

GEF
CLUSTER
COUNTRY
PORTFOLIO
EVALUATION

GEF Beneficiary Countries of the OECS (1992–2011)

(Antigua and Barbuda, Dominica, Grenada, St. Kitts
and Nevis, St. Lucia, St. Vincent and the Grenadines)

Volume 2: Technical Documents





GEF Cluster Country Portfolio Evaluation: GEF Beneficiary Countries of the Organisation of Eastern Caribbean States (1992–2011)

(Antigua & Barbuda, Dominica, Grenada, St. Kitts & Nevis, Saint Lucia, St. Vincent & the Grenadines)

October 2011

Final Evaluation Report

Technical Documents

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Technical Document 1: OECS Cluster Country Environmental Legal Framework

To support the OECS
Cluster Country Portfolio
Evaluation

October 2011

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Acronyms

BPoA	Barbados Programme of Action
CBD	UN Convention on Biological Diversity
CCPE	Country Cluster Portfolio Evaluation
CDB	Caribbean Development Bank
CITES	Convention on International Trade in Endangered Species
CPACC	Caribbean Planning for Adaptation to Climate Change
CPE	Country Portfolio Evaluation
CSEP	Caribbean Sustainable Energy Programme
EIA	Environmental Impact Assessment
ESDU	Environment and Sustainable Development Unit
GEF	Global Environment Facility
GOG	Government of Grenada
GOSL	Government of Saint Lucia
GSPTA	Growth and Social Protection Technical Assistance
INC	Initial National Communication (to the UNFCCC)
IRENA	International Renewable Energy Agency
LBS	Land-Based Sources and Activities
MACC	Mainstreaming Adaptation to Climate Change
MARPOL	International Convention for the Prevention of Pollution from Ships
NCSA	National Capacity Self Assessment
NEMS	National Environmental Management Strategy
NGO	Non-governmental Organization
NIP	National Implementation Plan (on Persistent Organic Pollutants)
NSWMA	National Solid Waste Management Authority
ODS	Ozone-depleting Substance(s)
OECS	Organisation of Eastern Caribbean States
POPs	Persistent Organic Pollutants
SGD	St. George's Declaration of Principles for Environmental Sustainability in the OECS
SIDS	Small Island Developing State(s)
SIRMM	Sustainable Island Resource Management Mechanism
SNC	Second National Communication (to the UNFCCC)
SPAW	Specially Protected Areas and Wildlife
UN	United Nations
UNCLOS	UN Convention on the Law of the Sea
UNFCCC	UN Framework Convention on Climate Change
UNCCD	UN Convention to Combat Desertification and Land Degradation
WCR	Wider Caribbean Region

Introduction

This report supports the Country Cluster Portfolio Evaluation (CCPE) of a cluster of six countries belonging to the Organisation of Eastern Caribbean States (OECS) that have benefited from GEF support. The OECS Cluster CPE will measure the relevance, efficiency, and results of the GEF country portfolios in the six countries. By capturing aggregate portfolio results and performance of the GEF at the country level, the country portfolio evaluation approach provides useful information for the GEF Council, the individual countries and the OECS leadership as a whole.

The report describes the environmental legal framework of the OECS countries, discussing commonalities and highlighting any unique features or issues within a particular country. This provides a context in which the GEF projects have been developed and implemented. The report includes information on national environmental legislation, policies, plans and strategies as well as the international agreements signed by the six countries, analyzed through time, from 1997 to the present, with respect to related GEF support.

The document is structured as follows:

- The **Background** provides basic information on the OECS and the global sustainable development backdrop;
- The **International Environmental Legal and Policy Framework** describes the international environmental agreements to which the six OECS countries are a party and discusses regional and sub-regional environmental legislative and policy frameworks;
- The **Environmental Legal and Policy Frameworks in OECS Countries** section discusses the national-level institutions, laws, regulations, policies, plans and strategies of the six countries, analyzing commonalities and differences;
- The **GEF Influence on the Environmental Legal and Policy Frameworks of the OECS Countries** section analyzes the influence of GEF support on implementation of the OECS countries' commitments to international conventions and development of national laws, policies and plans;
- **Annex 1** provides the laws and policies of each of the six OECS countries; and
- **Annex 2** illustrates the linkages among national legislation, policies and plans, the ratification of international agreements and the implementation of GEF global, regional and national projects in a timeline for each OECS country.

The six countries in the OECS Cluster are:

- Antigua and Barbuda
- Dominica
- Grenada
- St. Kitts and Nevis
- Saint Lucia
- St. Vincent and the Grenadines

Background

The Organisation of Eastern Caribbean States

The OECS was established in 1981 by the Treaty of Basseterre in an effort to deepen cooperation and sub-regional arrangements among seven Eastern Caribbean countries.^{1,2} The OECS aims to promote economic integration and to assist Members in meeting their international obligations and responsibilities.

The OECS is governed by The Authority (Heads of Government) comprising the Prime Ministers/Chief Ministers from all of the Member States whose policy decisions direct the work of the Organisation. The OECS work programmed is advanced by annual meetings of portfolio ministers with responsibility for trade, agriculture, education, environment etc. At their meetings, Ministers of the Environment usually discuss progress on the environmental portfolio of the OECS Secretariat and make recommendations on priority areas for future programming work in such areas as environmental management and planning, biodiversity management, sustainable livelihoods and disaster management. In addition, discussions take place with donor agencies regarding their environmental activities.

The Environment and Sustainable Development Unit (ESDU) (formerly Natural Resources Management Unit), within the OECS Secretariat provides natural resource and environmental management services to Member states, guided by the OECS Technical Advisory Committee on the Environment, which consists of Chief Environmental Officers, and Permanent Secretaries.

The OECS countries share common social, economic and environmental issues. In the 1980s, the OECS sub-region experienced a relatively strong decade of growth (5.9 percent per year), driven mainly by tourism and banana exports.³ But growth in the OECS has been slowing down since the early 1990s as a result of a decline in productivity growth and a contraction of private investment. These countries are vulnerable to annual hurricanes and storms that in recent years have had negative impacts on infrastructure and agricultural productivity.



¹ OECS website.

² Montserrat, one of the seven countries, is not part of the GEF OECS cluster as it is a British Overseas Territory.

³ World Bank report, OECS: Towards a New Agenda for Growth, 2005.

Although there are differences among the OECS countries, these countries are faced with common challenges related to scarce land area, under-developed indigenous energy sources, and insufficient fresh water resources⁴.

Sustainable Development Framework

The OECS member states established their commitment to supporting the 1992 Rio Summit's Agenda 21 at the United Nations Global Conference on the Sustainable Development of Small Island Developing States (SIDS) held in Barbados in 1994, which adopted the Programme of Action for the Sustainable Development of SIDS (known as the Barbados Programme of Action – BPoA) for the implementation of Agenda 21 in the region. The BPoA recognized that small island states have vulnerable economies which are dependent upon narrow resource bases and international trade, possess relatively fewer technological, human and financial resources and are particularly vulnerable to natural hazards.

In 2005, UNESCO held a meeting to review the implementation of and refine the BPoA. The resultant Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of SIDS builds on the original BPoA areas and highlights several new priorities and emerging issues now considered important dimensions of sustainable development in SIDS. The Mauritius Strategy promotes an integrated approach to sustainable island living and development and emphasizes interregional linkages and cooperation.

⁴ A notable exception to this is Dominica, which has ample freshwater resources.

International Environmental Legal and Policy Framework

International Environmental Agreements

The OECS countries are party to the following conventions for which GEF is the designated financial mechanism:

- Convention on Biological Diversity (CBD) and its Cartagena Protocol on Biosafety;
- Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol;
- Convention to Combat Desertification and Land Degradation (UNCCD);
- Stockholm Convention on Persistent Organic Pollutants (POPs); and
- Montreal Protocol on Substances that Deplete the Ozone Layer.

There are also international environmental agreements outside of the UN system, such as the Statute of the International Renewable Energy Agency (IRENA), which entered into force in July 2010⁵. The agency is new on the international stage; it was officially established in Bonn in January 2009 to promote the world-wide use of renewable energy. Antigua and Barbuda, Grenada and St. Vincent and the Grenadines are among the 148 countries (plus the European Union) that have ratified the IRENA Statute.

Table 1 below lists the international environmental agreements of relevance to the GEF areas of work to which the OECS countries are a party, indicating the year of signature, ratification or accession by each country.

⁵ IRENA web site.

Table 1. Ratification Status of International Agreements by OECS Countries

International Agreement	Year of Signature (S) / Ratification (R) / Accession (A)					
	Antigua and Barbuda	Dominica	Grenada	St. Kitts and Nevis	Saint Lucia	St. Vincent and the Grenadines
Biodiversity						
Convention on Biological Diversity, 1992 (CBD)*	1993 (R)	1994 (R)	1994 (R)	1993 (R)	1993 (R)	1996 (R)
Cartagena Protocol on Biosafety, 2003*	2003 (R)	2004 (A)	2004 (R)	2003 (R)	2005 (R)	2003 (R)
Convention on International Trade in Endangered Species of Wild Fauna and Flora, 1975 (CITES)	1997 (A)	1995 (A)	1999 (A)	1994 (A)	1982 (A)	1988 (A)
Convention on Wetlands of International Importance, 1971 (RAMSAR)	2005	x	x	x	2002	x
Climate Change / Energy						
United Nations Framework Convention on Climate Change, 1992 (UNFCCC)*	1993 (R)	1993 (R)	1994 (R)	1993 (R)	1993 (R)	1996 (R)
Kyoto Protocol, 2005*	1998 (R)	2005 (R)	2002 (R)	2008 (R)	2003 (R)	2004 (R)
Statute of the International Renewable Energy Agency, 2009 (IRENA)	2009	x	2009	x	x	2009
International Waters						
United Nations Convention on the Law of the Sea, 1982 (UNCLOS)	1989 (R)	1991 (R)	1991 (R)	1993 (R)	1985 (R)	1993 (R)
International Convention for the Regulation of Whaling, 1946	1982	1982	x	x	x	1982
International Convention for the Prevention of Pollution from Ships, as amended in 1978 (MARPOL 73/78)	1986	1979	1998	2001	1980	1981
Convention on the Prevention of Marine Pollution and Dumping of Wastes and Other Matter, 1972 (London Convention)	1989	x	x	x	1985	2001
Protocol to the London Convention, 1996	x	x	x	2004 (A)	x	x
Persistent Organic Pollutants						
Stockholm Convention on Persistent Organic Pollutants, 2001 (POPs)*	2003 (R)	2003 (A)	x	2004 (A)	2002 (A)	2005 (A)
Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, 1989 (Basel Convention)	1993 (A)	1998 (A)	x	1994 (A)	1993 (A)	1996 (A)
Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, 2004	2010 (A)	2005 (A)	x	x	x	2010 (A)
Land Degradation						
United Nations Convention to Combat Desertification, 1994 (UNCCD)*	1997 (R)	1997 (A)	1997 (A)	1997 (A)	1997 (A)	1998 (R)
Ozone						
Vienna Convention for the Protection of the Ozone Layer, 1988	1992 (A)	1993 (A)	1993 (A)	1992 (A)	1993 (A)	1996 (A)
Montreal Protocol on Substances that Deplete the Ozone Layer, 1989*	1992 (A)	1993 (A)	1993 (A)	1992 (A)	1993 (A)	1996 (A)

*Convention supported by the GEF as the main financial mechanism.

Regional Legal and Policy Framework for Environmental Management

In addition to the global international sustainable development initiatives and environmental agreements, the OECS countries participate in a number of Caribbean regional and sub-regional initiatives.

i. St. George's Declaration

OECS countries have developed their own unique environmental charter. In 2001, the OECS Ministers of the Environment signed the St. George's Declaration of Principles for Environmental Sustainability in the OECS (SGD). The SGD is based on the principles and commitments to sustainable development enunciated in the Rio Declaration and the Agenda 21 programmed of action. The Declaration sets out the broad framework to be pursued for environmental management in the OECS region based on 21 principles. The OECS Environmental Management Strategy, the framework through which the St. George's Declaration is to be implemented, proposes the establishment of "a comprehensive system of environmental law" and recommends provision of adequate resources for its implementation and enforcement. It also requires the adoption of an integrated approach to the management and use of natural resources.

In 2005 the SGD was revised, creating a policy framework with specific goals, objectives, outcomes and targets that guide member states in the review of their National Environmental Management Strategies (NEMS). The NEMS remains the key mechanism for implementing the SGD at the national level and provides a tool for tracking progress towards the goals and targets of the SGD and for communicating with other Member States, national partners and regional institutions on that progress.¹

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

The **Cartagena Convention** is the only Caribbean region-wide environmental legal framework that protects critical marine and coastal ecosystems and promotes regional co-operation and sustainable development. Its area of application comprises the marine environment of the Gulf of Mexico, the Caribbean Sea and the areas of the Atlantic Ocean adjacent thereto, south of 30 north latitude and within 200 nautical miles of the Atlantic Coasts of the States. The Convention was adopted in 1983 for the legal implementation of the Action Plan for the Caribbean Environment Programme and entered into force in 1986².

The Cartagena Convention requires Parties to adopt measures aimed at preventing, reducing and controlling pollution of the following areas: pollution from ships; pollution caused by dumping; pollution from sea-bed activities; airborne pollution; and pollution from land-based sources and activities. In addition, the Parties are required to take appropriate measures to protect and preserve rare or fragile ecosystems, as well as the habitat of depleted, threatened or endangered species and to develop technical and other guidelines for the planning and environmental impact assessments of important development projects in order to prevent or reduce harmful impacts on the area of application.

The Cartagena Convention is supplemented by the Oil Spills Protocol, the SPAW Protocol and the LBS Protocol. These are described below. Table 2 below presents the status (at November 2010) of the

¹ St. George's Principles of Sustainability in the OECS, 2007.

² Caribbean Environment Programme website.

Convention and the three protocols and Table 3 below provides the ratification status of these agreements by the six OECS countries.

The **Protocol Concerning Co-operation in Combating Oil Spills in the Wider Caribbean Region** (Oil Spills Protocol) aims to strengthen national and regional preparedness and response capacity of the nations and territories of the Wider Caribbean Region (WCR). It also serves to foster and facilitate co-operation and mutual assistance among the nations and territories in cases of emergency in order to prevent and control major oil spill incidents.

The **Protocol Concerning Specially Protected Areas and Wildlife in the Wider Caribbean Region** (SPAW Protocol) aims to protect, preserve and manage in a sustainable way areas and ecosystems of special value; threatened or endangered species of flora and fauna and their habitats. The SPAW Protocol stresses the importance of protecting habitats as an effective method of protecting endangered species. Protection is focused on fragile and vulnerable ecosystems as a whole, rather than on individual species. The SPAW Protocol is similar to the Convention on Biodiversity, but on a regional level.

The **Protocol Concerning Land-Based Sources and Activities** (LBS Protocol) is a regional agreement for the prevention, reduction, and control of marine pollution from land-based sources and activities in the Wider Caribbean Region (WCR). This Protocol facilitates the achievement of the goals and obligations of the United Nations Convention on the Law of the Sea (UNCLOS) and the Global Plan of Action for the Protection of the Marine Environment from Land-Based Activities. UNCLOS calls upon States to adopt laws and regulations to prevent, reduce and control pollution of the marine environment from land-based sources. The GPA highlights the need for action to reduce the pollutant load to the seas from land-based sources and activities. Both of these instruments emphasize the need to act at the regional level to address this problem.

The LBS Protocol is implemented through initiatives that focus on coastal management, environmental monitoring, sustainable agriculture, sewage treatment, and restoring contaminated bays and harbors. It emphasizes exchange of information on land-based pollution through cooperation in monitoring and research. Parties of the Protocol are obligated to establish legally binding effluent limits for domestic sewage, and develop plans for the reduction and control of agricultural non-point sources.³

³ Caribbean Environment Programme website – LBS Protocol page.

Table 2. Status of Cartagena Convention and its Protocols⁴

Agreement	Date Adopted	Date Entered into Force	Number of members
Cartagena Convention	1983	1986	25
Oil Spills Protocol	1983	1986	25
SPAW Protocol	1990	2000	18
LBS Protocol	1999	2010	9*

*This is the minimum number of countries required to enable the Protocol to enter into force.

Table 3. Ratification Status of Regional Agreements by OECS Countries⁵

Regional Agreement	Year of Signature (S) / Ratification (R) / Accession (A)					
	Antigua and Barbuda	Dominica	Grenada	St. Kitts and Nevis	Saint Lucia	St. Vincent and the Grenadines
St. George's Declaration Principles for Environmental Sustainability in the OECS	2001	2001	2001	2001	2001	2001
Convention for the Protection and Development of the Marine Environment in the Wider Caribbean Region, 1983 (Cartagena Convention)	1986 (R)	1990 (R)	1987 (R)	1999 (R)	1984 (R)	1990 (R)
Protocol Concerning Co-operation in Combating Oil Spills in the Wider Caribbean Region	1986 (R)	1990 (R)	1987 (R)	1999 (R)	1984 (R)	1990 (R)
Protocol Concerning Specially Protected Areas and Wildlife (SPAW) in the Wider Caribbean Region	1990 (S)	1990 (S)	x	x	2000 (R)	1991 (R)
Protocol Concerning Pollution from Land-Based Sources and Activities (LBS Protocol)	2010 (R)	x	x	x	2008 (R)	x

x – Not a party to this agreement/convention

⁴ Source: Report of the Executive Director of the Cartagena Convention on the Implementation of the 2008-2009 Work Programme of the Caribbean Environment Programme (UNEP, 2010).

⁵ Source: Report of the Executive Director of the Cartagena Convention on the Implementation of the 2008-2009 Work Programme of the Caribbean Environment Programme (UNEP, 2010).

Environmental Legal, Operational and Policy Frameworks in OECS Countries

International environmental agreements and conventions do not have direct legal authority at the national level and must be locally implemented through national legislation within appropriate institutional structures. Legislation can be used to incorporate conventions either by repeating the conventional provisions, or by referencing the convention, frequently by reproducing the agreement in an Appendix to the Act⁶.

The Constitutions of the OECS countries (like most others in the Caribbean) do not provide citizens with an inherent fundamental human right to a clean and healthy environment as they focus more on civil and political rights⁷. They provide strong protection to private property interests. While private property rights may be necessary to avoid “tragedy of the commons” environmental issues, private property interests may require curtailment in order to properly balance developmental and environmental concerns.

In the absence of constitutional protection of the right to a healthy environment, enactment of environmental legislation is under complete control of the government. While it is the government which is responsible for creating and adopting environmental laws, the Constitutions of these countries enable the government to amend or repeal this very environmental legislation and governments are often exempt from the scope of this legislation.

The six OECS countries have laws and regulations governing aspects such as land use and planning, protection of flora and fauna, fisheries, pollution of marine areas, beach protection, and public health. A range of institutions implements, monitors and enforces this environmental legislation. This fragmented approach (which is not unique to the OECS) can be considered an inadequate framework for environmental protection. A survey of the Environmental Laws of the Commonwealth Caribbean, commissioned by the Caribbean Law Institute in 1992, reported that:

“Much of the resource legislation in the Commonwealth Caribbean region lacks adequate environmental and institutional focus. Such environment-related legislation as exists, is, more often than not, inherited from the British, and is often fragmented and dispersed over several enactments. Responsibility for administering applicable legislation is likewise distributed among several government departments, unsupported by appropriate institutional arrangements to coordinate and direct relevant initiatives.”⁸

⁶ Environmental legislative and judicial developments in the English-Speaking Caribbean countries in the context of compliance with Agenda 21 and the Rio Agreements, 2001.

⁷ Ibid.

⁸ As reported in Environmental legislative and judicial developments in the English-Speaking Caribbean countries in the context of compliance with Agenda 21 and the Rio Agreements, 2001.

However, as shown in Table 1 above, all six OECS countries have signed most of the major multilateral environmental agreements, signaling their legislative and institutional commitment to effective environmental management.

Institutional Frameworks for Environmental Management

iii. Portfolio responsibility for environmental management within OECS countries

Throughout the years, the “environment portfolio” has been shifted between different ministries within many of the OECS countries. Across OECS countries, ministries responsible for the environment portfolio include those with responsibility for water, health, lands, development and tourism, among others. The frequent reallocation of this portfolio in the past has reduced these countries’ ability to implement a comprehensive environmental strategy. Table 4 below shows the current assignment of the Environment portfolio in the OECS countries. It can be seen that St. Kitts and Nevis is unique in placing the environment portfolio within a ministry of “sustainable development” indicating a more holistic approach to environmental management. This ministry is under the Prime Minister’s portfolio and has direct responsibility for environmental protection, marine pollution, forestry and watershed management, soil conservation and wildlife management, and lands and works in collaboration with ministries with responsibility for agriculture, public utilities and health. As will be discussed later in this report, St. Kitts and Nevis is the only OECS country that currently has umbrella integrating environmental legislation.

Table 4 also shows the location of the GEF focal points as well as the focal points for the international conventions that govern the GEF areas of work. In most cases, the focal points are within the ministry with responsibility for the environment – sometimes designated by a particular unit within that ministry (as seen by the shaded areas in the table). Other focal points lie within the Ministry of Foreign Affairs, in the case of Antigua and Barbuda, or the countries’ permanent missions to the United Nations (Antigua and Barbuda and St. Vincent and the Grenadines). Table 4 shows the names of the ministry at the time of focal point designation (as indicated by the year in parentheses); it can be seen that, in some cases, the name of the ministry was different at that time (see in particular, Dominica). This provides some examples of the frequent movement of the environment portfolio.

Table 4. Ministries with Responsibility for Environment and GEF Areas of Work⁹

	Antigua and Barbuda	Dominica	Grenada	St. Kitts and Nevis	Saint Lucia	St. Vincent and the Grenadines
Ministry with Environment Portfolio	Agriculture, Lands, Housing and the Environment	Environment, Natural Resources, Physical Planning and Fisheries	Environment, Foreign Trade and Export Development	Finance, Sustainable Development and Human Resource Development	Physical Development and the Environment	Health, Wellness and the Environment
GEF Political Focal Point	Permanent Mission of Antigua and Barbuda to the United Nations	Ministry of Environment, Natural Resources, Physical Planning and Fisheries	Permanent Representative of Grenada to the United Nations	Ministry of Sustainable Development	Ministry of Physical Development, the Environment	Ministry of Health, Wellness and Environment
GEF Operational Focal Point	Ministry of Foreign Affairs	Ministry of Environment, Natural Resources, Physical Planning and Fisheries (2011)	Ministry of Finance, Planning, Economy and Energy (2009)	Ministry of Sustainable Development (2006)	Sustainable Development and Environment Sector Ministry of Physical Development, the Environment (2008)	Ministry of Health and the Environment (2004)
UNFCCC Focal Point	Permanent Mission of Antigua and Barbuda to the United Nations	Ministry of Environment, Natural Resources, Physical Planning and Fisheries	Ministry of Environment, Foreign Trade, Export Development	Ministry of Health and Environment	Ministry of Physical Development and the Environment	Ministry of Health and the Environment
UNCCD Focal Point	Ministry of Foreign Affairs	Ministry of Agriculture and the Environment	Forestry Department Ministry of Agriculture, Lands, Forestry and Fisheries	Department of Physical Planning and Environment Ministry of Sustainable Development	Forestry Department Ministry of Agriculture, Fisheries, Forestry and the Environment	Environmental Services Ministry of Health and the Environment
CBD Focal Point	Environment Division Ministry of	Environmental Coordinating Unit	Ministry of Environment, Foreign Trade and Export	Department of Physical Planning and Environment	Ministry of Agriculture, Lands, Fisheries and Forestry	Permanent Mission of Saint Vincent and the Grenadines to the

⁹ N/A: Information not available. Bold entries are the names of the ministries with the environment portfolio. Shaded entries are focal points that are within ministries with the environment portfolio. *Sources:* Websites of the OECS country governments and GEF, UNFCCC, UNCCD, CBD, POPS Convention, Montreal Protocol.

	Antigua and Barbuda	Dominica	Grenada	St. Kitts and Nevis	Saint Lucia	St. Vincent and the Grenadines
	Agriculture, Lands, Housing and the Environment	Ministry of Health and the Environment	Development	Ministry of Sustainable Development		United Nations
Stockholm POPs Focal Point	Ministry of Works, Transportation and the Environment (2003)	N/A	N/A	N/A	Ministry of Economic Affairs, Economic Planning and National Development	N/A
Montreal Protocol Focal Point	Ministry of Commerce, Industry and Business Development	Environmental Coordinating Unit Ministry of Health and the Environment	Ministry of Communications, Works and Public Utilities	N/A	Ministry of Finance and Planning	Environmental Services Unit Ministry of Health and the Environment

iv. Other institutions involved in environmental management in OECS countries

Notwithstanding the primacy of the ministries with responsibility for the environment, there are many institutions involved in issues relevant to environmental management. These institutions include government ministries, statutory bodies, NGOs and community groups. As found in most OECS countries, the general governmental institutions and their roles and responsibilities are outlined below.

- Ministries of agriculture – responsible for land and marine-based natural resources, with departments that focus on forestry and fisheries;
- Land use and development authorities – responsible for regulating the use and development of land for urban, economic and infrastructural development;
- Ministries of planning – provides the lead in integration of planning activities;
- Ministries and agencies of public utilities and/or water – responsible for the provision of electricity, domestic water/sanitation as well as roads, drainage structures and dams; and,
- Ministries of health – responsible for environmental health, sanitation, liquid and solid waste management, water quality monitoring.

Currently, there are very few formal attempts to provide structured collaboration among these institutions at the national level within OECS countries. Most commonly collaboration occurs either informally at a personal level, or ad hoc through meetings or workshops dealing with specific issues. However, in the past ten years, activities associated with international environment-related conventions, such as biodiversity and climate change, have provided opportunities and resources for inter-ministerial and inter-agency discussions surrounding their proposed plans of action.

Some countries have established umbrella organizations that oversee all international conventions, for example, Saint Lucia's National Environmental Commission (established in 2008)¹⁰; Antigua and Barbuda's National Coordinating Mechanism¹¹ and St. Vincent and the Grenadines' National Environmental Advisory Council. Dominica has a Steering Committee for UNCCD, UNFCCC and CBD¹². These bodies aim to oversee projects being implemented under each convention and to strengthen communication links between the relevant Ministries and Departments directly involved with the implementation of the Conventions to facilitate a coordinated and timely response to treaty obligations. Also, governments have established coordinating committees for some of the conventions. Examples include Saint Lucia's National Climate Change Committee¹³ and Project Coordination Unit (for POPs)¹⁴. These entities – whether convention-specific or for all conventions – involve representatives of ministries and agencies as well as the private sector, NGOs and community groups.

OECS Country Legislative and Policy Frameworks for Environmental Management

As noted earlier in this report, international conventions do not, in general, have legal authority at the national level. However, two OECS countries have enacted legislation which provides legal authority to selected international agreements to which they are a party (including, but not limited to, CBD, UNFCCC, and Montreal Protocol). These Acts give the conventions legal standing and facilitate use of the international agreements in influencing judicial national-level decision-making on environmental management, and associated issues, such as land-use planning.

Antigua and Barbuda has adopted the Ratification of Treaties Act (cap. 364) 1989 which makes the provision that eight international conventions have been ratified by Parliament¹⁵, thereby giving them force of law. On the other hand, St. Kitts and Nevis has included in its National Conservation and Environmental Protection Act (discussed below) the provision that conventions listed in an annex to the Act (a total of seven in 2002) are to have the force of law, and empower the making of Regulations to give effect to these conventions. This approach is being followed by Antigua and Barbuda, whose draft Environmental Management Act is designed to integrate international environmental agreements into national legislation.

Each OECS country has numerous pieces of national legislation – laws and regulations – that govern aspects of the environment. Annex 1 provides lists of the environmental laws and regulations for each country as well as relevant policies and plans. Annex 2 shows the most recent (since 1985) laws for each country in a timeline which also includes the international environmental agreements, national policies and GEF global, regional and national projects that provided support to the countries' environmental legal frameworks.

Much of the legislation is outdated – with some legislation dating to before the 1930s – and does not reflect more current standards for natural resources management or include certain emerging international issues such as biosafety. In addition, with the exception of Antigua and Barbuda and St.

¹⁰ Saint Lucia's Fourth National Report to the Convention on Biological Diversity, 2009.

¹¹ Case Study: Synergies of MEAs in Antigua and Barbuda, 2002.

¹² Dominica National Action Plan to Combat Land Degradation.

¹³ Saint Lucia Initial Communication to the UNFCCC.

¹⁴ Saint Lucia POPs National Implementation Plan.

¹⁵ Environmental legislative and judicial developments in the English-Speaking Caribbean countries in the context of compliance with Agenda 21 and the Rio Agreements, 2001.

Kitts and Nevis as described above, local laws do not adequately reflect the provisions of multilateral agreements to which the countries have acceded. For example, permit systems for importing quotas of endangered species – which may have already been set up – need to be supported by legislation that supports such quotas. Other issues exist in relation to conflicts among different sectoral laws; unclear assignment of management responsibilities for watersheds; improper protection of biodiversity; and lack of enforceable laws with appropriate fines and fees.

These deficiencies are being addressed by the countries' commitment to the international environmental agreements they have signed which call for establishment of effective legal frameworks. Furthermore, these international conventions have mechanisms which provide financial and technical support to assist these countries in developing and implementing programs of action to achieve the objectives of the agreements.

Table 5 below compares the existence of environmental legislation, policies and plans of the six OECS countries in the GEF focus areas of work and the ratification of international agreements. It is followed by a discussion of the legislative and policy frameworks in the OECS countries, describing the existing laws and policies as well as the recent developments in the review or addition of legislation and the development of policies and plans.

Table 5. Environmental Agreements, Legislation, Policies and Plans in the OECS Countries¹⁶

Focus Area	Antigua and Barbuda	Dominica	Grenada	St. Kitts and Nevis	Saint Lucia	St. Vincent and the Grenadines	GEF Support
General Environment							
Umbrella	I, DL, P	I, DP	I, P	I, L, P	I, P	I, DL, P	
Biodiversity and Forest Management							
General biodiversity	I, P	I, P	I, P	I, P	I, DL, P	I, P	Yes
Biosafety	I	I	I, DL	I	I	I	Yes
National parks	L	L	L	L	L	L	
Protected areas	P	L, P	L, DL, P		P		Yes
Forestry	L, DL	L	L, P, DP	L	L, DL, DP	L	
Fisheries	L, DL	L	L, P	L	L, DP	L	
Species protection	I	I, L, P	I	I, L	I, L, P	I, L	Yes
Climate Change and Energy							
Energy	DP				DP		
Climate Change	I	I	I, DP	I	I	I	Yes
Renewable energy	I		I			I	
International Waters							
Pollution prevention	I, L	I	I	I	I, L	I	Yes
Public health	L	L	L	L	L	L	
Sanitation	DP	L	L, DL			L	
Solid waste management	L		L	L	L		
Persistent Organic Pollutants							
POPs	I, P	I	I	I	I, P	I	
Pesticides	L	L	L	L	L	L	
Toxic substances	DL				L		
Land Degradation and Land Use*							
Prevention of land degradation	I, P	I, P	I, P	I, P	I, L	I	Yes
Land use / physical development	L, DP	L	L, P	L, P	L, P	L, P	
Ozone							
Reduction of ODS	I, P	I, DL, P	I, P	I, P	I, P	I, P	

* Note that legislation, policies and plans related to biodiversity habitat protection and forest management combat land degradation. This entry refers to explicit requirements of the UNCCD and the general issue of land use.

Legend:

I Party to international/regional agreement

L Legislation exists

P Policy, plan or strategy exists

DL Legislation is in draft form

DP Draft policy, plan or strategy exists

Note that "L, DL" means that some legislation exists but additional legislation is being drafted to supplement or replace the original law(s).

It should be noted that the newer umbrella environmental legislation contains provisions that govern aspects of the environment which are addressed by sector- or issue-specific laws and regulations.

¹⁶ Sources: National action plans and communications for UNFCCC, UNCCD, CBD, POPs Convention; other reports as noted in the detailed discussions in this report.

v. Integrative Legislation and Policies

In 1987, St. Kitts and Nevis was the first Caribbean country to enact legislation for integrative environmental management when it adopted the National Conservation and Environmental Protection Act (NCEPA) 1987, amended as the National Conservation and Environmental Protection (Amendment) Act 1996.¹⁷

St. Kitts and Nevis - National Conservation and Environmental Protection Act

The 1996 NCEPA Amendment Act establishes a Department of the Environment (DOE) as the leading environmental agency in the country with a mandate to support sustainable development. The DOE is statutorily obliged to comply with national legislation relating to the environment and with the policies of the Government. As the lead agency, it is mandated to consult with other departments and ministries in regard to environmental projects, programs and policies undertaken by them and is required to provide those other agencies with advice, co-operation and assistance. Also, the DOE is given the power to negotiate environmental treaties initiated by regional and international organizations.

The NCEPA regulates environmental issues in functional units within the context of a comprehensive regime. The Act promotes establishment and administration of protected areas (including acquisition and management of private land for this purpose); establishment of specific national parks and historic sites; coast conservation and beach protection; forestry, soil, and water conservation; protection of wild animals and birds; and protection of antiquities and historic buildings.

The enactment of this comprehensive environmental legislation provided an avenue for the consolidation of sectoral environmental regulation. The NCEPA provides for the repeal of the Forestry Act, the Beach Control Act and the Wild Birds Protection Act. The repealed provisions were then re-enacted with revision (for example, strengthening enforcement provisions and increasing penalties and fines), into the NCEPA.

Note that when the Act was adopted, the DOE was within the then Ministry of Environment. Since then, this ministry was subsumed under the Ministry of Finance and Sustainable Development within the Prime Minister's portfolio. The designation of the Department of Environment as the lead environmental agency is therefore not affected by its location within a particular ministry and retains its authority and functions.

Source: Environmental legislative and judicial developments in the English-Speaking Caribbean countries in the context of compliance with Agenda 21 and the Rio Agreements, 2001

Other OECS countries are pursuing integrative environmental legislation as shown in Table 6.

¹⁷ Environmental legislative and judicial developments in the English-Speaking Caribbean countries in the context of compliance with Agenda 21 and the Rio Agreements, 2001.

Table 6. Umbrella Environmental Legislation being developed in OECS Countries

Country	Draft Integrative Environmental Legislation	Status/Comments
Antigua and Barbuda	Environmental Health Act Environmental Protection Management Bill	Conflicts exist between these two instruments particularly as it regards pollution control ¹⁸
St. Vincent and the Grenadines	Environmental Management Act	Draft act prepared in 2009 Has provisions for Strategic Impact Assessment ¹⁹

As noted above, the St. George's Declaration called for each OECS country to develop National Environmental Management Strategies (NEMS). Five of the six countries have developed these national strategies which are designed in part to support commitments to the international environmental agreements as well as the Barbados Programme of Action and the Mauritius Strategy. The lone country without an official National Environmental Management Strategy is Dominica; that country prepared a draft strategy but it has not yet been accepted by Parliament.²⁰

vi. Biodiversity and Forest Management

Biodiversity legislation in the OECS countries focuses on protection of specific plant or animal species, declaration of protected land and marine areas, forestry conservation and use, and fisheries management.

All six of the OECS countries have specific legislation governing the creation of national land or marine parks, most of which were adopted in the 1970s and 1980s, prior to the UN Convention on Biological Diversity (CBD). However, much of this legislation does not include provisions for management of these parks as protected areas. In order to address this and other shortcomings, and to fulfill the commitments to the CBD, new laws, policies and plans are being created to create true protected areas as part of the legislation review and policy development within the countries' national biodiversity action plans.

All OECS countries have forest management legislation which typically governs the granting of permits for harvesting forest produce, forest clearing and declaring forest reserves. Similarly, fisheries management legislation exists to preserve habitats, flora and fauna also create marine reserves in which fishing is restricted. However, fisheries and forestry legislation typically does not include adequate provisions for management of reserves created as protected areas. Also, many of the forestry regulations – which tend to be among the oldest in each country – are not well enforced, resulting in exploitation of forest resources for fuelwood and charcoal on both government and private lands.

All countries have drafted or enacted a National Biosafety Framework (Dominica, Saint Kitts & Nevis), a National Biosafety bill (Antigua and Barbuda, Grenada) or a National Biosafety Act (Saint Lucia, and Saint Vincent & the Grenadines). The timeline in Figure 1 below presenting regional GEF projects and national policies and plans, shows the timed relation between the GEF global and regional biosafety projects and

¹⁸ Integrating Management of Watersheds & Coastal Areas in Small Island Developing States of the Caribbean, National Report for Antigua and Barbuda, 2001.

¹⁹ Fourth National Biodiversity Report of St. Vincent and the Grenadines to the UNCBD.

²⁰ Status of Environmental Management in the OECS, 2009.

the elaboration of these frameworks, bills and acts. In all of the countries, participation in the GEF-supported biosafety activities resulted in direct policy or legislative outputs.

Examples of progress made since 1990 in the area of legislation and policy development are shown in Table 7 below, which also relates this progress with support received.

Table 7. Progress in Legislation and Policy Development re Biodiversity and Forest Management

Country	Results	Support
Antigua and Barbuda	<ul style="list-style-type: none"> National Biodiversity Strategic Action Plan prepared and submitted to CBD secretariat 	National NBSAP Enabling Activity - UNDP/GEF (GEF ID 281)
	<ul style="list-style-type: none"> Sustainable financial management strategy developed for Codrington Lagoon leading to the declaration of Codrington Lagoon National Park²¹ New protected area in North Sound of Antigua declared 	Sustainable Island Resource Management Mechanism national project – GEF (GEF ID 1614)
	<ul style="list-style-type: none"> Development of a marine protected areas program underway 	Regional OECS Protected Areas and Associated Livelihoods (OPAAL) project (GEF ID 1204)
	<ul style="list-style-type: none"> Development of draft Fisheries Act and Forestry and Wildlife Act 	
	<ul style="list-style-type: none"> Draft Biosafety and Biotechnology²² Management Bill prepared 	GEF Development of National Biosafety Frameworks Regional and Global Projects (GEF IDs 875, 2341, 2582)
Dominica	<ul style="list-style-type: none"> National Biodiversity Strategic Action Plan prepared and submitted to CBD secretariat 	National NBSAP Enabling Activity - UNDP/GEF (GEF ID 256)
	<ul style="list-style-type: none"> Development of protected areas policy and legislation which includes provisions for the establishment of 5-year marine management plans and relevant penalties 	Sustainable Island Resource Management Mechanism (SIRMM) national project – GEF (GEF ID 3460)
	<ul style="list-style-type: none"> Development of sustainable land management legislation 	Sustainable Land Management (SLM) national project - GEF
	<ul style="list-style-type: none"> Creation of management plans for two protected area sites 	
	<ul style="list-style-type: none"> Development of emergency action plans for two invasive species, the Black Sigatoka and the Giant African Snail 	Regional OECS Protected Areas and Associated Livelihoods (OPAAL) (GEF ID 1204)
	<ul style="list-style-type: none"> Establishment of specific conservation targets for conch, turtles and lobsters 	
	<ul style="list-style-type: none"> Development of the Carib community 	

²¹ Status of Environmental Management in the OECS, 2009.

²² National Biosafety Framework of Antigua and Barbuda.

Country	Results	Support
	initiative to protect traditional knowledge and promote local communities	
	<ul style="list-style-type: none"> Draft Biosafety and Biotechnology Management Act 2004 prepared which calls for the establishment of the National Biosafety Authority²³ 	GEF Development of National Biosafety Frameworks Regional and Global Projects (GEF IDs 875, 2341)
Grenada	<ul style="list-style-type: none"> National Biodiversity Strategic Action Plan prepared and submitted to CBD secretariat 	National NBSAP Enabling Activity - UNDP/GEF (GEF ID 470)
	<ul style="list-style-type: none"> Management gaps for biodiversity sector determined and plan for the way forward 	National Capacity Self Assessment (NCSA) Enabling Activity – GEF (GEF ID 2036)
	<ul style="list-style-type: none"> Elaboration of the ecological gap assessment study on the management effectiveness of protected areas²⁴ Development of sustainable use plans and programs for inland and coastal fishery, mangroves, forest resources, and wildlife species linked to the National Physical Development Plan 	Regional OECS Protected Areas an Associated Livelihoods (OPAAL) (GEF ID 1204)
	<ul style="list-style-type: none"> Development of draft protected areas policy and legislation Development of a plan and policy for a system of national parks and protected areas Creation of finance plan and management plans for protected areas Government pronouncement to effectively protect 25 percent of its terrestrial and near shore coastal areas by 2020 	Sustainable Land Management (SLM) national project – GEF (GEF ID 3512)
	<ul style="list-style-type: none"> Development of draft protected areas policy and legislation Development of a plan and policy for a system of national parks and protected areas Creation of finance plan and management plans for protected areas Government pronouncement to effectively protect 25 percent of its terrestrial and near shore coastal areas by 2020 	Integrating Watershed and Coastal Area Management regional project – GEF (GEF ID 1254)
	<ul style="list-style-type: none"> Biosafety act approved by Cabinet but not yet submitted to Parliament Formation of the National Biosafety Authority²⁵ 	GEF Development of National Biosafety Frameworks Regional and Global Projects (GEF IDs 875, 2341, 2582)
St. Kitts and Nevis	<ul style="list-style-type: none"> National Biodiversity Strategic Action Plan prepared and submitted to CBD secretariat 	National NBSAP Enabling Activity - UNDP/GEF (GEF ID 255)
	<ul style="list-style-type: none"> Development of Biosafety Framework²⁶, including: <ul style="list-style-type: none"> Draft Biosafety Act 2007 Establishment of National Biosafety 	GEF Development of National Biosafety Frameworks Regional and Global Projects (GEF IDs 875,

²³ National Biosafety Framework of Dominica.

²⁴ Fourth National Report on Grenada to the CBD.

²⁵ National Biosafety Framework of Grenada.

²⁶ National Biosafety Framework of St. Kitts and Nevis.

Country	Results	Support
	<ul style="list-style-type: none"> Board <ul style="list-style-type: none"> Draft Statutory Rules and Orders Draft Biosafety Regulations – for registration and licenses 	2341, 2582)
Saint Lucia	<ul style="list-style-type: none"> National Biodiversity Strategic Action Plan prepared and submitted to CBD secretariat 	National NBSAP Enabling Activity - UNDP/GEF (GEF ID 679)
	<ul style="list-style-type: none"> Development of draft Biosafety Act and establishment of National Biosafety Authority²⁷ 	GEF Development of National Biosafety Frameworks Regional and Global Projects (GEF IDs 875, 2341, 2582)
	<ul style="list-style-type: none"> Draft legislation developed²⁸: <ul style="list-style-type: none"> Draft Biodiversity Conservation and Sustainable Use Act for Saint Lucia Forest (Timber And Non Timber Products) Regulations, 2008) 	
	<ul style="list-style-type: none"> Development of draft Fisheries Management Plan 2006-2010²⁹ Development of draft Forest Policy Development of forestry strategic plan 2007 	
	<ul style="list-style-type: none"> Establishment of a full-time Biodiversity Office resulting in production of draft second NBSAP 	Commenced with UNEP/GEF financing now financed by GOSL and various projects
	<ul style="list-style-type: none"> Development of plans for invasive alien species 	UNEP/GEF 2009 regional project “Mitigating the threats of Invasive Alien Species in insular Caribbean” (GEF ID 3183)
	<ul style="list-style-type: none"> Preparation and review of a Revised Systems Plan of Parks and Protected Areas³⁰ 	OPAAL Regional Project (GEF ID 1204)
	<ul style="list-style-type: none"> Establishment of two more legally protected areas – the Piton Management Area, which is a World Heritage site and the Point Sable Environmental Protection Area³¹ 	OPAAL Regional Project (GEF ID 1204)
St. Vincent and the Grenadines	<ul style="list-style-type: none"> National Biodiversity Strategic Action Plan prepared and submitted to CBD secretariat Revision and updating of all the relevant legislative instruments that support the CBD³². Results were the drafting of: 	<p>National NBSAP Enabling Activity - UNDP/GEF (GEF ID 257)</p> <p>OECS Protecting the Eastern Caribbean Region’s Biodiversity regional project - GEF</p>

²⁷ National Biosafety Framework of Saint Lucia.

²⁸ Saint Lucia 4th report to CBD 2009.

²⁹ Saint Lucia 4th report to CBD 2009.

³⁰ Saint Lucia National Trust.

³¹ Saint Lucia National Trust.

³² 4th Report to the CBD St Vincent Ministry of Health and Environment, 2010.

Country	Results	Support
	<ul style="list-style-type: none"> ○ Wildlife Protection Act ○ Marine Park Act ○ National Parks Act ○ Environmental Management Act 	
	<ul style="list-style-type: none"> • National Capacity Self-Assessment (NCSA) conducted in 2005 	National Capacity Self-Assessment Enabling Activity-UNDP/GEF (GEF ID 1828)
	<ul style="list-style-type: none"> • Development of proposal to establish Department of Environmental Management 	2003 OECS Project to promote mainstreaming of integrated environmental management in four of its member states
	<ul style="list-style-type: none"> • Development of draft Biosafety Act, 2007 and establishment of Biosafety Board³³ 	GEF Development of National Biosafety Frameworks Regional and Global Projects (GEF IDs 875, 2341, 2582)

vii. Climate Change and Energy

The OECS countries recognize the importance of establishing a framework for institutionalizing sustainable energy management, which will enable them to explore new opportunities, including those that may arise from out of the implementation of the Clean Development Mechanism and other aspects of the implementation of the UNFCCC and the Kyoto Protocol.

GEF-supported enabling activities facilitated the preparation and submission of initial national communications (INC) to the UNFCCC by all six OECS countries except St. Vincent and the Grenadines, which received support from the Caribbean Planning for Adaptation to Climate Change (CPACC) project.

No new national legislation has been developed in any of the OECS countries explicitly dealing with climate change. The general approach is to ensure that climate change considerations are placed at the center of national development planning and policy development, including disaster management planning. Efforts to address climate change issues in the OECS countries include mitigation initiatives for reduction of the country's greenhouse gas (GHG) emissions but, given their small contribution to global GHG emissions, focus more on adaptation efforts dealing with the adverse impacts of climate change.

At the policy level, the GEF-funded CPACC project supported implementation of the CARICOM Programme of Adaptation, and included regional components and national pilot projects. One of the regional components focused on assisting countries to identify national climate change issues in order to develop implementation plans, and national plans and policies were developed in Grenada, Saint Lucia, and Antigua & Barbuda, including attention to climate change disaster management and response.

The subsequent GEF-funded Mainstreaming Adaptation to Climate Change (MACC) project, in which all six OECS countries participated, built on the progress made during the CPACC project and the CIDA-funded Adaptation to Climate Change in the Caribbean Project (ACCC). The MACC project continued the process of regional cooperation in the preparation of a regional negotiating agenda and adaptation

³³ National Biosafety Framework of St. Vincent and the Grenadines.

strategy relating to climate change.³⁴ The project facilitated the development of process where regional position papers are prepared and agreed prior to each Conference of the Parties (COP), meeting of subsidiary bodies, and UNFCCC discussion. These are incorporated into the AOSIS negotiating position since the Caribbean region negotiates as part of the AOSIS group.

Under the MACC project, a regional strategy on climate change was developed, and adopted by the Heads of State in July 2009. The strategy, "Climate Change and the Caribbean: A Regional Framework for Achieving Development Resilient to Climate Change (2009-2015)", defines the main pillars on which the region will focus.

All six OECS countries have started national energy programs, and the three IRENA signatories have developed national energy policies that include a focus on the development of renewable energy as well as energy conservation and efficiency.³⁵ In addition, Grenada is developing a sustainable energy plan. The other OECS countries that have not signed the Statute are never-the-less pursuing the development of national energy policies and plans through the CSEP. Also, Dominica is creating alternative energy legislation and regulations under the World Bank-funded Growth and Social Protection Technical Assistance (GSPTA) Project.

As noted in Table 1 above, in 2009, Antigua and Barbuda, Grenada and St. Vincent and the Grenadines signed the Statute of the International Renewable Energy Agency (IRENA) which promotes the widespread and increased use of renewable energy.

viii. International Waters

The OECS countries all have legislation governing issues addressing water quality, sanitation and solid waste, which influences environmental quality of the surrounding Caribbean Sea and Atlantic Ocean.

The GEF Wider Caribbean Initiative on Ship-Generated Waste regional project, implemented in 1994-1998, resulted in an increased acceptance in the region of the importance of implementing the MARPOL convention. Grenada and St. Kitts and Nevis ratified MARPOL during or after the project (in 1998 and 2001, respectively). The project identified the amount of legislative and regulatory work required in the WCR to bring into effect proper enforcement and compliance of MARPOL³⁶ and resulted in the adoption of relevant legislation in St. Kitts and Nevis. All six OECS countries have now ratified the convention.

Table 2 above shows the OECS countries that are party to the Cartagena Convention and its protocols (co-operation in combating oil spills, SPAW and LBS); however, national legislation does not yet meet the requirements of these protocols. In many cases, existing water legislation does not address sewage disposal and is not supported by regulations with adequate provisions for effluent discharge into water bodies.

ix. Persistent Organic Pollutants

At present there is no legislation specifically dealing with management of POPs, but POPs are partially addressed through legislation on pesticides, agriculture, health, waste management, ports etc.

³⁴ MACC Project Implementation Completion and Results Report, World Bank. 2009.

³⁵ Caribbean Information Platform on Renewable Energy (CIPORE) website

³⁶ Completion Report, the Wider Caribbean Initiative on Ship-Generated Waste Project, 1999.

All six OECS countries have pesticide legislation that controls importation and conditions for storage and use of agricultural and domestic pesticides. However, the provisions of these acts are somewhat limited and are not fully enforced.

The GEF-supported National Implementation Plans developed by Antigua & Barbuda and Saint Lucia have set the stage for a new act – the Pesticides and Toxic Chemicals Control Act – which provides a more comprehensive legal framework for the control and management of toxic substances, including pesticides. Saint Lucia's act was adopted in 2001 and is being revised to include the specific requirements of the Stockholm, Rotterdam, and Basel conventions as part of that country's National Implementation Plan for 2006-2010.³⁷ Antigua and Barbuda's act, developed as part of the country's 2007 POPs Plan, is awaiting approval.³⁸

Antigua and Barbuda's 2004 NSWMA (Amendment) Act and Saint Lucia's 1996 Solid Waste Management Authority Act governs hazardous wastes which include a number of persistent toxic substances. Additionally, Antigua and Barbuda's draft Environmental Management Bill addresses some of the pollution issues related to POPs.

x. Land Degradation

The foundation of plans to prevent land degradation is effective land use planning. Historically, this has been a weakness in the OECS countries, with fragmented, inadequate and often conflicting legislation and policies governing use of land among municipal, agriculture, forestry exploitation, and conservation purposes. However, all of the OECS countries are developing national land use or development plans as shown in Table 8 below.

Table 8. Development of Physical Development and Land Use Legislation, Policies, Plans

Country	National Legislation, Policy or Plan	Status
Antigua and Barbuda	National Physical Development Plan	Draft as of 2009
Dominica	Integrated Development Plan Sustainable land management legislation	Development process started Legislation not yet approved
Grenada	National Physical Development Plan for Grenada and its sister islands (Carriacou and Petit Martinique)	Approved 2003
	Integrated Physical Development and Environmental Management Plan for Carriacou and Petit Martinique	Plan developed through funding from UNDP/CDB/GoG Plan for Grenada pending
St. Kitts and Nevis	Revision of Development Control and Planning Act to include a legal requirement for conducting environmental impact assessments (EIAs) ³⁹	
Saint Lucia	National Land Policy	Approved 2007
St. Vincent and the Grenadines	National Physical Development Plan 2002 - 2022	Approved

³⁷ Saint Lucia National Implementation Plan for the Management of POPS 2006-2010.

³⁸ Antigua National Implementation Plan for the Management of POPS, 2007.

³⁹ St Kitts National Action Programme for Combating Desertification and Land Degradation, 2007.

Activities related to good forestry and watershed management lead toward prevention of land degradation. Therefore, legislation related to biodiversity and habitat preservation, watershed management, and forest management are de facto laws for the prevention of land degradation. (See discussion under Biodiversity and Forest Management section above, regarding initiatives in these areas.)

Four of the six OECS countries have submitted National Action Plans or Programmes under their commitment to the UNCCD. The four countries are:

- Antigua and Barbuda - 2005 (working draft)
- Dominica - 2004
- Grenada - 2006
- St. Kitts and Nevis - 2007

These plans or programs reflect national policy to elevate concern for land management to the level of planning and action and recognize land management as an important national asset. In Grenada and St. Kitts and Nevis, they have submitted after the GEF Capacity Building and Mainstreaming of Sustainable Land Management national projects.

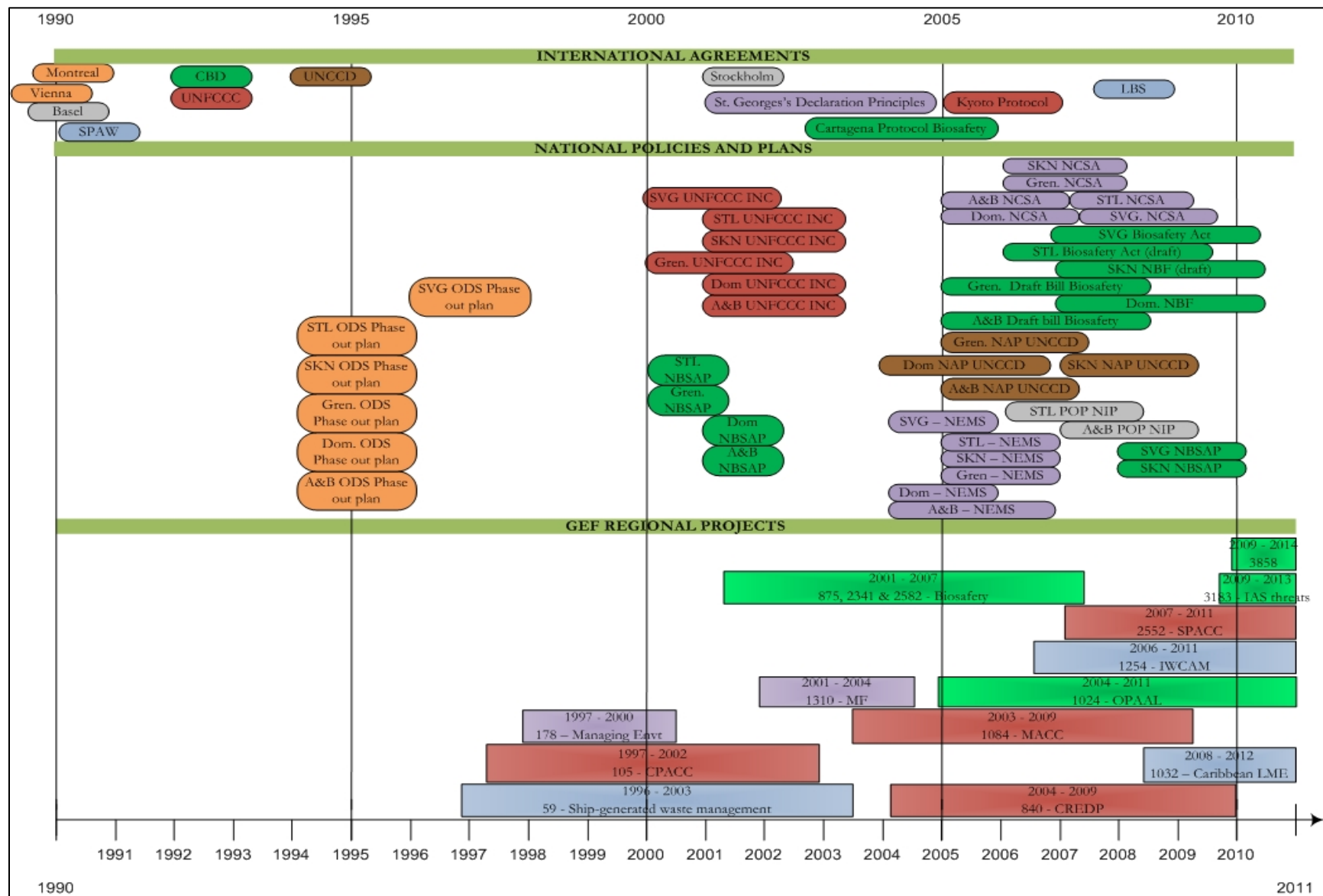
xi. Ozone

At the time of this analysis the OECS countries did not have legislation targeting the reduction of ozone-depleting substances (ODS), although some actions have been taken; Antigua & Barbuda has developed an import / export licensing system,⁴⁰ Dominica is in the process of developing ODS licensing regulations, and Saint Lucia has established labeling standards for imported equipment that uses ozone-depleting substances.⁴¹ All six countries have national phase-out plans for ozone-depleting substances and have established national “ozone units” to oversee the implementation of these plans.


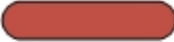

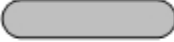




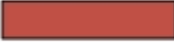

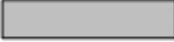



⁴⁰ Antigua and Barbuda Ozone Recovery & Recycling Seminar, 2000.

⁴¹ Multilateral Fund for the Implementation of the Montreal Protocol: Phase-Out Plans and Projects, April 2010.

Figure 1. Timeline of International Agreements, National Policies and Plans and GEF Regional Projects



Legend

	Biodiversity Focal Area related regulations, strategies, policies and agreements
	Climate Change Focal Area related regulations, strategies, policies and agreements
	International Water Focal Area related regulations, strategies, policies and agreements
	POP Focal Area related regulations, strategies, policies and agreements
	Land Degradation Focal Area related regulations, strategies, policies and agreements
	Ozone Focal Area related regulations, strategies, policies and agreements
	Multi Focal Area related regulations, strategies, policies and agreements
	Biodiversity Area GEF Projects
	Climate Change Area GEF Projects
	International Water Area GEF Projects
	POP Water Area GEF Projects
	Land Degradation Area GEF Projects
	Ozone Area GEF Projects
	Multi Focal Area GEF Projects

Nb. The size of the boxes for the different projects and national strategies, laws and policies are not intended at defining the project duration or the period covered by a strategy or a policy. This means that boxes are not proportional to projects' durations and do not show projects or strategies' end-dates. The aim is to provide indicative time figures regarding implementation of projects or strategies, laws and policies approvals.

GEF Influence on the Environmental Legal and Policy Frameworks of the OECS Countries

The influence of GEF support has been partially determined based on the explicit acknowledgement of support within national plan documents and reports where one of the key outputs of the GEF enabling activities were these documents themselves. Examples include national biodiversity action plans, communications to the UNFCCC and reports to the CBD. These documents include information on the development of legal and policy frameworks with the reports being particularly useful in providing updates on progress made since the development of the initial action plans. However, these reports do not always indicate the programs or initiatives under which these developments take place. It is even more difficult to associate legislation and policy developments with supporting initiatives from external reports such as the “Status of Environmental Management in the OECS” prepared by the OECS Secretariat. However, some GEF project documents and websites (e.g., the GEF Initial Strategy on Biosafety) provide information on the outcomes of GEF-funded activities that explicitly state the GEF influence on the development of legislation, policies and plans.

Figure 1 above illustrates the connection between the timing of ratification of international agreements; development of policies and plans, and the implementation of GEF regional projects for the six OECS countries. Annex 2 provides this information – plus national laws and regulations, and GEF national projects – for each country.

Inferences can be drawn from Figure 1 and national timelines presented in Annex 2 where GEF global, regional and national project timing has coincided with certain activities. These inferences are supported by the discussion in the previous section that indicates the level of GEF support as identified in national plans and reports as well as GEF project documents and websites.

For example, the NBSAP for each country has been developed after the implementation of the GEF NBSAP national enabling activities. Initial communications to the UNFCCC have been submitted by each country after the implementation of the GEF UNFCCC Initial National Communication Enabling Activities (or after the implementation of the regional CPACC project, in the case of St. Vincent and the Grenadines). Also, it can be seen that the development of national climate change strategies in Grenada and Saint Lucia occurred after the preparation of the initial communications and after the implementation of the CPACC project.

Timelines also show that GEF global and regional biosafety projects have been implemented before the development of the National Biosafety Frameworks (for Dominica, St. Kitts and Nevis), the National Biosafety bills (for Antigua and Barbuda, Grenada) or the National Biosafety acts (for Saint Lucia and St. Vincent and the Grenadines). Furthermore, the Cartagena Protocol on Biosafety has been ratified by all countries at the same time as the implementation of GEF global and regional biosafety projects.

MARPOL has been ratified by Grenada and St. Kitts and Nevis at the same time as the implementation of the regional GEF Wider Caribbean Initiative on Ship-Generated Waste (SGW).

Another example is the National Capacity Self Assessment (NCSA) for each country, which has been developed after the GEF NCSA Enabling Activities. POP National Implementation Plans for Antigua and Barbuda and Saint Lucia have also been developed after the implementation of the national GEF POP Enabling Activities. The National Action Plans or Programmes to combat land degradation have also been developed in St. Kitts and Nevis and Grenada after the GEF Capacity Building and Mainstreaming of Sustainable Land Management national projects.

It can be seen that national POPs Enabling Activity projects were conducted in three countries – Antigua and Barbuda, Dominica and Saint Lucia. However, only Antigua and Barbuda and Saint Lucia have submitted National Implementation Plans (NIPs). The status of the Dominica plan is unclear. Note, also that St. Kitts and Nevis and St. Vincent and the Grenadines joined the Stockholm Convention after the first three countries and did not have GEF enabling activities; neither country has submitted a NIP.

From this review, the relative advantages of regional, sub-regional or national projects cannot be determined. The regional approach used in the CPACC and MACC projects was critical in strengthening the position of the OECS countries (as well as the other Caribbean countries) in international climate change negotiations. However, national approaches would seem to be more appropriate for initiatives such as enabling activities for preparation of country communications and plans.

Table 9 below summarizes the results of GEF's support for activities related to environmental law and policy in the six OECS countries.

Table 9. Legislation and Policy Activities Influenced by the GEF

Activity	Scope	Notes
Biodiversity and Forest Management		
Preparation of National Biodiversity Strategic Action Plans	All 6 OECS countries	National NBSAP enabling activities (GEF IDs 255, 256, 257, 281, 470, 679)
Development of biosafety frameworks including draft legislation and establishment of a National Biosafety Authority	All 6 OECS countries	GEF Development of National Biosafety Frameworks global and regional projects (GEF IDs 875, 2341, 2582)
Ratification of Cartagena Protocol on Biosafety	All 6 OECS countries	GEF Development of National Biosafety Frameworks global and regional projects (GEF IDs 875, 2341, 2582)
Sustainable financial management strategy developed for Codrington Lagoon leading to the declaration of Codrington Lagoon National Park New protected area in North Sound of Antigua declared	Antigua and Barbuda	Sustainable Island Resource Management Mechanism (SIRMM) national project – GEF (GEF ID 1614)
Development of land and marine protected area programs	Antigua and Barbuda, Grenada, Saint Lucia completed; other countries in process of preparing plans	OECS Protected Areas and Associated Livelihoods (OPAAL) regional project (GEF ID 1204)
Determination of management gaps for biodiversity sector	Grenada, St. Vincent and the Grenadines	National Capacity Self Assessment (NCSA) enabling activities (GEF IDs

Activity	Scope	Notes
		1828, 2036)
Development of plans for invasive alien species	Saint Lucia	UNEP/GEF 2009 regional project "Mitigating the threats of Invasive Alien Species in insular Caribbean" (GEF ID 3183)
Climate Change and Energy		
Development of national climate change strategies and action plans	Grenada, Saint Lucia	CPACC regional project (GEF ID 105)
Policy framework for climate change adaptation	Antigua and Barbuda	CPACC regional project (GEF ID 105)
Preparation and submission of initial national communication (INC) to the UNFCCC	All 6 OECS countries except St. Vincent and the Grenadines which received support from the CPACC Project	GEF UNFCCC INC enabling activities (GEF IDs 271, 326, 437, 441, 454, 527) CPACC regional project (GEF ID 105)
Preparation of the second national communication (SNC) to UNFCCC (in progress)	Dominica	GEF UNFCCC SNC enabling activity (GEF ID 40776)
Increased regional cooperation in the preparation of a regional negotiating agenda related to climate change	All 6 OECS countries	MACC regional project (GEF ID 1084)
Development of regional strategy on climate change	All 6 OECS countries	MACC regional project (GEF ID 1084)
International Waters		
Ratification of MARPOL	Grenada and St. Kitts and Nevis	GEF Wider Caribbean Initiative on Ship-Generated Waste (SGW) regional project (GEF ID 59)
Adoption of legislation re ship-generated waste	St. Kitts and Nevis	SGW regional project (GEF ID 59)
Persistent Organic Pollutants		
Preparation of National Implementation Plans	Antigua and Barbuda, Saint Lucia	POPs national enabling activities (GEF IDs 2033, 2158). The plans state that implementation is expected to be facilitated by funding from GEF
Land Degradation and Land Use		
Implementation of National Action Plans or Programmes to combat land degradation	Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis	The plans state that implementation is expected to be facilitated by funding from GEF and other donors through projects such as the GEF OPAAL project
Development of sustainable land management plans or legislation	Dominica, Grenada	Sustainable Land Management national projects (GEF ID 3512)

Annex 1 – National Legislation and Policies

Antigua and Barbuda

Table A-1. Antigua and Barbuda: National Environmental Legislation, Plans and Strategies

Table A-1: Antigua and Barbuda: National Environmental Legislation, Plans and Strategies	
Legislation	Policies, Plans and Strategies
Umbrella Environmental	
	National Environmental Management Strategy 2004 - 2009
Biodiversity and Forest Management	
The Fisheries Act (No. 14, 1983)	National Biodiversity Strategy and Action Plan 2001
Fisheries (Protection of Lobster) Regulations (SRO No. 3, 1978)	
Turtle Ordinance (Cap. 333, 1927)	
Maritime Areas Act (No. 23 of 1986) (formerly Territorial Waters Act)	
Fisheries Regulations (No. 10, 1990)	
Wild Birds Protection Act (Cap 115, 1919)	
Protection of Animals Act (Cap 113)	
National Parks Act (No. 11 of 1984)	
National Parks (Amendment) Act (No. 3 of 1986)	
Marine Areas (Preservation and Enhancement) Act (No. 5 of 1972)	
Marine Areas (Preservation and Enhancement) Regulations (SRO No. 25, 1973)	
Marine (Restricted Areas) Order (SRO No. 47, 1973)	
Beach Control Act (Cap. 297, 1959)	
Beach Protection (Amendment) Act (No. 1, 1968)	
Beaches Beach Protection (Cap. 298, 1957)	
Forestry Act (Cap 99, 1941)	
Forestry Regulations (SRO No. 13, 1941 and SRO No. 42, 1952)	
Bush Fires Act (Cap 62, 1901)	
Bush Fires Act (Cap 303)	
Climate Change and Energy	
	National Energy Policy 2010 (draft) Climate Change Strategy 2009 (draft)
International Waters	
Dumping at Sea Act (No. 29 of 1975)	
The Public Utilities Act (No. 10 of 1973)	
Watercourses and Water Works Regulations (SRO 23, 1954 and SRO No. 24 of 1961)	

Legislation	Policies, Plans and Strategies
Public Health Act (Cap No. 236, 1957) and various regulations	
The Litter Act (No. 7 of 1983)	
The Litter (Fixed Penalty Procedure) Regulations (SRO No. 41, 1984) (and Amendment Regulations of 1985)	
Persistent Organic Pollutants	
The Pesticides Control Act (No 15 of 1973)	National Implementation Plan 2007
The Plant Protection Act (Cap 102)	
Land Degradation and Land Use	
Town and Country Act (Cap 278, 1948)	National Action Plan to Combat Desertification and Land Degradation 2005 (draft)
Town and Country Planning Regulations (SRO No. 24, 1953)	
Land Development and Control Act (No. 15 of 1977)	
Antigua Agricultural Development Corporation Act No. 11 1978	
Crown Lands (Regulation) Act (Cap 130, 1917)	
The Crown Lands (Land Settlement) Regulations (SRO No. 24, 1930)	
Ozone	
	National ODS Phase-out Plan 1994

Source: IWCAM report for Antigua and Barbuda

Dominica

Table A-2. Dominica: National Environmental Legislation, Plans and Strategies

Legislation	Policies, Plans and Strategies
Umbrella Environmental	
	National Environmental Management Strategy (draft)
Biodiversity and Forest Management	
Forest Act 1959	National Biodiversity Strategy and Action Plan 2001 – 2005
Forestry and Wildlife Act 1976	
National Parks and Protected Areas Act 1975	Protected Areas Policy (draft)
Forests, Soil and Water Conservation Ordinance 1946	
Crown Land (Forest Produce) Rules 1949	
Forestry Act 1958	
Forest Rules 1977	
Botanic Gardens Ordinance (Cap. 166,1889)	
Cabrits National Park (SRO No. 54, 1986)	
Fisheries Act 1987	
Climate Change and Energy	
International Waters	
Water Catchment Rules 1995	
Stewart Hall Catchment Rules 1975	
Water and Sewerage Act 1989	
Territorial Sea, Contiguous Zone, Exclusive Economic and Fishery Zones Act 1981	
Beach Control Act 1966, 1990	
Public Health Act 1968	
Litter Act 1990	
Persistent Organic Pollutants	
Pesticides Control Act 1974, 1987	
Pesticides Control Act Regulations on Labeling (1986) and Licensing and Registration of Pesticides (1987)	
Land Degradation and Land Use	
Town and Country Planning Act 1975	National Action Plan to Combat Desertification and Land Degradation 2004
Development & Planning Corporation Act (No. 19, 1972)	
Crown Lands Ordinance (Cap. 169, 1960) (SRO No. 49, 1960; No. 28, 1961; No. 13, 1963)	
Mines and Minerals Act 1996	
Ozone	
ODS Regulations	National ODS Phase-out Plan 1994

Source: IWCAM report for Dominica

Grenada

Table A-3. Grenada: National Environmental Legislation, Plans and Strategies

Legislation	Policies, Plans and Strategies
Umbrella Environmental	
Environmental Levy Act 1997	National Environmental Management Strategy 2005 - 2010
Biodiversity and Forest Management	
Grand Etang Forest Reserve Act 1906	National Biodiversity Strategy and Action Plan 2000
Forestry Act	
Forest, Soil and Water Conservation Ordinance (Cap. 129, 1949) Amendments (1984)	National Forestry Policy
Crown Lands Forest Produce Rules (1956)	Forestry Implementation Strategy
Protected Forest Rules (SRO No. 87, 1952)	
National Parks and Protected Areas Act Cap. 206 (1990)	
Animals (Diseases and Importation) Act Cap 15	
Fisheries (Marine Protected Areas) Order 2001	
Climate Change and Energy	
None	National Climate Change Policy and Action Plan 2007 – 2011 National Energy Policy 2010
International Waters	
National Water and Sewerage Authority Act No. 250, 1990	
Amendments (1991 and 1993)	
Draft (revised) NAWASA Act (1999)	
Public Health Ordinance (Cap. 237, 1925 Amendments and Regulations (SRO No. 218, 1957)	
Forest, Soil and Water Conservation Act of 1949	
Solid Waste Management Act 2001	
Persistent Organic Pollutants	
Pesticides Control Act	
Land Degradation and Land Use	
Physical Planning Unit/ Land Development Control Authority (PPU/LDCA) Act	National Action Plan to Combat Desertification and Land Degradation 2005 (draft)
Land Development Regulations (SRO No. 13, 1988)	National Physical Development Plan Agricultural Policy and Programme of 1997 - 2010 (draft)
Crown Lands Ordinance (Cap. 78, 1896); Crown Land Rule (SRO No. 36, 1934); Crown Lands (Amand.) Rules (SRO Nos. 3, 19, 39, 1965)	
Beach Protection Act of 1979	
The Carriacou Land Settlement and Development Act of 1955	Agricultural Strategy and Corporate Plan for the Agricultural Sector 2005 (draft)
Land Development Control - Cap 160 of 1988	
Town and Country Planning Act 1946	
Ozone	
	National ODS Phase-out Plan 1994

Source: IWCAM report for Grenada and UNCCD NAP

St. Kitts and Nevis

Table A-4. St. Kitts and Nevis: National Environmental Legislation, Plans and Strategies

Legislation	Policies, Plans and Strategies
Umbrella Environmental	
National Conservation and Environmental Protection Act 1987	National Environmental Management Strategy 2005 - 2009 Nevis Integrated Strategic Development Plan (2001 – 2005)
National Conservation and Environmental Protection (Amendment) Act 1996	
Ratification of Treaties Act 1989	
Biodiversity and Forest Management	
Turtle Ordinance 1949	National Biodiversity Strategy and Action Plan 2008
Wild Bird Protection Ordinance 1913	
Plant Protection Ordinance 1913	Forestry Strategic Plan 2007
Forestry Regulations (St. Christopher) 1923	
Protection of Animals Act 1935	
Forestry Regulations (Nevis) 1944	
Public Parks Regulation Ordinance 1944	
Agriculture Department Act No. 18 of 1973	
Fisheries Act 1984	
Climate Change and Energy	
International Waters	
Watercourses and Water works Ordinance 1949	
Watercourse Regulations	
Public Health Act 1969	
Public Health Regulations	
Litter Act 1989	
Solid Waste Management Act 2000	
Persistent Organic Pollutants	
Pesticides Act 1973	
Pesticides Labeling/ Storage Regulations	
Pesticides and Toxic Chemicals Act 2001	
Land Degradation and Land Use	
Development Control and Planning Act 2000	National Action Plan to Combat Desertification and Land Degradation 2007 (draft)
Land Development Act 1960	
Nevis Housing and Land Development Act 1988	
Frigate Bay Development Corporation Act 1972	
South East Peninsula Land Development and Conservation Act 1986	National Physical Development Plan 2006 Integrated Planning, Land Use and Development Policy 2001 – 2005 Nevis Resource Assessment and Zoning Plan 1990

Legislation	Policies, Plans and Strategies
	St Kitts and Nevis Land Use Code (draft) Agricultural Strategic Plan (2005 – 2009) Coastal Zone Management Strategy and Action Plan
Ozone	
	National ODS Phase-out Plan 1994

Source: UNCCD NAP, 1NC

Saint Lucia

Table A-5. Saint Lucia: National Environmental Legislation, Plans and Strategies

Legislation	Policies, Plans and Strategies
Umbrella Environmental	
	National Environmental Management Strategy 2005 - 2010
Biodiversity and Forest Management	
Forest, Soil and Water Conservation Act (1946)	National Biodiversity Strategy and Action Plan 2000
Wildlife Protection Act, 1980	
Plant Protection Act, 1988	Fisheries Management Plan
Plant Protection Regulations SI, 1995	
National Conservation Authority Act (1999) ¹	
Fisheries Act 1984	
Fisheries Regulations #9, 1994	
International Trade in Wild Fauna and Flora (CITES) Act No. 15 of 2007	
Climate Change and Energy	
Disaster Preparedness and Response Act 2000	National Energy Policy 2009 (draft)
International Waters	
Maritime Areas Act (1999)	Integrated Coastal Area Management Plan for the South East Coast 1995-1999
Public Health Act, 1975	
Public Health (Water Quality Control) Regulations	
Solid Waste Management Act, 1996	
Water and Sewage Act, 1999	
Forest, Soil and Water Conservation Ordinance of 1957	
Oil in Navigable Water Act (Cap 91).	
Persistent Organic Pollutants	
Pesticides Control Act. 1975	National Implementation Plan 2006
Pesticides Control Regulations, 1987	
Land Degradation and Land Use	
Land Conservation and Improvement Act, 1992	National Physical Development Plan 2002 - 2022
Land Development (Interim) Control Act 1971	
Agricultural Small Tenancies Act, 1983	
Beach Protection Act of 1967 and Beach Protection (Amendment) Act of 1984	
Ozone	
	National ODS Phase-out Plan 1994

Source: IWCAM report for Saint Lucia, INC

¹ Although the name might connote an “umbrella” environmental act, this act governs mainly public parks and beaches

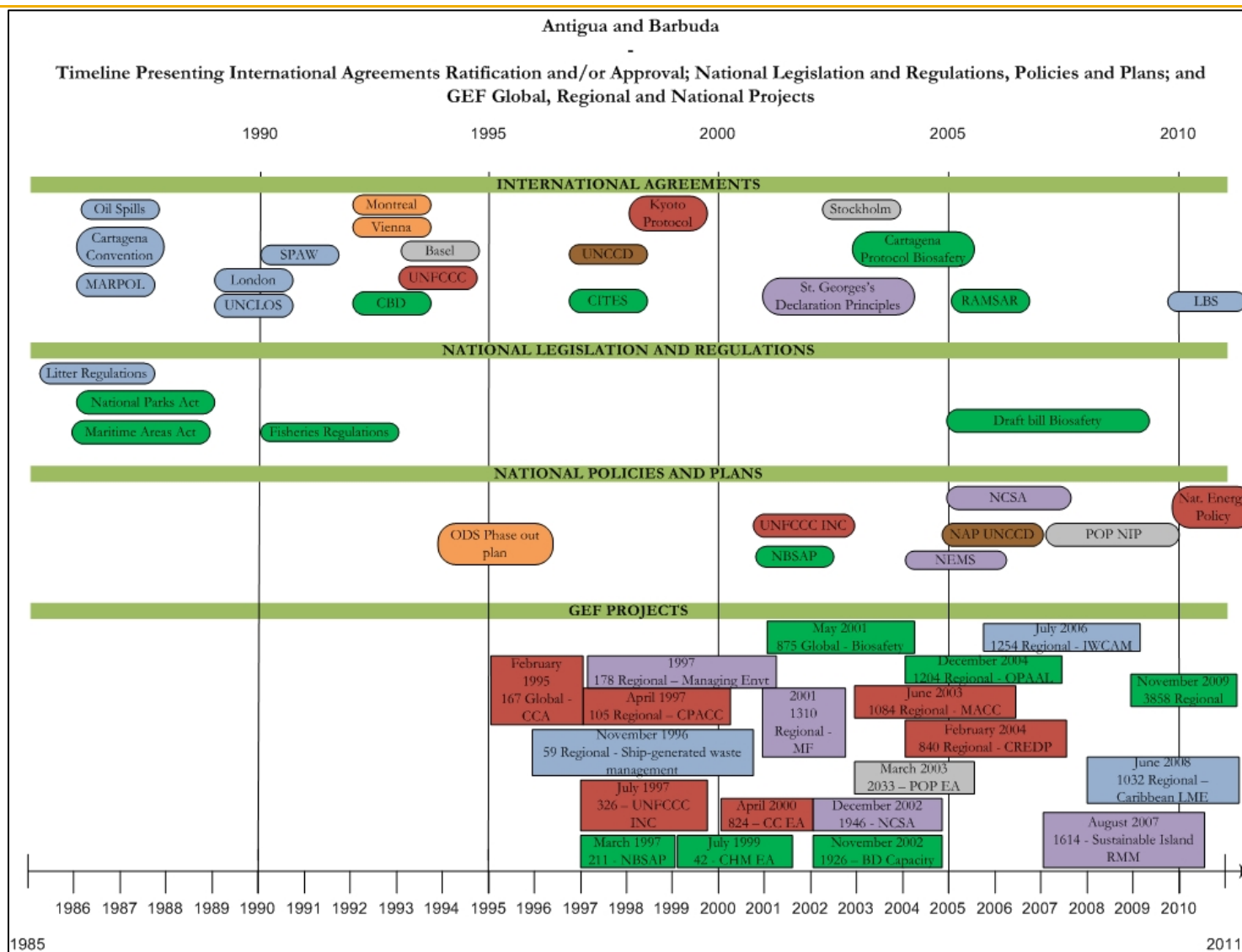
St. Vincent and the Grenadines

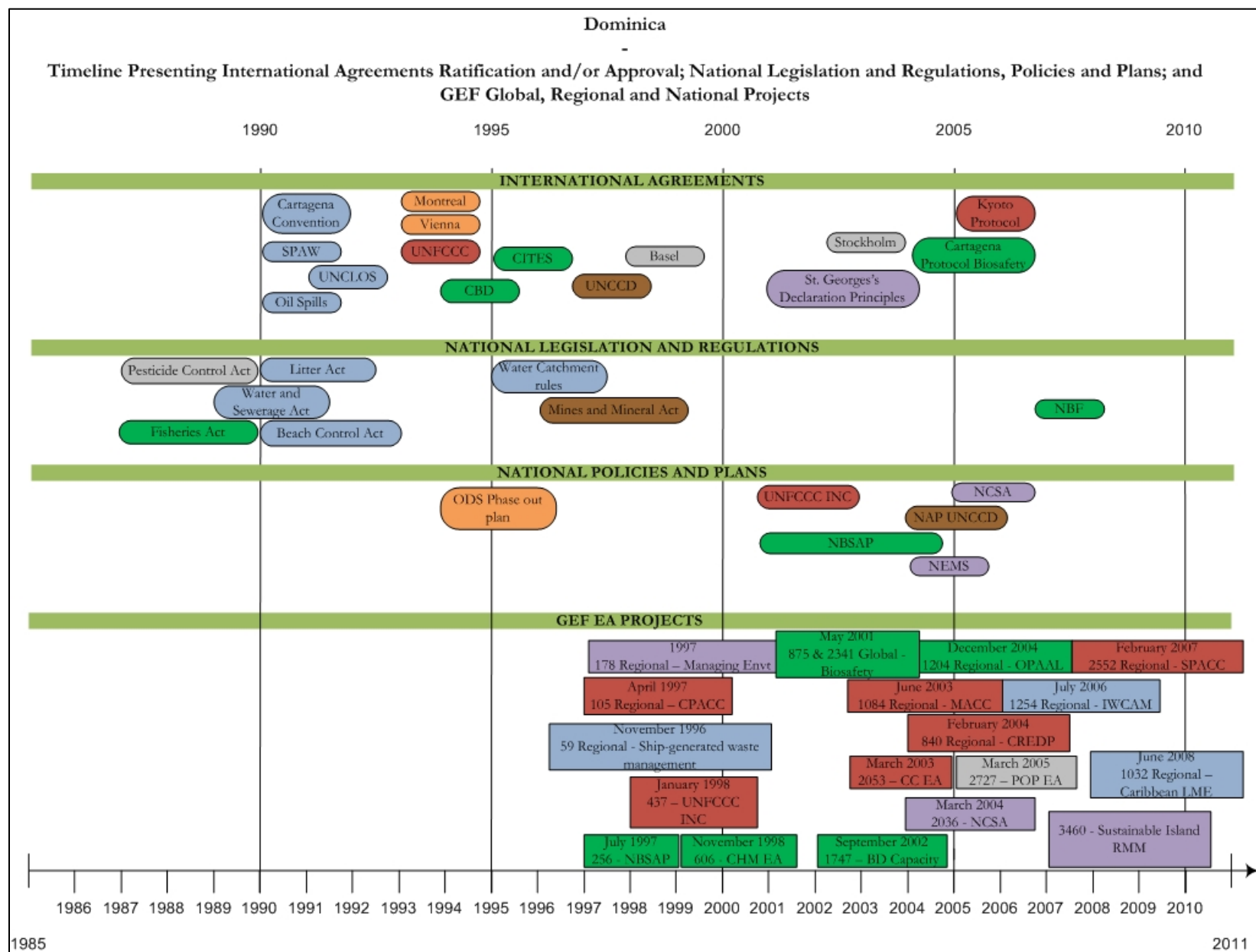
Table A-6. St. Vincent and the Grenadines: National Environmental Legislation, Plans and Strategies

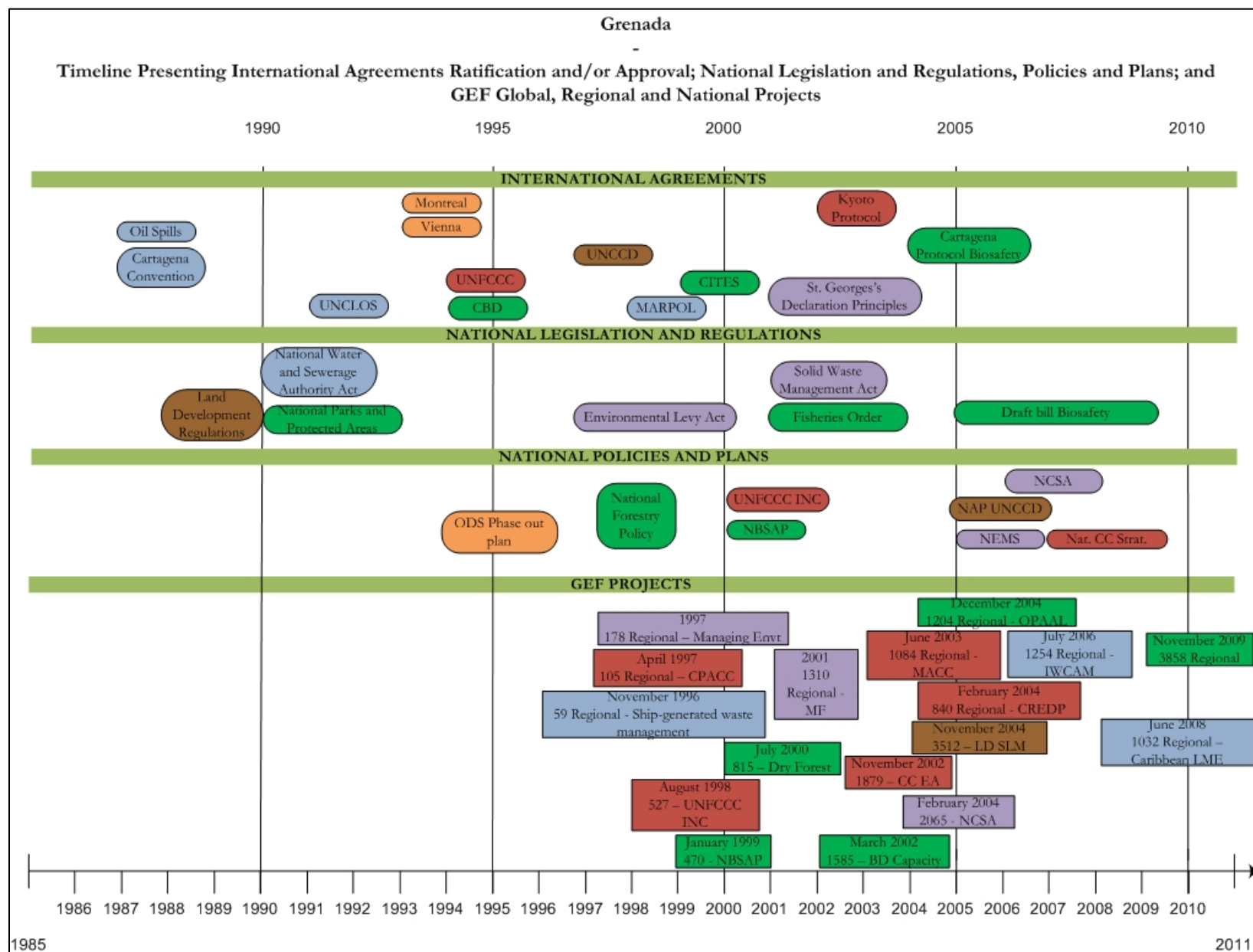
Legislation	Policies, Plans and Strategies
Umbrella Environmental	
	National Environmental Management Strategy 2004 - 2006
Biodiversity and Forest Management	
Forestry Conservation Act of 1992	National Biodiversity Strategy and Action Plan 2008
Wild-life Protection Act 1987	
Fisheries Act of 1986	
Climate Change and Energy	
	National Energy Policy 2010
International Waters	
Central Water and Sewage Authority Act of 1991	
Public Health Act 1977	
Environmental Health Services Act 1991	
Persistent Organic Pollutants	
Pesticides Act	
Land Degradation and Land Use	
Town and Country Planning Act of 1991	
Beach Protection Act of 1981	
Ozone	
	National ODS Phase-out Plan 1996

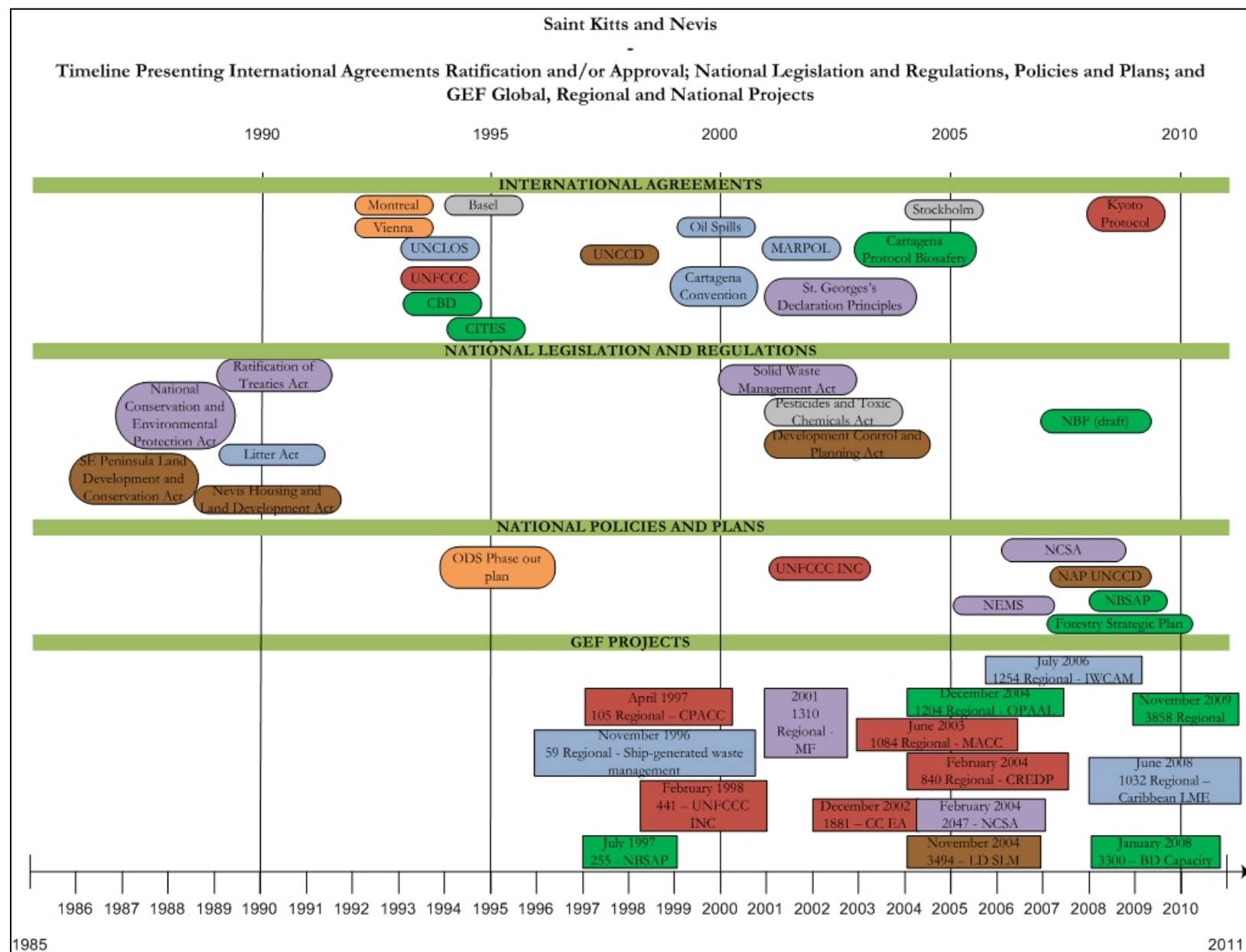
Source: IWCAM report for St Vincent and the Grenadines

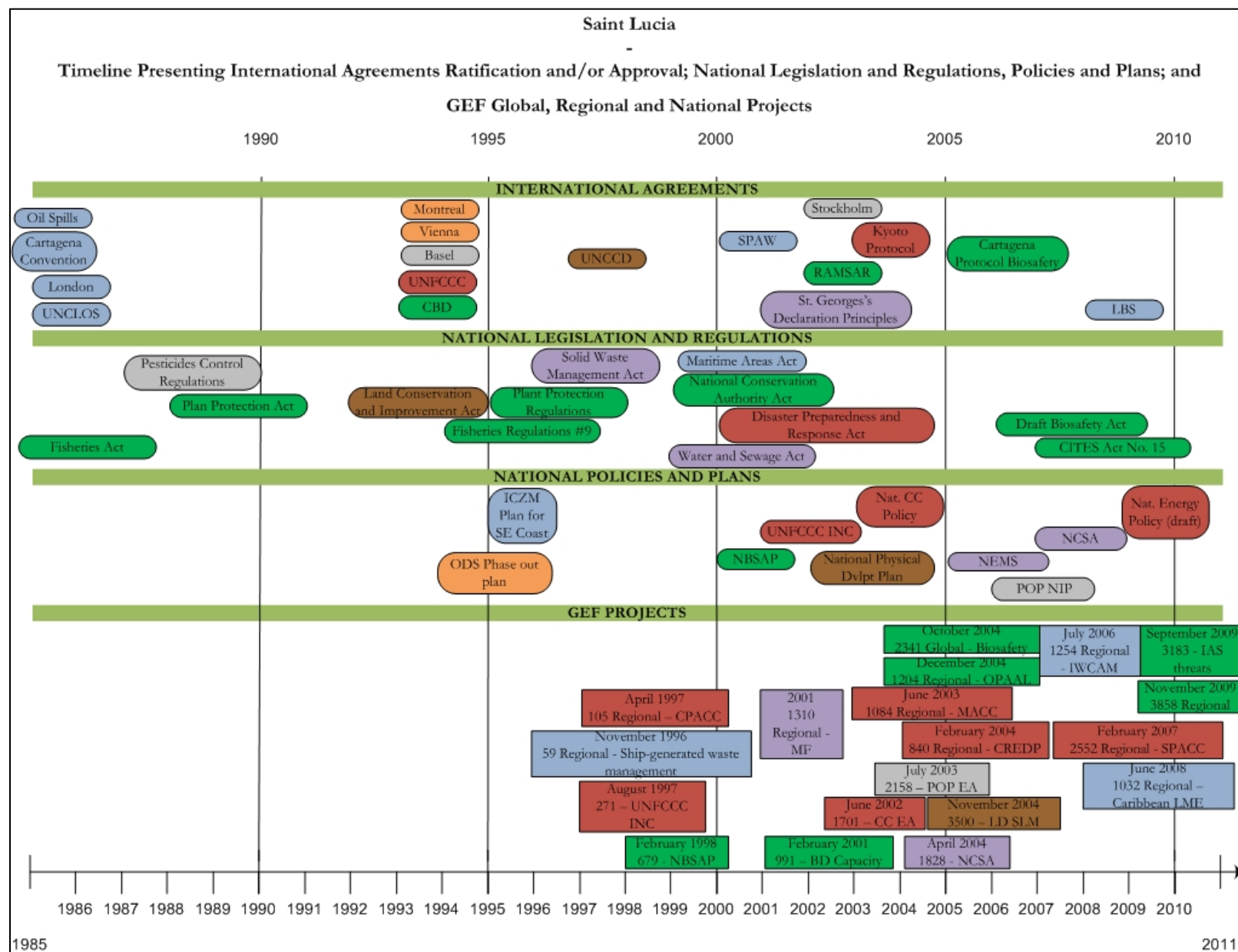
Annex 2 Legislation and Policy Timelines

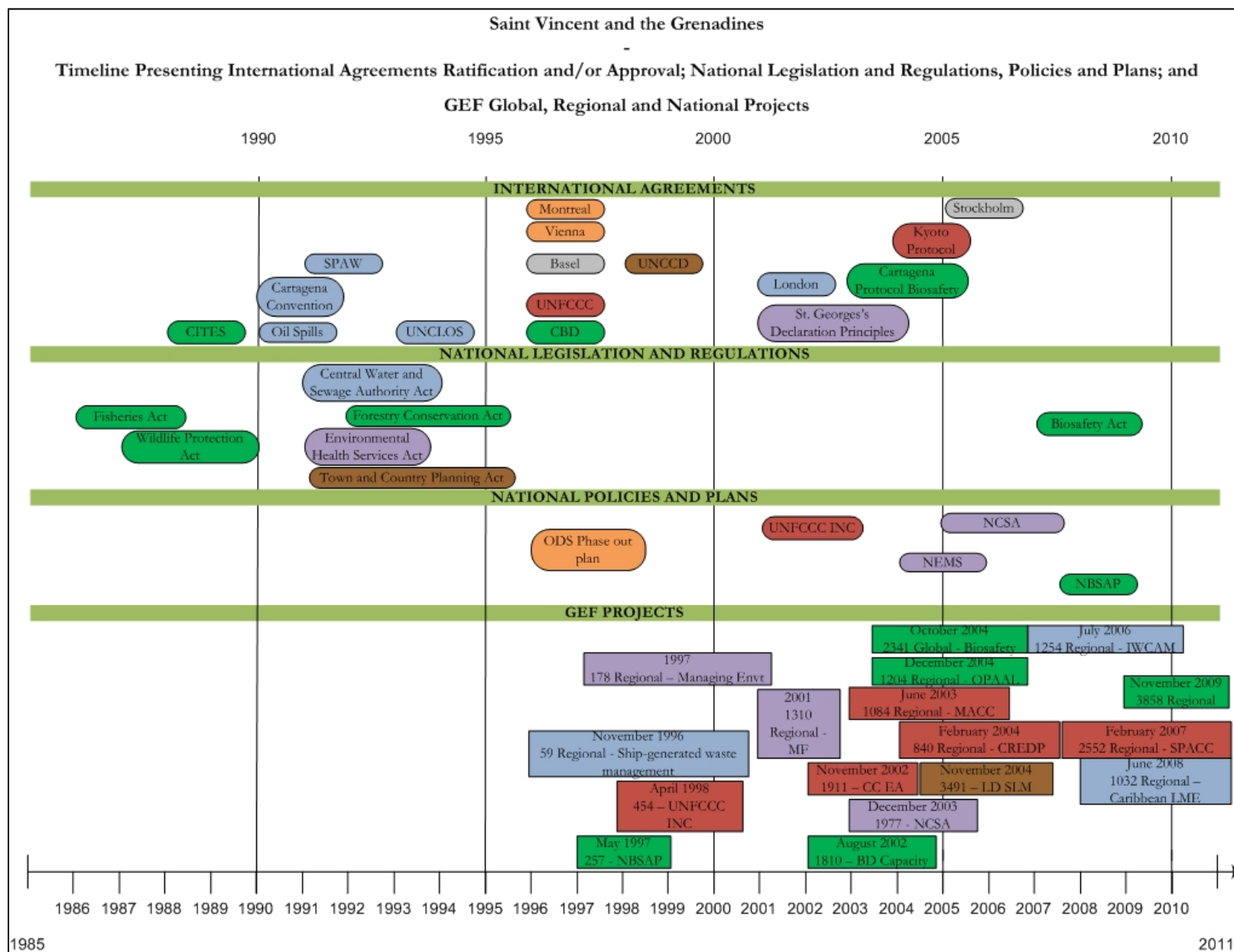












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Technical Document 2: OECS Cluster Country Global Environmental Benefits Assessment

To support the OECS
Cluster Country
Portfolio Evaluation

October 2011

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Acronyms

CLME	Caribbean Large Marine Ecosystem
CO ₂	Carbon Dioxide
CPACC	Caribbean Planning for Adaptation to Global Climate Change
CREDP	Caribbean Renewable Energy Development Programme
GBI	Global Benefits Indices
GDP	Gross Domestic Product
GEB	Global Environmental Benefits
GEF	Global Environmental Facility
GHG	Greenhouse Gas Emission
IFC	International Finance Corporation
INC	Initial National Communication
IWCAM	Integrated Watershed and Coastal Area Management
LDC	Lesser Developed Country
MACC	Mainstreaming Adaptation to Climate Change
MSP	Medium-sized Project
Mt	Million tonnes
NAP	National Action Programme
NAPA	National Adaptation Programmes of Action
NIP	National Implementation Plan
OECS	Organisation of Eastern Caribbean States
OPAAL	OECS Protected Areas and Associated Livelihoods
POP	Persistent Organic Pollutant
SIDS	Small Island Developing States
STAR	System for a Transparent Allocation of Resources
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollar



OECS Regional Context

The Organisation of Eastern Caribbean States was created under the Treaty of Basseterre in 1981. According to the World Bank, the OECS countries have developed increasingly integrated regional approaches on the following issues: (a) a comprehensive approach to economic and function cooperation (foreign, defense and security policies); (b) a common currency and central bank – the Eastern Caribbean Central Bank; (c) an integrated legal system; (d) collective regulation of banking and securities, telecommunications and civil aviation; and (e) coordinated approaches to critical shared sectors such as education, health, agriculture, tourism, export development, the environment and maritime matters.

The six countries of the OECS are located in the Lesser Antilles chain of Caribbean islands, strung along the southeast edge of the Caribbean Sea. The OECS countries are interspersed with non-OECS windward islands of the Caribbean Sea, most notably, Barbados, Guadeloupe and Martinique. The total OECS population is 592,548 with the largest individual population in Saint Lucia at around 170,000 and smallest in St. Kitts & Nevis, at just under 50,000. Population growth is not high, ranging from 0.2% to 1.3% in the region. The OECS countries have a combined area of 2,740 sq km, with Dominica as the largest nation in area (750 sq km) and St. Kitts & Nevis the smallest (269 sq km). Some socio-economic statistics for the OECS countries are given in Table 3.1 of Vol. 1 of this evaluation report.

Although the islands are generally considered middle-income countries (among the countries Grenada has the lowest per capita GDP at purchasing power parity - \$8,541 USD), poverty is still a critical issue with approximately 20-40% of the population below their respective national poverty lines. Real GDP growth averaged 6.1% in the 1980s, 3.2% in the 1990s, and 2.2% in the 2000s. Among the countries, Antigua & Barbuda, and Saint Lucia have the largest economies, and Antigua & Barbuda's economy is nearly four times the size of Dominica's (the smallest of the group), and roughly twice the size of the other three nations. Together, the OECS countries have formed the Eastern Caribbean Currency Union, under the supervision of the Eastern Caribbean Central Bank, and which uses the East Caribbean dollar, pegged to the US dollar at a rate of 2.7169.

Primary and secondary school enrollment is generally high, ranging from 78% (Grenada) to 100% (St. Kitts & Nevis), but youth unemployment is considered a growing problem. Health indicators are generally good, with life expectancy in the range of 67.3 (Grenada) to 76.3 years (Dominica), and relatively low infant-mortality. The majority of the population is distributed in rural areas, with the urban population ranging from 27.8% to 47.0%, excepting Dominica with a 73.9% urban population. The size of the islands means in a practical sense however that nearly all citizens are within a day's travel of an urban center – Dominica, the largest of the islands, is only 47 km in length and 29 km in width.

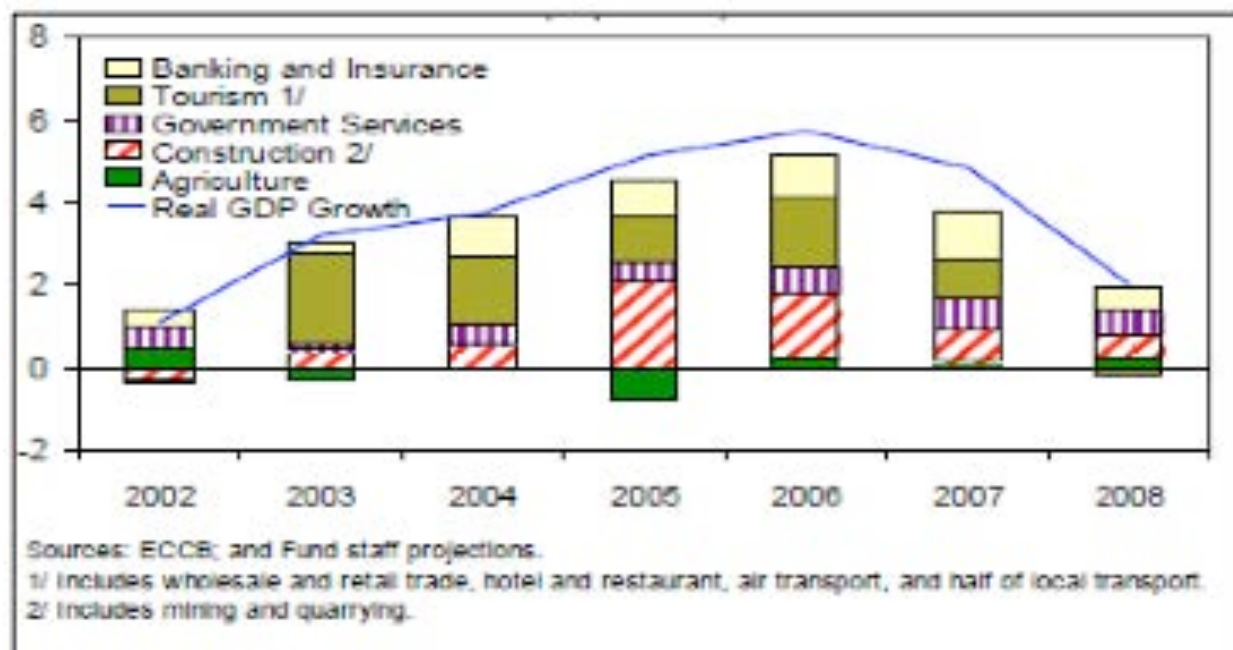
Key economic sectors are tourism, banking, and construction typically associated with tourism and private land development. Figure 1 below shows the relative contribution to GDP growth in the region

from 2002-2008 for key economic sectors.¹ Overall the countries have limited natural resources in terms of minerals, fossil fuels, arable land, fresh water resources, and timber. None of the OECS countries has any known significant oil or natural gas reserves. With significant exclusive economic zones, they do have rights to notable marine resources (e.g. commercial fish stocks), but typically do not have the capacity to access these in a large-scale manner. Their greatest asset is their natural beauty and climate, which is the prime driver of the tourism industry.

Technical capacity for environmental management is also a critical issue, considering the size of the countries' populations, and the fact that there is only one major university in the region providing higher education on issues related to environmental management – the University of the West Indies, with the main campus located in Barbados (other campuses are located in Jamaica and Trinidad, also non-OECS countries).

With a geographic position exposed to the major hurricanes arriving each year from the Atlantic, these storms are historically a major natural disaster threat, with data indicating an 18% probability² of a hurricane in any given year.

Figure 1 Sectoral Contribution to Growth in the ECCU



¹ Source: World Bank and IFC, 2010. "Regional Partnership Strategy for the Organization of Eastern Caribbean States (OECS) for the period 2010-2014," May 3, 2010.

² World Bank and IFC, 2010. "Regional Partnership Strategy for the Organization of Eastern Caribbean States (OECS) for the period 2010-2014," May 3, 2010.

GEF Global Environmental Benefits Index for OECS Countries

The GEF's current System for a Transparent Allocation of Resources (STAR) uses environmental data to calculate Global Benefits Indices (GBI) for all GEF beneficiary countries for the biodiversity, climate change, and land degradation focal areas. The GEF's methodology to calculate GBI values relies on current scientific data related to environmental resources, supported by civil society and other data sources.³ The biodiversity GBI is one attempt to quantify each country's relative contribution to global terrestrial and marine biodiversity resources, considering species and ecosystem representativeness and threat level. However, as discussed in the following section on the biodiversity focal area, there is a notable lack of data for many taxonomic groups in the region. The GBI for climate change quantifies a country's relative contribution to global climate change from GHG emissions (and therefore mitigation potential), including through land use change. According to the GBI methodology, the GBI for climate change is represented as "A country's emissions of greenhouse gases in tons of CO₂ equivalents in year 2007 multiplied by the country's Carbon Intensity in 1990 divided by the country's Carbon Intensity in 2007." The Land Degradation GBI calculation takes into account three key factors: a) control and prevention of land degradation in production systems; b) combating desertification in drylands, including drought adaptation; c) addressing livelihood needs of vulnerable populations. Each country's percentage share of the total global biodiversity, climate change, and land degradation indices are shown in Table 3.2 in Vol. 1 of this evaluation report.

The calculated index value for each of the focal areas contributes to the determination of resource envelopes for GEF-5. Multiple additional elements go into the final GEF-5 resource allocation determination; Table 3.3 in Vol. 1 of this evaluation report shows the resource allocations for the OECS countries for GEF-5. For comparison, due in significant part to their greater GBI calculations, countries such as Brazil (\$129.3 million) and China (\$211.7 million) were allocated much larger resource envelopes for GEF-5.

³ GEF Secretariat. 2010. "System for Transparent Allocation of Resources (STAR)," June 24, 2010; GEF Policy Paper, GEF/P.3/2010.

OECS Global Environmental Benefit Values by Focal Area

Biodiversity

The OECS countries terrestrial and marine biological diversity has been significantly altered following European presence in recent centuries, but ecosystem and species diversity remains impressive. Table 1 below highlights some of the key ecosystem types within each of the countries. Although there are significant individual differences, most of the OECS countries are characterized by low-lying sloping coastal plains around a central massif, and are ringed with rocky cliffs, sandy beaches, and mangrove swamps. There are multiple unique ecosystems however, as noted in Antigua & Barbuda's NBSAP (#211): "Barbuda is unique with its coastal lagoon, extensive tidal flats, sand bars, underwater sand dunes, salt ponds, cliffs, caves, 'blue holes' and 'highlands'." Yet threats to ecosystem extent and integrity are intense: the Caribbean as a whole now maintains only 11.3% of its original habitat.⁴

The OECS countries make up part of the Caribbean Islands biodiversity hotspot, which covers all of the island nations of the Caribbean Sea. As a whole this hotspot has 6,550 endemic plant species, 48 endemic threatened birds, 18 endemic threatened mammals, 143 endemic threatened amphibians, and 38 species that have gone extinct since 1500.⁵ For the OECS countries specifically, Table 2 below provides a summary of species level biodiversity, to the extent data is available.

As previously highlighted, as a whole, data on the status and trends of biodiversity at the species level in the OECS countries is lacking. Major taxonomic groups are not fully documented and defined. For example, the number and status of freshwater fish species, crustaceans and mollusks is apparently undocumented in each of the countries. Freshwater fish in Dominica are known to include anadromous and catadramous species.

⁴ Government of Antigua & Barbuda. 2010. "Fourth National Report to the CBD, 2009" Dr. Janil Gore-Francis. Environment Division, Ministry of Agriculture, Lands, Fisheries and Environment.

⁵ Conservation International, Biodiversity Hotspots Database, at www.biodiversityhotspots.org, as accessed on March 29, 2011.

Table 1 Key Ecosystems among OECS Countries⁶

Ecosystem Type	Antigua & Barbuda	Dominica	Grenada	St. Kitts & Nevis	Saint Lucia	St. Vincent & the Grenadines
Coral reefs	X		X	X	X	X
Mangroves	X		X	X	X	X
Rainforest		X	X	X	X	X
Sand beaches	X		X	X	X	X
Dry scrub woodlands	X	X			X	X
Littoral woodland		X	X	X		X
Montane rain forest		X	X	X	X	
Sea grass beds	X		X	X	X	
Dry forest	X	X	X			
Elfin woodland		X			X	X
Rocky shores	X			X		
Cactus scrub			X		X	
Coastal swamp		X		X		
Deciduous / semi-evergreen forest		X	X			
Evergreen forest	X		X			
Grasslands	X	X				
Salt lagoon	X			X		
Cloud forest			X			
Fumarole vegetation		X				
Palm brakes						X

Table 2 Species Level Biodiversity in OECS Countries^{7,8} (n/s = not specified)

Classification	Antigua & Barbuda	Dominica	Grenada	St. Kitts & Nevis	Saint Lucia	St. Vincent & the Grenadines
Plants	1158, including 197 rare species, 4 mangroves	1226	1068, including 450+ flowering, (3 threatened - WRI)	926+	1310 (27 endangered), including 4 mangroves	1150 (1166 – WRI), including 163 ferns
Mammals	7 native bats, others introduced	18 - 12 bats, others introduced: agouti introduced pre-Columbian, 1 opossum, 4 rodents, feral pig	15 - 11 bats, 4 others introduced, including mongoose, Mona monkey	15 - 8 bats, others introduced: Vervet monkey, deer, mongoose, 3 rodents	9, 1 extinct endemic (St. Lucia muskrat)	17 - 12 bats, 5 others introduced, plus 1 extinct native
Birds	182 (62 breeding – WRI)	175 (60 breeding)	150 (24 breeding), 18 threatened or endangered	130+	150+ (24 breeding), 4 endangered	153 (95 breeding) – St. Vincent Parrot (<i>Amazona guildingii</i>) endangered
Invertebrates	Not	Not documented	Not	Not documented	n/s	Several snails – little

⁶ Note: The ecosystems table may not be exhaustive; it includes the main ecosystem types mentioned in the following sources: Government of Antigua & Barbuda. 2001. "Integrating Management of Watersheds & Coastal Areas in Small Island Developing States of the Caribbean: National Report for Antigua & Barbuda," April 2001. Environment Division, Ministry of Tourism and Environment.; Government of Dominica. 2001. "Dominica's Biodiversity Strategy and Action Plan," Ministry of Agriculture and Environment.; World Resources Institute. 2003. EarthTrends, Country Profiles, available at <http://earthtrends.wri.org>.; Government of Grenada. 2000. "Biodiversity Strategy & Action Plan," July 2000, Ministry of Finance.; Government of St. Kitts & Nevis. 2004. "National Biodiversity Strategy & Action Plan for St. Kitts and Nevis," Ministry of Health and Environment.; Government of St. Lucia. 2000. "National Biodiversity Strategy and Action Plan of St. Lucia," Ministry of Agriculture, Forestry and Fisheries.; Government of St. Vincent & the Grenadines, 2000. "National Biodiversity Strategy & Action Plan for St. Vincent & the Grenadines," May 2000, Environmental Unit, Ministry of Health & Environment.; GEF Small Grants Programme, 2007. "St. Vincent and the Grenadines GEF SGP Country Programme Strategy (2007-2010)," Rev. October 19, 2007.

⁷ Sources: Same sources as for Table 1 above.

⁸ Note: Alternate or additional data from World Resources Institute EarthTrends in parentheses.

	documented		documented			known
Reptiles	20 (4 extinct)	19 (15 terrestrial, 4 marine) (incl. 1 introduced tortoise)	17 - 8 lizards, 5 snakes, 4 marine turtles (21, 4 threatened – WRI)	16 total - 3 marine turtles, 1 terrestrial tortoise (rare), 4 lizards, 4 geckos, 3 snakes	17 reptiles (23 – WRI)	12 on St. Vincent (3 geckos, 4 lizards, iguana, skink, 3 snakes), 4 additional on Grenadines, 4 marine turtles
Amphibians	2	4	4 (5 – WRI)	1 introduced toad, 1 introduced tree frog	4 (3 – WRI)	4
Freshwater fish	5 native species	Not well documented, but at least 5 – many are anadromous, some catadromous	17+ (WRI reports 172 for “fish”)	Not well documented, but at least 2+	n/s	Unknown, but at least 4 geneses
Marine fish	400+	Incomplete lists	233 marine, 69 marine / brackish	Not specifically documented, at least 15 commercial	250+ reef fish (175 sp. – WRI)	100+ commercially landed sp (169 sp – WRI)
Marine mammals	7	10	n/s	At least 5	7	5
Crustaceans	n/s	11 freshwater shrimps, 20 freshwater / terrestrial crabs, multiple marine incl. 4 lobster species	Several freshwater shrimps and crabs; conch, lobster, marine snails	7 crayfish, and land / marine crabs	13 freshwater shrimps	Incomplete - several freshwater shrimps, several terrestrial and freshwater crabs, marine lobster
Insects	n/s	Incomplete – 55 butterflies, 11 stick insects	1 possible endemic weevil	n/s	n/s	Limited studies – 43 butterflies on SV, 35 in Grenadines
Coral	n/s	32 hard, 16 soft	25	17+ soft	50 (25 – WRI)	45 listed marine invertebrates, including corals (25 corals – WRI)
Porifera (sponges)	n/s	“Many”	n/s	11+	n/s	n/s
Echinoderms	n/s	7+	n/s	n/s	n/s	n/s
Mollusks	n/s	7+ genus	n/s	n/s	n/s	n/s
Marine algae	n/s	5 commercial species	n/s	2 seagrass, several algae	3 sea grasses	11 genus seaweeds
Endemic	22 sub-regional endemic plants, 20 sub-regional endemic birds, incl. 2 island endemics, 1 endemic snake, 6 endemic lizards, 1 endemic bat	“Several” endemic plants, 2 endemic birds (both threatened), 9 regional endemic birds, 4 regional endemic bats, 2 endemic lizards, 1 regional endemic lizard, 1 endemic snake, 2 regional endemic snakes, 2 endemic frogs, 2 regional endemic frogs, 2 endemic butterflies, seven regional endemic butterflies, 1 endemic stick insect	2 endemic birds, 4 regional endemic birds, 15 regional endemic plants	1 endemic lizard, 1 endemic tree frog, 1 regional endemic extinct frog (<i>Leptodactylus fallax</i>) – “Mountain chicken”, 1 introduced tree frog, 45 endemic or regional endemic plants	7 endemic fern species, 9 endemic plant species, 5 endemic birds, 2 endemic bird-subspecies	At least 26 total including regional endemics - 5 regional endemic orchids, 2 island endemic ferns, 4 or 12 regional endemic ferns (sources vary), 1 endemic frog, 2 endemic lizards, 1 endemic snake, 1 endemic gecko, 2 regional endemic lizards, 1 regional endemic snake, 2 endemic birds, 14+ regional endemic birds, 3 regional endemic bats
Extinctions	n/s	n/s	Manatee, Grenada parrot, Agouti, Neuweid’s Moon Snake, Shaw’s Racer, Morocoy Tortoise.	1 regional endemic amphibian (<i>Leptodactylus fallax</i>) – “Mountain chicken” frog	1 endemic mammal (<i>Megalomys luciae</i>), 1 regional endemic amphibian (<i>Leptodactylus fallax</i>)	1 endemic mammal (<i>Oryzomys victu</i>) (Rice Rat)

With respect to other terrestrial and freshwater species, each of the OECS countries has more than 1000 higher plant species, and more than 150 bird species. The only native mammal species found among the countries are bats, with two quasi-exceptions: in Dominica, the agouti, introduced in pre-Colombian times by Arawaks or Caribs, and the Rice Rat (*Oryzomys victu*) in St. Vincent, which has since become extinct. Of the native bat species, 12 have been identified in Dominica and St. Vincent & the Grenadines, with slightly fewer species identified in the other islands. Other introduced mammal species (not including livestock and common domesticated species) include an opossum, the mongoose, several species of rodents, feral pigs, white-tailed deer (*Odocoileus virginianus*) (from the Florida keys) and Vervet monkey (*Chlorocebus aethiops*) (native to Africa) in St. Kitts & Nevis, and the Mona monkey (*Cercopithecus mona*) in Grenada (native to southwest Africa). Invertebrates and insects are poorly documented in all of the islands. A maximum of four amphibian species are documented in any of the countries, although an additional introduced species of toad and tree frog are found in St. Kitts & Nevis, and some of the other islands. There are several terrestrial and freshwater crustacean species (e.g. shrimp, crayfish and crabs), many of which are commonly known, but no comprehensive scientific list appears to have been compiled for any of the countries.

With respect to marine species, between five to ten species of marine mammals frequent the waters of each of the OECS countries, including multiple species of whales and dolphins. Four species of marine turtles are found throughout the islands: Hawksbill, Green, Leatherback, and Loggerhead. Marine fish species are also not comprehensively documented in OECS national waters, though generally greater than 200 species are found in each of the countries, and there may be more than 400. A much smaller number of these are commercially important, though it has been stated that at least in St. Vincent more than 100 species can be found at the local market. Each of the islands has some coral reef habitats, which are a focal point for marine biodiversity, and between 25 and 50 species of soft and hard corals can be found off the shores of the six countries. However, other classes of species, including marine mollusks, echinoderms, crustaceans and other invertebrates, as well as marine algae are not comprehensively documented.

As in much of the world, in the OECS region there is little data available on biodiversity at the genetic level.

Species endemic to the Lesser Antilles can be found across species classifications – as seen in Table 2, there are regionally endemic birds, plants, mammals, reptiles, and amphibians. Some species in the islands have at present recovered slightly from their previous nadirs - for example the single-island endemics imperial parrot (*Amazona imperialis*) (in Dominica), red-necked parrot (*Amazona arausiaca*) (also in Dominica), Grenada dove (*Leptotila wellsi*), and Antigua Racer Snake (*Alsophis antiguae*). However threats to biodiversity in the region remain manifold, and these iconic species could again see their numbers dwindle. Two “Alliance for Zero Extinction” sites have been identified in OECS countries, one in St. Lucia for the Semper’s Warbler (*Leucopez a semperi*), and one in St. Vincent & the Grenadines for the Whistling Warbler (*Catharopeza bishop*) and an endemic frog (*Pristimantis shrevei*).⁹

⁹ Alliance for Zero Extinction (2010). 2010 AZE Update. www.zeroextinction.org

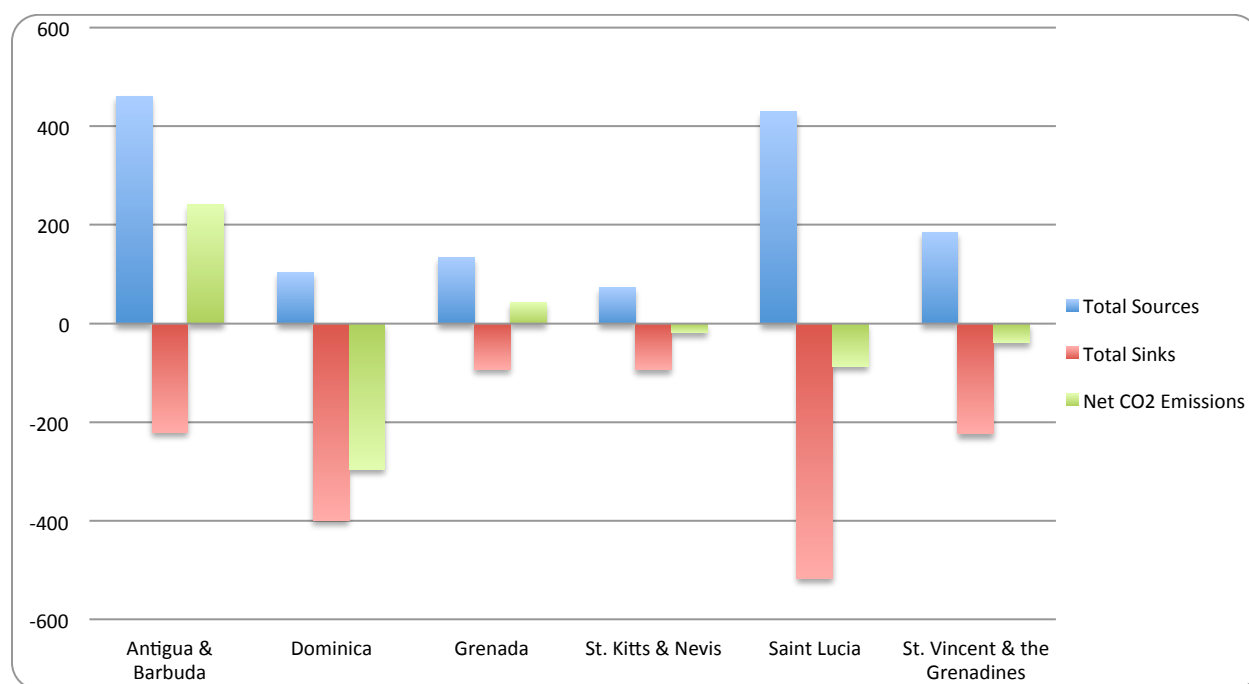
With many aspects of biodiversity in the OECS region so poorly known and understood, there is little solid data on trends related to biodiversity status. All circumstantial evidence indicates, however, that biodiversity has generally declined in the OECS countries since the arrival of Europeans (or potentially even with the arrival of their native Arawak and Carib predecessors), and this decline continues to today. As previously mentioned, in the past 20-30 years the populations of certain high profile species such as endemic birds have increased slightly from their all-time lows, typically with conservation efforts catalyzed when the species reaches extreme peril with dozens or a few hundred individuals remaining.

As in other countries, protected areas are one of the main tools for biodiversity conservation in the OECS countries. Three of the countries have declared a percentage of their national territory protected that is well above the global average¹⁰ (Dominica, St. Lucia, and St. Vincent & the Grenadines), while three countries are well below the global average in terms of their percentage of protected national territory (Antigua & Barbuda, Grenada, and St. Kitts & Nevis). Marine protected areas (MPA) have historically been underemphasized relative to terrestrial protected areas, but are a rapidly growing global initiative. At present the largest percentage national share of MPA is in St. Kitts & Nevis, with 0.26%. Terrestrial and marine protected areas have been supported under multiple GEF projects in the region, including the \$3.7 million “OECS Protected Areas and Associated Livelihoods” project (#1204).

Climate Change

The OECS countries UNFCCC Initial National Communications (INCs) include national GHG inventories with the baseline year of 1994; for a few of the countries limited data is available for 1990 or 1997, but this is not comprehensive between the countries. Thus this exercise must rely on this baseline data, although it is clearly dated at this point. Figure 2 shows CO₂ emissions, sinks, and net total CO₂ for each of the OECS countries. OECS countries do have some sources of other key GHGs, but these are comparatively much smaller. The most significant non-CO₂ GHG for OECS countries is methane from agriculture (enteric fermentation and manure management) and solid waste disposal on land.

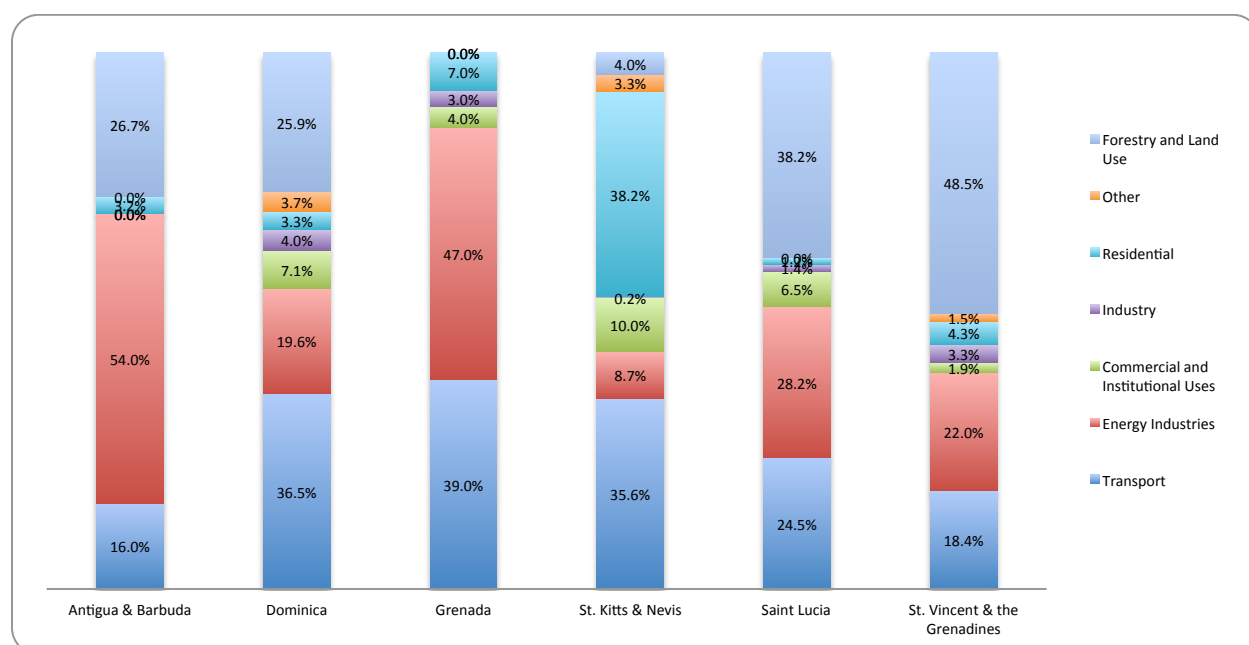
¹⁰ According to the World Database on Protected Areas, the national average for protected land area is approximately 9.1%. The average national area of marine protected area is approximately 5.9%.

Figure 2 OECS CO₂ Emissions, Sinks and Net Totals (Gg), 1994¹¹

A breakdown of percentage share of sources of CO₂ emissions is shown in Figure 3 below. For the OECS countries the main sources of CO₂ emissions are energy production, transport, and forestry and land use. Sources of CO₂ sinks are also found in the forestry and land use sector though, and as a whole, the sector is a net sink in each of the countries. Figure 3 shows only CO₂ sources, not net emissions, and does not include sources related to international aviation.

Because emissions data is lacking for multiple years, it is difficult to accurately assess current trends. It is generally accepted however that GHG emissions in OECS countries are increasing, though not rapidly, corresponding to the relatively low population growth rates.

¹¹ Sources: Government of Antigua & Barbuda. 2001. "Antigua and Barbuda's Initial National Communication on Climate Change," May 2001, Office of the Prime Minister.; Government of Dominica. 2001. "Initial National Communication under the United Nations Framework Convention on Climate Change," October 2001, Environmental Coordinating Unit, Ministry of Agriculture and the Environment.; Government of Grenada. 2000. "Grenada's Initial Communication to the UNFCCC," October 2000, Ministry of Health and the Environment.; Government of St. Kitts & Nevis. 2001. "St. Kitts-Nevis Initial National Communication," November 2001, Ministry of Environment.; Government of St. Lucia. 2001. "Saint Lucia's Initial National Communication on Climate Change," November 2001, Ministry of Planning Development, Environment & Housing.; Government of St. Vincent & the Grenadines. 2000. "Initial National Communication on Climate Change," November 2000, National Environmental Advisory Board and Ministry of Health and the Environment.

Figure 3 OECS CO₂ Emissions Sources by Sector (% of total), 1994¹²Table 3 OECS Per Capita Annual CO₂ Emissions (mt)¹³

Antigua & Barbuda (2008)	Dominica (2007)	Grenada (2007)	St. Kitts & Nevis (2008)	Saint Lucia (2007)	St. Vincent & the Grenadines (2007)
5.1	1.6	2.2	2.8	2.2	1.6

Although OECS countries are highly vulnerable to climate change in multiple economic and environmental sectors, there has as yet been limited nationally based initiatives focusing on adaptation to climate change, as indicated by the fact that NAPAs have not been developed.

International Waters

The primary international waters resource for OECS countries is the Caribbean Large Marine Ecosystem. The Caribbean Sea covers 1,943,000 sq km, and is located entirely within the tropics, with a surface

¹² Sources: Government of Antigua & Barbuda. 2001. "Antigua and Barbuda's Initial National Communication on Climate Change," May 2001, Office of the Prime Minister.; Government of Dominica. 2001. "Initial National Communication under the United Nations Framework Convention on Climate Change," October 2001, Environmental Coordinating Unit, Ministry of Agriculture and the Environment.; Government of Grenada. 2000. "Grenada's Initial Communication to the UNFCCC," October 2000, Ministry of Health and the Environment.; Government of St. Kitts & Nevis. 2001. "St. Kitts-Nevis Initial National Communication," November 2001, Ministry of Environment.; Government of St. Lucia. 2001. "Saint Lucia's Initial National Communication on Climate Change," November 2001, Ministry of Planning Development, Environment & Housing.; Government of St. Vincent & the Grenadines. 2000. "Initial National Communication on Climate Change," November 2000, National Environmental Advisory Board and Ministry of Health and the Environment.

¹³ Year in parentheses. Source: World Bank and IFC, 2010. "Regional Partnership Strategy for the Organization of Eastern Caribbean States (OECS) for the period 2010-2014," May 3, 2010.

temperature averaging between 25.5 degrees Celsius in the winter to 28 degrees Celsius in the summer. The average depth is 2,200 m, with the deepest location being the Cayman Trench, which drops 7,100 m. The Caribbean Current passes through the Sea, carrying water from the southeast to the northwest. The current is driven by the North Equatorial, North Brazil, and Guyana currents, which pushes the Atlantic Ocean into the Caribbean Sea primarily through passages adjacent to the southernmost OECS countries, Grenada, Saint Lucia, and St. Vincent & the Grenadines. The Caribbean flows into the Gulf of Mexico in the northwest, through the Yucatan Channel.

Overall the Caribbean Sea LME is classified as a Class III productivity ecosystem, according to SeaWiFS global primary productivity estimates based on remote sensing data; this is considered a low productivity class, but there are localized areas of high productivity along the Sea's southern boundary with South America due to nutrient inputs from rivers and estuaries. Other high productivity areas are around coral reefs and specific areas of upwelling.

There are numerous shared migratory fish stocks in the region, and the fishing industry is highly important, including the industrial, artisanal and recreational sectors, and the unsustainable exploitation of fish stocks and other marine resources is a primary transboundary issue that can be documented in different ways. For example on the north coast of Jamaica, the percentage of snappers and groupers in the landings declined from 26% to 12% between 1981 and 1990. According to FAO, approximately 35% of the fish stocks in the region are overexploited. According to one source, "Large commercial fishing vessels from several nations not indigenous to the sub-region frequently exploit the limited fish stocks within the Exclusive Economic Zone of these islands. In many cases, these vessels operate without the knowledge and consent of island governments. All of the islands have fisheries legislation but a shortage of trained personnel and the high cost of effective fisheries patrols in offshore as well as inshore waters and marine parks hinder their effective enforcement."¹⁴ In addition migratory fish stocks, lobster, reef species, and small coastal species can also be considered a shared resource due to planktonic larval dispersal.

The high and low estimates for coral reef area in square kilometers for each of the OECS countries ranges from 47 sq km in Dominica to potentially 240 sq km in Antigua & Barbuda. Coral reefs are highly sensitive to extreme changes in water temperature, disease, sedimentation and pollution; thus corals can serve as the proverbial canary in the coal mine for coastal habitats. The limited mangrove habitats in OECS countries have also declined markedly over the past three decades. Land-based pollution comes from multiple sources – poor land-use practices, municipal and industrial wastes, and agricultural inputs; pollution hotspots tend to occur around coastal urban areas. Other pollution sources in the region include sewage, erosion (leading to coastal sedimentation), petroleum and heavy metals.

As described in the Environmental Legal Framework analysis for this evaluation, international cooperation in the Caribbean Sea is governed by the Cartagena Convention, or the "Convention for the

¹⁴ Gobin, Judith, 2001. "Professional Development Programme: Coastal Infrastructure Design, Construction and Maintenance: A Course in Coastal Zone/Island Systems Management. Chapter 7: Marine Biological Issues," Antigua, West Indies, June 18-22, 2001.

Protection and Development of the Marine Environment of the Wider Caribbean Region” which was adopted March 24, 1983, and entered into force October 11, 1986. All of the OECS countries are parties to the convention.

Land Degradation

All of the OECS countries are party to the United Nations Convention to Combat Desertification (UNCCD), and four of the countries have developed their National Action Programmes (NAPs) for combating desertification and land degradation – Antigua & Barbuda, Dominica, Grenada, and St. Kitts & Nevis.

Key ecosystem services for the OECS countries are soil productivity (given their limited land base) and water regulation (given the limited freshwater resources on the islands). The OECS countries have between 26% (St. Vincent & the Grenadines) and 38% (Grenada, and St. Kitts & Nevis) of their land in use for agriculture. Forest lands make up between 12.1% (Grenada) and 27.9% (Saint Lucia), with the exception of Dominica, which has 61.3% forest cover.

The sugar industry has significant historical and present influence on land use patterns and land degradation issues, and is further discussed in Vol. 1 of this evaluation report.

Current land use practices among the islands continue to have negative effects on land productivity and other ecosystem services. Antigua & Barbuda’s NAP identified 18 specific sites of ongoing land degradation in the country. In other words, land management in the OECS countries has not reached a sustainable equilibrium. This was partially the impetus for the series of GEF-supported sustainable land management Medium-sized projects (MSPs) initiated in each of the OECS countries except Antigua & Barbuda in the mid-2000s, with UNDP as the implementing agency (#s 3460, 3512, 3494, 3500, 3491). Implementation progress on these MSPs varies between countries, but none has yet reached completion.

Land degradation root causes, water pollution, and national physical development planning is further discussed in Vol. 1 of this evaluation report and the Legal Framework Analysis technical document included in Vol. 2.

Persistent Organic Pollutants (POPs)

The United States was the source of many POPs in the OECS countries, and these products, such as PCB-containing electrical transformers have mostly been phased out. However, older PCB containing transformers are still present in some cases – the Antigua & Barbuda NIP noted that older transformers knocked down in hurricanes in the 1990s could have led to accidental releases of PCBs into the soil as the transformers leaked their contents before being removed and replaced.

Three countries have undertaken GEF-supported Enabling Activities to produce their National Implementation Plan (Antigua & Barbuda (#2033), Dominica (#2727), and Saint Lucia (#2158)), and, according the Stockholm Secretariat website, these three same countries are the only ones to have

designated official national contacts or focal points. At the present time, only the NIPs for Antigua & Barbuda, and Saint Lucia are available.

The national inventory of POPs pesticides in Saint Lucia identified 60.74 kgs and 45.75 liters (of various types of pesticides) of currently stored stocks. The identified obsolete stocks of chemicals in Saint Lucia included Toluene (20 liters), Chlorine (8 cylinders), and poly-ester resin (4x500 gallon drums).

The Antigua & Barbuda NIP documents previous use sites for POPs, but found few stocks. The use of pesticide POPs in Antigua has been restricted since the early 1980s. The use of PCB POPs has been limited since use was discontinued in the United States around 1970. The national inventory also documented potential unintended releases, particularly from three key waste disposal sites throughout Antigua, and the one waste disposal site in Barbuda.



Technical Document 3: R0tI on Dry Forest Biodiversity Conservation Project

To support the OECS
Cluster Country Portfolio
Evaluation

October 2011

ROtI on Dry Forest Biodiversity Conservation Project

I. Introduction

This review was carried out as part of the Global Environment Facility Evaluation Office (GEF EO) Organisation of Eastern Caribbean States (OECS) Cluster Country Portfolio Evaluation (CCPE). This review aims at assessing concrete, measurable and verifiable results (outcomes and impacts) of the GEF in the OECS countries using an impact evaluation methodology being developed by the GEF Evaluation Office, called the Review of Outcomes to Impacts (ROtI). The ROtI methodology assesses progress from project outcomes to impact-level results.

The focus of this ROtI analysis is the Medium-sized Project (MSP) Grenada Dry Forest Biodiversity Conservation (GEF ID 815). The World Bank was the Implementing Agency for the project. The project details are presented in Section 1.1, below.

This ROtI analysis faced some limitations and challenges. As a number of years had passed since project completion, some of key individuals involved in project implementation were not available as they had moved on to other roles, or even left the country. In addition, Hurricane Ivan in 2005 damaged the project office building, and a portion of the project documentation was destroyed or lost. Despite extensive and numerous inquiries by the evaluation team, the analysis was only able to garner direct input from three individuals involved in project implementation, but the fact that these were among the key persons involved in the project compensated to some extent for the limited number of perspectives available. All available documentation was also extensively reviewed to supplement the direct input from the individuals consulted.

B. Project background information and description

The official project effectiveness date (i.e., date project began in World Bank terminology) was August 2001 and the actual closing date was June 2006 following an extension from the proposed closing date on June 2005. The project milestones are presented in Table 1 below.

Table 1 Milestone Dates for Dry Forest Conservation Project

Milestone	Expected date	Actual date	Time from previous milestone (total time)
Country Endorsement	Not applicable	April 30, 1999	Not applicable
Project Proposal	Not applicable	April 12, 2000	Not applicable
World Bank Approval	Not applicable	August 8 2001	16 months (16)
Implementation start (Effectiveness)	August 2001	August 2001	
Project Operational Completion	April, 2005	June 2006	14 months (14)
Terminal Evaluation Completion		May 6, 2008	

The project was a follow-up to the previous WB-GEF effort which provided support for Grenada Dove conservation, and in particular, for the establishment of the Mt. Hartman National Park, through the OECS Ship-generated Waste Management Project (GEF ID 59) and the European Investment Bank (EIB)/Caribbean Development Bank (CDB) co-financing of the associated Solid Waste Management Project which assisted with the establishment of the Perseverance Sanctuary for the protection of the Grenada Dove. These initiatives provided the foundation for the development of the Dry Forest Conservation project.

The total estimated cost of implementing the MSP was \$1,127,580. The GEF contribution for MSP implementation amounted to \$723,000. The Government of Grenada provided cofinancing in the order of US\$260,580. Cofinancing by collaborating institutions (NGOs and universities), was estimated at US\$144,000, and was to be managed by these institutions.

The project had two objectives:

Objective 1:

Promote the adoption of effective long term strategies for conservation of the dry forest on public and private land by raising the awareness of key stakeholders on the importance of the dry forest habitat, providing key scientific information on this ecosystem, strengthening institutional capacity for forest habitat, and creating partnerships with the private sector to foster and support conservation activities.

Objective 2:

Promote the acceptance of environmentally friendly land management practices to minimize dry forest loss and degradation on private land.

The MSP's four components and activities are presented below, with the Implementation Completion Memorandum (ICM) ratings:

- Component 1 Environmental Education/Public Outreach (Satisfactory)
 - Benchmark quantitative research undertaken to establish level of current awareness among critical stakeholders and to segment target audiences, as needed. A second survey will be undertaken after mid-point of project to provide mid-course correction of program, as well as a final survey to measure project impact.
 - Qualitative research, such as focus groups, undertaken to identify effective messages for target audiences.
 - Implement an integrated communications outreach effort based on the research that would target key audiences. Expected activities included:
 - Host a series of participatory workshops for communities residing in the vicinity of the dry forests;
 - Develop the public's appreciation of the dry forest ecosystem by building on past education efforts using the media, billboards, theatre, publications, mobile education trailer, etc.;
 - Implement RARE Center's follow-up education campaign on the Grenada Dove;
 - Disseminate information gathered on the dry forest in a manner useful to different resource users;

- Initiate a schools-based program for environmental education.
- Component 2. Dry Forest Biodiversity Research and Monitoring (Moderately Satisfactory)
 - Through selected studies, describe and better understand the ecology, composition, structure, and functioning of the dry forest ecosystem;
 - Inventory the fauna and flora and identify those species of global and local significance for further study;
 - Interview and/or survey residents, resource users, and other stake holders to identify the use patterns of natural resources in the dry forest;
 - In consultation with public and private sector stakeholders, use GIS, biodiversity and ecological data to map dry forest cover and land use patterns and identify a network of dry forest areas for conservation or improved management;
 - Design and carry out research on endangered species including the two flag ship species, and implement appropriate sections of the Recovery Plan for the Grenada Dove;
 - Identify potential areas of habitat for the Grenada Dove and other species of global significance for protection and/or restoration;
 - Develop restoration techniques for identified degraded forest areas;
 - Develop ongoing ecosystem monitoring program.
- Component 3 Capacity Building (Moderately Satisfactory)
 - Work with private landowners to identify incentives and to promote voluntary conservation and habitat enhancement activities for key areas of dry forest on private lands;
 - Provide technical assistance to landowners and developers for adoption of environmentally friendly practices in dry forest areas, and if feasible, test restoration techniques (developed under component 2 above);
 - Develop private sector sponsorships supporting conservation activities such as education programs and exhibits at the Mt. Hartman Visitor Center, educational products such as tee shirts, pamphlets and billboards, and advertisements promoting conservation;
 - Develop criteria and promote the “Award for Conservation Excellence in the Private Sector”;
 - Habitat and wildlife experts from partner institutions work with Forestry and Parks Department to increase knowledge and expertise, as needed;
 - Short-term training such as that provided by the Smithsonian's National Zoological Park or the National Conservation Training Center;
 - Forest policy and legislation produced, as needed, to address threats to dry forest habitat (e.g., squatters) and opportunities for protection (e.g., private sector);
 - Links established with relevant national and international institutions and stakeholders.
- Component 4 Private Sector Partnerships for Dry Forest Conservation (Unsatisfactory)
 - Work with private landowners to identify incentives and to promote voluntary conservation and habitat enhancement activities for key areas of dry forest on private lands;

- Provide technical assistance to landowners and developers for adoption of environmentally friendly practices in dry forest areas, and if feasible, test restoration techniques (developed under component 2 above);
- Develop private sector sponsorships supporting conservation activities such as education programs and exhibits at the Mt. Hartman Visitor Center, educational products such as tee shirts, pamphlets and billboards, and advertisements promoting conservation;
- Develop criteria and promote the “Award for Conservation Excellence in the Private Sector.”

The project formulation began at a two-day national workshop on Grenada Dry Forest and Wildlife Conservation convened in March 1999. The workshop had local and regional stakeholder participation. Stakeholders were also given the opportunity to comment on the project brief.

The MSP was executed by the Forestry and Parks Department of the Ministry of Agriculture, and was managed as a separate project within the department.

II. The Dry Forest Project’s Global Environmental Benefits

The starting point for the Dry Forest Conservation Project ROfI assessment is to identify the MSP's intended environmental impacts, which for GEF projects is the delivery of Global Environmental Benefits (GEBs), and the relevant GEB category is the “Maintenance of and increase in biodiversity.” The MSP's GEB is embodied in its global environmental objective in the MSP's Terminal Evaluation Review, which is to “*improve management and conservation of Grenada’s dry forest ecosystem and its component species of global significance.*”

The Grenada dry forests are among lowland dry forest threatened worldwide. These habitats, particularly lowland areas, are frequently suitable for agriculture and residential purposes, and hence tend to be the first areas converted for human use. These forests are under severe threat from a variety of land uses including the development of housing, clearing for agriculture, grazing and charcoal burning.

The dry forests in Grenada are included among the globally significant habitats under threat, and are also the home of several unique species including the endangered endemic Grenada Dove (*Leptotila wellsi*, Grenada’s National Bird), and the Grenada Hook-billed Kite (*Chondrohierax uncinatus mirus*).

Threats to biodiversity in Grenada are the direct result of habitat destruction, deterioration and fragmentation. The Grenada Dove (*Leptotila wellsi*), Grenada’s national symbol and one of the world’s most endangered doves, is in severe decline and can be viewed as an indicator of the declining health of Grenada’s dry forest habitat. The endangered status of the Grenada Dove has been noted by the Conservation Assessment and Management Plan of the IUCN Pigeon and Dove Specialist Group and the IUCN Species Survival Commission’s Captive-breeding Specialist Group, as well as the Red Data Book of BirdLife International). It is also considered one of the most endangered birds in the Caribbean and the world, according to an analysis by the U.S. Fish and Wildlife Service.

The Mount Hartman National Park holds most of the world's Grenada Doves, with scattered individuals in patches of forest around the National Park. The Perseverance Sanctuary and the adjacent Woodford Estate on the west coast holds the only other known population of Grenada Doves. The primary factor limiting dove populations is habitat availability, with the effects of other potentially limiting factors still unknown. Grenada Doves are restricted to a certain successional stage of dry thorn-scrub forest. Alterations to this habitat are due to clearing for agriculture, housing, and other human activities. In

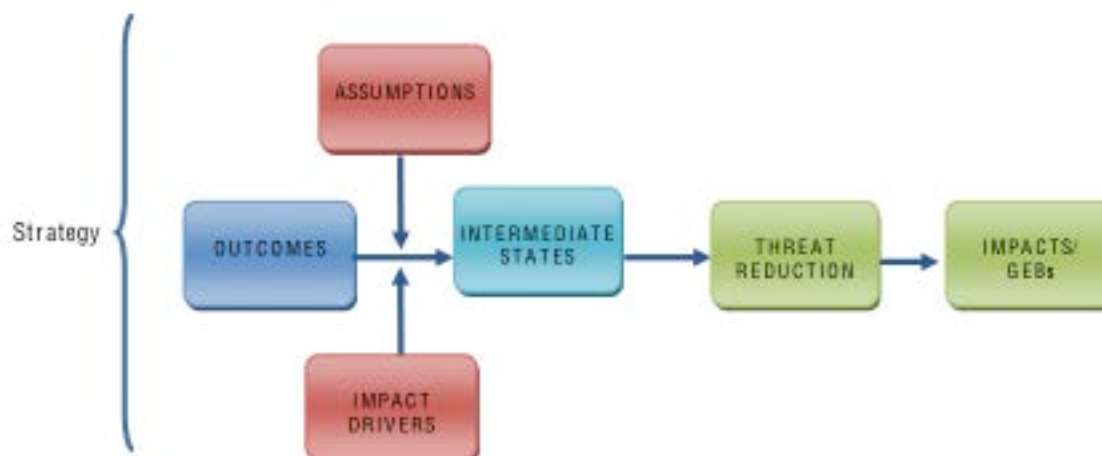
addition, many of these patches of habitat are now isolated from one another and surrounded by developed lands across which doves are reluctant to disperse.

III. The Dry Forest Biodiversity Conservation Project Outcomes-Impacts Theory of Change

A. The ROTI: A theory based approach to understanding impact

A project's logical intervention approach or theory of change is the expression of the strategy chosen to achieve the objective(s). Based on the strategy, the strategic inputs and activities are designed to drive the expected subsequent intervention approach. Inputs and activities leads out produce outputs, leading to outcomes, and eventually impacts. As a whole, these steps together define the outcome impact pathways. Figure 1 illustrates the key elements of an outcome impact theory of change. The ROTI analysis seeks to identify and makes explicit the detailed intervention logic linking outcomes to impacts.

Figure 1 Generic Theory of Change for Outcomes-Impacts Pathways



The key elements for the ROTI analysis are the assumptions and impact drivers, and intermediate states (defined in Table 2 below). Sustained changes in environmental resources require significant time because changes in the natural world occur slowly. ROTI methodology acknowledges and recognizes in the case of most interventions targeted at improving environmental status (impact level results), there is generally time required following the end of the project for processes to occur, leading to eventual changes in threats to or improved management of eventual resources. The “intermediate states” are the time required for outcomes (e.g. increased management capacity increased management capacity, increased awareness etc.) to result in impacts.

Table 2 Definitions of Theory of Change Elements in the Outcomes-Impacts Pathways

ToC terms	Definition
Intermediate States (IS)	These are the transitional conditions between the project's outcomes and impacts that must be achieved in order to deliver the intended impacts
Impact Drivers (ID)	These are the significant factors that, if present, are expected to contribute to the ultimate realization of project impacts, <u>and that are within the ability of the project to influence</u>

Assumptions (A)	These are the significant factors that, if present, are expected to contribute to the ultimate realization of project impacts, <u>but that are largely beyond the power of the project to influence or address</u>
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B. Dry Forest Conservation Project Outcomes-Impacts Theory of Change

Information for the development of the Theory of Change for the Dry Forest Conservation Project was collected from project documentation review, interviews with persons who were responsible for implementing the MSP project, key informants who were familiar with the Pilot Phase OECS Ship Generated Solid Waste Management Project and the Dry Forest Conservation Project and site visits.

The project document was completed in 2000 and by that time use of the logical framework was already widespread but the project document did not include a logical framework. The project document included a section for outcomes but they were not clearly identified. The ICM document also included a section on Outcomes, but there too the outcomes were not explicit. The absence of the logframe and explicit strategies meant that the logic behind the theory of change was not clear and had to be conjectured for this analysis, including through the input of project participants.

The MSP project outcomes-impacts theory of change is presented in Table 3 below. The MSP project was developed on the expressed assumption that it will build on the existing efforts to protect Grenada's dry forest and their component species. There were also developed on the assumption that the existing efforts to protect the Grenada Dove will be provide a natural synergy for the project and that it could also be used to leverage resources to help the increase the Forestry Department institutional capacity.

Table 3 The Dry Forest Biodiversity Conservation Project Outcomes-Impacts Theory of Change

Project Strategies	Outcome What was the situation at the end of the project?	Impact Driver / Assumption What are the key factors for delivery of intermediate states?	Intermediate State What needs to happen, to achieve impact?	Impact What is the project ultimately aiming to achieve?
<i>Strategy 1: Improve public awareness to increase public and political support for dry forest ecosystem conservation</i>	<p>Outcome 1: Stakeholders knowledgeable and supportive of dry forest habitat protection</p> <p>Outcome 2: Public support for conservation measures for dry forest ecosystems and species of global significance increased</p> <p>Outcome 3: Dry forest area designated for conservation increased</p>	<p>A: The Government of Grenada was committed to conservation of dry forest conservation</p> <p>A: There is strong support from NGOs working with Grenada Dove to collaborate with the project</p> <p>A: Public opinion is the strongest force for shifting government policy, and other forces (e.g. private interests, etc.) do not overshadow</p> <p>ID. Public awareness contributes to broad-based support for dry forest ecosystem conservation</p> <p>ID. Increase in public awareness from levels already established by previous "Love the Dove" public awareness campaign conducted under the GEF funded Solid Waste Management and Ship Generated Waste Management project</p>	IS: Sustained government commitment to increased areas designated as conservation areas of Grenada's dry forest ecosystem	CONSERVATION OF GRENADA'S DRY FOREST ECOSYSTEM AND ITS COMPONENT SPECIES OF GLOBAL SIGNIFICANCE, LEADING TO INCREASE IN POPULATION OF SPECIES OF GLOBAL SIGNIFICANCE

Project Strategies	Outcome What was the situation at the end of the project?	Impact Driver / Assumption What are the key factors for delivery of intermediate states?	Intermediate State What needs to happen, to achieve impact?	Impact What is the project ultimately aiming to achieve?
Strategy 2: Development of private sector partnerships for dry forest ecosystem conservation	<p>Outcome 4: Critical minimum dry forest habitat conservation requirements identified, and long-term priorities set for developing a network of private and public habitat conservation sites</p> <p>Outcome 5: Effective partnerships in place with private landowners, developers, and other stakeholder groups to protect, manage, and restore the identified network of key dry forest conservation sites</p> <p>Outcome 6: Adoption of environmentally friendly land use practices minimizes dry forest loss and degradation on private lands</p>	<p>A: Private landowners, developers and other stakeholder groups willingness to partner</p> <p>A: Environmentally friendly land use practices promoted are culturally and economically accepted by private landowners</p> <p>ID: A high level of public consultations as part of the process for the development of the dry forest project, contributing to private sector support for conservation of dry forest lands</p> <p>ID: Public – private partnerships established to manage and restore key dry forest conservation sites</p> <p>ID: Private sector adopts land use practices initiatives introduced by the Dry Forest project</p>	IS: Effective stakeholder participation in decision making and conservation activities contribute to sustained private sector commitment to ongoing sustainable land management in critical habitat areas	CONSERVATION OF GRENADA'S DRY FOREST ECOSYSTEM AND ITS COMPONENT SPECIES OF GLOBAL SIGNIFICANCE, LEADING TO INCREASE IN POPULATION OF SPECIES OF GLOBAL SIGNIFICANCE

Project Strategies	Outcome What was the situation at the end of the project?	Impact Driver / Assumption What are the key factors for delivery of intermediate states?	Intermediate State What needs to happen, to achieve impact?	Impact What is the project ultimately aiming to achieve?
Strategy #3: Improve institutional capacity for management of dry forest ecosystems	<p>Outcome 7: Policy and/or legislative initiatives adopted to promote environmentally friendly land-use practices, minimizing dry forest loss and degradation on public and private lands</p> <p>Outcome 8: Baseline data from scientific research available and ongoing dry forest resource monitoring program established and functioning</p> <p>Outcome 9: Forestry department staff capacity increased through training</p> <p>Outcome 10: Grenada Dove Recovery Plan implemented</p>	<p>A: Funds for capacity building component will be available</p> <p>A: Grenada would not be impacted by a hurricane during the project life. That assumption was not far fetched because Government of Grenada reports stated at the time that Grenada was not in the hurricane belt</p> <p>ID: Baseline database developed from scientific research, and used for decision making and management of dry forest</p> <p>A: Management plan and conservation strategy for the dry forest developed and implemented supported by appropriate legislation and forest policy</p> <p>ID: Relevant stakeholders trained apply acquired capacity</p> <p>ID: Institutional capacity of public sector strengthened for technical implementation of conservation practices for dry forest conservation</p>	IS: Dry forest management plan and conservation strategy implemented and monitored and informed by information from scientific research	CONSERVATION OF GRENADA'S DRY FOREST ECOSYSTEM AND ITS COMPONENT SPECIES OF GLOBAL SIGNIFICANCE, LEADING TO INCREASE IN POPULATION OF SPECIES OF GLOBAL SIGNIFICANCE

IV. Assessment of Achievement of the Outcomes-Impacts Pathways

The analysis of the outcomes-impacts pathways progress towards impact was conducted based on a review of the project documentation and interviews with key informants and site visit. The assessment is broken down by individual strategies applied as outlined in the previous section. The rating system for

the field ROTI methodology is given in Table 4 below as per the ROTI handbook. The rating system is applied to the individual theory of change elements as well as to the project as a whole in the final analysis.

Table 4 Field ROTI Rating System

Rating	Description
0	Not achieved
1	Poorly achieved
2	Partially achieved
3	Well achieved

A. Overall Parameters Necessary to Achieve Objectives and Contribute to Impact

As previously mentioned, the MSP was building on the work undertaken by the Pilot Phase OECS Ship Generated Solid Waste Management Project and there were some challenges separating the impact of the MSP from the previous project.

In a previous section it was stated that the outcome-impact pathway was not explicit. What was clearly articulated was that the project was designed to build on previous and existing efforts to conserve the Grenada Dove habitat that was focused on dry forest areas on public lands. In order to achieve that objective, the public-private partnership component involving the private land owners should have been given priority during implementation. However, all of the individuals interviewed who were involved in the project implementation acknowledged that this component was the least successful.

The Government of Grenada commitment to the maintenance of the status of protected area of the dry forest was not included as an outcome of the project. However, in the year following the completion of the project, the Government of Grenada amended the National Parks and Protected Areas Act. Cap 206. The amendment allowed the Governor General to declare for the purposes of conveyance, possession, use or access or both, any area declared to be a National Park or a protected area.

The Forestry Department reported that the amendment was subsequently repealed following the change of government in 2008.

B. Strategy 1: Improve public awareness to increase public and political support for dry forest ecosystem conservation

i. Theory of Change Overview

This strategy focused on providing information to stakeholders on the dry forest ecosystem, and measuring the change in level of knowledge and attitude. Information was disseminated through the mass media, stakeholder workshops and the production of public education material. Educational material was also prepared for the CXC syllabus. Two surveys were conducted to measure changes in level of knowledge and attitude. Based on the results of the surveys, the strategy achieved the outcome, which was to increase the level of knowledge and change in attitude of stakeholders. The strategy does

not appear to have focused on changing behavior of local stakeholders and community members, but rather in raising awareness to leverage political will support conservation of the Dry Forest habitat. Some of the 12 billboards erected under the project are still in existence and the video produced under the project is still used at the Mt Hartman Visitor Centre.

The project document used the terms communication, public awareness and public education interchangeably even if they all have different meanings; so it was difficult to determine whether the strategy was intended to change behavior which is linked to public education or to change level of awareness which is linked to public awareness.

Figure 2. Theory of Change for Strategy 1

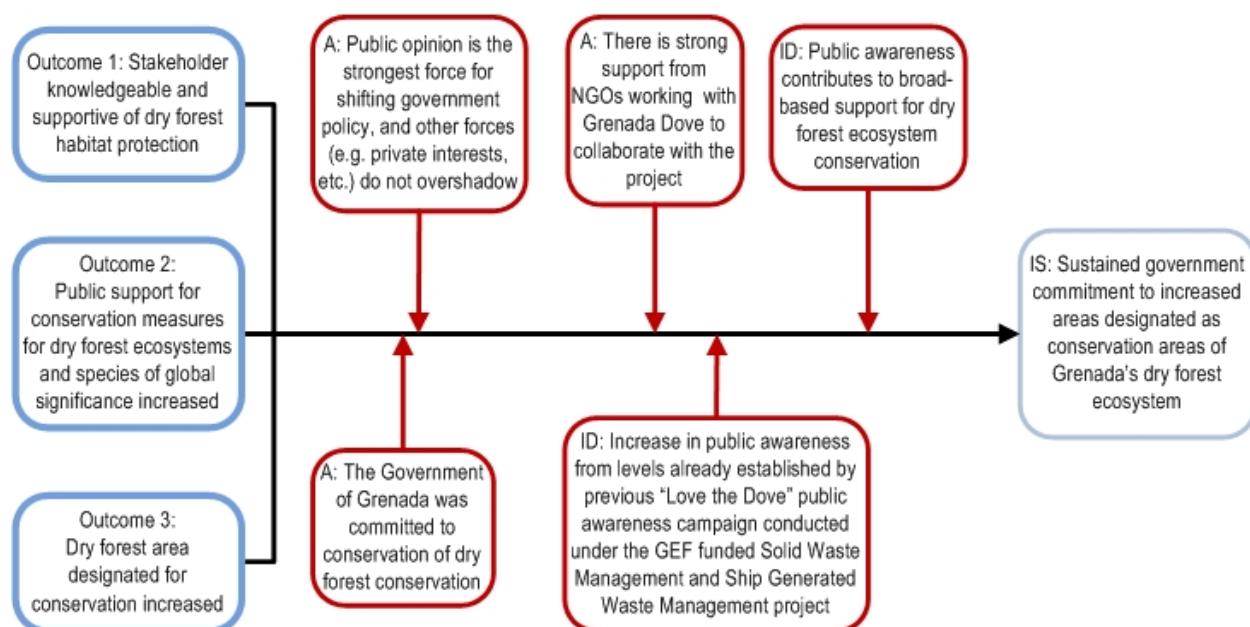


Table 5 Outcomes-Impacts Findings for Strategy 1 Improve public awareness to increase public and political support for dry forest ecosystem conservation

Theory of Change Component	Qualitative Assessment	Rating
Outcome 1: Stakeholder knowledgeable and supportive of dry forest habitat protection	This outcome was achieved. The Attitudinal Survey conducted in 2006 show increases in the level of awareness of the dry forest ecosystem and willingness to support its protection over the 2003 survey.	3
Outcome 2: Public support for conservation measures for dry forest ecosystems and species of global significance increased	The first part of the outcome was fully achieved. The 2006 survey results showed that there was a significant increase in the percentage of the respondents who were willing to support dry forest conservation compared to 2003 results. The increase in the percentage of respondents who were supportive of conservation measures of species of Grenada's global significance in 2006 compared to 2003 was marginal.	2
Outcome 3: Dry forest area designated for	This outcome was not achieved but it should be noted that additional areas on private and public lands were identified as areas for dry forest conservation.	1

Theory of Change Component	Qualitative Assessment	Rating
conservation increased		
A: The Government of Grenada was committed to conservation of dry forest conservation	Although the government was supportive of the Dry Forest Conservation Project, in April 2007 the Government of Grenada passed an amendment to the National Parks and Protected Areas Act allowing the government to sell national parks to developers or other private interests with the approval of the Governor General. There was public outcry	1
A: There is strong support from NGOs working with Grenada Dove to collaborate with the project	There was strong NGO advocacy for the protection of dry forest areas. There was support for the project from WINDREF, St Georges University, Rare Centre for Tropical Conservation, Peregrine Fund	3
A: Public opinion is the strongest force for shifting government policy, and other forces (e.g. private interests, etc.) do not overshadow	This assumption was tested, and ended up holding true. As previously mentioned, following the project there was a change in policy in relation to protected areas in Grenada. However, there was a public outcry against this, and when the new government came into office the policy was changed back to its original status.	3
ID: Public awareness contributes to broad-based support for dry forest ecosystem conservation	The public awareness contributed to broad based support for the dry forest ecosystem	3
ID: Increase in public awareness from levels already established by previous "Love the Dove" public awareness campaign conducted under the GEF funded Solid Waste Management and Ship Generated Waste Management project	There was a higher level of awareness from 2003 to 2006 of the dry forest ecosystem as a result of the public awareness campaign conducted.	3
IS: Sustained government commitment to increased areas designated as conservation areas of Grenada's dry forest ecosystem	With the repeal of the amendment to the national parks legislation, the government has shown some ongoing commitment to areas designated for conservation. This commitment seems to shift with elections however, so it remains to be seen if this commitment will be sustained in the long-term.	2

C. Strategy 2: Improve public awareness to increase public and political support for dry forest ecosystem conservation

i. Theory of Change Overview

This strategy did not achieve the outcomes intended and it resulted in minimal contribution to project impact. The terminal evaluation and persons involved in the implementation both confirmed that that strategy did not achieve its intended outcome. This strategy was the most important in contributing to the project impact because most of the dry forest land in Grenada is owner by private land owners.

The explanation provided in the ICM is that the funds for the private sector partnership component were reallocated after the Hurricane Ivan. However, Hurricane Ivan impacted Grenada seven months before the project end. In order to achieve the outcomes the project activities under that component should have been given priority for implementation at the start of the project.

In addition public education/public awareness activities did not focus on the private sector as a key stakeholder so there were no specific activity targeting the private landowners other than an Award for Excellence. Details about the criteria for the award were not clear from the project documents and the persons involved in the implementation of the project did not wish to offer any explanation.

Figure 3. Theory of Change for Strategy 2

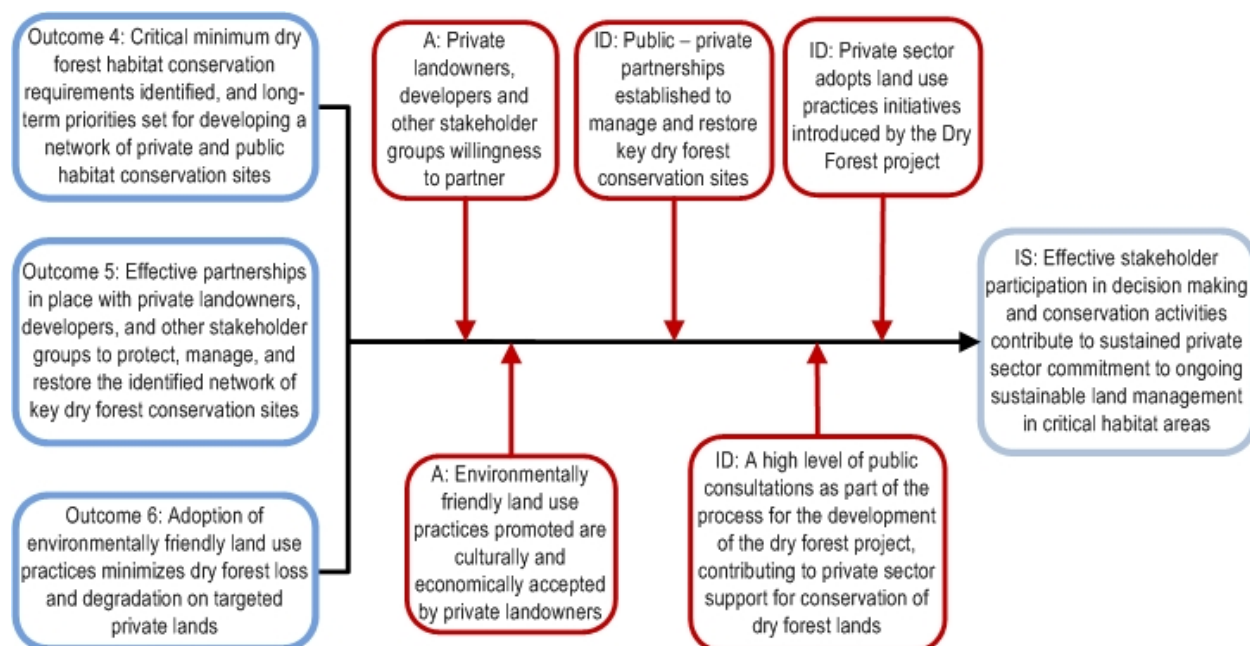


Table 6 Outcomes-Impacts Assessment Findings for Strategy 2: Development of Private Sector Partnerships for Dry Forest Ecosystem Conservation

Theory of Change Component	Qualitative Assessment	Rating
Outcome 4: Critical minimum dry forest habitat conservation requirements identified, and long-term priorities set for developing a network of private and public habitat conservation sites	A list of dry forest areas on private lands was identified for conservation. The work with the private sector was acknowledged as the least successful part of the project. The explanation given in the terminal evaluation was that the funds for that component were reallocated to the rehabilitation of the Mt. Hartman Visitor Centre after Hurricane Ivan impacted the country. However, staff involved in the project expressed the view that the level of effort dedicated to engaging the private sector before Hurricane Ivan was unsatisfactory.	0
Outcome 5: Effective partnerships in place with private landowners, developers, and other stakeholder groups to protect, manage, and restore the identified network of key dry forest conservation sites	Work was started in engaging one landowner in areas identified as dry forest conservation areas but the efforts were not successful. At the end of the project there was no partnership built with the private sector. The involvement of the private sector in the stakeholder consultation process was limited. The private sector should have been a key stakeholder in the process from the project design stage.	0

Theory of Change Component	Qualitative Assessment	Rating
Outcome 6: Adoption of environmentally friendly land use practices minimizes dry forest loss and degradation on targeted private lands	Land use practices were not adopted because the techniques that were supposed to be introduced under the project were never introduced.	0
A. Private landowners, developers and other stakeholder groups willingness to partner	Unable to assess. This component of the project was the least successful, but it is not known if the private sector partners that were anticipated to be targeted by the project were open to collaboration and partnerships.	UA
A. Environmentally friendly land use practices promoted are culturally and economically accepted by private landowners	Not completed. The project was not successful in promoting environmentally friendly land use practices, so their cultural and economic acceptability cannot be assessed. From the information available it does not appear that a lack of acceptability was the reason the project was unsuccessful in promoting such practices.	UA
ID: A high level of public consultations as part of the process for the development of the dry forest project, contributing to private sector support for conservation of dry forest lands	The private landowners were identified as a key stakeholder. There were stakeholder consultation meetings with communities in areas near to dry forest areas during the project development phase. There were no stakeholder meetings with the private dry forest land owners. The building of the partnership with the private sector should have been among the initial activities of the project because partnership building is a long-term activity.	0
ID Public – private partnerships established to manage and restore key dry forest conservation sites	There was a relationship established with the communities prior to project implementation. There was no such relationship with the private sector. There was no partnership established with the private sector. Some attempt was made to work with one individual landowner but not much progress was made. Not enough effort was put into the activity before the activity was abandoned. One reason given for the lack of progress on that activity was that the funds was reallocated, however this did not occur until late in the project implementation, when progress should have already been made.	0
ID Private sector adopts land use practices initiatives introduced by the Dry Forest project	The land use practices were not introduced.	0
IS: Effective stakeholder participation in decision making and conservation activities contribute to sustained private sector commitment to ongoing sustainable land management in critical habitat areas	The project requested and received financial support from private sector. There was no engagement of the private dry forest landowners.	1

D. Strategy 3: Improve institutional capacity for management of dry forest ecosystem

i. Theory of Change Overview

This focus of this strategy was on the Forestry Department. This strategy achieved its outcomes but it did not result in any significant impact. The department was provided with equipment, vehicles and office equipment. Permanent staff were trained locally and temporary staff were also trained in field research techniques. The department has retained all but one of the trained staff and has added one of the temporary staff trained in the field techniques.

The staff has not resampled the monitoring plot established under the project and the officer trained in Geographic Information System do not put the skills acquired under the project for decision making for the department.

Figure 4. Theory of Change for Strategy 3

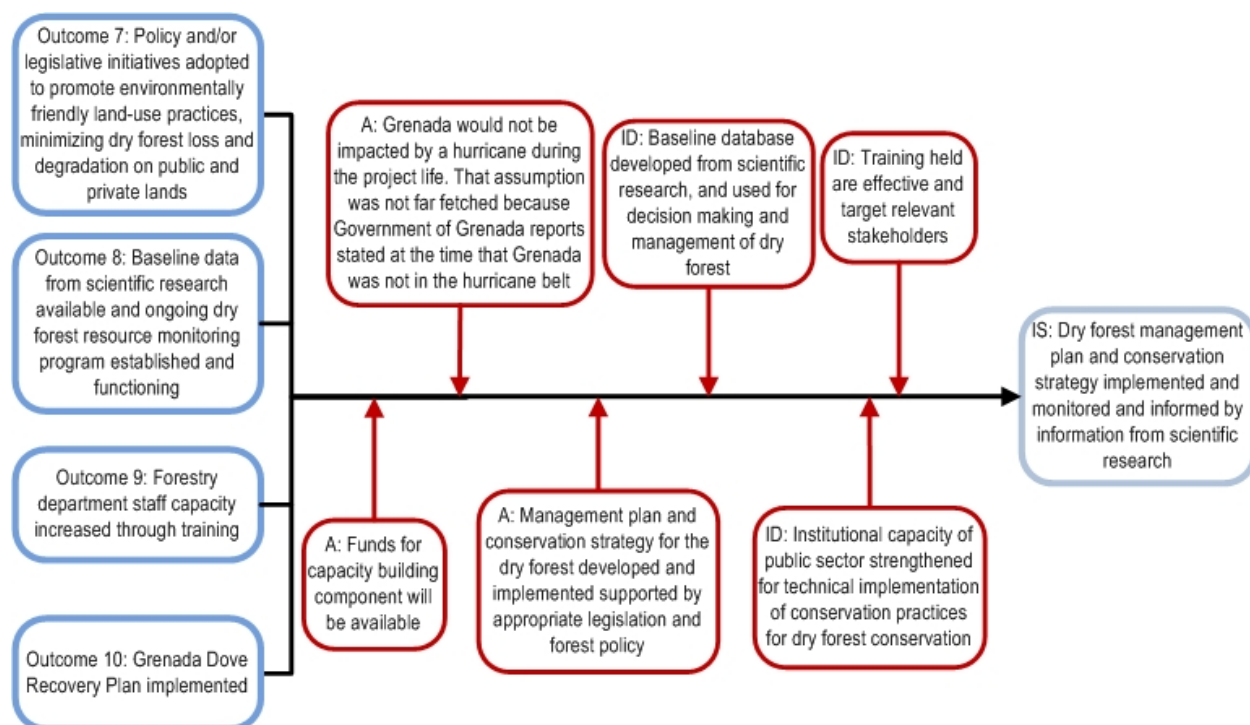


Table 7 Outcomes-Impacts Assessment Findings for Strategy 3: Improve institutional capacity for management of Dry Forest Ecosystems

Theory of Change Component	Qualitative Assessment	Rating
Outcome 7: Policy and/or legislative initiatives adopted to promote environmentally friendly land-use practices, minimizing dry forest loss and degradation on public and private lands	No policy or legislative initiatives resulted from the project.	0

Theory of Change Component	Qualitative Assessment	Rating
Outcome 8: Baseline data from scientific research available and ongoing dry forest resource monitoring program established and functioning	A survey was conducted on the insect assemblages in five dry forest sites in Grenada (Mt Hartman National Park, Perseverance Dove Sanctuary and Lederal Hills). A report was completed. A study was conducted on the Composition and Structure of the Grenada Dove (<i>Leptotila wellsi</i>) Habitat. A final report was completed. The Peregrine conducted research on the Grenada Hook-bill Kite (<i>Chondrohierax uncinatus mirus</i>) population in Grenada. A census of the Grenada Dove was undertaken in 2003- 2004 and a post Hurricane Ivan census was also conducted because the Grenada Dove is a key indicator of species of the Grenada dry forest ecosystem. A Grenada Dove Biology Program was also conducted but only a draft interim report was available for review.	2
Outcome 9: Forestry department staff capacity increased through training	A capacity building plan was developed and implemented. Some of the funds allocated for the plan were reallocated when the project was revised following the impact of Hurricane Ivan. Training in field sampling was conducted.	1
Outcome 10: Grenada Dove Recovery Plan implemented	Under the project, this plan was partly implemented	2
A: Funds for capacity building component will be available	Some of the funds for capacity building were reallocated to the rehabilitation of the Mt Hartman Visitor Centre	1
A: Grenada would not be impacted by a hurricane during the project life. That assumption was not far fetched because Government of Grenada reports stated at the time that Grenada was not in the hurricane belt	Grenada was impacted by two hurricanes (Ivan 2004 and Emily 2005) during the project life and the project was negatively affected by Hurricane Ivan and required revision. The hurricanes resulted in damage to the Forestry Department and Dry Forest Project offices.	0
ID: Baseline database developed from scientific research, and used for decision making and management of dry forest	Database was developed and used for decision-making in the public sector for dry forest management.	2
A: Management plan and conservation strategy for the dry forest developed and implemented supported by appropriate legislation and forest policy	A draft management plan was developed for Mt. Hartman National Park and Protected Area and Perseverance Protected Area (Jackson, 1998) under the GEF Solid Waste Management Project. The management plan is not fully implemented, and the changes in relevant legislation and policy have not provided the mandate for implementation of the previously developed management plan.	1
ID: Training held are effective and target relevant stakeholders	Forestry Department staff received training locally and overseas. Funds for training reallocated after Hurricane Ivan. Some of the training provided have not been utilized by staff.	2
ID: Institutional capacity of public sector strengthened for technical implementation of conservation practices for dry forest conservation	The project provided office supplies, equipment and vehicles to strengthen the capacity of the Forestry Department. The conservation initiatives were not introduced as planned under the project.	0
IS: Dry forest management plan and conservation strategy implemented and	See previous discussion under impact drivers. A revised management plan was not produced but there is a draft plan available from a previous	0

Theory of Change Component	Qualitative Assessment	Rating
monitored and informed by information from scientific research	GEF project but it was not implemented. The conservation strategy was not prepared. A monitoring plan for the dry forest was not prepared and was no resampling of the biodiversity. Copies of the scientific research conducted under the project were not readily accessible at the Forestry Department and were made available by the Research and Monitoring Officer from personal files.	

V. Dry Forest Conservation ROTI Overall Conclusions

This project was an extension of a previous GEF-funded project. It was intended to build on achievements such as the draft management plan for Perseverance Dove Sanctuary and Mt Hartman National Park. It was also building on the successful public awareness campaign on the Grenada Dove. The project was designed to collaborate with international NGO's and the WINDREF, which were already conducting scientific studies on the dry forest biodiversity. So the project was using strategies that were already tried and tested and those were successful. However, It was not clear whether the public awareness was a strategy to change actual behavior or change level of knowledge.

The new addition was the private-public partnerships approach. It was based on the strategy that private landowners with dry forest lands could be motivated to implement conservation measures. This was not successful, but it is not clear if the barriers were a result of lack of initiative and effort under the project or if private landowners proved to be un-engagable. In addition the project document was not clear on the nature of the partnership, and the activities to be undertaken to build the partnership were not included in the document.

The project was developed with wide stakeholder participation including private sector entities, but the private landowners were not identified among the key stakeholders.

Another assumption made was that the project would not be affected negatively by hurricanes that assumption also did not hold. The entire project was affected by the two hurricanes, which resulted in reallocation of the project budget.

There was also another assumption that if training and scientific information is provided to the staff for of the Forestry Department then it would result in improved management of the dry forest. However not all the training has been put to use, for example, the officer who was trained in Geographic Information system has not been using the skills learned.

The project had some positive results, but overall progress toward impact is rated a "1" on the ROTI rating scale, equating to "poorly achieved." The dry forest areas remained intact during the project life, but it was unable to make inroads into conservation of the dry forest located on private lands.

Although the public awareness campaign was not initially sufficient to stop the government from amending the law to give the Governor General authority to sell the protected areas, the awareness may have worked in the long run in getting the new government to rescind the amendment.

Censuses of the Grenada Dove population were carried out pre- and post- the hurricanes that struck in 2005 and 2006. A Post Hurricane Ivan evaluation of the Grenada Dove population (Rusk 2005) reported that the population of the Grenada Dove was increasing up to 2004 and showed a decline after the impact of Hurricane Ivan.

Table 8 Overall Rating of the Project's Impact

Theory of Change Component	Outcome-Impacts Assessment
Strategy #1: Improve public awareness to increase public and political support for dry forest ecosystem conservation.	3
Strategy #2: Development of private sector partnerships for dry forest ecosystem	0
Strategy #3: Improve institutional capacity for management of dry forest ecosystem	1
Overall project	1
<p>Overall rating summary</p> <p>Strategy 1: The project resulted in general awareness of the dry forest and its value as a habitat for the species of global significance. It was able to build on the Grenada Dove awareness campaign conducted by a previous GEF project. It was also able to build on the work done by the previous GEF project at the Mt Hartman Visitor Centre by rehabilitating and equipping the centre. The public awareness material such as the video is being used at the visitor centre.</p> <p>While public awareness was able to create awareness that resulted in public support, it was unable to achieve political support for dry forest conservation because immediately following the end of the project the government made the decision to amend the National Parks and Protected Areas Act to allow for the sale of lands to individuals and developers.</p> <p>The research and Monitoring Officer of the Dry Forest Conservation Project was subsequently hired by the developer of the hotel near to the Mt Hartman National Park and protected area.</p> <p>NGOs locally and internationally protested the sale of the Mt Hartman National Park and Protected area.</p> <p>Strategy 2: The project was able to mobilize public support from the private sector to fund public awareness activities but was not successful in building partnerships with dry forest land owners.</p> <p>Scientific research was conducted but it is not readily accessible at the Forestry Department.</p> <p>Strategy 3: The project provided equipment, offices supplies and vehicles for the Forestry Department to support its work in dry forest conservation. Some staff received training but the training was not completed due to revision of the project the reallocation of funds. Temporary staff employed under the project were trained in field research techniques and one of the temporary staff is now employed with the department.</p> <p>Progress toward impact: The most recent information available indicates that the population of the Grenada Dove has not increased appreciably. The population was negatively impacted by the 2005-06 hurricanes. At the same time, the project appears to have been successful in contributing to the avoidance of increased threats from development in the previously established protected areas.</p>	

Appendix 1. List of Persons Contacted

Name	Title	Organization
Bonnie Rusk	Research Coordinator	Dry Forest Conservation Project
Simone Lewis	Public Education Coordinator	Dry Forest Conservation Project
Anthony Jeremiah	Forestry Officer	Forestry Department

Appendix 2. Documents Reviewed

Case Study: Mt. Hartman Development and the Grenada Dove: Finding a Win-Win Solution, Bonnie L. Rusk, USAID and The Nature Conservancy, September 2010

Composition and Structure of the Grenada Dove (*Leptotila wellsi*) Habitat Pedro Lugo, July 2005

Final Report Grenada Dove Census 2003 -2004, Lawrence Clouse Jr. and Bonnie Rusk, March 2004

Forest and National Parks Department Capacity Building Plan

Terminal Evaluation Review, Dry Forest Biodiversity Conservation Project, GEF Evaluation Office, no date

Grant Reporting and Monitoring Report, Grenada Dry Forest Biodiversity Conservation, TF050989, World Bank, November 28, 2007.

Grenada Dove Biology Programme, Interim Report, August – November 2004

Grenada Dry Forest Attitudinal Survey Report 2006, Michael Phillips, 2006

Implementation Completion Memorandum, Grenada Dry Forest Project, TF050989, World Bank, May 6, 2008.

Implementation Completion Report for the OECS Ship-generated Waste Management Project and the Solid Waste Management Project, World Bank, November 21, 2003

OECS Ship-generated Waste Management Project, Project Document, World Bank, April 1995

Post Hurricane Ivan Grenada Dove Evaluation, February 2005

The record of the Grenada Hook- Billed kite (*Chondrohierax uncinatus mirus*) from 2002-05.

Desmond McQueen, Peregrine Fund

A Survey of insect assemblages in five dry forested areas in Grenada, Elroy Charles



Technical Document 4: ROtI on OECS Ship- generated Waste Management Project

To support the OECS
Cluster Country Portfolio
Evaluation

October 2011

ROtI on OECS Ship-generated Waste Management Project

I. Introduction

This review was carried out as part of the Global Environment Facility Evaluation Office (GEF EO) Organisation of Eastern Caribbean States (OECS) Cluster Country Portfolio Evaluation (CCPE). This review aims at assessing concrete, measureable and verifiable results (outcomes and impacts) of the GEF in the OECS countries using an impact evaluation methodology being developed by the GEF EO, called the Review of Outcomes to Impacts (ROtI).¹ The ROtI methodology assesses progress from project outcomes to impact-level results.

This ROtI analysis focuses on the Full-sized Project (FSP) “OECS Ship-generated Waste Management” project (SWM) (GEF ID 59), which was the second GEF-supported project in the OECS region, following the project “Wider Caribbean Initiative on Ship-generated Waste” (WCISW) (GEF ID 523),² in which 22 countries participated, including the OECS countries. The World Bank was the implementing agency for both of these projects. The OECS SWM project was “fully blended” with the World Bank’s larger Solid Waste Management project, funded through credits and loans. The project arrangements are discussed in detail in Section 1.1 below.

The ROtI data collection process relied on a review of available documentation, interviews with relevant national and GEF Agency stakeholders, field visits to relevant sites, and a focus group discussion that brought national stakeholders together to reflect on the project theory of change and progress toward impacts. Like all evaluations, this ROtI analysis faced some limitations and challenges, notably because the project was completed nearly eight years ago, and the project concept first originated nearly 20 years ago. Thus, not all individuals involved in the project design and implementation were available to provide input to the ROtI assessment; this is a recognized challenge in applying the ROtI methodology, as ROtI assessments are most frequently applied ex-post, years after project completion. In addition, as the project was a regional project involving all six OECS countries, it was not possible to physically gather individuals from all six countries together in one place for an extended discussion on the project’s theory of change and progress toward impacts. In addition, the project approach included both regional and national based strategies for outcomes-impacts pathways analysis. To address these challenges a regional teleconference was organized with project participants to facilitate the opportunity for direct stakeholder discussion and dialogue on the project theory of change and progress toward impacts. The assessment relied on in-depth interviews with the relevant persons who were available, and on the available documentation. The focus of a ROtI assessment on a World Bank fully blended GEF/non-GEF project also created complexity in the analysis, as the GEF-supported and non-GEF supported parts of the project were closely linked, although the scope of the ROtI was limited to the GEF-supported portion of the project. This complexity was addressed by explicitly acknowledging the importance of the non-GEF supported portion of the project but without applying in-depth analysis, as further described in Section 3.2 below. A final significant challenge is that there is not specific baseline data available on the status of the targeted environmental resources or on the level of threats (amount of ship-generated

¹ The ROtI methodology is described in the “ROtI Handbook” available at the GEF Evaluation Office website, <http://www.thegef.org/gef/node/2225>,

² GEF project identification numbers are not chronologically sequential for projects in the early phases of the GEF; the project numbering identification system was not instituted from the start of the GEF, but was applied retroactively at a later point without a chronological basis.

waste introduced into marine and coastal ecosystems), and there is no structured monitoring program to assess impact-level changes over time.

A. SWM Project Background Information and Description

The SWM project reached “effectiveness” (implementation start in World Bank terminology) on November 11, 1996, and was closed on June 30, 2003, following multiple extensions. Key milestone dates for the project are presented in Table 1, below. From project concept to project completion was a total of approximately 11.8 years, and the project implementation period was a little over 6.5 years.

Table 1 Milestone Dates for OECS Ship-generated Waste Management Project³

Milestone	Expected date	Actual date	Time from previous milestone (total time)
Project Concept Document	Not Applicable	September 10, 1991	Not Applicable
GEF Approval	Not Applicable	December 1, 1992	15 months (15)
World Bank Appraisal	Not Applicable	January 16, 1994	13.5 months (28.5)
World Bank Approval	Not Applicable	May 4, 1995	15.5 months (44)
Implementation Start (“effectiveness”)	November 11, 1996	November 11, 1996	18 months (62)
Mid-term Evaluation	November 10, 1998	December 9, 1998	25 months (87)
Project Operational Completion	December 31, 2000	June 30, 2003	54.5 months (141.5)
Terminal Evaluation Completion	Not specified	November 21, 2003	5 months (146.5)

The SWM project was a “fully blended” project with an additional World Bank-supported effort in the OECS countries on solid waste management – as outlined in the Implementation Completion Report (ICR), “While [the SWM and solid waste projects] have different project appraisal documents supported by 14 individual grant/loan/credit agreements, these projects were considered fully blended during preparation and supervision.” The total blended project estimated cost at appraisal was \$50.5 million United States dollars (USD), broken down as such: World Bank loans and credits: \$11.5 million; GEF grants: \$12.5 million; Caribbean Development Bank: \$8.7 million; European Investment Bank: \$6.4 million; European Union: \$1.9 million; counterpart funding (co-financing) from the six participating countries: \$9.5 million.

Because of the fully blended nature of the project, there were two development objectives – one for the non-GEF supported solid waste management portion of the project and one for the GEF supported ship portion. The first objective was:

Reduce public health risks and protect the environmental integrity of the islands and their coastal and marine systems. This was to be accomplished by improving domestic

³ Sources: GEF online project database <http://www.gefonline.org/projectDetailsSQL.cfm?projID=59>; Implementation Completion Report.

*solid waste management facilities and facilitating compliance with the 'Special Area' designation of the Caribbean Sea for MARPOL 73/78 Annex V wastes. The project sought to reduce terrestrial and marine pollution in this area by preventing and discouraging indiscriminate disposal of solid waste both on and off-shore. A further objective was to significantly enhance public health and environmental quality by strengthening the countries' capacities to manage effectively and dispose of solid waste in an environmentally sustainable manner.*⁴

The objective of the GEF-supported SWM portion of the project was “to protect the environmental integrity of coastal and marine systems in the Caribbean Sea. This was to be done by facilitating compliance with the special area designation of the Caribbean Sea for MARPOL 73/78 Annex V wastes and thereby, reducing marine pollution.”⁵

The fully blended project was broken down into national and regional components as outlined below, relating to both the GEF-funded and non-GEF funded portions of the project. Based on the fully blended nature of the financial arrangements, the ICR provides a single joint rating for performance and achievement of outcomes and objectives - the ICR ratings for each component are shown in parentheses. Within the ICR there are also ratings for project achievements within each of the countries for the national components and outcomes, but these are not included here.

- National Component 1: Introducing solid waste management investment to the existing storage, collection and disposal systems in participating countries (Satisfactory)
 - Landfill sites: construction and closure
 - Collection and disposal equipment
- National Component 2: Investments in port reception facilities for ship-generated waste in participant countries (Unsatisfactory);
- National Component 3: Rationalization of the existing institutional framework for ship and land-based solid waste management in all six countries (Satisfactory);
- National Component 4: Assistance in the establishment of a sanctuary for the threatened Grenada Dove (Satisfactory);
- Regional Component 1: Support activities and technical assistance to all countries (Satisfactory)
 - Model legislation (for both land-based and ship-generated solid waste management)
 - Recycling/compost markets
 - Training and workshops
 - Ship-generated waste documentation
 - Systems for monitoring and evaluation
 - Model environmental education program
 - Technical assistance in the preparation of sewerage master plans
- Regional Component 2: Preparation of a workable institutional framework for regional coordination in the project sectors and facilitating overall project management and monitoring (Satisfactory).

⁴ ICR.

⁵ Ibid.

To assess results, the ICR also grouped the project into four more distinct outcomes associated with different project components:

- Outcome 1: Established and fully functioning autonomous or semi-autonomous Solid Waste Management Entities (SWMEs) in each participating country (Satisfactory);
- Outcome 2: Increased coverage and improved quality of land-based solid waste management services (collection, transport and disposal) in each participating country (Satisfactory);
- Outcome 3: Enhanced public awareness of solid waste management issues resulting in behavioral changes (Satisfactory);
- Outcome 4: Improved institutional arrangements with functioning systems to help each country manage and dispose effectively of waste generated by ships (in accordance with MARPOL V 73/78) and leisure craft (yachts) (Satisfactory).

B. ROTI Analysis of the Fully Blended Project

The rationale for the project as a fully blended GEF grant and various World Bank loans and other financial instruments is clear, and provided synergistic elements. The GEF-funded ship-generated waste component of the project could not have been planned or undertaken without functioning land-based solid waste management institutional frameworks and infrastructure. According to the ICR and sources interviewed for this analysis, the project concept first developed by the World Bank focused on the ship-generated waste issue, but the participating OECS countries' first priority was addressing the inadequate land-based solid waste management circumstances. Thus the solid waste management portion of the project was developed in conjunction with the ship-generated waste management portion. The fully blended project was managed through a single implementation mechanism (first the Project Management Unit (PMU) housed in the OECS Secretariat, then the OECS Natural Resources Management Unit (NRMU)⁶), with individual national implementing units addressing both the SWM and solid waste management activities.

The fully blended nature of the project presents some challenges for the ROTI analysis. The full project, including the solid waste management portion, is beyond the scope of the ROTI analysis for the identification of Global Environmental Benefits (environmental impacts) to which GEF support may have contributed. There were clearly environmental benefits from the solid waste portion of the project (e.g. reduction in litter, reduction in air pollution from waste burning, etc.), but the GEF was not a contributor to these results. Thus this ROTI analysis focuses on the GEF-supported portion of the project, the ship-generated waste management aspect. At the same time, the ship-generated waste management activities were dependent on the outcomes of the solid-waste portion in terms of the operation of waste collection and disposal processes and infrastructure.

The Outcome-Impacts Pathways Theory of Change analysis for this ROTI (see Table 2 in Section 2 below) therefore includes identification of the relevant outcomes from the solid waste management portion of the project, but only carries out the full analysis for the strategies and outcomes associated with the GEF-supported ship-generated waste management portion (the SWM project) of the fully blended project. The ROTI analysis is conducted for both national and regional strategies associated with the SWM project.

⁶ Currently called the Environment and Sustainable Development Unit (ESDU).

II. The SWM Project's Targeted Global Environmental Benefits

The first step in the ROTI analysis is to identify and clearly outline the project's expected environmental impacts, or Global Environmental Benefits (GEBs). The ROTI handbook defines GEBs as "lasting improvements in the status of an aspect of the global environment that safeguards environmental functioning and integrity as well as benefiting human society." The primary desired GEB is implied in the project objective, and for the purposes of this assessment is clarified as:

Improved environmental status of the marine and coastal ecosystems of the OECS countries from reduced solid waste dumping by cruise ships and other ship-based sources of pollution (e.g. yachts, shipping vessels), as required under MARPOL 73/78.

While the improvement of coastal and marine ecosystems is the high-level GEB targeted under the project, there would be numerous specific environmental benefits associated with a reduction in marine dumping of ship-generated waste in the OECS waters. These include for example:

- Reduced threats to biodiversity, for example from mistaken consumption of inedible wastes by sea turtles, sea birds, and other species;
- Reduced mortality of various species associated with strangulation or constriction from waste products;
- Improved population recruitment of marine species due to improved water quality, affecting reproduction and growth.

The marine and coastal ecosystems of the OECS countries, which include portions of the Atlantic Ocean and Caribbean Sea, are considered globally significant on multiple grounds. The full extent of the global environmental significance of the region is outlined in the separate Global Environmental Benefits Assessment of the OECS Cluster Country Portfolio Evaluation, to which this ROTI assessment contributes. The region supports diverse near-shore marine ecosystems, most notably coral reefs and sea grass beds, and the numerous individual species that rely on these habitats. The OECS countries have 1,257 kilometers of coastline,⁷ which include sandy beaches, rocky shoreline, mangroves and other coastal wetland areas, such as salt ponds. The countries have a total claimed marine Exclusive Economic Zone of 212,272 square kilometers, and coral reef areas in the countries are estimated to cover between 740 and 980 square kilometers. Currently less than 1% of marine ecosystems are protected, but Grenada and St. Vincent & the Grenadines have committed to protecting 20% of their marine habitat by 2020, under the Caribbean Challenge partnership.⁸

These ecosystems support a diversity of species. Approximately 250 or more species of reef fish can be found in near shore waters, and total fish species in the region may number more than 400. Between seven and ten marine mammals can be found in the region, as well as four marine turtles. Between 20 and 50 hard and soft coral species make up the reefs in each of the countries; other marine species (e.g. sponges, invertebrates, algae, etc.) are not well documented. Important commercially harvested near shore species include lobster and conch, as well as dozens of near-shore fish species. The deep waters of the region also support populations of numerous commercially valuable pelagic fish species.

⁷ Figures are aggregated from data presented in the Global Environmental Benefits Assessment.

⁸ The Nature Conservancy, 2011.

The human populations of the OECS countries (approximately 593,000) are also heavily dependent on their marine and coastal resources; a majority of the countries' populations live near the coastal areas (not surprising, considering the small size of these island nations). The marine and coastal ecosystems provide a source of subsistence food resources, and support private enterprise. The tourism industry is a key economic driver in the region, and is heavily dependent on marine and coastal resources, especially the OECS countries' well-known beautiful and diverse beaches, and the coral reef marine life.

The project focused on assisting the countries in implementing their commitments under MARPOL 73/78, although MARPOL 73/78 is not one of the primary conventions for which the GEF is the financial mechanism. The marine and coastal thematic area of the Convention on Biological Diversity (CBD) was not fully articulated under the CBD at the time the project was conceived, but the project can be considered to have supported the countries in implementing their commitments under the CBD.

The project also has a small nationally based component for Grenada, focused on the Grenada Dove; this component was only budgeted for \$200,000 of the total GEF funding. The associated GEB for this small component can be defined as:

Conservation of Grenada's globally significant biodiversity, including the indicator species Grenada dove.

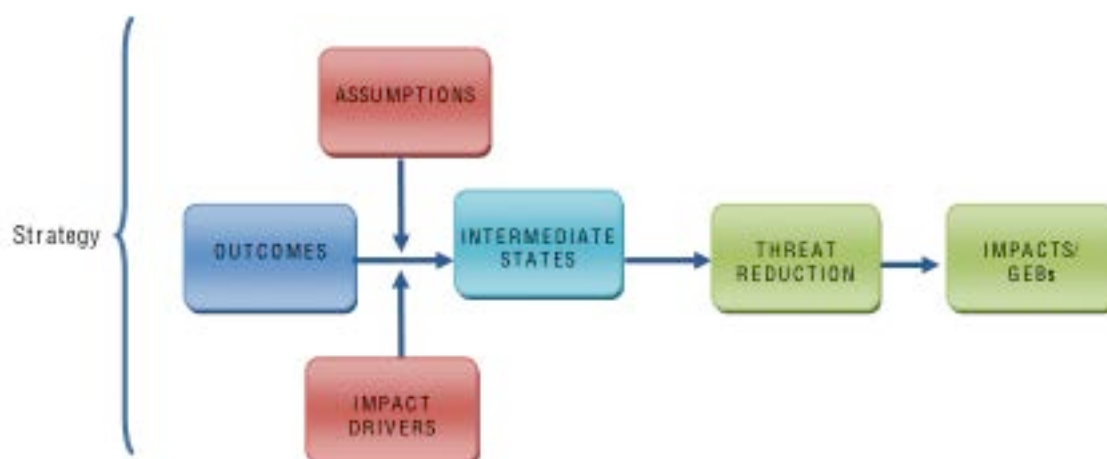
While conservation of the endemic species the Grenada Dove was the specific target of this component of the project, the component focused generally to the conservation of the biodiversity of Grenada's dry forest ecosystems, in and around established protected areas.⁹

III. The Ship-generated Waste Management Project Outcomes-Impacts Theory of Change

A. The ROTI: A theory based approach to understanding impact

A project's logical intervention approach, or theory of change, is the expression of the strategy chosen to achieve the objective(s). Based on the strategy, the specific inputs and activities are designed to drive the expected subsequent intervention approach. Inputs and activities produce outputs, leading to outcomes, and eventually impacts. As a whole, these steps together define the outcomes-impacts pathway. Figure 5 below illustrates the key elements of an outcomes-impacts theory of change. The ROTI analysis seeks to identify and make explicit the detailed intervention logic linking outcomes to impacts.

⁹ This component was followed-up with a stand-alone Medium-sized Project (MSP) in Grenada, the Dry Forest project (GEF ID 815)

Figure 5 Generic Theory of Change for Outcomes-Impacts Pathways

The key elements for the ROTI analysis are the assumptions and impact drivers, and intermediate states (defined in Table 2 below). Sustained changes in environmental resources require significant time because changes in the natural world occur slowly. The ROTI methodology acknowledges and recognizes that in the case of most interventions targeted at improving environmental status (impact level results), there is generally time required following the end of the project for processes to occur, leading to eventual changes in threats to or improved management of environmental resources. The “intermediate states” are the time required for outcomes (e.g. increased management capacity, increased awareness, etc.) to result in impacts.

Table 2 Definitions of Theory of Change Elements in the Outcomes-Impacts Pathways

ToC terms	Definition
Intermediate States (IS)	These are the transitional conditions between the project's outcomes and impacts that must be achieved in order to deliver the intended impacts
Impact Drivers (ID)	These are the significant factors that, if present, are expected to contribute to the ultimate realization of project impacts, <i>and that are within the ability of the project to influence</i>
Assumptions (A)	These are the significant factors that, if present, are expected to contribute to the ultimate realization of project impacts, <i>but that are largely beyond the power of the project to influence or address</i>

B. Ship-generated Waste Management Project Outcomes-Impacts Theory of Change

The SWM project theory of change was developed based on project documentation (e.g. project document, implementation status reports, implementation completion report), and interviews with project stakeholders who participated in the project implementation or are familiar with the situation following project completion. Based on these sources, the reconstructed theory of change was again validated in the regional teleconference with stakeholders prior to assessing progress toward impact. The project was the second GEF project in the OECS region, and the first specifically focusing on OECS countries. Considering that the project concept originated in 1991, and the World Bank approved the project in 1995, the project document does not include as much explicit and detailed information about the project strategy and components as could be expected in the project documents of current GEF projects. For example, the project document does not include a logframe, which typically provides

greater insight as to a project's proposed theory of change. The ICR does structure its finding by project outcome, which has been useful in constructing this ROTI analysis.

The SWM project outcomes-impacts theory of change is presented in Table 3 below. As previously discussed, the synergistic elements of the theory of change from the blended solid waste management component are identified, but not further analyzed. In the table below they are in gray text, to indicate the necessity of their presence in supporting the ship-generated waste project-specific strategies, but without additional focus in the analysis. They are included in the table before the GEF-supported portion of the project to set the foundation and indicate the dependency of the GEF-supported portion of the project on the non-GEF supported portion.

Three national strategies have been identified, and one regional strategy. The national strategies relate to the two main intervention approaches of the project – the physical infrastructure related to waste management, and the policy framework necessary to support functional waste management procedures. The third national strategy relates to the Grenada Dove component, which was only carried out in Grenada. The regional strategy focused on technical support to all of the countries, and included multiple activities and topics, such as trainings and information management. The regional strategy also links strongly to the synergistic regional solid waste strategies. Some project components or activities contributed to both the ship and solid waste projects; the education and awareness campaign was relevant on both fronts, but the main focus of this activity was on the solid waste aspect, and is therefore grouped under this section of the theory of change table below. As previously highlighted, this ROTI analysis focuses on the ship-generated waste aspect, which was the portion funded by the GEF.

C. SWM Project Design and Implementation Context

It is expected that all projects will be well designed and implemented successfully, and thus these issues are not a focus of the ROTI methodology, which examines changes over time. The ROTI analysis focuses on the extent to which impact level results may have been reached, yet achievement of the objective depends on the quality of the strategy, and the quality of the strategy becomes moot if the strategy is not adequately implemented. For the SWM project, design and implementation issues must be discussed as part of the project context, as the rationale and justification for the project concept and design depended on external assumptions that had a critical influence on the quality of the project's theory of change, and implementation issues influenced the project's progress toward potential impact.

The original project concept focused on ship-generated waste management, with the proposed approach of the countries handling waste reception from ships. However, the OECS countries declared that their first priority was to deal with land-based solid waste management, before they were willing to focus ship-generated waste. Thus the project was designed as a blended project, with a large portion focusing on solid waste management for land-based sources. Overall, multiple sources indicated that during the project design phase and during the first half of the implementation the process was very top-down and externally driven. Ship-generated waste was relevant to the countries needs and priorities, as ship-generated waste was thought to be contributing to coastal solid waste pollution, which had the potential to negatively affect the tourism industry, one of the key economic drivers in the region. However, it was eventually determined that land-based sources were a much bigger contributor to coastal solid-waste pollution.

Multiple sources have indicated that the project implementation approach was poorly designed (as discussed in other sections of this report), but once adequate implementation arrangements were put in place with implementation responsibility transferred to the OECS ESDU, the project successfully

completed most of the expected activities. Procurement was also problematic: According to multiple sources, capital costs for multiple aspects of the project were higher than expected. The most significant example was the procurement of the ship waste transport barges for each of the countries. These were initially budgeted at \$125,000 each; the final cost was not available to this evaluation, but apparently exceeded this amount.

Results-based management was a significant issue, and there was not an adequate M&E system with results-based indicators. Project participants indicated that some activities were carried out just because they were scheduled and had to be completed. One example is the procurement of the barges, which, according to some sources, the countries' questioned the value of (ultimately proven to be correct). The results focus of the project improved in the latter part of the implementation period.

Individual aspects of the achievement of project objectives are further discussed in detail in the strategy sections below.

Table 3 The Ship-generated Waste Management Project Outcomes-Impacts Theory of Change

Project Strategies		Outcome	Impact Driver / Assumption	Intermediate State	Impact
		What was the situation at the end of the project?	What are the key factors for delivery of intermediate states?	What needs to happen, to achieve impact?	What is the project ultimately aiming to achieve?
Synergistic Strategies from the Blended World Bank Solid Waste Management Project	Strategy A: Develop institutional and technical capacity at the national level for countries to manage solid waste in a manner compatible with public health and environmental considerations	Outcome: Solid Waste Management Entities established and operational	N/A	N/A	N/A
		Outcome: Adequately prepared landfill facilities are operational	N/A	N/A	N/A
		Outcome: Solid waste transportation equipment and procedures are in place, such as procurement of hauling trucks and necessary bins, and routes determined	N/A	N/A	N/A
	Strategy B: Prepare plans and programs to address the problems of collection, treatment and disposal of liquid wastes and identify regional opportunities for recycling of waste	Outcome: Sewerage Master Plans prepared	N/A	N/A	N/A
		Outcome: Information on options for regional entry into recycling markets identified and disseminated to regional stakeholders, with key issues analyzed and clarified, such as technical specifications for recyclable materials, transportation costs, delivery schedules, length of contract, etc. Includes possible completion of letters of understanding with possible market actors.	N/A	N/A	N/A
		Outcome: SWMEs have expanded opportunities to leverage recycling for revenue generation and reduction of waste volume	N/A	N/A	N/A
		Outcome: Composting activities implemented and possible applications identified	N/A	N/A	N/A

Project Strategies		Outcome	Impact Driver / Assumption	Intermediate State	Impact
		<i>Outcome: Waste minimization procedures developed and implemented</i>	N/A	N/A	N/A
		<i>Outcome: Increased public awareness related to household and individual waste disposal resulting in behavioral changes in population with respect to waste disposal</i>	N/A	N/A	N/A
	Strategy 1 (National): Improve collection, treatment and disposal of ship-generated solid waste	Outcome 1: Capacity to transport ship-generated waste from port to landfill in place with adequate port reception facilities and equipment	A: Ships' willingness to pay for island-based waste disposal ID: SWMEs carry out and oversee waste management procedures	IS: SWMEs in each of the OECS countries effectively collects, transports, and appropriately disposes of (deposits in landfill) ship-generated waste	SUSTAINED IMPROVEMENT IN THE ENVIRONMENTAL STATUS OF THE MARINE AND COASTAL ECOSYSTEMS OF OECS STATES (AND ASSOCIATED DOWNSTREAM ENVIRONMENTAL BENEFITS), DUE TO REDUCED OFFSHORE DUMPING OF SOLID AND LIQUID WASTES FROM SHIP-BASED SOURCES
		Outcome 2: Cost recovery mechanisms agreed and in-place, supporting the necessary on-going operation of the collection and disposal of ship-generated waste	A: Revenue from cost recovery mechanisms will be directed back to supporting ongoing collection and disposal of ship-generated waste ID: Government approval of cost-recovery mechanisms		
		Outcome 3: Cooperation established with ships for waste disposal processes and requirements	A: Ship owners' cooperation and willingness to pay for disposal of waste at ports		
	Strategy 2 (National): Establish appropriate legal and institutional frameworks to enable OECS countries to effectively manage and dispose of ship-generated waste	Outcome 4: Ship-waste management legislation adopted in all countries (based on model legislation developed for the region) [ALSO SUPPORTING REGIONAL STRATEGY]	A: Once introduced, legislation will be adopted by national government bodies within a reasonable time period ID: Project produced model legislation will present the countries with a clear path forward to adopt ship-generated waste management legislation		

Project Strategies		Outcome	Impact Driver / Assumption	Intermediate State	Impact
		What was the situation at the end of the project?	What are the key factors for delivery of intermediate states?	What needs to happen, to achieve impact?	What is the project ultimately aiming to achieve?
		Outcome 5: Ship-generated waste management procedures for collaboration between waste management authorities and port authorities codified in Memorandums of Understanding (MOUs)	A: Port authorities have incentive to enter into MOUs ID: Institutional procedural arrangements in place to handle reception and transportation of ship-generated waste		
		Outcome 6: All OECS countries have acceded to MARPOL 73/78 and are moving toward meeting their obligations thereunder with a regional special area designation	A: Countries have incentive to accede and fulfill obligations ID: Provision of data and information on waste reception facilities		
	Strategy 3 (National): Grenada: Establishment of an effectively managed protected area for the endangered Grenada Dove at Mount Hartman Estate	Outcome 7: Mount Hartman protected area and Perseverance Sanctuary are established	A: Gazettement begun prior to project is successfully completed ID: Stakeholders' support for establishment of protected area	IS: Ongoing effective management of the Mount Hartman protected area	CONSERVATION OF GRENADA'S GLOBALLY SIGNIFICANT BIODIVERSITY, INCLUDING THE INDICATOR SPECIES GRENADA DOVE
		Outcome 8: Institutional and individual capacity for effective management of the protected area is in place, as well as technical capacity (e.g. monitoring equipment, etc.)	A: Lack of management capacity is primary barrier to effective conservation of the Grenada Dove ID: Implementation of cost-recovery mechanism to support ongoing sustainability of Mount Hartman protected area		
		Outcome 9: Effective management of the protected area supported by necessary physical infrastructure (e.g. fencing, visitor center)	A: Budget is adequate to support planned infrastructure investments ID: Physical infrastructure directly contributes to improved management effectiveness of the protected area ID: Ongoing operating and maintenance costs of physical infrastructure can be supported through cost recovery mechanism or other sources		

Project Strategies	Outcome	Impact Driver / Assumption	Intermediate State	Impact
Regional Strategies: OECS Ship-generated Waste Management Project Strategy 4 (Regional): Regional technical assistance provided to support enhanced waste management capacity and implementation - Outputs: model legislation, 4Rs reports, technical training, regional workshops, waste information documentation and tracking. [LINKED TO BLENDED PROJECT STRATEGIES - Synergistic blended project outputs: model public awareness program, sewerage master plans]	Outcome 10: Ship-generated waste legislation adopted in the OECS countries based on regional model legislation developed [LINKED TO NATIONAL STRATEGY 2]	A: Model legislation is an adequate approach to regional technical policy support ID: Technical quality of model legislation ID: Adoption at national level of ship-generated waste management legislation	IS: SWMEs in each of the OECS countries effectively collects, transports, and appropriately disposes of (deposits in landfill) ship-generated waste IS: Ship-generated waste information is effectively monitored and shared between OECS countries to ensure illegal dumping does not take place between countries	SUSTAINED IMPROVEMENT IN THE ENVIRONMENTAL STATUS OF THE MARINE AND COASTAL ECOSYSTEMS OF OECS STATES (AND ASSOCIATED DOWNSTREAM ENVIRONMENTAL BENEFITS), DUE TO REDUCED OFFSHORE DUMPING OF SOLID AND LIQUID WASTES FROM SHIP-BASED SOURCES
	Outcome 11: SWMEs have and are applying increased technical and institutional waste management capacity	ID: Trainings held are effective ID: Trainings held are adequate to address technical barriers		
	Outcome 12: Necessary mechanisms in place to document and monitor ship-generated within the region between OECS countries, to facilitate enforcement against illegal marine dumping in transit between countries	A: SWMEs are able and willing to use and maintain waste information monitoring and tracking systems once systems are in place ID: Technical quality and functionality of waste information monitoring and tracking systems ID: Regional interoperability of waste information monitoring and tracking systems		

IV. Assessment of Achievement of the Outcomes-Impacts Pathways

The analysis of the outcomes-impacts pathways progress toward impact was conducted based on a review of the project documentation, interviews with key informants, and discussion during the regional virtual focus group meeting. The assessment is broken down by individual strategies applied, as outlined in the previous section. The rating system for the field ROTI methodology is given in Table 4 below, as per the ROTI Handbook. The rating system is applied to the individual theory of change elements as well as to the project as a whole in the final analysis.

Table 4 Field ROTI Rating System

Rating	Description
0	Not achieved
1	Poorly achieved
2	Partially achieved
3	Well achieved

A. Aspects of the Fully-blended Solid Waste Management Project Necessary for the SWM Project's Planned Progress Toward Impact

As previously discussed, the GEF-supported SWM project was a part of a larger fully-blended World Bank project on solid waste management. The theory of change components of the fully-blended project are not analyzed in Table 3 above as this is outside the scope of this ROTI exercise. However, as the SWM project was dependent on some key outcomes under the fully-blended project, the achievement of these outcomes is briefly synthesized in Table 5 below. Strategy "A" below, from the solid waste management project, was the most critical aspect for the SWM project. Key activities included the establishment of the SWMEs, establishment and preparation of landfills, and procurement of waste transportation equipment. Without these elements, the strategy of the SWM project for the OECS countries to receive the ship-generated waste would not have been feasible. All of these activities were adequately completed. The public education and awareness activities under strategy "B" of the solid waste management project also supported the objectives of the SWM project, but was not directly relevant to the ship-generated waste management activities.

Table 5 Summary of Outcomes Completion of Key Blended Solid Waste Management Project

Solid Waste Management Project Strategy	Theory of Change Component	Completion Notes
<i>Strategy A: Develop institutional and technical capacity at the national level for countries to manage solid waste in a manner compatible with public health and environmental considerations</i>	<i>Outcome: Solid Waste Management Entities established and operational</i>	Completed, with varying levels of financial security at the time. All SWMEs remain operational today, including the one in Dominica, which was considered to be the most at-risk at the time of the ICR.
	<i>Outcome: Adequately prepared landfill facilities are operational</i>	Completed with varying degrees of quality, except in Grenada where landslide issues affected landfill site planning and implementation. Some of the landfills are now likely to reach maximum capacity earlier than originally expected, and new approaches will need to be implemented.
	<i>Outcome: Solid waste transportation equipment and procedures are in place, such as procurement of hauling trucks and necessary bins, and routes determined</i>	Completed, though negatively affected by procurement issues. According to some sources, some of the equipment procured was not adequately suitable to the OECS context, such as hauling trucks incapable of handling steep terrain. On the whole, solid waste collection was significantly expanded in the countries, reaching over 95% coverage.
<i>Strategy B: Prepare plans and programs to address the problems of collection, treatment and disposal of liquid wastes and identify regional opportunities for recycling of waste</i>	<i>Outcome: Sewerage Master Plans prepared</i>	This outcome was dropped from the project as being too ambitious for the scale of the project.
	<i>Outcome: Information on options for regional entry into recycling markets identified and disseminated to regional stakeholders, with key issues analyzed and clarified, such as technical specifications for recyclable materials, transportation costs, delivery schedules, length of contract, etc. Includes possible completion of letters of understanding with possible market actors.</i>	Technical reports were prepared on the "4 Rs", but initial steps toward catalyzing regional recycling markets were not carried out.
	<i>Outcome: SWMEs have expanded opportunities to leverage recycling for revenue generation and reduction of waste</i>	Limited progress at the time of the ICR. At least one country, Antigua, did initiate recycling through a local facility, but this has since ceased operation.

	<i>volume</i>	
	<i>Outcome: Composting activities implemented and possible applications identified</i>	Limited implementation. Workshops carried out. The ICR notes that all countries had initiated composting programs, and cites the example of Saint Lucia. Composting was also a focus of the education and awareness activities.
	<i>Outcome: Waste minimization procedures developed and implemented</i>	Limited progress.
	<i>Outcome: Increased public awareness related to household and individual waste disposal resulting in behavioral changes in population with respect to waste disposal</i>	Completed, with strong results, according to information available in project documentation and evaluation documents. There currently remains a great need for additional work in this area according to relevant stakeholders.

B. Strategy 1 (National): Improve collection, treatment and disposal of ship-generated solid waste

i. Theory of Change Overview

This theory of change strategy focused on the operational nuts and bolts of the equipment and procedures necessary to actually receive and transport ship-generated waste offloaded at the countries' ports. The strategy focused on the intermediate state of the SWMEs having the technical capacity to actually accept and transport ship-generated waste – a process that, once achieved, would then be continuously ongoing for effective waste management. By providing a direct opportunity for ships to dispose of their waste on land rather than through off-shore dumping, this intermediate state makes up a critical overall element for achieving impact level results and the eventual Global Environmental Benefit of improving the marine and coastal ecosystems in the region.

Figure 4 Theory of Change for Strategy 1

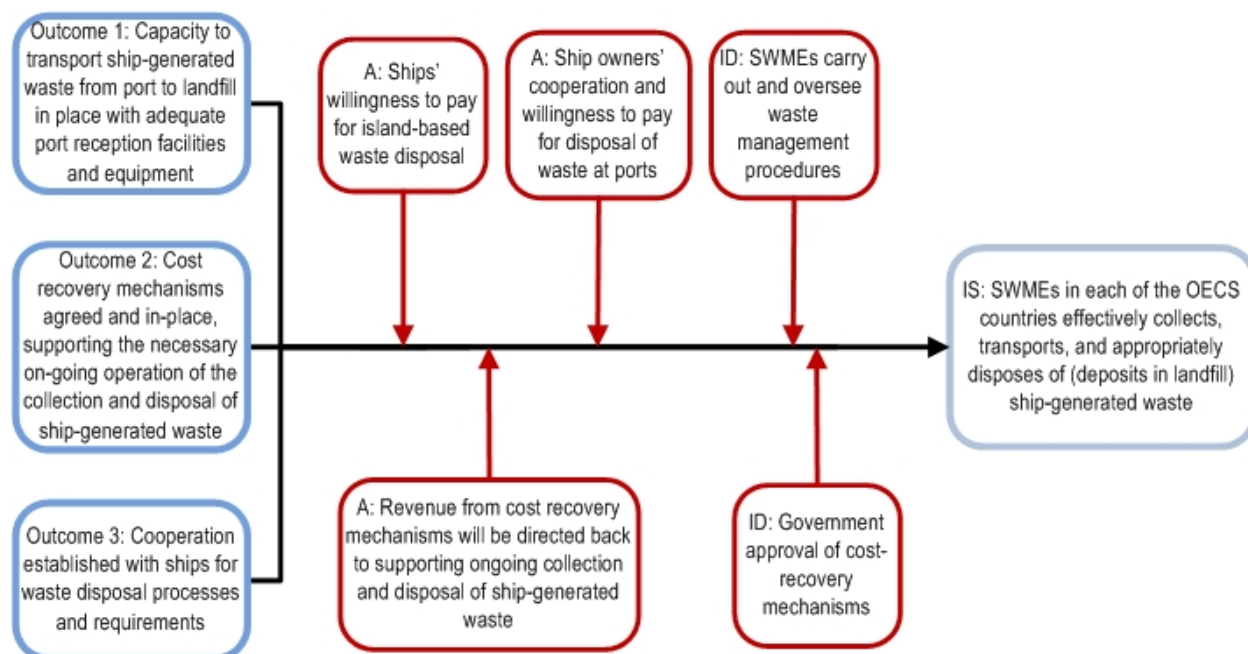


Table 6 Outcomes-Impacts Assessment Findings for Strategy 1 (National): Improve collection, treatment and disposal of ship-generated solid waste

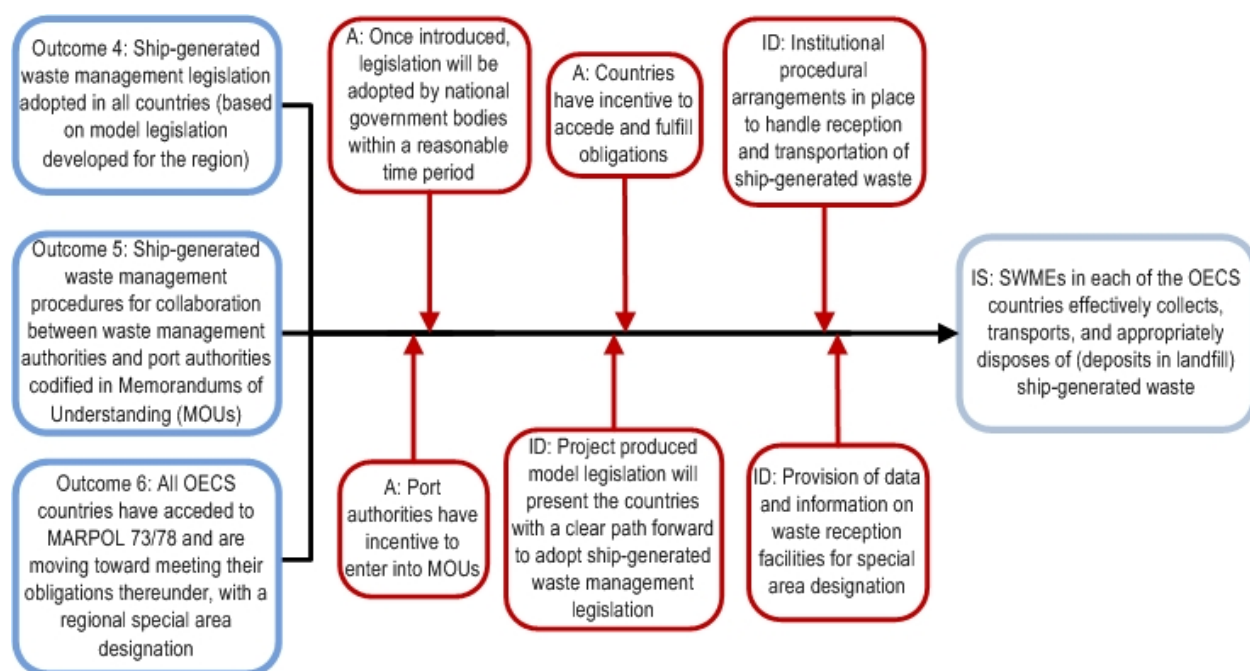
Theory of Change Component	Qualitative Assessment	Rating
Outcome 1: Capacity to transport ship-generated waste from port to landfill in place with adequate port reception facilities and equipment	The overall original scheme for the equipment and procedures to offload waste from ships was flawed, so even though equipment was purchased and in place, not all of the equipment procured was necessary, and some proscribed equipment couldn't be found, such as the "MARPOL waste bins". Ultimately most countries retain the original system of private haulers handling the collection and transport of ship waste, when necessary.	1
Outcome 2: Cost recovery mechanisms agreed and in-place, supporting the necessary on-going operation of the collection and disposal of ship-generated waste	Environmental levies were agreed and established by government in each of the countries, but this revenue goes into the general government treasury and is not channeled in full back to the SWMEs to support ongoing operations. A head tax was negotiated with the cruise ship association, but this was also not completely satisfactory. A per ton charge is levied in each of the countries for any waste received from the ships, but this has been insufficient to cover the cost of actually collecting and transporting the waste. In Grenada and St. Vincent & the Grenadines, waste collection charges have been collected through the electricity meter for households.	1
Outcome 3: Cooperation established with ships for waste disposal processes and requirements	This was not a major issue, other than the head tax, which required negotiation. In general, the ships have been willing to pay to offload waste, although it is not carried out at the scale originally anticipated – a still relatively small amount of waste is collected from the ships. There has not been implementation of regional waste tracking through inspection of the ship waste logs from port to port.	2
A: Ships' willingness to pay for island-based waste disposal	The per ton charge has not been heavily challenged, though it would need to be at a higher level to financially sustain the collection and transport of ship waste. There was a lower willingness to pay the head tax.	2
A: Revenue from cost recovery mechanisms will be directed back to supporting ongoing collection and disposal of ship-generated waste	This assumption has not held – the environmental levy revenues in each of the countries are directed back into the general treasury, and then the SWMEs receive a separate budgetary allocation, which is not equal to the environmental level revenues, and is not adequate for financial sustainability.	1
A: Ship owners' cooperation and willingness to pay for disposal of waste at ports	See assumption two previous. Related assumptions supporting two separate outcomes.	2
ID: SWMEs carry out and oversee waste management procedures	Overall this is the case, although there are many inter-institutional issues among relevant government bodies related to waste management. There are multiple government agencies that have a role to play in connection with waste management, but institutional responsibilities are not always clearly delineated. The improvement in waste management in the countries thus far, however, has been thanks to the establishment of the SWMEs, and their execution of the necessary waste management procedures.	2
ID: Government approval of cost-	The government-backed implementation of the environmental levy in each of the countries has been a valuable and supportive element. There were	3

recovery mechanisms	some intra-regional issues related to the negotiation of the head tax.	
IS: SWMEs in each of the OECS countries effectively collect, transport, and appropriately dispose of (deposits in landfill) ship-generated waste	<p>SWMEs appear to have reached 90%+ collection rates (nearly 100% in some countries) for land-based solid waste, which was a major contributor to coastal and marine waste. However, ship-generated waste is not regularly or consistently collected. This is partially due to the fact that the countries do not have the landfill storage capacity to comprehensively collect and dispose of ship waste. For example, St. Kitts had to establish an annual cap for the amount of ship waste it was able to receive. The cruise ship industry has also significantly improved on-board handling of waste, including through recycling, so there is less waste to potentially offload.</p> <p>This intermediate state would have been a critical element of the original project design, but with the changed assumptions related to the severity of the problem from ship-generated sources, this intermediate state has much reduced importance.</p> <p>See further discussion under Strategy 2 below.</p>	1

C. Strategy 2 (National): Establish appropriate legal and institutional frameworks to enable OECS countries to effectively manage and dispose of ship-generated waste

i. Theory of Change Overview

The second strategy for the project addressed the policy framework and legislative mandate related to ship-generated waste for the countries. The project design included the development of model legislation on ship-generated waste management, which the countries could then modify and adopt within each of their own contexts. It was also anticipated that institutional mechanisms such as MOUs between the SWMEs and the port authorities would be established to facilitate the institutional cooperation and cost recovery for reception and transportation of ship-generated waste. Finally, it was proposed that the Caribbean OECS region receive “Special Area Designation” under MARPOL 73/78, which would ban marine dumping of wastes in the region. Collectively these policy and legislative measures would provide the required institutional mandates and structures to underpin the process of physically collecting the ship-generated waste at the ports, and the institution of associated cost recovery measures. In other words, this was the second part of the two-pronged national level strategy (with strategy 1, above) required to achieve a reduction in the entry of ship-generated waste to marine and coastal ecosystems.

Figure 5 Theory of Change for Strategy 2**Table 7 Outcome-Impacts Assessment Findings for Strategy 2 (National): Establish appropriate legal and institutional frameworks to enable OECS countries to effectively manage and dispose of ship-generated waste**

Theory of Change Component	Qualitative Assessment	Rating
Outcome 4: Ship-generated waste management legislation adopted in all countries (based on model legislation developed for the region) [ALSO SUPPORTING REGIONAL STRATEGY]	Model legislation was produced, but it was not adopted by any of the countries except St. Vincent & the Grenadines. This was due to multiple issues. First, the model legislation produced by the project created a lack of clarity on the issue because there was already model legislation in circulation from the International Maritime Organization. Second, nationally-based legislation on ship-generated waste was seen as redundant to the actual convention; it was believed that if the countries were parties to the convention, this would provide the legal basis for addressing ship-generated waste, without the need for additional national legislation. Third, the model legislation produced under the project was not technically adequate, as it did not fully take into account and was not consistent with other relevant legislation already in place. For example, it was noted that the draft legislation included provisions on Environmental Impact Assessments, but these were already addressed by laws on the books at the time. None of the countries have passed ship-generated waste specific legislation since the end of the project.	1
Outcome 5: Ship-generated waste management procedures for collaboration between waste management authorities and port authorities codified in Memorandums of Understanding (MOUs)	MOUs were established between the SWMEs and the port authorities regarding the processes for reception and transportation of ship-generated waste. However, as noted in the qualitative assessment for strategy 1, there remain issues related to allocation of institutional mandates and responsibilities related to ship-generated waste.	2
Outcome 6: All OECS countries have acceded to MARPOL 73/78 and are	The special area designation for the Caribbean OECS region was never achieved, and remains outstanding to the present. The countries note that	0

moving toward meeting their obligations thereunder, with a regional special area designation	to fulfill the obligations under the special area designation they would have to have the facilities to receive and properly dispose of the various types of MARPOL annex wastes, not just Annex V waste (garbage). At present the countries do not have the capacity to handle either the type or volume of waste that would be expected to be received. The number of cruise ship passengers to the region annually is approximately equal to or exceeds the population of the OECS countries combined. The landfill facilities in the OECS countries do not have the capacity to accept the waste from this many visitors each year for any extended period of time. As it is, the current landfill facilities, many of which were established during the original project, will reach capacity before originally forecast.	
A: Once introduced, legislation will be adopted by national government bodies within a reasonable time period	This did not occur for a number of reasons, including the legal ambiguity of the model legislation. See associated issues under Outcome 1 above.	1
A: Port authorities have incentive to enter into MOUs	This assumption has held. MOUs were established, though there were some issues related to cost sharing and institutional responsibilities.	3
A: Countries have incentive to accede and fulfill obligations	The countries state that they are committed to fulfilling their obligations under MARPOL 73/78. The Special Area Designation under MARPOL 73/78 has not been enacted. See associated issues under Outcome 3 above.	1
ID: Project produced model legislation will present the countries with a clear path forward to adopt ship-generated waste management legislation	The model legislation was not technically adequate. See discussion under Outcome 2 above.	1
ID: Institutional procedural arrangements in place to handle reception and transportation of ship-generated waste	This has been achieved with the establishment of the MOUs with the port authorities. The relevant health authorities are also involved in inspecting waste received from ships.	3
ID: Provision of data and information on waste reception facilities for special area designation	Not achieved. See associated issues under Outcome 3 above.	0
IS: SWMEs in each of the OECS countries effectively collect, transport, and appropriately dispose of (deposits in landfill) ship-generated waste	There are processes in place to support the reception, transport and disposal of some ship-based wastes, but the volume of waste received is not significant. Certain types of wastes are not received in some countries, such as recyclables and pallets, as well as non-Annex V wastes. However, the overall need for the countries to receive ship-generated waste, at least in the case of cruise ships, has significantly diminished from the time of the project concept. On-board processing of waste has significantly improved on modern cruise ships. At the same time, there are no regional mechanisms for monitoring waste disposal within the regional (see further discussion under Strategy 4, below).	1

D. Strategy 3 (National): Grenada: Establishment of an effectively managed protected area for the endangered Grenada Dove at Mount Hartman Estate

i. Theory of Change Overview

The national strategy in Grenada for the establishment of a sanctuary for the critically endangered Grenada Dove grew out of the identification of a population of Grenada Doves at the proposed Perseverance landfill site during initial project development. The government then requested a specific component of the project focus on supporting the conservation of this species through the establishment and management capacity strengthening of the Mount Hartman protected area and Perseverance Sanctuary. Approximately \$200,000 of the GEF funding supported this component of the project.

Figure 6 Theory of Change for Strategy 3

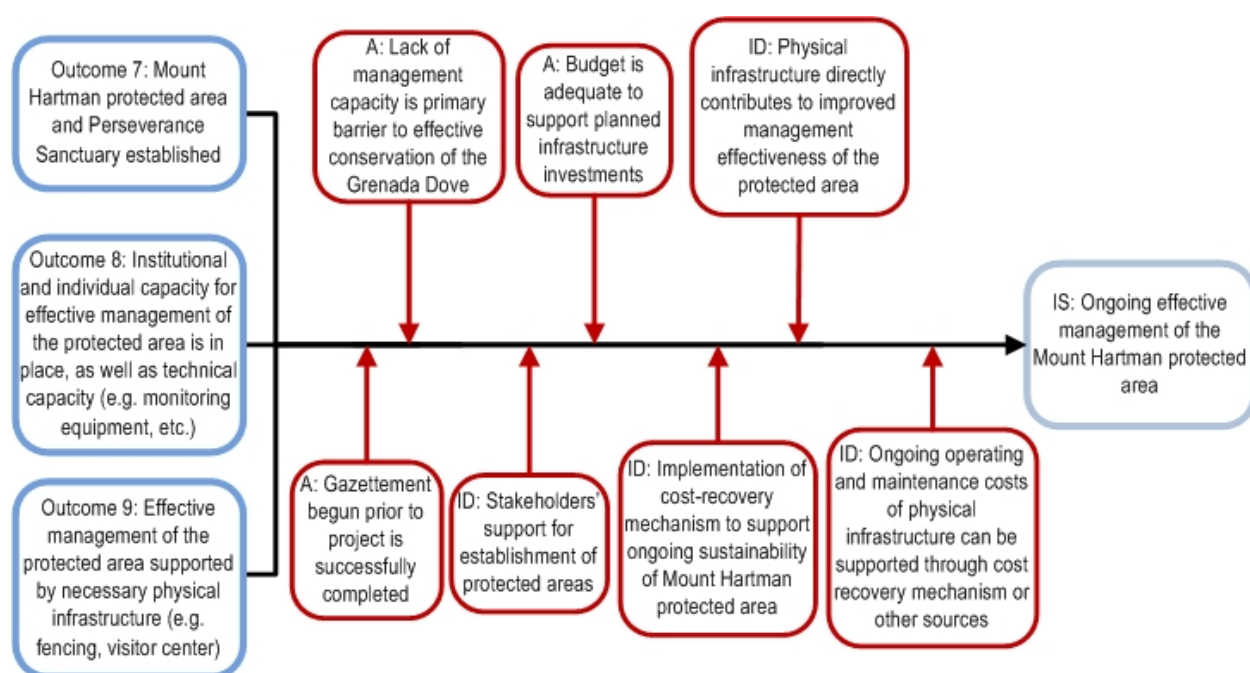


Table 8 Outcomes-Impacts Assessment Findings for Strategy 3 (National): Grenada: Establishment of an effectively managed protected area for the endangered Grenada Dove at Mount Hartman Estate

Theory of Change Component	Qualitative Assessment	Rating
Outcome 7: Mount Hartman protected area and Perseverance Sanctuary established	Gazettelement was a prerequisite for disbursement of project funds, and was completed prior to project implementation.	3
Outcome 8: Institutional and individual capacity for effective management of the protected area is in place, as well as technical capacity (e.g. monitoring equipment, etc.)	Technical capacity development measures were implemented with project support. According to the ICR, this included the production of a cabinet-approved management plan, hiring of two guards for Perseverance Sanctuary (in line with the management plan), and the training for park employees. Still to be completed was full implementation of the management plan and the institution of revenue mechanisms to support ongoing management. It was expected that this would be fulfilled under the subsequent GEF-supported Dry Forest MSP, but the MSP also did not	2

	fully achieve its objectives, and effective management through implementation of the management plan and consistent monitoring has not been established. See the Dry Forest project ROTl analysis for additional implementation on the status of these activities.	
Outcome 9: Effective management of the protected area supported by necessary physical infrastructure (e.g. fencing, visitor center)	The project supported fencing for the two protected areas, and guard houses to reduce trespassing. The visitor center at the Mount Hartman site was completed.	2
A: Gazettement begun prior to project is successfully completed	Assumption held. This was completed.	3
A: Lack of management capacity is primary barrier to effective conservation of the Grenada Dove	Although there has not been a current threat assessment for the protected areas, recent significant threats have included development pressures in the Mount Hartman area. Management capacity is one key issue, and can address such issues as development pressures, but political will and public support are also critical. The established protected areas may not provide adequate habitat for the Grenada Dove, and habitat loss is among the main threats. In addition, the hurricanes in 2004 and 2005 had a significant negative impact on the population status of the Grenada Dove and other species. Thus, effective management of the protected areas may not be sufficient to ensure conservation of this species.	2
A: Budget is adequate to support planned infrastructure investments	There were no known significant issues with this assumption, although there were delays in construction of the visitor center due to heavy rain.	3
ID: Stakeholders' support for establishment of protected areas	The protected areas were established, but competing stakeholder pressures continue to affect the area, as is discussed in the Dry Forest medium-sized project ROTl analysis. In the 2006-2008 timeframe there was significant development pressure in the Mount Hartman area, with government approval. However, a coalition of concerned stakeholders came together to reach an acceptable solution to maintain the integrity of the protected areas.	2
ID: Implementation of cost-recovery mechanism to support ongoing sustainability of Mount Hartman protected area	This was not completed during the life of the project. Cost recovery mechanisms were to be followed up under the subsequent medium-sized project. It is not clear to what extent this was expected to be completed during the SWM project.	0
ID: Physical infrastructure directly contributes to improved management effectiveness of the protected area	The visitor center, guard houses and fencing do contribute to effective management of the area. Such infrastructure alone is not sufficient to create effective management however.	3
ID: Ongoing operating and maintenance costs of physical infrastructure can be supported through cost recovery mechanism or other sources	Not achieved during the life of the SWM project.	0
IS: Ongoing effective management of the Mount Hartman protected area	The current quantitative measure of management effectiveness of the protected area is not known, but available qualitative data indicates that management is not fully effective, and the management plan is not under implementation. Anecdotal information suggests however that current management status may be enough to sustain the population of the Grenada Dove in the short-term, barring the development of significant additional threats (such as the development pressures of 2006-2008). On	2

	the other hand, conservation biologists have indicated that the current habitat and protected areas are not adequate for the long-term survival of the Grenada Dove. A 2007 census of the Grenada Dove population indicated a population estimate of approximately 136 total individuals, significantly lower than prior to the 2005 and 2006 hurricanes.	
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E. Strategy 4 (Regional): Regional technical assistance provided to support enhanced waste management capacity and implementation - Outputs: model legislation, 4Rs (reduce, reuse, recycle, recover) reports, technical training, regional workshops, waste information documentation and tracking. [LINKED TO BLENDED PROJECT STRATEGIES - Synergistic blended project outputs: model public awareness program, sewerage master plans]

i. Theory of Change Overview

The project's regional strategy was to provide technical support on multiple fronts to countries across the region, leveraging synergies to generate additional return on investment at the regional level. The regional technical assistance strategy included diverse activities and outputs, such as the production of model legislation, a model public awareness program, regional trainings, a regional waste monitoring information system, and studies on recyclables and composting. Some of the regional technical support activities were successful, while others did not contribute to the degree expected.

Figure 7 Theory of Change for Strategy 4

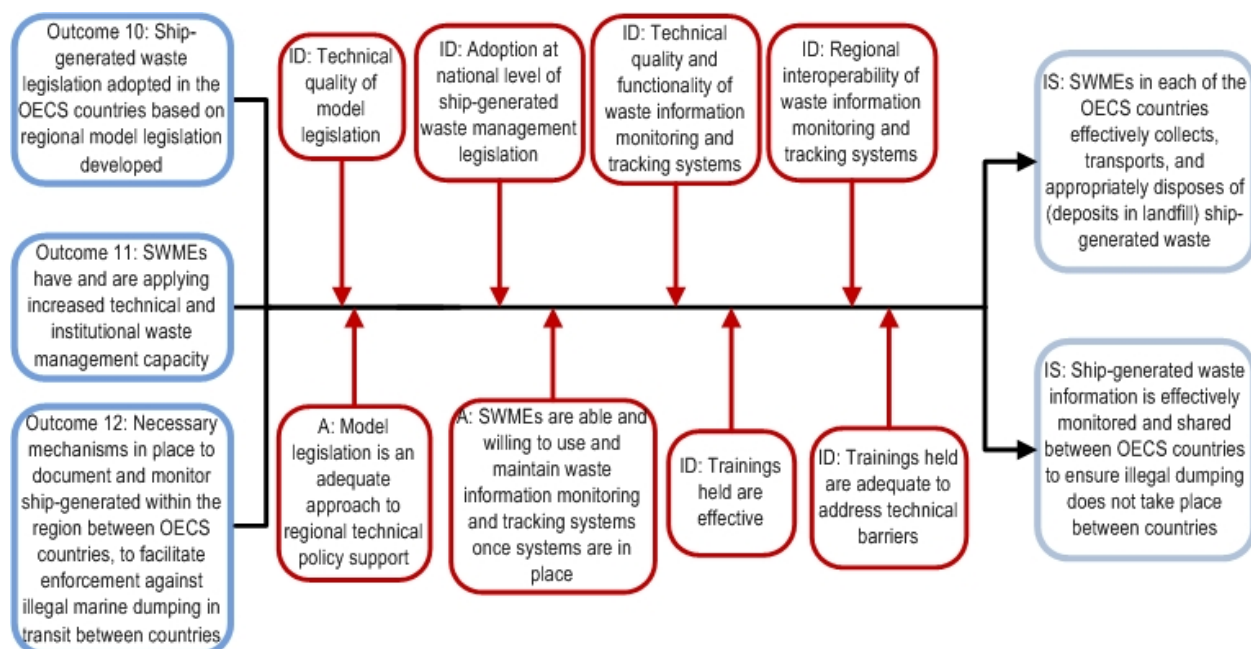


Table 9 Outcomes-Impacts Assessment Findings for Strategy 4 (Regional): Regional technical assistance

Theory of Change Component	Qualitative Assessment	Rating
Outcome 10: Ship-generated waste legislation adopted in the OECS countries based on regional model legislation developed [LINKED TO NATIONAL STRATEGY 2]	Limited achievement. See previous discussion under national Strategy 2.	1
Outcome 11: SWMEs have and are applying increased technical and institutional waste management capacity	This was partially achieved through the regional technical trainings and exchange of good practices and lessons that was facilitated through the regional nature of the project. Through these capacity development activities the SWMEs technical individual capacity and institutional capacity was increased, and this capacity is applied in day-to-day operations. There remains a significant potential to increase capacity development support for further operational effectiveness and efficiency.	2
Outcome 12: Necessary mechanisms in place to document and monitor ship-generated within the region between OECS countries, to facilitate enforcement against illegal marine dumping in transit between countries	Some activities were under taken to develop some experimental approaches to the tracking and monitoring of ship-generated waste within the region, but these were never successfully implemented. There is no system currently in place to track ship-generated waste in the region.	0
A: Model legislation is an adequate approach to regional technical policy support	The model legislation proved to be an inadequate approach to support on this issue. See previous discussion under national Strategy 2.	1
A: SWMEs are able and willing to use and maintain waste information monitoring and tracking systems once systems are in place	The waste information monitoring and tracking system was not implemented.	0
ID: Technical quality of model legislation	The model legislation produced had technical shortcomings. See previous discussion under national Strategy 2, above.	1
ID: Adoption at national level of ship-generated waste management legislation	Only St. Vincent & the Grenadines adopted ship-generated waste management legislation at the national level. See previous discussion under national Strategy 2, above.	1
ID: Trainings held are effective	The trainings held received positive reviews from participants who felt that the trainings were useful; participants indicated they would be able to apply the knowledge and skills gained. There is only anecdotal evidence available to assess the extent to which skills and knowledge transferred during trainings were subsequently put into practice.	3 / Unable to assess
ID: Trainings held are adequate to address technical barriers	There remains a need for technical capacity development in the waste management field in the OECS countries. There has been no known follow-up training needs assessment related to waste management in the region, but individuals associated with the respective SWMEs in the OECS countries have indicated that additional technical capacity development would be useful.	2

ID: Technical quality and functionality of waste information monitoring and tracking systems	The waste information monitoring and tracking systems that were developed in a preliminary manner were not technically suitable to allow adoption and ongoing use in the region.	1
ID: Regional interoperability of waste information monitoring and tracking systems	See above impact driver.	1
IS: SWMEs in each of the OECS countries effectively collect, transport, and appropriately dispose of (deposits in landfill) ship-generated waste	There are processes in place to support the reception, transport and disposal of some ship-based wastes, but the volume of waste received is not significant. Certain types of wastes are not received in some countries, such as recyclables and pallets, as well as non-Annex V wastes. However, the overall need for the countries to receive ship-generated waste, at least in the case of cruise ships, has significantly diminished from the time of the project concept. On-board processing of waste has significantly improved on modern cruise ships.	1
IS: Ship-generated waste information is effectively monitored and shared between OECS countries to ensure illegal dumping does not take place between countries	There are currently no mechanisms for monitoring waste disposal within the region. The countries have the capacity to request the waste logs of the cruise ships at each port of call, but actually tracking the waste disposed along the way would require intra-regional communication and a functional tracking system, which would also have to be extended to non-OECS countries.	0

V. SWM Project ROTI Overall Conclusions: Progress toward impact?

The SWM project presents an interesting example of GEF-supported progress toward environmental impacts and Global Environmental Benefits in the context of the ROTI methodology. On the whole, the project concept and design was based on assumptions that did not fully hold true – namely that ship-generated waste was a significant contributor to marine and coastal solid waste pollution in the OECS region, and that it was bound to become a larger problem as the cruise industry continued to grow. The project was designed to assist the OECS countries in meeting their obligations under MARPOL 73/78 to address this issue. The threat was not accurately assessed during the project concept phase, and the nature of the threat that did exist changed during project implementation period.

The waste reception systems envisioned in the project document (i.e. the use of barges and bins) were not fully implemented and have not been sustained, and a regional system for monitoring and tracking waste information was not implemented. At the same time, the perceived environmental threat has been reduced, primarily due to improvements in waste management on-board cruise ships in the region since the time that the project concept was developed. Ship-generated waste dumping remains a relevant environmental issue in the region however, and the OECS countries have not yet facilitated implementation of the “Special Area Designation” under MARPOL 73/78 by providing the required information on waste reception facilities to the United Nations International Maritime Organization.¹⁰

During project implementation it was determined that land-based sources of solid waste presented a more significant issue for marine and coastal solid waste pollution. The World Bank solid-waste management project that was blended with the ship-generated waste management project produced results in this regard, contributing to positive environmental impacts. The solid waste management

¹⁰ For additional recent context, see the article: Associated Press. 2009. “Caribbean balks on ship waste ban,” March 1, 2009.

project is not fully discussed in the context of this ROTI analysis because it was not supported with GEF-funding. The non-GEF solid waste portion of the blended project succeeded in achieving and sustaining results much better than the SWM portion; sources consulted for this analysis indicated that the overall fully blended project had many significant positive benefits, and contributed to environmental impacts, thanks to an increase in the amount of land-based solid waste that is now collected by the independent SWMEs. However, for the SWM project, the outputs produced have not contributed to the ultimate achievement of the necessary outcomes, and the results have not been sustained.

Although original assumptions about the threat were proven to be incorrect, and additional information about the nature of marine and coastal pollution has been gained, it is not possible to assert at present that illegal marine dumping of waste is no longer an issue, particularly without regional monitoring and tracking of ship-generated waste. Without enactment of the Special Area Designation, it is, in fact, legal for ships to dump the majority of waste, as long as it is ground up to less than one square inch pieces, and dumped outside the three-mile limit. Concurrently with the project implementation period, important progress was made within the cruise ship industry in modernizing on-board waste management systems. The Cruise Line International Association now publishes cruise industry waste management practices and procedures,¹¹ and in 2006 the association even partnered with a well known international environmental NGO, Conservation International, on a report analyzing sustainable stewardship in cruise destinations.¹²

Given the above context and relevant issues, the consolidated full ROTI rating for the project is presented in below.

Table 10 Overall Rating of the Project's Impact

Theory of Change Component	Outcome-Impacts Assessment
Strategy 1 (National): Ship-generated waste collection and disposal	1
Strategy 2 (National): Ship-generated waste legal and institutional frameworks	1
Strategy 3 (National): Grenada Dove Protected Area	2
Strategy 4 (Regional): Regional technical support	1
Overall Ship-generated Waste Management Project	1
Rating Description: Key elements of the ship-generated waste project were not fully completed, and the project's theory of change and strategies to execute it were flawed. The barges and bins waste collection system that was supposed to be used to receive and transport ship waste was never fully utilized, and is no longer in use. The Special Area Designation was not implemented, although there are some important reasons why this may not be an appropriate mechanism for the Caribbean – namely that the OECS states do not have the landfill space or technical capacity to handle the volume and different types of waste generated by cruise ships and other vessels, and there are other ports in the region where ships could easily off load waste. Finally, a regional ship waste information monitoring and tracking system has not been implemented, and thus it is not	

¹¹ Cruise Line International Association. 2006. "CLIA Industry Standard: Cruise Industry Waste Management Practices and Procedures," Revised November 12, 2006.

¹² Conservation International. 2006. "From Ship to Shore: Sustainable Stewardship in Cruise Destinations," Center for Environmental Leadership in Business.

possible to determine whether ships are complying with laws and regulations currently in place.

Thankfully, multiple factors have combined to reduce the threat of marine and coastal solid waste pollution. For one, according to anecdotal evidence, the non-GEF supported solid waste portion of the blended project made a significant contribution to reducing land-based sources of marine and coastal solid waste pollution (although this remains an important issue today), which is believed to have been a more critical threat than ship-based sources. Second, during the life of the project there were notable advances made in on-board ship waste management and processing.

Overall there was progress toward impact on the issue of marine and coastal pollution in the OECS states, but the ship-generated waste portion of the project made little contribution to this. However, the fully blended portion of the World Bank effort, the solid-waste project did make positive contributions in this regard.

Without any system for monitoring or reporting of ship waste in the Caribbean there is no way to determine the current extent of this threat. There is extensive anecdotal evidence that solid waste along coastlines remains a moderate problem in the region, as well as marine and coastal pollution resulting from sources such as wastewater and small-scale oil spills. More comprehensive environmental monitoring, and monitoring of ship waste disposal in the region, would be required to assess the current extent of the threat to the marine and coastal ecosystems of the OECS countries.¹³

The Grenada Dove component was a relatively small portion of the project. Some of the component activities were successfully implemented (e.g. construction of physical infrastructure), but others were not completed (e.g. establishment of revenue generating mechanism). Long-term progress toward impacts depended on sustained additional efforts, partially to be carried out under the subsequent MSP, which is the subject of the other ROTI analysis under the OECS CCPE. However, this MSP was also only partially successful, and some results from the SWM project activities were negatively impacted by Hurricane Ivan in 2005 – for example, the destruction of the original visitor center that was built. In this sense, while the SWM component on the Grenada Dove had partial progress toward impact, the theory of intervention has not been supported in a sustained manner to present, and the status of the environmental resources has not changed significantly since the time of the SWM project completion.

¹³ Current analysis by environmental watchdog groups indicates that the cruise industry has a significant ways to go to achieve environmentally sustainable practices on the whole, though such analyses do not deal specifically with dumping of ship-generated waste in the Caribbean. For example, see: Friends of the Earth. 2010. "Cruise Ship Environmental Report Card," available at www.foe.org/cruisereportcard. In recent years there have been efforts to pass a "Clean Cruise Ship Act" in the U.S. Congress, but this legislation has not yet been approved (see: Friends of the Earth. 2009. "Fact Sheet: The Clean Cruise Ship Act," January 15, 2009.)

Appendix 1. List of Persons Contacted

Name	Title	Organization
Dr. Vasantha Chase	Former Director ¹⁴	OECS ESDU
Mr. David Spencer	Manager	Antigua Waste Management Authority
Mr. Dorene O'Marde	Former SWM Regional Coordinator / Chairman AWMA	Antigua Waste Management Authority
Mr. Bristol John Lawrence	Acting Director	Dominica Waste Management Authority
Mr. Florian Mitchel	Manager	Dominica Waste Management Authority
Mr. Selby Da Breo	General Manager	Grenada Solid Waste Management Authority
Mr. Ian Evans	Port Manager	Grenada Ports Authority
Mr. Alphonso Bridgewater	Manager	St. Kitts Solid Waste Management Corporation
Mr. Elvis Newton	Permanent Secretary	Ministry of Health, St. Kitts
Mr. Garry Charlier	Former SWM project Task Team Leader	World Bank

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¹⁴ In the role of ESDU Director Dr. Chase was directly involved with implementation of the SWM project. Dr. Chase is also a member of the evaluation team for the overall OECS CCPE. For this ROTI analysis Dr. Chase has been interviewed solely for the collection of evaluative evidence, and did not contribute in any way to the evaluative analysis under the ROTI assessment.

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Global Environment Facility
Evaluation Office
1818 H Street, NW
Washington, DC 20433
USA

www.gefeo.org