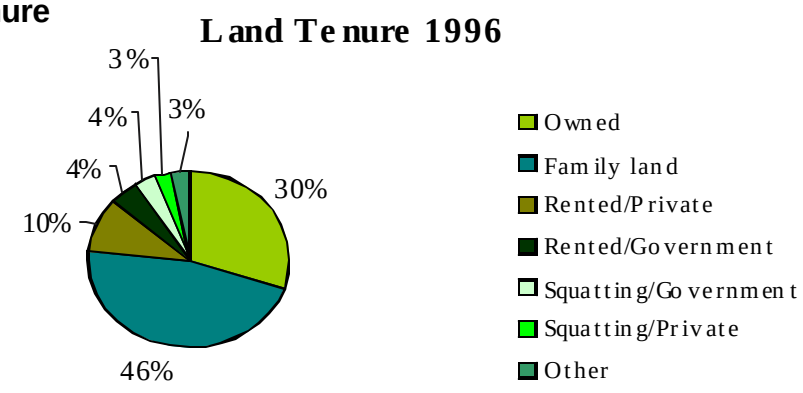
Source: Census of Agriculture, 1996

Figure3.6
Land Tenure



Source:CensusofAgriculture,1996

Figure3.6
Land Tenure



Source:CensusofAgriculture,1996

AGRICULTURE

4.0 AGRICULTURE

Table4.1
Agricultural LandUse Change

Major Use/ Category (FAO Class)	In-country Land Use Classification	1996		Rate of Change (average loss/ gain per year in hectares)		
		Land Area	% of total land area	1974-1986	1986-1996	1996-2000*
Arable land	Productive land	173.54	28.10	loss: 6.03	loss: 241.55	loss: 144.93
	Agricultural land					
	Cultivated land	157.85	25.60	gain : 190.30	loss: 336.8	loss: 117.90
	Temporary crops and fallow	18.49	3.00	loss: 168.30	loss: 145.12	loss: 167.56
Land under permanent crops	Permanent crops	139.35	22.60	gain : 358.60	loss: 191.66	gain : 197.41
Permanent meadow and pasture	Grassland	15.69	2.50	loss: 196.33	gain: 95.20	loss:27.82
Other land	Forest and woodlands	27.56	4.50	loss: 360.17	loss: 61.20	loss:55.08
	All other land	6.63	1.10	loss: 74.76	loss: 4.69	gain : 4.83
Total land in Agriculture		**207.73**	**33.70**	**Loss: 441.0**	**Loss: 307.4**	**Loss: 380**

*Subjective estimates

Source : Biodiversity Report, 1998

Table4.2
Agricultural HoldingsbySize

Size Group (in acres)	1973/1974		1986		1996	
	No. of Holdings	%	No. of Holdings	%	No. of Holdings	%
Landless	502	4.60	850	7.40	1630	12.20
Less than 5	8,558	78.20	8,770	75.90	9,166	68.60
5 to 9.9	1,082	9.90	1,191	10.30	1,713	12.80
10 to 24.9	475	4.30	560	4.90	700	5.20
25 to 49.9	199	1.80	98	0.90	92	0.70
50 to 99.9	58	0.50	35	0.30	27	0.20
100 to 199.9	19	0.20	17	0.20	15	0.10
200 to 499.9	26	0.20	17	0.20	16	0.10
500 and over	19	0.20	13	0.10	7	0.10
Total	**10,938**	**100**	**11,551**	**100**	**13,366**	**100**

Source: Min inistry of Agriculture

Table4.3
Agricultural Area by SizeofHoldings

Size Group (in acres)	1973/1974		1986		1996	
	No. of Holdings	%	No. of Holdings	%	No. of Holdings	%
Landless	502	4.60	850	7.40	1630	12.20
Less than 5	8,558	78.20	8,770	75.90	9,166	68.60
5 to 9.9	1,082	9.90	1,191	10.30	1,713	12.80
10 to 24.9	475	4.30	560	4.90	700	5.20
25 to 49.9	199	1.80	98	0.90	92	0.70
50 to 99.9	58	0.50	35	0.30	27	0.20
100 to 199.9	19	0.20	17	0.20	15	0.10
200 to 499.9	26	0.20	17	0.20	16	0.10
500 and over	19	0.20	13	0.10	7	0.10
Total	**10,938**	**100**	**11,551**	**100**	**13,366**	**100**

Source: Mininstry of Agriculture

Table4.4
Number ofTrees, 1986and1996

Crop	Number of Trees	
	1986	1996
Banana	11,839,400	11,372,234
Plantain	329,300	603,833
Coconut	846,200	560,740
Mangoes	80,200	113,017
Cocoa	219,300	129,088
Citrus	102,500	119,966
Avocado	25,100	28,509
Breadfruit	32,000	64,778

Source: Census of agriculture, 1996

Table4.5
Number ofLivestock Slaughtered, 1982-1996

Year	CATTLE	SHEEP & GOATS	PIGS
1982	1,237	38	688
1983	1,163	74	745
1984	2,166	552	1,812
1985	1,566	307	950
1986	2,066	533	1,362
1987	1,674	248	850
1988	2,533	258	2304[b]
1989	1,999	224	1,556
1990	1,642	364	1,923
1991	1,357	373	1,826
1992	477	99	637
1993	1,251	297	1,692
1994	701	326	1,379
1995	835	393	1,442
1996	493	157	760

Source:PublicHealthDepartment,MinistryofHealth

Table4.6
Agricultural Equipment, 1974 and 1996

Type of Equipment	Total Number of Equipment	
	1974	1996
Trucks and vans	201	5932
Tractors	41	146
Ploughs	174	228
Sprayers	337	9011
Carts/wagons	79	13
Pumps	169	250
Seed planters	17	110

Source: Census of Agriculture, 1996

Table4.7
Imports of Fertilizers, 1997 - 2001

Year	Ammonium Nitrate		Ammonium Sulphate		Urea		Other Fertilizers	
	EC$ '000	Tonnes	EC$ '000	Tonnes	EC$ '000	Tonnes	EC$ '000	Tonnes
1997	21	38	2	2	15	18	7700	5760
1998	-	-	-	-	800	1650	2983	2913
1999	4	2	4	-	1100	1404	4163	4486
2000	18	21	11	2	742	860	3561	4231
2001	1012	997	-	-	88	128	911	941

(-) Negligible

Source: Ministry of Agriculture/Government Statistics Department

Table4.8
Imports of Pesticides, 1997-2001

Agro-Chemicals	Imports (Kilograms)									
	1997		1998		1999		2000		2001	
	Kilos	Litres	Kilos	Litres	Kilos	Litres	Kilos	Litres	Kilos	Litres
Insecticides	4656662	199827.36	736520	249020.00	511877.86	272042.83	220648.3	193618.40	1564.50	536217.38
Fungicides	7883.00	18810.00	5763.40	2653.00	16507.81	8013.65	8452.85	2138.60	635.32	3314.00
Herbicides	6.00	71396.00	260.00	58853.00	0.00	152512.80	32.86	69248.10	27.00	88131.29
Nematicides	8541000	0.00	1914500.00	0.00	1147245.00	7771.00	78240.00	8009.90	2946270	7267.20
Rodenticides	3706.00	0.00	11590.00	0.00	66840.8	351.00	2887.90	0.00	10120.96	0.00
Molluscides	1196.00	0.00	1909.00	0.00	0.00	1575.00	5.80	0.00	203.90	0.00
Tickicides	0.00	158.00	0.00	0.00	0.00	56.00	6.60	135.12	11.00	95.00
TOTAL	**14476762**	**290192.36**	**2188377.70**	**310526.00**	**12216124.60**	**422322.68**	**1116690.84**	**273150.12**	**42025.38**	**635024.87**

Source: Pesticide Control Board

Table4.9
Agricultural Pesticide Use, 1996

Type of Pesticide	Number of Holdings Reporting
Insecticides	5919
Herbicides	7706
Nematicides	4691
Fungicides	4681
Rodenticides	1639

Source: Census of Agriculture, 1996

FORESTRY WILDLIFE BIODIVERSITY

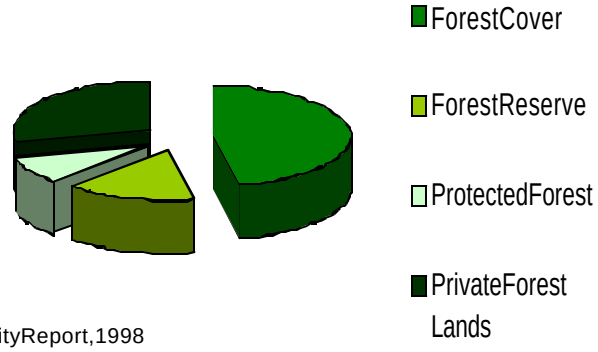
5.0 FORESTRY, WILDLIFE, BIODIVERSITY

FORESTRY

Table **5.1**
ForestResource

Forest Cover	38%
Forest Reserve	12%
Protected Forest	7%
Private Forest Lands	23%
Total	**80%**

Figure5.1
ForestResource



Source:BiodiversityReport,1998

Table5.2
AreaofForestbyType and Land Tenure

Category	Forest Reserves	Crown Lands	Private Lands	Total	Percentage
Natural forest	6,788	163	5,137	**12,088**	56%
Mangrove	0	3	352	**355**	2%
Scrub forest	116	236	7,162	**7,514**	35%
Grass and open woodlands	0	10	1,292	**1,302**	6%
Plantation	484	16	5	**505**	2%
Total	**7,388**	**428**	**13,948**	**21,764**	**100%**

Source:BiodiversityReport,1998

Table5.3
Income from Forest Products,1992 - 1 997

Year	Income derived (million EC$)
1992	1.34
1993	1.24
1994	1.35
1995	1.22
1996	1.07
1997	0.99

Source:BiodiversityReport,TablefromStatisticsDepartment

Theharvestingofforestryproductsisonthedecline (Table5.3)fortworeasons-theneedtoprotectand conservethe remaining forested areasinorderto protect water catchment areas, and the fact that forestryproductscanbeimportedatalowercost.. The harvestingnotonlyconsists oftimberfrom plantations(mahogany,bluemahoeandCaribbean pine), but also timber from local species. Inaddition,woodisusedforcharcoalproduction.

Deforestation

Inthe1980'sdeforestationwasestimatedat1.9%perannum.WithafalteringBananaIndustry (GOSL 1993), thisrateisexpectedto reduce.
Within thepastsixyears,theareaoccupiedbysquattersintheForestReservehasbeen

reducedfrom 320hato100ha.

Table5.4
Visitors To Forest Trails

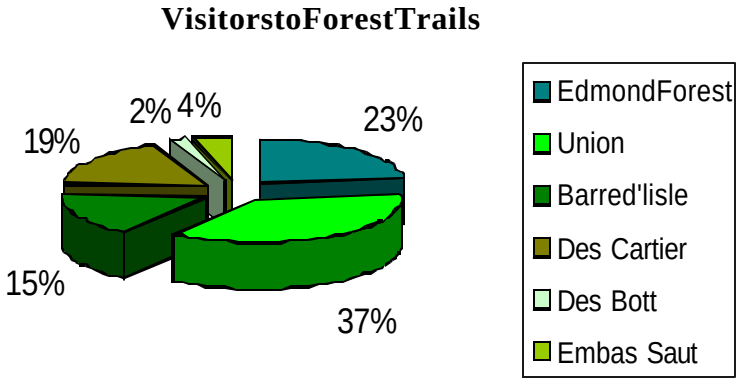
Year	Trail	No. Visitors
1989-1999	Edmond Forest	14,871
1991-1999	Union	23,554
1995-1999	Barre d'lisle	9,926
1996-1999	Des Cartier	11,934
1997-1999	Des Bott	1,099
1997-1999	Embas Saut	2,834
Total		64,218

Source:St.LuciaTouristboard

Duringtheperiod,1998-1999,thesetrails generatedatotalof$923,205.30inrevenue totheMinistryofAgriculture.

TheEdmondForestandDesCartierTrails contributed33%respectivelytothetotal revenuegenerated,thelargest contributions madebyalltrails

Figure5.4
VisitortoForest Trails



Source:St.LuciaTouristboard

Table5.5
Flora Species

Type	Number of species	Endemic species	Endangered species
Flowering plants	1,310	9*	27
of which with medical value	105		
of which forest trees	241		
Ferns	118	7	-

* two of these are probably extinct

Source: Biodiversity report

Table5.6
Fauna Species

Type	Number of species*	Endemic species	Endangered species
Mammals	9	5	-
Birds	>150	5	3
Reptiles	17	5	(7**)
Amphibians	4	-	-

* Four species are probably extinct: the musk rat, Semper's warbler (a bird), the cribo snake and the mountain chicken (a frog)

** Classified as rare or very rare

Source: Biodiversity report

Table5.7
Wetlands

Type of Ecosystem	Examples in St.Lucia
Basin mangrove	Bois D'orange
Reed marsh	Anse La Raye
Reed swamp	Marquis
Closed canopy swamp forest	Anse Ger
Herbaceous swamp	Belle Plain
Forested wetland	Desrache
Fresh water marsh	Hewannora
Back swamp	Roseau
Inland delta	Roseau
Floodplain	Cul De Sac
Fresh water lake	Rabot
Dry stream thicket	Galette
Fresh water hole	Troumassee
Fish pond	Beausejour
Reservoir dam	Roseau
Sewage treatment pond	Gros-Islet

Source: Biodiversity Report, 1998

COASTAL ZONE

6.0 COASTAL ZONE

Marineand C oastalresourcesinclude beaches, mangroves and mangals and coral reefs. Each resourcecontributes significantlytoSt.Lucia'seconomicand environmentalsustainability. Beachesprovidethemain attractiontotourist whilstproviding recreation toSt.Lucians. Mangroves,whenmanaged s ustainably, (suchasisoccurringat theMakoteMangroveinthe southoftheIsland),provideasource of alternative renewable energy to St. Lucia.Thissource ofenergyreduces demand on imported forms of energy such as dieselandcookinggases thatcontributetoSt. Lucia'semissions of green housegases(ghg).Ineffect,mangrovesare sinks of the c hiefghg contributingtoglobal climate change andprovideameans of reducing national emissionofghg.Coralreefs providea h ome for marine life andcontributetremendously toSt. Lucia's foodsupply.Themarineandcoastalresources inSt.Lucia areindicatorsof environmentaland human health.The viabilityofcoastalandmarineresourcesdependheavily on activitiesoccurring inland: development projects,agriculturalpracticesand solid waste management practices, couldnegatively impact on these resources.The abilityofSt.Lucia tosustainablymanagethese resourceswilldetermine thefuture of this s ource offood, as well as theviabliltyofitsTourismIndustry.

Table6.1
RegisteredFishermen 2001

SITE	PART-TIME	FULL-TIME	NON-FISHERS	TOTAL
Anse la Raye	46	54	2	102
Canaries	35	50	1	86
Castries	105	135	1	241
Bananne s	38	35	2	75
Choiseul	36	99	4	139
Dennery	90	133	12	235
Gros Islet	77	103	0	180
Laborie	43	78	3	124
Marisule	12	8	0	20
Micoud	105	95	0	200
Monchy	8	6	0	14
Praslin	31	20	0	51
River Doree	8	16	0	24
Roseau	1	1	0	2
Savannes Bay	7	33	2	42
Soufriere	62	92	1	155
Vieux Fort	106	208	12	326
Total	**810**	**1166**	**40**	**2016**

Source : Min. of Agriculture

Table6.2
FishLandingsbyType,1992-2001

Year	Estimated Fish Landings (Tonnes)						
	Tuna	Dolphin	Kingfish	Black fish	Flying Fish	Other	TOTAL
1992	223.30	238.90	149.80	3.50	32.20	320.30	968.00
1993	321.00	207.00	141.00	8.00	89.00	348.00	1114.00
1994	300.00	142.00	6.00	6.00	47.00	382.00	883.00
1995	300.00	200.00	20.00	6.00	50.00	407.00	983.00
1996	252.00	313.00	230.00	10.00	36.00	404.00	1245.00
1997	247.00	455.00	224.00	3.00	34.00	349.00	1312.00
1998	401.00	276.00	254.00	8.00	50.00	379.00	1360.00
1999	324.00	587.77	309.90	5.78	66.79	420.63	1714.86
2000	473.40	555.10	243.10	4.90	98.50	351.80	1860.10
2001	404.40	427.10	214.00	4.50	323.30	594.10	1967.30

Source: Ministry of Agriculture

Table6.3
FishLandingbySite,2001(Tonnes)

Sites/Species	Dolphin	Wahoo	Tuna	Flying fish	Snapper	Shark	Others #	TOTAL
ANSE LARAYE	0.46	0.13	5.78	4.44	2.24	0.00	4.12	17.17
CASTRIES	2.90	0.89	19.48	1.66	6.82	1.10	30.78	63.63
DENNERY	163.22	107.04	115.92	1.86	4.46	0.82	41.91	435.23
GROS ISLET	9.05	2.95	12.23	13.47	2.02	1.71	79.79	121.22
MICOUD	21.38	14.40	9.33	4.57	2.22	0.18	8.65	60.73
RIVER DOREE	5.62	3.37	10.65	1.84	0.24	0.00	8.29	30.01
SAVANNES BAY	45.20	28.30	10.21	1.61	0.29	0.00	15.89	101.50
SOUFRIERE	8.10	3.28	15.30	12.02	0.72	0.00	49.07	88.49
VIEUX FORT	293.91	129.77	93.47	0.00	21.68	0.26	17.97	557.06
OTHERS	37.93	19.77	31.63	25.32	4.33	1.71	119.13	239.82
TOTAL	**587.77**	**309.90**	**324.00**	**66.79**	**45.02**	**5.78**	**375.60**	**1714.86**

Source: Ministryog Agriculture

Note : Figures recorded in tonnes

Other sites include all non-sampled sites - Canaries, Bannanes, Choiseul, Laborie, Praslin Marisule, Monchy, Roseau and other minor sites in Vieux Fort.

Table6.4
Aquaculture, 1992 -2001

Year	No. of Farmers	(m^2)	Fish Produced (Kg)	Shrimp Produced (Kg)	Post Larvae Produced	Fingerlings Produced
1992	11	26,056	125	1,076	271,000	400
1993	16	33,153	447	1,820	410,000	2,000
1994	23	52,762	305	1,442	330,000	1,304
1995	27	65,950	449	1,258	315,000	2,971
1996	29	71,368	302	913	282,000	1,563
1997	30	71,876	2,134	1,157	324,000	8,057
1998	30	71,876	903	584	173,500	10,112
1999	N.A	71,876	992	347	100,450	3,200
2000	30	N.A	884	114	N.A	9,150
2001	30	24,800	643	59	50,000	45,000

DNA: data not available

Source: Biodiversity Report, 1998 & Ministry of Agriculture

Table6.5
FishImports, 1992-2001

Year	Fish Imports	
	Value ($EC)	Net Weight (KG)
1992	4,180,019	331,265
1993	3,834,158	404,304
1994	4,321,031	387,483
1995	4,611,929	346,739
1996	5,050,121	391,915
1997	5,387,550	444,535
1998	5,357,230	437,955
1999	5,720,245	473,619
2000	5,274,294	499,281
2001	4,608,358	454,559

Source: Statistics Department

Table6.6
Sand Imports,1992-2001

Year	Sand Imports	
	CIF Value ($EC)	Net Weight (Kg)
1992	5,893,396	36,157,888
1993	1,024,252	23,458,535
1994	1,342,646	49,544,283
1995	695,479	17,386,975
1996	2,169,513	49,534,190
1997	7,594,222	67,481,591
1998	3,449,327	81,384,965
1999	3,742,338	98,376,157
2000	2,764,870	49,178,027
2001	3,653,313	75,914,761

Source: Statistics Department

Coral Reefs

Coral reefs are located mainly along the south-east coast (Anse Des Sables), central west coast (off the districts of Anse La Raye, Soufriere and Laborie) and north-west coast (Choc Bay). The reefs along the north-west coast have been subject to negative impacts caused by pollution and shore developments, while reefs on the east coast are generally small and have a comparatively higher algal cover. The heathiest and most diverse reefs are found along the central west coast off Soufriere.

Hurricanes and storms have also taken a toll on St. Lucia's reefs. Coral reefs are sensitive to siltation, which results near river mouths after heavy rainfall, as well as to excess nutrients in the water.

Under the CANARI Programme, reefs checks and mapping are carried out at Coral Gardens (Soufriere).

One of the threats is siltation, (mud being transported from rivers). Data from a few shorelines show siltation rates of 0-90 mg per cm sq a day at Canaries and 0-20 mg per cm sq a day at Anse La Raye.

Table 6.7
Marine Reserves in St. Lucia (declared 15th October, 1986)

MARINE RESERVES	
Anse Mamin Reef	Anse L'Ivrogne Reef
Anse Pointe Sable-Man Kote	Bois D' Orange Mangrove
Mangrove, Choc Mangrove	
Maria Islet Reef	Cas En Bas Mangrove
Marigot Bay Mangrove	Esperance Habor Mangrove
Marquis Mangrove	Fond d'Or Mangrove
Reef at Mangretoute	Grande Anse Beach and Mangrove
Reef in Anse De Pitons	Louvette Mangrove
Rodney Bay Artificial Reefs	Pralin Mangrove
Savanes Bay Mangrove	Reef between Grand Caille and Rachette Point

Source: The Department of Fisheries, Ministry of Agriculture, Forestr, fisheries and the Environment, 1986 (The St. Lucia Gazette, 15th October, 1986)

Table 6.8
Marine Reserves in St. Lucia (declared 15th October, 1986)

MARINE RESERVES
Artificial Reef at Anse Cochon
Artificial Reefs at Moule-a-Chique
Reef extending from the river at Anse Galet to the northern most point of the beach at Anse Cochon
Reefs at Anse Chastenet comprising Turtle Reef and that portion of reef extending seaward from the southernmost point of Anse Chastenet Beach to Grand Caille Point
Reefs extending from Caesar Point to Mathurin Point
Vigie Bay Artificial Reef

Source: The Department of Fisheries, Ministry of Agriculture, Forestry, Fisheries and the Environment, 1990 (The St. Lucia Gazette, 13th January, 1990)

Charcoal ProductionatMankote

The mangrovesatMankote,coveringanareaof39.4ha, are declared marinereserves andare managed by CANARI (the CaribbeanNaturalResourcesInstitute). Woodismainly extracted from Mankoteforthepurposeof charcoalproduction.Thetotalproduction in2000was 30,041kg.Researchfrom1989-1992indicates thatthelevel ofcharcoal productionissustainable, i.e. Thewooduseddoes notexceedthe natural growth. Measurementsfrompermanent inventory plotsarenowbeingtaken,inorderto corroborate theearliergrowthestimates.

Source:ParticipatoryandCollaborativeResourceManagementTeachingGuide,FieldTestEdition,CANARI2001.

Table6.9
Marine Species

Type	Number of species	Landed species 1995 or 1997	Additional species recorded in St Lucia	Threatened species
Mammals	27[a]	.	.	
Finfish	..	190	142	13
Turtles	3[b]	1[c]	.	3
Invertebrates	..	6	14	1
Corals	..	.	29	(some)

[a] in the Caribbean region
[b] the loggerhead is not included. Reports on its presence have not been confirmed
[c] catch of hawksbill turtle was reported in 1995, before the moratorium on turtle fishing was introduced (in 1996)

Source: Biodiversity report

Ingeneral,thereisinsufficientinformationforadequatedocumentationofthebiodiversity ofcoastal and marineecosystemsinSt.Lucia.Availableinformationfocuses mainlyon commerciallyimportedspecies.

Table6.10
BeachesandMangrovesSummary

Beaches and Mangroves Summary	
Beaches - West	
Number	62
Total Length (Km)	19.955
Beaches - East	
Number	42
Total Length (Km)	14.885
Mangroves	
Number	14

Source: OECS (1999) Beaches and Mangal Systems of ST. Lucia.
Organisation of Eastern Caribbean States, Natural Resources Management Unit.

Table6.11
Reef Check Summary, 1999and2000

Reef	% Live Coral		Diadema/m^2		Snapper and Groupers /m^2	
	1999	2000	1999	2000	1999	2000
Anse Chastanet	34.5	27.5	0.14	1.3	0.05	0
Coral Gardens(3m)	30.8	8	0.36	0.02	0	0
Coral Gardens(10m)	45.8	15	0.26	0.1	0.02	0
Turtle Reef	38.8	28	0	0	0.01	0.02
Malgretoute (3m)	50.1	25.6	1.39	0.27	0	0.03
Malgratoute (10m)	35	16.9	0.28	0.18	0.03	0.03

Source: SMMA

Table6.12
MangalsinSt.Lucia

Name	Type	Area (hectares)		Ownership	Species
		1985	1997		
Bois d'Orange	Basin	2.59	NA	Private	*L. racemosa*
Cas en Bas (3 distinct pathces)	Riverine (plus two small scrub mangals)	5.44	1.5	Crown, Private	*R. mangale, L. racemosa and C. erecta*
Choc - North and South	Basin, riverine	12.95	NA	Private	*R. mangale*
Dennery	Riverine	6	<0.5	Crown	*R. mangale and L. racemosa*
Esperance	Riverine	17.35	17.35	Private	*R. mangale and L. racemosa*
Fond d'Or	Riverine	21	<0.5	Crown	*A. germinans, C. erecta, R. mangale and L. racemosa*
Grande Anse	Basin	NA	<0.5	Crown	*R. mangale and L. racemosa*
La Corciere	Riverine	5.18	<1.0	Crown	*A. germinans, C. erecta, R. mangale and L. racemosa*
Louvet	Riverine	17.35	17.35	Private	*R. mangale and L. racemosa*
Man Kote	Basin	39.37	39.37	Crown	*A. germinans, C. erecta, R. mangale and L. racemosa*
Marigot	Fringe	6.22	0.7	Crown	*A. germinans, R. mangale and L. racemosa*
Marquis	Riverine	2.59	1.5	Crown	*C. erecta, R. mangale and L. racemosa*
Micoud	Fringe	1.29	1	Private	*A. germinans, C. erecta, R. mangale and L. racemosa*
Prasin	Fringe	17.35	17.35	Private, Crown	*A. germinans, C. erecta, R. mangale and L. racemosa*
Savances	Fringe	24.61	24.61	Crown	*C. erecta, R. mangale and L. racemosa*
Troumasse	Fringe	NA	<0.2	Crown	*R. mangale and L. racemosa*
Volet	Fringe	NA	1.5	Pivate, Crown	*R. mangale and L. racemosa*

Source: Biodiversity Report, 1998

WATER RESOURCES

7.0 Water Resources

Water is essential for human survival. Factors such as population growth, changes in lifestyle, increasing visitor arrivals, demands of the construction and manufacturing sector are mainly responsible for the increases in water consumption in St. Lucia.
The Water and Sewage Company is responsible for the distribution of water in St. Lucia. Preliminary Census results and the data in table 7.1 indicates that the percentage of the population with access to potable water has increased significantly.

Table7.1
WaterProductionandConsumption, 1982-2001

YEAR	PRODUCTION	CONSUMPTION	WASTE/LOSS	NO. OF CONSUMERS ON FILE
1985	2,048	1,606	442	15,934
1986	2,255	1,620	635	18,605
1987	2,381	1,672	709	20,488
1988	2,550	1,850	700	21,711
1989	2,325	1,697	628	23,742
1990	2,402	1,885	517	25,424
1991	2,376	1,914	462	26,850
1992	3,068	2,057	1,011	29,634
1993	3,160	2,212	948	31,000
1994	2,366	1,982	473	33,000
1995	2,579	2,115	464	33,752
1996	2,468	2,035	432	37,782
1997	2,739	2,353	386	37,990
1998	2,909	1,997	912	39,416
***1999**	3,459	1,660	1799	
***2000**	3,641	1,930	1711	39,618
2001	3,641	2,025	1616	47,493

Source: Water and Sewage Company (WASCO)
*NB: unaccounted for water according to the World Bank was 52% and 47% in 99 and 2000 respectively

The number of WASCO's consumers on file has increased by 77% from 26,850 in 1991 to 47,493 in 2001. The production of water has increased by 53% and the consumption by 5.8% between 1991 and 2001. On average approximately 10 million gallons of water is produced daily and 5.5 million gallons is consumed daily.

Table 7.2
Imports of Water, 1996-2001

Type	Import Quantity (Litres)					
	1996	1997	1998	1999	2000	2001
Mineral Waters	184,832	91,411	315,402	169,848	160,779	121,693
Aerated Waters	11,266	20,423	66,295	35,437	34,442	40,671
Other Unsweetened Waters	295,893	500,769	29,093	100	0	1
Ordinary Waters	24,467	151,269	229,538	278,772	308,085	395,332
Other Waters Including Natural or Artificial Mineral Waters	15,214	14,188	136,438	110,497	128,658	84,836
Total	**516,458**	**763,872**	**640,328**	**484,157**	**503,306**	**557,697**

Source: Government Statistics Department

There is no direct correlation between the import of water in St. Lucia and local quality of water available. This increase from 1996 to is primarily due to the changing demands and preferences among consumers and the Tourism Industry.

Table7.3
Watersheds

Catchment	Area (km^2)	Average Base Flow (litres/s)	Average Dry Season Baseflow (litres/s)
Sallee/Lapins	6.7	NA	NA
Esperance	9.7	NA	NA
Trou Gravaul/Dauphin	10	NA	NA
Marquis	31	240	150
Grande Anse/Louvet	29.2	NA	NA
Fond d'Or	41	470	225
Dennery	21.4	270	137
Riviere Galet/Trois Islet	11	NA	NA
Mamiku/Patience	16	NA	NA
Fond	18.1	285	150
Volet	8.6	NA	NA
Troumassee	31.7	650	400
Micoud/Ravine Bethel	13.1	NA	NA
Canelles	17.3	300	150
Roarne/Rugeine/Palmiste/St. Urban	22.8	NA	NA
Vieux Fort	28.8	480	250
Black Bay	15.2	NA	NA
Laborie	5.5	NA	NA
Piaye	9.6	NA	NA
Balembouche	5.2	NA	NA
Doree	11.1	NA	NA
Choiseul/TrouBarbet/TrouMarc	18.1	NA	NA
L'Ivrogne	6.5	95	65
Pitons	7.1	NA	NA
Soufriere	17.2	440	200
Mamim/Mahut	13.7	NA	NA
Canaries	14.6	NA	NA
Anse la Verdure/Cochon/Galet	13.1	NA	NA
Grande Riviere de Anse la Raye	8.9	175	87
Petit Riviere de Anse la Raye	5.7	NA	NA
Roseau	49.1	1050	550
Mt. Bellevue	4.8	NA	NA
Cul de Sac	40.9	500	237
Castries	14.3	NA	NA
Choc	12.7	100	50
Bois d'Orange	11.3	NA	NA
Cap	15.4	NA	NA

NA: Data not available

Source: Biodiversity Report, 1998

Table7.4
Catchment Status

River Name	Status of Catchment
Marquis	At high risk; water quality at the two intakes possesses high levels of chemical and microbiological contaminants
Dennery	At high risk from intensive agriculture (mainly banana)
Troumassee	At high risk from marginal agriculture (banana cultivation)
Vieux Fort	The catchment area is almost completely farmed, water volumes and quality are no longer adequate for domestic water supply
L'Ivrogne	At high risk; quality and continuity of supply is threatened
Canaries	Potentially at risk, primarily from agriculture
Grande Riviere/Anse la Raye	Potentially at risk from banana cultivation
Roseau	The most important catchment area; potentially at risk from possible land slips
Cul de Sac	High risk from agriculture and sewage discharges; soon likley to be abandoned as a water supply source
Castries	Not suitable for water supply purposes; impacted by agriculture, sewage and waste (grey) water
Choc	Water supply low; contaminated by pesticides; likely to be abandoned

Source: Biodiversity Report, 1998

Table7.5
CategoriesofPollution

Category	Principal Source/Causes	Occurrence in Catchment		
		Lower (< 2000 ft)	Middle (200-600 ft)	Upper (> 600 ft)
Organics	Domestic sewage	+	+	-
Nitrogen + Phosporous	Domestic sewage and agricultural fertilizers	+	+	-
Pesticides	Farm land	++	+	-
Herbicides	Farm land	++	+	-
Heavy Metals	Industrial effluents	-	-	-
Oil	Transport	+	+	-
pH	Industry	-	-	-
Pathogens	Human sewage and farm waste	++	+	-
Physical solids	Farm land and deforested soils	++++	+++	++

"- insignificant; + significant; ++ damaging; +++ severe; ++++ extreme"

Source: Biodiversity Report, 1998

Table 7.6
Waterfalls

Waterfall (River on which located)	Estimated Maximum Heights/metres	Access	Status
Canaries- 1	6.90	5 - minute climb	clean,heavily used
Canaries- 2	7.80	5 - minute walk	clean,heavily used
Canaries- 3	11.90	20 - minute walk	clean,heavily used
Canaries- 4	17.30	2 hour hike	clean,rarely used
Saltibus - 1	17.00	1 - hour hike	clean, very rarely used
Saltibus - 2	15.00	1.5 - hour hike	clean, very rarely used
Satilbus - 3	12.00	1.75 - hour hike	clean, very rarely used
Saltibus - 4	13.80	2 - hour hike	clean, very rarely used
Saltibus - 5	30.00	1.5 hour hike	clean, used moderately
L'Ouvette	30.90	25 - minute walk	threatened*, not used
Jalousie	28.80	15 - minute climb	clean, heavily used
Anse La Raye	46.80	15 - minute walk	threatened, heavily used
Dennery	36.30	15 - minute climb	threatened*, used
Ravine Claire	93.00	15 - minute climb	threatened, used
Zenon	16.10	5 - minute climb	threatened, used
Abasseuu	16.20	1 - hour hike	clean, used
Diamond	19.20	Easy 10 - minute walk	degraded, not used
Clauzier	17.70	2 - minute boat ride across	
		dam; 40 - minute walk	clean, rarely used
Fond	28.50	30 - minute walk	degraded*, not used
Millet	15.30	2 - hour hike	clean, not used

Note: 'used' in the Status column refers to bathing by persons

Key: * agricultural influence

Source: Felix, M.L., Waterfalls of St.Lucia, 1996.

ENERGY

8.0 Energy

Almost all consumption of energy in St. Lucia is from imported fossil fuels such as gasoline, kerosene and aviation jet fuel. There is a negligible amount of energy consumption from renewable sources namely, solar energy and charcoal. To maintain the lifestyle we enjoy requires an enormous use of energy. Energy is used for lighting, preparation of food, transportation, manufacturing and other commercial purposes. The use of energy generates waste products, some of which are harmful. As the energy consumption increases it directly affects the emission of green house gases.

St. Lucia has recently completed its first National Communications on Green House Gases and is soon to ratify the Quito Protocol. It is hoped that we will eventually be in a position to reduce on our emission of green house gases.

Table8.1
Imports of Petroleum Products, 1997 - 1999

Fuel Product	Quantity in 000's of Barrels		
	1997	1998	1999
Leaded Gasoline	239	122	218
Unleaded Gasoline	83	42	121
Gas Oil	112	58**	82**
Kerosene	2	2	3
LPG	225	503	140
Lubricants (lbs)	6	2	5
Bitumen	13	-	-
Fuel Oil	-	1	7
Spraytex	7	3	6
Av-jet	2	20	202
Av-gas	2	1	0
TOTAL	**691**	**696**	**702**

**does not include LUCELEC's Gas Oil*
Source:SustainableDevelopmentandEnvironmentUnit

Table8.2
FinalConsumptionof Energy(TOE*)

Sector	Primary Energy	Secondary Energy							Total
	1	2	3	4	5	6	7	8	
Residential	1589	1886	0	0	269	0	0	5987	9731
Commercial	-	1335	0	219	13257	17618	2984	3824	39237
Public	-	7	199	35	0	0	1246	1644	3131
Tourism	-	596	2015	98	0	0	2677	2838	8224
Transportation	-	0	25885	9903	0	0	7523	-	43311
Agriculture	-	0	1505	0	0	0	16	-	1521
Industrial	-	18	0	0	0	0	644	356	1018
Marine	-	0	0	0	0	0	430	-	430
Unidentified	-	10	0	89	0	0	62	224	385
Total	**1589**	**3852**	**29604**	**10344**	**13526**	**17618**	**15582**	**14873**	

(1)Firewoodand Agricultural Residence
(2)LiquifiedGas
(3)LeadedGasoline
(4)UnleadedGasoline
(5)Kerosine/Aviation Gasoline
(6)JetFuel
(7)Diesel
(8)Electricity

*TOE = Tons of Oil Equivalent

Source: Sustainable Development and Environment Unit

Table8.3
Capacity of GeneratingPlants,1995 - 2001

	1995	1996	1997	1998	1999	2000	2001
Maximum Installed Capacity of Plants (kWh '000)	44,500	44,500	44,500	59,900	59,900	66,400	66,400
Total Generated (kWh '000)	196,574	198,033	213,147	235,881	256,195	276,745	286,539
USAGE							
Domestic Consumers (No.)	31,858	33,725	36,071	37,956	39,825	41,097	42,548
Quantity Used (kWh '000)	62,668	65,653	69,617	75,639	79,491	85,075	88,443
Commercial Consumers (No.)	4,697	4,888	4,843	4,896	5,049	5,102	5,082
Quantity Used (kWh '000)	85,683	86,518	97,248	108,617	120,628	131,863	137,017
Industrial Consumers (No.)	141	180	121	119	115	116	112
Quantity Used (kWh '000)	12,697	10,861	11,287	11,640	12,271	13,250	12,954
Street Lighting (Qty), (kWh '000)	2,282	2,185	2,605	2,931	3,271	3,893	5,002
Loss in Transmission (Qty), (kWh '000)	25,171	24,628	23,935	28,236	29,734	30,595	30,601
Internal Use (Qty), (kWh '000)	8,073	8,189	8,455	8,817	10,800	12,069	12,522
Revenue ('000EC$)	79,263	86,788	99,260	102,763	113,516	141,111	141,784

Source: Saint Lucia Electricity Services Ltd (Annual Report 2001).

Table8.4
AverageConsumption per Customer (kWh), 1995-2001

Type	Average Annual Consumption Per Customer (kWh)						
	1995	1996	1997	1998	1999	2000	2001
Domestic	1,967	1,947	1,930	1,993	1,996	2,070	2,079
Commercial*	18,242	17,700	20,080	22,185	23,892	25,845	26,961
Industrial	90,050	60,333	93,281	97,815	106,709	114,224	115,661
Street Lighting	134,235	109,250	137,105	172,412	192,394	229,000	277,889
Total Consumption**	**244,494**	**189,230**	**252,396**	**294,405**	**324,991**	**371,139**	**422,590**

*Includes Hotels
Source: Lucelec Annual Report 2001

Table8.5
DistributionofHouseholds byFuelUsedforCookingandDistrict,1991and2001

DISTRICT	Charcoal		Wood		Gas/LPG		Kerosene		Electricity		Other		Not Stated	
	1991	2001	1991	2001	1991	2001	1991	2001	1991	2001	1991	2001	1991	2001
	Percentage of Households													
Castries	13.9	4.7	3.2	1.6	80.1	88.2	1.2	0.3	1.0	0.5	0.7	1.0	-	3.7
Anse La-Raye	44.2	15.5	6.2	4.1	46.6	75.2	0.8	0.1	1.0	0.3	1.2	1.4	-	3.3
Canaries	69.8	32.2	4.2	1.7	24.2	63.0	0.4	0.2	1.4	-	0.0	2.5	-	0.4
Soufriere	31.3	17.6	15.2	7.7	52.1	72.1	0.3	0.2	0.5	0.3	0.6	0.7	-	1.4
Choiseul	27.4	18.1	33.1	14.2	33.9	65.5	4.6	-	0.5	0.1	0.5	1.2	-	0.9
Laborie	23.3	9.1	24.8	7.3	50.8	80.3	0.4	0.2	0.1	0.1	0.6	0.8	-	2.3
Vieux-Fort	15.6	4.6	11.9	5.6	69.5	86.9	1.6	0.1	0.6	0.3	0.8	1.2	-	1.2
Micoud	16.8	5.9	12.5	5.3	68.7	87.1	0.5	0.1	0.7	0.1	0.7	0.6	-	0.9
Dennery	25.7	7.6	9.4	6.1	62.9	83.2	0.9	0.2	0.4	0.2	0.8	1.1	-	1.6
Gros Islet	15.3	3.5	7.4	2.3	74.4	90.1	0.7	0.2	2.0	1.0	0.3	0.8	-	2.1
Total Island	**19.6**	**7.0**	**9.2**	**5.1**	**68.5**	**85.0**	**1.1**	**0.2**	**0.9**	**0.4**	**0.7**	**1.0**	**-**	**1.3**

Source: Saint Lucia Government Statistics Department

85% of households used LPG/ Gas for cooking. This represented an increase of 16.5 percentage points over the 1991 figures.

Households who use charcoal and wood both declined in 2001. 7% used charcoal compared to 19.6% in 1991, whilst 5.1 percent used wood compared to 9.2% in 1991. The districts with the highest usage of charcoal and wood were Canaries and Choiseul respectively. 32% of households in Canaries used charcoal and 14.2 % of the households in Choiseul used wood.

Table8.6
DistributionofHouseholds byFuelUsedforCooking,1980-2001

Type	1980	1991	2001
	Percentage of Household		
Charcoal/wood	68.9	28.9	12.1
Gas	24.5	68.5	85.0
Kerosene	1.6	1.1	0.2
Electricity	0.6	0.9	0.4
Other/Not Stated	4.4	0.7	2.3
Total Households	**24,733**	**33,079**	**41,481**

Source: Saint Lucia Government Statistics Department

Table8.7
DistributionofHouseholds byTypeofLighting andDistrict,1991 and 2001

DISTRICT	Gas		Kerosene		Electricity		Other		None		Not Stated	
	1991	2001	1991	2001	1991	2001	1991	2001	1991	2001	1991	2001
Percentage of Households												
Castries	0.3	0.2	11.6	2.8	84.2	89.3	3.8	3.3	-	0.8	-	3.7
Anse La-Raye	0.4	0.5	35.7	9.3	61.6	78.4	2.4	5.6	-	2.7	-	3.5
Canaries	0.2	0.2	47.4	17.3	50.4	77.1	2	3.1	-	1.5	-	0.8
Soufriere	0.2	0.4	26.1	7.5	71.2	85.1	2.5	4.7	-	1	-	1.2
Choiseul	0.5	0.2	52.1	15.7	45.6	79.5	1.7	2.8	-	0.7	-	1.1
Laborie	1.3	0.2	40.8	10	55.6	84.1	2.3	2.7	-	0.8	-	2.3
Vieux-Fort	0.4	0.3	23.3	5.5	66.8	85.6	9.4	5	-	2	-	1.6
Micoud	0.4	0.1	23.1	6.3	63	84.2	13.5	7.4	-	1	-	1.1
Dennery	0.4	0.2	30.7	6.7	63.3	79.1	5.6	10.9	-	1.8	-	1.3
Gros Islet	0.5	0.4	14.3	2.1	80.7	92.6	4.4	2.3	-	0.5	-	2.2
Total Island	**0.4**	**0.2**	**18.7**	**5.1**	**76.1**	**86.6**	**4.8**	**4.5**	**-**	**1.1**	**-**	**2.5**

Source: Saint Lucia Government Statistics Department

Table8.8
DistributionofHouseholdbyType of Lighting

Type	1980	1991	2001
Percentage of Household			
Electricity	44.8	76.1	86.6
Kerosene	51.1	18.7	5.1
Gas	0	0.4	0.2
other	1.4	4.8	4.5
Not Stated	2.7	0	2.5
None	-	-	1.1
Total Households	**24,733**	**33,079**	**41,481**

Source: Saint Lucia Government Statistics Department

TRANSPORT

9.0 TRANSPORT

Table9.1
Number ofVehiclesRegisteredbyType,1997-2001

Category	No. of Vehicles Registered				
	1997	1998	1999	2000	2001
Goods Vehicles	7,881	8,198	8,545	8,789	8,972
Taxi/Hired Vehicles	1,230	1,522	1,718	1,824	1,894
Motorcycles	642	674	720	750	757
Private Vehicles	15,330	17,475	19,245	20,752	22,453
Passenger Vans	2,708	2,903	3,107	3,257	3,387
Tractor Trailers	34	34	34	34	39
Earth Moving Equipment	172	178	178	178	178
Tractors	40	40	40	40	40
Other/Not Stated	1,070	1,231	1,382	1,550	1,696
TOTAL	**29,107**	**32,255**	**34,969**	**37,174**	**39,416**

Source: Road Transport Division; Min. of Communications, Works & Transport

Table9.2
Number ofNewlyRegisteredVehicles byType1997 - 2001

Vehicle type	No. of Newly Registered Vehicles				
	1997	1998	1999	2000	2001
Goods Vehicles	378	317	347	244	183
Taxis /Hired Vehicles	192	292	196	106	70
Motorcycles	53	32	46	30	7
Private Vehicles	1,544	2,145	1,770	1,507	1,701
Passenger Vans	206	195	204	150	130
Tractor Trailers	2	0	0	0	5
Earth Moving Equipment	13	6	0	0	0
Tractors	0	0	0	0	0
Other Not stated	85	77	132	128	87
TOTAL	**2,473**	**3,064**	**2,695**	**2,165**	**2,183**

Source: Road Transport Division, Ministry of Communications, Works, Transport & Public Utilities

Table9.3
Aircraft Movementby Port,1996 - 2000

	HEWANORRA					GEORGE F. L. CHARLES				
	1996	1997	1998	1999	2000	1996	1997	1998	1999	2000
Scheduled	3,307	3,639	4,805	4,764	4,127	16,662	15,790	19,001	20,124	20,220
Non-Scheduled	7,347	6,301	4,778	5,774	5,158	9,374	11,536	7,332	7,326	7,904
Other	603	686	1,097	872	819	4,409	3,280	3,149	3,518	4,814
TOTAL	**11,257**	**10,626**	**10,680**	**11,410**	**10,104**	**30,445**	**30,606**	**29,482**	**30,968**	**32,938**

Source: St. Lucia Air & Sea Ports Authority

Table9.4
PassengerAirTrafficfrom George F. L. Charles, 1996 - 2000

Passengers	GEORGE F. L. CHARLES				
	1996	1997	1998	1999	2000
Embarked	151,175	159,704	158,306	182,022	201,086
Disembarked	142,207	151,714	154,916	176,084	193,222
Total Passengers Handled	**293,382**	**311,418**	**313,222**	**358,106**	**394,308**

Source : St. Lucia Air & Sea Ports Authority

Table9.5
PassengerAirTrafficfrom Hewanorra, 1996 - 2000

Passengers	HEWANORRA				
	1996	1997	1998	1999	2000
Embarked	155,271	168,310	174,320	181,936	173,566
Disembarked	162,835	178,564	180,050	183,960	178,112
Total Passengers Handled	**318,106**	**346,874**	**354,370**	**365,896**	**351,678**

Source : St. Lucia Air & Sea Ports Authority

Table9.6
Vessel CallsbyType and Port,1997 - 2000

TYPE OF VESSEL/SHIP	NUMBER OF VESSEL CALLS							
	Castries				Vieux-Fort			
	1997	1998	1999	2000	1997	1998	1999	2000
Cargo Vessels <100 GRT.	173	163	100	70	111	102	89	112
Conventinal Break Bulk Vessels	214	240	262	379	114	108	191	167
Container Ships	389	455	445	105	194	217	271	172
Combination Ships	93	102	95	105	54	52	52	54
Production Tankers	8	6	12	10	45	63	62	49
Car & Truck Carriers	13	14	25	21	8	6	0	0
Tug & Barge	39	48	78	41	0	6	7	3
Tugs	2	5	5	5	0	0	0	0
Cruise Ships	499	632	653	662	2	5	11	2
Navel Ship & Coast Guard	9	15	15	16	0	0	0	0
Others	3	5	2	12	0	0	0	0
TOTAL	**1442**	**1685**	**1692**	**1431**	**528**	**559**	**683**	**559**

Source : St. Lucia Air & Sea Ports Authority

Table9.7
RoadLengthandCondition

Type	Length (Km)	Approximate Percentage of Road Length in Fair or Better Condition
Main Roads	152.9	80%
Village Roads	82.9	70%
FeederRoads	513.8	55%
Secondary Roads	110.2	60%

Source: Biodiversity Report, 1998

AIR AND CLIMATE

10.0 Air and Climate

Air Quality is an important aspect of overall environmental quality.
Human Health, for example, can be influenced by the level of pollutants in the air that they breathe. The need to collect data on green house gas emissions (GHG) was recognized when St. Lucia embarked upon the implementation of its Initial National Communication on Climate Change in 1994, (the base year for this purpose). National Communications will reflect more up to date information.

The collection of data on Ozone depleting substances commenced with the implementation of The Montreal Protocol Activities in St. Lucia in 1995.

Table10.1
EmissionsofGreenHouseGases,1994

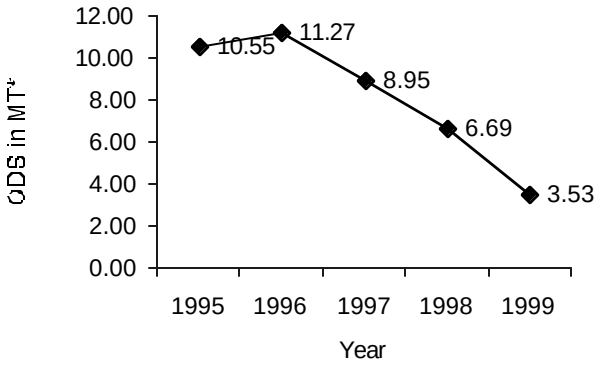
GHG Source and Sink	Greenhouse Gas								TOTAL
	CO_2+	CO_2-	CH_4+	N_2O+	NO_x+	CO+	NMVOC+	HCFC$_s$+	
	*	**					***		
Energy									
Energy Industries	121.00	0	0.00	0.00	0.33	0.02	0.01		121.37
Manufacturing Industries	6.00	0	0.00	0.00	0.01	0.00	0.00		6.01
& Construction									0.00
Transport	105.00	0	0.03	0.00	0.94	10.84	1.084		127.65
Other	36.00	0.00	0.05	0.00	0.07	1.14	0.07		37.33
Industrial Processes	0.00		0.00	0.00	0.00	0.00	1.96	1.34	3.30
Solvent & Product Use	0.00			0.00			0.00		0.00
Agriculture			0.49	0.05	0	0			0.54
Land-Use Change & Forestry	0.00	-352.00	0.30	0.00	0.07	2.60			-349.03
Waste			27.80	0.02					27.82
Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Memo Notes									
International Bunkers	67.79		0.00	0.00	0.00	0.00	0.00		67.79
CO2 from Biomass	18.96								18.96
TOTAL	**354.745**	**-352.00**	**28.67**	**0.07**	**1.41**	**14.61**	**12.88**	**1.34**	**61.72**

* *Positive sign (+) signifies emissions into the environment*

** *Negative sign (-) signifies uptake from the environment*

****NMVOC = Non Methane Volatile Organic Compounds*

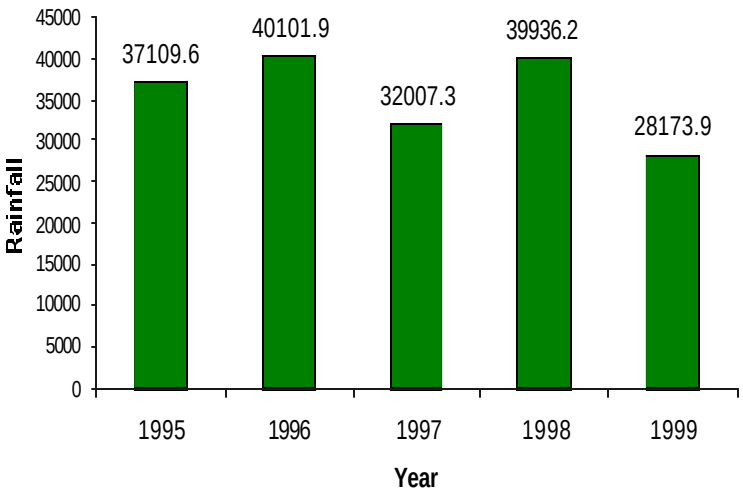
Figure10.1
Consumption of OzoneDepletingSubstances (ODS), 1995 - 2000



Thereducing trendinconsumptionof ozonedepleting substances(ODS) is in tune with the factthat St.Luciais obligated to reduceconsumptionof thosegases,to zero,by2010.

MT = metrictons
Source: Sustainable Development and Environment Unit

Figure 10.2
Annual Rainfall, 1995 - 1999



Source: Engineering Division, Ministry of Agriculture

Temperature

The monthly mean temperature measured at the two airports (George F.L. Charles Airport and Hewanorra International Airport) varies between 25 and 29°C, with most months having a mean temperature between 27 and 29°C.

Humidity

The mean monthly humidity at Hewanorra has been between 71-81% throughout 1997-1999. At George F.L. Charles, it has been between 69-80% during the same period.

Sunshine Hours

Recorded average sunshine hours per day are between 8-9 hours. Averages of 5-6 hours have been recorded.

NATURAL HAZARDS

11.0 NATURAL HAZARDS

St. Lucia's geographic location makes it more prone to natural disasters such as hurricanes, tropical storms and flooding. Human activity exerts pressure on the environment and can increase the damage caused by natural disasters.

Poor land use and agricultural practices increases the risk of landslides and flooding causing substantial damage to property, crops and coastal and marine resources such as beaches and coral reefs. Improper disposal of garbage also contributes to the flooding experienced after continuous heavy rainfalls.

The most serious landslide experienced in the past ten years was Tropical Storm Debbie on September 9th and 10th, 1994. Three lives were lost and the damage was estimated at $230 million. The disaster matrix in table 11.1 gives a list of all disasters experienced in St. Lucia from 1780 to present.

Table 11.1
Disaster Matrix of events experienced in Saint Lucia

DATE	EVENT	NUMBER KILLED	NUMBER HOMELESS	COST	COMMENT
October 11, 1780	Hurrican	2,000 - preliminary estimate 800 - revised estimate			Every bridge on the island collapsed
October 21, 1817	Hurrican	unknown			Loss to shipping and damage to west coast village
August 11, 1831	Hurrican	11			
January 11, 1939	Earthquake (7.5)	1			Located East of Martinique -In Castries all public building and masonry houses were severely damaged with partial collapse in some cases. In Soufriere one person killed
August 1841	Yellow Fever	9			
March 1, 1949	Civil unrest	8			
July-October, 1854	Cholera	(est.) 1, 500			
September 11, 1898	Hurrican	13			17 inches of rain estimated in Castries
February 2, 1906	Earthquake				
September 25, 1908	Rainstorm	1			Killed in landslide
February 7, 1911	Rainstorm	11			10 killed at night in flash flood in Mabouya Valley 1 in landslide at Roseau
May 14/15, 1927	Castries Town Fire				17 Blocks burnt
November 7, 1933	Rainstorm	3			Killed in landslides
February 24, 1935	MV George overturned	41 persons drown			
February 13, 1937	Sinking of the May Rose	12 persons drown			
November 21/22, 1938	Ravine Poisson Landslide	100			
May 21, 1946	Earthquake				Building damage
June 19/20, 1948	Castries Town Fire		2,300		
March 19, 1953	Earthquake (7.3)		homeless		In Castries there was partial collapse of buildings previously damaged by the 1948 fire, and some damage to other buildings. New buildings designed to resist earthquake were undamaged
June 9, 1955	Soufriere Town Fire	3	2, 000 homeless	EC$1.25 million (at 1955 prices)	7 blocks (478 houses lost)
September 22, 1955	Hurricane Janet				Coastal damage and jetties lost
July 10, 1960	Hurricane Abby	6		EC$ 4 million	Landslide at Fond St. Jacque
September 25, 1963	Hurricane Edith			EC$ 3/4 million	
August 1, 1966	Tropical Depression			EC$3/4 million	
September 7, 1967	Tropical Storm Beulah	1		EC$2 million	

March 23, 1972	The upper floor of Teacher's Training College collapsed				250 persons involved but not all were injured.
October 29, 1973	Island Airplane Crash	4			Saint Lucia Airways Mt. Gimie at 2,000 ft.
August 29, 1979	Hurricane David				Coastal damage
4-Aug-80	Hurrican Allen	9	6,000	EC$250 million (US$100 million)	
30-Nov-81	Cargo Transport Airp;ane Crash	3			Guyana DC6 B crashed at Vigie Airport
8-Sep-86	Tropical Storm Danielle				
Sep-89	Swarm of Locusts				Landed islandwide, however there was no damage as the Pipirites ate them all up
Year of 1990	Series of Earthquakes			EC$579,996.00	From February to November ranging in strength from 3.0 to 4.5
6-Nov-90	Landslide at Morne Du Don		68	EC$10,000.00 (initial allocation)	
29-Nov-92	Landslide at Bocage		10 families affected (36 persons)	EC$10,000.00 (initial allocation)	
7-Oct-93	Civil unrest	2			Unrest in the banana industry. Demonstrations at La Ressource, Dennery
September 9/10, 1994	Tropical Storm Debby	3		EC$230 million	
19-Oct-95	Oil Spill (MV Flinders)			EC$3,257.37 (claims)	Cul-de Sac Bay 93 Barrels Arabian Light Crude Oil. The oil belonged to Mobile Oil. The oil spread from Hess Oil Compound at Cul-de Sac to the North of the island
1-Feb-96	Fire at Victoria Hospital				
11-Feb-96	Fire at Patterson's Gap		10 families displaced		
26-Oct-96	Tropical Storm			EC$12 million	
5-Jun-98	Collapse of telephone system			Immeasurable	
14-Oct-98	Landslide at Boguis		12 households (49 people)		
21-Oct-98	Tropical Wave	1	3 families displaced	EC$ 621,500	One family (with 1 dead) at Vamard, Anse La Raye. Two families at Sunbuilt Castries
3-Jun-99	Oil Spill-St. Lucia Linen			US$1,168.50	4,000 gallons found its way into the Choc River
Sep-99	Black Mallet Maynard Hill Landslide		102 families relocated	$1 million (preliminary estimate)	
19-Nov-99	Hurrican Lenny			$16.9 million	

17-Oct-00	Clay products spill		$3,988.00	45 gallons of an oil/water mixture discharged into the Cul-de-Sac River
31-Oct-00	Attack at Basilica Minor of the Cathedral of the Immaculate Conception	2	$20,000.00 (preliminary estimate)	Of the 12 burnt, 6 sent to New York, 2 to Matinique and 2 to Barbados for Medical attention 2 men arrested
May 18, 19 and 20, 2002	Collapse of telephone system		Minimal: May 18 and 19 was a weekend May 20 was a holiday	Payphones, normal phones, pagers, fax machines, internet and emergency numbers affected

Source: National Emergency Management Office (NEMO)

TOURISM

12.0 TOURISM

Tourism is one of the fastest growing sectors in the St. Lucian economy, contributing approximately 13 percent to the Gross Domestic Product. The tourism industry is dependent on the country's natural resources, (marine and natural resources). These resources need to be managed in a sustainable manner for the continued development of the tourism product. Tourism also exerts pressure on the environment, increasing the demand for water, energy and physical infrastructure whilst generating both liquid and solid waste.

Table12.1
SelectedVisitorStatistics, 1997 - 2001

	1997	1998	1999	2000	2001
Total Visitor Arrivals	573602	638876	668837	728966	747305
of which					
Cruise Passengers	320233	381346	394801	446263	490878
Stay - over	248406	252237	263793	269850	249251
Excursionist	4963	5293	10243	12853	7176
Average length of stay	9.1	9.2	9.1	9.6	10.6
Average hotel occupancy	71.4	75.3	72.5	63.8	56.5
Cruise Ship calls	329	348	331	347	327

N.B. Regional Passengers and calls not included in Cruise Passengers and cruise ship calls.

Source: St. Lucia Tourist Board, St. Lucia Air and Sea Ports Authority

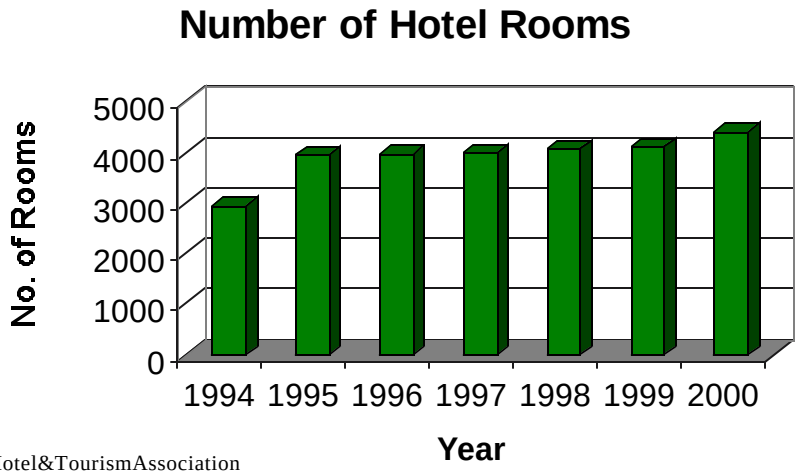
Total visitor arrivals increased by 30% in the last 5 years. The Sub-sector, cruise ship arrivals wasthelargestcontributorwithanincreaseof53%inthatperiodandanincreaseof10%in2001.

Stayoverarrivals experiencedadeclineof7.6%in2001asaresultofglobaleconomicconditions andthedownturninarrivalsaftertheterroristsattacks in the UnitedStates.Aonedayincreasein averagelengthofstaycausedtouristnightstoincreaseby1.9%.Visitorexpenditure contracted by 16.2%in2001afterexperiencingyearsofgrowth,thisdeclinehasbeenattributedtothefallin stayoverarrivalsandtheheavydiscountsinhotelrates.

Table12.2
Number ofHotelRooms 1996 - 2000

Year	No. of Room
1994	2954
1995	3974
1996	3986
1997	4014
1998	4077
1999	4125
2000	4425

Figure12.1
Number ofHotelRooms 1996 - 2000



Source:St.LuciaHotel&TourismAssociation

Table12.3
TouristNights, 1994 - 2001

Year	Tourist Arrivals [1]	Average Length of Stay	Tourist Nights
1994	218,567	9.2	2,010,816
1995	231,259	9.0	2,081,331
1996	235,659	8.7	2,050,233
1997	248,406	9.1	2,260,495
1998	252,237	9.2	2,320,580
1999	263,793	9.1	2,400,516
2000	269,850	9.6	2,590,560
2001	249,251	10.6	2,642,061

[1] *tourist arrivals include stayover arrivals only*
Source: St. Lucia Tourist Board and Government Statistics Department.

Figure12.3
TouristNights, 1994 - 2001

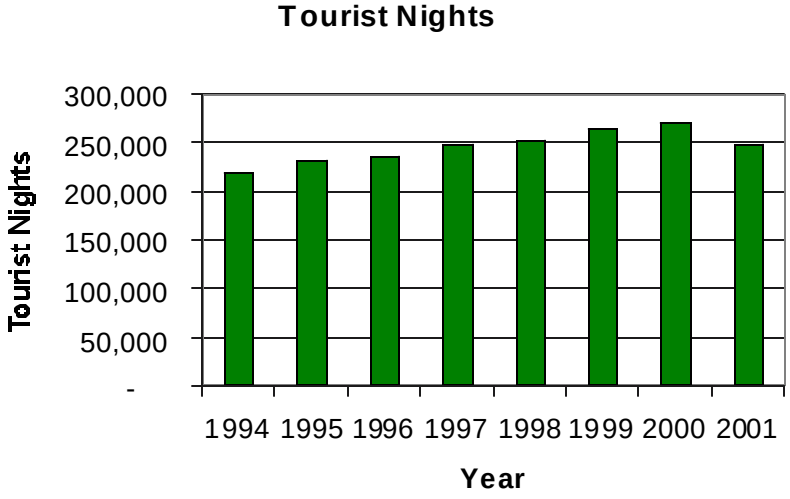


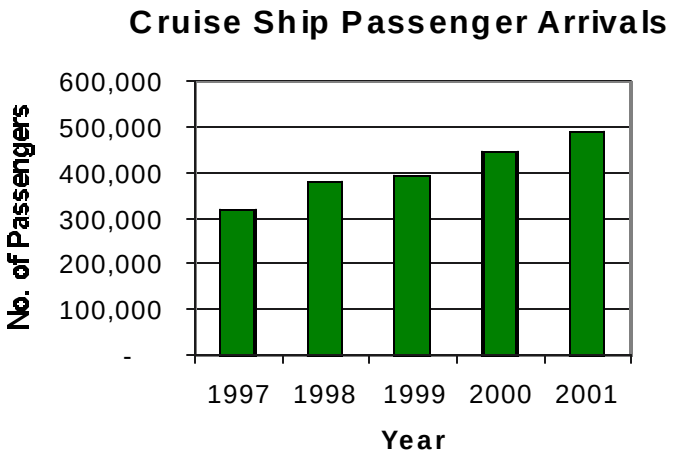
Table12.4
CruiseShipPassengerArrivals1997-2001

Year	INTERNATIONAL PASSENGER ARRIVALS
1997	320,233
1998	381,346
1999	394,801
2000	446,263
2001	490,878

Note: Only Intransit International Passengers are included.

Source : St. Lucia Air and Sea Port Authority

Figure12.4
CruiseShipPassengerArrivals1997-2001



Source:St.LuciaAirandSeaPortAuthority

Table12.5
TouristPenetration Ratio 1997-2001

Year	Total Visitor Arrivals[1]	Mid year Population	Penetration Ratio
1997	573,602	149621	3.8
1998	538,876	151952	4.2
1999	668,837	153703	4.4
2000	728,966	155,796	4.7
2001	747,305	151,143	4.9

[1] *total visitor arrivals includes stayover arrivals, excursionist and international cruise passengers*

Source: Government Statistics Department, St. Lucia Tourist Board, St. Lucia Air and Sea Port Authority

Table12.6
TouristArrivalsbyType of Accommodation 1996-2000

Type	Tourist Arrivals				
	1996	**1997**	**1998**	**1999**	**2000**
Hotels	157,709	169,610	182,261	189,357	204,389
Guest Houses	14,951	14,871	13,948	8,763	8,562
Apartments	5,772	6,954	6,796	12,019	6,924
Other Paid	19,741	22,599	14,605	15,571	4,354
Private	32,958	30,760	29,467	31,907	21,380
Not Stated	4,528	3,612	5,160	6,176	24,241
Total	**235,659**	**248,406**	**252,237**	**263,793**	**269,850**

Source: St. Lucia Tourist Board, Government Statistics Dept.

Table12.6
Visitor Expenditure, 1996 - 2000

Year	Expenditure (EC$M)
1996	725
1997	766
1998	770
1999	740
2000	752

Source: St. Lucia Tourist Board

Figure12.6
Visitor Expenditure, 1996 - 2000

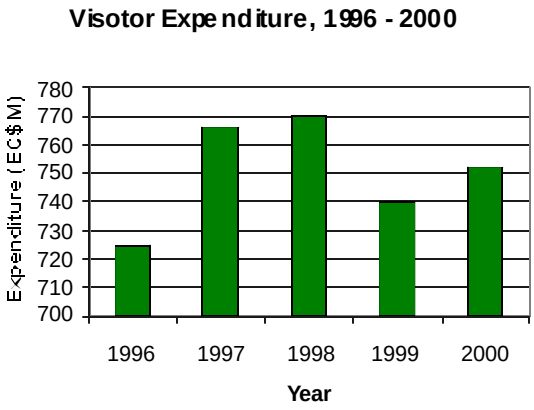


Table12.7
VisitstoParks,1996-2000

Year	Number of Visits
1996	71309
1997	67232
1998	67572
1999	62246
2000	64668

Source: St. Lucia National Trust (2001)

Heritage Tourism

The St. Lucia Heritage Tourism Programme was established in 1998. Its mission is to establish heritage tourism as a viable and sustainable component of St. Lucia's Tourism Product by facilitating a process of education, capacity building, product development, marketing, credit access and the promotion of environmental and cultural protection for the benefit of host communities and St. Lucia.

SOLID & LIQUID WASTE

13.0 SOLID AND LIQUID WASTE

SOLID WASTE

The St. Lucia Solid Waste Management Authority is responsible for the management of solid waste in St. Lucia. Presently there are two waste disposal sites, the Ciceron Waste Disposal Site in the north of the island and the Vieux Fort Solid Waste Disposal Site in the south of the island.

The Ciceron Site is soon to be closed, to be replaced by a new and modern disposal site at Deglos in Castries. This new site will comply with international standards, containing an electronic weighing scale, a recycling building where waste will be separated with the hope to source level of recycling in the future and the monitoring and treatment of leachate. The Vieux Fort Disposal Site will also be upgraded.

Table13.1
Waste Disposal by Type,1998-2000

Year	Volume of Waste (m^3)				
	Household or Institutional	Green	Commercial	Industrial	Total
1998	114178	28653.5	38961	20248	202045.5
1999	138435	23452	61073	36924	259884
2000	158541	22569	67289	50089	298488

Source: St Lucia Solid Waste Management Authority.

Table13.2
WasteDisposal byType and Site 2001

Type of Waste	Ciceron	Vieux-Fort	Total
Residential	74181	60088	134269
Commercial	54436	9981	64417
Industrial	8165	13002	21167
Construction & Demolition	16900	531	17431
Green	22483	5174	27657
Ship/Aircraft	3020	117	3137
Bulky	6029	543	6572
Derelict Vehicles	918	338	1256
Total Waste Volume	**186132**	**89774**	**275906**
Total Vehicle Trips	33647	15647	49294

Source: St. Lucia Solid Waste Management Authority

Solid Waste is generated by most human activity. With a growing population and changing consumption patterns, the quantity and composition of solid waste also changes. Household or residential waste accounts or almost half (49%) of the total waste disposed at landfill sites in 2001 followed by commercial waste (23%). In 200, the total waste volumes for all categories of waste was greater in Ceceron than in VieuxFortexceptinthecategory of Industrial waste.

Table13.3
Distribution ofHouseholdsbyMainMethod ofGarbage Disposal 2001

METHOD	2001
Percentage of Households	
Dumping on land	1.5
Compost	0.2
Burning	5.1
Dumping in river/sea/pond	0.3
Burying	0.5
Garbage truck/skip	88.4
Other	1
Not Stated	3.1

Source: St. Lucia Government Statistics Department

PreliminaryCensus results show that 88.4% of households inSt.Luciausethegarbage truckorskipastheirmainmethodofgarbagedisposal.The second mostpopularmethod used is burning, used by 5.1% of households. Approximately 1.8% of the households dispose of garbage by dumping (on land, river, sea or pond).

CONVENTIONS WITH AN ENVIRONMENTAL COMPONENT

The relatively large number of conventions on the environment to which St. Lucia is a signatory is testimony to its interest in environmental matters. While there is a lag in reporting, this is due to a lack of staff to perform the duties required under the various conventions.

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

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

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

- **Convention on the Prohibition of the Development, Production and Stockpiling of Biological and Toxic Weapons and on their Destruction**
  Date of adoption: 10/4/1972
  Place of adoption: London, Moscow and Washington D.C.
  Date of entry into force: 26/3/1975
  Date of succession of St. Lucia: 26/11/1986
  Responsible Government Department: Ministry of Foreign Affairs

- **Convention of International Trade in Endangered Species of Wild Fauna and Flora**
  Date of adoption: 3/3/1973
  Place of adoption: Washington D.C.
  Date of entry of Convention: 1/7/1975
  Date of Accession of St. Lucia 15/12/1982
  Date of entry into force: 15/3/1983
  Amendments: 22/6/1994, Born; 30/4/1983, Gabarone
  Responsible Government Department: Department of Forests and Lands/Department of Fisheries.

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

- **Agreement for the Implementation of the Provision of the United Nations Conventions on the Law of the Sea 10/12/1982 relating to the Conservation and Management of Straddling Fish Stock and Highly Migratory Fish Stocks.**
  Date of Adoption: 4/8/1995 (Opened for Signature on 4/12/1995)
  Place of Entry into Force: Not yet in force
  Date of St. Lucia's Signature: 12/12/1995
  Date if St. Lucia's Ratification: 9/8/1996
  Responsible Government Department: Department of Fisheries

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

- **Vienna Convention for the Protection of the Ozone Layer**
  Date of adoption: 22/3/1985
  Place of adoption: Vienna
  Date of entry into force: 22/9/1988
  Responsible Government Department: Ministry Planning and Sustainable Development

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

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

- **Protocol on Specially Protected Areas and Wildlife to the Cartagena Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region**
  Date of adoption: 18/1/1990
  Place of adoption: Kingston
  Date of entry into force: Not yet in force
  Date of St. Lucia's signature: 18/1/1990
  Responsible Government Department: Department of Fisheries /Department of Forests and Lands

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

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

- **Convention to Combat Desertification**
  Date of adoption: 17/6/1994
  Place of adoption: Paris
  Date of entry into force: 26/12/1997
  Date of entry of St. Lucia: 30/9/1997
  Responsible Government Department: Department of Forests and Lands

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

- **Convention on the Prohibition of Military or any other Hostile use of Environmental Modification Techniques**
  Date of adoption: 10/12/1976 (Opened for signature on 18/5/1977)
  Place of adoption: Geneva
  Date of entry into force: 5/10/1978
  Date of St. Lucia's Succession: 27/5/1993
  Responsible Government Department: Planning and Sustainable Development

- **Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemicals Weapons and on their destruction**
  Date of opening for Signature: 13/1/1993
  Place of opening for Signature: Paris
  Date of entry into force: 29/4/1997
  Date of St. Lucia's signature: 29/3/1993
  Responsible Government Department: Planning and Sustainable Development

- **Treaty for the Non-Proliferation of Nuclear Weapon in Latin American and the Caribbean**
  Data on adoption and signature were not available

- **Protocol Concerning Cooperation in Combating Oil Spills in the Wider Caribbean Region**
  Date of Adoption: 24/3/1983
  Place of Adoption: Cartegena De Indias, Colombia
  Date of St. Lucia's Signature: 24/3/1983
  Date of Entry into force: 11/10/1986
  Date of ratification: 30/11/1984
  Responsible Government Department: Ministry of Agriculture, (Fisheries)

- **(London Amendment to the Montreal Protocol**
  Date of accession: 24/8/1999
  Responsible Government Department: Planning and Sustainable Development

- **(Copenhagen) Amendment to the Montreal Protocol**
  Date of accession: 24/8/1999
  Responsible Government Department: Planning and Sustainable Development

EXISTING MEA'S BEING CONSIDERED FOR RATIFICATION

- **Convention on Wetlands of International Importance especially as Waterfowl Habitat**
  Date of Adoption: 2/2/1971
  Place of Adoption: Ramsar, Iran
  Date of Entry into force: 21/12/1975
  Responsible Government Department: Ministry of Agriculture (Fisheries)

- **Convention on the Prevention of Marine Pollution by dumping from Ships and Aircrafts (as amended)**
  Date of Adoption: 15/2/1972, 2/3/1983, 5/12/1989
  Place of Adoption: Oslo
  Date of Entry into force: 7/4/1974, 1/9/1989
  Responsible Government Department: Ministry of Planning (Sustainable Development)

- **Protocol concerning Land Based Sources of Marine Pollution in the Wider Caribbean Region, 1999 (LBSMP)**
  Responsible Government Department: Ministry of Planning (Environment)

- **International Convention for the Safety of Life at Sea, 1974 (SOLAS)**
  Responsible Government Department: St. Lucia Air and Sea Ports Authority

- **International Convention on Civil Liability for Oil Pollution Damage,**
  Date of Adoption: 29/11/1969
  Place of Adoption: Brussels
  Date of Entry into force: Not yet in force
  Responsible Government Department: SLASPA, Maritime Authority

- **International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage**
  Date of Adoption: 25/5/1984
  Place of Adoption: Brussels
  Date of Entry into force: Not yet in force
  Responsible Government Department: SLASPA, Maritime Authority

- **International Convention on Oil Pollution Preparedness, Response and Cooperation**
  Date of Adoption: 30/11/1990
  Place of Adoption: London
  Date of Entry into force: 13/5/1995
  Responsible Government Department: SLASPA, Maritime Authority

- **Rotterdam Convention on the Prior Informed Concerts Procedure for Certain Hazardous Chemicals and Pesticides in International Trade 1998 (PIC)**
  Responsible Government Department: Ministry of Agriculture, (Department of Agriculture, Environment)

TREATIES UNDER NEGOTIATION

- **Treaty on Persistent Organic Pollutions (POP's)**
  Responsible Government Department: Ministry of Agriculture

- **Biosafety Protocol to the Convention on Biological Diversity**
  Responsible Government Department: Ministry of Agriculture

PRINCIPAL ENVIRONMENTAL LAWS OF ST. LUCIA

- **Agriculture Small Tenancy Act (1983) (no. 22 of 1983)**
  Enforcement of regulations requiring sound soil and water conservation practices on small land holdings.

- **Air and Seaport Act (1981) (Amendment) 1983; Regulations of 1985**
  Development and management of the nation's air and seaports

- **Beach protection Act (1967) (No. 2 of 1967) (Amendment) (No. 9 of 1994)**
  Protection of beaches through permitting system for beach sand mining

- **Crown Lands Ordinance (1946)**
  Establishment of the Crown Land Committee to review and make recommendations on the allocation/use of crown lands

- **Employees Occupational Health and Safety Act (1985)**
  Provision of inspection of food handling premises

- **Fisheries Act (1984) (No. 10 of 1984)**
  Fisheries Regulations SI No. 9 of 1994)
  Fisheries (Snorkeling License) regulations No. 223 of 2000.
  Management of fisheries and marine reserves

- **Forest, Soil and Water Conservation Ordinance (Cap 25) (1946) (Amendment 1957, 1983)**
  Management of forests, Establishment of forest reserves and protected forests
  Development of Soil and Water Conservation programmes to protect forested areas

- **Housing and Urban Development Corporation Act (1992)**
  Assistance in Planning and development of housing projects

- **Land Conservation and Improvement Act (1992) (No. 10 of 1992)**
  Provision for better land and drainage conservation

- **Land Development (Interim Control) Act (1971) (No. 8 of 1971) (Amendment) Act (1990)**
  Provision of Land Use planning and development control

- **Litter Act (1983) (No. 24 of 1983) (Amendment) Act (No. 15, 1985) (No. 14, 1993)**
  Control of litter in public and private places

- **Maritime Areas Act (1984)**
  Provision for territorial sea continental shelf, Establishment of contiguous zone, economic zone and other related purposes, Implementation of various provisions of the United Nations Conservation on the Law of the sea

- **Merchant Shipping Act (1981)**
  Introduction of the law of England with regard to Merchant Shipping and matters connected therewith including marine pollution

- **National Development Corporation Act (1971)**
  Promotion of economic growth/industrial development

- **Oil in Navigable Waters Act (Cap91)**
  Provision against the discharge or escape of oil into the territorial waters of the colony

- **Pesticides and Toxic Chemicals Control Act (1975) (No. 7 of 1975)**
  Establishment of the Pesticide Control Board Control of import, use labeling and storage of pesticides

- **Public Health Act (1975) (No. 8 of 1975)**
  Regulatory oversight for sewage, industrial and solid waste disposal
  Removal of nuisance and in-sanitary conditions on premises (rubbish, night soil etc.)

- **Plant Protection Act (1988) (No. 21 of 1988), Statutory Instruction (No. 66 of 1995) and Section Instruction (No. 71 of 1995)**
  Control of pest and diseases injurious to plants and to prevent the introduction of exotic species of the same

- **Radioactive Minerals Act (1957)**
  Authorization for exploration or mining of minerals

- **Rodney Bay Development Act (1970)**
  Authorization of land improvements works at Rodney Bay Limited

- **Slum Clearance and Housing Ordinance (1946)**
  Housing of persons, acquisition management slum areas, Re-development in improvement of unhealthy areas, demolition of in-sanitary areas

- **St. Lucia Solid Waste Management Authority Act (1996) (No. 20 of 1996)**
  Environmental Levy Order SI 1996. (No. 68) and Tipping Fee Order SI 1996 (No. 69)
  Establishment of the National Solid Waste Management Authority

- **Timber Industry Development Act (1984)**
  Development of Timber Industry, Promotion of Timber Industry

- **Tourist Industry Development Act (1981)**
  Promotion and development of tourist industry

- **Town and Country Planning Ordinance (Cap 175) (1946) and amended**
  Provision for Physical Planning and building control

- **Water and Sewerage Authority Act (1984) (No. 18 of 1984)**
  Management of water supply and resources, Development and control of sewage systems, Protection of surface water supply intakes

- **Wildlife Protection Act (1980) (No. 9 of 1980)**
  Provision for conservation of wildlife and recommendations for designation of wildlife reserves, Enforcement of hunting regulations

- **National Conservation Act (No. 16 of 1999).**

- **Minerals (vesting) Ordinance (No. 7 of 1966).**

- **St. Lucia National Trust Act (No. 16 of 1975).**

- **Animals (Disease and Importation) Act (No.41 of 1956) (as amended by Act No. 15 of 1994)**

A

Agricultural Land: Land including arable land, land under permanent crops and land under permanent meadows and pastures.

Aquaculture: The farming of aquatic organisms including fish, mollusks, crustaceans and aquatic plants. Farming implies some sort of intervention in the rearing process to enhance production, such as regular stocking, feeding, protection from predators and so forth. It also implies individual or corporate ownership of the stock being cultivated.

C

Catchment Area: Area from which rainwater drains into river systems, lakes and seas.

Climate: A description of the long-term pattern of weather in a particular area.

Coastal Zone: Lands and water adjacent to the coast that exert an influence on the uses of the seas and its ecology or, inversely, whose uses and ecology are affected by the sea.

Coral Reefs: Prominent oceanic features composed of hard, limy skeletons produced by coral animals; usually formed along edges of shallow, submerged ocean banks or along shelves in warm, shallow, tropical seas.

D

Demography: Vital statistics about people: births, marriages deaths, etc.; the statistical study of human populations relating to growth rate, age structure, geographic distribution, etc., and their effects on social, economic, and environmental conditions.

Disease: A deleterious change in the body's condition in response to destabilizing factors, such as nutrition, chemicals, or biological agents.

E

Economic Growth: An increase in the total wealth of a nation; if population grows faster than the economy, there may be a real economic growth, but the share per person may decline.

Emission: Discharge of pollutants into the atmosphere from stationary sources such as smokestacks, other vents, surface areas of commercial or industrial facilities and mobile sources, for example, motor vehicles and aircrafts.

Environment: The circumstances or conditions that surround an organism or group of organisms as well as the complex of social or cultural condition that affect an individual or community.

Environmental Degradation: Deterioration in environmental quality from ambient concentrations of pollutants and other activities and processes such as improper land use and natural disasters.

Erosion: Wearing away and transport of the soil by wind or running water, glaciers or waves. Erosion occurs naturally but it often intensified by human land-clearing activities related to farming, residential or industrial development.

F

Fauna: All animal life.

Flood: An overflow of water onto land that normally is dry.

Flora: All plant life.

G

Greenhouse Effects: Warming of the earth's atmosphere caused by a build-up of carbon dioxide and other greenhouse or trace gases that act like a pane of glass in a greenhouse, allowing sunlight to pass through and heat the earth but preventing a counterbalancing loss of heat radiation.

Greenhouse Gases: Carbon dioxide, nitrous oxide, methane, ozone and chloro-fluorocarbons occurring naturally and resulting from human (production and consumption) activities, and contributing to the greenhouse effect (global warming).

Gross National Product (GNP): The sum total of all goods and services produced in a national economy.

H

Herbicide: Substance used to control weeds or the growth of undesirable grass or plant.

Household waste: Waste material usually generated in the residential environment. Waste with similar characteristics may be generated in other economic activities and can thus be treated and disposed of together with household waste.

Human Settlements: Integrative concept that comprises (a) physical components of shelter and infrastructure and (b) services to which the physical elements provide support, that is to say, community services such as education, health, culture, welfare, recreation and nutrition.

I

Industrial Waste: Liquid, solid and gaseous wastes originating from the manufacture of specific products.

Insecticide: Substances that destroys or controls insect pests.

L

Landfills: Land disposal sites for solid waste; operators compact refuse and cover it with a layer of dirt to minimize rodent and insect infestation, windblown debris, and leaching by rain.

Land Tenure: Right to the exclusive occupancy and use of a specified area of land.

M

Marine Pollution: Direct or indirect introduction by humans of substances or energy into the marine environment (including estuaries), resulting in harm to living resources, hazards to human health, hindrances to marine activities including fishing, impairment of the quality of sea water and reduction of amenities.

O

Ozone O_3 : A highly reactive molecule containing three oxygen atoms; a dangerous pollutant in ambient air. In the stratosphere, however, ozone forms an ultraviolet absorbing shield that protects us from magnetic radiation.

Ozone Depletion: Destruction of ozone in the stratosphere, where it shields the earth from harmful ultraviolet radiation. Its destruction is caused by chemical reactions in which oxides of hydrogen, nitrogen, chlorine and bromine act as catalysts.

P

Pesticide: Any chemical that kills, controls, drives away, or modifies the behavior of a pest.

Pollution: To make foul, unclean, dirty; any physical, chemical, or biological changes that adversely affects the health, survival, or activities of living organisms or that alter the environment in undesirable ways.

Population Momentum: A potential for increased population growth as young members reach reproductive age.

R

Recycling: Reprocessing of discarded materials into new, useful products; not the same as reuse of materials for their original purpose, but the terms are often used interchangeably.

S

Solid Waste: Useless and sometimes hazardous material with low liquid content. Solid waste includes municipal garbage, industrial and commercial waste, sewage sludge, waste resulting from agricultural and animal husbandry operations and other connected activities, demolition wastes and mining residue.

Solid Waste Disposal: Ultimate disposition or placement of refuse that is not salvaged or recycled.

Solid Waste Management: Supervised handling of waste material from generation at the source through the recovery processes to disposal.

Species: All the individuals and populations of a particular kind of organism, maintained by biological mechanisms that result in their breeding only with their won kind.

Sustainable Development: A real increase in well-being and standard of life for the average person that can be maintained over the long-term without degrading the environment or compromising the ability of future generations to meet their own needs.

T

Threatened Species: While still abundant in parts of its territorial range, this species has declined significantly in total numbers and may be on the verge of extinction in certain regions or localities.

Total Fertility Rate: The number of children born to an average woman in a population during her entire reproductive life.

W

Water Conservation: Preservation, control and development of water resources, both surface and groundwater, and prevention of pollution.

Water Pollution: Presence in water of harmful and objectionable material – obtained from sewers, industrial wastes and rainwater run-off – insufficient concentrations to make it unfit for use.

CONVERSION COEFFICIENTS BETWEEN THE IMPERIAL SYSTEM AND THE METRIC SYSTEM

	IMPERIAL	TO	METRIC
LENGTH	1 inch		2.540 cm
	0.39370 inches		1 cm
	1 Yard		0.9144 m
	1.094 Yards		1 m
	1 Mile		1.609 Km
	0.6214 Miles		1 Km
AREA	1 Sq. Foot		0.093 Sq. m
	10.6 Sq. Ft.		1 Sq. m
	1 Acre		0.405 ha
	2.471 Acres		1 ha
	1 Sq. ft.		2.59 Sq. Km
	0.386 Sq. Miles		1Sq. Km
VOLUME	1 Pint		0.568 Litres
	1.76 Pints		1 Litre
	1 Imperial Gallon		4.546 Litres
	0.220 Gallons		1 Litre
	1 Cu. Ft.		0.028 Cu. m
	35.31 Cu. Ft.		1 Cu. m
WEIGHT	1 LB.		0.4536 Kg
	2.205 LB.		1 Kg
	1 Long Ton		1016 Kg
	1 Short Ton		907.185 Kg
	0.9842 Long Ton		1 Tonne (1000 Kg.)
	1.102322 Short Ton		1 Tonne (1000 KG.)
TEMPERATURE	Conversion from ^{0}F To ^{0}C: Subtract 32, Then Divide by 1.8		Conversion from ^{0} C To ^{0}F: Multiply by 1.8, then Add 32