



GOVERNMENT OF SAINT LUCIA

NATIONAL IMPLEMENTATION PLAN FOR THE STOCKHOLM CONVENTION

ON

PERSISTENT ORGANIC POLLUTANTS

2006 to 2020

Charles, 2006

Implementing the Stockholm Convention on Persistent Organic Pollutants in Saint Lucia

National Implementation Plan
for the Stockholm Convention
on Persistent Organic Pollutants

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GEF Implementing Agency
UNEP

National Focal Point

Ministry of Physical Development, Environment and Housing
Sustainable Development and Environment Section
Pricewaterhouse Coopers Building
Point Seraphine
P. O. Box 709
Castries
Saint Lucia

Consultant: Donnalyn Charles

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Acronyms and Abbreviations

AGC	Attorney General's Chambers
BAT	Best Available Techniques
BCD	Base Catalyzed Decomposition
BEP	Best Environmental Practices
CARICOM	Caribbean Community
CEHI	Caribbean Environmental Health Institute
CEDE	Customs and Excise Department
CCSS	Castries Comprehensive Secondary School
COP	Conference of Parties
CHEMICO	Chemical Manufacturing and Investment Co. Ltd.
CPCC	Caribbean Programme Coordinating Centre
DOS	Department of Statistics
DEWA	Division of Early Warning and Assessment
EPC	Environment Policy Committee
FAO	Food and Agricultural Association
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GLP	Good Laboratory Practices
GOSL	Government of Saint Lucia
HBC	Hexachlorobenzene
HMRT	Hazard Material Response Team
IICA	Inter-American Institute for Cooperation on Agriculture
KAP	Knowledge Attitudes and Practice
LUCELEC	Saint Lucia Electricity Company
MPDEH	Ministry of Agriculture, Forestry and Fisheries
MOE	Ministry of Education, Human Resource Development, Youth and Sports
MOH	Ministry of Health and Gender Relations
MOPDEH	Ministry of Physical Development, Environment and Housing
NEMO	National Emergency Management Organization
NEMS	National Environmental Management Strategy
NEP	National Environmental Policy
NGO	Non Governmental Organization
NIP	National Implementation Plan
NIC	Intergovernmental Negotiating Committee
NTN	National Television Network
OECS ESDU	Organization of Eastern Caribbean States, Environment and Sustainable Development Unit
OHSD	Occupational Health and Safety Department
PAHO	Pan American Health Institute
PA&E	Public Awareness and Education
PCB	Polychlorinated biphenyls
PTCCA	Pesticides and Toxic Chemicals Control Authority
PTCCB	Pesticides and Toxic Chemicals Control Board
PCU	Project Coordinating Unit
PMA	Pitons Management Area
POPs	Persistent Organic Pollutants
PIC	Prior Informed Consent
PPE	Personal Protective Equipment
SDE	Sustainable Development and Environment Section

SID	Small Island Developing State
SLASPA	Saint Lucia Air and Sea Ports Authority
SLBS	Saint Lucia Bureau of Standards
SLCGA	Saint Lucia Coconut Growers Association
SLCIA	Saint Lucia Chamber of Commerce, Industry and Agriculture
SLFA	Saint Lucia Farmers Association
SLMA	Saint Lucia Manufacturers Association
SLNT	Saint Lucia National Trust
SMMA	Soufriere Marine Management Area
SOER	State of the Environment Report
SOP	Standard Operating Procedures
UNEP	United Nations Environment Programme
UNEP ROLAC	United Nations Environment Programme, Regional Office for Latin America and the Caribbean
US EPA	United States Environment Protection Agency
WASCO	Water and Sewerage Company
WEBDECO	Windward Islands Banana Development and Exporting Co. Ltd.
WED	World Environment Day

Executive Summary

Persistent Organic Pollutants or POPs are chemical substances that persist in the environment, bioaccumulate through the food chain, and cause adverse effects to human health and the environment. These POPs not only pose threats to the regions in which they are produced and used, but they also threaten other regions where they have never been used or produced as they are transported via air and water, posing an even greater threat to the global population and environment.

The Stockholm Convention (SC) on Persistent Organic Pollutants (POPs) is a direct response by the international community to protect human health and the environment from the negative effects of POPs and chemicals. Currently, 12 POPs pesticides are being controlled by the convention commonly called the *dirty dozen*, these are: aldrin, chlordane, DDT, dieldrin, dioxins, endrin, furans, hexachlorobenzene, heptachlor, mirex, polychlorinated biphenyls (PCBs) and toxaphene.

It is the goal of the SC to provide the necessary technical and financial resources to assist countries to take action to reduce and eliminate the releases of these chemicals.

Recognizing that:

1. persistent organic pollutants (POPs) pose major and increasing threats to human health and the environment in Saint Lucia;
2. Saint Lucia is a Small Island Developing State (SID) that does not produce any of the group of POPs chemicals under control by the (SC) and may be unintentionally producing POPs;
3. Saint Lucia may be using POPs and chemicals of this nature and equipment containing POPs;

Saint Lucia became Party to the SC on POPs in 2002 in an effort to take action to protect human life and the environment in Saint Lucia. In 2003 the Project Coordination Unit (PCU) was identified and established within the Sustainable Development and Environment (SDE) Section of the Ministry of Physical Development, Environment and Housing (MPDEH). Though not fully staffed, the National Implementation Plan (NIP) serves as the key instrument to be used by the PCU to implement the SC on POPs in Saint Lucia.

Commitment to implementation of NIP

The development and implementation of a NIP is evidence of Saint Lucia's commitment to:

1. remain compliant with the obligations of the SC on POPs
2. reduce and eventually eliminate the unintentional release of POPs
3. protect human health and the environment

Under the SC, Parties seek to:

1. identify and implement measures to reduce or eliminate releases from intentional production and use
2. establish a register of specific exemptions that Parties have requested



3. identify and implement measures to reduce or eliminate releases from unintentional production
4. identify and implement measures to reduce or eliminate releases from stockpiles and wastes
5. develop and implement a plan for the implementation of the obligations under the SC
6. submit proposals for the listing of chemicals in Annexes A, B and/or C
7. facilitate or undertake exchange of information relevant to the reduction or elimination or production, use and release of POPs and exchange information regarding alternatives to POPs.
8. promote and facilitate awareness among policy and decision makers regarding POPs.
9. undertake appropriate research, development, monitoring and cooperation pertaining to POPs, within each Party's capabilities and resources.

National Priorities and Key Issues

Saint Lucia acceded to the Stockholm Convention on Persistent Organic Pollutants on 4th October 2002. Although Saint Lucia no longer uses POPs pesticides, assessments reveal that unintentional by-products of POPs are produced when formed from anthropogenic sources such as waste incinerators, combustion of fossil fuels, residential combustion sources and vehicular or mobile sources. In addition to exposure to POPs pesticides, Saint Lucia is also exposed to releases from PCBs and PCB containing equipment used mainly in the telecommunications and power generating sector. Saint Lucia is further exposed to a range of household, agricultural and industrial chemicals and seeks to address management of these chemicals in addition to POPs pesticides.

In implementing the SC on POPs in Saint Lucia, the following national priorities and key issues has been recognized:

1. Institutional strengthening in the field of chemicals management and POPs in particular;
2. Overall awareness raising on chemicals management issues including hazardous and chemical waste;
3. Assessment of hazardous risks associated with existing stockpiles;
4. Development of specific legislation on sound management of chemicals;
5. Development of specific legislation on sound management of hazardous waste.

The NIP seeks to address these national priorities and key issues and sets targets for implementation within the period for 2006 to 2020 and will be developed in accordance with the procedures set out by the Conference of Parties (COP) to the SC under the following objectives:

1. To strengthen and enhance Saint Lucia's institutional and regulatory framework
2. To eliminate the importation and use of Annex A POPs Pesticides
3. To eliminate the importation and use of PCBs and equipment containing PCBs and dispose of PCBs and PCB containing equipment
4. To reduce or eliminate releases from unintentional production of POPs
5. To identify and manage contaminated sites

6. To develop, facilitate and promote a system for information exchange that allows Saint Lucia to be compliant under the SC on POPs
7. To increase awareness of the public on POPs and chemicals, and their related issues
8. To ensure the regular preparation and submission of reports in accordance with the SC
9. To promote capacity for research and development related to the management of POPs pesticides and chemicals
10. To monitor implementation of the SC in Saint Lucia

1.0 Introduction

Sections 1.1, 1.2 and 1.3 present the history of the SC, the purpose and structure of NIP and discusses the POPs issue in Saint Lucia.

1.1 History of Convention

The SC on POPs was developed out of an international awareness that POPs posed major and increasing threats to human health and the environment, and an international commitment to take measures to protect human health and the environment. In initial list of 12 POPs, phrased the “dirty dozen”, are currently being considered under the convention; these are:

- Aldrin
- Chlordane
- DDT
- Dieldrin
- Dioxins
- Endrin
- Furans
- Hexachlorobenzene
- Heptachlor
- Mirex
- PCBs
- Toxaphene

In February 1997, the UNEP Governing Council, through decision 19/13C, convened an Intergovernmental Negotiating Committee (INC) with a Criteria Expert Group that would develop criteria and a procedure for identifying additional POPs for future international action.

The SC on POPs was adopted and opened for signature in May 2001 in Stockholm. This convention marked the third multilateral environmental agreement (MEA) to address chemicals management, following the Basel Convention on the Transboundary Movement of Hazardous Chemical Waste and the Rotterdam Prior Informed Consent (PIC) Convention. In developing the NIP, it was necessary to consider the synergies between these groups of MEAs in an effort to develop the way forward regarding the management of chemicals in Saint Lucia within the framework of the SC.

National Implementation Plans

Article 7 of the Convention states that

1. Each Party Shall:

- (a) Develop and endeavour to implement a plan for the implementation of its obligations under this Convention;
- (b) Transmit its implementation plan to the Conference of the Parties within two years of the date on which this Convention enters into force for it; and
- (c) Review and update, as appropriate, its implementation plan on a periodic basis and in a manner to be specified by a decision of the Conference of the Parties.



2. The parties shall, where appropriate, cooperate directly or through global, regional and sub-regional organizations, and consult their national stakeholders, including women's groups and groups involved in the health of children, in order to facilitate the development, implementation and updating of their implementation plans.
3. The Parties shall endeavour to utilize and, where necessary, establish the means to integrate national implementation plans for persistence organic pollutants in their sustainable development strategies where appropriate.

This article presents the basis for development and implementation of national plans to implement the SC through international and regional cooperation. This article is of particular significance to SIDs such as Saint Lucia where technical expertise pertinent to the development, implementation and updating of implementation plans, may be limited. The article further encourages Parties to incorporate the management of POPs into national sustainable development strategies and action plans as far as possible.

Mechanisms used to develop the NIP

The NIP was developed out of a process of stakeholder consultation, national and international research and data gathering and guidance from the PCU of the Ministry of Physical Development, Environment and Housing. The following also guided the development of the NIP:

- National Profile for POPs and Chemicals Management
- National POPs and Chemicals Inventory
- Assessment of the Legislative and Institutional Framework for the Management of POPs and Chemicals in Saint Lucia
- Establishment of a POPs Information System

1.2 Purpose and Structure of the NIP

Purpose of NIP

Article 7 of the SC states that “Each Party shall develop and endeavour to implement a plan for the implementation of its obligations under this Convention”. The NIP seeks to present the way forward regarding the management of POPs pesticides and chemicals in Saint Lucia in an effort to protect human life and the environment. The NIP will also allow Saint Lucia to be compliant with its obligations under the Convention through institutional, policy and legislative action plans that will guide Saint Lucia through the period 2006 to 2020. The NIP offers flexibility in that it provides for regular 5-year reviews in an effort to ensure that the action plans and strategies meet the future challenges as the convention evolves.

Structure of the NIP

The development of the NIP was guided by the draft document, “Guidance for Developing a National Implementation Plan for the Stockholm Convention” (UNEP).

Section 1 presents the history of the SC, discusses the purpose of national implementation plans and summarizes the POPs issues in Saint Lucia. Section 2 presents Saint Lucia's

country baseline and profile, highlights the current institutional, policy and regulatory framework for POPs and chemicals in Saint Lucia and presents an assessment of POPs and chemicals in Saint Lucia. The last section (Section 3) intends to outline the strategies and action plan elements of the NIP.

1.3 Summary of POPs Issue

POPs Pesticides

The last known uses of POPs pesticides are summarized as follows:

Table 1: Last Known Uses of POPs Pesticides

POP Pesticide	Last Know Uses
Aldrin	Treatment for termites and other soil pests, termites infesting building materials, in grain storage, and for vector control
Camphechlor (trade name Toxaphene)	Control insect pests in cotton and other crops
Chlordane	Treatment for termites and other soil pests, termites attacking building material
DDT	Control of medical and veterinary vectors such as malaria-transmitting mosquitoes, plague-transmitting fleas and trypanosomiasis-transmitting tsetse flies
Dieldrin	Treatment for locusts, termites, human disease vectors
Endrin	Formally used against insects and rodents. No current or recent uses are known
Heptachlor	Treatment for termites and other soil pests, termites infesting building materials
Hexachlorobenzene (HCB)	Formally used for seed treatment against fungal diseases, as well as for industrial purposes. No current or recent agricultural uses are known
Mirex	Treatment against leaf-cutting ants, termites in buildings and outdoor; fire retardant and for other industrial purposes

(Morner, 1996)

Although the use of POPs pesticides in Saint Lucia was banned between 1972 and 1998 (Magloire, 2006), chemicals are still being imported and used primarily in the manufacturing and agricultural sectors. Table 2 presents the groups of chemical products or formulations imported into Saint Lucia (Assessment of Infrastructure for Chemical Management in Saint Lucia, CEHI, 2006)

Table 2: Groups of Chemical Products Imported Into Saint Lucia

Petroleum	Petroleum products
Detergents	Drugs
Paints, synthetic fibers	Cosmetics
Perfumes	Agro- chemical products
Adhesives	Arts and craft products
Automotive products	Batteries
Cleaners	Metal Coatings

Fiberglass and resin plastics	Fillers
Inks	Oils
Pigments	Acids
Alkalis	

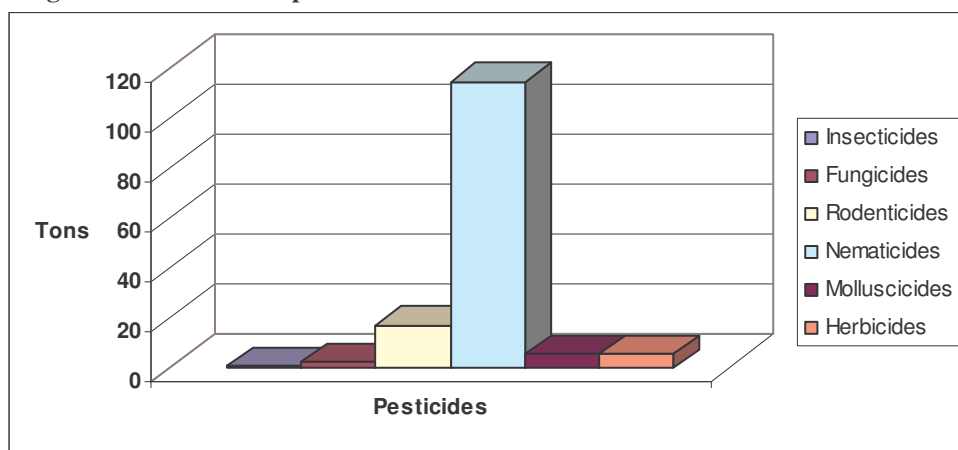
Source: CEHI, 2006

Saint Lucia is also exposed to unintentional by-products of POPs (dioxins and furans) when formed from anthropogenic sources such as combustion of fossil fuels, residential combustion sources and vehicular or mobile sources. The National Inventory (Agrico, 2006) did not identify incinerators as a source of dioxins and furans as Saint Lucia does not make use of incinerating as a waste disposal method. Section 2.3.4 presents an assessment of releases from unintentional production of dioxins and furans, HCB and PCBs.

Pesticides, Fertilizers and Chemicals

The National Profile for POPs and Chemicals Management in Saint Lucia (Magloire, 2006) reveals that Saint Lucia imports relatively high amount of pesticides, fertilizers, petroleum products and industrial chemicals. Figure 1 presents the pesticides that were imported into Saint Lucia during the period June 2004 to March 2005.

Figure 1: Pesticides Imported into Saint Lucia June 2004 to March 2005

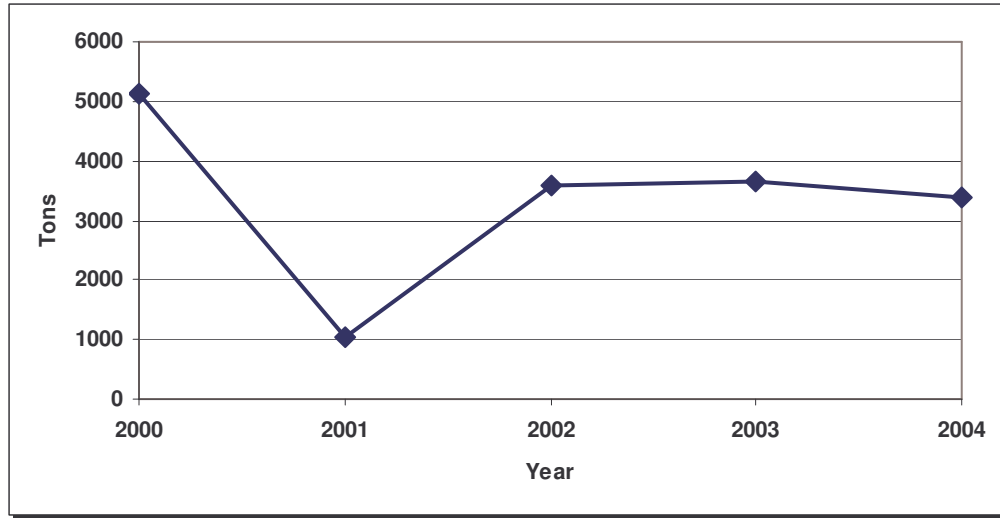


Source: Department of Statistics (DOS), 2006

Nematicides comprise a total of 78% of total pesticides imported during the period June 2004 to March 2005. Rodenticides comprised a total of 12% of total pesticides imported with insecticides having the smallest share of imports at 1%.

During the period 2000 to 2004, there has been an overall reduction in the importation of fertilizers into Saint Lucia. Further monitoring of this trend will be required to adequately address the management of chemicals in Saint Lucia.

Figure 2: Trend in Fertilizer Imports for Saint Lucia 2000 to 2004



Source: Saint DOS, 2006

The National Profile for POPs and Chemicals Management in Saint Lucia notes the continuing importation of PCBs and PCB containing equipment such as transformers and large capacitors. It also highlights many cases where mercury based products such as light bulbs, healthcare instruments, pesticides, body soaps and bleaching creams are still being sold and used in Saint Lucia. It will be imperative for the Government of Saint Lucia (GOSL) to monitor this situation and in this regard, the action plans and strategies of the NIP include a monitoring programme in an effort to improve the situation.

Obsolete and Unwanted Pesticides

A survey of obsolete and unwanted or banned pesticides was conducted in 2002 by the Pesticides and Toxic Control Board (PTCCB), revealing the existence of obsolete and unused stockpiles of chemicals on the Island. Section 2.3.1 and 2.3.5 present data on stocks of POPs pesticides and obsolete POPs pesticides and chemicals respectively.

The major problem which these stockpiles of obsolete and unused chemicals present is the eventual release of POPs and chemicals into the ground and atmosphere, owing to inadequate and unsuitable storage conditions. In addition, the nature of containers used to stow these chemicals do not ensure their integrity and containment. The NIP identifies actions that must be taken to address management and disposal of these stockpiles as this will determine its ability to meet the obligations of the SC and protect human health and the environment.

2.0 Country Baseline

The SC is being implemented in Saint Lucia through the POPs Enabling Activities Project which commenced September 2003, with funding from the Global Environment Facility (GEF). The overall objective of the project is to protect human health and the environment from POPs and chemicals by:

- a. Preparing the foundation for the implementation of the convention in Saint Lucia
- b. Assisting Saint Lucia to meet its reporting and other obligations under the Convention
- c. Strengthening Saint Lucia's national capacity to manage POPs and chemicals

The project activities include the following:

- a. Determination of coordinating mechanisms and organizations
- b. Assessment of national infrastructure and capacity, and establishment of an inventory of chemicals, including POPs
- c. Establishing priorities and determining objectives
- d. Formulation of a National Implementation Plan (NIP) and specific Action Plans
- e. Endorsement of the NIP by Stakeholders

Implementation of the POPs Enabling Activities lies with the Sustainable Development and Environment (SDE) Section of the Ministry of Physical Development, Environment and Housing (MPDEH). The GEF implementing agency for this project is the United National Environment Programme (UNEP).

2.1 Country Profile

2.1.1 Geography and Population

Saint Lucia is a Small Island Developing State (SID) located in the chain of Islands making up the Eastern Caribbean. It is situated between the French island of Martinique to its north and Saint Vincent and the Grenadines to its south, lying at 14^o north and 61^o west. Saint Lucia has a land area of 616.4 square kilometers, (238 sq. miles) with maximum dimensions of 42 km (27 miles) long and 22 km (14 miles) wide.

Figure 4: Map of Saint Lucia

Figure 3: Location Map of Saint Lucia





Saint Lucia’s terrain is characterized by an interior mountainous topography and flatter terrain along its coastline. The Island’s highest peak is Mount Gimie, rising to a height of 3,145 feet.

Saint Lucia is rich in biodiversity with its mountainous interior being home to a wide variety of tropical plants and birds, including the indigenous Saint Lucian Parrot, the *Amazona Versicolor*.

In addition to its rich biodiversity, Saint Lucia is also home to one of the more recent sites to be

designated as a World Heritage Site, the Pitons Management Area or PMA. The PMA is located in the town of Soufriere, on the west coast and is one of few World Heritage Sites to have a land and marine component. The marine component forms part of the Soufriere Marine Management Area (SMMA) and is home to one of the Island’s more vibrant and healthy coral reef systems.

Saint Lucia experiences tropical climatic conditions with a marked wet or rainy season from June to November and dry season from December to May. Table 3 presents selected meteorological data for Saint Lucia.

Table 3: Selected Meteorological Data for Saint Lucia

	Average	
Rainfall	158.6	mm
Max. temperature	28.3	°C
Min. temperature	23.2	°C
Daily temperature	25.8	°C
Relative humidity	74%	
Daily sunshine hours	8.1	

Source: DOS, 2002 base year.

The following further characterizes Saint Lucia's geography and population:

Table 4: General Statistics for Saint Lucia

Area	240 sq miles or 616 sq km
Official Languages	English; Patois a dialect of French is also spoken
Population	164,791 ¹
Birth Rate	15.1 ²
Life Expectancy rate	70.9 male; 75.9 female
Unemployment Rate	18.2 ³

Source: DOS, 2005

Saint Lucia's population stands at 164, 791 according to the DOS 2004 population data. At the end of 2004, the labour force stood at 80,600, with 65,900 persons being gainfully employed.

According to the 1996 Poverty Assessment Report, 18.7% of households, and 25.1% of Saint Lucia's population are poor (Compendium of Environmental Statistics, 2001). The assessment also notes that the working poor were concentrated in the agricultural and manufacturing sector.

2.1.2 Political and Economic Profile

Political Profile

Saint Lucia gained independence from Great Britain on 22nd February 1979, inheriting a Westminster System of Government with a 17 member elected house of Parliament and an 11 member senate nominated by the Prime Minister. The Governor General represents the Queen as the head of state, however her role is ceremonial.

The Island is divided into 10 administrative Districts, namely, Castries, Dennery, Micoud, Vieux-Fort, Laborie, Choiseul, Soufriere, Canaries, Anse-La-Raye and Gros-Islet (Figure 4). Saint Lucia's highest population densities are in the Capital city of Castries and the town of Vieux-Fort, with a population density (per square km) of 760 and 332 respectively (DOS, 2001).

¹ Data for 2005, Saint Lucia Statistical Department

² Data for 2005, Saint Lucia Statistical Department

³ Data for 2004, Saint Lucia Statistical Department

Economic Profile

Saint Lucia is classified as a middle-income country. According to the Statistical DOS, Saint Lucia's Gross Domestic Product (GDP) in 2005 was EC \$1340.5⁴ million. The major sectors contributing to Saint Lucia's economy are the tourism, manufacturing and agricultural sectors. In 2003 and 2004 the Tourism sector contributed 14.57% and 14.07% respectively to the GDP (Table 5). During that same period, the Agricultural sector contributed 5.27% and 5.50% respectively, with the manufacturing sector contributing 5% for both years.

⁴ EC \$1.00 = US \$0.37

2.1.3 Profiles of Economic Sectors

Table 5 reveals that the agricultural sector is contributing to the island's economy. The use of pesticides, fertilizers and other toxic chemical products is of increasing concern to the terrestrial and aquatic ecosystems, as well as the health of the people. The manufacturing sector also holds a fair share of GDP and would require chemicals as a factor of production.

Table 5: GDP by Economic Activity in Saint Lucia

SECTORS	2002	2003	2004
	<i>Million E.C.\$</i>		
Agriculture	6%	5%	5%
Mining & Quarrying	0%	0%	0%
Manufacturing	5%	5%	5%
Construction	7%	7%	7%
Electricity & Water	5%	5%	5%
Wholesale & Retail	11%	12%	12%
Hotels & Restaurants	12%	14%	14%
Transport	12%	12%	12%
Finan. Intermediation	10%	10%	10%
Real Estate	10%	10%	10%
Producers of Gov't Services	15%	15%	15%
Other Services	5%	5%	5%
Imputed Charges	-8%	-8%	-8%
TOTAL	100%	100%	100%

Source: Department of Statistics, 2006

Saint Lucia has been receiving a share of the global tourism industry as the island offers a unique blend of sun, sea, sand and natural beauty. Cruise ships are continuing to hold a greater share of the tourism industry. In 2004, cruise ship arrivals contributed 43% to the tourism market (Figure 5). Tourist stayover contributed to 27%. Table 6 presents a summary of the tourism sector.

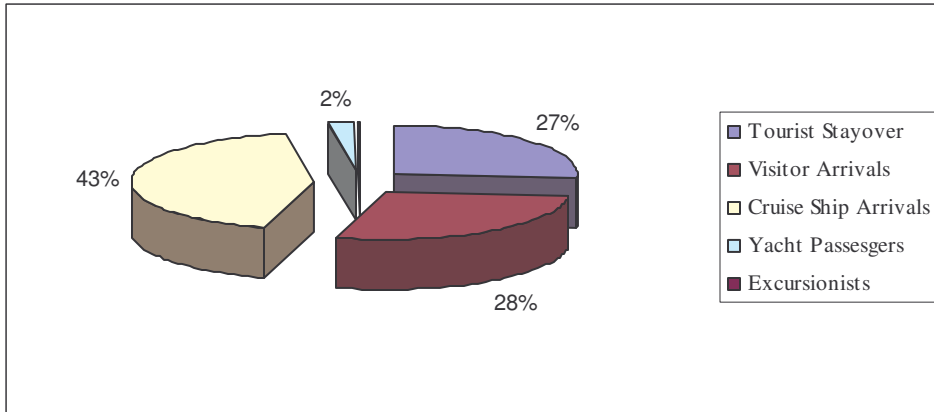
Table 6: Selected Tourism Indicators⁵

	2001	2002	2003	2004	2005
Tourist Stayover	250,132	253,463	276,945	298,431	172,039
Visitor Arrivals	256,554	261,175	289,765	309,872	174,107
Cruise Ship Passengers	489,912	387,180	393,240	481,279	247,700
Yacht Passenger Arrivals	19,817	25,516	17,993	24,812	16,126
Avg. Hotel Occupancy	57.0	56.1	62.7	64.8	67.8

Source: DOS, 2005

Figure 5: Contributors to Tourism Sector in Saint Lucia, 2004

⁵ 2005 data up to June 2005



Source: DOS, 2005

Excursionists, though the smallest group contributing to the tourism sector has been increasing its contribution to the tourism market by contributing 0.63% and 1.3% respectively to the tourism sector in 2001 and 2003 (Figure 5).

2.1.4 Environmental Overview

As a SID, Saint Lucia has recognized the need to manage its environment in a sustainable manner. Many of the country's income earning activities depend on natural resources and as such, it is imperative for Saint Lucia to take steps to address and mitigate negative impacts on the environment.

Saint Lucia is faced with numerous environmental issues summarized as follows:

- Degradation of the marine and coastal systems
- Poor land management and clear land use zones
- Loss of biodiversity
- Degradation of fresh water systems
- Improvement of waste management systems
- Degradation of land from poor land management practices
- Poor management of chemicals
- Air and noise pollution
- Adapting to negative effects of climate change
- Phasing out consumption of ozone depleting substances

Section 2.2 describes the current institutional, policy and regulatory framework for environmental management in Saint Lucia and highlights barriers to an effective framework as analyzed by the assessment of infrastructure for chemicals management in Saint Lucia.

2.2 Institutional, Policy and regulatory Framework

The Ministry of Physical Development, Environment and Housing (MPDEH) has the overall mandate for environmental management in Saint Lucia. However environmental management is not only vested in this Ministry, various agencies including governmental, non-governmental and community-based organizations also share this role. Table 7 presents the agencies with responsibility for key environmental issues in Saint Lucia.

Table 7: Agencies Responsible for Key Environmental Issues

Environmental Issue	Responsible Agency/cies
Water	MOA, MPDEH, WASCO
Air and pollution	MOA, OHSD, MPDEH, CEHI
Climate	MPDEH
Land	MOA, MPDEH
Waste Management	SWMA
Coastal and Marine	MOA, MPDEH, SMMA
Energy/Renewable Energy	MPDEH, LUCELEC

Historically, the approach to environmental management in Saint Lucia has been ad hoc. There is no overarching environmental legislation guiding environmental management in Saint Lucia and various pieces of legislation exist to address different environmental issues.

In an effort to improve and strengthen environment management in Saint Lucia, and in response to the implementation of the St. George's Declaration on Principles for Environmental Sustainability (SGD), in October 2004 Cabinet approved of a National Environmental Policy (NEP) and National Environmental Strategy (NEMS) for Saint Lucia.. The NEP provides a broad framework for environmental management in Saint Lucia and establishes links with policies and programmes in all relevant sectors of development (*Government of Saint Lucia, 2004*). The NEMS sets out specific actions and mechanisms for a more efficient policy implementation. It is hoped that the NEP will result in the development of overarching legislation to guide environmental management in Saint Lucia.

An assessment of the Infrastructure for Chemical Management in Saint Lucia (CEHI, 2006), concludes that management of POPs and chemicals is done in an uncoordinated and adhoc manner, with responsibility vested among many agencies.

As with other key environmental issues, chemicals management is vested within various agencies depending on the stage in the life cycle of the chemical. Section 2.2.2 discusses these agencies and their role within the life cycle of chemicals.

The assessment of infrastructure for chemicals management identifies the following findings regarding Saint Lucia's infrastructure for chemicals management:

- **Unstable Committees.** Committees tend to be the preferred mode of operation in an effort to maximize the use of human resources from various agencies with capacity to manage chemicals. However, this has realized inherent challenges such as the level of commitment and dedication by persons and agencies. In some instances, the agencies do not have chemicals management as a priority and as such their participation in chemical committees is low.
- **Absence of a national chemical management plan.** A national plan for the effective management of chemicals in Saint Lucia is absent. This has resulted in the lack of a coordinated and integrated approach to chemicals management. Further, Standard Operating Procedures (SOPs) for some of the private sector entities where chemicals are used and stored are lacking and where available may not be followed.
- **Limited financial resources.** The main legal body for the administration of measures required for the management of chemicals at the national level is the PTCCB. The PTCCB lacks financial resources to increase the level of efficiency at which it functions including staffing, record keeping, monitoring chemical use and research on chemicals imported. The execution of the functions of the PTCCB is on a voluntary basis within the available time of its members.
- **Limited protocol guiding the import of chemicals.** Though the permitting system by the PTCCB and verification system by the Customs Department is in place, there are areas for improvement such as the handling of chemicals when clearing containers and adequate storage facilities.

- **Lack of evacuation plan for communities.** Though communities have disaster management plans and implement those plans under NEMO, the plans do not address industrial disaster management.
- **Inappropriate use of Personal Protective Equipment (PPE).** The handling and storage of chemicals require the use of protective devices that will prevent harm to personnel. This is an area that is lacking in Saint Lucia due to limited education and awareness and an absent culture of safety or commitment to follow safety procedures.
- **Improper and inadequate disposal of chemicals and containers.** Disposal arrangements for hazardous wastes and spent chemicals are inadequate and limited to deep burial and containment.
- **Limited protocol for transportation and use of chemicals.** The agricultural use and applications of chemicals is generally done in an ad hoc manner and is characterized by the proliferation of “cocktails”. Data and information on the effects of these chemicals on the environment and humans are difficult to measure but incidences of poisoning and unexplained neoplasia are believed to be triggered by mismanagement.
- **Limited data, information management and dissemination.** There is no coordinated approach to information generation and dissemination with regards to management of toxic chemicals. Data and information pertinent to enhancing the management of chemicals are resident among a number of agencies, which are not mandated to perform functions related to toxic chemicals management or collating data on toxic chemicals. This results in difficulties in the generation and access to procurement of information on chemicals in Saint Lucia.
- **Bias focus towards agro-chemicals.** In the management and control of chemicals there is an apparent focus on agro-chemicals. This has its genesis in the Pesticides Control Act (1975) that focuses on pesticides due to the thriving agricultural industry of that era. The development of measures to control other chemicals is in the infancy stage. This situation is compounded by the inadequate administrative arrangements for the management of chemicals as stipulated by the Pesticides and Toxic Chemicals Control Act (2001).
- **Management of chemical related disasters.** There is minimum involvement of the National Emergency Management Organization (NEMO) in the process of chemical management. Inadequate resources (human, financial, equipment) are restricting the active participation of NEMO in chemicals management.
- **Insufficient data for chemical management.** There is an absence of a thorough inventory of POPs and chemicals in Saint Lucia. A database of imported chemicals is non-existent and information on chemicals imported is classified under broad

headings. This makes it difficult to access information on specific chemicals and determine potential risks.

- **Monitoring.** There is an absence of efficient monitoring programmes. In cases where monitoring is carried out, it is done in an ad hoc manner and on a research-needs basis. Very often the result of these monitoring programmes are not used in the decision making process for chemical management.
- **Research.** There is an absence of research in chemical residue in the environment and chemical related activities, the level of exposure to and bioaccumulation in living systems.

The action plans and strategies within the NIP present actions that need to be taken to improve the institutional infrastructure in Saint Lucia. The following two sections speak to the policy and regulatory framework that currently exists for management of POPs and chemicals in Saint Lucia.

2.2.1 Environmental/Sustainable Development and General Legislative Framework

It is well known and documented among environmental managers in Saint Lucia, that legislative support for the management of the environment and in particular, management of chemicals (including pesticides) is inadequate. Legislation is fragmented with jurisdiction over environmental issues such as coastal zone management, forestry, biodiversity, climate change, ozone layer protection, occupational health and safety, land use and fresh water being scattered throughout various legislative instruments and policies. This has resulted in duplication of effort and inefficient use of resources.

As stated in section 2.2, the NEP/NEMS provides a holistic approach to environmental management that seeks to improve this situation. Section 2.2.4 presents existing legislation that address POPs and chemicals.

The National Assessment of the Infrastructure for Chemicals Management in Saint Lucia (CEHI, 2006), presents the following findings regarding Saint Lucia's policy framework for chemicals management:

- **A fragmented approach to chemicals management** - there are multiple institutions and agencies involved in aspects of chemical management, each with their own policy, legislation and mandate, none of which is sufficiently broad and comprehensive, resulting in poor coordination.
- **Absence of a comprehensive national policy on chemicals management** - There is no comprehensive national policy on chemical management. Though Saint Lucia has a number of obligations under both international and regional agreements with regards to chemical management, this has not been an articulated national policy to address these various obligations.

- **Absence of policy for involving the private sector in chemicals management** - There is no policy and/or legislation which specifically provides for the private sector to be involved in any aspect of chemicals management
- **Absence of a policy for involving civil society and the public at large in chemicals management** - While a large number of chemicals used in Saint Lucia are for domestic purposes, there is no policy for involving this group in the management of chemicals. It is evident that children, the poor and the socio-economically disadvantaged are the ones at greatest risk from improper pesticide use.

The assessment further presents findings on the legal and regulatory framework for chemicals management in Saint Lucia:

- **The Pesticides and Toxic Chemical Control Act (2001)** is the most comprehensive single piece of legislation dealing with POPs and chemical management and by extension chemical weapons control in Saint Lucia.
- **Pesticides and Toxic Chemical Control Board** is the main body stipulated by the Act for the control of POPs and chemicals and administration of measures in accordance with its mandate. This Board however is not full-time and executes its functions on a voluntary basis.
- **Fragmented legislation for the management of chemicals.** The legal basis supporting a holistic approach to the management of chemicals at the national level is fragmented among. This is especially evident when addressing measures that will straddle sectors that are mandated by different legislation.
- **Limited resource persons for legal drafting.** Limited human resources within the Attorney General's Chambers (AGC) for legal drafting have affected the revision, amendment and enhancement of legislation regarding POPs and chemicals management. Their involvement is critical to the harmonization of legislation.
- **Lack of enforcement.** In addition to fragmented legislation there is also the issue of lack of enforcement of legislation and the absence of an auditing system for POPs and chemicals.

The NIP presents actions necessary to improve the legal and regulatory framework for chemicals management that will allow Saint Lucia to achieve its goals under the SC and be compliant with its obligations under the SC.

Environmental Data

Environmental data is critical to analyzing and taking appropriate measures to address environmental issues such as chemicals management. Saint Lucia lacks the capabilities to adequately generate environmental data pertinent to forward planning and decision-making.

In an effort to address this, Saint Lucia hosted a number of national consultations in 2001, that brought together key agencies towards the publication of a Compendium of Environmental Statistics (GOSL, 2001). With assistance from CARICOM and under the guidance of the SDE Section and the DOS, key environmental issues were highlighted and relevant data collected and published. The Compendium however, presented data and did not analyze the status of environment in Saint Lucia. What was required was an analysis of the state of the environment in Saint Lucia based on data.

To this end, in 2003 and with assistance from the United Nations Environment Programme (UNEP) Division of Early Warning and Assessment (DEWA) Saint Lucia began the process of integrated environmental assessment and reporting, towards publishing a State of the Environment Report (SOER) for Saint Lucia. Although this report has not been finalized a number of the key systems and issues of priority to Saint Lucia will be addressed by the report, namely: Marine and Coastal Systems, Forest Systems, Fresh Water Systems, Waste Management, Land Use Management, Chemical Use, Climate Change and Air and Noise Pollution Control. The GOSL intends to produce this report on a regular basis and to use the report to influence policy decisions with particular reference to chemicals management. The strategies and action plans in the NIP require the publication of a SOER every 5 years and will allow Saint Lucia to access the overall status regarding chemicals management.

2.2.2 Roles and Responsibilities of Agencies involved in POPs Life Cycles

The MPDEH through the SDE Section has collaborated with a number of key agencies to implement the POPs Enabling Activities Project and the SC in Saint Lucia.

One key group of agencies, *Hazardous Waste Advisory Committee* (HWAC), represents the concerns of public sector, private sector, NGOs and regional agencies. HWAC is a Cabinet approved committee with the mandate of addressing issues related to the handling, treatment and disposal of hazardous waste materials in addition to addressing matters pertinent to the implementation of the convention in Saint Lucia. Table 8 lists the membership of HWAC.

Table 8: Hazardous Waste Advisory Committee Members

Sustainable Development and Environment Section, MPDEH (<i>Chair</i>)
Pesticides and Toxic Chemicals Control Board, MOA (<i>Secretary</i>)
Saint Lucia Solid Waste Management Authority (SWMA)
Occupational Health and Safety Department, Ministry of Labour Relations (OHSD)
Maritime Affairs Department, Saint Lucia Air and Sea Ports Authority (SLASPA)
National Emergency Management Office (NEMO)
Saint Lucia Chamber of Commerce, Industry and Agriculture (SLCIA)
Saint Lucia Farmers Association (SLFA)
Saint Lucia Bureau of Standards (SLBS)
Saint Lucia National Trust (SLNT)
Caribbean Environmental Health Institute (CEHI)

The MPDEH represented by the SDE Section, is a member of the PTCCB, the main agency responsible for managing the importation and use of pesticides and toxic chemicals. Through this membership, the SDE Section receives guidance and technical assistance is to further assist the Ministry in its work. Section 2.2.1 highlights the main barrier to this board being fully functional and effective in the management of chemicals. Although the process to change the PTCCB to a Pesticides and Toxic Chemicals Control Authority (PTCCBA)

has begun, the action plans of the NIP has identified actions that need to be taken to lobby support for the speedy establishment and functioning of the proposed PTCCA.

Table 9 describes the roles and responsibilities of agencies involved in the POPs life cycles in Saint Lucia:

Table 9: Roles and Responsibilities of Agencies in POPs and Chemicals Life Cycles

POPs Life Aspect	Responsible Agencies	Responsibilities
Importation	PTCCB MOA Customs Department	<ul style="list-style-type: none"> - Determines whether POPs allowed to be imported and issue licenses to import - Provides guidance on intended use of pesticides to be imported - Monitors imports and prevents illegal imports
Storage	Customs Department Distributors Users	<ul style="list-style-type: none"> - Stores the POPs until released to importer or distributor; also stores detained chemicals - Stores POPs until sold - Stores POPs and until used; stores POPs containers until disposed of
Production of Chemicals	Manufacturers	<ul style="list-style-type: none"> - Manufactures chemicals
Transportation	Importers, Distributors, Users	<ul style="list-style-type: none"> - POPs transported to point of sale or to farm or business place by importer or distributor
Distribution and Marketing	Importers or Distributors	<ul style="list-style-type: none"> - Importer uses it for self or distributor places it for sale
Use/Handling	Users OHSD	<ul style="list-style-type: none"> - Handles chemicals during use - Provides guidance on procedures to be followed when handling chemicals
Disposal	Users, Distributors SWMA,	<ul style="list-style-type: none"> - Dispose chemical containers - Dispose waste at landfill - Export waste such as lead acid batteries

Other agencies identified through the National Assessment of the Infrastructure for Chemicals Management in Saint Lucia (CEHI, 2006), that are of critical importance to the management of POPs and chemicals in Saint Lucia include:

Caribbean Environmental Health Institute (CEHI)

CEHI is a regional agency of the Caribbean Community (CARICOM). Its main objectives include: providing technical and advisory services to its member states in all areas of environmental management; collection and dissemination of technical and scientific information; serves as a focal point for environmental monitoring networks for the collection and dissemination of environmental data; stimulates the provision of engineering and public health laboratory services and other related environmental services for its member states; and conducts courses, seminars, symposia and workshops on environmental management .

Organization of Eastern Caribbean States (OECS), Environment and Sustainable Development Unit (ESDU)

The OECS ESDU is involved in the provision of support services based on policy directions set by the OECS Ministers of the Environment Policy Committee (EPC).

Pan-American Health Organization (PAHO)

PAHO seeks to improve health and living standards of the people of the Americas. The Caribbean Program Coordination Centre (CPCC) is located in Barbados and serves a number of countries including Saint Lucia. PAHO's mandate includes chemical safety.

The Inter-American Institute for Cooperation on Agriculture (IICA)

IICA seeks to encourage and support efforts of member states to foster agricultural development and rural well-being in their territories. Areas of focus include Trade and Agribusiness Development, Technology and Innovation, Agricultural Health and Food Safety, [Sustainable Rural Development](#), Information and Communication, Education and Training

National Emergency Management Organization (NEMO)

NEMO develops tests and implements adequate measures to protect the population of Saint Lucia from the physical, social, environmental and economic effects of both natural and man-made disasters. Their mandate includes the efficient functioning of preparedness, prevention, mitigation and response actions.

2.2.3 Relevant International Commitments and Obligations

Owing to Saint Lucia's commitment to preserving life on Earth as we know it, Saint Lucia is Party to a number of multilateral environmental agreements (MEAs) and regional agreements. Much of the progress that Saint Lucia has made in managing its environment has been the result of technical and financial assistance received as a Party to these agreements. Table 10 presents these agreements relevant in the context of POPs and chemicals.

Table 10: Relevant Regional and International Agreements

Agreement	Notes
Organization of Eastern Caribbean States	Supports environmental management from a regional (OECS) level through the EPC
St. George's Declaration on Principles of Environmental Sustainability	Sets out principles for environmental sustainability for the OECS countries
Stockholm Convention on POPs	Seeks to eliminate the use of POPs and chemicals
Basel Convention	Address the Transboundary movement of toxic and hazardous waste
Rotterdam PIC Convention	Prior informed consent regarding shipment of toxic and hazardous waste
Montreal Protocol	Seeks to phase out the consumption of ozone depleting substances
Cartagena Convention	Protects Caribbean waters form pollution

2.3.4 Principles of Existing Legislation and Regulations Addressing POPs

Saint Lucia's current framework for addressing POPs related issues is presented in section 2.2.1. This section will highlight legislation and regulations that address POPs directly or indirectly.

Table 11: Legislation that Address POPs and Chemicals in Saint Lucia

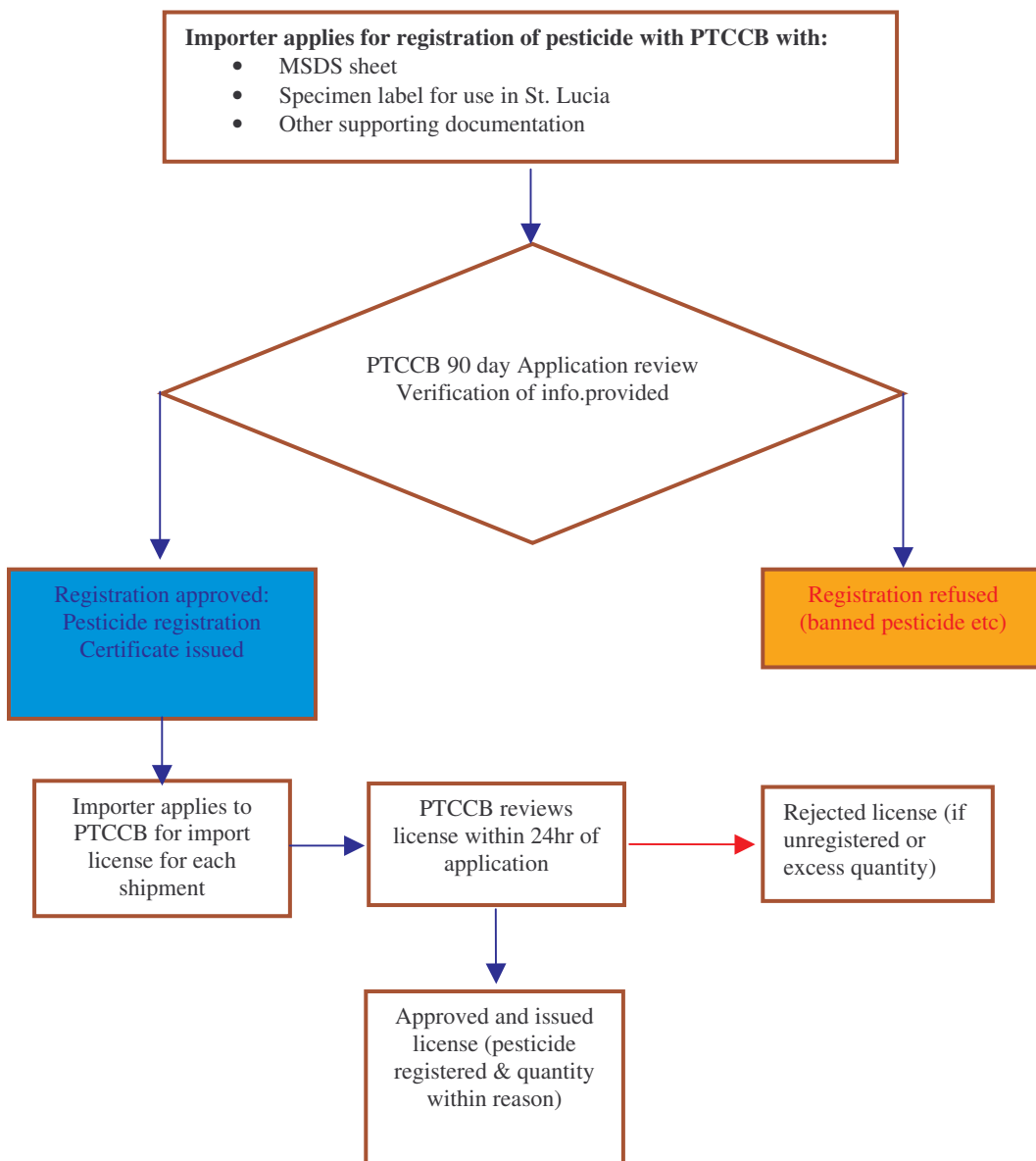
Legislation	Relationship to POPs
<i>Pesticides and Toxic Chemicals Control Act No. 15 of 2001</i>	Provide a “comprehensive framework for the regulation of pesticides and other toxic chemicals, for the purpose of more adequately protecting human and animal health and safety, plant and the environment.” Being revised to include requirements of Stockholm, Basel and Rotterdam Conventions
<i>Saint Lucia Solid Waste Management Authority Act No. 20 of 1996</i>	Provides for coordinated and integrated systems for the collection, treatment, recycling and disposal of solid waste, including hazardous waste which may contain POPs.
<i>Employees (Occupational Health and Safety) Act No. 10 of 1985</i>	Sets new and improved standards of occupational health and safety in places of employment. It addresses handling, storage, use of disposal or transport of dangerous substances.
<i>Public Health Act No. 8 of 1975</i>	Promotion and protection of human health.
<i>Fishers Act (1984) No. 10 of 1984</i>	Protects and preserves marine reserves from chemicals.
<i>Merchant Shipping (Oil Pollution) Act No. 11 of 1996</i>	Makes provision with respect to civil liability for oil pollution by merchant ships and for connected purposes.
<i>Litter Act No. 24 of 1983 (Amendment) Act (1985) No. 18 of 1985 and No. 14 of 1993</i>	Protects against the indiscriminate disposal of a chemical waste.
<i>Oil in Navigable Waters (Chap. 91) No. 8 of 1929</i>	Makes provision against discharge or escape of oil in territorial waters of Saint Lucia.
<i>Forest, Soil and Water Conservation Ordinance 1/198</i>	Protect water catchment areas.
<i>Water Act of 1999?</i>	Provides for declaration of a water emergency in cases of chemical spills into water ways
<i>Standards Act No. 14 of 1990</i>	Labeling of all chemicals and POPs, and promotes public and industrial welfare and health and safety
<i>Disaster Preparedness and Response Act No 13 of 2000 and Draft Disaster Management Bill</i>	Speaks to locations of chemicals and POPs containing equipment and managing the potential disasters associated with POPs
<i>Physical Planning Act No 29 of 2001</i>	Requires an environmental impact assessment for developments that pose threats to the environment
<i>Petroleum Act No. 4 of 1900</i>	Controls the importation of petroleum products
<i>Saint Lucia Air and Seaports Authority Act No. 10 of 1983; the Saint Lucia Air and Seaports Authority Regulations No. 92 of 1985</i>	Establishes regulations for port safety and empowers the Authority to destroy or dispose of dangerous, offensive or leaking cargo at the expense of the owner

2.2.4 Key Approaches and Procedures for POPs Chemical and Pesticide Management

Importation

The PTCCB sets the overall procedures for importing pesticides and chemicals into Saint Lucia. Products are included in a list of chemicals that require a license to import. This list is compiled by the PTCCB and is reviewed periodically. Presently, these procedures do not extend to POPs chemicals, as they are not on the list of chemicals that require a license for importation. The following figure describes this process.

Figure 6: Process for Registering and Importing Pesticides in Saint Lucia



Use

The PTCCB and the Occupational Health and Safety Department (OHSD) set out procedures for the safe use of chemicals and pesticides. They ensure that farmers and industry workers are equipped with the necessary information regarding the negative effects of exposure to pesticides, fertilizers and chemicals and provide the necessary guidelines for safe use of pesticides and chemicals. The OHSD also seeks to ensure that industries provide the required personal protective equipment (PPE) to their workers to ensure safety whilst handling chemicals.

Enforcement and Monitoring

Management of POPs chemicals and pesticides require enforcement of the established codes and guidelines. This area is lacking in Saint Lucia as the required technical and financial resources are not allocated to allow for efficient and effective enforcement and monitoring.

2.3 Assessment of the POPs Issue in Saint Lucia

2.3.1 Assessment for Annex A Part I Chemicals (POPs Pesticides) and Chemicals

History

The chemicals categorized under Annex A Part I of the SC are aldrin, chlordane, dieldrin, endrin, heptachlor, hexachlorobenzene (HCB), mirex, toxaphene and polychlorinated biphenyls (PCBs). Saint Lucia is not a producer or exporter of POPs pesticides but has been importing pesticides and chemicals for use primarily in the agricultural and manufacturing sector and in industrial processes.

The categories of pesticides used in Saint Lucia are insecticides, fungicides, herbicides molluscicides and nematocides (CEHI, 2006). Table 12 lists the most commonly used pesticides in the agricultural sector in Saint Lucia.

Table 12: Most Commonly Used Pesticides in the Agricultural Sector in Saint Lucia

Pesticide	Active Ingredient	Class
Fungalor	Imazilil	Fungicide
Furadan	Carbofuran	Nematicide
Gramoxone	Paraquat	Herbicide
Mertect	Thiabendazole	Fungicide
Miral	Isazafos	Nematicide
Mocap	Ethoprop	Nematicide
Primicid	Pirimiphos-ethyl	Insecticide
Roundup	Glyphosate	Herbicide
Talent	Asulam	Herbicide
Touchdown	Glyphosate trimesium	Herbicide
Vydate	Oxamyl	Insecticide/ Nematicide

Source, CEHI, 2006

Nematicides and herbicides are the largest group of pesticides imported into Saint Lucia Figure 1 (page 7). The health and environmental effects associated with the various groups of pesticides are described in Table 13. Fungicides and herbicides generally have low mammalian and soil toxicity. Molluscicides and nematicides have higher toxicity though they are less persistent in the environment.

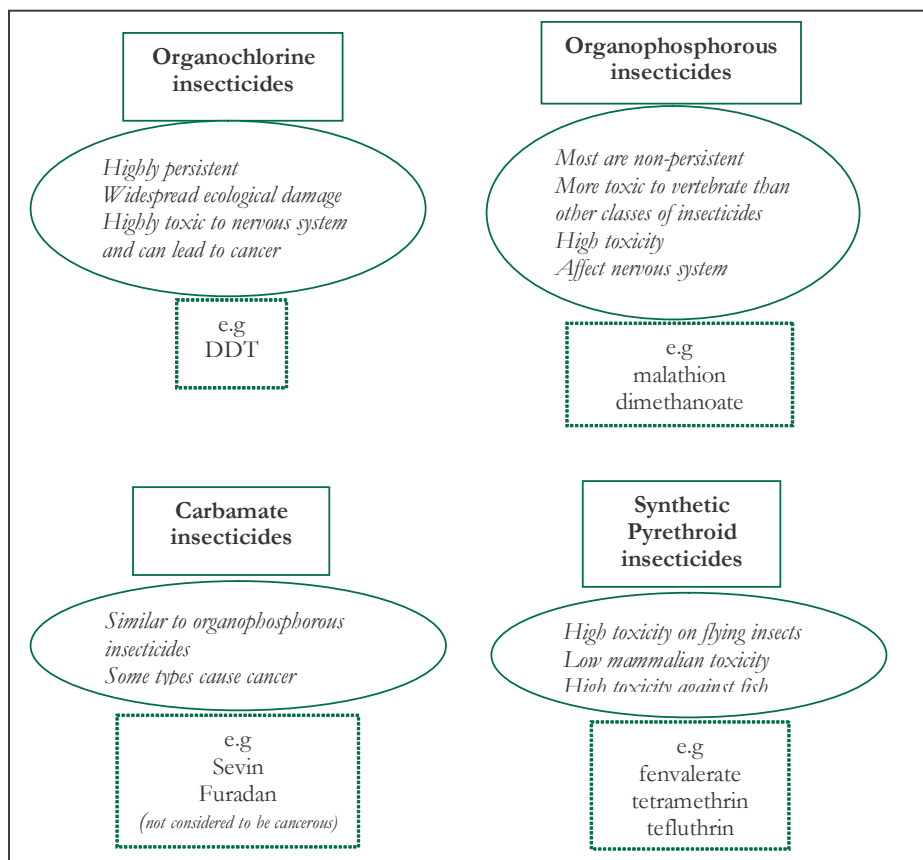
Table 13: Health and Environmental Effect of Pesticide Use

Pesticide	Toxicity	Environmental Impact
Fungicide	Low mammalian	Short term toxicity to soil microorganisms
Herbicides	Low mammalian	Soluble and reach waterways and ground water Generally non-persistent
Molluscicides	Toxic to birds, animals (cats, dogs), fish; Moderate toxicity to humans	Non-persistent
Nematicides	High mammalian toxicity	Negative effects on soil systems

Source: Adapted from Health and Environmental Impacts of Pesticides and Chemicals, CEHI, 2006

The insecticides used in Saint Lucia fall into two classes, organic and inorganic (CEHI, 2006). According to CEHI, the inorganic insecticides imported included Silica (SiO₂) and Boric Acid (H₃BO₃). The organic insecticides include organochlorine (OC) insecticides (e.g. DDT), organophosphorous (OP) insecticides, carbamate insecticides and synthetic pyrethroid insecticides. The toxicity and health effects of these insecticides are described in figure 7. In general, insecticides have a high level of toxicity with varying effects on humans.

Figure 7: Toxicity and Health Effects of Insecticides



Source: Adapted from Health and Environmental Impacts of Pesticides and Chemicals, CEHI, 2006

Stocks of POPs Pesticides

Table 14 presents an inventory of stocks of POPs pesticides in Saint Lucia. According to *Magloire* (2006), preliminary results reveal a total of 60.74 kgs and 45.75 litres of POPs pesticides in stock within four agencies. It should be noted that the stocks found at CEHI are used primarily for the purpose of laboratory analysis. The use of those located at the other agencies is not clear.

Table 14: Inventory of POPs Pesticides Stocks

POPs Pesticide	Location	Quantity	
		kgs.	litres
Ethel Mercury	MOA	1.4	
P. Toulene Annide 7.7%			
Chlordane	MOA/CEHI	0.0006	22.5
Heptachlor	MOA/CEHI/WIBDECO	2.3005	22.5
Methomyl 90%	MOA	2.4	
Dicofol	MOA/SLACC		0.75
Parathion	MOA	23	
Parathion 15%	MOA	23	
Methomyl 90%	SLAA	8.64	
BHC	CEHI	0.0005	
Aldrin	CEHI	0.0002	
Endosulphan I & II	CEHI	0.0002	
Endrin	CEHI	0.00025	
DDT	CEHI	0.0006	
Dieldrin	CEHI	0.00025	
Methoxychlor	CEHI	0.00025	
Mirex	CEHI	0.0002	
Taxaphene	CEHI	0.0006	
Arochlor	CEHI	0.000006	
	TOTAL	60.74	45.75

Adapted from Maglorie, 2006

Chemicals

In addition to pesticides, Saint Lucia also imports and uses a wide range of chemicals such as fertilizers, petroleum and related products, lubricating oils, greases and waxes and industrial chemicals. Table 19 in section 2.3.5 presents results from a preliminary inventory of stocks of obsolete chemicals in Saint Lucia.

Control

Obsolete POPs pesticides pose problems as the deteriorated condition of the packaging of these pesticides may contaminate soil. The following FAO guidelines (FAO, 2002) can be used to prevent recurrence and contain contaminated soil:

- Pesticides need to be repackaged to control containment
- Pesticides need to be removed and can be treated by means of incineration in a cement kiln as a final treatment

- Contaminated soil can be contained by covering soil with buildings, asphalt or another impermeable layer
- Preventing human contact with contaminated soil
- Organochlorine pesticides may be treated onsite through biological treatment, where the soil is covered with a layer of water to which nutrients are added to stimulate anaerobic biological reaction. This treatment requires a few years but is relatively cheap.

Regulatory and Policy Framework

The regulatory and policy framework for the management of POPs pesticides has already been addressed in preceding sections of the NIP. Although this framework does not contain the legal and administrative mechanisms to adequately deal with the complete elimination of the use and importation of POPs pesticides as required under the SC for Annex A, Part I chemicals, a number of pesticides and toxic chemicals has been prohibited from importation into Saint Lucia (Table 15). The action plan and strategies in the NIP identifies actions required to strengthen this framework in order to allow Saint Lucia to achieve its obligations under the SC.

Table 15: Prohibited Pesticides and Toxic Chemicals in Saint Lucia (2001)

Aldicarb (Temik)	Azinphos-ethyl (Gusathion A)
Azinphos-methyl (Gusathion M. Guthion)	Demeton (Systox)
Dicrotophos (Bidrin)	Dimefox (Pestox XIV)
DNPC	EPNB
Fensulfothion (Dasanit, Terracur P)	Fluometil (Lambrol)
Fonofos (Dyfonate)	Gophacide
HCH Lindane	Parathion
Parathion-methyl	Pentachlorophenol ACP
Phorate (Thimet)	Scjradam
Sulfotep	TEPP
Thionazin (Nemofos, Zinophos)	Zectran
DDT	

Source: Background and Literature Review for Chemicals Management, CEHI

2.3.2 Assessment for Annex A Part II Chemicals (PCB)

History

Annex A Part II Chemicals under the SC speaks to the use of polychlorinated biphenyls or PCBs in equipment such as transformers, capacitors and other receptacles containing liquid stocks. Saint Lucia is not a producer or an exporter of such PCBs containing equipment but is an importer of PCBs and equipment containing PCBs. According to the National Profile for Chemicals and POPs Management (*Magloire, 2006*) a preliminary inventory of PCB applications indicate that asphalt and lubricating oils are the major applications in Saint Lucia. In 2003 and 2004, 928 and 1983 dielectric transformers were imported respectively. The industries in Saint Lucia that currently depend on PCB containing equipment are the telecommunications and power generation industry.

Control

Innovative treatment technologies can be used to dispose of PCBs. The United States Environment Protection Agency (US EPA) developed the base catalyzed decomposition (BCD) process can be used to detoxify chlorinated compounds such as PCBs and dioxins (FAO, 1997). The following technologies exist:

- Thermal desorption followed by a chemical process to separate and detoxify organic contaminants. This treatment is efficient and relatively inexpensive if small quantities of PCBs are to be treated.

Saint Lucia lacks capabilities and capacities for this process and as such, the primarily control for PCBs and PCB containing equipment would be the elimination of imports of PCBs and PCB equipment through a phase out programme and the identification of alternative technologies adaptable to Saint Lucia's situation.

Existing Policy and Regulatory Framework

There is no policy or regulatory framework to address the elimination of the uses of PCBs in equipment, as Saint Lucia is not a producer of such equipment. However, Saint Lucia is an importer of such equipment and it should also be noted that there is no legislative framework to address the management of PCB containing equipment and the elimination of the importation of such equipment.

The NIP identifies actions necessary to ensure legislative support to eliminate the use of PCBs and PCB containing equipment in Saint Lucia.

2.3.3 Assessment for Annex B Chemicals (DDT)

History

The importation of DDT into Saint Lucia has been banned since the 1980's. According to Magloire (2006), the only agency with stocks of DDT is CEHI (Table 14), which is used for laboratory analysis. Although there is no planned future use or importation of DDT into Saint Lucia, the GOSL reserves the right to seek exemptions, within the deadline date as set

out by the convention, for vector control purposes, until suitable and economically feasible alternatives to DDT are identified and become available.

Existing Policy and Regulatory Framework

The ban placed on the importation of DDT is controlled by the Pesticides and Toxic Chemicals Control Act No. 15 of 2001. This regulation is monitored and enforced by the PTCCB.

2.3.4 Assessment of Releases from Unintentional Production of Annex C Chemicals (Dioxins/Furans, HCB and PCBs)

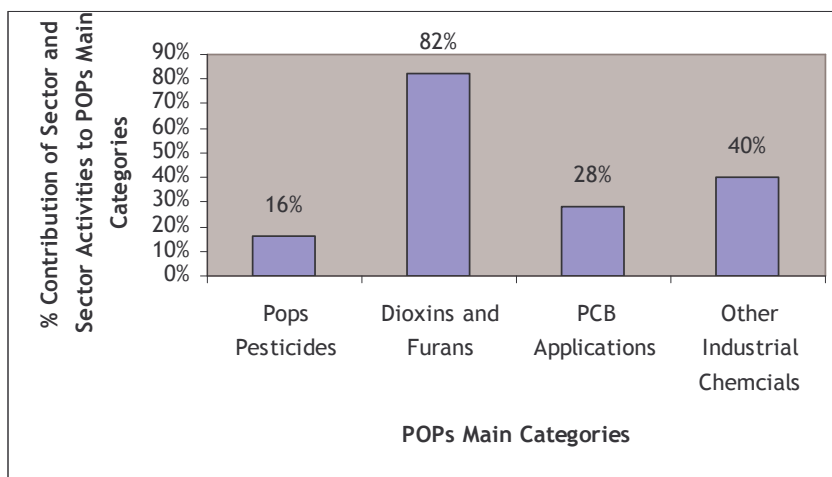
History

The chemicals categorized by Annex C Chemicals of the SC are:

- polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/PCDF) – Dioxins and Furans
- hexachlorobenzene (HCB)
- and polychlorinated biphenyls (PCB)

According to Agrico (2006), 82% of stakeholders are involved in activities that contribute to the release of dioxins and furans, 28% are involved in PCB applications and 16% are involved in POPs pesticide related activities. Forty percent (40%) are involved in activities related to other industrial chemicals (figure 8).

Figure 8: Distribution of Stakeholder Activity with respect to POPs and chemicals in Saint Lucia



Source: Agrico, 2006

Dioxins and furans are products of combustion. Saint Lucia has a long history of practicing burning for agricultural, energy, and solid waste management purposes. In the agricultural sector, burning is practiced for land clearing, in the energy sector, charcoal production still remains a source of energy and combustion still occurs on a low level as a means of waste disposal.

The main sources of dioxins and furans in Saint Lucia can be classified as stationary and diffuse sources (Agrico, 2006). Stationary sources include activities from industry and manufacturing (thermal wire reclamation, brick production, asphalt production) and energy production (power plants, wood and biomass combustion). Diffuse sources include automobiles, commercial and household heating and cooking, uncontrolled combustion, production and use of chemical and consumer goods.

Table 16 summarizes the preliminary dioxins and furan inventory by main source categories, subcategories and production/activity rate.

Table 16: Summary of Preliminary Dioxin and Furan Inventory - Main Source Categories, Subcategories and Production/Activity Rate

Cat.	Main Source Categories	Sub cat.	Class	Source Categories	Company/Data Source	Production/Activity Rate (per annum)
1	Waste Incineration	-	-	-	-	NA
2	Ferrous and Non-Ferrous Metal Production	m	1	Thermal wire reclamation	Larry Cadet	0.02 t/a
		.	2	Open burning of cable	-	NA
			3	Basic Furnace with after burner, wet scrubber	-	NA
				Burning electric motors, brake shoes, etc.	-	NA
3	Power Generation and Heating/Cooking	a.	4	Fossil fuel power plants Light fuel oil/natural gas fired power boilers	LUCELEC	1.165 TJ/a (equiv - 64,367 t/a)
		b.		Biomass power plants	-	NA
		c.		Landfill and biogas combustion	-	NA
		d.		Household/Commercial heating and cooking – Biomass		
			2	Virgin wood/biomass fired stoves	Local Bakery Biogas digesters	ND 0.0252 t/a
		e.		Domestic/Commercial heating and cooking - fossil fuels		
			3	Natural gas fired stoves	Commercial: Hotels and Restaurants Manufacturing	6.01 t/a
					Households	840.58 t/a
4	Production of Mineral Products	c.	1	Brick production Cyclone/no dust control	St Lucia Clay Products	220 t/a
		f.	1	Asphalt mixing Mixing plant with no gas cleaning	Concrete and Aggregates	400 t/a
5	Transport					

Cat.	Main Source Categories	Sub cat.	Class	Source Categories	Company/Data Source	Production/Activity Rate (per annum)	
		a.	2	4-Stroke engines unleaded fuel without catalyst	Petroleum dealers and distributors – for automotive industry	16,480,580 t/a	
		b.	2	2-Stroke engines Unleaded fuel without catalyst		NA	
		c.	1	Diesel engines Diesel engines		1,1774 t/a	
6	Uncontrolled Combustion Processes	a.	1 2 3 4	Fires/burnings - Biomass Forest Fires Grassland and moor fires Agricultural residue burning (in field), not impacted Agricultural residue burning (in field), impacted, poor combustion conditions	National Fire Service	ND ND ND ND	
		b.	1 2 3 4 5	Fires, waste burning, landfill fires, industrial fires and accidental fires Landfill Fires Accidental fires in houses, factories (per event) Uncontrolled domestic waste burning Accidental fires in vehicles (per vehicle) Open burning of wood (construction/demolition)		NA ND ND ND ND	
7	Production and Use of Chemicals and Consumer Goods	a.	5	Pulp and paper mills Recycling paper		WINERA	ND
		b.	1 2	Chemical industry PCP PCB		Island wide - HANCO Klenz Chemicals Marisule Chemical Industries Ltd. Chemical Investment	ND ND NA ND NA

Cat.	Main Source Categories	Sub cat.	Class	Source Categories	Company/Data Source	Production/Activity Rate (per annum)
			3	Chlorinated pesticides	Ltd.	NA
			4	Chloranil		NA
			5	ECD/VCM/PVC		ND
		d.		Fabric/textile plant		
			1.	Upper limit		ND
8	Miscellaneous	a.		Drying of biomass		NA
		b.		Crematoria		
			1	No control	Rambally's	10 t/a
		c.		Smoke houses		
			1	Treated wood, waste fuels used at fuel	Grew Industries	81 t/a
			2	Clean fuel, no afterburner		
			3	Clean fuel, afterburner		
		d.		Dry cleaning residues		
			2	Normal textiles	St. Lucia Linen	0.008 t/a
		e.		Tobacco smoking*		
			1	Cigar (per item)	Gov't Stats Dept.	2245.6
			2	Cigarette (per item)		11,582,7 (avg no. imported p/a - (2003/2004 data))
9	Disposal/Landfill	a.		Landfill leachate		
			1	Hazardous waste	St. Lucia Solid Waste Management Authority (SWMA)	ND (Leachate data not measured at this time).
			2	Non-hazardous waste		
		b.		Sewage/Sewage treatment		
			1	Industrial, mixed domestic with chlorine relevance No sludge removal	WASCO,	ND

Cat.	Main Source Categories	Sub cat.	Class	Source Categories	Company/Data Source	Production/Activity Rate (per annum)
			2	With sludge removal Urban environments		ND
			3	No sludge removal With sludge removal Remote and residential or modern treatment plant		ND
		c.		Open water dumping		ND
			1	Mixed domestic and industrial inputs		ND
			2	Urban environments		ND
			3	Remote environments or input control		ND
		d.		Composting		ND
			1	All organic fraction		ND
			2	Garden, kitchen wastes		ND
			3	Green materials, not impacted environments		ND
		e.		Waste oil disposal		ND
				All fractions		ND
10	Identification of Potential Hotspots			a. Production of chlorinated organics		
				b. Production sites of chlorine	CHEMICO	Site specific evaluation - water
				c. PCB-containing equipment	LUCELEC	Site specific evaluation - land at Union, where carcasses were stored before shipment – tests showed that levels were not significant
					Imports of small transformers and capacitors from developing countries	

Cat.	Main Source Categories	Sub cat.	Class	Source Categories	Company/Data Source	Production/Activity Rate (per annum)
				d. Dumps of wastes/residues from categories 1-9	SLSWMA – Larry Cadet	Site specific evaluation – - land
				a. Thermal wire reclamation treatment sites		- land
				b. Production and use of Chemical s and Consumer goods	Spent Chemical disposal in school laboratories	- water
				e. Sites of relevant accidents		Site specific evaluation – land/water
				f. Dredging of sediments		“
				g. Kaolinitic or ball clay sites		“

Based on assessments, automobile traffic is the major source of dioxins and furans in the environment, followed by power generation (fossil fuel power plants) as the second major source and commercial and household heating and cooking being the third source.

PCBs containing articles, materials and equipment are presented in Table 17. The National Inventory (Agrico, 2006), concludes that asphalt was the leading PCB application in Saint Lucia in 2004, followed by lubricating oils.

Table 17: Articles, Material and Equipment Containing PCBs

Adhesives	Asphalt Roofing Materials
Carbonless Copy Paper	Compressor Oil
De-dusting Agents	Dielectric Fluid (Primary Source)
Dyes	Electromagnets
Fluorescent Light Ballasts	Heat Transfer Fluid
Inks	Insulating Coatings
Lubricants	Natural Gas Pipeline
Paints	Pesticides
Plasticizers	Rubberizers
Space Heaters	Submersible Well Pumps
Tar Paper	Wax Extenders

Source: Saint Lucia, National Inventory, 2006

Equipment containing dielectric fluids such as transformers, capacitors, microwave ovens, air conditioners, electric motors, electrical light ballast and electro magnets are the main concern for Saint Lucia. Liquid dielectric transformers present the major threat for PCB releases. In 2004, 1,983 PCB containing dielectric transformers were imported, while in 2003 928 dielectric transformers were imported (Agrico, 2006).

The National Profile concludes that material which may contain PCB fluids and industrial chemicals are imported into Saint Lucia in relatively large quantities (Table 18).

Table 18: Mass of Material Imported Containing PCB - 2003-2004

Application	2004	2003
Open	89%	87%
Closed	7%	9%
Partially closed	4%	4%
Total	100%	100%
Total Mass	7,825,868	4,288,707

Source: Agrico, 2006

In 2003 and 2004, the total mass of material with PCB potential imported into Saint Lucia was 4,288,707 kg and 7,825,868 kg respectively.

Control

The only means of reducing and eliminating unintentional releases of PCDD/PCDF, HCB and PCBs is by improving the efficiency of crematories, vehicles and machinery in factories and by reducing or eliminating the practice of burning through legislative measures.

Existing Policy and Regulatory Framework

There is no policy or regulatory framework to address the unintentional production of Annex C Chemicals.

2.3.5 Assessment of Stockpiles, Contaminated Sites and Wastes

State of Stockpiles, Contaminated Sites and Wastes

During the period January to February 2002, the PTCCB conducted a survey of obsolete, unwanted and/or banned pesticides. A total of approximately seven (7) metric tonnes of material was recorded and identified for disposal. Organochlorine pesticides were also identified. The Saint. Lucia Electricity Company (LUCELEC) recorded one hundred and fifty six (156) electrical transformers for disposal. The quantity of oil within the transformers was undetermined.

Obsolete stocks of chemicals have also been found at a number of school laboratories such as the Castries Comprehensive Secondary School (CCSS), where chemicals were previously used for laboratory reactions. In addition obsolete pesticides and industrial chemicals have been identified at the Windward Islands Banana Development and Exporting Co. (WEBDECO) Ltd (*Magloire, 2006*). Table 19 provides a description of a preliminary inventory of obsolete stocks of chemicals in Saint Lucia.⁶

⁶ Through the implementation of the Enabling Activities Project, CEHI will be conducting an Analysis of POPs and Contaminated Sites, resulting in sampling, data collection and analysis. The GOSL will be submitting this analysis at a later date, as an appendix to this document

Table 19: Obsolete Stocks of Chemicals in Saint Lucia

Location	Chemical Name	Quantities	Storage
Saint Lucia Coconut Growers Association	Toluene	20 litres	
CHEMICO	Chlorine	8 Cylinders	Off-area within compound
Castries Comprehensive Secondary School	Range of laboratory chemicals		Store Rooms
WIBDECO*	Range of Pesticides and Industrial Chemicals		Technical Services Department-Roseau
HANCO	Poly-Ester Resin	four 500 gallon drums	Within Warehouse

Source: Adapted from Magloire, 2006

Control

The following FAO guidelines (FAO, 2002) can be used to prevent releases from contaminated sites and waste:

- Containment of soil by covering with buildings, asphalt or impermeable layer
- Preventing human contact with contaminated soil and wastes

The strategies and action plans of the NIP require an analysis of BET and BAT to identify the most economically feasible control options for implementation in Saint Lucia.

Existing Policy and Regulatory Framework

There is no policy or regulatory framework to address the management of stockpiles, contaminated sites and waste. The NIP identifies actions that must be taken to adequately manage stockpiles, contaminated sites and waste.

2.3.6 Summary of Future Use and Releases of POPs – Requirements for Exemptions

Saint Lucia has no planned future use or production of POPs, with the exception of DDT, for which Saint Lucia reserves the right to seek exemptions for vector control purposes, until suitable and economically feasible alternatives to DDT are identified and become available.

2.3.7 Monitoring Releases, Environmental and Human Health Impacts

Saint Lucia has no existing programmes or capacity for monitoring releases and environmental and human health impacts. Though six (6) laboratories exist in Saint Lucia, they are not monitoring releases of POPs and chemicals and do not have the necessary equipment and technical skills to monitor releases of POPs and chemicals. Table 20 provides a description of laboratories in Saint Lucia and their capabilities

Table 20: Summary of Laboratory Capabilities in Saint Lucia

Laboratory	Equipment/Analytical Capabilities Available	Accreditation	GLP ⁷ Certified	Purpose/Capability
CEHI	- Gas Chromatograph with electron capture detector and fluorescence photometric detector - High Performance Liquid Chromatograph	Yes ICE/ISO 17025	yes	- Organochlorine pesticides(OC) - organophosphorus pesticides,(OP) - PCBs - Carbanates, Bipyridinium, (paraquat and diquat) - Polyaromatic Hydrocarbons (PAHs)
Union Industrial Station	High Performance Liquid Chromatograph	No	No	U/A
WASCO	Unavailable (U/A)	No	No	U/A
Victoria Hospital	U/A	No	No	U/A
Tapion Hospital	U/A	U/A		U/A
St. Jude's Hospital	U/A	U/A	U/A	U/A

Source: Adopted from Magloire, 2006

⁷ GLP-Good Laboratory Practices

2.3.8 Current Level Awareness and Education Amongst Target Groups

General Public

The awareness among the general public regarding chemicals management is relatively low compared to knowledge on other environmental issues. Although the issues of POPs and chemicals is incorporated into the public awareness work programme of the SDE Section, knowledge of POPs and its negative impacts on human health and the environment among this group needs to be improved. It is necessary to perform a survey of Knowledge, Attitudes and Practices (KAP) study regarding POPs and chemicals use to accurately assess the level of information and awareness among the general public. This KAP study will provide a baseline from which public awareness and education (PAE) programmes can be developed and implemented.

Farmers and users of POPs, pesticides and other chemicals

The MOA has also been educating farmers on the POPs issues with particular reference to the proper use of pesticides, resulting in a higher level of awareness among farmers. This is facilitated mainly through one-on-one contact between farmers and Extension Officers. The Ministry also produces short features on various aspects of agriculture which are aired regularly on NTN. A KAP study is necessary to provide a baseline from which an awareness programme for farmers could be developed and implemented.

Industry

The OHSD seeks to ensure that manufactures and other industries are aware of the issues related to handling chemicals. Once again, there is no quantitative data on the actual level of knowledge among persons in the manufacturing industry. A KAP study is necessary.

2.3.9 Relevant Activities of Non-Governmental Stakeholders

Non-Governmental organizations (NGO) are a crucial group and have great influence in the success of a Government's efforts to manage POPs and chemicals. Whilst NGOs in Saint Lucia have not traditionally participated in the management of POPs and chemicals, they are actively involved in general environmental awareness and management in Saint Lucia.

Their participation in POPs and chemicals related issues may be evolving as the Saint Lucia National Trust (SLNT) is a member of HWAC and as such, has been involved in mapping the way forward regarding the management of POPs and chemicals in Saint Lucia.

The strategies and action plans of the NIP require greater participation from NGOs in the management of chemicals.

2.3.10 Technical Infrastructure for POPs Assessment, Measurement, Analysis, Management, Research and Development

The overall technical infrastructure in Saint Lucia, for POPs assessment, measurement, analysis, management, research and development (R&D) is weak. The NIP will propose steps that can be taken to improve the infrastructure for POPs assessment and analysis, and research and development.

2.3.11 Impacted Populations or Environments

Table 21 seeks to identify the impacted populations and environments and estimates the scale and magnitude of threats to health and environmental quality in the Saint Lucia context.

Table 21: Populations and Environments Impacted by POPs and Chemicals

POP or Chemical	Impacted group or environment	Threat Scale	Notes
Pesticides	Farmers	5	Farmers have daily direct contact with pesticides
	Households	2	Insecticides and household products used on a needs basis; household chemicals are usually of lower concentrations
	Fresh water ecosystems	5	Very vulnerable system especially when poor management of pesticides on farms and chemicals in industries is factored
	Soil	5	Contaminated soil affect plant production and reduces land usage
Chemicals	Industry workers	3	Daily contact with chemicals. Threat rises to 5 if PPE not provided.
	Fresh water systems	5	Very vulnerable system especially when poor management of pesticides on farms and chemicals in industries is factored
	Soil		Contaminated soil affects plant production and reduces land usage
PCBs	Electricity co. employees	2	Employees become exposed upon leakage of equipment. Threat rises to 4 if PPE is not provided
	Telecommunication co. employees	2	Employees become exposed from leakage of equipment. Threat rises to 4 if PPE is not provided
DDT	Farmers	1	DDT not used in Saint Lucia
	Soil	1	DDT not used in Saint Lucia
	Fresh water systems	1	DDT not used in Saint Lucia
Dioxins and Furans	General public	4	Though burning and charcoal making may occur in public areas, negative effects are determined by factors such as distance of people from the site, wind speed and direction. Also, people generally avoid these conditions. In general, dioxins and furans are easily carried via wind exposing people to their negative effects
	Farm animals	4	Recent studies have proven that animals such as chickens are highly sensitive to POPs and that POPs show up in eggs where farms are located in close proximity to a constant source of dioxins and furans.
	Hospital and Funeral Home employees	3	Employees are directly exposed to dioxins and furans as most facilities do not have stacks or an outlet for release of these POPs.

Threat Scale: (1=low, 5=high)

2.3.12 Assessment and Listing of New Chemicals

The importation of POPs pesticides and chemicals into Saint Lucia is controlled through the Pesticides and Toxic Chemicals and Control Act No. 15 of 2001. The PTCCB assesses chemicals proposed for importation. It should be noted that this assessment is limited to national, regional and international research and the experiences of other countries.

3.0 Strategy and Action Plan Elements of the NIP

3.1 Policy Statement

Saint Lucia's commitment to eliminating the use of POPs and chemicals is evident by Saint Lucia becoming Party to the SC on POPs. Saint Lucia's commitment can be further measured by the Cabinet of Minister's approval of the development and implementation of the NIP.

The objective of the NIP is to implement a basket of institutional, policy and legislative activities that will ensure the protection of human health and environment from negative effects of POPs and chemicals through the development and implementation of a POPs and chemicals management plan that meets the needs of Saint Lucia as the SC evolves.

The NIP is integrated into the work programme of the SDE Section of the MPDEH, and as such is integrated into government's environmental policies and sustainable development strategies. Further reference of this integration is:

- The NEP/NEMS provides a broad framework for environmental management
- St. George's Declaration on Principles of Environmental Sustainability⁸; Principles 3 (Improve on Legal and Institutional Frameworks), 6 (Use Economic Instruments for Sustainable Environmental Management), 7 (Foster Broad-based Environmental Education, Training and Awareness), 10 (Prevent and Control Pollution and Manage Waste) and 17 (Negotiate and Implement Multilateral Environmental Agreements) speak to improved management of POPs pesticides and chemicals (*OECS, 2001*)
- The cabinet approved POPs New Initiative outlines Government's commitment to the implementation of the SC in Saint Lucia

The guiding principles of this policy are:

- a. examination of risks posed to Saint Lucia's population and environment by identifying stockpiles, obsolete pesticides and chemicals, equipment that contain PCBs and identifying sources of unintentional production of POPs.
- b. Protection of human health and environment by reducing and eliminating emissions of POPs and the use of equipment containing POPs
- c. Creating a sense of ownership among stakeholders and partners towards the promotion of a holistic and sustainable approach to chemicals management
- d. Seeking funding for the implementation of the measure identified in the NIP

Saint Lucia's national objectives for implementing the NIP are:

- a. To strengthen and enhance Saint Lucia's institutional and regulatory framework
- b. To eliminate the importation and use of Annex A POPs Pesticides

⁸ The SGD's are currently under review.

- c. To eliminate the importation and use of PCBs and equipment containing PCBs and dispose of PCBs and PCB containing equipment
- d. To reduce or eliminate releases from unintentional production of POPs
- e. To identify and manage contaminated sites
- f. To develop, facilitate and promote a system for information exchange that allows Saint Lucia to be compliant under the SC on POPs
- g. To increase awareness of the public on POPs and chemicals, and their related issues
- h. To ensure the regular preparation and submission of reports in accordance with the SC
- i. To promote capacity for research and development related to the management of POPs pesticides and chemicals

In an effort to ensure that the NIP is implemented and that the most pressing concerns are addressed to ensure effective and efficient implementation, the following national priorities have been identified through national stakeholder consultation:

- Institutional strengthening for POPs and chemicals management
- Overall awareness raising on chemicals management issues including hazardous and chemical waste;
- Assessment of hazardous risk associated with existing stockpiles;
- Development of specific legislation on sound management of chemicals and hazardous waste

3.2 Implementation Strategy

The objective of the NIP is to protect human health and the environment from the negative effects of POPs and chemicals by developing a holistic and integrated approach to POPs and chemicals management in Saint Lucia.

The NIP will be implemented in the context of the NEP and NEMS and its implementation will be coordinated by the MPDEH.

The NIP must embrace wide stakeholder participation and collaboration and create a sense of ownership among stakeholders. Present Committees will be strengthened to avoid duplication of work and loss of effort by creating new committees or bodies.

Existing legislation will be strengthened and proposed regulations will allow for integration into existing legislative frameworks. Existing infrastructure such as laboratories will be strengthened and capacity and capabilities will be built. The NIP will allow for responses to the evolving requirements of the SC and needs of Saint Lucia.

The NIP must be reviewed every five years, as guided by the Parties to the Convention, in addition to allowing for amendments that may be required to strengthen the NIP. This review will ensure compliance with the terms of the NIP activities and must be reviewed under the following conditions:

- a. new measures identified by the SC
- b. addition of new chemicals to the annex of the Convention
- c. changes in national conditions that may affect the NIP activities
- d. other changes that directly affect the NIP

All amendments and reviews must be developed by the MPDEH in consultation with stakeholders and must be approved by Cabinet. All amendments to the NIP must be reported to the SC Secretariat and any other relevant implementing agency.

3.2 Strategies and Action Plans

The following sections outline ten (10) strategies and action plans along with timelines and budget.

3.2.1 Action Plan: Institutional and Regulatory Strengthening Measures

Goal: To strengthen and enhance Saint Lucia's institutional and regulatory framework to the implement the SC on POPs US \$615,000.00					
Programme	Activities	Responsible Agencies	Indicators	Time Frame	Cost US \$
Develop a mechanisms for coordination, cooperation and collaboration towards an integrated approach to chemicals management	- Develop a National Policy on POPs and chemicals management (see below)	SDE HWAC	- Integrated planning for POPs and chemicals management	Jan.07 to Dec 07	
	- Coordinate work programme activities among agencies with responsibility for chemicals management	SDE HWAC Proposed PTCC Auth.	- Work programmes within agencies seek to meet similar goals regarding chemicals management	Jul 07 – Jun 2020	
	- Develop guidelines for coordination, cooperation and collaboration among stakeholders	SDE HWAC	- Guidelines developed and promoted	Jul 06 – Jun 07	
	- Update the 2004 NEMS to include key targets and activities of the NIP	SDE	- NEP/NEMS implemented	Sep 07 - Dec 07	
	- Broaden mandate of HWAC to include the monitoring of the implementation of national policy and NIP. (including increased rep. from private sector, NGO and CBO)	SDE HWAC	- HWAC mandate broadened to include monitoring implementation of the NIP and national policy	Jul 06 – Dec 06	
	- Update/develop contingency plan for chemical disaster management	SDE NEMO Fire Service	- Elements of plan developed - Plan approved and implemented - Resources mobilized for implementing plan - Capacity built to implement plan	Jan 07 – Aug 07	
Institutional Strengthening for assessment, analysis and monitoring of POPs and	- Strengthen national capacity for the implementation of the NIP	SDE	- Resources allocated	ongoing	
	- Review/update of laboratories to determine existing and potential capabilities and resources required	SDE Laboratories	- Priority areas identified, capacities improved and resources allocated	Jan 07 – Jun 07	

chemicals	- Create technical infrastructure for POPs assessment, measurement, analysis within laboratories	SDE	- Laboratories equipped technical and financial resources and equipment for data collection, analysis and monitoring of POPs and chemical releases	Jun 07 – Mar 08	
	Develop and implement an information exchange system (see sec. 3.3.7)	SDE	- Information system developed	Jul 06 – Mar 07	
Development of a National Policy on POPs and Chemicals Management	- Assess the context for National Policy	SDE	-	Oct 06 – Dec 06	
	- Establish mechanisms for the development and implementation of national policy	SDE	- NIP implemented	Oct 06 – Mar 07	
	- Develop and implement mechanisms for mobilizing and sourcing financial and technical resources	SDE MAFF PTCCB	- Financial and technical resources mobilized	Jan 07 - Dec 07	
	- Develop and implement monitoring and evaluation programme for implementing the Policy	SDE HWAC	- Monitoring and evaluation programme implemented - Bi-annual reports published	ongoing	
Development of Protocols for priority areas of chemicals management	- Review, revise and update protocols for importation of chemicals	PTCCB	- Stakeholder consultations guide development of protocols - Protocols approved and promoted	Oct 06 – Sep 07	
	- Review, revise and update protocols for transportation, storage, handling/use and disposal of chemicals including storage	PTCCB	- Stakeholder consultations guide development of protocols - Protocols for transportation, handling and containment of chemical spills developed - Protocols approved and promoted	Oct 06 – Sep 07	
	- Develop a programme for promoting updated protocols among stakeholders	PTCCB	- Programme implemented - Protocols used by stakeholders	Jul 07 – Dec 07	
	- Develop and implement a monitoring programme for evaluating use of protocols	PTCCB	- Use of protocols improve transportation, storage, handling and disposal of chemicals	Jul 07 – ongoing	

Enhancement of Legislative and Regulatory Framework for POPs and chemicals management	<ul style="list-style-type: none"> - Conduct a legislative and policy review 	SDE	<ul style="list-style-type: none"> - National consultations to develop legislation held - Seek endorsement for revised legislative framework - Legislation established to address disposal of stockpiles and waste - Licensing system for PCB and PC:B containing equipment implemented and importation and use phased out by 2012 - Legislation amended to address exportation of PCB equipment and obsolete equipment - framework addressed disposal of PCBs and PCB containing equipment, including obsolete equipment - Regulations developed to control and eliminate releases from unintentional production of POPs - Limits of acceptable 'burning' established - Acceptable activities within contaminated identified and enforced - Legislative framework address management of contaminated sites - Legislative support for standards for acceptable levels of POPs and chemicals in portable water and food established by 2010 	Jan 07 - Jun 07	
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	- Ensure incorporation of legislative and regulatory requirements for POPs management into the Pesticides and Toxic Chemicals Control Act (under review)	AG	- Existing legislation revised to give effect to the framework - Requirement for POPs and chemicals management incorporated into revised Pesticides and Toxic Chemical Control Act - POPs added to list of chemicals requiring an import license	Jun 06 - Jun 07	
	- Strengthen capacity for enforcement and monitoring of legislation	SDE	- Budget allocated to support implementation of legislation	Jan 07 – ongoing	
Improve stakeholder involvement in the management of POPs and Chemicals	- Identify partners whose mandate directly relate to POPs and chemicals management	SDE	- Partners identified - MOUs of cooperation signed between partners and Government	Oct 06 – Mar 07	
	- Conduct a stakeholder analysis	SDE	- Report of analysis published and guide development of strategies	Oct 06 – Mar 07	
	- Develop strategies to improve stakeholder participation	SDE	- Strategies identified and implemented - Stakeholder participation improves	Jul 06 – Dec 06	
Develop mechanisms for sustainable financing for chemicals management	- Conduct an analysis of current financing mechanisms employed in chemicals management	SDE	- Financing mechanisms identified	Jun 06 – Dec 07	
	- Gain approval for sustainable financing options for chemicals management	SDE	- Financing Options approved and implemented	Sep 07 – Dec 07	
Establishment of a Pesticides and Toxic Chemical Control Authority	- Prepare policy paper on the establishment of a PTCA Review the mandate of the PTCCB	SDE PTCCB HWAC	- PTCCB evaluated - Policy paper establishment of PTCA prepared and submitted to Cabinet	Apr 08 – Dec 08	
	- Develop the TOR and legislative requirements for the establishment of Pesticides and Toxic Chemical Authority PTCCA	SDE PTCCB HWAC	- TOR and legislative requirements developed for establishment of a PTCA - Cabinet approval for establishment of PTCA	Jan 09 – Mar 09	

	<ul style="list-style-type: none"> - Lobby support for the speedy establishment and functioning of a PTCA 	<p>SDE PTCCB</p>	<ul style="list-style-type: none"> - Ministers with responsibility for chemicals management aware of importance and role of a PTCCA - Agencies with responsibility for chemicals management aware of importance and role of a PTCCA 	<p>Apr 09 – Sep 09</p>	
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3.2.2 Action Plan: Import and Use, Stockpiles and Wastes of Annex A POPs Pesticides (Annex A, Part 1 Chemicals)

Goal_1: To eliminate the importation and use of Annex A POPs Pesticides in Saint Lucia; US \$34,000.00					
Programme	Activities	Responsible Agencies	Indicators	Time Frame	Cost
Eliminating the Importation of Annex A POPs Pesticides (Part I Chemicals)	- Develop and implement strict guidelines for Annex A POPs	PTCCB	- Required regulations developed and implemented - Annex A POPs Pesticides included in list of chemicals that require a license to import (Pesticides and Toxic Chemicals Act), and their importation prohibited - Register of specific exemptions created and submitted to Secretariat of SC	Jan 07 - Jun 07	
	- Encourage IPM within the agricultural, health and urban sectors through model farms, model communities and PAE programmes	MAFF SDE	- Amount of pesticides used is reduced by 50% from baseline data (2006) by 2012	Apr 07 – Dec 2012	

Goal_2: To reduce or eliminate releases of Annex A Part I chemicals (POPs Pesticides) from stockpiles and wastes to allow Saint Lucia to remain compliant under the SC; US \$30,000.00					
Programme	Activities	Responsible Agencies	Indicators	Time Frame	COST
Sustainable Management of Stockpiles and Waste of Annex A Part I Chemicals	- Conduct an assessment of stockpiles and waste and releases	- SDE	- Updated inventory of stockpiles and waste - Baseline established and documented	ongoing	
	- Develop and implement national management plan for stockpiles and waste of Annex A Part I chemicals	- SDE	- Management plan approved by Cabinet - Agency budget allocation for management of POPs - Bi-annual reports on inventory - See 3.2.1 for legislative indicators	Oct 07 – ongoing	

	- Identify and promote of BEP and economically feasible disposal options for stockpiles and waste of Annex A Part I chemicals among industry	- SDE	- BAT and BEP implemented for management of stockpiles and waste - Options for reducing and eliminating releases of Annex A Part I chemicals identified	Jan 07 – ongoing	
	- Develop and implement an integrated monitoring plan for releases from stockpiles and waste	SDE	- Laboratories equipped with technical resources and equipment necessary for monitoring releases of Annex A POPs - Releases monitored and reported on a bi-annual basis - Releases reduced by 50% of 2006 baseline by 2012, eliminated by 2018	Oct 07 – ongoing	

3.2.3 Action Plan: Import, Use, Identification, labeling, Removal, Storage and Disposal of PCBs and Equipment Containing PCBs (Annex A, Part II Chemicals)/Obsolete Equipment

Goal: To eliminate the importation and use of PCBs and equipment containing PCBs and to identify and dispose of PCBs and PCB containing equipment to allow Saint Lucia to be compliant under the SC on POPs; US \$58,000.00					
Programme	Activities	Responsible Agencies	Indicators	Time Frame	COST
Sustainable Management of PCBs and PCB containing equipment	- See section 3.2.1 for legislative and regulatory activities and indicators regarding management of PCBs and PCB equipment				
	- Develop updated inventory of PCB and PCB containing equipment including obsolete equipment	SDE	- Inventory developed and published - Sustainable management plan approved	Jul 06 – Dec 06	
	- Develop and implement a phase out plan for PCBs and PCB containing developed	SDE PTCCB	- Phase out plan approved by Cabinet - Use of PCB and PCB equipment reduced by 50% by 2012 from the 2006 baseline year - Use of PCB and PCB equipment phase out by 2018	Jan 07 – ongoing	
	- Identify and promote the use of economically feasible and environmentally sound alternatives to, and disposal options for PCBs and PCB containing equipment	SDE	- Alternatives to PCBs and PCB containing equipment promoted - Incentives measures implemented to encourage BEP practices - BEP and BAT adopted and application increased by 50% over 2006 baseline, by 2012 - Sound disposal increased from by 50% over 2006 baseline year, by 2012 - Safety sheet published and distributed	Jan 07 – ongoing	

	<ul style="list-style-type: none"> - Establish an effective system for the collection and dissemination of information on PCBs and PCB containing equipment including obsolete equipment 	SDE	<ul style="list-style-type: none"> - System for collection of PCBs and PCB containing equipment and obsolete equipment established - Annual reports on PCB and PCB equipment generated and reported annually to SC and BC 	Jan 07 – Jun 07	
	<ul style="list-style-type: none"> - Develop and implement a PAE programme for effective management of PCBs and PCB containing equipment at the industrial and domestic level 	SDE Users of PCBs and PCB containing equipment	<ul style="list-style-type: none"> - Training programme implemented - Required technical and financial resources sourced - Users of PCBs and PCB equipment educated in sustainable management of PCBs and PCB equipment 	Jul 07 – Mar 08	

3.2.4 Action Plan: Releases from Unintentional Production of PCDD/PCDF, HCB and PCBs

Goal: To reduce or eliminate releases from unintentional production of POPs to allow Saint Lucia to remain compliant under the SC; US \$30,000.00					
Programme	Activities	Responsible Agencies	Indicators	Time Frame	COST
	See section 3.2.1 for legislative and regulatory activities and indicators regarding management of PCBs and PCB equipment				
Assessment of releases from unintentional production of POPs	- Identify sources of unintentional production of PCDD/PCDF, HCB and PCBs	SDE	- Sectors contributing to unintentional production identified	Jul 06 -Dec 06	
	- Establish baseline on releases	SDE	- Baseline on releases from unintentional production of POPs established	Jan 07 – Jun 07	
	- Assessment of current levels of dioxins and furans in women	SDE	- Assessment published	Jan 08 – Jun 08	
Reduction of Releases from unintentional production of POPs	- Review operations of incinerators and crematories at hospitals and funeral homes	SDE SLBS	- Programme to reduce releases from unintentional production of POPs approved and implemented - General public, private and public sector informed of negative effects of burning - Standards for operation of incinerators and crematories approved and enforced	Jan 07 – Jun 07	
	- Eliminate releases from unintentional production of POPs	SLBS SDE	- Limits of acceptable burning enforced - Eliminate burning household, commercial and green waste by 2012 - Application of alternative methods to burning increased by 50% from 2006 base line year by 2012 - Releases from unintentional production of POPs eliminated by 2018	Jul 07 - ongoing	

3.2.5 Action Plan: Identification and appropriate management of Contaminated Sites (Annex A, B and C Chemicals)

Goal: To identify and manage contaminated sites in a manner that allows Saint Lucia to be compliant under the SC on POPs; US \$44,000.00					
Programme	Activities	Responsible Agencies	Indicators	Time Frame	COST
Sustainable management of POPs and chemicals contaminated sites	- See section 3.2.1 for legislative and regulatory activities and indicators regarding management of PCBs and PCB equipment				
	- Develop sustainable management plan for contaminated sites	SDE	- Data base of contaminated sites published - BEP and BAT for contaminated sites increase by 50% from 2006 baseline, by 2012	Jan 07 - ongoing	
	- Develop of capacity for data collection and analysis and monitoring of releases	SDE	- Monitoring and reporting on state of contaminated sites to agencies every 2 years - Capacity improved within laboratories	Sep 07 – ongoing	
	- Identify, develop and implement remediation programmes for contaminated sites	SDE	- Remediation of 50% of contaminated sites, from the 2006 baseline, by 2012 - Remediation of all contaminated sites by 2018	Jan 07 – ongoing	
	- Establishment of a Poison Control Centre	SDE NEMO	- Saint Lucia's capacity to respond to cases of chemical exposure improves by 50% from 2006 baseline year, by 2012 - Poison Centre established by Apr 2008 - HMRT equipped to manage human exposure to POPs and chemicals	Jul 07 – ongoing	

3.2.6 Strategy for Information Exchange

Goal: To develop, facilitate and promote a system for information exchange that allows Saint Lucia to be compliant under the SC on POPs; US \$72,000.00					
Programme	Activities	Responsible Agencies	Indicators	Time Frame	COST
A coordinated approach to information generation, sharing and exchange	- Increase information generation and collection capacities among agencies on POPs and chemicals in Saint Lucia	SDE	- Agency identified to oversee coordinated approach	Jul 06 – Dec 06	
	- Develop Catalogue on existing national information on POPs pesticides and chemicals	SDE	- Catalogue published and disseminated every 2 years	Jan 07 – ongoing	
	- Develop and implement an Information System Application for chemicals management	SDE	- Website developed and approved - Website use increases by 50% from 2007 baseline yea, by 2010 - Spatial mapping of health effects developed by Dec 07 (2006 base year)	Oct 06 – ongoing	
	- Maintain information exchange with SC Secretariat and other agencies	SDE	- Reports compiled and submitted to the SC secretariat as guided by COP - Annual reports on implementation of NIP submitted to agencies annually	Oct 06 – ongoing	
	- National Information Clearing House on POPs pesticides and chemicals	SDE	- Clearing house established by Dec 2007 - Use of clearing house increases by 50% from 2008 baseline year, by 2012		
Training programmes on key aspects of chemicals use and management	- Train District Emergency Management Officers in chemicals disaster management	NEMO SDE	- Priority training areas identified - Resources mobilized to develop training material - Training material produced by Dec 07 - Officers equipped to address chemicals disasters	Jan 07 – ongoing	

	- Train Fire Service and SLASPA in HazMat and chemicals management	NEMO SDE	- Officers skilled in HazMat - Critical control points established by Dec 07 - Training held twice each year from 2008 - Responses improved by 50% over 2007 baseline year by 2012	Jan 07 – ongoing	
Establishment of Network of PCUs for the English-Speaking Caribbean Region	- Develop TOR for network of PCUs for the English-Speaking Caribbean	SDE	- Parties to the SC of the English Speaking Caribbean Region present case for Network at the 2008 COP	Jul 06 - Mar 08	
	- Lobby for the establishment of a Network for PCUs of the English-Speaking Caribbean Region	SDE	- Letters to lobby support for network sent to SC secretariat, UNEP ROLAC and other Parties - Network established and functioning by Dec 2009 - Network meets annually from 2010	Jul 06 - ongoing	

3.2.7 Action Plan: Public awareness, information and training

Goal: To increase awareness of the public on POPs and chemicals, and their related issues; US \$99,000.00					
Programme	Activities	Responsible Agencies	Indicators	Time Frame	COST
Assess the KAP regarding POPs and chemicals	- Assess the general public's, agricultural sector and industry's KAP regarding POPs pesticides and chemicals	SDE	- Report on KAP study regarding POPs and chemicals published - KAP study conducted biannually	Jul 06 – ongoing	
	- Develop and implement a programme to monitor KAP of industry, agricultural sector and general public	SDE	- Desired behavioral changes identified - KAP increase by 50% over 2006/07 baseline year by 2012 - Reports published and submitted every 5 years (stakeholders & SC)	Jul 06 – ongoing	
Public and industry awareness and education programme for POPs and chemicals management	- Develop and implement an effective PAE programme on chemicals management	SDE	- Use of website and information clearing house increased by 50% over 2007 baseline year by 2012 - NTN programming includes biweekly programmes on chemicals management - Publication and dissemination of State of the Environment Reports for Saint Lucia every 5 years - WED programmes include chemicals management issues - Safety sheets and industry specific awareness material distributed - Industries implement measures to better manage chemicals and POPs equipment by 2010 - NGO participation in PAE on chemicals management increase by 50% over the 2007 base year by 2012	Jan 07 – ongoing	
Promote safe handling of chemicals and	- Develop and BEP for handling chemicals	SDE PTCCB	- BEP improve by 50% over 2007 baseline year by 2012 - Critical control points established	Jul 07 – Aug 07	

equipment that contain POPs and chemicals	- Host health and safety workshops and BEP workshops with industry	SDE	- Workshops held annually - 50% improvement in handling of chemicals within industry from the 2007 baseline year by 2012	Apr 07 – Aug 07	
	- Establish industry standards regarding safe handling of chemicals and equipment containing chemicals	SLBS	- Chemicals management improve by 50% over 2007 baseline by 2012	Jan 07 – Jun 07	
	- Promote safe handling of household chemicals	SDE	- Survey on households' use of chemicals - 50% improvement in household handling of chemicals by 2012	Jul 07 – Mar 2020	

3.2.8 Action Plan: Monitoring

Goal: To monitor the implementation of the SC in Saint Lucia; US \$95,000.00					
Programme	Activities	Responsible Agencies	Indicators	Time Frame	COST
	See section 3.2.1 for legislative and regulatory activities and indicators regarding monitoring of chemicals				
Monitoring health of agricultural and industry workers exposed to POPs and chemicals, and equipment containing POPs and chemicals	- Develop and implement of Industry and Agricultural Monitoring Plan	SDE OHSD	- Monitoring plan approved - Monitoring plan implemented	Jan 07 – ongoing	
	- Enhancing laboratories for testing and analysis	SDE	- Laboratories equipped for testing and analysis by 2010 - Bi-annual reports published - Data included in SOE Report	Jun 07 – ongoing	
	- Develop and implement a monitoring programme for importers of chemicals	SDE	- Standards for storage, handling and transporting chemicals established and enforced - Bi-annual visits to premises of importers of chemicals - Storage, handling and transporting chemicals improved by 50% over 2006 base year by 2012	Jun 07 - ongoing	
Monitoring programme for detecting POPs and Chemical in portable water and food	- Develop a monitoring plan for analyzing and detecting levels of PCB, POPs and other chemicals in portable water and food	SDE	- WASCO's laboratories equipped to analyze levels of PCB, POPs and chemicals in portable water by 2010 - Laboratories equipped to analyze levels of POPs and chemicals in food by 2010 - Annual reports submitted to SDE and relevant agencies - Standards for acceptable levels of POPs and chemicals in portable water and food established and enforced by 2009	Jan 07 – ongoing	

	- Systematic updating on Status of POPs pesticides and chemicals releases	SDE	- Quantitative evaluations of releases conducted every 2 years - Information clearing house updated annually	Jan 08 – ongoing	
Access technical assistance from countries with well established POPs monitoring and analysis programmes	- Identify countries with experience in POPs monitoring and analysis	SDE	- Technical assistance to monitor POPs and chemical releases received by 2007	Sep 06 – Dec 07	
	- Mobilize financial and technical assistance to enable monitoring POPs	SDE	- Saint Lucia's ability to monitor POPs and chemicals releases improves by 50% over 2007 baseline, by 2012	Jan 07 – ongoing	

3.2.9 Action Plan: Reporting

Goal: To ensure the regular preparation and submission of reports in accordance with the SC; US \$122,000.00					
Programme	Activities	Responsible Agencies	Indicators	Time Frame	COST
National Framework for Reporting	- Incorporate local, regional and international reporting obligations under the SC into agency reporting framework	SDE	- Relevant reports submitted to the SC secretariat annually	Jul 06 – ongoing	
	- Establishment of National information exchange system to facilitate data collection and analysis	SDE	- National information exchange system functional by Mar 2007 - Report developed and disseminated annually (POPs releases, status of stockpiles and wastes, status of PCBs and PCB containing equipment)	Jul 06 – ongoing	
	- Reporting on implementation of Action Plans and Strategies identified in the NIP	SDE	- Reports submitted as guided by the SC	Jul 2011 – Mar 2020	

3.2.10 Strategy for Research and Development

Goal: To promote capacity for research and development related to the management POPs pesticides and chemicals, to allow Saint Lucia better respond to future developments in the SC and its obligations; US \$62,000.00					
Programme	Activities	Responsible Agencies	Indicators	Time Frame	COST
Research and Development (R&D) for POPs and chemicals	- Develop R&D capabilities and capacities in Saint Lucia	- SDE - MOAFF	- National capacity for R&D developed by Dec 2007 - R&D Unit within MOAFF strengthened and conduct R&D activities related to chemicals management from Jan 2009 - Sustainable financing for R&D implemented	Oct 06 – ongoing	

3.3 Capacity Building and National Priorities

Project Coordinating Unit

In order for Saint Lucia to achieve the objectives of the NIP, it is imperative for the Ministry of Physical Development, Environment and Housing to strengthen capacity within the Sustainable Development and Environment Section by strengthening the POPs Coordinating Unit (PCU).

Through the approved new initiative (Government Estimates, 2003-2004) on the implementation of the SC on POPs in Saint Lucia through the “*Enabling Activities for the Stockholm Convention on Persistent Organic Pollutants (POPs): National Implementation Plan for Saint Lucia*”, Government approved the establishment of PCU. The PCU has overall responsibility for implementing the SC on POPs in Saint Lucia and also has responsibility for monitoring the implementation of the NIP. Presently the PCU is lacking the staff complement and it is imperative for the PCU to be fully staffed in order for Saint Lucia to implement the NIP and meet its obligations under the Convention.

Translation of the NIP

Another priority area for Saint Lucia would be to translate the NIP into ‘reader-friendly’ booklets that would appeal to partner agencies, industry and the general public. The dissemination of this booklet would promote awareness of the NIP and its objectives and will assist Saint Lucia in achieving those objectives.

Ownership

Finally, it is necessary for Government to rally support from all stakeholder agencies to support the implementation of the NIP and the Convention. Stakeholder agencies offer valuable support and their participation will create ownership in the process to implement the SC on POPs in Saint Lucia.

3.4 Timetable for Plan Implementation

Specific Indicator	Target Date
Publication of State of the Environment Report (every 5 years)	Jul 06 – ongoing
Implementation of the NEP/NEMS	Jul 06 – ongoing
Clearing house established	July 06
PCU strengthened	Dec 06
Information System Application implemented	Oct 06
Establishment of National Information Exchange System	April 07
Register of specific exemptions submitted to Secretariat of SC	June 07
Sustainable management Plan of PCBs and PCB containing equipment implemented	Jan 07
Sustainable management plan for POPs and chemicals contaminated sites developed	Jan 07
Management Plan for PCBs and equipment containing PCBs implemented	August 08
Public and industry awareness and education programme for POPs and chemicals management	Jan 07
POPs and chemicals management included into school curricula	August 07
National Policy on POPs and Chemicals Management developed and implemented	Mar 07
Laboratories equipped to analyze levels of POPs and chemicals in portable water and food	Dec 2010
Inventory of Annex A POPs pesticides developed	March 08
Poison Control Centre established	Jun 08
Capacity for R&D developed	Jan 09
Establishment of a Pesticides and Toxic Chemical Control Authority	Sep 09
Network of PCUs of the English Speaking Caribbean established	Dec 09
PCBs and PCB containing equipment phased out	Dec 2018
Unintentional releases of POPs eliminated	De 2018

3.5 Resource Requirements

Table 22 presents the total projected costs for the NIP and identifies potential sources. It should be noted that this projection will require bi-annual reviews to reflect the actual cost of activities at the time of implementation.

Table 22: Projected Cost for NIP

Objective	Cost
	US \$0.00
3.3.1	610,000.00
3.3.2	34,000.00
3.3.3	40,000.00
3.3.4	30,000.00
3.3.5	44,000.00
3.3.6	38,000.00
3.3.7	87,000.00
3.3.8	95,000.00
3.3.9	122,000.00
3.3.10	65,200.00
TOTAL	1,165,200.00

Funding: UNEP, GOSL (in-kind contributions), Sustainable self-financing of NIP and other sources

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