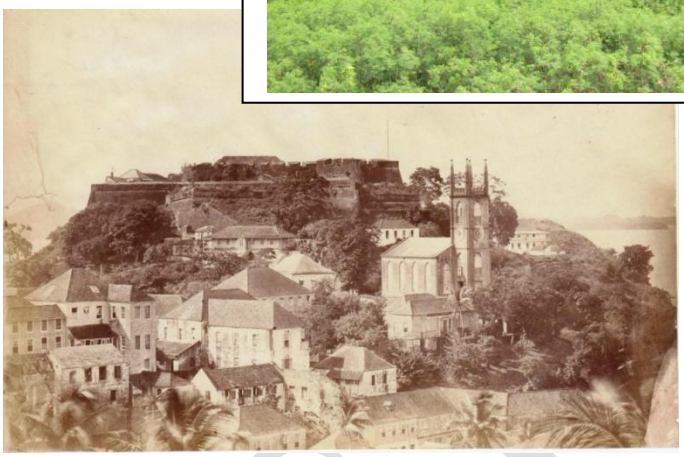


SFG2153

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

FOR THE

OECS REGIONAL TOURISM COMPETITIVENESS PROJECT

World Bank Project P152117 - May, 2016

ACRONYMS

BMP	Best Management Practice
EA	Environmental Assessment
EC	Environmental Consultant
EIA	Environmental Impact Assessment
ESMF	Environmental and Social Management Framework
EMP	Environmental Management Plan
GoG	Government of Grenada
GoSL	Government of Saint Lucia
GoSVG	Government of Saint Vincent and the Grenadines
GTA	Grenada Tourism Authority
IBRD	International Bank For Reconstruction and Development
IFC	International Finance Corporation
ILO	International Labor Organization
MEAs	Multilateral Environmental Agreements
OECS	Organization of Eastern Caribbean States
OP	Operational Policy
PAP	Project Affected Peoples
PCRMP	Physical Cultural Resources Management Plan
PCU	Project Coordination Unit
PPP	Public Private Partnership
PPU	Physical Planning Unit
PPDB	Physical Planning and Development Board
PSIPMU	Public Sector Investment Project Management Unit
RAP	Resettlement Action Plan
RPF	Resettlement Policy Framework
SA	Social Assessment
SGD	St. Georges Declaration (of Principles for sustainable development in the OECS)
SWMA	Solid Waste Management Authority
TA	Technical Assistance
UNCBD	United Nations Convention on Biological Diversity
UNCCD	United Nations Convention to Combat Desertification
UNFCCC	United Nations Framework Convention on Climate Change
WB	World Bank
WBG	World Bank Group
WTTC	World Travel and Tourism Council

EXECUTIVE SUMMARY

The Governments of Saint Vincent and the Grenadines (GoSVG), Saint Lucia (GoSL), and Grenada (GoG) are collaborating with the World Bank (WB) to implement a Competitiveness Program with the objective to lay the foundation to improve the competitiveness of the tourism sector in the OECS region through (a) increasing tourism spending at selected pilot program locations in each of the participating countries; (b) establishing a strategic approach to tourism development; (c) facilitating the movement of people among participating islands, using existing ferry systems; and (d) supporting better quality of services in the tourism sector.

The program will finance physical infrastructure including the improvement/ rehabilitation of the historic sites of Fort George in Grenada. In Saint Vincent and the Grenadines rehabilitation is planned for historic Fort Charlotte. Works in Saint Lucia will focus on beautification and improvements to the downtown Castries district, including Derek Walcott Square, William Peter Boulevard, possibly the Vigie Lighthouse, Battery Meadows and George V. Park Botanical Gardens, as well as a façade improvement programme and improvements to streets, docks, and walkways in the downtown area to improve visitor mobility.

The sub-project locations have been field-checked by World Bank staff and have been inventoried and assessed in a preliminary form through this ESMF, which includes a top-level Environmental Assessment (EA) to describe the environmental impacts of the project on a program-wide level, and a preliminary screening of potential social risks and impacts. In addition this ESMF includes an EMP with environmental safeguards to guide the implementation of relatively simple works for which no additional assessment would be required. As many of the specific details of the investment works are not yet fully defined, this ESMF also includes general guidelines to screen possible future subprojects, identify potential impacts, develop mitigation plans, and include them into project environmental management. This ESMF also includes criteria to identify sub-projects which require further assessment due to complex or sensitive conditions, such as the restoration of historic Fort George and Fort Charlotte, and provides recommendations for the development of an Environmental Assessment (EA) or Social Assessment (SA), as needed, including a Physical Cultural Resources Management Plan (PCRMP) to guide those activities.

The World Bank Environmental and Social Specialists who contributed to this ESMF recognize, appreciate, and are grateful to the Project Coordination Units (PCUs) in Grenada, Saint Lucia, and Saint Vincent and the Grenadines, that would have helped to develop and coordinate this ESMF.

TABLE OF CONTENTS

FIGURES

TABLES

1.0 INTRODUCTION

1.1 Project Background

The OECS (Organization of Eastern Caribbean States) is an intergovernmental organization dedicated to economic harmonization and integration, protection of human and legal rights, and the encouragement of good governance between countries and dependencies in the eastern Caribbean region. The main organ of the OECS, the Secretariat, is based in Castries, Saint Lucia. The islands of Saint Lucia, Grenada, and Saint Vincent and the Grenadines are the southernmost members of the OECS and are the subject of this Project (Figure 1).

The Governments of Saint Vincent and the Grenadines (GoSVG), Saint Lucia (GoSL), and Grenada (GoG) are collaborating with the World Bank (WB) to implement a Competitiveness Program with the following objectives:(i) facilitate the movement of tourists within the region using ferries; (ii) improve selected touristic sites; and (iii) strengthen implementation capacity for regional tourism market development.

The program will finance physical infrastructure including the improvement/ rehabilitation of the historic sites of Fort George in Grenada. In Saint Vincent and the Grenadines rehabilitation is planned for historic Fort Charlotte. Works in Saint Lucia will focus on beautification and improvements to the downtown Castries district, including Derek Walcott Square, William Peter Boulevard, and possibly other locations such as the Vigie Lighthouse, Battery Meadows and George V. Park Botanical Gardens, as well as a façade improvement programme and improvements to streets, docks, and walkways in the downtown area to improve visitor mobility.

According to the Bank's Environmental Assessment (EA) Policy (Operational Policy OP 4.01), the OECS Regional Tourism Competitiveness Project is classified as Category B, meaning that environmental impacts for the type of work anticipated under the project are expected to be moderate in nature and can be managed through the application of appropriate engineering and management measures. This ESMF includes a top-level Environmental Assessment (EA) to describe the environmental impacts of the project on a program-wide level, as well as a preliminary screening of potential social risks and impacts associated with the project. In addition, this ESMF includes an EMP with environmental safeguards to guide the implementation of relatively simple works for which no additional assessment would be required. Since many of the specific details of the investment works are not yet fully defined, this ESMF also includes general guidelines to screen possible future subprojects, identify potential impacts, develop mitigation plans, and include them into project environmental and social management. This ESMF also includes criteria to identify sub-projects which require further assessment due to complex or sensitive conditions, such as the restoration of historic Fort George and Fort Charlotte, and provides recommendations for the development of a Physical Cultural Resources Management Plan (PCRMP) to guide those activities.

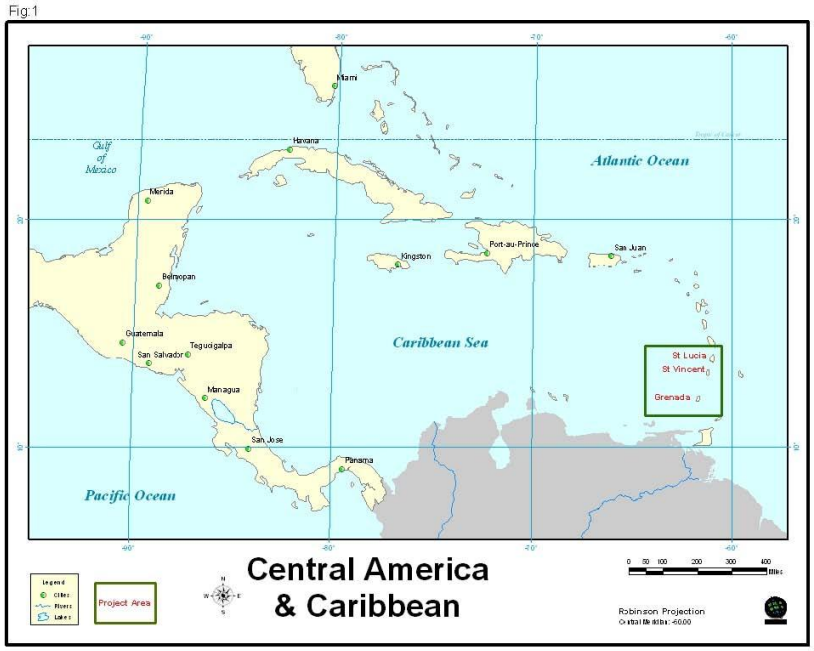


Figure 1. Location Map of St. Lucia, Grenada, and St. Vincent and the Grenadines within the Central America & Caribbean region

1.2Project Description and List of Subprojects

The Project objectives will be achieved through the following four components:

Component 1: Component 1: Facilitation of the Movement of People *(*US$ 2.7M). This component aims to strengthen regional integration and facilitate the movement of people in the region through: (i) support for the development of a single regional space for immigration and customs entry of international tourists; (ii) development of a pilot ferry system through technical assistance, IT and small infrastructure improvements.

Sub-Component 1.1 (country specific) consists of **TAs to develop a single regional space for Immigration and Customs entry of international tourists (US$ 1.4M).** At national level, this sub-component will provide (i) infrastructure investment (works) to turn domestic terminals into international ones[1], and (ii) provision of goods: scanners and other IT needs for immigration and customs clearance. At regional level, this sub-component will provide TAs to support review of the existing regional immigration system (CARISEC);review of existing OECS Treaty for the creation of a single economic space and identification of potential regulatory and institutional gaps on the free movement of people and goods, including port charges; develop a plan for the implementation of a Schengen Style single space; and transition the region to a common customs

[1] This includes small refurbishing investments in the passenger ferry terminals and the addition of simple facilities including small customs and immigration booth/building and security screening equipment and infrastructure.

and immigration clearance platform for persons, by supporting the region in identifying and agreeing on a common platform[2].

Sub-Component 1.2 (regional) consists of the **development of a pilot regional ferry corridor (US$ 1.3M).** This component will provide gap financing for the operation of the ferries; IT support for information technology software and hardware required for a centralized ferry scheduling system; TA to review technical standards and enforcement for water transport, including safety standards; and TA to support the dialogue between the governments and the ferry operators.

Component 2: Pilot Tourism Investments (US$ 18.5M). The planned investment in signature attractions for each OECS island is an essential step in the strengthening of the competitiveness of tourism in the region. The selected pilot tourism products for each country are: (i) the rehabilitation of Fort George, as part of the development of a tourism product around the Carenage area in Grenada; (ii) reinforcement of the marine-based tourism product offering in St. Vincent and the Grenadines, and rehabilitation of Fort Charlotte on the mainland; and (iii) enhancement and beautification of Castries City waterfront in St. Lucia[3].

As a first step, this country-specific component will finance a number of technical assistance interventions to support the anchor tourism products, including feasibility studies, technical, engineering, social and environmental assessments, as well as rehabilitation designs; and marketing, business, commercialization and management plans for investments identified. The second step would include the following works and technical assistance:

- **St. Vincent and the Grenadines – (i)** *Improve the competitiveness of its flagship Marine-Based Tourism sector through d*evelopment and implementation of a Marine Tourism Festival; upgrading anchorage site infrastructure: Investments include safety and security, waste collection and management, facilities, equipment, boats and training (for Police, coast guard, rangers and guards), upgrades to walkways, signage, in pilot sites in SVG; and, TA by supporting preparatory studies for the SVG Marine Training Institute, STWC training[4]; and, (ii) *Limited rehabilitation of Fort Charlotte*. Support for infrastructure investment and goods would include an interpretation center, roof repair, cafeteria, vending space, wall repair, a car park, access, and minor repairs of a bridge to the site. TA to craftsmen on selection and display of products they offer to tourists would also be provided.

- **Saint Lucia -** The strengthening of a Castries City Tourism product including (i) *Infrastructure and institutional support for improved urban mobility in Castries* through technical assistance, civil works and provision of goods, including works in reconstruction of the intersection of Jeremie Street and Compton Highway;

[2] The implementation of the common platform, including any hardware and software that may be required could be implemented through additional financing under this Project.

[3] For reasons why these sites were selected, please see background paper titled "World Bank OECS Regional Tourism Competitiveness Project: Tourism Site Development and PPP Options".

[4] The implementation of this study could be supported through additional financing under this Project.

works to support the organization of pedestrian and taxi movements near La Place Carenage; works to support improvements of sidewalks in other key parts of town; works and goods to support replacement of all other traffic lights and improvements of junction; and TA for institutional strengthening; (ii) *Urban and tourism development, including of sites and attractions in Castries,* including for works related to the upgrading the market and surrounding area; works and goods for improving visitor experience walking through downtown Castries and Boulevard area (signage, strategically located maps, interactive visitor kiosks with information on events, historic relevance, tours, interpretation facilities, benches, rest areas, cleanliness including additional waste bins and recycling, safety and security upgrades including additional lighting); Façade improvement programme; Works related to the upgrading of the botanical gardens (landscaping, fence repair, lighting, benches, trash cans); TA for the vendors in the market regarding how to showcase goods, alternate goods to consider, etc.; and, (iii) *Improving the business environment* through Improving the process of starting the business through TA for supporting regulatory changes and IT support for implementing a system of unique identifier; Improving the process of obtaining construction permits through TA for creating a single window for construction permits and IT support for implementing a single window; Strengthening the protection of minority shareholders through TA for supporting the drafting of legislation; Improving the process of registering property through TA for supporting the modernization of the land registry, including associated regulatory reforms, and IT support for implementing a modern property registry; Linking the relevant registries: TA to support the linking of the relevant registries, including associated regulatory reforms (e.g. collateral registry, business registry, motor vehicle registry, etc.), and IT support for the linking of the relevant registries; and Populating the new registries with data from the previously existing registries through TA to support the transfer the data (including the collateral registry, new property registry, business registry).

- **Grenada -** rehabilitation of *Fort George historic site* (repairs and cleanup of Eastern barracks and adjacent building of the Fort, development of an interactive interpretation center, coffee and gift shops, signage, vending booths, parking lot, washrooms)[5]. TA to craftsmen on selection and display of products that they offer to tourists would also be provided. Support for infrastructure and works would include a roof on the East Barracks; stone work and masonry on the ground floor; internal timber frames, windows, and doors; an interpretation center; displays, railings, walkways, and signage; gift shop and coffee shop; parking lay by; rampart repair and general cleanup.

- **Component 4: Project Implementation Support (US$2.0M).** This country-specific component aims to support the overall implementation of the project. It will provide TA,

[5] It is critical to ensure that the Police Headquarters is moved out of the Fort before the rehabilitation work could start. A government policy to move the Police HQ has already been approved by the Cabinet and a location to move the HQ identified. The government expects to support this move with financing from the Caribbean Development Bank.

training and logistical support (as the case may be, office equipment and/or software) to support: (i) capacity-building/staffing of the existing Project Coordination Units (PCUs) on project management, procurement, financial management, safeguards, Monitoring and Evaluation (M&E) and technical expertise in each OECS member country as needed, during the execution of the project; (ii) M&E of project's results, including performance indicators; (iii) consulting services for project audit in each country; (iv) other operating costs that would be defined prior to Appraisal.

2.0 LEGAL AND REGULATORY FRAMEWORK

2.1 National Laws

All the islands within the study area have ratified several international environmental Agreements and Conventions and by their signature of the St. Georges Declaration (SDG) of 2001 have committed themselves to the Principles for Environmental Sustainability in the Organization of the Eastern Caribbean States (OECS). They all have in place several pieces of legislation and institutions to protect their environments; some of those legislations were originally enacted in the 1940's and amended in recent times.

The legal and institutional framework for environmental management in those islands have been influenced by Government's policies over the years and to a great extent, the policies of some donor agencies and regional and international agencies like the World Bank, Caribbean Development Bank (CDB) the Organization of East Caribbean States and the United Nations. Their main focus has been on the protection of sensitive and important natural resources, protection of public health and safety, and the encouragement of appropriate and feasible macroeconomic and sectoral policies, which promote sound environmental and natural resource management principles and practices. Such policies impact positively on a wide range of resources and issues that are of great importance to their economic development and the welfare of the society in general. Some of those resources and issues include the forest, mangrove swamps, marine ecosystems, historic buildings and sites, sustainable land use, wildlife protection, pollution abatement, solid waste management and waste disposal.

Another commonality among OECS national law systems is the EIA process, which is typically controlled by the Physical Planning Department (or Development Authority) in each country. Set categories of project types deemed of potentially high impact are required to prepare an EIA, for which the terms of reference are provided by the relevant Department or Authority. Once prepared the EIA is circulated to a number of referral agencies which are made up of some of the other agencies and statutory bodies with some responsibility for environmental management, to approve or make additional recommendations if necessary.

All development projects including commercial buildings, apartments, hotels, industrial building, residential or commercial subdivisions with civil works such as roads, drains, retaining walls, must submit their plans to the Physical Planning Department (or Development Authority) for approval before works can commence. This is to ensure integrity in the designs as well as orderliness of the development in keeping with the national vision. For all activities in the Project, the requirements of the relevant Physical Planning Department (or Development Authority) must be followed, as well as all laws and regulations pertaining to environmental protection in Saint Vincent and the Grenadines, Saint Lucia, or Grenada.

A more complete discussion of the regulatory frameworks of each OECS country is provided in Appendix 1.

2.2 World Bank Safeguard Policies

The World Bank projects and activities are governed by Operational Policies (OP), which are designed to ensure that the projects are economically, financially, socially and environmentally sound.[6] The Bank has specific safeguard policies, which include Environmental and Social Assessments and policies designed to prevent unintended adverse effects on third parties, Project Affected Peoples (PAP) and the environment. These specific safeguard policies address natural habitats, pest management, cultural property, involuntary resettlement, indigenous peoples, safety of dams, projects on international waterways and projects in disputed areas[7].

The World Bank's environmental and social assessment policy and recommended processing are used to identify, avoid, and mitigate the potential negative environmental and social impacts associated with Bank lending operations and are described in the Bank's **Operational Policy (OP)/Bank Procedure (BP) 4.01: Environmental Assessment**. This policy is considered to be the umbrella policy for the Bank's environmental 'safeguard policies' which among others include: Natural Habitats (OP 4.04), Forests (OP 4.36), Pest Management (OP 4.09), Physical Cultural Resources (OP 4.11), Safety of Dams (OP 4.37), Indigenous Peoples (OP 4.10) and Involuntary Resettlement (OP 4.12).

Under OP4.01 the Bank will undertake **environmental and social screening** of each proposed project to determine the appropriate extent and type of environmental and social assessment required. Proposed projects are classified into one of four categories, depending on the type, location, sensitivity, and scale of the project and the nature and magnitude of its potential environmental impacts. The categories of potential environmental impacts are classified as A, B, C and FI, as described in Table 2 below:

Table 1: World Bank project categories

Category	Description
Category A	Category A project is likely to have significant adverse environmental impacts that are sensitive, diverse, or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works. The EA for Category A project examines the project's potential negative and positive environmental impacts, compares them with those of feasible alternatives (including the "without project" scenario), and recommends any measures needed to prevent, minimise, mitigate, or compensate for adverse impacts and improve environmental performance. For Category A project, a borrower is responsible for preparing an Environmental Impact Assessment (or a suitably comprehensive regional or sectoral EA).
Category B	Category B project has potential adverse environmental impacts on human populations or environmentally important areas, including wetlands, forests, grasslands, and other natural habitats - which are less adverse than those of Category A projects. These impacts are site specific; few if any of them are irreversible; and in most cases mitigation measures can be designed more

[6]Source:http://www.worldbank.org/opmanual

[7]Source:http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTSAFEPOL/0,,contentMDK:20507440~pagePK:64168427~piPK:64168435~theSitePK:584435,00.html

	readily than for Category A projects.
Category C	Category C project is likely to have minimal or no adverse environmental impacts. Beyond screening, no further EA action is required.
Category FI	Category F or FI project involves investment of Bank funds through a financial intermediary, in subprojects that may result in adverse environmental impacts.

After review of the project and its components, the overall OECS Regional Tourism Competitiveness Project has not been deemed to have any major negative environmental impacts but because of the presence of the civil works with minor to moderate impacts, the project has been classified as a **Category B project**. The implementation of appropriate mitigation and management measures will assist in reducing any potential negative impacts from the various project components.

The World Bank Safeguard Policy OP 4.01 for Environmental Assessment (EA) is triggered, and requires that an Environmental and Social Management Framework (ESMF) be prepared along with an Environmental Management Plan (EMP) to guide recommended measures. Four other World Bank Safeguard Policies dealing with natural habitats, physical cultural resources, pest management, and involuntary resettlement are also triggered by the Project, and are briefly described below[8]:

- Operational Policy 4.04 on Natural Habitats seeks to ensure that World Bank-supported infrastructure and other development projects take into account the conservation of biodiversity, as well as the numerous environmental services and products which natural habitats provide to human society. The policy strictly limits the circumstances under which any Bank-supported project can damage natural habitats (land and water areas where most of the native plant and animal species are still present).This policy was triggered as a precaution to ensure that any affected natural habitats are adequately protected, because some of the project sites may take place within parks or protected areas.

- The objective of OP/BP 4.11 on Physical Cultural Resources is to avoid, or mitigate, adverse impacts on cultural resources from development projects that the World Bank finances. Cultural resources are important as sources of valuable historical and scientific information, as assets for economic and social development, and as integral parts of a people's cultural identity and practices. The fort restoration and rehabilitation works envisioned under the Project would clearly affect these important historical resources, triggering the policy. A Physical Cultural Resources Management Plan (PCRMP) will need to be prepared as part of the EMP to ensure that these resources are not damaged.

- Operational Policy 4.09 on Pest Management seeks to ensure that rural development and health sector projects avoid using harmful pesticides. It is possible that minor, incidental use of pesticides may also occur under the Project in the treatment of foundations for termites, or in extermination or fumigation of structures as part of rehabilitation or maintenance. The Bank requires that any pesticide it finances be manufactured,

[8]Source: http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTSAFEPOL/0,,contentMDK:20543943~menuPK:1286597~pagePK:64168445~piPK:64168309~theSitePK:584435,00.html

packaged, labelled, handled, stored, disposed of, and applied according to standards acceptable to the Bank. The Bank does not finance formulated products that fall in WHO classes IA and IB, or formulations of products in Class II, if (a) the country lacks restrictions on their distribution and use; or (b) they are likely to be used by, or be accessible to, lay personnel, farmers, or others without training, equipment, and facilities to handle, store, and apply these products properly. This policy has been triggered as a precaution, to allow pesticides to be used as part of the Project in minor quantities. The EMP specifies that such use must be made by a licensed and registered professional contractor, trained and skilled. The ESMF screening procedures specify that any significant use or purchase of pesticides is excluded and ineligible under the Project.

- Operational Policy 4.12 on Involuntary Resettlement seeks to prevent severe long-term hardship, impoverishment, and environmental damage to the affected peoples during involuntary resettlement.The overall objectives of the Bank's policy on involuntary resettlement are the following:(a) Involuntary resettlement should be avoided where feasible, or minimized, exploring all viable alternative project designs.(b) Where it is not feasible to avoid resettlement, resettlement activities should be conceived and executed as sustainable development programs, providing sufficient investment resources to enable the persons displaced by the project to share in project benefits. Displaced persons should be meaningfully consulted and should have opportunities to participate in planning and implementing resettlement programs.(c) Displaced persons should be assisted in their efforts to improve their livelihoods and standards of living or at least to restore them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher. The purpose of the Resettlement Policy Framework (RPF) is to clarify resettlement principles, organizational arrangements, and design criteria to be applied to subprojects. For operations that may involve involuntary resettlement, the Bank requires that the Borrower screens subprojects to ensure their consistency with OP 4.12. The RPF is to be submitted by the Borrower, prior to appraisal, conforming to the policy, and is attached as Annex 5 of this ESMF.

2.3 Environmental and Social Management Capacities

Within each OECS country the duties of environmental and social risk management are shared by several agencies or entities. The various management agencies operate under legislation that attempts to guide them but the issues of overlapping and sometimes unclear responsibilities continue to plague effective operations and responses to a number of environmental and social risk management issues. For example, in some coastal development projects, jurisdiction is shared by the Fisheries Authority, the Forestry Department and the Physical Planning Department. These forms of overlap along with lack of adequately trained staff, technical and financial resources coupled with absence of concerted, coordinated, cooperative efforts by the various agencies have contributed to limitations in environmental management. Such limitations coupled with agencies heavy workloads and deadlines make it difficult if not impossible for them to single-handedly contribute to monitoring and ensuring environmental and social safeguards as prescribed.

A separate Environment Department is often charged with coordination of higher level initiatives, such as planning and policy efforts, or providing technical support in the review of EIAs. Here it is worth noting that there is a dormant cabinet appointed multidisciplinary team called the National Environment Advisory Board that has a mandate to ensure environmental safeguards for SVG. In Saint Lucia the Ministry of Public Service, Sustainable Development, Energy, Science and Technology is the government body responsible for the following-up of the international commitments signed by Saint Lucia related with environmental issues, including the Climate Change Convention (UNFCC). The Sustainable Development, Energy, Science and Technology Section oversees all matters relating to sustainable development within the country and ensure that the various protocols are adhered to. It is the lead environmental agency in the country and spearheads the National Environmental Policy (NEP), National environmental Management strategy (NEMS), the national Climate Change Committee (NCCC), and other initiatives related to biodiversity, marine and terrestrial pollution, energy efficiency, sustainable development and environment.

In practice the beneficiary agencies (e.g. Education, Housing, Fisheries, and Transport) must play a role in ensuring that environmental and social safeguards are incorporated into their projects. Typically, the ministries of Public Works or Infrastructure are charged with oversight and supervision of larger projects. Works contracts must include environmental and social provisions, and often a separate Design and Supervision Consultant is selected to prepare the detailed design and include the relevant environmental and social mitigation measures.
The World Bank's primary contact point with OECS governments on environmental and social matters is the Project Coordination Units (PCU) which are typically based in the Ministry of Finance. The PCU's responsibility is primarily of a fiduciary and safeguards nature, as the manager of funds for the Project. The PCUs release contracts for the various works that include the relevant mitigation measures, as specified in this ESMF. Supervision and oversight of the works to ensure compliance is ultimately the responsibility of the PCU, but in practice it is shared by the Design & Supervision Consultant, the beneficiary Agency, and for larger projects, a separate implementing agency (e.g. Public Works).

To ensure that environmental requirements are tracked and managed, the PCUs have each designated a safeguards point of contact, typically an engineer with shared responsibilities to beneficiary or implementing agencies. This capacity is supported by the hiring of external Consultants as needed for specific project needs. Primary responsibility for the implementation of social safeguards policies also lies with the PCUs. Screening of sub-project sites for potential social risks and impacts, and subsequent development and implementation of related mitigation measures, is undertaken by the Social Development Specialist(s) within the Project Coordination Unit of each borrower country.

3.0 DESCRIPTION OF EXISTING ENVIRONMENT

The OECS countries share many common characteristics of topography, geology, ecology, water resources, history and demographics. This chapter of the ESMF provides a brief summary of physical and social conditions in the region.

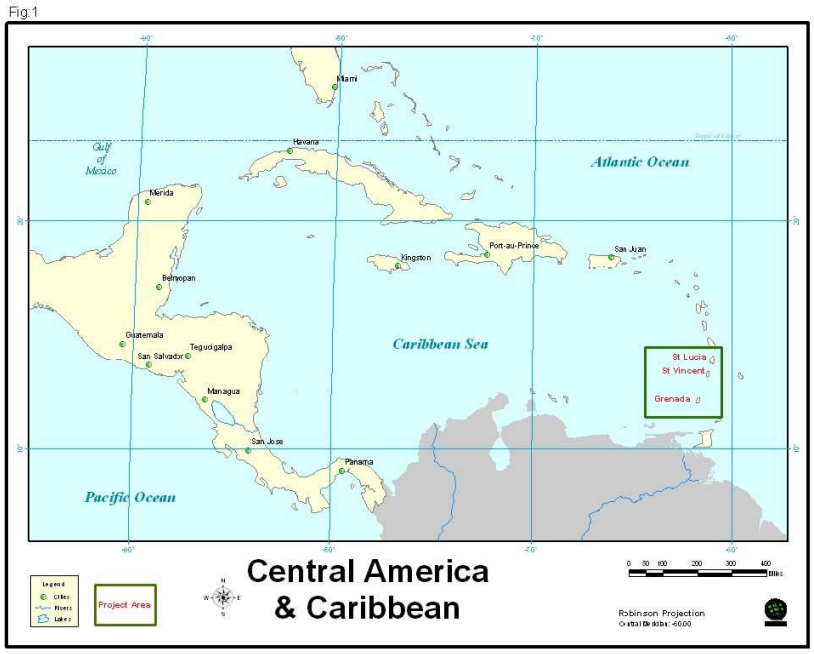
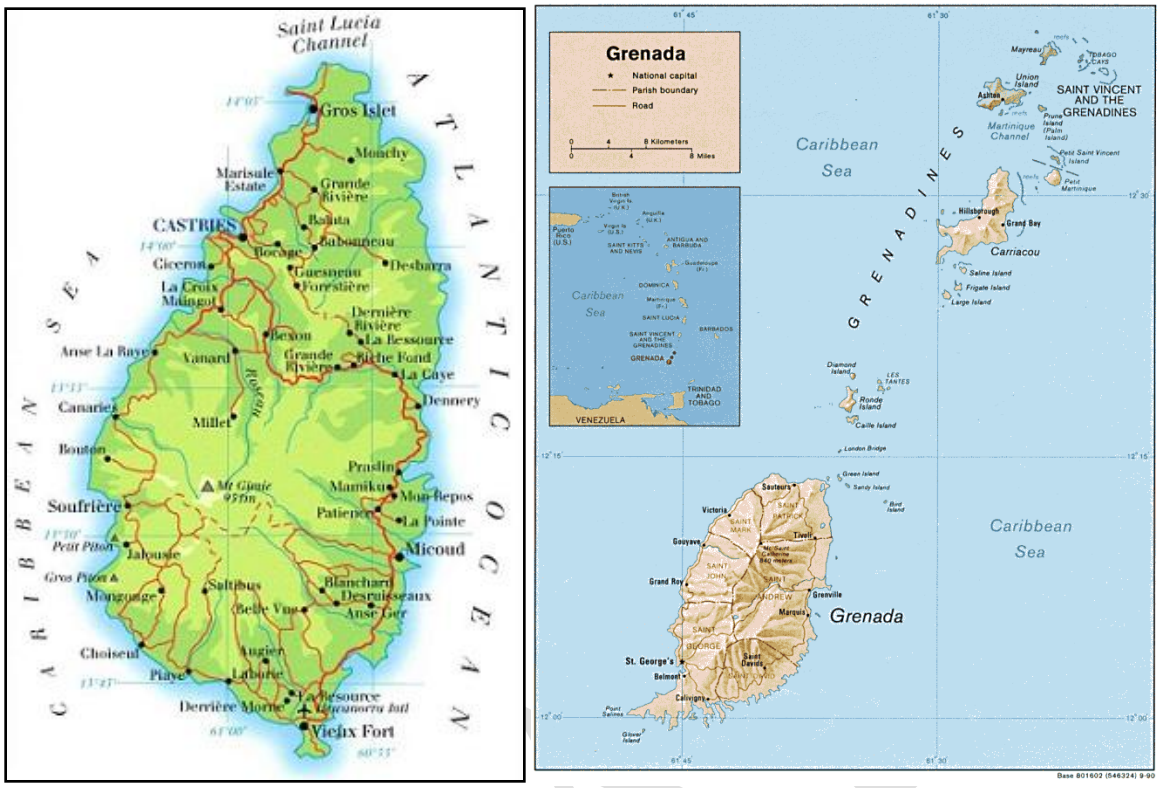


Figure 1. Location Map of Grendada,Saint Lucia, Saint Vincent and the Grenadines, within Central America & Caribbean region

3.1 Physical Environment

Saint Vincent and the Grenadines consists of a main island and a chain of 32 islands and cays, approximately 389 km^2 (150 square miles) in area. Saint Lucia is located between Saint Vincent to the south and Martinique to the north in the Caribbean Sea bordering the Atlantic Ocean and is approximately 616.4km^2(238 square miles) in area. Grenada, which includes the inhabited islands of Grenada, Carriacou, and Petite Martinique to the northeast, has an area of 344 sq km (131 sq mi) and a coastline of 121 km.

All are archipelagic state in the Eastern Caribbean (Figure 1) of volcanic origin, formed by the active tectonic process of crustal subduction which creates deep ocean trenches and steep coastal mountain ranges. Volcanic ash has created rich and fertile soils which support lush vegetation. Apart from recent alluvial deposits such as river and beach sands, and a few outcrops of sedimentary and marine deposits such as limestone and coral, only igneous rocks are found on most parts of the islands.



Figures 2a-2b. Maps of Saint Lucia, Saint Vincent and the Grenadines and Grenada

The islands each have a central axial range of mountains running north-south, with steep topography and a narrow coastal belt and limited flat land area. Relief is pronounced with the highest peaks exceeding elevations of 4,000 feet in Saint Vincent, 3,100 feet in Saint Lucia, and 2,700 feet in Grenada (Figures 2a-2b). The volcanic mountains divide the islands between an eastern or windward side and a western or leeward side. Rain shadow effects distribute the rainfall across the islands with drier conditions in the southern and western parts of the islands, while the orographic effect creates a steep precipitation gradient from the coast to the highlands. In Saint Lucia, annual rainfall ranges from over 250 inches in the wet central mountainous interior to below 60 inches in the dry coastal locations; Grenada is somewhat drier with maximum rainfall exceeding 160 inches in the highlands. Watersheds tend to be steep, narrow, and prone to flash flooding from extreme rainfall events that include hurricanes and tropical depressions or troughs. Rainfall is bimodal with a wet season from June to November, with most precipitation occurring in the tropical storm season (Figure 3).

The OECS countries are vulnerable to a number of natural hazards such as hurricanes, earthquakes, volcanic activity, drought, tsunamis, flooding, and landslides. The effects of these phenomena can be exacerbated by the activities of population such as deforestation, indiscriminate garbage disposal, poor building practices, and unplanned settlements in environmentally sensitive areas. Periodic droughts also place tremendous strain on local and national water supplies, especially combined with high sedimentation rates often exacerbated by watershed erosion which clog water intakes and reservoirs. Periodic heavy rainfall events cause major disasters from landslides, debris flows, river floods, causing major damage to

infrastructure, major roadways and settlements, resulting in loss of life and property. Seismic and volcanic hazards are appreciable and vary from island to island; the Soufriere in Saint Vincent is considered the region's most active volcano, erupting twice over the last century and causing fatalities and displacement of populations. Costal zones are also vulnerable to storm surge during hurricanes typically ranging from 2 to 5 meters. The windward (eastern) sides of the islands are exposed to long-fetch waves across thousands of miles of open Atlantic Ocean, and consequently there are numerous erosion "hot spots" vulnerable to wave energy. Tsunamis also pose a hazard in the Eastern Caribbean and can be caused by earthquakes, by avalanches off the side of La Soufriere or other volcanoes (Le Friant and others, 2009), and by eruptions of volcanoes particularly those lying on the seafloor such as Kick-em Jenny near Grenada, which could result in a 2-meter tsunami arriving at St. Vincent within 15 minutes of eruption (Gibbs, 2001).

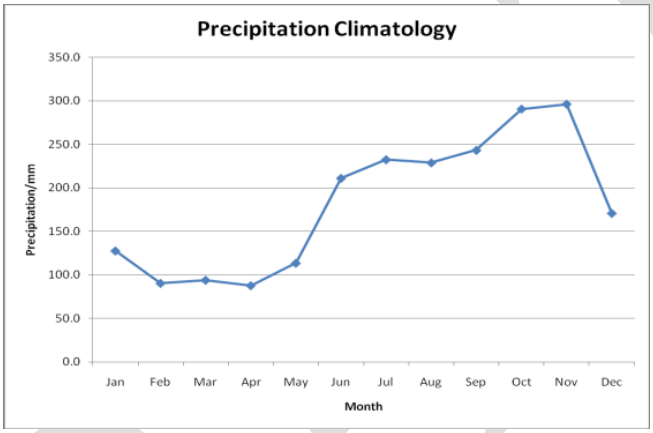


Figure 3. Mean annual monthly rainfall for Saint Vincent (ET Joshua Airport 1987 -2008). Units are mm/month.

3.2 Biological Resources and Land Use

The natural vegetation of the OECS countries exists in several stages of development and/or disturbance caused by human and natural (volcanic) interventions, and is therefore defined by a climax vegetation formation based on environmental gradients. The concentric variations of rainfall with elevation also give rise to concentric variations in vegetation. The physical and environmental conditions of rainfall, soils, elevation, terrain, and exposure to the trade winds, results in a remarkable diversity of eco-systems and forest types, including elfin woodland on high mountain summits, rain forest and palm brakes on slopes and along valleys, deciduous seasonal forests and cactus scrub on lowlands, and littoral woodlands, mangrove and swamps on the coasts.

Ecosystems in OECS countries are highly diverse, with more than 1,000 species of flowering plants, more than 150 species of ferns, and more than 100 species of birds. Table 2 provides a summary of endemism and biodiversity in Grenada. Forests are key to biodiversity, in some cases exhibiting more than 100 species of trees per hectare. Endemism is high, with a number of ground-dwelling amphibians and reptiles unique to each island; the parrots in Saint Lucia and

Saint Vincent are also endemic to each island and are cherished as representative of national identity.

Table 2. Endemism and Biodiversity in Grenada

Resource	No. of species	No. of endemics
Plants	Approximately2000	3
Amphibians	4	0
Reptiles, Snakes, Lizards	5 8	1 0
Birds	Approximately150	-18threatened 1(+1sub-species)
Marine and Brackish Water fauna	233 and 69 respectively	
Freshwater fauna	17	
Mammals (indigenous)	4	0

Source:ICPB1988

Grenada has a forest area of 15,000 hectares, about half of the three island's 33,669 hectares total land area. The mountainous forest lands have been set aside as Forest Reserve or National Park land to various degrees. Deforestation is a common challenge and caused serious damage to many watershed areas during the heyday of banana cultivation. Clandestine cultivation of ganja may occur in the roughest mountainous areas of some of the islands, and is an emerging major cause of deforestation and land degradation. Protected areas in Grenada and Saint Vincent are shown in Figure 4a and 4b, respectively.

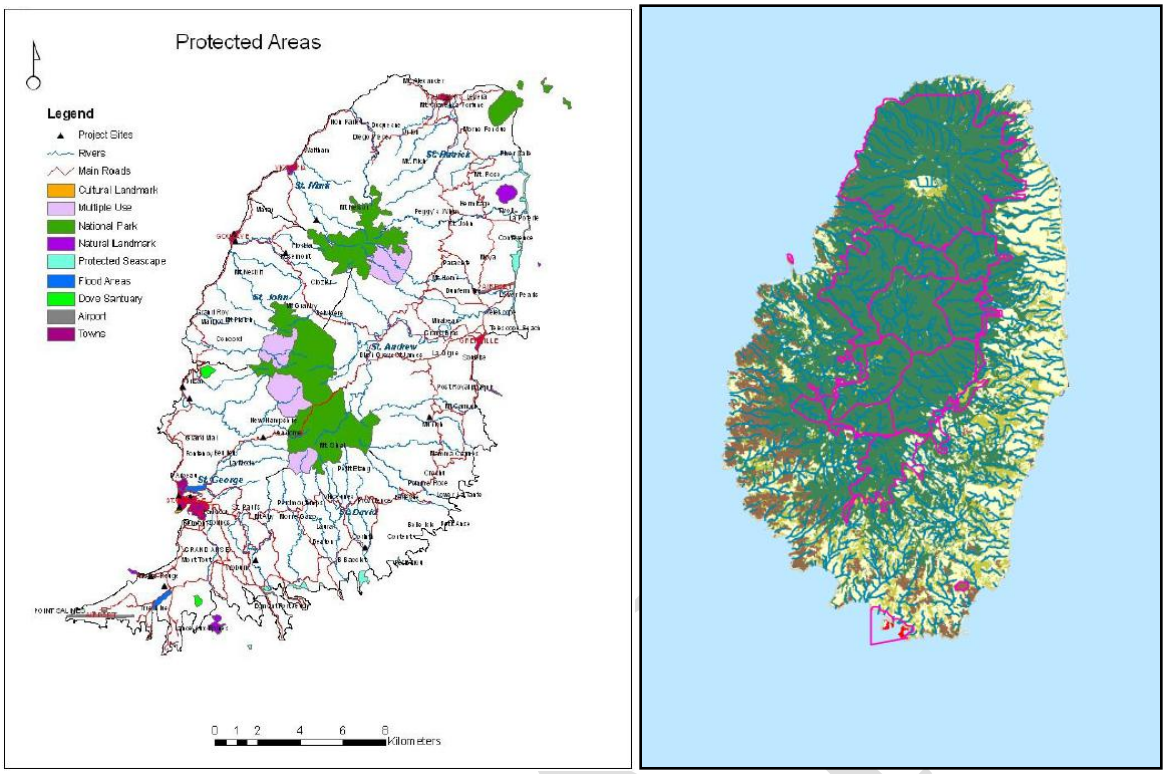


Figure 4a, 4b. Map of Protected Areas in Grenada (left) and Saint Vincent (right).

3.3Socio-economy and Human Settlement

The Eastern Caribbean islands were originally populated by Amerindian peoples, known as Kalinago (Carib) and Arawak Indians. The Spanish arrived in 1498 and built secure harbour locations which attracted traders and some French settlers during the 16th century. The British fought for control of the islands and by the late 18th century the area was under British rule.

As of 2012, Saint Vincent and the Grenadines had approximately 108,570 inhabitants, Saint Lucia had approximately 169,000 inhabitants, and Grenada had about 106,000. Historical settlement patterns have followed along flat coastal areas near major rivers or fishing banks. The population of Saint Vincent and the Grenadines is concentrated in the south of the island, particularly in Kingstown and Calliaqua and their suburbs. The population of St. Lucia is concentrated in the north of the island, particularly the northwestern and northeastern part which includes Castries, Gros Islet, and Babonneau, in what is now referred to as the Northwest Urban Corridor. In Saint Lucia and mainland Saint Vincent, as the population has increased the settlement pattern has slowly creeped up from the low lying urban areas into the surrounding hillsides creating expanding suburban settlements. Many of these settlements are unplanned. This urban sprawl is largely the result of rural urban migration. Lower income households generally reside in some of these areas on the hillsides, and coupled with inadequate drainage and unplanned sewage systems and services, find themselves vulnerable to landslides and exposures to hurricanes.

In the Easter Caribbean, much of the population (90% or more) is of African descent, while the remainder is a combination of East Indian, European and indigenous people. St. Vincent and the Grenadines is internationally classified as a lower-middle-income country. The economic development is structured around the agriculture, tourism and international business services sectors. The Gross Domestic Product (GDP) per capita (2008) is US$5,515; the literacy rate is 96% and the life expectancy at birth is 74 years. In 2009, the overall Human Development Index (HDI) Value is 0.772 and the country is ranked 91st in terms of HDI. Grenada's economy is structured mainly around the tourism and agriculture sectors, with a GDP of US$8577.61 per capita at market value (2014); and an HDI of 0.77. The life expectancy is 76 years for females and 71 years for males; and the literacy rate is 97%. The country is classified as an upper middle class income country by the World Bank.

In recent decades the economy of the Eastern Caribbean is increasingly dominated by tourism. In Saint Vincent in 2004 the number of stop over tourists reached 86,700 with tourism receipts totaling US$95.6 million. Due to the contraction of the agricultural sector, the tourism sector is now making a greater contribution to national development with direct investment and ancillary development in support service sectors. This trend is anticipated to increase as national development policy seeks to place the hospitality sector within the main engines of economic growth.

3.4Physical Cultural Resources

The rich culture and history of the Eastern Caribbean have created physical cultural resources, which are features or objects of interest and value to the nation's people because of their archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. These may include artefacts, objects, sites, structures, groups of structures, and natural features and landscapes, and may be located in urban or rural settings, above or below ground, or under water. Cultural resources are important as sources of valuable historical and scientific information, as assets for economic and social development, and as integral parts of a people's cultural identity and practices. Recognition of physical cultural resources may be at the local, national level, or within the international community.

National treasures in the Eastern Caribbean typically include the Botanic Gardens, which have a rich heritage and longevity, being some of the largest and oldest in the western hemisphere. Petroglyphs are found in numerous locations (e.g. Layou in Saint Vincent). Marine Preserves like the Tobago Cays in Saint Vincent are also of international renown, as are forest trails in the mountainous interiors of the Eastern Caribbean islands.

Historical buildings, antiquated Catholic Churches, and old cemeteries are typically features of community importance or international renown, often featuring excellent stonemasonry work and architectural style. Fort Charlotte also ranks as one of the key historic centerpoints on the island of Saint Vincent, and in Grenada, Fort George occupies this position. In downtown Castries, Saint Lucia, there are a number of historic parks, buildings and lighthouses, which are community treasures. Relicts of forts or plantations, shipwrecks may have great local or international value, thus meriting attention and preservation.

4.0PROJECTED IMPACTS

The following discussion of impacts relate to the activities proposed on the respective sites under consideration. In many cases the works are small in scale and any potential impacts are generally minor; however, works in historic or cultural sites or within designated parks or natural areas could potentially have significant impacts, as could works that lead to private land acquisition, physical or economic displacement, and will therefore require additional care and assessment to develop detailed mitigation plans.

4.1 Summary of Project Activities

In Saint Vincent and the Grenadines, the main physical investments on the mainland would involve Fort Charlotte site and upgrades to anchorage site infrastructure to enhance competitiveness of a flagship Marine-based Tourism sector.Fort Charlotte is difficult to access across a one-lane narrow bridge, and it holds enormous potential touristic interest. Large areas of the fort complex are not yet restored including army barracks, a prison and gallows. Access is difficult and although close to the centre of Kingstown, the Fortis underutilized. Environmental management of restoration and access works would focus on community consultation of historic resources, and minimizing footprint for any enhancement of access. Trail development and ecotourism also have high potential on adjacent lands, as they may represent natural habitat with scenic vistas.

Other activities across the OECS include the creation of a pilot ferry system, which may involve coastal works (jetties, terminals, and mooring plans) that may affect ecologically sensitive coastal zones and natural habitat. For example, restoration of jetties in Carriacou or other areas could be considered under the Project. Marine traffic and safety will be improved through a TA, and good environmental and social practice should also be included in this analysis. Finally, some of the proposed works will be carried out in ecologically sensitive areas or protected areas, such as, the Tobago Cays Marine Park in the Grenadines, which could be negatively impacted by increased tourism unless adequate provisions are taken.

In Saint Lucia the chief potential infrastructure investments are related to beautification of the downtown Castries area. One of the chief components is the “ring road” which connects the cruise ship harbor with downtown Castries. The ring road was perused by taxi and on foot to get a sense of the difficulties and obstacles faced by tourists working their way from the harbor to the market and through the downtown area. Much of the ring road is under construction and barricades are common, as well as temporary steel plates covering drains and hazardous footing (see Photo Annex). Parks in downtown Castries are difficult to locate on foot and would offer respite from the heat and welcome shade if more accessible. The downtown traverse was conducted in mid-day as two cruise ships were docked and foot traffic was substantial. Environmental aspects would focus on public safety and harmonization with flood works, as well as consideration of disability access.

Investments at the Botanical Garden in Saint Lucia could involve an aviary upgrade for the endangered parrot species, which could serve to showcase this flagship species. Protection of habitat for these endemic and charismatic birds would form a focal point for conservation efforts, as is the case with the Saint Lucian parrot. The Botanical Gardens serves as a venue for

weddings, social gatherings, and high profile events, so the conservation aspects of investment in this area could be widely communicated, far reaching and effective.

In Grenada the main physical works will revolve around Fort George, which has a pivotal role in the conservation efforts of the historic town of St. George and the Carenage area. The project must be in harmony with the goals of the urban redevelopment in the Carenage area and the historic districts, including the Fort, as expressed in the conservation guidelines and the World Bank proposal for rehabilitation of the fort. The cultural landscape and the scale of the potential effects of the intervention include effects on a UNESCO nomination (Lesterhuis, 2004). The East Barracks is in a critically central area, and its restoration plans must be carefully harmonized with other development and restoration plans. It is concluded that there is a need to perform an EA on this project and develop a PCRMP (physical cultural resource management plan) that involves extensive public participation to develop the detailed scope.

4.2 Summary of Potential Impacts

An initial assessment of the types of potential negative impacts, and their degree or significance, is provided in Table 3 below.

Table 3. Summary of Potential Impacts of Sub-Projects

Activity/Sub-Project	**Type of Potential Impacts ***	**Degree of Potential Negative Impacts**
GRE: Fort George restoration	Physical Cultural Resources, EHS	Moderate to High
GRE: Carriacou Jetty	Natural Habitat, EHS	Moderate
SVG: Fort Charlotte restoration	Physical Cultural Resources, EHS, Involuntary Resettlement	Moderate to High
SVG: Upgrades to anchorage site infrastructure	Involuntary Resettlement (temporary or permanent land acquisition and/or economic displacement)	Low to Moderate
SLU: Lighthouse & Park rehabilitation	Physical Cultural Resources, EHS	Moderate
SLU: Downtown restoration	EHS, Involuntary Resettlement (temporary or permanent land acquisition and/or economic displacement)	Low to Moderate
SLU: Botanical Gardens	Natural Habitat, Physical Cultural Resources, EHS	Low to Moderate
OECS: Pilot Ferry	Natural Habitat, EHS	Low to Moderate

***** Note, EHS = environment, health and safety impacts.

Table 3 above indicates that the restoration activities of Fort George and Fort Charlotte have the highest potential negative impacts, because these activities may negatively impact these critical physical cultural resources, which are of historic, touristic, and national significance. While

private land acquisition is not anticipated for upgrade works that take place on the existing footprint of these Forts, final designs have not yet been developed, and upgrades and/or widening of the road leading to Fort Charlotte may be required to accommodate the passage of some tourist buses, and these activities may lead to permanent or temporary private land acquisition. If undertaken, the restoration of the lighthouse and parks in Saint Lucia also has potential to negatively affect these physical cultural resources, though not to the same degree as the larger fort restoration efforts. Physical cultural resources may also be affected in works at the Botanical Gardens in Saint Lucia..

Potentially significant negative impacts to natural habitat may also occur from activities in Carriacou and the Tobago Cays. Coastal and marine resources may be negatively affected from poor design of docks or jetties that can cause changes in currents or beach erosion, or poor management of construction resulting in spills, inadvertent clearing of lands or dredging of coastal zones. Such impacts can occur from spillage of construction materials or chemicals such as cement or oils, from suspended sediments in the water, or from altering the shoreline or coastline configuration such that tidal or water currents are changed to create new areas of erosion or new areas where sediments may be deposited. Natural habitat may also be affected in works at the Botanical Gardens in Saint Lucia.

All the works may also carry negative impacts to environment, health and safety during the execution of the civil works, typically during construction. These types of small civil works generally carry associated impacts which are minor and of short duration.

4.3 Positive and Negative Potential Impacts

There are both positive and negative impacts attendant to the project and its components. This section of the ESMF provides a detailed discussion of the impacts so that the mitigation measures can be designed to optimize the positive impacts and reduce the negative impacts. The impacts indicated above will be reduced and mitigated as described in Section 5 of this ESMF.

4.3.1Positive Impacts

There are several potential positive impacts of the project and associated works. The positive impacts are expected to be significant and associated with the potential economic growth and development likely to occur as a result of the improvement in tourism services such as increased income and employment opportunities, improvement in the quality and standard of living. The respective local communities should also benefit from employment and income-generating opportunities created during the implementation of the project. This is a significant and major impact. There will be an opportunity to ensure accessibility for physically disabled individuals via the installation of ramps and other measures as necessary at subproject sites undergoing infrastructure construction and upgrading (particularly the traffic upgrades and beautification measures in downtown Castries). Improved accessibility will benefit the local population as well as tourists to the islands, including those with disabilities, and harmonization of works with flood protection plans will enhance sustainability of any works.

Another major positive impact is the increased visibility and exposure of eco-tourism, historical tourism, and other activities that highlight and showcase the natural habitat and physical cultural resources of the OECS region. With such exposure may come appreciation and desire for protection and conservation.

Efforts to maximize the positive benefits of the works should be sought during design and implementation.

4.3.2Negative Impacts

There is the possibility of the occurrence of the following negative impacts associated with the projects. Table 4 provides a summary of the potential negative impacts.

Table 4: Potential Negative Impacts of Activities

Activity	Potential Negative Impacts	Significance / Remarks
Restoration and rehabilitation of historic forts, sites, parks, lighthouses, and other areas with physical cultural value	- Damage to historic structures or areas - Incompatibility of selected design with community wishes - Clearing or impingement upon natural habitat - Poor trail design resulting in erosion or visual scars - Occupational safety and health risk to workers - Traffic and community safety issues - Temporary/permanent land acquisition (specifically for road improvements leading to Forts) or to livelihoods of self-employed persons operating at the sites. - Dust, debris, fumes of industrial chemicals during construction may affect nearby residents and occupants of institutions, such as General Hospital in Grenada, which is downwind of Fort George -Restricted or limited access and road detours during civil works - Temporary limited or no access to site during construction works - Temporary increase of waste generation	- Potentially significant and long term in both construction and operation - Physical cultural resources and natural habitat concerns require a detailed assessment and management plan - Typical civil works impacts can be addressed through standard measures - Any potential land acquisition is anticipated to be discrete and can be readily mitigated by the use of standard measures.
Ferry, jetty, dock, and other transportation related works	-Turbidity or other damage and modification to reef and/or marine environment - Change in currents or wave energy affecting beach - Poor fueling, waste, or other operation practices - Increased marine traffic safety and pollution issues - Temporary/permanent land acquisition - Unavailability of jetty, docks during construction works - Temporary interruptions to livelihood practices and businesses in the project areas - Temporary increase of waste generation	- Moderately significant and long term - Natural habitat concerns may be relevant and require additional assessment - Typical civil works impacts can be addressed through standard measures - Any potential land acquisition is expected to be discrete and can be readily mitigated using standard measures.
Transportation Works in downtown Castries (streets, sidewalks, etc.)	- Occupational health and safety - Risk to traffic and pedestrians - Compatibility with flood control schemes - Noise, dust, vibration, spills, air pollution - Temporary/permanent land acquisition, economic displacement - Ensuring adequate access to bathroom facilities in the event that works block access to public bathroom facilities - Ensuring accessibility for physically disabled individuals via the installation of ramps and other measures as necessary, at sub-project sites undergoing infrastructure construction and upgrading - Ensuring access for disabled persons	- Low to moderate, short term - Typical civil works impacts can be addressed through standard measures - Any potential land acquisition and/or economic displacement is expected to be temporary and discrete - Issues of accessibility and land acquisition/economic displacement can be mitigated using standard social safeguards instruments and measures

Works in Botanical Gardens (Saint Lucia)	- Loss of natural hábitat - Damage to aesthetic or visual resources - Care of species housed on site (parrots) - Community and access issues	- Low to moderate, short term - Physical cultural resources and natural habitat concerns may be relevant and require additional assessment - Typical civil works impacts can be addressed through standard measures
Works in protected areas	-Increased stress on reefs from increased tourism - Poor fueling, waste, or other operation practices - Increased marine traffic safety and pollution issues - Long-term modification of marine habitat (as a result of anchorage sites) - Increased long-term waste generation	- Moderately significant and long term - Natural habitat and physical cultural resource concerns may be relevant and require additional assessment

The effects of the impacts above can also be described individually as follows:

- Loss of or Damage to Physical Cultural Resources
- Destruction or Damage to Terrestrial Natural Habitat
- Impacts on Marine habitats and Coastal Environments
- Road safety, traffic and community risk
- Increased Vibration and Noise levels
- Poor Solid and Liquid Waste Management
- Air pollution
- Occupational Health and safety issues
- Involuntary Resettlement (which could refer to permanent or temporary acquisition of private land; physical or economic displacement)

Each of the impacts is described in more detail below. Measures to avoid, minimize, and mitigate the negative effects, are described in Section 5 of this ESMF.

- ***Loss of or Damage to Physical Cultural Resources***

During restoration and rehabilitation of the historic forts and other showcase prominent landmarks, damage to the visual or aesthetic qualities of the structures could occur. Poor or inappropriate choice of stones, mortar, layout, or design, or other aspects could cause irreparable harm to the structures.

In undertaking restoration works of a historic heritage site like Fort George or Fort Charlotte, it is imperative that the restoration works be done by people who are knowledgeable and experienced in this highly specialized field. Otherwise, irreparable damage could be done to the physical structures of the Forts, or amenities added (such as toilets or stores) in a style totally out of place in a heritage site. UNESCO World Heritage site status could be jeopardized if the values which make the sites unique are threatened.

In addition, during construction activities there is the possibility of coming across or "chance finding" what may appear to be an historical or cultural artifact which may need to be studied and preserved by the relevant authorities. One example is the sunken ship that became partially exposed on the Georgetown beach a few years ago. In cases like this, the artifact could be lost due to careless construction activities prior to the relevant authorities determining whether or not it is worthy of preservation. It is therefore recommended to consult with local stakeholders as to

the final design of facility, and the disposition of any potential physical and cultural resources, because the valuation of such items is ultimately subjective and they are of most value to local stakeholders.

- ***Destruction or Damage to Terrestrial Natural Habitat***

The works to be undertaken may be located in designated parks, protected areas, or reserves. In some cases there are eco-tourism trail systems interconnecting through historical areas. Land clearing, trail building, or installation of facilities such as interpretation centers, bridges, customs buildings, or other installations may be poorly sited or impact areas of natural habitat. This impact must be considered as significant, moderate or even major, depending on the area affected. If vegetation is to be cleared in areas considered significant natural habitat, then the screening mechanism for Natural Habitats is triggered and additional assessment is required to properly develop mitigation measures. Likewise if project activities are to take place in areas where coral reefs, sensitive coastal ecosystems, or marine protected areas occur, then additional evaluation would be needed.

- ***Impacts on the Marine and Coastal Environments***

Coastal zones and reefs may be affected by project works and activities. If project activities are to take place in areas where coral reefs, sensitive coastal ecosystems, or marine protected areas occur, then additional environmental evaluation or assessment would be needed. The design of jetties, docks, or other structures in the marine or coastal environments may affect wave energy, currents, or sediment transport, resulting in unintended changes to beach and nearshore ecosystems. Turbidity from construction in water may also deleteriously affect marine life by siltation and sedimentation, with potential damage to sea-grass meadows, coral reefs, or other sensitive natural habitat. Increased tourism pressure may also affect marine and coastal environments. Increased boat and ship traffic also has negative implications for marine safety, as well as increased risk of improper waste management, fuel spills, and other impacts.

The activities involved in the implementation of the project, particularly those occurring in marine protected areas, will most likely interface with pristine and possibly fragile coastal and marine ecosystems; therefore the disposal of waste (oil, grease etc.) could cause pollution in the area (if poorly managed) and quite possibly affect some of the natural resources. Installation of jetties and docks may also cause damage to the marine environment due to physical disturbance of the seafloor and benthic organisms (if poorly routed), generation of silt during dredging, and degradation of poorly selected materials over time. Dock sites may be located in sensitive coastal areas, where beaches important to tourism occur, or where they could interfere with fishing or boat traffic.

- ***Increased Traffic and Potential for Traffic Conflict***

Works within the city centres carry the possibility of increased construction-related traffic for civil works of certain sizes especially when the works are occurring in crowded zones such as downtown Castries. The potential for vehicular/vehicular and pedestrian/vehicular conflict increases as the scale of construction increases if proper traffic management procedures are not implemented. This can lead to very tempered negative response from the nearby residents or the

community affected. The breakdown of a large project vehicle causing the blockage of a well travelled route can escalate tensions within a community especially if it contributes to loss of travel time to work, school, or returning home.

- ***Increased Noise and Vibration levels***

Increased noise and vibration levels resulting from construction activities such as the movement of heavy supply trucks into and out of the site, the use of various forms of heavy equipment such as demolition equipment, can have negative impacts on the residents. The effects within communities and residential areas, can be deemed as an unnecessary and unwanted nuisance affecting local business and day to day activities. Care must be taken in the judicious usage of any form of heavy noise and vibration equipment. Associated vibrations from the use of heavy equipment such as rollers can negatively impact surrounding communities, causing nuisances by shaking household items and possibly affecting the stability of nearby structures.

The use of the vibration and / or noise producing equipment can be a potential nuisance to the local community depending on location. It may also create an unacceptable disturbance to marine species. This impact is ranked as minor and significant mainly because of the people's intolerance to this type of nuisance.

- ***Poor Solid and Liquid Waste Management***

The improper management and disposal of both solid and liquid wastes can be detrimental to both the terrestrial and to the nearby marine environment. The mishandling of construction wastes such as chemicals, detergents, greases, oils, building materials, can lead to the poisoning of the terrestrial environment. The entry into the marine environment of any waste or chemical, either through runoff, in drains, or are blown by the wind can also poison the marine environment or damage the fragile marine ecosystem. The management of human wastes on site is very critical to ensuring a healthy working environment and reduce the risk of faecal contamination. The management of food wastes is also critical to reducing the incidence of vector entry into an area causing infestation.

The potential for terrestrial and marine pollution can occur with indiscriminate disposal of both solid and liquid wastes. The mishandling of chemicals and especially waste oils during construction activities can poison the landscape. During rainfall events chemicals can mix with or be carried by runoff and create liquid wastes that impact both terrestrial and marine environments. Improper disposal of human wastes can lead to similar effects. This also applies to pesticides used in termite treatment of construction sites. Managing excavated soil is also important especially when this soil is being transported to another site for use or storage. Care must be taken to ensure the appropriateness of the transport and the protocols for transporting and storing the soil.

- ***Air Pollution***

Air pollution can come from a number of sources. The vehicles and machinery being utilized can both produce noxious fumes such as carbon monoxide, diesel fumes, as well as burnt oil fumes. There is the increased potential for air pollution to come from older or improperly service

vehicles and machinery as well. Dust also arises from cleared land that has been exposed to the sun, is dried, and the wind carries this material to nearby residences or communities. Similarly, uncovered fines such as sands or even cement can be light enough to be blown by the wind. This is a nuisance to nearby facilities or communities. The mishandling of particularly noxious chemicals such as solvents or chemical washes, greases, as well as the burning of solid wastes on the construction site, especially chemical containers, can lead to air pollution resulting in negative health impacts.

- ***Occupational Health and Safety Issues***

The International Labour Organization (ILO) defines decent work as safe and having appropriate compensation. Worker safety is critical to any operation, therefore, mishandling of equipment, the improper storage and usage of various chemicals and construction materials on site, poor and unsafe working conditions, high levels of continuous noise and fumes, as well as inadequate safety equipment can cause serious injury and down time to the workers and project and should therefore be avoided. Best management practices should always be implemented as labour laws hold the employer responsible for the workers safety. Proper facilities will need to be provided for workers in the interest of the workers and the environment.

There is also potential hazards during any offshore or work (ie, over-water) such as boating, tourism, dock or jetty construction, and tourism activities. This is significant mainly because of the high level of concern and legislation for the protection of public health and safety.

- ***Involuntary Resettlement***

While private land acquisition is not anticipated, final designs have not yet been developed, and rehabilitation works (particularly under Components 1 and 2) may lead to permanent or temporary land acquisition, resettlement, and/or economic displacement. Involuntary resettlement may cause severe long-term hardship, impoverishment, and environmental damage unless appropriate measures are carefully planned and carried out, particularly in an extreme scenario if it becomes necessary to relocate people from their usual place of residence which is of cultural or of economic importance (prime fishing, tourist attraction and recreation area, for example) to facilitate the implementation of the project.

5.0 MITIGATION MEASURES

As described in Section 2 of this ESMF, proposed activities will involve the rehabilitation of sites and facilities, some of which are located in protected areas with natural habitat and physical cultural resources, and some of which may lead to potential involuntary resettlement impacts. Given the potential impact of these activities, the project is considered as Category B, and the Environmental Assessment Policy (OP/BP 4.01) has been triggered. In addition, the Natural Habitats Policy (OP 4.04) is triggered given that some of the proposed works will be carried out in ecologically sensitive areas or protected areas, and coastal works (jetties, terminals, and mooring plans) may also affect ecologically sensitive coastal zones and natural habitat. The Physical Cultural Resources Policy (OP 4.11) has also been triggered, given that the project aims to rehabilitate sites of historic importance, including for instance Fort George in Grenada and Fort Charlotte in Saint Vincent. Some of the works may involve the use of pesticides for building treatment or extermination of pests, therefore the Pest Management Policy (OP 4.09) is also triggered. The mitigation measures in this Section of the ESMF provide the basis to minimize or avoid the negative impacts, in accordance with the WBG safeguard policies. Access for disabled persons should also be considered in the design of works. Finally, the Involuntary Resettlement Policy (OP 4.12 is triggered because works under components 1 and 2 may lead to permanent or temporary land acquisition, resettlement, and/or economic displacement.

Mitigation measures address the potential impacts of the projects to reduce or avoid any negative social and environmental impacts. As indicated in section 4 of this ESMF, some of the potential impacts are associated with physical cultural resources, natural habitat, and involuntary resettlement. These types of impacts may be fairly complex and would require additional assessment and analysis to design the appropriate mitigation measures. Screening to identify these types of risks and impacts is described in more detail in section 6 of this ESMF. Additional mitigation measures would be derived from any conditions imposed by any statutory agency who reviewed the sub-projects and provided recommendations or conditionalities. These could also be converted to contract clauses as necessary.

5.1Simple/Generic Mitigation Measures

There are always minor impacts associated with the construction phase of any civil works. Most of the negative impacts associated with the sub-projects are expected to occur during the construction phase. While these impacts are not expected to be major, the careful implementation of mitigation measures will allow for the reduction or avoidance of any adverse effects. These general impacts have been identified above and the following in Table 5 is a list of the potential mitigation measures. The measures are presented in a manner that makes them easily incorporated into an EMP and, with appropriate adjusting, can become contract clauses for the contractor who will undertake the civil works. This also allows for ease of monitoring as well. Minor use of pesticides (e.g. for termite treatments of building foundations, or for extermination) is also included in the standard EMP below (note that the use or purchase of significant amounts of pesticides is not eligible under the Project).

Table 5. General Civil Works - Impact Areas and Mitigation Measures

	IMPACT AREA	MITIGATIVE MEASURES
1	Traffic impacts	(a) A traffic management plan to be developed and implemented by contractor in consultation with the Traffic authority. (b) Alternative routes to be identified in the instance of extended road works or road blockages. (c) The public to be notified of all disturbances to their normal routes. (d) Signposting, warning signs, barriers and traffic diversions must be clearly visible and the public warned of all potential hazards. (e) Provision must be made for the safe passages and crossings for all pedestrians where construction traffic interferes with their normal route. (f) There must be active traffic management by trained and visible staff at the site or along roadways as required to ensure safe and convenient passage for the vehicular and pedestrian public. (g) Adjustment of working hours to facilitate local traffic patterns, e.g. avoiding major work activities during rush hours and do temporary road closures at night.
2	Noise	(a) Construction / work activities will occur within specified daylight hours e.g. 8:00 am to 4:00pm. (b) Community / public to be informed in advance of any work activities to occur outside of normal working hours or on weekends. (c) Sites should be hoarded wherever possible. (d) During operations, the engine covers of generators, air compressors and other powered mechanical equipment shall be closed, and equipment placed as far away from residential areas as possible. (e) There will be no excessive idling of construction vehicles at sites. (f) Noise suppression equipment or systems supplied by manufacture will be utilized. (g) Ensure all vehicles and equipment are properly serviced. (h) The contractor must develop and implement a public notification and noise management plan.
3	Solid and Liquid Waste Management (general)	(a) Contractor to develop and implement waste management plan in consultation with the local solid waste authorities. (b) Contractor to abide by all pertinent waste management and public health laws. (c) Waste collection and disposal pathways and sites will be identified for all major waste types expected from demolition and construction activities. (d) Construction and demolition wastes will be stored in appropriate bins. (e) Liquid and chemical wastes will be stored in appropriate and labeled containers separated from the general refuse. (f) All waste will be collected and disposed of properly in approved landfills by licensed collectors. (g) The records of waste disposal will be maintained as proof for proper management as designed. (h) Whenever feasible the contractor will reuse and recycle appropriate and viable materials (except asbestos or other hazardous material). (i) Construction related liquid wastes must not be allowed to accumulate on or off the site, or to flow over or from the site in an uncontrolled manner or to cause a nuisance or health risk due to its contents.

4	Solid and Liquid Waste Management for hazardous substances.	(a) Contractor must provide temporary storage on site for all hazardous or toxic substances in safe containers labeled with details of composition, properties and handling information. (b) The containers of hazardous substances shall be placed in a leak-proof container to prevent spillage and leaching. (c) The wastes shall be transported by specially licensed carriers and disposed in a licensed facility. (d) Paints with toxic ingredients or solvents or lead-based paints will not be used. (e) Banned chemicals will not be used on any project. (f) If termite treatment is to be utilized, appropriate chemical management measures will be implemented to prevent contamination of surrounding areas and use only licensed and registered pest control professionals with training and knowledge of proper application methods and techniques. (g) Any project which involves the purchase or use of pesticides, other than incidental amounts (for example termite treatment in item (f) above), will be excluded during the screening project.
5	Solid and Liquid Waste Management for asbestos	(a) If asbestos is located on the project site, it shall be marked clearly as a hazardous material. (b) If work has already commenced, all work in the area must stop immediately. (c) An asbestos management plan must be prepared by the contractor and approved by the relevant local health and waste management authorities. (d) Where possible the asbestos and its location must be appropriately contained and sealed to minimize exposure. (e) The asbestos prior to removal (if removal is necessary) will be treated with a wetting agent to minimize asbestos dust. (f) Asbestos will be handled and disposed of by skilled & experienced professionals using appropriate PPE (personal protective equipment) such as respirators and tyvec suites. (g) If asbestos material is to be stored temporarily, the wastes should be secured within closed containments and marked appropriately. (h) Security measures must be implemented against unauthorized removal of asbestos from the site. (i) No removed asbestos will be reused.
6	Solid and Liquid Waste Management for Medical Wastes	(a) The contractor must ensure that all persons handling medical wastes are provided with proper protective clothing. (b) All medical wastes must be treated as hazardous. (c) All medical wastes must be secured in specially labeled and sealed containers separate from other wastes streams. (d) All medical wastes must be disposed of in accordance with relevant local legislation at specified disposal sites.
7	Deforestation	(a) There must be no unnecessary clearing of forests or well-preserved natural vegetation, without an appropriate assessment and management, restoration and compensation plan. (b) Avoid the use of herbicides or other chemicals. (c) Any works to be undertaken in a protected forest area must be done under

		the supervision of a representative of the Forestry Department. (d) The contractor must ensure that any work undertaken in the forest reserve be done by manual means. (e) There must be minimal impact to flora and fauna in the forest area. (f) All recognized natural habitats; wetlands and protected areas in the immediate vicinity of the activity must be protected from damage or exploitation. (g) The contractor must ensure that all staff be strictly prohibited from hunting, foraging, logging or other damaging activities. (h) A survey and an inventory shall be made of large trees and rare medicinal plants in the vicinity of the construction activity, these shall be marked and cordoned off with fencing, their root system protected, and any damage to the trees avoided. (i) There will be no unlicensed borrow pits, quarries or waste dumps in protected areas. (j) Upon completion, all wastes must be immediately removedfrom the forested area.
8	Air Quality	(a) Construction materials such as sand, cement, or other fines should be kept properly covered. (b) Cement should be kept stored within a shed or container. (c) The sand and fines should be kept moistened with sprays of water. (d) Unpaved, dusty construction roads should be compacted and then wet periodically. (e) During interior demolition debris-chutes shall be used above the first floor. (f) Demolition debris shall be kept in controlled area and sprayed with water mist to reduce debris dust. (g) During pneumatic drilling/wall destruction dust shall be suppressed by ongoing water spraying and/or installing dust screen enclosures at site (h) The surrounding environment (sidewalks, roads) shall be kept free of debris to minimize dust. (i) There will be no open burning of construction / waste material at the site. (j) There will be no excessive idling of construction vehicles at sites. (k) The bins of all haulage vehicles transporting aggregate or building materials must be covered on all public roads.
9	Terrestrial and Marine Pollution	(a) The contractor must implement all necessary waste management plans and measures. (b) All construction materials, including chemicals, must be properly stored. (c) The contractor will establish appropriate erosion and sediment control measures such as hay bales, sedimentation basins, and / or silt fences and traps to prevent sediment from moving off site and causing excessive turbidity in nearby streams, rivers, wetlands, and coastal waters. (d) If works are to be done along coastal marine areas or near major streams and rivers, water quality monitoring must be done before construction, and at regular intervals during construction to determine turbidity levels and other quality parameters. (e) See soil erosion and slippage mitigation measures below. (f) Construction vehicles and machinery will be washed only in designated areas where runoff will not pollute natural surface water bodies.

10	Soil Erosion and Slippage	(a) The contractor must ensure that appropriate erosion control measures such as silt fences are installed. (b) Proper site drainage must be implemented, including drainage at the tops of slopes, around slopes, and beneath roadways. (c) Any drain clogged by construction material or sediment must be unclogged as soon as possible to prevent overflow and flooding. (d) The use of retaining structures and planting with deep rooted grasses to retain soil during and after works must be considered. (e) The use of bio-engineering methods must be considered as a measure to reduce erosion and land slippage. (f) Keep angle of slopes within limits of soil type. (g) Balance cut and fill to limit steepness of slopes. (h) All slopes and excavated areas must be monitored for movement.
11	Occupational Health and Safety Issues	(a) The contractor must ensure that an Occupational Health and Safety Plan is in place to guide work activities, and provide a safe environment for workers. (b) The contractor must ensure that all workers operate within a safe environment. (c) All relevant Labour and Occupational Health and Safety regulations must be adhered to ensure worker safety. (d) Workers must be provided with necessary equipment as well as protective gear as per their specific tasks such as hard hats, overalls, gloves, goggles, boots, etc. (e) Sanitary facilities must be provided for all workers on site. (f) The contractor must ensure that there are basic medical facilities on site and that there are staff trained in basic first aid. (g) Appropriate posting of information within the site must be done to inform workers of key rules and regulations to follow.
12	Accidental destruction of artifacts during earth moving or excavation	(a) The contractor must ensure that provisions are put in place so that artifacts or other possible "chance finds" encountered in excavation or construction are noted and registered, responsible Authorities contacted, and works activities delayed or modified to account for such finds. (b) No item believed to be an artifact must be removed or disturbed by any of the workers.
13	Involuntary Resettlement	(a) Preliminary screening will be undertaken during the preparation phase of works at all sub-project sites in order to determine the existence of any potential involuntary resettlement impacts (including temporary/permanent land acquisition, physical or economic displacement); (b) Involuntary Resettlement will be avoided to the extent possible. Where it is not feasible to avoid involuntary resettlement impacts, the procedures to follow in order to screen for/assess, minimize, mitigate, and compensate for any negative impacts will be established in a single, regional Resettlement Policy Framework (RPF) that will be developed for the project and disclosed prior to project appraisal. The RPF will provide guidelines for the development of social safeguards instruments as needed (e.g. Resettlement Action Plans, Temporary Resettlement Plans,

		Compensation Plans) to mitigate land acquisition and/or other social issues that may arise from works undertaken during the course of project implementation. The RPF will include country specific chapters reflecting country-specific legal legislation and the organization of the respective implementation units.

It is expected that the projects would receive adequate technical review by qualified technical professionals to ensure their technical and environmental soundness and social sustainability. Engineering review for all construction details and designs should be integral in this process.

5.2 Complex/Special Mitigation Measures

Additional mitigation measures would be derived from any conditions imposed by any statutory agency that reviewed the sub-projects and provided recommendations or conditionalities, for example in EIA permit requirements. These must also be converted to contract clauses as necessary.

Finally, it is noted that some of the potential impacts are associated with physical cultural resources and natural habitat. These types of impacts may be fairly complex and would require additional assessment and analysis to design the appropriate mitigation measures. Screening to identify these types of projects is described in more detail in section 6 of this ESMF. Additional mitigation measures would be derived from the additional assessment work; for those projects affecting historic structures (e.g. Fort Charles, Fort Charlotte, or others) the additional requirements will be in the form of a Physical Cultural Resources Management Plan (PCRMP) to be prepared as part of the additional assessment.

6.0 SCREENING PROCEDURES

This section of the report provides the screening procedure for future work activities and subprojects. The purpose of the screening process is (i) to identify the potential environmental and social impacts of a particular subproject in the future as it becomes defined with clarity and detail, and (ii) to include the appropriate environmental and social mitigation measures in its scope of work (SOW) and terms of reference (TOR).

As described in section 2 of this ESMF, the preliminary project descriptions, impact evaluations, and generalized mitigation measures given previously in this report provide a good starting point, but as is often the case, details and particulars may change over time. In the future as detailed actions emerge and physical works ready to begin, the scope, scale, and design of particular activities become fully known. At that time it will be necessary to ascertain their potential environmental and social impacts through a screening process, and determine which mitigation measures must apply for environmental protection and mitigation of any social risks and impacts. In some cases with minimal impact (e.g. renovation of a small customs-house) the answer may be to use standardized or generic mitigation measures; in this case, a standard/generic EMP and associated contract clauses are provided in this ESMF. Perhaps more importantly it will be necessary to identify works which could have more significant impacts (e.g. restoration of major historical structures) and which would require additional evaluation, assessment, and the preparation of a separate Environmental Assessment (EA) with a PCRMP.

The initial screening and scoping of the sub-project sites must also focus on social aspects. It should identify the extent and complexity of potential social impacts and the socio-economic characteristics of people in the project area. Special attention should be paid to vulnerable or disadvantaged groups who could experience adverse impacts from the proposed project more severely than other groups. If the initial screening indicates potential adverse social impacts and risks(including but not limited to involuntary resettlement, temporary/permanent land acquisition and/economic displacement), a more thorough social assessment will be undertaken to determine the nature and magnitude of impacts, the people affected, and identification of mitigation measures. The development of specific safeguards instruments may become necessary during the course of project implementation (i.e. Resettlement Action Plans, Compensation Plans, Relocation Plans, etc.) and will be guided by the principles laid out in the Resettlement Policy Framework (RPF) which is included in Annex 5.

This ESMF provides a preliminary assessment of the potential social and environmental risks and impacts and related mitigation measures. For simple works, a generic Environmental Management Plan (EMP) is included in the ESMF, which will also define criteria for more detailed Environmental Assessments (EAs) as needed. The ESMF accounts for natural habitats and physical cultural resources when screening potential works which are already identified, and provides screening criteria for future sub-projects to determine if additional assessment and specialized mitigation measures would be required, once detailed designs are known during implementation.

6.1 Screening Processes

Each sub-project may have site specific issues that contribute to potential social and environmental impacts. A screening mechanism and a scoping exercise are key tools to assist

assessing officers in red flagging potential environmental and social risks or issues as part of the assessment process at an early stage in the project identification cycle. This process would allow for the highlighting of potential impacts, mitigation measures to address the potential impacts, and allowing for the incorporation of these mitigation measures as contract clauses for the proposed small works.

To facilitate the process it is necessary for the assessing individual or agency to use a screening or scoping tool, typically a checklist **(Table 5)**, to determine the potential red flags or issues, and to trigger specific responses as appropriate. The checklist helps to identify and assess potential impacts and contribute to the wider decision making process involving the proposed project and project activities. The checklists and its response should be fed into the EMP and proposed mitigation measures to address potential issues that have been identified and as necessary, trigger additional measures such as impact analysis.

The PCU of each OECS country, as the coordinator of the safeguards and fiduciary aspects of the Project, will use the screening checklist during the scoping exercise so that an officer may be able to determine that a project has certain environmental and/or social ramifications that were not previously identified, or which bear additional assessment and planning to avoid environmental impacts.

6.2 Screening Criteria and Checklists

To begin, it is necessary to determine whether a proposed sub-project falls into one of two groups: those which involve more complex environmental and social conditions and/or potentially significant environmental or social effects (if unmitigated) and which therefore require more cautious planning efforts; or, those comprising relatively simple or uncomplicated works where the impacts are minimal (e.g., effects during construction of repairs and retrofitting) and which can be addressed through standardized or generic mitigation measures.

6.2.1 Relatively Complex Sub-projects

There are several criteria to determine if a sub-project or activity is environmentally or socially complex or may have potentially significant environmental and/or social impacts if unmitigated. These would include the following:

- Potential impact to physical cultural resources (OP/BP 4.11): whether or not a specific subproject or activity would potentially affect objects, sites, structures, natural features or landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. This would include historic buildings or structures such as forts or lighthouses, viewpoints or lookouts.

- Potential impact to natural habitats (OP/BP 4.04): whether or not a specific activity or subproject would potentially affect land or water areas where the biological communities are formed largely by native plant and animal species where human activity has not essentially or heavily modified the area's primary ecological functions. This would

include reefs, coastal areas, mangroves, forests, and any declared or designated parks or protected areas.

- Potential involuntary resettlement (OP/BP 4.12): whether or not a specific activity or subproject requires the acquisition of private land, physical resettlement, economic displacement, and/or the involuntary restriction of access to legally designated parks and protected areas resulting in adverse impacts on the livelihoods of displaced individuals.

The following checklist in Table 6is intended to be used as a first tier screen or adapted with modifications to fit the specific suite of sub-projects being considered by the Project, to assist the PCU in determining if a project is likely to have significant environmental and/or social impacts or presents complex conditions for which an environmental or social assessment is required.

Table 6. Identification of Complex/Sensitive Sub-Projects or Activities

Characteristic of Sub-project or Activity:	**Yes/No**	**Observations**
1. Will the project significantly modify any coastal zone features, reef or marine feature?		
2. Could the project activities affect any parks, natural or protected areas, coastal zone, or Forest Reserves?		
3. Could the project impact or affect the habitat of endangered species of plants or animals?		
4. Could the project adversely affect natural waterways (streams, rivers, or wetlands) by sedimentation, pollution, flooding, draining, or filling)?		
5. Would the works require leveling and clearing of lands with natural habitat (those water or land areas where most of the original plant and animal species are still present)?		
6. Would the works adversely affect cultural property, including archeological and historical sites?		
7. Does the project involve the restoration or rehabilitation of any historic structure?		
8. What are the general demographic and socio-economic characteristics of the population living in this area?		
9. Are there vulnerable or disadvantaged groups residing in the project area who could experience adverse impacts from the proposed project more severely than other groups?		
10. What are the land ownership patterns at this subproject site? i.e. how many households with (i) formal rights to land; (ii) semi-formal rights or claims to land; and (iii) informal land use/occupation, i.e., squatters		
11. What are the main sources of income and employment for the population residing in this area?		
12. Will proposed works or activities at this site imply the		

acquisition of any private land/physical displacement/economic displacement/restriction of access to legally designated parks and protected areas?		
13. Will proposed works at this site imply any other potential social risks or impacts?		

In cases where it is suspected that a specific sub-project or activity could meet these criteria, the screening procedure would result in a positive determination, as these activities would affect natural habitat and/or physical cultural resources, and/or imply social risks and impacts. These projects are likely to have other complex environmental or social conditions as identified in the checklist above and such subproject would require a separate stand-alone EIA to be done specifically for that sub-project. For sub-projects requiring a stand-alone EIA, the EIA will be completed prior to initiation of the works and will establish environmental requirements for the design and construction phase of the activity in the form an EMP specific to that sub-project. For projects affecting physical cultural resources, the EIA must include a Physical Cultural Resources Management Plan (PCRMP).

In cases where a specific activity or works at a subproject site imply potential social risks and impacts (including but not limited to involuntary resettlement, land acquisition, economic displacement), a standalone Social Assessment will be undertaken to ascertain the nature and extent of impacts and determine appropriate mitigation and compensation measures with the Project Affected Peoples (PAPs). Specific social safeguards instruments will be developed and implemented as needed.

6.2.2 Relatively Simple Sub-projects

If none of the criteria in Table 5 apply to a particular sub-project or activity, then it is considered to have only a limited and minor environmental and/or social impact. Based on the discussion and analysis in Section 4 of this report, sub-projects with minor civil works will involve only limited or minor impact, and can be easily mitigated by using standardized generic environmental controls that represent best practice for construction of civil works. For the relatively uncomplicated environmental actions required of these activities, standardized generic construction contract clauses are sufficient, and can be applied as needed to works construction contracts. Typical draft language for inclusion in contracts can be found in Appendix 8 of this report. Further discussion of the generic EMP is provided in section 7 of this report.

6.3 Local Permitting

During the scoping phase of the project assessment, the PCU officer uses his/her training and experience to make a determination bases on the degree of impact likely to be caused by the project due to its size, proximity to a coastal area, marine or terrestrial reserve and the existing topography that may be disturbed. For all activities in the Project, the requirements of the local Physical Planning Department (or Development Authority) must be followed, as well as all laws and regulations pertaining to environmental protection in the host country. Any permit

condition, local requirement, or other authorization stipulation must be included in the TOR and SOW for all project activities.

6.4 Physical Cultural Resources Management Plan (PCRMP)

Future EAs during implementation will further define works particularly in historic sites. It is expected that the historic site rehabilitation at Fort George and Fort Charlotte will require an EA which includes a Physical Cultural Resources Management Plan (PCRMP), to integrate the extensive identification and assessment work previously done as part of the nomination dossier for UNESCO World Heritage Site status. The ESMF includes the procedures applicable for reviewing all the sub-projects as regards PCR, including additional assessment as needed and substantial public participation in final project design.

TORs for future EAs will specify extensive consultation and coordination with the national Tourism and Cultural Ministries, the National Trusts, Planning and Development authorities, and other local organizations, as well as review of previous work and consultation with international organizations including ICOMOS, UNESCO, and IUCN. Local experts have already been engaged to develop preliminary rehabilitation plans for historic sites, and these will be defined further in consultation of EAs to develop the final renovation designs and corresponding PCRMPs for key high visibility projects. Since there are also road works and other activities which may involve excavation, a "chance-find" procedure will also be included in the ESMF and EA to fully implement OP4.11.

The EA TORs should reference WBG's EHS Guidelines for Tourism and Hospitality Development as well as UNEP's Guidance on Sustainable Coastal Tourism, and must build on existing country and regional environmental policies for tourism development and coastal zone management. Annex 2 contains general guidelines for the TOR.

7.0 ENVIRONMENTAL MANAGEMENT PLAN

This section of the report describes the link between the predicted environmental impacts, the needed mitigation measures identified during the screening and assessment process, provisions for budgeting the costs of such measures, and the roles of those responsible for ensuring that the mitigation measures are carried out.

7.1 Standard/Generic Mitigation Measures

The mitigation measures for relatively simple environmental management issues are based on best management practice and industry standards for small civil works. These are the mitigation measures which are expected of all professional contractors who are performing civil works, and represent the minimum standard of execution for environmental protection during the execution of such works.

7.2 Additional Mitigation Measures

If there are local or national permit requirements (e.g. from the Development Authority or Planning Department), then the generic minimum mitigation measures and monitoring conditions in Table 6 above should be amended to include the conditions and recommendations of the authority's permit, and included in the contracting documents.

If an EIA has been conducted for a particular sub-project due to its environmentally sensitive or complex nature (see section 6), then the specific recommendations for mitigation measures in that EIA should also be included as contract clauses, in addition to the standard minimum EMP in Table 6 above.

The EIA for the rehabilitation at Fort George and Fort Charlotte will include a Physical Cultural Resources Management Plan (PCRMP), as well as the results and recommendations from extensive consultation and coordination with the national Tourism and Cultural Ministries, the National Trusts, Planning and Development authorities, and other local organizations. The PCUs will engage the services of an Environmental Consultant (EC) to prepare the EIA and PCRMP for these projects. The TOR for the EC will be coordinated with WBG.

7.3 Environmental Performance Clauses

Typical generic environmental clauses in Appendix 8 of this report will feed into the specific contract clauses for these types of works which are deemed to have minimal or limited impacts. These clauses are general and may be modified to conform to applicable laws and contract procedures as necessary for such works and shall remain in force throughout the contract period.

Generic contract clauses are provided in Appendix 8 for the following general conditions for small civil works, roads, buildings, and other works expected to have minor impacts:

- Permits and Approvals
- Site Security

- Chance Discovery of Antiquities
- Worker Occupational Health and Safety
- Noise Control
- Use and Management of Hazardous Materials, fuels, solvents and petroleum products
- Use and Management of Pesticides
- Use of Preservatives and Paint Substances
- Use of Explosives
- Site Stabilization and Erosion Control
- Traffic Management
- Management of Standing Water
- Management of Solid Wastes (trash and construction debris)
- Management of Liquid Wastes

If an EIA has been conducted for a particular sub-project due to its environmentally sensitive or complex nature (see section 6), then the specific recommendations for mitigation measures in that EIA should also be included as contract clauses, in addition to the standard minimum EMP in Table 6 above. If there are local or national permit requirements (e.g. from the Development Authority or Planning Department), then the generic minimum mitigation measures and monitoring conditions in Table 6 above should be amended to include the conditions and recommendations of the authority's permit, and included in the contracting documents.

It is expected that these generic clauses will be incorporated into all contracts, as applicable. For purposes of cost estimation and budgeting, the contractors should be aware of the existence of the environmental mitigation measures and associated EMP requirements, and include cost items for such purposes in their proposals.

7.4 Supervision, Monitoring, and Reporting

Supervision for compliance with environmental and social safeguards policies will be managed by the PCU in each country (Figure 5). Understanding that environmental management is a cross-sectoral task especially within a small island developing states like those in the OECS with limited financial and technical resources, the PCU may require support from beneficiary agencies such as the Ministry of Tourism, Ministry of Public Works, Ministry of Environment, or others as the case may be, and may form agreements or committees to mutually support supervision efforts. For each particular project, the Contractor must also have the responsibility for on-the-ground compliance with the contract clauses, recommendations, and mitigation measures. The World Bank will provide periodic technical assistance during project implementation.

The PCU will serve as overall project coordinator for the Project undertaking the tasks of evaluation, supervision and implementation. The PCU will designate a field representative who shall conduct periodic inspections to assure environmental compliance; and a dedicated social development specialist to screen for potential social risks and impacts, and subsequently develop and implement social safeguards instruments as needed. The frequency of monitoring will be determined by the requesting agencies, but will be sufficient to allow the PCU to determine site

changes, the environmental conditions and social context, the adequacy of the mitigation measures, and the overall ability of the contractor to execute the works in the specified and sustainable manner. In addition to Bank requirements, the PCU will also be responsible for ensuring the proper application of any national environmental or social requirements. The PCU should staff or train an additional environmental specialist or engineer to support environmental supervision, especially as regards inspection in the field. The PCU should hire and train a social development specialist as needed to support the management of social risks and impacts, and implementation of social safeguards requirements.

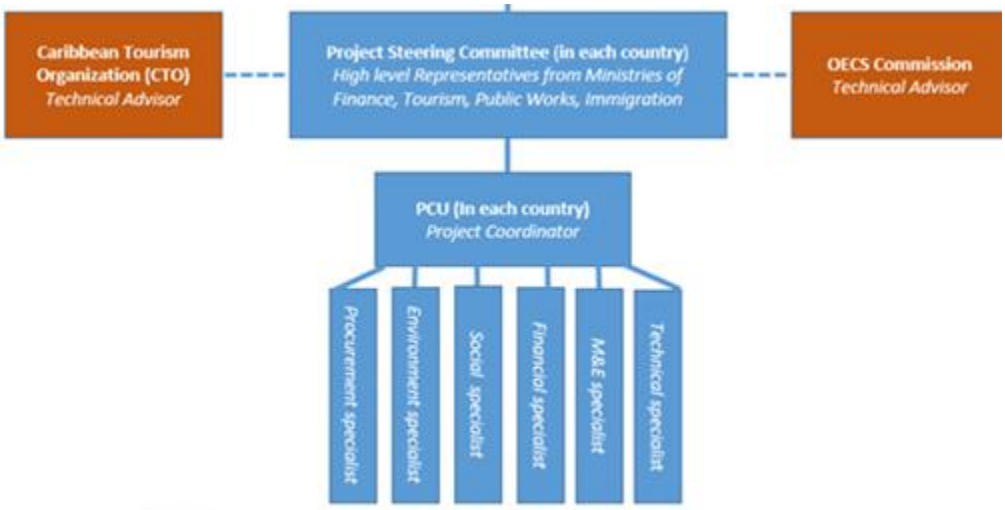


Figure 5. Project Organization Chart

Grenada, St Lucia, and St Vincent and the Grenadines have designated staff who have attended WBG training sessions and are currently involved with other Bank projects. Pre-appraisal missions by the Safeguards Specialists have engaged these local staff and discussed the need for their support in preparing the ESMF. Meetings and site visits with these staff as well as key regional experts has laid the groundwork for technical and administrative support to the Bank if any additional assessment visits or coordination meetings are needed prior to appraisal.

If deemed necessary, a separate environmental consultant (EC), social development specialist (SDS) or cultural heritage specialist (CHS) may also be contracted by the PCU to support field or desktop assessments, screening, contracting, supervision, and reporting. The EC would support the PCU in ensuring the implementation of the mitigation measures and the coordination of environmental management activities (monitoring, enforcement, audits and inspection) of the Project. The EC will have various duties as assigned by the PCU. Prior to construction this may include screening of possible projects for impacts, development of management, or other tasks. Once construction activities are underway the EC may conduct frequent or continuous inspections in the field, provide reports to the PCU, or otherwise assist with environmental and social compliance work. The PCU may staff or contract the EC as desired according to level of need and logistics.

8.0DISCLOSURE &PUBLIC CONSULTATION

During the project preparation process, discussions were held with the PCU and with regional experts in historical resources. The results of this initial consultation process have already been included in the draft ESMF.

The next step is for stakeholder consultations to be carried out as part of refining the ESMF to ensure that it is satisfactory and will serve to guide environmental aspects of the project. The comments received may include technical aspects and/or matters of importance to communities, NGOs, and other stakeholders.

The PCUs will disclose the draft ESMF on the GoG, GoSL, and GoSV websites and notify stakeholders of the time period for which comments will be accepted. A workshop may also be organized by the PCUs to solicit comments from Line Agencies, the communities affected, NGOs, and others.

The consultation output will be incorporated into the ESMF's final version, and will be documented in Annex 2 of this ESMF.

In the future as projects are implemented, additional public consultation will occur through the EIA process and through the interaction with communities. Those consultations will be part of the ongoing implementation process and will not be documented in this ESMF.

9.0TECHNICAL REFERENCES

Byrne, J. **St. Vincent & the Grenadines Protected Areas System Gap Assessment.** Convention on Biological Diversity Secretariat and The Nature Convervancy, First Workshop,March 9th & 10th, 2006.

The Caribbean Conservation Association. **St.Lucia Country Environmental Profile**. St. Michael, Barbados, 1991.

Culzac-Wilson, L. **Important Bird Areas – AMERICAS, St. Vincent and the Grenadines**. Avian Eyes, 2009.

Knights, R.D. and Joslyn, Otis R.F. **Climate Change and Biodiversity in St. Vincent and the Grenadines.** Convention on Biological Diversity, Meeting February 25-29 2008, Panama City, Panama. February 2008.

Government of Saint Lucia. **Physical development Act no 21 of 2001**. Government Printery, Castries Saint Lucia, 2001.

Government of St. Vincent and the Grenadines.**Draft Environmental Management Act, 2009**.

Government of St. Vincent and the Grenadines.**Draft Environmental Impact Assessment Regulations**, **2009**.

Government of St. Vincent and the Grenadines.**National Economic and Social Development Plan 2013-2025.**

Government of Saint Vincent and the Grenadines.**Physical Development Act no 21 of 2001**.

Ministry of Health, Wellness and the Environment. **National Report, Third International Conference on Small Island Developing States.** July 2013.

Organization of American States, Saint Lucia Development Atlas. Department of Regional Development, OAS General Secretariat, Washington D.C. USA, 1987.

Robertson, R. **Final Report on Sustainable Land Management St. Vincent and the Grenadines**. UNDP-GEF project, 2012.

Singh, A., and Wilson J. **National Environmental Summary (NES), St. Vincent and the Grenadines, 2010.** UNEP (United Nations Environment Programme), 2010.

SVG National Physical Development Plan: **Preliminary Methodological Framework Report.** Stephen Kemp BA, DipTP, MRTPI, FRSA 16th October 2013.

The Caribbean Conservation Association.**St. Vincent Country Environmental Profile**. St. Michael, Barbados. 1991.

Wade, A. Barry. **COASTAL ZONE MANAGEMENT, The Need for a CZM Programme, St. Vincent and the Grenadines**. Environmental Solutions Ltd. Kingston 6, Jamaica. October 10, 2013.

APPENDICES

Appendix 1 – National Law in OECS Countries

This appendix provides a detailed discussion of the legal and regulatory framework in each OECS country.

1.1Saint Vincent and the Grenadines

In Saint Vincent and the Grenadines a number of Government and statutory agencies have responsibility for environmental management in one form or another under various pieces of legislation. Some agencies find themselves operating in grey areas or executing responsibilities that could better be managed under one agency with the relevant legal mandate.

The following matrix provides a general overview of the agencies, laws and regulations pertaining to environmental management and disaster mitigation. They cover such areas as the environment, land use, water management (including domestic, commercial, and hazardous waste management), historical and cultural patrimony, public health, and disaster response. The varied environmental management efforts have generally been fragmented and stymied in many cases by a lack of coordinated efforts, absence of empowering legislation or regulations, and financial and technical resources.

Table 1. Summary of pertinent agencies, the supporting legislations and scope of influence in Saint Vincent and the Grenadines.

Agency	Legislation	Scope
Central Water and Sewerage Authority [Ministry of Health Wellness and the Environment]	• *Central Water and Sewerage Act* (No.6, 1978), amended in 1992 • *Central Water and Sewerage Authority Act* (No.17, 1991)	Make better provision for the conservation, control, apportionment, and use of water resources of SVG.
Ministry of Health Wellness and the Environment [Solid Waste Management Unit]	• *Environmental Health Services Act* (No.14, 1991) • *Environmental Impact Assessment Regulations (Draft, 2009)* • *Environmental Management Act* (Draft, 2009) • Waste Management Act (No.31, 2000)	Make provision for the conservation and maintenance of the environment in the interest of health generally and in particularly in relation to places frequented by the public The SWMU was established in November, 1999 to execute the activities under the "Organization of Eastern Caribbean States (OECS) Solid and Ship-generated Waste Management Project" and is also currently responsible for the collection and disposal of Solid waste on St. Vincent. In addition, the SWM Unit is responsible for the

		development of waste management facilities on the Grenadine islands of Bequia, Union Island and Canouan.
Ministry of Agriculture, Rural Transformation Forestry and Fisheries	• *Fisheries Act* (No.8, 1986), & later amendments (No.32, 1986, and No.25, 1989) • *Forest Resource Conservation Act* (No.47, 1992	Promotion and management of fisheries and matters pertaining there to. To provide for the conservation, management and proper use of the forest and watersheds, declaration of forest reserves, cooperative forest and conservation areas.
Ministry of Agriculture, Rural Transformation Forestry and Fisheries [Forestry]	• *Marine Parks Authority Act*1997(No.33, 2002) • *Natural Forest Resource Act* (1947) • Wildlife Protection Act (No.16, 1987) & later amendments (1988, 1991) • Wildlife Conservation Act (1991)	The establishment of Marine Parks and other related matters. Providing for the protection of wildlife and any connected issues. The conservation and sustainable management of the Nation's forest, wildlife and national park resources
Ministry of Tourism and Culture	• *National Parks Act* (No.33, 2002) • *National Parks (Amendment) Act* (No.13, 2010)	To preserve, manage, protect and develop the natural and cultural heritage of SVG, including the historical and cultural heritage of the Island
Ministry of Housing, Informal Human Settlement, Physical Planning, Lands and Surveys [PPU]	• *Town and Country Planning Act* (No.45, 1992)	*The Town and Country Planning Ac*t (No.45, 1992) guides planning in St. Vincent & the Grenadines. Under this act, the PPU has the legal authority for environmental management in general, including the evaluation of the need for and level of EIA requirements.
The Sustainable Development Unit of the Ministry of Economic Planning, Sustainable Development, Industry, Information and Labour houses most of the focal point for these conventions.	United Nations Conventions • UNCBD • UNCCD (Now resides with the Forestry Department of the Ministry of Agriculture, Rural Transformation Forestry and Fisheries) • UNFCCC	Convention for the protection of biological diversity. Convention to combat desertification. Convention to reduce greenhouse gas emissions. Convent against land based sources of marine pollution.

	• Cartagena Convention Now resides with the Forestry Department of the Ministry of Agriculture, Rural Transformation Forestry and Fisheries • – LBS protocol (Public Health Department of hte Ministry of Health, Wellness and the Environment)	
The Sustainable Development Unit of the Ministry of Economic Planning, Sustainable Development, Industry, Information and Labour [The SGD has reporting requirements for all Ministries of Government]	• St. Georges Declaration of Principles for Sustainable Development (SGD) in the Organization of the Eastern Caribbean States (OECS) of 2001.	This sub-regional agreement is designed to support sustainable development and covers a wide range of environmental issues including … the Multilateral Environmental Agreements (MEAs)

St. Vincent & the Grenadines has legislation in place to address environmental and social development issues within respective jurisdictions. *The Town and Country Planning Ac*t (No.45, 1992) was initiated to guide planning in St. Vincent & the Grenadines and falls under the jurisdiction of Ministry of Housing, Informal Human Settlement, Physical Planning , Lands and Surveys. Under the Act, Article 29, an EIA for environmentally sensitive projects or activities is required.

The Physical Planning Unit (PPU) has the legal authority for environmental management in general under this Act, including the evaluation of, the need for and level of EIA required. In St. Vincent & the Grenadines there is no grading system for projects requiring EIA but the scope of the EIA is determined through discussion with the PPU.

The PPU functions as the technical/advisory arm of the Physical Planning and Development Board (PPDP), the body that oversees national development. The Act gives the Minister the ultimate and final decision on any planning matter. The Chair, Deputy Chair and Committee member of the PPDB are civil society member with the Town Planner as Secretary. Other members of the PPDB include representatives from the Police, National Properties, Transport and Works (Chief Engineer), Housing and Land Development Corporation, CWSA, VINLEC, Lands and Surveys, Kingstown Town board, the Ministry of Health Wellness and the

Environment, Ministry of Agriculture and the Permanent Secretary in the Ministry of Housing. The PPU is responsible for ensuring Project development occurs within the environmental and social requirements of St. Vincent & the Grenadines. As part of its regular responsibilities, the PPU will review the EIA and development applications as well as oversee all other development control related matters, from inspection, to monitoring and enforcement.

The Physical Planning and Development Board (PPDB) has the legal authority for carrying out the purpose and provisions of the *Town and Country Planning Act*. Within this piece of legislation lies the authority of the Planning Department to "… make provision for the orderly development of land, the assessment of the environmental impacts of development, the grant of permission to develop land and for other powers to regulate the use of land, and for related matters."

As a signatory to the MEAs and SGD, Saint Vincent and the Grenadines has obligations to reduce its greenhouse gas emissions, protect and sustainably manage its biological diversity, prevent land degradation and ensure that livelihood issues are not threatened or compromised. The National Environmental Management Strategy and the National Economic and Social Development Plan 2013-2025 speaks to environmental sustainability; as a consequence, all activities under the RDVRP must respect and respond to these declarations and pronouncements.

1.2Saint Lucia

In Saint Lucia a number of Government and statutory agencies have responsibility for environmental management in one form or another under various pieces of legislation. Some agencies find themselves operating in grey areas or executing responsibilities that could better be managed under one agency with the relevant legal mandate. As an example, the national responsibility for landslide rehabilitation is disjointed, with the main responsibility for road and settlement falling with the Ministry of Infrastructure, while the responsibility for landslides occurring in the Forest Reserve being that of the Forestry Department. Landslides occurring on private forested lands remain the responsibility of private owners while the Ministry of Agriculture through its engineering division provided some support to farmers whose farms or feeder roads were affected by landslides[9].

The following provides a general overview of the agencies, laws and regulations pertaining to various sections that have relevance to environmental management and as well as to disaster mitigation. They cover such areas as environmental, land use, water management, domestic, commercial, and hazardous waste management, historical and cultural patrimony, public health, and disaster response. The varied environmental management efforts have generally been fragmented and stymied in many cases by a lack of coordinated efforts, clear or absent empowering legislation or regulations, and financial and technical resources.

Table 2 below summarizes a number of pertinent agencies, their responsibilities, and enabling legislation.

[9] Meeting with Adam Toussaint Dep Chief forestry officer on 15 May, 2013

Table 2. Agencies with Environmental Management Responsibilities

Agency	Responsibility	Legislation
Ministry of Physical Development, Housing, and Urban Renewal	This Ministry has responsibility through the functions of its various departments/ sections which impact directly on the management of the country's natural resources. The Physical Planning section is the technical arm of the Development Control Authority (DCA). The Ministry is also responsible for the implementation of the Saint Lucia Building Codes and guidelines which are supposed to provide guides for best construction practices.	The Physical Planning and Development Act No 21of 2001
Development Control Authority	The Board of the Development Control Authority the power to review and decide on development proposals that are brought to it by its technical secretariat, the Physical Section of the Ministry of Physical Development. The relevant Act provides the legislated authority to make provision for the development of land, the assessment of the environmental impacts of development, the grant of permission to develop land and for other powers to regulate the use of land, and for related matters.	The Physical Planning and Development Act No 21 of 2001 (amended 2005) which superseded the 1971 Land Interim Development Control Act. Amendments to the 1971 Land Interim Development Control Act
Ministry of Health, Wellness, Human Services, and Gender Relations	Through its Environmental Health Department, it has the responsibility for reviewing plans, monitoring and enforcing public health and sanitation regulations and practices, and promoting public awareness on matters relating to public health and the environment. These include practices that affect health such as food preparation, sanitation, solid waste management, liquid and solid waste disposal, dust and air pollution, water quality, some occupational health and safety matters.	Public Health Act of 1975 and attendant Regulations to present. No. 10, 11, 12, 13, 14, 15, 16, 18, 20, 21, and 22 of 1978]:Public Health [Nuisances] Regulations. Public Health [Offensive Trades] Regulations: Public Health [Communicable and Notifiable Disease] Regulations: Public Health [Water Quality Control]

		Regulations: Public Health [Apartment Houses, Guest Houses and Hotels] Regulations: Public Health [Swimming Pools] Regulations: Public Health [Disposal of Offensive Matter] Regulations: Public Health [Sewage and Disposal of Sewage and Liquid Industrial Waste Works] Regulations
Pesticides Control Board (in the Ministry of Agriculture)	Pesticides Control Board in the Ministry of Agriculture and is responsible for monitoring the importation and use of various chemical substances.	The Pesticides and Toxic Chemicals Control Act 1975
Saint Lucia National Trust	This statutory body has responsibility for the conservation and management of buildings and objects of historical and architectural value as well as areas of natural and scientific importance. The Trust is responsible for protecting and promoting the patrimony of the country. It manages the Pigeon Island National Landmark, the Praslin Protected Landscape, and the Maria island and Frigate Island Nature reserves.	National Trust Act 1975
Saint Lucia Solid Waste Management Authority	A statutory authority with the responsibility for providing a coordinated and integrated systematic approach to collection, treatment, disposal, and recycling of wastes including hazardous wastes. The Authority is also responsible for the management of two sanitary disposal sites, one in the north at Deglos, and the other in the south in Vieux Fort. ,	The St. Lucia Solid Waste Management Authority Act No 8 of 2004, Amendment of No 10 of 2007
Ministry of Agriculture , Food Production, Fisheries, and Rural	This Ministry has wide ranging management responsibilities relating to the conservation and management. The	Forest Soil and Water Conservation Ordinance 1946

Development (formerly Ministry of Agriculture Forestry and Fisheries)	Forestry Department is responsible for terrestrial ecosystems and resources, flora and fauna in particular legislated reserves on public or private lands such as forest reserve and water catchment areas, water abstraction, and public awareness. The Fisheries Department has similar responsible for the coastal marine environment and is heavily involved in education of fishers. They also have some responsibilities for some riverine environments.	(amended in 1957 and 1983) Fisheries Act 1984 Wildlife Protection Act 1964
Ministry of Infrastructure, Port Services, and Transport	This Ministry is primarily responsible for the provision and maintenance of major infrastructure (roads and drains) within the state. It also issues licences for the extraction of sand from beach areas. The Ministry is responsible for the provision and management of technical services in the areas of communications, meteorology, transport, electrical safety, roads, hydraulic and building infrastructure, and utilities. The Chief Engineer represents the Ministry on the Development Control Authority and the National Emergency Management Advisory Committee (NEMAC).	Motor Vehicle and road Traffic Act 2003 Beach Protection Ordinance 1963
Sustainable Development, Energy, Science and Technology	The Ministry of Public Service, Sustainable Development, Energy, Science and Technology is the government body responsible for the following-up of the international commitments signed by Saint Lucia related with environmental issues, including the Climate Change Convention (UNFCC). The Sustainable Development, Energy, Science and Technology Section oversees all matters relating to sustainable development within the country and ensure that the various protocols are adhered to. It is the lead environmental agency in the country and spearheads the National Environmental Policy (NEP), National	

	environmental Management strategy (NEMS), the national Climate Change Committee (NCCC), and other initiatives related to biodiversity, marine and terrestrial pollution, energy efficiency, sustainable development and environment.	
The Caribbean Environmental Health Institute (CEHI), now called Caribbean Public Health Authority- now CARPHA	The Caribbean Environmental Health Institute, now called Caribbean Public Health Authority (CARPHA), is a regional CARICOM institution and a lead agency in matters related to water quality and water pollution control. It has been involved in testing for and quantifying various inputs into the coastal waters of the island and establishing monitoring and controls especially as part of water quality monitoring programmes. It collaborates with the Ministry of Health performing testing and analysis for that ministry as well as other ministries, agencies, and the private sector who may wish to employ its technical services. This organization is has a well equipped laboratory to assist its functions. The Ministry of Health relies on the Caribbean Environmental Health Institute (CEHI) to perform many of its analytical functions. CEHI also provides technical assistance and support to water resource management initiatives.	
The National Emergency Management Office (NEMO)	The role of the National Emergency Management Organisation [NEMO] is to develop, test and implement adequate measures to protect the population of Saint Lucia from the physical, social, environmental and economic effects of both natural and man- made disasters from Hurricanes, to landslides, to oil spills and fires. Its responsibility is to ensure the efficient functioning of preparedness, prevention, mitigation and response actions. NEMO is responsible	Disaster Management Act No. 30 of 2006 Emergency Powers (Disasters) Act No. 5 of 1995

	for preparing and managing the National Emergency Management Plan. NEMO is the chair of the National emergency Management Advisory Committee which convenes whenever there is a national emergency.	
Saint Lucia National Trust	The Trust is a statutory body established in 1975 and is charged with protecting and promoting natural and cultural heritage and manages sites such as the historical Pigeon Island National Landmark and the Maria Islands Nature Reserve. The Trust has developed the System Plan for Saint Lucia, and is also trying to document and preserve the Architectural Heritage of Saint Lucia. While the Trust is a referral agency for The DCA, and also in the vocal manner in which it voices its opinion on matters where it believes the matter of national heritage or preservation has threatened.	The St.Lucia National Trust Act of 1975
The Archaeological and Historical Society	The Archaeological and Historical Society is an NGO founded in 1954. It is custodian of many of Saint Lucia's archaeological and historical collections and is supposed to serve as a "Preserver of Records". The area of preservation of historical buildings and sites has remained a grey one between the Society and the Trust, and this has caused some conflict at times. The Society also promotes itself as the custodian of underwater archaeological sites as well.	
Water and Sewerage Company Limited (WASCO)	WASCO is responsible for the provision of potable water to the country, provision and management of potable water infrastructure, along with sewerage management / waste water services. The company is responsible for the management of the John Compton Dam and a number of intakes around the country.	Water and Sewage Act 2005 with amendment in 2008
Labour Department -	This department is responsible for	Employees

Occupational Health and Safety Section	standards of occupational health and safety in places of employment and providing inspection of food handling premises.	[Occupational Health and Safety] Act, No. 10, 1985.

The Physical Planning and Development Act (No. 29, 2001) is the act that guides the Development Control Authority (DCA) and the Physical Planning Section. Environmental Impact Assessments are requested under Section 22 of the Act and the list of undertakings that require an Environmental Impact Assessment (EIA) as part of the consideration for approval are listed in Schedule 4 of the Act, as follows:

1. Hotels of more than the number of rooms specified in the Regulations;
2. Sub-divisions of more than the number of plots specified in the Regulations;
3. Residential development of more than the number of units specified in the Regulations;
4. Any industrial plant which in the opinion of the Head of the Physical Planning and Development Division is likely to cause significant adverse impact on the environment;
5. Quarrying and other mining activities;
6. Marinas;
7. Land reclamation, dredging and filling of ponds;
8. Ports;
9. Dams and reservoirs;
10. Hydro-electric projects and power plants;
11. Desalination plants;
12. Water purification plants;
13. Sanitary land fill operations, solid waste disposal sites, toxic waste disposal sites and other similar sited;
14. Gas pipeline installations;
15. Any development projects generating or potentially generating emissions, aqueous effluent, solid waste, noise, vibration or radioactive discharges;
16. Any development involving the storage and use of hazardous materials;
17. Coastal zone developments;
18. Development in wetlands, marine parks, national parks, conservation areas, environmental protection areas or other sensitive environmental areas.

The Physical Planning Section of the Ministry is guided by this legislation and after soliciting an EIA based on the type of development, will circulate the report to a number of referral agencies which are made up of some of the other agencies and statutory bodies with some responsibility for environmental management and safeguard and who would have assisted in contributing to the Terms of Reference for the study. The study will be reviewed for its adequacy and the agencies may make additional recommendations if necessary.The final decision on any proposed development application or an EIA is made by the Board of the Development Control Authority

(DCA) who may approve the EIA with its recommendations and measures, along with the recommendations and measures of the referral agencies. The Development Control Authority (DCA) is empowered under the Physical Planning and Development Act No 29 of 2001 to consider and grant approval for all development within the state (Interview DPPS-MPDH, Executive Secretary- DCA). The DCA is made up of a government appointed Board of various professional interest and main technical government offices which also includes the Chief Engineer of the Ministry of Infrastructure or his representative.

However, the Ministry of Infrastructure has the responsibility for undertaking activities relating to the construction and management of major infrastructural works. This ministry does not apply to the DCA for approval as they are of the opinion that all such works are exempted under the Planning Act's third Schedule. It has also been suggested that since the Chief Engineer sits on the DCA Board, he can so inform the Board of the various works as a matter of courtesy. While the Ministry of Infrastructure may ask for an EIA for works done by a consultant if it so desires, it does not request one for projects done in house within the Ministry.

It is the responsibility of the DCA to monitor development, either singularly, or as part of a monitoring team, to evaluate the level of compliance by the developer with the approval granted and the attendant conditions. But this becomes an issue, even in respect to the EIA, when the other agencies already have their own mandates, heavy workloads, and deadlines. Overall, the DCA and the Ministry of Infrastructure must work closely together with the understanding that their mutual responsibilities lie in the welfare of the nation. With an understanding of this fact to guide discussions, it may be feasible for the Ministry of Infrastructure to submit plans along with environmental statements to the DCA for quick review in order that the DCA can revert with pertinent recommendations in a timely manner. It must be appreciated by the DCA that such projects require priority review and facilitation for the wider public benefit.

1.3Grenada

Thereareseveraldifferentagenciesinvolvedinactivitiesthatimpactontheenvironment,howeveronlyeight(fiveGovernmentDepartmentsandthreeStatuaryBodies)aredirectlyinvolvedinenvironmentalmanagementactivitiesonadailybasis, as shown in Table 1.

The current approach to Environmental management in Grenada is sectoral in nature. The Ministry of Health and the Environment has the primary responsibility for the environment along with some twenty agencies, inclusive of Government departments, nongovernmental organisations (NGOs) and statutory bodies (Physical Planning Unit – Draft Sectoral Report on the Environment, 2000).

The legislative framework for environmental management reflects the fragmentation of the institutional framework. A review of the environmental legislation in Grenada (Alexis, 2000) concluded that "… most of the laws … are sectoral and decentralized … while they have environmental application, they were not legislated to address those concerns and are mainly incidental to environmental management."

Table 1 - Agencies with responsibility for Project Approval and/or Implementation* and Environmental Management

DEPARTMENT/MINISTRY/ORGANISATION	MANDATE/RESPONSIBILITY
Physical Planning Unit, Ministry of Communication,Works, Physical Development, Public Utilities, ICT and Community Development	To protect and enhance the Nation's investment in infrastructure. Physical development, public utilities, communications, works, and community development.
Fisheries Division-Ministry of Agriculture, Natural Resources, Physical Planning & Fisheries	Provide efficient, effective, quality services to the agricultural community (farming, fishing, forestry) to stimulate maximum production for local consumption, export and increased incomes through the sustainable use of natural resources.
Land Use Division-Ministry of Agriculture, Natural Resources, Physical Planning & Fisheries	Provide efficient, effective, quality services to the agricultural community (farming, fishing, forestry) to stimulate maximum production for local consumption, export and increased incomes through the sustainable use of natural resources.
Environmental Health Department- Ministry of Health and Social Security	To encourage the improvement, protection, maintenance and preservation, of our fragile ecosystems on a sustainable basis.

Grenada now has in place several pieces of legislation to protect its environment**.** The most relevant ones to the project are**:** the Physical Planning and Development Control Act No 25, of 2002; the Public Health Act of 1958 and the litter Abatement Act of 1973, which has been supplemented by the passage of the Waste Management Act 2001 addressing pollution control and the abatement of litter; the 1986 Fisheries Act; and the 1990 National Parks and Protected Areas Act. Every one of those legislations has been playing important resource management roles, which, to some extent, has contributed to the enhancement and conservation of the natural environment and the preservation of public health and safety in Grenada. Nevertheless, only two of those legislations (the Waste Management Act No 16 of 2001 and the Physical Planning and Development Control Act, No25, of 2002) include provisions for environmental impact assessment (EIA).

It is important to note here that according to both Acts, the legal responsibility for environmental impacts assessments and development control in general is shared between none other than the current Physical Planning and Development Control Authority (PPDA) and the Minister responsible for Planning (Act16:15-17 and Act25:25&28). That Minister is responsible for

making regulations and appeals. The PPDA is responsible for everything else, with the support of the Physical Planning Unit functioning as its staff.

The Physical Planning and Development Control Act No25, of 2002 stands out for its overall responsibility for land use management in general**.** It makes fresh provision for the control of physical development, to continue the Land Development Authority, to require the preparation of physical plans for Grenada, to protect the natural and cultural heritage, and for related matters**.** The Physical Planning and Development Authority (PPDA) is set up under the Act with regulatory powers over any development taking place in, on, under or over the land**.**

Part 4 of the Act makes provision for the preparation of Environmental Impacts Assessment**.** The second schedule (section25 (2)), lists a total of 18 matters for which an Environment Impact Assessment is normally required, as follows:

1. Hotels of more than 50 rooms
2. Sub-divisions of more than 10 lots
3. Residential development of more than 25 units
4. Any industrial plant which in the opinion of the Authority is likely to cause significant adverse environmental impact
5. Quarrying and other mining activities
6. Marinas
7. Land reclamation, dredging and filling of ponds
8. Airports, ports and harbors
9. Dams and reservoirs
10. Hydro-electric projects and power plants
11. Desalination plants
12. Water purification plants
13. Sanitary landfill operations, solid waste disposal sites, toxic waste disposal sites and other similar sites
14. Gas pipeline installations
15. Any development generating or potentially generating emissions, aqueous effluent, solid waste, noise, vibration or radioactive discharges
16. Any development involving the storage and use of hazardous materials
17. Any coastal zone development
18. Any development in wetlands, marine parks conservation areas, environmental protection areas or other sensitive environmental areas.

According to the Act, the Authority (meaning the Physical Planning and Development Control Authority) can request an EIA in respect of any development application including application for approval in principle, if the proposed development could significantly affect the environment (Subsection1). The Physical Planning Department authorized under the Planning and Development Authority authorized by Act No. 25 of 2002 has the primary responsibility to issue environmental permits for development or construction. Activities or projects that require an EIA (Environmental Impact Assessment) are listed in Annex 2. In practice an EIA is created only in private sector developments, and the relevant Line Ministries are consulted to provide input into the evaluation of the EIA.

The PPDA functions as the national agency for the identification, protection, conservation and rehabilitation of the natural and cultural heritage in accordance with the United Nations Educational, Scientific and Cultural Organization**.** It is a convention for the protection of the World Cultural and Natural Heritage, to which Grenada is a party**.**

To ensure that environmental guidelines are adhered to, the proposed projects should be examined by the agency responsible for approval of development projects in Grenada, the Physical Planning Department, as well as the Ministry of Health, Ministry of Works, Ministry of Economic Development, prior to implementation to identify proposed environmental issues and put in place mitigation measures. Other responsible agencies should also be consulted as necessary.

Appendix 2 – Guidelines for Preparing an EIA

Public Involvement

The environmental process should be a public and transparent process in which citizens are involved as it is citizens that will be impacted. Most major projects will have impacts, negative and positive, on the community in which it is located and immediately surrounding communities; however, some projects may have more far-reaching effects; therefore, public involvement may need to be national and not just in affected communities. Ecologic, social and economic impacts need to be properly evaluated for the proposed project and alternatives. The scoping process or a process that decides what issues are important to the project and that should be addressed in environmental documents including Environmental Impact Assessment (EIA) must involve citizens. Additionally, the public should also be allowed to comment on EIAs for moderate to large scale projects during a comment period and their comments addressed in a follow-up document.

A brief background of the project must be provided early on in any documentation. The project must be clearly defined and all issues/impacts presented and evaluated in an unbiased manner. Maps, graphics, photographs, site plans, renderings and other data should be included in any documentation. Impacts on natural resources like soils, water, vegetation, terrestrial and marine species clearly defined. Social impacts should also be presented. Impacts on transportation, infrastructure, energy, drainage, sewage, education, health, safety, noise, security, land use, planned projects, community facilities, utilities, cultural and historical resources and community character must be presented and analysed. All economic impacts must also be presented with supporting data/studies, etc. Importantly, alternatives to the proposed project must be presented and evaluated.

The description of the proposed action should include:

1. The purpose or objective of the action, including any public need for, or public benefits from the action, including social and economic considerations;
2. The location and physical dimensions of the action;
3. The background and history of the action, or site;
4. Timing and schedule for implementing the action, including construction and operations phases, to the extent the information is available, or can reasonably be estimated;
5. Relationship of the action to land use plans, zoning restrictions, and other adopted plans and programs at the local or regional level; and
6. Identification of authorizations permits and approvals required.

For the restoration of historic Fort George and Fort Charlotte, the EIA should include a Physical Cultural Resources Management Plan (PCRMP) to guide those activities. The PCRMP should integrate the extensive identification and assessment work previously done as part of the nomination dossier for UNESCO World Heritage Site status. TORs for future EAs will specify extensive consultation and coordination with the national Tourism and Cultural Ministries, the National Trusts, Planning and Development authorities, and other local organizations, as well as review of previous work and consultation with international organizations including ICOMOS,

UNESCO, and IUCN. Local experts have already been engaged to develop preliminary rehabilitation plans for historic sites, and these will be defined further in consultation of EAs to develop the final renovation designs and corresponding PCRMPs for key high visibility projects. The EA TORs should reference WBG's EHS Guidelines for Tourism and Hospitality Development as well as UNEP's Guidance on Sustainable Coastal Tourism, and must build on existing country and regional environmental policies for tourism development and coastal zone management.

Appendix3–Typical Environmental Contract Clauses

The following are standard environmental related clauses that may be appended to or incorporated into the contracts for the small civil works which have been determined to be of minimal environmental impact. These mitigation measures are the core of a generic, standardized EMP (Environmental Management Plan) for these types of small works and the typical associated minor impacts which can be routinely addressed with best industry practice. These clauses are general and may be modified to conform to applicable Saint Vincent and the Grenadines laws and contract procedures for such works and shall remain in force throughout the contract period. These mitigation measures are intended for relatively simple environmental management issues and are based on best management practice and industry standards. These are the mitigation measures which are expected of all professional contractors who are performing civil works, and represent the minimum standard of execution for environmental protection during the execution of such works. (Specific project related recommendations may also be forthcoming from statutory permitting agencies such as the PPDB or the Ministry of Health, and these can be reformatted in to contract clauses as well. Finally, if an EIA has been conducted for a particular sub-project due to its environmentally sensitive or complex nature, then the specific recommendations for mitigation measures in that EIA should also be included as contract clauses.)

1. Permits and Approvals

The contractor shall be responsible for ensuring that he or she has all relevant legal approvals and permits required to commence works.

2. Site Security

The contractor shall be responsible for maintaining security over the construction site including the protection of stored materials and equipment. In the event of severe weather, the contractor shall secure the construction site and associated equipment in such a manner as to protect the site and adjacent areas from consequential damages. This includes the management of onsite, construction materials, construction and sanitary wastes, additional strengthening of erosion control and soil stabilization systems and other conditions resulting from contractor activities which may increase the potential for damages.

3. Discovery of Antiquities

If, during the execution of the activities contained in this contract, any material is discovered onsite which may be considered of historical or cultural interest, such as evidence of prior settlements, native or historical activities, evidence of any existence on a site which may be of cultural significance, all work shall stop and the supervising contracting officer shall be notified immediately. The area in which the material was discovered shall be secured, cordoned off, marked, and the evidence preserved for examination by the local archaeological or cultural authority. No item believed to be an artifact must be removed or disturbed by any of the workers. Work may resume, without penalty of prejudice to the contractor upon permission from the contracting officer with any restrictions offered to protect the site.

4. Worker Occupational Health and Safety

The contractor shall ensure that all workers operate within a safe environment. Sanitation facilities shall be provided for all site workers. All sanitary wastes generated as a result of project activities shall be managed in a manner approved by the contracting officer and the local authority responsible for public health. The contractor shall ensure that there are basic medical facilities on site and that there are staff trained in basic first aid. Workers must be provided with the necessary protective gear as per their specific tasks such as hard hats, overalls, gloves, goggles, boots, etc. The contractor shall provide the contracting officer with an occupational health and safety plan for approval by the local health authority prior to the commencement of site activities.

The contractor must ensure that all workers operate within a safe environment. All relevant Labour and Occupational Health and Safety regulations must be adhered to ensure worker safety. Sanitary facilities must be provided for all workers on site. Appropriate posting of information within the site must be done to inform workers of key rules and regulations to follow.

5. Noise Control

The contractor shall control noise emissions generated as a result of contracting activities to the extent possible. In the case of site locations where noise disturbance will be a concern, the contractor shall ensure that the equipment is in good working order with manufacturer supplied noise suppression (mufflers etc.) systems functioning and in good repair. Where noise management is a concern, the contractor shall make reasonable efforts to schedule activities during normal working hours (between 8 am and 5 pm). Where noise is likely to pose a risk to the surrounding community either by normal works or working outside of normal working hours or on weekends, the contractor shall inform the contracting officer and shall develop a public notification and noise management plan for approval by the contracting officer.

Specific elements of the noise control activities by the contractor shall include: construction/ work activities will occur within specified daylight hours e.g. 8:00 am to 4:00pm; community / public to be informed in advance of any work activities to occur outside of normal working hours or on weekends; sites should be hoarded wherever possible; during operations, the engine covers of generators, air compressors and other powered mechanical equipment shall be closed, and equipment placed as far away from residential areas as possible; there will be no excessive idling of construction vehicles at sites; noise suppression equipment or systems supplied by manufacture will be utilized; ensure all vehicles and equipment are properly serviced; the contractor must develop and implement a public notification and noise management plan.

6. Use and Management of Hazardous Materials, fuels, solvents and petroleum products

The use of any hazardous materials including pesticides, oils, fuels and petroleum products shall conform to the proper use recommendations of the product. Waste hazardous materials and their containers shall be disposed of in a manner approved by the contracting officer. A site management plan will be developed by the contractor if the operation involves the use of these

materials to include estimated quantities to be consumed in the process, storage plans, spill control plans, and waste disposal practices to be followed. This plan and the manner of management are subject to the approval of local authority responsible for safety, and waste management, and the contracting officer.

Elements of the hazardous materials management shall include: contractor must provide temporary storage on site of all hazardous or toxic substances in safe containers labeled with details of composition, properties and handling information; the containers of hazardous substances shall be placed in an leak-proof container to prevent spillage and leaching; the wastes shall be transported by specially licensed carriers and disposed in a licensed facility; paints with toxic ingredients or solvents or lead-based paints will not be used; banned chemicals will not be used on any project.

7. Use and Management of Pesticides

The project will not fund activities that involve the purchase or use of significant quantities of pesticides. For incidental, minor use of pesticides, theuse of pesticides shall be approved by the contracting officer and shall conform to the manufacturers' recommendations for use and application. Any person using pesticides shall demonstrate that they have read and understood these requirements and are capable of complying with the usage recommendations to the satisfaction of the contracting officer. All pesticides to be used shall conform to the list of acceptable pesticides that are not banned by the relevant local authority.

If termite treatment is to be utilized, ensure appropriate chemical management measures are implemented to prevent contamination of surrounding areas, and use only licensed and registered pest control professionals with training and knowledge of proper application methods and techniques.

8. Use of Preservatives and Paint Substances

All paints and preservatives shall only be used with the approval of the contracting officer. Information shall be provided to the contracting officer who describes the essential components of the materials to be used so that an informed determination can be made as to the potential for environmental effects and suitability can be made. Storage, use, and disposal of excess paints and preservatives shall be managed in conformance with the manufacturers' recommendations and as approved by the contracting officer. The contractor shall provide the contracting officer with a list of materials and estimated quantities to be used, storage, spill control and waste disposal plans to be observed during the execution of the contract. This plan is subject to the approval of the contracting officer.

9. Use of Explosives

Use of explosives shall be at the approval of the relevant local authority and shall be supervised and undertaken by a qualified explosives technician. Blasting will be limited to between the hours of 9:00am and 4:00 pm unless specifically approved by the local authority and the contracting officer. Any use of explosives shall be permitted only after an explosives

management and blasting plan has been approved by the relevant local authority and the contracting officer.

This plan shall include:

A. Description of the explosive agent, charge description, intended use.

B. Site safety plan including:
1. Storage of initiators, booster charges and principal blasting agents
2. Handling precautions to be observed
3. Transport to and from site
4. Security of stored materials
5. Disposal of excess or damaged explosive materials.

C. Analysis of risk to surrounding area and mitigation measures to be employed including:
1. Over-pressure event
2. Noise
3. Flying debris
4. Seismic transmission
5. Accidental detonation

D. Name and qualifications for all persons responsible for handling explosive agents

10. Site Stabilization and Erosion Control

The Contractor shall implement measures at the site of operations to manage soil erosion through minimization of excavated area and time of exposure of excavated areas, preservation of existing ground cover to the extent possible, provision of approved ground cover. Where excavations are made, contractor shall implement appropriate stabilizing techniques to prevent cave-in or landslide. Measures shall be approved by the contracting officer.

The contractor must ensure that appropriate erosion control measures such as silt fences are installed. Proper site drainage must be implemented. Any drain clogged by construction material or sediment must be unclogged as soon as possible to prevent overflow and flooding. The use of retaining structures and planting with deep rooted grasses to retain soil during and after works must be considered. The use of bio-engineering methods must be considered as a measure to reduce erosion and land slippage. Keep angle of slopes within limits of soil type. Balance cut and fill to limit steepness of slopes. All slopes and excavated areas must be monitored for movement.

All construction materials, including chemicals, must be properly stored. The contractor will establish appropriate erosion and sediment control measures such as hay bales, sedimentation basins, and / or silt fences and traps to prevent sediment from moving off site and causing excessive turbidity in nearby streams, rivers, wetlands, and coastal waters.
An erosion management plan will be required where the potential exists for significant sediment quantities to accumulate in wetlands, lakes, rivers and nearshore marine systems. This plan shall

include a description of the potential threat, mitigation measures to be applied, and consideration for the effects of severe weather and an emergency response plan.

If works are along coastal marine areas or near major steams and river, water quality monitoring must be done before construction, and at regular intervals to determine turbidity levels and other quality parameters. Construction vehicles and machinery will be washed only in designated areas where runoff will not pollute natural surface water bodies.

11. Air Quality

The following conditions apply to work sites for the control of air quality including dust control:

- Construction materials such as sand, cement, or other fines should be kept properly covered.
- Cement should be kept stored within a shed or container.
- The sand and fines can be moistened with sprays of water.
- Unpaved, dusty construction roads should compacted and then wet periodically.
- During interior demolition debris-chutes shall be used above the first floor.
- Demolition debris shall be kept in controlled area and sprayed with water mist to reduce debris dust.
- During pneumatic drilling/wall destruction dust shall be suppressed by ongoing water spraying and/or installing dust screen enclosures at site
- The surrounding environment (sidewalks, roads) shall be kept free of debris to minimize dust.
- There will be no open burning of construction / waste material at the site.
- There will be no excessive idling of construction vehicles at sites.
- The bins of all haulage vehicles transporting aggregate or building materials must be covered on all public roads.

12. Traffic Management

In the event that construction activities should result in the disruption of area transportation services, including temporary loss of roadways, blockages due to deliveries and site related activities, the contractor shall provide the contracting officer with a traffic management plan including a description of the anticipated service disruptions, community information plan, and traffic control strategy to be implemented so as to minimize the impact to the surrounding community. This plan shall consider time of day for planned disruptions, and shall include consideration for alternative access routes, access to essential services such as medical, disaster evacuation, and other critical services. The plan shall be approved by relevant local authority and the contracting officer.

Elements of the traffic management plan to be developed and implemented by contractor shall include: alternative routes to be identified in the instance of extended road works or road blockages; the public to be notified of all disturbance to their normal routes; signposting, warning signs, barriers and traffic diversions must be clearly visible and the public warned of all potential hazards; provision must be made for the safe passages and crossings for all pedestrians

where construction traffic interferes with their normal route; there must be active traffic management by trained and visible staff at the site or along roadways as required to ensure safe and convenient passage for the vehicular and pedestrian public; Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours or times of livestock movement .

13. Management of Standing Water

Under no circumstances shall the contractor permit the collection of standing water as a consequence of contractor activities without the approval of the contracting officer and consultation with the relevant local environmental health authority. Recommendations from that local authority on how to manage and treat the standing water must be implemented. The condition of the standing water must be monitored by the contractor to ensure that it does not present itself as a breeding ground for any pests such as mosquitoes.

14. Management of Solid Wastes -trash and construction debris

The contractor shall provide the contracting officer with a solid waste management plan as part of a site waste management plan that conforms to the solid waste management policies and regulations of the relevant Saint Vincent and the Grenadines authority. Under no circumstances shall the contractor allow construction wastes to accumulate so as to cause a nuisance or health risk due to the propagation of pests and disease vectors. The site waste management plan shall include a description of how wastes will be stored, collected and disposed of in accordance with current law. Additionally the contractor shall provide for the regular removal and disposal of all site wastes and provide the contracting officer with a schedule for such removal.

15. Management of Liquid Wastes

The contractor shall provide the contracting officer with a liquid waste management plan as part of a site waste management plan that conforms to the waste management policies and regulations of the relevant Saint Vincent and the Grenadines authority. Under no circumstances shall the contractor allow construction related liquid wastes to accumulate on or off the site, or to flow over or from the site in an uncontrolled manner or to cause a nuisance or health risk due to its content. The site waste management plan shall include a description of how these wastes will be stored, collected and disposed of in accordance with current law. Additionally the contractor shall provide for the regular removal and disposal of all site wastes and provide the contracting officer with a schedule for such removal.

Specific elements of the contractor's liquid waste management plan shall include: contractor to abide by all pertinent waste management and public health laws; waste collection and disposal pathways and sites will be identified for all major waste types expected from demolition and construction activities; construction and demolition wastes will be stored in appropriate bins; liquid and chemical wastes will be stored in appropriate containers separated from the general refuse; all waste will be collected and disposed of properly in approved landfills by licensed collectors; the records of waste disposal will be maintained as proof for proper management as designed; whenever feasible the contractor will reuse and recycle appropriate and viable

materials (except asbestos); construction related liquid wastes must not be allowed to accumulate on or off the site, or to flow over or from the site in an uncontrolled manner or to cause a nuisance or health risk due to its contents.

16. Special Condition - Management of Medical Wastes

In the event that the contractor discovers medical wastes, the contractor shall provide the contracting officer with a medical waste management plan as part of a site waste management plan that conforms to the waste management policies and regulations of the relevant Saint Vincent and the Grenadines health and waste management authorities. The plan shall include a description of how these wastes will be stored, collected and disposed of in accordance with current law. The contractor must ensure that all persons handling medical wastes are provided with proper protective clothing. All medical wastes must be secured in specially labelled and sealed containers, and disposed of according to relevant local legislation at specified disposal sites. Medical wastes must be kept separate from the other waste streams on site.

The waste management plan provided by the contractor must ensure that all persons handling medical wastes are provided with proper protective clothing. All medical wastes must be treated as hazardous. All medical wastes must be secured in specially labeled and sealed containers separate from other wastes streams. All medical wastes must be disposed of according to relevant local legislation at specified disposal sites.

17. Special Condition - Management of Asbestos

In the event that during the course of work activities the contractor discovers asbestos as part of the existing site that requires stabilization and removal, the contractor shall contact the relevant local authorities and the contracting officer immediately. If work has already commenced, all work in the area must stop immediately. An asbestos management plan must be prepared by the contractor and approved by the relevant local health and waste management authorities and the contracting officer describing how this material will be stored, collected and disposed of in accordance with current law, and identifying the approved experienced professional who will undertake this work. The plan must include:

- Description of the issue and extent of contamination
- Site safety measures
- Stabilization techniques to be employed
- Storage and transport plan
- Approved disposal procedure
- Worker awareness and training

In preparing the plan, the contractor should liaise with the relevant local health and waste management agencies to ensure that the adequacy of the measurements being proposed.

Site management shall consist of enclosing relevant sections of the site with appropriate material by the contractor. Where possible the asbestos and its location must be appropriately contained and sealed to minimize exposure, and any asbestos shall be marked clearly as a hazardous

material. Stabilizing friable asbestos will be done prior to removal (if removal is necessary) and it will be treated with a wetting agent to minimize asbestos dust. Asbestos will be handled and disposed by skilled & experienced professionals using appropriate PPE (personal protective equipment) such as respirators and tyvec suites which will be provisioned to workers to protect them and prevent contamination with asbestos fibres. Respiratory protection together with measures to prevent the contamination of clothing and inadvertent transport of asbestos fiber off-site shall be provided to all exposed workers. If asbestos material is to be stored temporarily, the wastes should be securely enclosed inside closed containments and marked appropriately. Security measures must be implemented against unauthorized removal of asbestos from the site. No removed asbestos will be reused.

18. Special conditions - Water Pipeline Installation

The Contractor shall utilize the following measures to mitigate potential environmental, health and safety impacts during the construction and installation of the water pipeline:

- Trenching. Soil stockpiling will be done in designated areas alongside the trench using piles no higher than 2 meters, convex in shape, and located so as to minimize disturbance and hazard to passers-by or traffic. The contractor shall ensure that stockpiles do not cause damming of water or runoff, or that such stockpiles are themselves not washed away.
- Dewatering. Removal of water from trenches shall be done in such a manner to prevent the discharge of mud or sediment into any water body, or the creation of standing water bodies on lands outside the work area.

- Dust Control. During dry periods when dust is a nuisance it shall be mitigated by spraying of water onto work surfaces along the pipeline work area. Dust shall not be allowed to travel outside of the work zone.

- Traffic Control. For all works alongside roadways, appropriate safety signage and barriers shall be used to ensure the safety of any foot traffic or vehicular traffic. If the trench is exposed to foot or vehicle traffic appropriate restrictive barriers, taping, and warning signage shall be used. Traffic shall be controlled and stopped as necessary on public thoroughfares in accordance with good safety practice and national requirements. Trenches or equipment exposed to public access must be clearly demarcated and restricted to public access. Mud and sand brought onto paved public access roads shall be washed and cleared daily.

- Safety Plan. The Contactor will prepare a Health and Safety Plan which shall include emergency response and first aid procedures, awareness training suitable to the tasks being conducted, vehicle and equipment safety provisions, and personal protective equipment information. The contractor will provide hard hats, work boots, protective eyewear and gloves to workers and will ensure that they are used by workers on the job.
- Vegetation and Topsoil Clearing. If any vegetation or brush is cleared, or topsoil removed, it shall be done in such a way as to avoid disturbance or effects outside the established work area. Herbicides or burning may not be used to dispose of any cleared

vegetation, rather such vegetation must be chipped, shredded, and dispersed in approved areas or hauled to an approved landfill. Should fauna be encountered work will cease until such fauna have been safely relocated. If any agricultural land is crossed, topsoil shall be stored separately and replaced by spreading on the land surface upon completion of work.

- Access Roads. No new access roads will be opened, only existing roadways will be used for all the entry and exit of materials and equipment to and from the work zone.

- Work Areas. Contractor will delineate approved work areas for all activities including excavation, stockpiling, access, equipment placement during excavation, and materials storage. Such work areas are subject to approval by the contract manager and/or supervising engineer, and Contractor may use only those lands for which approval and access has been provided by the contracting officer and/or supervising engineer. Any rental, use or acquisition of lands from private parties is not permitted without previous notification to and express written approval by the PSIMPU through application of relevant World Bank Policy.

- Vehicle and Equipment Fuelling and Maintenance. All gasoline and diesel filling, oil changing, and maintenance of vehicles and equipment will be done outside of the project area at established facilities. If fuel trucks are used they will have adequate safety equipment and fire extinguishers, be free of leaks and be fitted with appropriate dispensers, and have spill kits and absorbent materials ready to retrieve any leaked or spilled fuels. No fuel, new oil or waste oil will be stored on the work site, and vehicles will not be washed on the work site or in adjacent areas.

19. Special conditions – works in Forest Reserves

For any work in a designated Forest Reserve, the following will apply:

- There must be no unnecessary clearing of natural vegetation.
- Avoid the use of herbicides or other chemicals.
- Any works to be undertaken in a protected forest area must be done under the supervision of a representative of the Forestry Department.
- The contractor must ensure that any work undertaken in the forest reserve must be done by manual means.
- There must be minimal impact to flora and fauna in the forest area.
- All recognized natural habitats, wetlands and protected areas in the immediate vicinity of the activity must not be damaged or exploited.
- The contractor must ensure that all staff will be strictly prohibited from hunting, foraging, logging or other damaging activities.
- A survey and an inventory shall be made of large trees in the vicinity of the construction activity, large trees shall be marked and cordoned off with fencing, their root system protected, and any damage to the trees avoided.
- There will be no unlicensed borrow pits, quarries or waste dumps in protected areas.
- Upon completion, all wastes must be immediately removed out of the forested area.

Appendix 4 – Disclosure / Public Consultation

Description of Disclosure

Website screenshot

Workshop or Meeting Lists

Key input, concerns, observations

The participants felt that …

There was a request for information on …

Major conclusions, results

The ESMF was finalized based on inputs from the national workshop and comments on the draft …

Appendix 5 – Resettlement Policy Framework (RPF)

The regional RPF (encompassing resettlement policy aspects for all three countries) is under development and will form Annex 5 of this ESMF.