ENVIRONMENTAL FRAMEWORK

DOMINICA, SAINT LUCIA, AND ST. VINCENT AND THE GRENADINES
SPECIAL PROGRAM ON ADAPTATION TO CLIMATE CHANGE (SPAC) PROJECT

March 10, 2006
A. PROJECT DESCRIPTION

1. Lending instrument

This is a GEF grant funded through the Strategic priority “Piloting an operational approach to adaptation” (SPA). The project costs would be financed by a GEF grant of US$2.1 million, with co-financing from: (i) the three participating countries in the amount of US$1.5 million; and (ii) other donors (US$2.5 million), for a total of US$6.1 million.

The GEF following the instructions from the Conference of Parties to the UNFCCC, the Marrakech Accords (COP-7), set up the SPA, which includes a requirement that: (i) activities be within a natural resources management context that generate global environmental benefits, and (ii) involve adaptation measures that provide other major development benefits (e.g. WEHAB, i.e. water, energy, health, agriculture, biodiversity).

2. Project development objective and key indicators

The project development objective is to support efforts by Dominica, Saint Lucia and St. Vincent and the Grenadines to implement specific (integrated) pilot adaptation measures addressing the impacts of climate change on the natural resource base of the region, focused on biodiversity and land degradation along coastal and near-coastal areas. Reducing these impacts will induce economic benefits in the tourism, fisheries, agriculture and forestry sectors, help maintain the resource base upon which these economic activities rely and promote climate resilient sustainable development. More importantly, the experience gained through these local level activities will assist and inform the policy decision making process and is expected to influence the enactment of climate resilient sustainable development policies.

The project will have the following key performance indicators:

3 Population of flagship species stabilized in Morne Diablotin and Morne Trois Pitons national parks in Dominica.
3. 30% progress in protected areas management effectiveness, integrating climate impacts as measured through GEF tracking tool.
3. More than 80 ha and at least 5% of the farmers producing in pilot sites with improved land use models that foster biodiversity preservation while improving farmers income.
3. No less than 10,000 ha with improved land use and park management plans incorporating global climate change risk management.
3. Time without adequate water services in key communal buildings (schools, health posts, markets, etc.) in three sites reduced by 30%.
3. Maintaining the services from lifeline infrastructure to withstand category 3 hurricanes in the face of intensified hurricanes in the Castries area of St. Lucia.
3. Development of National Sustainable Development Strategy in at least one country which integrates climate change, biodiversity conservation, and land degradation management within national development planning frameworks.
3. **Global learning value.** At least one country adopts lessons from the project in similar activities in other small states, not participating in the project, including those from other regions.
3. Contributions are made towards better definition of adaptation performance indicators.

3. **Project components**

1. The project would support three activities (components) prioritised in national adaptation strategies and refined through a series of regional and national consultations.

**Component one:** Design of priority adaptation measures addressing impacts of climate change on biodiversity and land degradation (total cost $1.0 million; GEF funding $0.3 million). Under this component the following activities will be supported:

- **Subcomponent 1 – Feasibility Analysis.** Under this component the project will support studies, analyses, surveys and data collection to prepare: (i) Baseline analysis, analysis of specific climate change impacts, characterization of specific problems to be addressed; (ii) Identification of alternatives; (iii) Assessment of alternatives (technical, cost analysis, institutional, environmental, social, risk, etc.); (iv) Selection of recommended actions; and, (v) analysis of policy framework and implications.
- **Subcomponent 2 - Community Participation.** (i) Build communities participation and management capabilities to support the implementation and management of the selected pilot measures; (ii) Analysis of feasibility studies; (iii) Prioritization of specific investments.
- **Subcomponent 3 - Design of adaptation measures.** (i) Technical design; (ii) Environmental and Social management plans; (iii) Institutional arrangements; (iv) Community participation; (v) M&E system design to measure and monitor vulnerability of biodiversity assets and land degradation to climate change impacts; (vi) Procurement Process Selection.

**Component two:** Implementation of adaptation measures designed to address climate impacts on biodiversity and land degradation (total cost $2.15 million, GEF funding $1.7 million). The project will support the implementation, on a pilot basis, of selected adaptation measures in seven sites in the participating countries thereby enhancing the resilience of insular ecosystems with biodiversity assets
under threat from climate change. Under this component the following activities, identified in national communications and other studies, will be supported:

- **Subcomponent 1** – Implementation of adaptation measures in the biodiverse Morne Diablotin National Park and its neighboring coastal communities of Colihaut, Dublanc and Bioche (Dominica) identified in updated management plan under Component 1.

- **Subcomponent 2** - (Dominica): The project would address biodiversity and land degradation issues and vulnerabilities to climate change, by: (a) implementation of strategic measures identified in the updated and complemented management plan for the Morne Trois Pitons National Park developed in Component 1; and (b) establishment of pilot adaptation measures to enhance the resilience of aquatic systems and watershed areas and improvement to water resource management so as to enhance the capabilities for sustainable development of adjoining communities thereby reducing stress on the Morne Trois Pitons Nation Park.

- **Subcomponent 3** - (Saint Lucia): This subcomponent seeks to complement the government’s water program by establishing adaptation measures that would result in increased resilience to the impacts of climate variability and climate change in the Vieux Fort Region of Saint Lucia, and the proposed Pointe Sable National Park. Specifically, activities will be implemented to enhance the efficient use of available water supplies and increased resilience to water scarcity conditions anticipated from climate change impacts.

- **Subcomponent 4** – (Saint Lucia): This pilot adaptation measure seeks to demonstrate the design and implementation of appropriate interventions to reinforce critical infrastructure (hospitals, shelters, fire stations and storm barriers) to the effects of intensified hurricanes and tropical storms, in the Castries region of Saint Lucia. The Caribbean islands need to built critical infrastructure that can withstand the increased frequency of tropical storms (a change associated with global warming) to serve as pillars for disaster management and reconstruction. The project will provide for the scientific and engineering services required to assess vulnerabilities, define priorities and retrofit one specific building.

- **Subcomponent 5** - (St. Vincent and the Grenadines): This subcomponent is designed to support national efforts aimed at integrating climate change adaptation principles into ecosystem management. The project will focus on the implementation of adaptation measures to address fresh water needs and coastal vulnerabilities, in particular the salinization of aquifers caused by sea level rise, while reducing land degradation and protecting the fragile biodiversity in the two islands of Bequia and Union. The project will support the establishment of adaptation measures to address biodiversity, land degradation issues and vulnerabilities.

- **Subcomponent 6** - (St. Vincent and the Grenadines): The project will support the implementation of adaptation measures addressing land use / land planning issues and associated vulnerabilities. In this regard the project activities will include interventions, to be selected during the execution of Component 1, like: execution of key, strategic, actions to initiate the land use plan implementation, including community control and enforcement; strengthen forest management and soil conservation efforts; reduce vulnerability to flash flooding; reduce shoreline erosion and protect coastal marine resources

**Component Three.** Strengthen national capacity to implement multiple Multi-lateral environmental agreements (MEA) obligations (total cost US$2.95 million; GEF US$ 0.1 million). This component, which will mostly be financed by third party and counterpart contributions, would finance goods and services required to develop and establish (in at least one country) the building blocks
and the operational frameworks (legal, institutional and management structures) for addressing multiple convention objectives in accordance with national priorities within the “ecosystem approach” as adopted by the three governments and promoted by the United Nations Framework Convention on Climate Change (UNFCCC), Convention on Biological Diversity (CBD) and United Nations Convention to combat desertification (UNCCD). To this end the project will support: (i) the production of vulnerability maps (ii) the development of National Sustainable Development Strategy which integrates climate change, biodiversity conservation, and land degradation management within national development planning frameworks; (iii) establish a single national reporting framework for the UNFCC, CDB, and UNCCD so as to reduce the burden on limited resources available in the three countries, while pioneering a harmonized report structure that would integrate climate change, biodiversity and land degradation issues. iv) legal and institution strengthening.

4. Sector issues addressed by the project

Reducing the risks to global commons. The project will support the design and implementation of specific adaptation measures that will contribute to the reduction of land degradation and enhance the resilience of vulnerable, globally-important ecosystems and biodiversity, including the primary forest of the Morne Diablotin National Park (Dominica), the undisturbed rain forests of the Morne Trois Pitons National Park and World Heritage Site (Dominica), the only remaining Caribbean island with old growth forest (Union Island), and the sensitive marine environment (coral reefs, coral veneers, sea grass beds and offshore islands with rare and endangered species) of the Maria Islands Nature Reserve and proposed Pointe Sable National Park which are both RAMSAR designated sites (Saint Lucia).

Harboring biodiversity assets from the anticipated climate impacts. In Saint Lucia alone, this rich biological diversity is illustrated by its 1,300 known species of plants, 14 of which are endemic, 21 species of herpetofauna (5 endemic), several invertebrates and a few mammals. Additionally, 250 reef fish species and 50 coral species have been recorded for the island. The island is also home to over 150 species of birds of which five species are endemic: the Saint Lucia Parrot or Jacquot (Amazona versicolor); the Saint Lucia blackfinch or moisson pied–blanc (Melanospiza richardsoni); Semper’s Warbler or pied blanc (Leucopeza semper); the Saint Lucia Oriole or carouge (Icterus laudabilis); (Saint Lucia Pewee or gobemouche (Contopus oberi).

Dominica is host to the most diverse assemblage of wildlife species remaining in the Eastern Caribbean. All the faunal groups are well represented. Dominica boasts a plant diversity of approximately 155 families, 672 genera and 1226 species of vascular plants (Nicolson, 1991). Dominica's two endemic parrot species Amazona imperialis and Amazona arauiaca are both considered threatened (IUCN Red Data List) and are specially protected birds under Dominican law. The most recent population estimate put the parrot population at 200 for A. imperialis, and 1500-2000 for A. arauiaca. Although A. imperialis may never have been abundant in Dominica, it is now considered rare. Both species have been negatively impacted by the combined effects of forest clearance for agriculture and the damage to the forests caused by hurricanes. The populations of these two endangered parrots reached critical levels as low as 60 for A. imperialis and 200 for A. Araustiaca following Hurricane David in 1979.
Preventing Land Degradation caused by climate impacts is global in geographic scope. The Food and Agricultural Organization estimates that >70% of the soils in the Caribbean show signs of severe degradation. At the local level, St. Vincent and the Grenadines currently exhibits classical symptoms of land degradation occasioned by squatting, mono-cropping with poor agricultural techniques, global weather patterns (changes in rainfall distribution, drought and elevated atmospheric temperatures), deforestation and excessive use of agrochemicals. The smaller islands of the Grenadines suffer a similar fate by default. With no surface water and little arable topsoil, inhabitants of these islands eke out an existence from the coastal waters (sea). The islands are major tourist attraction because of their exquisite beauty of the offshore reefs. However the reef resources are threatened by over exploitation and phenomena associated with global Climate Change - coral bleaching, inflated ocean temperature and sea level rise. Research conducted under the Sea Grants Project revealed that St. Vincent and the Grenadines has a base coastal erosion of 0.3m/year, however, between 1995 and 2000, areas in Richmond and Sand Bay recorded >15m coastal erosion. Some coastal erosion has been attributed to the loss of coral reef as a consequence of land base sources of pollution and sedimentation. Coral reefs smothered by sediments die and break up depriving the shore line of invaluable defense.

Promoting climate resilient development at the local level. At the local level the project will have implications on the economic sectors affected by GCC. Specifically the agriculture, fisheries and tourism sectors which represent the major share of the GDP of the participating countries and are highly vulnerable to climate impacts, will benefit from the adaptation pilots. In St. Vincent and the Grenadines, Census figures for 2000 show that 60% of the population is involved in agriculture occupying 43% of the land mass. Also critical infrastructure has been identified as very vulnerable to the increased intensity of tropical cyclones. By investing on adaptation measures geared towards global commons the project addresses at the same time local priorities. The project intends to reduce the impacts of climate change and land degradation along coastal and near-coastal areas and will thereby increase the resilience of agricultural activities as well as the resistance of critical infrastructure. The focus of the project on coastal areas directly benefits the tourism sector mainly located along the coasts. But also activities towards enhancing the protection of national parks in the face of GCC will benefit ecotourism activities. The project will address the availability of fresh water in each participating country. Water supply is anticipated to be a bottleneck for economic activity and a serious health concern. All water using sectors would be affected if anticipated GCC impacts on water supply are not adequately addressed. These developments at the local level will contribute to the process of learning how adaptation measures can be developed and be effective. The experience gained through the pilots is intended to inform the policy making process and result in the adoption of climate resilient sustainable development policies.

5. Mainstreaming measures and policy content

Sustainability of project activities depends on the success in mainstreaming adaptation as a key element in local and regional development plans. Policy linkages will be of use for interventions in the power sector, disaster management, and biodiversity and water management.
B. ENVIRONMENTAL MANAGEMENT OF THE SPAC PROJECT

The environmental management plan takes into account the previously described components as well as the project’s classification as Category B. The supported activities may have minor environmental impacts from some on-the-ground investments. The project will make use of environmental best practices. The following table presents environmental issues and impacts.

<table>
<thead>
<tr>
<th>Component</th>
<th>Environmental issues and impacts</th>
<th>Elements of the Environmental Management Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Design of priority adaptation measures addressing impacts of climate change on biodiversity and land degradation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Subcomponent 1 – Feasibility Analysis</strong></td>
<td>No direct or indirect negative environmental effect is likely to arise during the implementation of this component. This component seeks to characterize and prioritize pilot adaptation measures addressing the impacts of climate change on biodiversity and land degradation. Moreover, the component includes among its design activities, the elaboration of specific and detailed environmental and social action plans. The selection criteria will include the maximization of social and environmental benefits. All proposed on-site activities will be subjected to an environmental impact assessment that will be undertaken during the feasibility analysis. The CARICOM/SPREP “Guide to the Integration of Climate Change Adaptation into the Environmental Impact Assessment (EIA) Process”, which is based on World Bank’s OP 4.01, will be used.</td>
<td>Key elements of the detailed formulation and design of site-specific adaptation interventions are the identification of potential environmental and social impacts, their characterization, and the definition of specific actions to improve, prevent, and control adverse outcomes. Guidelines will highlight the prominent role of exploring several viable options to reduce expected negative environmental and social impacts, if present.</td>
</tr>
<tr>
<td><strong>Subcomponent 2 - Community Participation</strong></td>
<td>Implementation of adaptation measures designed to address climate impacts on biodiversity and land degradation</td>
<td></td>
</tr>
<tr>
<td><strong>Subcomponent 3 - Design of adaptation measures</strong></td>
<td>The Project, and its pilot interventions, seeks to address prevailing and potentially exacerbated environmental stressors affecting valuable ecosystems. As such, no negative environmental impacts should be expected. Nonetheless, small physical works and new land management options will be explored. Pilots sought are small physical interventions from which the project seeks to extract lessons for up scaling or replication in similar contexts. Environmental impacts are expected to be localized and limited to the sites where each pilot measure for climate change adaptation is implemented. In all</td>
<td>During implementation SPACC has chosen to assure safeguard compliance through a well defined and detailed monitoring plan. Given the small size of the proposed interventions, and their pilot or experimental nature, the countries’ existing standards and procedures are rated acceptable and in agreement with the Bank’s OP 4.01. All adaptation activities will involve community participation from the start of the project. They have already been consulted and their active involvement would be sought through all pilot phases. Community-based organizations will be empowered</td>
</tr>
</tbody>
</table>
In the following table each activity was identified and characterized from the environmental point of view. Overall, as already indicated all interventions are small and present minor and manageable environmental impacts, for which no special environmental plan is required. Nonetheless, the project will undertake an environmental impact assessment on all site-specific activities during the feasibility analysis, and where applicable, environmental management and monitoring programs will be formulated to address any identified impacts. The CARICOM/SPREP “Guide to the Integration of Climate Change Adaptation into the Environmental Impact Assessment (EIA) Process”, which is based on World Bank’s OP 4.01, will be used for these assessments. To complement the environmental compliance strategy, the monitoring and evaluation system will include community participation—including training and empowerment— to ascertain the proper performance of project implementers and the achievement of the targets and objectives sought.

For each subcomponent below the reader will find a description of the activities to implement, an assessment of the potential environmental impacts, the environmental control measures defined and the monitoring strategy.
<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
<th>Field interventions</th>
<th>Environmental negative issues</th>
<th>Environmental control measures</th>
<th>Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Component 1.</strong> Design of priority adaptation measures addressing impacts of climate change on biodiversity and land degradation</td>
<td><strong>Sub-component 1:</strong> Feasibility Analysis. <strong>Sub-component 2:</strong> Community Participation. <strong>Sub-component 3:</strong> Design of adaptation measures.</td>
<td>Data collection; community participation</td>
<td>No negative environmental impact expected as consequence of this subcomponent. This component includes the social and environmental assessment of the adaptation. The measures are geared towards enhancing the resilience of insular ecosystems. Thus the measures will be designed to maximize the environmental and social benefits of adaptation.</td>
<td>Implementation of best practice guidelines as provided in the CARICOM/SPREP “Guide to the Integration of Climate Change Adaptation into the Environmental Impact Assessment (EIA) Process; Emphasis on the analysis of several alternatives for better selection of actions to implement.</td>
<td>This component includes the design of the M&amp;E system in order to measure and monitor the vulnerability of biodiversity assets and land degradation to climate change impacts. Monthly progress reports.</td>
</tr>
<tr>
<td><strong>Component 2:</strong></td>
<td><strong>Subcomponent 1</strong> – Implementation of adaptation measures designed to address climate impacts on biodiversity and land degradation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Implementation of adaptation measures in the diverse Morne Diablotin National Park and its Neighboring Communities (Dominica) identified in updated management plan under component 1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific field interventions considered include measures to:</td>
<td>Most expected environmental impacts are positive. There might be minor constructions which will apply appropriate environmental guidelines. Regarding the option of <strong>rainwater harvesting</strong>, the rainwater will be stored, treated, used and disposed of in environmentally sound structures (septic tanks, infiltration fields and additional treatment if required to protect down stream uses).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(i) address water supply deficits, e.g. rainwater harvesting;</td>
<td><strong>Flood mitigation actions</strong> might include rising of flood defenses and costal zoning.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii) key flood mitigation actions; and,</td>
<td><strong>Land use plans</strong> will include better information related to probable future climate scenarios. This will allow for improved decision making of preservation of selected ecosystems and on the intensity of land uses.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iii) development, implementation and enforcement of land use plans.</td>
<td>The selected strategy has two components: the use of best practice environmental guidelines, and proper monitoring of all activities and intended consequences, as provided in CARICOM/SPREP “Guide to the Integration of Climate Change Adaptation into the Environmental Impact Assessment (EIA) Process”.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Detailed progress reports including: (i) Field surveys & laboratory testing; (ii) Photographs; (iii) monitoring reports on water quality and quantity; and, (iv) Effectiveness and social impacts of pilot projects will be assessed at MTR and EOP.  
- Supervision missions
| **Subcomponent 2 –** Morne Trois Pitons National Park Integrated Ecosystem Management (Dominica) | **Specific field interventions considered include measures to avoid and minimize water supply deficits. Options considered include improved management, demand management, rain harvesting, improved water storage, etc. This component will also promote management options towards enhancing the resilience of coastal ecosystems.** | **The environmental impacts are expected to be entirely positive as the measures are expected to improve the efficient use of water and to decrease water supply deficits in the face of CC impacts. Other complementary measures under this component might include the development of participatory land use plans geared towards reducing upstream land degradation, reducing erosion, fostering biodiversity, reducing impacts on marine ecosystems, and protecting water resources.** | **The selected strategy has two components: the use of best practice environmental guidelines, and proper monitoring of all activities and intended consequences, as provided in CARICOM/SPREP “Guide to the Integration of Climate Change Adaptation into the Environmental Impact Assessment (EIA) Process”.

• Detailed progress reports;
• Economic assessment of traditional and new land use practices to be conducted at MTR and EOP.
• Comprehensive monitoring reports including: (i) water usage, water availability, water disposal; (ii) water quality and quantity; (iii) community perceptions; and (iv) coastal ecosystems observations
• Supervision mission on sites** |
<table>
<thead>
<tr>
<th>Subcomponent 3 – Enhancing the sustainability of Water Resources and Supply of the Vieux Fort Region (Saint Lucia) incorporating coastal ecosystem requirements.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interventions sought include, <em>inter alia</em>: (i) Implementing actions to better manage the demand for water. For example, piloting incentive scheme to encourage use of water saving devices in Vieux Fort Region; (ii) measures to reduce degraded lands, reducing sediment loads to water supply systems, and ecosystems; and, (iii) Establishment of river buffer zones, reducing erosion during floods, and minimizing losses.</td>
</tr>
<tr>
<td>No major negative environmental impacts are expected. On the contrary, the measures are expected to increase the resilience to the CC impacts in local water resources. Nonetheless, care will be taken in the selection of measures to implement and in the adequate selection of species to promote for river buffer areas. It is important to notice that a very specific objective of this pilot is to relate watershed water resources interventions with downstream ecosystem requirements formulated using CARICOM/SPREP “Guide to the Integration of Climate Change Adaptation into the Environmental Impact Assessment (EIA) Process”.</td>
</tr>
<tr>
<td>The selected strategy has two components: the use of best practice environmental guidelines, and proper monitoring of all activities and intended consequences. Community will be involved in monitoring the agreements made with landholders adopting new land management options. Agreements will be also monitored through community based organizations.</td>
</tr>
</tbody>
</table>
| • Detailed progress reports
• Comprehensive monitoring reports including: (i) water usage, water availability, water disposal; (ii) water quality and quantity; (iii) community perceptions; and (iv) coastal ecosystems observations
• Supervision mission on sites |
| **Subcomponent 4** | Field interventions include the retrofitting critical infrastructure. | The component is not expected to have negative environmental impacts as existing infrastructure is being reinforced. However, the design will make sure that environmental impacts are minimized and mitigated through a environmental management plan formulated using , as provided in CARICOM/SPREP “Guide to the Integration of Climate Change Adaptation into the Environmental Impact Assessment (EIA) Process”. | Use of appropriate environmental guidelines during construction; Adequate disposal of construction debris; Periodic monitoring of construction. | • Detailed progress reports; • Supervision missions; • Construction environmental reports |

**Subcomponent 4** –
Strengthened critical coastal infrastructure in the Castries area (Saint Lucia).
| **Subcomponent 5 – Integrated Ecosystem Approach to Climate Change in Bequia and Union Islands (St. Vincent and the Grenadines):** | Field interventions include implementing key activities contemplated in the Ecosystem Management Plan, and selected through a participatory process. Activities might include: (i) Strengthening water supply reliability for communal benefits; (ii) **replanting native vegetation to stabilize slopes**; and, (iii) implantating strategies to improve water management, with emphasis on **fresh water needs**. | No major negative impacts are expected. As indicated the pilot seeks to implement actions that will foster the adoption the Integrated Ecosystem Management approach to enhance resilience to GCC. Detailed assessment for on-site impacts to be undertaken using the, as provided in CARICOM/SPREP “Guide to the Integration of Climate Change Adaptation into the Environmental Impact Assessment (EIA) Process”. For the finally selected activities best environmental practices will be developed and enforced, to assure compliance. Monitoring will be conducted through community based organizations, as well as through experts. | The selected strategy has two components: the use of best practice environmental guidelines, and proper monitoring of all activities and intended consequences. Emphasis on: reduced land degradation practices; adequate use and disposal of agrochemicals; use of native species; reduce / eliminate slash & burnt practices; improve water usage | • Detailed progress reports; • Supervision • Periodic monitoring reports |
### Subcomponent 6 – Climate Change Risk Management for Spring Village (St. Vincent and the Grenadines):

<table>
<thead>
<tr>
<th>Interventions include implementing key activities contemplated in the Ecosystem Management Plan, and selected through a participatory process. The following activities might be implemented: Field interventions include: (i) river-bank stabilization measures; (ii) Implementation of mitigation and adaptation measures to reduce landslides risk and flash flooding, coastal degradation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The interventions are expected to be entirely positive from an environmental standpoint as they will reduce land degradation and will enhance resilience of otherwise climate vulnerable coastal and marine ecosystems. Detailed assessment for on-site impacts to be undertaken using the, as provided in CARICOM/SPREP “Guide to the Integration of Climate Change Adaptation into the Environmental Impact Assessment (EIA) Process”. Potential environmental impacts are very small, given the activities sought to implement and the resources allocated.</td>
</tr>
<tr>
<td>The selected strategy has two components: the use of best practice environmental guidelines, and proper monitoring of all activities and intended consequences. Emphasis will be given to reduced land degradation practices. Also Land use plans will include better information related to probable future climate scenarios. This will allow for improved decision making of preservation of selected ecosystems and on the intensity of land uses.</td>
</tr>
</tbody>
</table>

Taking into account the potential environmental impacts, the following table summarizes the environmental management for each component.
C. IMPLEMENTATION OF WORLD BANK SAFEGUARD POLICIES

Figure No. 1 shows World Bank Safeguard Policies, divided into environmental and social issues and those dealing especially with more legal aspects. The cross-cutting public dissemination policy applies to all other policies. However, some policies have specific requirements for dissemination and public consultation.

As shown in Figure No. 1 and expressed in subsection B “ENVIRONMENTAL MANAGEMENT OF THE SPACC PROJECT,” the safeguard policies Environmental Assessment (OP/BP 4.01), and Natural Habitat (OP 4.04) will be triggered by the project. As a preventive measure, project development observes the Cultural Property (OPN 4.11) policy. However, it is highly unlikely that the project activities will activate the latter safeguard policy. In general, the project is expected to result in no major adverse environmental impacts expected as a result of this project. Minor environmental impacts might be expected from some on the ground investments as described in the table above. The project is designed to be entirely positive from an environmental point of view, particularly by protecting vulnerable ecosystems from the impact of GCC.

Should any project activity affect an environmental component, this effect is expected to be minimal due to the nature of the activities and to the objectives of the project. In this case, the CARICOM/SPREP “Guide to the Integration of Climate Change Adaptation into the Environmental Impact Assessment (EIA) Process” is well able to cover these contingencies with the aim of preventing any minor effect.
Figure No. 1: World Bank Safeguard Policies