GOVERNMENT OF GRENADA

PROPOSAL

FOR

PHASE ONE

PILOT PROJECT ON CLIMATE RESILIENCE

SUMMARY OF PHASE I GRANT PROPOSAL

1. **Country/Region:** Grenada, Caribbean Region		2. **CIF Project ID #:**	{Trustee will assign ID.}
3. **Date of First Joint Mission:**	August 30 - 31, 2010		
4. **Funding request:**	**$271,000**		
5. **Type of request:**	Accelerated funding for phase 1		
6. **Multilateral Development Banks/focal points:**	World Bank-Mr. Niels Holm-Nielsen; Inter-American Development Bank-Mr. Gerard Alleng; Mr.Alfred Grünwaldt		
7. **National Implementing Agency**: Ministry of Finance, Economic, Energy and Cooperation, and the Project Coordination Unit housed within the Ministry of Finance, Economic, Energy and Cooperation			

8. **Project Description:**

(i) ***Key development challenges*** *(vulnerability) related to climate change/variability:* Water Resources; Coastal and Marine Resources; Human Health; Agriculture; Infrastructure and Human Settlements; Tourism; Disaster Risk Management; Data capture and management.

(ii) ***Areas of intervention*** – sectors and themes (indicative):

The areas of intervention identified in Phase I for Grenada include all key sector and have cross sectoral benefits:

- Conduct of various assessments and studies that will provide the technical foundation for the preparation of a comprehensive Strategic Programme for Climate Resilience (SPCR) and related Investment Plan, including:

  - Preparation of the SPCR and related Investment Plan for the Pilot Programme for Climate Resilience (PPCR), inclusive of the development of a programme results framework with performance indicators tailored to the specific sectors most vulnerable to climate variability and change;
  - Public education/outreach surrounding context-specific climate impacts;
  - Building capacity in, and support for, data management to facilitate linkages with, and benefit from, data and knowledge generation by regional agencies; and
  - Data capture and analysis of climate change adaptation resources, in collaboration with activities to be conducted under the regional track.

(ι) **Expected Outcomes**: a) In line with regional policy frameworks and based on the results and recommendations completed and on-going national projects and activities; b) in consideration of the capacity needs of key agencies such as the Physical Planning Unit; and c) with regard to discussions surrounding progress and identified gaps expected outcomes include:

- Framework and near-term (5 years) objectives;
- Identify strategy to engage general public and sector-specific policy and decision makers on climate change impacts and the risks it poses to livelihoods in Grenada;
- Provide an SPCR integrating public and sectoral inputs through a participatory, consultative process;
- Comprehensive, holistic and integrated programme for climate resilience that is inclusive of key sectors and vulnerable groups;
- Identify initial strategy for strengthening national capacity in, *inter alia*, Geographic Information Systems (GIS), data collection and management, climate impact assessment and related areas, that will facilitate linkages with, and benefits from data and knowledge generation by regional agencies;
- Enhanced coordination and facilitation of the PPCR in Grenada; and
- Final SPCR and related Investment Plan for submission.

(ιι) Key Results:

- Initial guidance framework for the integration of climate change into national development planning achieved;
- Phase II outreach strategy developed for engaging public and policy decision-makers to support the integration of climate change into social and physical development activities;
- Provisional climate impact baseline established from existing data, and initial future data needs identified;
- Operational framework for Grenada to address climate change in a cross sectoral, integrative manner, through the formulation of an initial climate resilience-focused investment plan;
- Phase II strategy developed to address data collection, capture, sharing and overall management amongst agencies in

Grenada in partnership with regional agencies; and

- An integrated framework and initial activities identified for Phase II.

9. **Budget (indicative): $271,000**

Expenditures

Consultants: (see below)

Activity[1]	**Cost in USD**
(i) Technical specialist with overall responsibility in coordinating the constancy team and lead author for the preparation of the SPCR, Investment Plan and Programme Results Framework. - Phase 1 Lead Consultant	$48,000
(ii) Technical assistance to lend support to, and build capacity in data management, including Geographic Information Systems, data collection and management, climate impact assessment and other related areas. - GIS/Data Management Specialist	$25,000
(iii) Specialist to provide technical support on water resources and watershed management issues for Grenada and contribute to appropriate sections of the SPCR - Watershed Management Specialist	$25,000
(iv) Specialist to provide technical support on coastal management and sea-level rise issues for Grenada and contribute to appropriate sections of the SPCR. - Coastal Management Specialist	$25,000
(v) Inter-governmental coordination and project management - PPCR National Project Coordinator	$60,000
Subtotal:	**$183,000**

Equipment: Operational cost (i.e. local transport, administrative supplies, administrative support, etc.) - **$20,000**

Workshops/seminars:
1) Holding of eight (8) days of national consultations (approximately 15 persons per consultation): $10,000
2) Sub-national consultation in Carricou: $3,000
3) National launch of the PPCR: $5,000

Subtotal: $18,000

Consultancy team and staff travel costs:[2] **$50,000**

Total Cost: $271,000

10. **Timeframe (tentative) – milestones**

- Scoping Mission for project introduction, planning and preparation: December 02-04, 2009
- First Joint Mission to finalise a proposal for Phase I: August 30-31, 2010
- Tasks related to the development of the SPCR: August 2010-January 2011
- Second Joint Mission to review and finalise the SPCR: January 2011
- Submission of the final SPCR with specific investment recommendations as the output of Phase I: February 2011

Submission for Trust Fund Committee approval:
Phase I – Second Joint Mission: January 2011
SPCR for Trust Fund Committee approval: February 2011

[1] Where the required experience and skills sets are available, consultants will be recruited at the regional level. If consultants cannot be identified at the regional level, international consultants will be recruited.

[2] This is an indicative figure that includes cost of workshop travel (i.e. to Carriacou) as well as travel costs for consultants and the National PPCR Coordinator's visits to regional agencies to hold discussions on the regional component and formulation of Grenada's SPCR.

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1. PROJECT BACKGROUND

As a Small Island Developing State (SIDS) with a high level of vulnerability to climate change, Grenada has been invited to participate in the Pilot Programme for Climate Resilience (PPCR) as a pilot country under the Caribbean regional pilot program. Within this regional pilot program, there are six countries involved in the Caribbean pilot: Haiti and Jamaica as well as four OECS countries, namely Dominica, Grenada, Saint Lucia and Saint Vincent and the Grenadines.

The objective of the PPCR is to provide incentives for scaled-up action and transformational change through pilot projects that demonstrate how to integrate climate risk and resilience into core development planning, while complementing other ongoing development activities in pilot countries.

The PPCR programme in Grenada is therefore led by the Ministry of Environment, Foreign Trade and Export Development, in collaboration with the Ministry of Finance, Economic, Energy and Cooperation. The programme will enable Grenada to transform some of its current practices in order to better address climate risks and vulnerabilities. It is expected that at the end of implementation of Phase II Grenada will be able to more strategically, and measurably begin to reduce climate vulnerability across different sectors.

Grenada shares climate change adaptation challenges with its Caribbean neighbours. Common challenges that are more efficiently addressed at a regional level, which have been identified by participating countries in the Caribbean pilots, will be addressed through the regional track of the Caribbean Pilot to the potential benefit of all CARICOM members. The regional track of the PPCR will focus on five broad lines of activities:[3] (1) climate change and climate change impact monitoring and modelling, (2) enabling environment for climate resilient development planning, including for private sector involvement, (3) technical assistance for improving land use management and spatial planning, (4) awareness raising on climate change issues, and (5) development of support tools for better integration of climate change impacts into development planning To achieve this, the regional track of the PPCR will provide financing for critical activities within these themes with medium and long-term implications which must be done at a regional scale and support the development of harmonized approaches, promoting cross-learning and potential for replication across the Caribbean.

According to the latest available information it is understood that the Caribbean Regional Program will benefit from 60-75 million United States dollars (USD) in grant resources for the preparation and implementation of the SPCR for six participating pilot countries linked by a regional track.

For planning purposes, it is anticipated that Grenada will benefit from at USD $5 million in grants to carry out pilot activities in phase II. Further, the PPCR also allows for highly concessional loans (0.25%) at an initial ceiling of twenty percent of the total available concessional finance amount per pilot program.

[3] See details in Appendix 2.

In Phase I, a Strategic Program for Climate Resilience (SPCR) will be developed for Grenada that is consistent with the regional framework, and specific projects/programmes that are proposed in SPCR will be implemented in Phase II. The indicative timeframe for Phase I for Grenada is months 3 to 5 months with an expected presentation of the SPCR to the PPCR Sub-Committee (PPCR-SC) after 4 months[4]. The key activities leading up, to and executed, during Phase I include:

- Scoping Mission for project introduction, planning and preparation (held in November 30 to December 1, 2009);
- First Joint Mission to finalise a proposal for Phase I (held from August 30 – 31, 2010);
- Tasks related to the development of the SPCR;
- Second Joint Mission to review and finalize the SPCR (anticipated January 2011); and
- Submission of the final SPCR with specific investment recommendations as the output of Phase I (February 2011).

1.1. National Overview

The independent State of Grenada consists of the islands of Grenada, Carriacou and Petit Martinique is located at 11' 58′ North latitude and 61' 20′ west longitude and lies between Trinidad and Tobago to the south and St. Vincent and the Grenadines to the north. It is the southernmost of the Windward Islands. Prior to 2004 Grenada was considered to be "outside of the hurricane belt" due to its location in the southern Caribbean.

Grenada is a Small Island Developing State (SIDS) comprising three islands with the largest being Grenada which is 34 km (21 miles) long and 18km (12 miles) wide and the three islands taken together have a land area of 345 sq. km (133 sq. miles).

1.2. Country Context

The country is characterized by humid tropical climate, with relatively constant temperatures throughout the year averaging 26 degrees centigrade. The mean maximum temperature is 31.4 degrees centigrade while the mean minimum is 24.0 degrees centigrade.

The dry season typically runs from January to May and the rainy season from June to December. Carriacou and Petit Martinique generally receive lower levels of rainfall and during the dry season can experience severe drought conditions.

Economy: The economy of Grenada has been hit hard by the global crisis. The economic downturn had stronger impact than was predicted in 2008 which is reflected in declining tourism receipts, Foreign Direct Investment (FDI), and remittances. Tourism, which is the main sector and contributor to the GDP, is expected to experience a 20 percent decline in stay-over arrivals in 2010; FDI is almost at a standstill contributing to unemployment in the construction sector which is projected to fall by 35 percent, the fourth consecutive year of double-digit declines. The weak economy has led to rising unemployment, while poverty

[4] Grenada will build its SPCR on a large number of analysis, reports and consultations that have been carried out over the past years. These are described in more detail in the main text of this proposal.

remains widespread. According to a preliminary draft of the Country Poverty Assessment, the unemployment rate stood at 25 percent in June 2008. Compounding matters, the authorities believe that labor market conditions have softened further in 2009 leading to unemployment rates closer to 30 percent. Some 38 percent of the population lives below the poverty line.

Grenada has a tourism driven economy and the industry is mainly concentrated in the southwest region, where the country's idyllic beaches are located. In addition to conventional beach and water sports tourism, the country offers eco-tourism, deriving from rare natural vistas- the Grand Etang, mountains and distinctive flora. The agricultural sector is its second major source of export growth. The recent Hurricanes Ivan (2004) and Emily (2005) severely damaged both the tourism and agricultural sectors.

***Population**:* According to the 2008 Poverty Assessment Report the population is estimated at 103,538 persons, but the report also purports that the population might have fallen as a result of "a larger than usual external migration in the light of the major hurricanes that the country has experienced."

1.3. Vulnerability Context

Grenada is vulnerable to climate related hazards such as tropical cyclones, floods and storm surge and prolonged dry periods. The water sector, agriculture and tourism sectors are all climate sensitive sectors and are impacted by climate related hazard events. Tourism and Agriculture are the two main sectors of the economy and the projections for increased climate related hazards would mean that the vulnerability of those sectors would increase in the future. Grenada has developed policies and actions plans for Vulnerability to Climate Change. Grenada has developed policies and actions plans for disaster mitigation, water resources and climate change however, these policies have not being implemented because of lack of human capacity and resources. In order to increase its resilience against these climate related hazards the policies and action plans must be implemented.

Grenada is already experiencing climate variability. Two hurricanes in the space of 10 months followed a prolonged dry period contributed to defining Grenada's current socio-economic situation. Hurricane Ivan which impacted the country in September 2004, severely damaged the productive sectors, resulting in the contraction of the productive sector, dislocating the labour force and disrupting key infrastructure especially electricity. Hurricane Emily, which struck the Northern part of the island, caused extensive damage to the food crop sector, which was in the process of recovering from Hurricane Ivan. In November a drought alert was issued for Grenada and the decline in water production became obvious from February to June 2010. Food production also declined from December 2010 and the recovery is slow.

Small islands were among the hotspots which have been identified by the Global Water Partnership as one of the hot spots where climate change impacts were forecasted to be felt within the next few years and where urgent attention is need in the water sector. Grenada is one of those small islands where the impact of the prolonged dry period was experienced between November 2009 and June 2010.

2. PARTICIPATORY PROCESS FOR THE PROPOSAL

The PPCR emphasizes the need for broad-based consultations. To date, such consultations have included respective government agencies, the private sector and non-government organisations. Leading up to the PPCR, a number of assessments were conducted and several policy documents were created to inform stakeholders about climate change issues and to establish climate resilience and mitigation targets. The Ministry of Environment, Foreign Trade and Export Development, in collaboration with the Ministry of Finance recently held consultations with Environmental Non-Government Organisations operating in Grenada in preparation for the PPCR First Joint Mission. The Grenada Hotel and Tourism Association was also consulted as part of the private sector while the Grenada Chamber of Industry and Commerce will be the other body consulted on behalf of the private sector. The National Climate Change Committee which brings together broad-based representatives will be consulted on behalf of the public service.

A number of previous processes were built on during the PPCR participatory development of Phase I. These include the Initial National Communication (INC) in 2001, National Development Strategic Plan, Water Policy, National Mitigation Policy and Plan and that National Climate Change Policy.

2.1. National Climate Change Policy

The National Climate Change Policy and Action Plan was developed based on Nine (9) stakeholder consultations and seven (7) community consultations which were held during the period September 20, 2006 to October 31, 2006 and were attended by approximately seven hundred (700) persons. It included representatives from the Public Sector Board of Management, staff of the Ministry of Sports and Community Development, Youth and Students, Statutory Bodies, Energy Sector Employees, Agricultural Sector, Carriacou and Petit Martinique Public Sector Employees, Grenada Institute for Professional Engineers, Sustainable Development Council. There were also parish public consultations in Grenada Carriacou and Petit Martinique.

These analyses have been supplemented by anecdotal information on climate sensitivity provided during the Stakeholder Consultations that informed the Policy and Action Plan. These anecdotal references included:

- Examples of beaches/coastline that has already been “lost” due to the rising seas;
- Examples of difficulties being encountered by farmers as a result of the inability of their seeds and/or plants to withstand current heat and humidity; and
- References to reduced rainfall and reduced stream flows.

These analyses and observations about climate sensitivity are consistent with the projections on the future impact of climate change in the Caribbean region. These projections include:

- Increases in average temperatures of between 1.8 C and 6.4 C within the next 100 years[5].

- Rising sea levels caused by the melting of the arctic ice and the thermal expansion of the sea water. The Caribbean Sea has already been rising by 1mm per year and global sea levels are expected to rise by between 0.18 m and 0.59 m over the next 100 years.[6]

- More intense hurricanes.[7]

- Longer dry seasons and wetter wet seasons, accompanied by reductions in total rainfall with at least 25% reduction in total rainfall has been predicted for the Caribbean region[8].

- More intense rainfall when it occurs.

These impacts are expected to affect all aspects of Grenada's socio-economic landscape including human settlements, agricultural production, food supply, water supply, health and tourism. In addition, it will expose Grenadians to additional hazards including the danger of landslides, flash flooding and more intense tropical storms and hurricanes[9].

The Stakeholder Consultations also noted that unsustainable livelihood and development practices are increasing Grenada's vulnerability to climate change impacts. These include:

(i) Absence of adequate agricultural soil and water conservation practices;

(ii) Uncontrolled/Poorly managed exploration of the coral reefs by divers and tourists;

(iii) Sand mining on the beaches;

(iv) Mangrove harvesting for firewood; and

(v) Use of sensitive land and marine areas for developmental purposes, without putting in place necessary safeguards.

2.2. Initial National Communications

The preparatory process for the Initial National Communications on Climate Change

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5 This is based on the Report entitled *Climate Change 2007: The Physical Science – Summary for Policymakers"* issued by Working Group 1 of the Intergovernmental Panel on Climate Change (IPCC) in February 2007 as part of its Fourth Assessment Report.

6 Ibid

7 Ibid

8 *Glimpses of the Future.* Report from the Precis Caribbean Climate Change Project

9 These expected impacts are detailed in Grenada's First National Communication to the UNFCCC. They are based on expert analysis of the potential impacts of climate change.

involved a series of consultations, meetings and peer reviews by a wide range of stakeholders, aimed at validating the results of the technical analyses and providing inputs into the recommended strategies and actions.

2.3. CPACC

Analysis done under the Caribbean Planning for Adaptation to Climate Change Project (CPACC) in 2001[10] concluded that Grenada's beaches are at risk of significant erosion from the rising sea levels. The analysis showed that between 55% and 75% of the Grand Anse beach could disappear if the sea levels rose by 0.5 metres (1.5 feet), while the beaches between Conference and Marquis could lose 65 percent of their current widths and 83% of the beaches in Carriacou could disappear. These include the beaches at Hillsborough, Paradise, Lillette and Windward.

The CPACC analysis also concluded that key coastal infrastructure will be inundated by a 1 metre (3 feet) sea level rise, including an estimated 18 hectares of land on the Carenage, St. George's, which is currently less than 0.20 metres (0.6 feet) above average mean sea-level, containing important buildings including the Financial Complex, the Carenage Sports Complex, the Carenage Road, the Cable & Wireless telephone exchange and the St. George's sewerage system pump station.

Other at-risk areas included the main hotel belt in Grand Anse, sections of the coastline close to the Point Salines International Airport, the Eastern Main Road leading out of Grenville and passing through Soubise and Marquis and the front streets in Hillsborough and Harvey Vale in Carriacou.

It must be noted however, that, outside of the CPACC analysis of the vulnerability of some sections of the coastline to sea level rise, no scientific analysis has been done of the specific potential impact of climate change on any of the main socio-economic sectors and no attempt has been made to initiate any response programming.

Grenada also participated in several regional and national level participatory workshops, including, the Adaptation to Climate Change in the Caribbean (ACCC) and the Mainstreaming Adaptation to Climate Change (MACC) workshop. These consultations covered various sectors and sub-sectors of climate, which raised national level awareness on the sectoral implications of climate variability and change.

3. KEY PPCR ISSUES

Based on past, present and planned climate change activities, and confirmed by the National Climate Change Policy and Action Plan 2007-2011 as well as the intensive consultative process undertaken under the Initial and Second National Communications Project (SNC), the most vital sectors susceptible to climate change are: water resource management, human

[10] CPACC Coastal Vulnerability and Risk Assessment Pilot Project (2001)

health, agriculture, tourism and coastal infrastructure. The SPCR under the PPCR will thus focus on these areas - particularly the priority areas and recommendations that have emerged from the National Climate Change Policy and Action Plan 2007-2011 aimed at addressing climate change issues and building climate resilience in Grenada.

Below is a breakdown by sector of key issues that will be addressed under the national and regional track of the PPCR:

Agriculture: Agriculture is one of the most critical sectors for the Grenada economy. The sector plays a significant role in the livelihoods of rural communities often as their lone source of income. The agriculture sector is vulnerable to the impact of climate natural hazards. With the 2004 and 2005 hurricanes the industry suffered widespread damage. The contribution of agriculture to national development dropped from 8.65 to 4.50 on 2005.

In 2009-2010 the agricultural sector was affected by the prolonged dry period. Food production declined from January 2010. The sector is still recovering and as of August 2010 Grenada had to resort to the importation bananas until banana production recovers. Carriacou accounts for a significant percentage of livestock production. Livestock is vulnerable to drought conditions and the prolonged dry periods in 1984 and 1992 reduced livestock population in Carriacou by 20% and 40% respectively. The 2009-2010 prolonged dry period also affected the livestock in Carriacou and the Ministry of Agriculture encouraged farmers to reduce their livestock population as an adaptation measure.

The Ministry of Agriculture established an Irrigation Management Unit in 2000 and in 2008 a project was launched to provide irrigation technology to farmers in the rural areas.

Water Resources: Grenada's water supply system depends mainly on gravity flow surface water and to a lesser extent on bore holes while Carricacou and Petit Martinique relies on ground water and rain water harvesting.

The prolonged dry period resulted in the decline in water production between December 2009 to June 2010; and decline in production became obvious as of February of 2010. The decline in water production affected more than 10,000 persons in the parish of St. George alone. It also affected hotels, apartments, schools and manufacturing sector. A truck delivery and valve schedule system was instituted and it was complimented by a ban on the use of water for irrigation of lawn and washing of vehicles.

In collaboration with the CARIWIN project, the Government of Grenada launched its National Water Information System (NWIS) in January 2009, as a tool to address the problems of compartmentalized data, lack of central storage, and limited access to data for decision-making in the country. The NWIS allows not only the archiving of data, but also displays the information in a very comprehensive and visual manner to give a snapshot of the water resources at any time and geographical scale. It was developed through a collaborative process engaging data collectors, data users and stakeholders throughout the development of the system and significantly expanded on the capabilities of earlier Water Information Systems.

The NWIS provides data to the Caribbean Drought and Precipitation Monitoring Network which was launched in 2009 and provides early warning for drought conditions.

However, water resources management remains an outstanding issue and funds from the PPCR Phase 1 could be used to implement the strategies in the Water Policy.

Disaster Risk Management: In 1999 Grenada was one of many Eastern Caribbean islands which were affected by storm surge from Hurricane Lenny. Grenada implemented mitigation measures under a World Bank funded Emergency Recovery and Disaster Management Project.

The Government of Grenada is currently negotiating funding from the World Bank for a multi-sectoral disaster risk reduction project. The PPCR has started the collaboration with the project and well strengthen the collaboration during Phase I.

Tourism Sector: The high vulnerability of the tourism sector most of which is located on the coastline is well documented. The hotel sector suffered much damage from the 1999 Hurricane Lenny Storm Surge and the 2004 Hurricane Ivan damage. Some hotels invested in mitigation measures to reduce the impact from hurricanes and storm surge. But the prolonged dry season also exposed another aspect of the vulnerability of the tourism sector to climate variability and change. Water based tourism activities were interrupted by the reduced river flow and bird watching was affected by the damage to the dry forest by fires.

Human Health: There is a projection for climate variability and change to lead to an increase in vector borne diseases and Grenada has been experiencing an increase in vector mosquitoes. The increase in the mosquito population coincided with an outbreak of dengue in February 2010, with months of July and August recording the highest number of confirmed cases.

The impact of climate variability and change on human health has not been given much attention in Grenada and there is a need to study that area and to prepare the health sector to adapt to climate variability and change. The assessment of the impact of climate variability and change on the human health and the building of capacity within the health sector to adapt to the impact of climate variability and change will be a critical part of Phase 1 of the PPCR.

4. COOPERATION ARRANGEMENTS WITH DEVELOPMENT PARTNERS

The cooperation arrangements with development/investment partners are still evolving. This will become more defined as the SPCR and Investment Plan are developed.

A PPCR Scoping Mission held in December 2009 involved the following partners:

- World Bank, represented by Mr. Niels Holm-Nielsen, Disaster Risk Management Specialist, and Ms. Tiguist Fisseha, Urban Planning Consultant.

- Inter-American Development Bank, represented by Mr. Gerard Alleng (Climate Change Specialist) and Ms. Laura Gaensly (Climate Change Consultant and CIF Programmes Coordinator for IDB).

The First Joint Mission was held in August 2010. The composition of the team that participated in Grenada's First Joint Mission are as follow:

- World Bank, represented by Mr. Niels Holm-Nielsen, Disaster Risk Management Specialist; Gerald Meier, Coastal Zone Management Specialist; and Justin Locke, Disaster Risk Management Specialist.[11]

The PPCR process will also seek to build on past and ongoing projects, as discussed in previous sections.

Other potential partners, in addition to those identified in the foregoing include, but are not limited to:

- Caribbean Development Bank (CDB)
- Caribbean Community Climate Change Centre (CCCCC)
- International Union for the Conservation of Nature and Natural Resources–World Conservation Union (IUCN)
- The Nature Conservancy (TNC)
- Organisation of Eastern Caribbean States (OECS)
- United States Agency for International Development (USAID)
- United Nations Development Programme (UNDP)
- United Nations Economic Commission for Latin America and the Caribbean
- United Nations Environment Programme-Caribbean Environment Programme (UNEP-CEP)
- University of the West Indies (UWI)

It is anticipated that cooperation arrangements with development partners for Grenada's PPCR, both at the national and regional level, will evolve over time as priorities are defined during the Phase 1 process. However, it is anticipated that Phase I will be Grenada-led and executed through the World Bank. Cooperation arrangements at the national level are addressed in Section 7.0.

5. PPCR LINKAGES TO NATIONAL PROCESSES

The objectives of the PPCR are closely linked with objectives of the Grenada National Climate Change Policy. The objectives of both the PPCR and the Grenada National Climate Change Policy are intended to integrate climate resilience into development policies and

[11] Following the CIF Guidelines, the Inter-American Development Bank and development partners were invited to participate in the Joint Mission; however, no representatives were able to attend.

planning, strengthen local capacity in climate change and implement climate resilient investments and to collaborate with relevant initiatives such as disaster risk reduction.

The PPCR Strategic Programme for Climate Resilience (SPCR) will complement the National Climate Change Action Plan. The PPCR Phase II will therefore seek to implement the activities of the Action Plan. These actions include strengthening the collection, analysis and use of climate-related data and impacts, building local human capacity and Public Education Programming.

A National Water Policy was also developed in 2007. The National Water Policy was developed to address the need to plan for, among other things, the impact of natural disaster and climate change. Water resources management is also one the critical areas identified in the Grenada National Climate Change Policy. One of the objectives of the Water Policy is to provide a framework for the integrated/rational use, management and regulation of water resources and services, with a view to achieving sustainable development of the sector. Among the actions included in the policy is the planning for prevention and mitigation of disasters related to floods and droughts and emergency responses. The PPCR SPCR will also complement the Water Policy strategies and these strategies will be implemented during Phase II.

The National Development Strategy for Grenada was developed in 2007 and it has as an objective to promote and provide for disaster risk reduction and climate change adaptation. However, the strategy has not been implemented to date. The PPCR supports the objectives of Grenada's National Development Strategy.

6. STRENGHTING NATIONAL LEVEL CLIMATE RESILIENCE AND ENHANCING PPCR IMPLEMENTATION

The Ministry of Environment, Foreign Trade and Export Development is the focal point for the PPCR. The ministry will coordinate all activities of the PPCR working in tandem with the National Project Coordination Unit (PCU) and the Ministry of Finance. All PPCR-related activities will be advised by Grenada National Climate Change Committee (NCCC) which will act as the PPCR Technical Working Group (TWG). The TWG is comprised of line ministries, non-governmental organizations, the private sector and chaired by the Ministry of Environment, Foreign Trade and Export Development. It was recommended that the TWG should keep an open membership in order to grow its membership and expertise. It will convene at regular intervals to receive updates on the PPCR process as well as to report on the implementation of the PPCR activities.

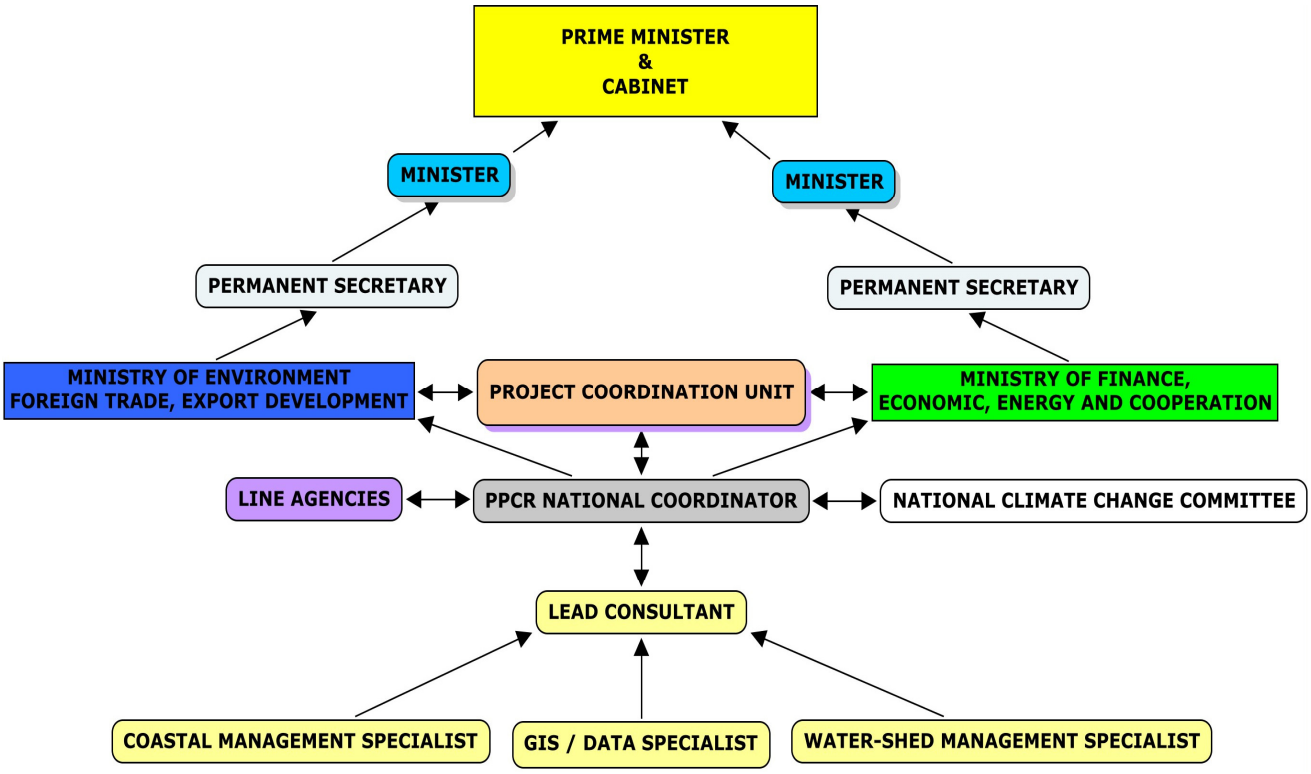
In addition to the Government arrangements, it is vital for PPCR success that political leadership on a whole-of-government cross sectoral climate change adaptation mainstreaming approach through utilizing existing and creating new government-non government, civil society and private sector partnership mechanisms to facilitate a participatory PPCR-decision making process.

The Ministry of Finance, Planning, Economy, Energy and Cooperatives will take the lead in

the all the fiduciary activities, policy coordination, mobilizing of additional resources, liaising with multilateral agencies and national stakeholders in a collaborative process - including pulling together the line ministries when needed. The Project Coordinating Unit housed within the Ministry of Finance will handle day-to-day responsibility for fiduciary aspects and safeguards aspects, and the Ministry of Environment, Foreign Trade, and Export Development will be responsible for leading program preparation and implementation from a technical point of view.

Phase 1 Consultancy Team: A team of four consultants will be procured to undertake activities during Phase I and formulate the SPCR and related Investment Plan. The consultancy team will be comprised of a Lead Consultant with extensive experience in climate change and managing integrated teams, a GIS / Data Specialist, a Coastal Management Specialist, and a Watershed Management Specialist. The Lead Consultant will be contracted for the entirety of Phase I, meanwhile the specialist consultants will be contracted for specific timeframes based on their area of expertise. All the consultants will liaise with the Lead Consultant and report directly to the Ministry of Environment, Foreign Trade and Export Development and the Ministry of Finance. The respective specialist consultants will work with the appropriate line ministry to collate the information and data needed to complete their respective section of the SPCR and related Investment Plan. The Team Leader will be responsible for managing and delivering all the proposed deliverables / activities under Phase 1 – most importantly, the SPCR and the Investment Plan. The terms of reference for the Phase I Consultancy Team will be highly integrated, and drafted based on the agreed Phase I activities and CIF SPCR template. At the end of the process, the TWG will review the draft SPCR and provide comments to the Lead Consultant. Phase I will be executed by the World Bank.

Figure 1: Institutional Arrangements



7. OUTLINE OF KEY ACTION AREAS IN PREPARING THE STRATEGIC PROGRAMME

Taking the National Climate Change Policy and Action Plan as a point of departure, key activities to be undertaken to produce the SPCR and related Investment Plan in Phase I include: 1) a cross sectoral analysis to inform the development of the SPCR and related Investment Plan; 2) design and formulation of a public outreach strategy to raise awareness on Grenada-specific climate impacts risks it poses to livelihoods, and 3) analyze national data capture / management capacity and needs, and identify initial strategy for strengthening national capacity - including the option to implement a data sharing platform[12] that facilitates collaboration and includes technical assistance (training of trainers and technical support) during the PPCR process in Grenada. These activities will be led by the Government of Grenada and undertaken by the team of consultants referenced in section 6.

[12] The GeoNode is an open source web-based geospatial data sharing platform that has been developed by the World Bank as a part of the CAPRA initiative. It serves to provide a system to break down the barriers to data sharing and collaboration within and between institutions and governments. The GeoNode is currently in its final testing phases and will be ready for deployment in the near future.

8. OUTLINE OF KEY ACTION AREAS IN PREPRING THE STRATEGIC PROGRAMME WITHIN THE CARIBBEAN REGIONAL FRAMEWORK AND PPCR REGIONAL TRACK

Under the PPCR Caribbean Regional track, PPCR resources will be used to engage regional institutions and countries in the development and use of models and tools that, tailored to a country's needs, will progress towards the integration of climate resilience into relevant plans. It is anticipated that all Caribbean states would be able to benefit from the regional activities through regional workshops and training events, dissemination of lessons, and provision of regionally relevant information, such a monitoring of sea level rise and ocean temperatures. Preliminary meetings have been held to define the regional track. (see Annex 1).

Based on this, the regional track of the PPCR is likely to focus on five broad lines of activities: (1) climate change and climate change impact monitoring and modelling (2) enabling environment for climate resilient development planning, including for private sector involvement, (3) technical assistance for improving land use management and spatial planning, (4) awareness raising on climate change issues, and (5) development of support tools for better integration of climate change impacts into development planning. Overall, the PPCR regional track Phase 1 preparation will draw upon expertise from, and complement planned and ongoing initiatives by the regional organizations, and bilateral and multilateral development partners. A number of regional initiatives developed by those organizations are already underway and can be built upon through the PPCR, relevant examples include: the Caribbean Carbon Neutral Tourism Project, which includes a component focusing on financing integration of climate resilience into development plans - executed by CCCCC; a Caribbean Risk Atlas – with the University of West Indies (UWI); and initiatives relating to Community Based Landslide Risk Reduction – by the World Bank ; and Regional Monitoring and Evaluation Framework for Disaster Risk Management and Climate Change Adaptation in the Caribbean Tourism Sector – executed by CDEMA and; Mainstreaming Disaster Risk Management in OECS Countries – executed by the Caribbean Development Bank.

The table below illustrates ideas expressed at the First Joint Mission in Grenada held August 30 – September 1, 2010, and ideas expressed at the First Joint Mission for the regional track held June 14-15, 2010; however, details are still subject to change in accordance with agreements reached with regional agencies.

Figure 2: Draft PPCR Structure for Regional Track Integration in a County-Led Process

The regional track of the PPCR is a reflection of the collective national priorities of the PPCR Caribbean country pilots, namely: Haiti, Jamaica, Saint Vincent and the Grenadines, Grenada, Saint Lucia and Dominica. The defined activities will have benefits for all CARICOM member states.

The regional track will focus on five broad lines of activities: (1) climate change and climate change impact monitoring and modelling; (2) enabling environment for gender empowerment and private sector involvement; (3) technical assistance to CARICOM member states for improving land use management and spatial planning; (4) awareness raising and education on climate change-related issues; and (5) development of support tools for better integration of climate change impacts into development planning.

To achieve this, the regional track of the PPCR will provide financing for critical activities with medium and long-term implications that will be undertaken at a regional scale to support the development of harmonized approaches, promoting cross-learning and potential for replication across the greater Caribbean.

Indicative Regional Agency Activities under PPCR

Improvement of Data and Knowledge Management:

- Improve accessibility to data between national and regional levels through better hardware, instrumentation, software and training for countries and regional agencies
- Creation of knowledge sharing platform for best practice and lessons learned related to climate change adaptation (e.g. gender, public private sector partnership, etc.)
- Development of regional policies and standards such as meta data

limate Change Impact Assessment:

On a pilot and demand basis provide climate change impact assessments

Improved sub-regional modelling through training and investments for understanding and interpreting climate impact models and assessments

Development of climate change adaptation decision support tools

Climate Change Awareness and Education:

- Develop material for and carry out a campaign to raise awareness and to educate policy makers on climate change issues
- Develop regional policies and standards for data storing and management
- Develop capacity to advise and support countries on data management and data collaboration

Country-specific Activities under PPCR

National level implementation will be country led and driven. Regional level execution will occur where there are distinct commonalities and overlap between country-specific needs and identified activities, and where there is a comparative advantage to undertake activities at the regional level. Regional level activities will be implemented by identified regional agencies based on mandate with the aim to benefit all CARICOM member states.

Haiti

Jamaica

Grenada

- Expand on the foundation set forth by the National Climate Change Policy and Action Plan
- Training and investments for improved data capture, collection, and management, for climate change impact assessments and interpretation purposes in collaboration with the private sector/quasi-government
- National level-specific infrastructure investments

Saint Lucia

- Promotion of private investments in data capture and sharing as well as risk modelling for climate resilience
- Training and investments for understanding and interpreting climate impact models and assessments
- Identification and analysis of knowledge and research gaps that exist and institutional capacity needs for the implementation of the PPCR
- National level-specific infrastructure investments

Dominica

A human resource limitation within the Ministry of Environment, Foreign Trade and Export Development as a whole, and the Ministry of Finance, is expected to be a limiting factor during Phases I and II of the PPCR, for which consultants will be hired under Phase I to conduct tasks as delineated below and in the proposed work programme in Table 4. These consultants will report to the Ministry of Environment, Foreign Trade and Export Development, who will provide oversight of the PPCR Project and is also Grenada's Technical Focal Point on climate change.

In line with regional policy frameworks, such as the Saint George Declaration of Principles for Environmental Sustainability in the OECS and the OECS Development Charter; based on the results and recommendations of completed and ongoing national projects and activities; in consideration of the capacity needs of key ministries such as the Ministry of Environment, Foreign Trade and Export Development; and with regard to discussions in progress and identified gaps; the following are deemed to be important inputs for Phase I of the PPCR for Grenada:[13]

- Technical specialist with overall responsibility in coordinating the constancy team and lead author for the preparation of the SPCR, Investment Plan and Programme Results Framework;

- Technical assistance to lend support to, and build capacity in data management, including Geographic Information Systems, data collection and management, climate impact assessment and other related areas;

- Specialist to provide technical support on water resources and watershed management issues for Grenada and contribute to appropriate sections of the SPCR; and

- Specialist to provide technical support on coastal management and sea-level rise issues for Grenada and contribute to appropriate sections of the SPCR.

9. WORK PROGRAMME, TIMETABLE AND FUNDING REQUIREMENTS

While there has been substantial progress in the realm of climate change over the years, there are still limitations, including, but not limited to: policy and legislative deficiencies; insufficient inter-agency collaboration; technical and technological constraints; human resource constraints and inadequate financial resources.

As indicated previously, the Ministry of Environment, Foreign Trade and Export Development will take the lead in the PPCR – ensuring that the proper technical assistance is provided.

Likewise, as indicated previously, the Ministry of Finance (with support from the PCU) will be responsible for fiduciary activities, mobilizing of additional resources, and liaising with

[13] Needs related to data management, data capture and analysis of climate change adaptation resources will be linked and contribute towards delivering the overall objectives of the Caribbean PPCR Regional Programme.

multilateral agencies, as appropriate, in collaboration with the Ministry of Environment, Foreign Trade and Export Development.

Based on the foregoing discussion, the following indicative work programme, schedule and budget, are proposed for Phase I of the PPCR, culminating in the development of the SPCR and an Investment Plan.

Indicative Work Programme and Schedule under Phase I of the PPCR

ACTIVITY	Oct 09	Nov 09	Dec 09	Jan 10	Feb 10	Mar 10	Apr 10	May 10	Jun 10	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11
1. Launching of PPCR in Washington	X																
Acceptance offer and confirmation by PPCR SC		X															
2. Scoping Mission- Presentation of PPCR to authorities		X															
3. Endorsement of Aide Memoire					X												
4. Sourcing alternative technical assistance for Phase I*)*					X	X	X	X	X	X	X	X					
5. Request for Joint Mission I to finalise the Proposal for Phase I, including preparation of requisite TOR										X							
6. Joint Mission 1to finalise the Proposal for Phase I											X						
7. Submission of Phase 1 Proposal to CIF												X					
8. Preparation of Consultant Team TORs												X					
9. Approval of Proposal for Phase I and release of funds													X				
10. Hiring of Lead Consultant for development of SPCR, Investment Plan and Programme Results Framework *(For detailed deliverables by consultant, refer to Outline of Key Action Areas in preparing the SPCR*													X	X			

ACTIVITY	Oct 09	Nov 09	Dec 09	Jan 10	Feb 10	Mar 10	Apr 10	May 10	Jun 10	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11
above)																	
11. Hiring of Specialist Consultants: GIS/Data Specialist, Water-shed Management Specialist, and Coastal Management Specialist													**X**				
12. National PPCR Launch														**X**	**X**		
13. First Round of Formal National sector consultations															**X**		
14. Sub-National consultations in Carriacou																**X**	
15. Preparation and refinement of draft SPCR, Investment Plan and Programme Results Framework by Lead Consultant, in collaboration with Section and stakeholders														**X**	**X**	**X**	**X**
16. Second Round of formal national sector consultations																**X**	
17. Request for Joint Mission 2 to finalise SPCR and Investment Plan																**X**	
18. Joint Mission 2 to finalise SPCR, Investment Plan and Programme Results Framework																**X**	
19. Presentation of SPCR to national stakeholders																**X**	
20. Finalization of SPCR, Investment Plan and Programme Results																**X**	

ACTIVITY	Oct 09	Nov 09	Dec 09	Jan 10	Feb 10	Mar 10	Apr 10	May 10	Jun 10	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11
Framework																	
21. Preparation of a brief/memo for the Cabinet of Ministers on the PPCR, specifically the SPCR and Investment Plan																**X**	
22. Submission of SPCR, Investment Plan, inclusive of Programme Results Framework to CIF for approval																	**X**

10. APPENDIX

ANNEX 1: PPCR Caribbean Regional Track: Possible Regional Activities

This document was developed by the PPCR Caribbean participating countries and key regional organisations during the Caribbean Kick-off Meeting (October 28-29, 2009, held at IDB's Headquarters) and further developed during the Videoconference held on February 01, 2010. This document also reflects some of the ideas/suggestions emerging from the scoping missions to the PPCR countries in the region. This outline states five main topics as the main areas to be potentially developed under the PPCR regional track by Caribbean regional organisations. The options provided under the five headings are intended to assist future discussions on the regional programme.

The proposed options for regional activities under the PPCR Regional Caribbean are as follows:

1. Monitoring and climate modelling activities

1.1 Strengthening climate change modelling and monitoring capacity of regional organisations or regional groups – e.g. strengthen the modelling group of CCCCC/UWI/ISMNET.
1.2 Development of standards/protocols for collecting and managing data – this would also include improving the human and institutional capacity to collect and manage data.
1.3 Development/implementation of Disaster Risk Management (DRM) and Climate Change adaptation indicators in key economic sectors. Within this context, there could be the development of standards/protocols related to monitoring, evaluation and reporting of these indicators.
1.4 Strengthening monitoring capacity by increasing the number of monitoring stations in the Caribbean, especially in those countries with very limited resources e.g. Haiti.
1.5 Provision of pertinent training in maintenance, data collection and analysis.
1.6 Strengthening linkages between regional modelling and monitoring networks with the PPCR pilot countries.

2. Enabling environment (policy and institutional framework)

2.1 Expansion of the Comprehensive DRM programme in the Caribbean; Ensure greater integration of DRM approaches with measures to integrate resilience to climate change (including measures to manage the impacts of climate change over the medium and longer-term) in the Caribbean. Consider using pilot countries of the PPCR as case studies.

2.2 There is an opportunity for the expansion of policy/legal framework to deal with issues related to climate change e.g. revamping of the land use or spatial planning legislation in the Caribbean to incorporate climate change resilience; development of new land codes/practices and guidelines.

3. Raising the political profile of the importance of factoring in climate risks into sustainable land-use management and spatial planning

3.1 What are the outreach opportunities or options for "up streaming" the issues to the political level?

3.2 What is the role of regional organisations to facilitate awareness raising at the political levels?

4. Capacity building and awareness raising aimed at different levels, including sectors and policy makers)

4.1 Development and/or expansion of a platform for sharing information/data/best practices/case studies to all member states (in all major languages used in the Caribbean – English, French, Spanish and Dutch). Is there an existing platform that can be used for these purposes?

4.2 Development of practical/user-friendly climate change training packages for:
- Policy/decision makers of key vulnerable economic sectors
- High level politicians
- Public awareness and communities

4.3 Provision of training on climate change modelling to scientists in the Caribbean (particularly those who are not part of the Caribbean climate modelling group and may have less capacity).

4.4 Provision of "adequate information" on climate change and the impact of climate change in selected productive sectors.

4.5 Strengthening regional coordination, planning and active participation in the UNFCCC.

5. How to integrate climate change into development and budget planning

5.1 Enabling dialogues at the regional level with policy makers from different sectors – Planning, Finance, Agriculture, Education, Water, etc.)

5.2 Need for innovative financial mechanisms to support the implementation of adaptation measures in the different sectors e.g. explore use of carbon taxes/levies and how the PPCR can provide seed funding to support piloting and/or scaling-up of such financial mechanisms. **ANNEX 3: Terms of Reference (Draft) For Climate Change Mainstreaming Consultant**

Pilot Program for Climate Resilience (PPCR) in Grenada

I. BACKGROUND

All Caribbean countries are particularly vulnerable to climate change, with the expected main impacts to include shifts in precipitation patterns, with more intense storms and longer dry spells, increased hurricane intensity and unrelenting sea-level rise. These unavoidable consequences of global warming are coupled with the fact that most are Small Islands, with the majority of their populations and main commercial activities on, or near, the coastline and with limited surface and groundwater resources.

In response for the need to urgently scale up investments in climate risk and resilience measures for highly vulnerable countries, the Pilot Program for Climate Resilience (PPCR) was designed under the Strategic Climate Fund (SCF) to pilot and demonstrates ways to integrate climate risk and resilience into developing countries' core development planning. The pilot programs implemented under the PPCR are primarily country led but for the Caribbean and the Pacific regional programs are also being implemented. The PPCR provides incentives for scaled-up action and transformational change and offers additional financial resources to help fund public and private sector investment for climate resilient development plans.

The objectives of the PPCR are to pilot and demonstrate approaches for integration of climate risk and resilience into development policies and planning; to strengthen capacities at the national levels to integrate climate resilience into development planning; to scale-up and leverage climate resilient investment, building upon other ongoing initiatives; and to enable learning-by-doing and sharing of lessons at the country, regional and global levels. In addition, regional PPCR pilots will aim to achieve economies of scale in supporting action at the national level in countries participating in the pilot program and to strengthen cooperation and capacity at the regional level to integrate climate resilience into national and appropriate regional development planning and processes

For the Caribbean, the approach to be taken for the PPCR will be a regional approach that will proceed along two linked tracks of activities. These activities will include: (i) country led activities or investments and (ii) a regional tract of activities focusing on climate monitoring, institutional strengthening, capacity building, and knowledge sharing. The dual tracts are expected to be synergistic with the expectation that the regional activities will supplement country–led activities. A select number of islands were chosen to pilot or demonstrate the approach of the PPCR under the country-led track under a general theme of

integrating climate resilience in coastal zone development. Grenada was chosen as one of the pilot countries under the regional PPCR, together with Jamaica, Haiti and three other island states from the Organization of Eastern Caribbean States (Dominica, St. Lucia and St. Vincent and the Grenadines).

The PPCR for the Caribbean is being implemented jointly by the Inter-American Development Bank (IDB) and the World Bank (WB) in a multi-sectoral and integrated manner involving public, private and civil society entities.

II. OBJECTIVE

The purpose of this consultancy is to assist the government of Grenada to mainstream climate change into development planning and investments through the coordination and implementation of PPCR activities in the country.

III. SCOPE OF SERVICES

The consultant will undertake the following activities but not restricted to these:

a. Assist in the development of a work plan, budget and timetable for the implementation of Phase 1 of the PPCR and the preparation of the "*Strategic Program for Climate Resilience*" (SPCR) for Grenada.

b. Provide support to the Ministry of Finance, Planning, Economy, Energy and Cooperatives and Ministry of the Environment, Foreign Trade and Export Development, which are coordinating the PPCR efforts in Grenada, in the preparation of the "*Strategic Program for Climate Resilience*" (SPCR) under Phase 1 of the program, including:

    i. Dissemination and sensitization of the PPCR across key sectors and to private sector, civil society and international agencies.

    ii. Compilation and update of information related to climate change in Grenada, especially to ongoing initiatives, programs and/or projects linked with resilience and adaptation to climate change.

    iii. Identification and analysis of knowledge and research gaps that exist and institutional capacity needs for the implementation of the PPCR.

    iv. Assist in the coordination of consultants working on the preparation of the SPCR where needed.

v. Support the preparation of the Terms of Reference for the official Joint Missions of the PPCR to Grenada.

vi. Support the development of the Joint Mission's program and composition.

c. Assist the Ministry of Finance, Planning, Economy, Energy and Cooperatives and Ministry of the Environment, Foreign Trade and Export Development in the coordination and supervision of technical and administrative activities related to the implementation and execution of the PPCR, including the organization of meetings, workshops, facilitate stakeholder consultations, preparation of documents and minutes of meetings, among other things.

d. Assist the technical team from the World Bank and the IDB during the official joint missions with the Government of Grenada.

IV. SPECIFCATION OF SERVICES

The consultancy will consist of the following:

Type of consultant: Individual local consultant.

Duration of contact: The consultancy will be for 12 months from the signing of the contact and is expected to begin on __ to _____.

Place and time of work: The consultant will be based in the offices of the Ministry of the Environment and will follow normal working hours.

Qualifications: Bachelors' degree or equivalent professional experience, in political sciences, environmental economics, environmental management or similar areas.

Experience: Minimum 5 (five) years experience in the coordination and management of projects, preferably climate change related projects; knowledge and understanding of the adaptation to climate change; working experience in Grenada; working knowledge of MS Office (Word, Excel, Powerpoint, etc.).

V. REPORTING

A progress report will be submitted at the end of the first quarter of the consultancy. This report shall be limited to 5 pages and shall contain a summary of the progress of the work, operations in preparation and implementation until the date of delivery

of the various SPCRs, difficulties encountered and recommendations and next steps.

A draft of the final report of the consultancy will be submitted for review at the end of the consultancy to the Ministry of the Environment. The draft report should contain a summary of the status of activities undertaken by the consultant, areas of difficulty and any outstanding activities. A final version of the report will be submitted ten (10) working days after receiving the comments to the draft. The consultancy report format shall be agreed with the supervisor at the Ministry of the Environment. The consultant shall keep a record of all primary and secondary information that is used to prepare such reports.

VI. PAYMENT

In consideration of the services to be performed under this contract, the consultant will be remunerated in the form of "lump-sums," subject to the successful delivery of reports and products. The schedule of payments shall be made as follows: 50 % after first quarter report and 50 % final report.

VII. SUPERVISION/COORDINATION

The consultant will work under the supervision of the Permanent Secretary, Ministry of the Environment, Foreign Trade and Export Development.

ANNEX 2: Terms of Reference for the First Joint Mission for the Pilot Programme on Climate Resilience (PPCR)

1. Background

The independent State of Grenada consists of the islands of Grenada, Carriacou and Petit Martinique is located at 11° 582 North Latitude and 61° 202 west longitude and lies between Trinidad and Tobago to the south and St. Vincent and the Grenadines to the north. It is the southernmost of the Windward Islands.

Grenada is a Small Island Developing State (SIDS) comprising three islands with the largest being Grenada which is 34 km (21 miles) long and 18km (12 miles) wide and the three islands taken together have a land area of 345 sq. km (133 sq. miles).

The country is characterized by humid tropical climate, with relatively constant temperatures throughout the year averaging 26 degrees centigrade. The mean maximum temperature is 31.4 degrees centigrade while the mean minimum is 24.0 degrees centigrade. The dry season typically runs from January to May and the rainy season from June to December. Carriacou and Petit Martinique generally receive lower levels of rainfall and during the dry season can experience severe drought conditions.

2. Economy

The economy of Grenada has been hit hard by the global crisis. The economic downturn had stronger impact than was predicted in 2008 which is reflected in declining tourism receipts, Foreign Direct Investment (FDI), and remittances. Tourism, which is the main sector and contributor to the GDP, is expected to experience a 20 percent decline in stay-over arrivals in 2010; FDI is almost at a standstill contributing to unemployment in the construction sector which is projected to fall by 35 percent, the fourth consecutive year of double-digit declines. The weak economy has led to rising unemployment, while poverty remains widespread. According to a preliminary draft of the Country Poverty Assessment, the unemployment rate stood at 25 percent in June 2008. Compounding matters, the authorities believe that labor market conditions have softened further in 2009 leading to unemployment rates closer to 30 percent. Some 38 percent of the population lives below the poverty line.

Grenada has a tourism driven economy and the industry is mainly concentrated in the southwest region, where the country's idyllic beaches are located. In addition to conventional beach and water sports tourism, the country offers eco-tourism, deriving from rare natural vistas- the Grand Etang, mountains and distinctive flora. The agricultural sector is its second major source of export growth. The recent Hurricanes Ivan (2004) and Emily (2005) severely damaged both the tourism and agricultural

sectors.

3. Population

According to the 2008 Poverty Assessment Report the population is estimated at 103,538 but the report also purports that the population might have fallen as a result of "a larger than usual external migration in the light of the major hurricanes that the country has experienced."

4. Vulnerability to Climate Change

Small islands were among the hotspots which have been identified by the Global Water Partnership as one of the hot spots where climate change impacts were forecasted to be felt within the next few years and where urgent attention is need in the water sector. Grenada is one of those small islands where the impact of the prolonged dry period was experienced between November 2009 and June 2010.

5. Timeframe

The Initial Joint Mission will be conducted during the period August 31- September 1, 2010. The three-day mission is based on the submission of the draft project proposal for phase one, two weeks prior to the arrival of the mission.

6. Mission objectives

- To assist Grenada to define a clear process for formulating a Strategic Program for Climate Resilience.
- To assist Grenada to finalize the proposal for undertaking the tasks for Phase 1 of the PPCR pilot program.
- To assist Grenada with the Scope of work for the development of the Strategic Programme for Climate Resilience
- To participate in the stock-taking exercise for climate change related country level activities underway by state, non-state actors and development partners

7. Stock-taking Exercise

The mission will focus on key issues that contribute to the design of a Strategic Program, such as a Climate change diagnosis. The mission will review the adequacy of existing data on climate change impacts, vulnerabilities and adaptation.

8. Data

- The mission will also review the following:

- The existing quantitative data and complementary qualitative information
- Accessibility of data for policy analysis
- Efforts to improve data collection and analysis
- Adequacy of climate data timeframes and spatial resolution for all key stakeholders, particularly given the specific needs of the private sector.
- Integration of climate change into sectors

The mission will review the following:

- Existence of country or sectoral-specific vulnerabilities to climate risks.
- Efforts to identify the key social, economic and institutional constraints to climate resilience
- Outcomes of past and existing activities on climate resilience
- The status of preparation of new activities on climate resilience, whether domestically or externally supported.
- The impact of relevant national and sectoral policies on country-specific climate risks and how they affect the ability of communities, sectors (including private sector), country to respond to climate shocks

Sector assessments

In keeping with its Climate Change Policy Grenada has identified Integrated Water Resources Management, data acquisition and management and capacity building as its priorities for phase one
of the PPCR. As a result, the stocktaking exercise will focus on the sectors relevant to the priority areas. These sectors include but are not limited to:

- The Ministry of Agriculture: Extension Division, Irrigation Division, Forestry Department, Land Use Division
- National Water and Sewerage Authority
- National Disaster Management Authority
- Ministry of Tourism
- Ministry of Health
- The Meteorological Office Point Salines Airport
- Physical Planning Unit
- Ministry of Communications and Works

9. Broad-based consultations

The PPCR emphasizes the need for broad-based consultations. These consultations will include the private sector and the non-government organisations.

The Ministry of the Environment recently held consultations with Environmental Non-Government Organisations operating in Grenada. This group will therefore represent non-government organisations to be consulted. The Grenada Hotel and Tourism Association will consulted as part of the private sector while the Grenada Chamber of Industry and Commerce will be the other body consulted on behalf of the private sector. The National Climate Change Committee which brings together broad-based representatives will be consulted on behalf of the public service.

10. Identification and outline of Phase 1 Activities

The mission will discuss the following activities to be included in phase 1:

- Implementation of activities/recommendations included in the Grenada Water Policy
- Implementation of capacity building activities for the health, agriculture, tourism, environment, water, forestry and fisheries sectors.
- Data acquisition and management
- Public awareness
- Scope of works. outline and process for development of SPCR
- Budget for Phase 1
- Timetable
- Work-programme for Phase 1
- Work-programme and funding for PPCR

11. Mission Outcome

At the end of the mission it is expected the following will be achieved:

a. The first draft of proposal for the development of the Grenada Strategic Program for Climate Resilience.

The proposal should include:
a. Stocktaking of past, present and planned activities;
b. Work program and indicative timetable of activities;
c. Coordination with other development partners;
d. Link to the regional SPCR;
e. Any analytical work urgently needed to support the policy, institutional and investment choices of the PPCR

Other Mission outcomes include:

- Agreement on the proposal for financing phase 1 of the PPCR
- Finalised project proposal for Phase 1

- Agreement on the development Partners who will be involved in Phase 1 of the PPCR
- Agreement on which local departments or agencies will be participate in Phase 1

Development Partners
- USAID/OECS
- UNDESA
- CARICOM
- IUCN

ANNEX 3: Agenda for Grenada's First PPCR Joint Mission

World Bank

Inter-American Development Bank

Monday, August 30-Tuesday, September 1, 2010

Day 1	**Meeting with Joint IDB / World Bank Team**
Time	**Session**
9:00 -10:00	Meeting with Ministry of Environment, Foreign Trade and Export Development/Ministry of Finance/PCU ● Update on Country Track and Regional Track ● Discussion on coordination and operational details of PPCR Programme ● Discussion on Project Proposal ● Discussion of Phase 1 activities; ● Discussion on the financing arrangements • Discussion on institutional capacities and arrangements of the implementation stakeholders of the PPCR.
10:00- 12:00	Meeting with Environmental NGO's, Private Sector and Hotel Association Presentation on goals and objectives of the PPCR Discussion on Phase 1 and involvement of the private sector and NGOs
1:30 – 4:00	Presentation on Regional Track with a focus on Data Questions/Discussion with organisations involved in GIS/data management/risk assessment on climate change data needs and gaps Relevant project activities under Phase 1 Phase 2
End of Session 1	

Day 2	**All PPCR Stakeholders Meeting**
Time	**Session**
9:00 - 9:05	Welcome Remarks- Permanent Secretary Ministry of Environment, Foreign

Day 2	**All PPCR Stakeholders Meeting**
Time	**Session**
	Trade and Export Development
	Introduction of Participants
	Presentation and Questions: Overview/Status of PPCR
	Discussion on the Process for the development of the Strategic Programme for Climate Resilience and Activities Phase 1 and Phase 2
	Presentation Grenada Draft Proposal Discussion on Draft proposal
	Discussion on Climate Change Action Plan Discussion Water Policy strategy Discussion Data/institutional capacity/arrangements for implementation/areas of overlap with disaster risk reduction project and other projects
	Next steps
	End of Day 2

Day 3	**Meeting with Joint IDB / World Bank Team**
Time	**Session**
	Discussion on Refinement of Proposal for Release of Phase 1 Funds /Terms of Reference for Consultants
	Discussion with PCU/Ministry of Finance/ Ministry of Environment, Foreign Trade and Export Development/ Key Ministries
End of Session 3	

ANNEX 4: Grenada National Climate Change Policy 2007-2011

INTRODUCTION

This Climate Change Policy and Action was developed through an extensive consultative process with stakeholder groups and the public at large.

Nine (9) stakeholder consultations[14] and seven (7) community fora[15] were held during the period September 20, 2006 to October 31, 2006 and were attended by approximately seven hundred (700) persons. These Consultations considered the results of technical work done on climate change in Grenada during the 1999 – 2005 period[16] and made recommendations thereon.

A First Draft of the Policy and Action Plan was developed based on the recommendations from these consultations, the technical imperatives that were highlighted by the aforementioned technical assessments, and the commitments and opportunities arising out of Grenada's status as a signatory to the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol (KP).
This First Draft was reviewed by the National Climate Change Committee (NCCC) and the Sustainable Development Council (SDC) during February 2007 and March 2007 respectively. Their feedback and inputs were incorporated into a Second Draft.

The Second Draft was the subject of discussion at a National Roundtable on Climate Change that was held on April 05, 2007, under the auspices of the Minister of Finance. This Roundtable was attended by 32 persons, including senior personnel from government departments, members of the diplomatic community and representatives from civil society. Their feedback and inputs have been incorporated into this formal submission to Cabinet.

1. THE GLOBAL CONTEXT

Climate Change is a global problem with local impacts.

It is the result of a buildup of greenhouse gas[17] (GHG) emissions in the atmosphere, mostly from activities by developed economies over the last one hundred and fifty years.

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[14] Public Sector Board of Management, Staff of Ministry of Sports and Community Development, Youth and Students, Statutory Bodies, Energy Sector Companies, Agricultural Sector, Carriacou and Petit Martinique Public Sector Employees, Grenada Institute of Professional Engineers, Sustainable Development Council.

[15] One in each parish, including Carricaou and Petite Martinique

[16] Grenada's Initial National Communication on Climate Change (2001); CPACC Coastal Vulnerability and Risk Assessment Pilot Project (2001); National Capacity Self Assessment (2005).

[17] The GHGs that are covered by the United Nations Framework Convention on Climate Change (UNFCCC) are CO_2 - Carbon dioxide, CH_4 – Methane, N_2O - Nitrous oxide, PFCs – Perfluorocarbons, HFCs - Hydrofluorocarbons and SF_6 - Sulphur hexafluoride

Rapidly growing developing countries are now beginning to contribute an increasingly greater share, with the emissions from developing countries forecast to exceed those of developed countries by 2030[18].

Scientists have warned that the buildup of GHGs is now at dangerously high levels, with the Stern Report citing the current level at 430 parts per million (ppm) of carbon dioxide equivalent (CO_2e). These concentrations are increasing by 2.5 ppm CO_2e per year and will reach 450 ppm CO_2e within ten (10) years, if no significant action is taken to significantly reduce GHGs by then.

That level (450 ppm) is considered by many scientists to be a critical threshold, which will trigger a 2^oC increase in temperatures by the middle of this century. This temperature level will *inter alia* trigger the "onset of irreversible melting of the Greenland ice sheet" [19], which can result in a 7M increase in sea levels, as well as cause irreversible damage to coral reefs and other ecosystems.

Either of the above impacts will have significant negative impacts on Grenada and other small island states, given the concentration of population and human activity on the coastline and the importance of coral reefs and other marine ecosystems for coastline protection and marine (food) habitats.

The scientific community has therefore issued an urgent call for political action to halt these increases in GHGs within the next ten years, before this threshold is breached and the European Union (EU) has set this 2^oC as their target stabilization level for temperature increases resulting from climate change.

Annex 1 contains a summary of the probable effects of different concentrations of GHGs and their associated temperature impacts.

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18 The World Energy Outlook 2006, International Energy Agency

19 Stern Review on the Economics of Climate Change, Executive Summary, pg. v

2. CLIMATE CHANGE AND GRENADA

2.1. Climate Change Impacts

The reality of global climate change is upon us.

It is evident in the increases in temperatures being experienced, with data from Point Salines International Airport (PSIA) showing that 2005 was the hottest year on record and that the five hottest years on record occurred since 1998 – Fig 1.

It is also evident in the increased intensity of hurricanes worldwide, with a doubling of Category 4 and Category 5 hurricanes since 1970 and a 50% increase in wind speed and duration of all hurricanes[20]; in the bleaching of over 25% of the coral reefs that occurred in some parts of the region in 2005[21]; and farther afield, in the rapid increase in the rate of melting of the Greenland ice sheet[22] which is predicted to increase global sea levels by 0.9 metres (3 feet) over the remainder of this century and which, if totally melted, can cause the sea levels to rise by as much as 7 metres (21 feet)[23].

Analysis done under the Caribbean Planning for Adaptation to Climate Change Project (CPACC) in 2001[24] concluded that Grenada's beaches are at risk of significant erosion from the rising sea levels. The analysis showed that between 55% and 75% of the Grand Anse beach could disappear if the sea levels rose by 0.5 metres (1.5 feet), while the beaches between Conference and Marquis could lose 65% of their current widths and 83% of the beaches in Carriacou could disappear. These include the beaches at Hillsborough, Paradise, Lillette and Windward.

The CPACC analysis also concluded that key coastal infrastructure will be inundated by a 1metre (3 feet) sea level rise, including an estimated 18 hectares of land on the Carenage, St. George's, which is currently less than 0.20 metres (0.6 feet) above average mean sea-level, containing important buildings including the Financial Complex, the Carenage Sports Complex, the Carenage Road, the Cable & Wireless telephone exchange and the St. George's sewerage system pump station.

Other at-risk areas included the main hotel belt in Grand Anse, sections of the coastline

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20 A recent study by Georgia Institute of Technology researchers found that the number of Category 4 and 5 hurricanes around the world has nearly doubled over the past 35 years. According to a study by Kerry Emanuel, a professor of atmospheric science at the Massachusetts Institute of Technology, the duration and strength of hurricanes have increased by about 50 percent over the last three decades.

21 The National Oceanic and Atmospheric Administration (NOAA), Coral Reef Watch

22 Maslin, Mark (2004). Global Warming: A Very Short Introduction ; Professor Eric Rignot, California Institute of Technology – Presentation at the annual meeting of the American Association for the Advancement of Science.

23 Maslin, Mark (2004). Global Warming: A Very Short Introduction

24 CPACC Coastal Vulnerability and Risk Assessment Pilot Project (2001)

close to the Point Salines International Airport, the Eastern Main Road leading out of Grenville and passing through Soubise and Marquis and the front streets in Hillsborough and Harvey Vale in Carriacou.

These analyses have been supplemented by anecdotal information on climate sensitivity provided during the Stakeholder Consultations that informed this Policy and Action Plan. These anecdotal references included:

- Examples of beaches/coastline that has already been "lost" due to the rising seas;

- Examples of difficulties being encountered by farmers as a result of the inability of their seeds and/or plants to withstand current heat and humidity; and

- References to reduced rainfall and reduced stream flows.

These analyses and observations about climate sensitivity are consistent with the projections on the future impact of climate change in the Caribbean region. These projections include:

(vi) Increases in average temperatures of between 1.8 C and 6.4 C within the next 100 years[25].

- Rising sea levels caused by the melting of the artic ice and the thermal expansion of the sea water. The Caribbean Sea has already been rising by 1mm per year and global sea levels are expected to rise by between 0.18 m and 0.59 m over the next 100 years.[26]

- More intense hurricanes.[27]

- Longer dry seasons and wetter wet seasons, accompanied by reductions in total rainfall with at least 25% reduction in total rainfall has been predicted for the Caribbean region[28].

- More intense rainfall when it occurs.

These impacts are expected to affect all aspects of Grenada's socio-economic landscape

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[25] This is based on the Report entitled *Climate Change 2007: The Physical Science – Summary for Policymakers"* issued by Working Group 1 of the Intergovernmental Panel on Climate Change (IPCC) in February 2007 as part of its Fourth Assessment Report.

[26] Ibid

[27] Ibid

[28] *Glimpses of the Future.* Report from the Precis Caribbean Climate Change Project

including human settlements, agricultural production, food supply, water supply, health and tourism. In addition, it will expose Grenadians to additional hazards including the danger of landslides, flash flooding and more intense tropical storms and hurricanes[29].

It must be noted however, that, outside of the CPACC analysis of the vulnerability of some sections of the coastline to sea level rise, no scientific analysis has been done of the specific potential impact of climate change on any of the main socio-economic sectors and no attempt has been made to initiate any response programming.

The Stakeholder Consultations also noted that unsustainable livelihood and development practices are increasing Grenada's vulnerability to climate change impacts. These include:

(vi) Absence of adequate agricultural soil and water conservation practices;

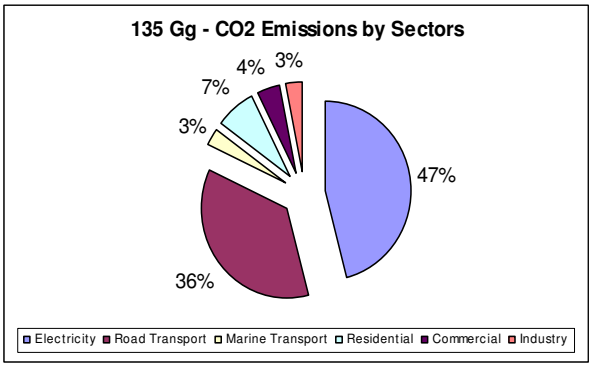
(vii) Uncontrolled/Poorly managed exploration of the coral reefs by divers and tourists;

(viii) Sand mining on the beaches;

(ix) Mangrove harvesting for firewood; and

(x) Use of sensitive land and marine areas for developmental purposes, without putting in place necessary safeguards.

2.2. Greenhouse Gas Emissions (GHG)



An Inventory of Grenada's Greenhouse gases for the year 1994[30] showed that Grenada emitted a total of 135,000 tonnes of carbon dioxide, 92,000 of which were absorbed by the forests. The main sources of carbon dioxide emissions were electricity (47%) and road transport (36%). 70,000 tonnes of methane were also produced from our solid waste disposal landfill.

There is emerging private sector interest in developing wind and solar energy applications and in the importation and sale of energy efficient lighting and appliances, both of which can contribute to a reduction in the Grenada's greenhouse gas emissions. A

[29] These expected impacts are detailed in Grenada's First National Communication to the UNFCCC. They are based on expert analysis of the potential impacts of climate change.

[30] Base year established by the United Nations Framework Convention on Climate Change (UNFCCC) in order to facilitate international comparability. A new one with a base year of 2000 is scheduled to be done in 2007.

small number of initiatives are on stream, but their development have been constrained by two factors, viz::

- The monopoly granted to GRENLEC through the Electricity Supply Act, which means that private producers of electricity have to negotiate and get a license from GRENLEC for power generation and for selling excess power back to the grid. This is a disincentive given that GRENLEC is also a competitor for the supply of electricity.

- High duties and taxes on renewable energy equipment components and energy efficient applications, in excess of 50% in some cases, have meant that these products are not competitive on the market.

2.3. Adaptive Response Capacity

The National Capacity Self Assessment Project, conducted in 2005, concluded that Grenada is lacking in the skills, data and technology to adequately assess and plan responses to the impact of climate change within the main socio-economic sectors. In addition, there is a lack of consistent, time series data with which to assess historical climate trends and make future projections.

3. NATIONAL POLICY FRAMEWORK

3.1. Vision Statement

An empowered Grenadian population capable of managing the risks from climate change, at the individual, community and national levels.

This vision statement implies that all levels of the Grenadian society will be empowered to respond to climate change in a manner that is consistent with their responsibilities, viz:

- *General Public* – willing and able to support national initiatives and to take personal initiatives, as appropriate;

- *Technical Personnel* – have the technical knowledge and tools required to conduct appropriate technical analyses and provide advice to policy and decision-makers, as appropriate;

- *Policy and decision-makers* – have access to the requisite information and willing and able to make relevant decisions, as appropriate.

3.2. Strategic Objective

The strategic objective of the National Policy and Action Plan for the period 2007 – 2011 is "*to lay the foundation for an organised long term response to Climate Change*".

This objective is based on the absence of specific analyses on which to plan response actions and the lack of capacity to conduct assessments and plan responses. One of the major outcomes of the Action Plan will therefore be the strengthening of the analytical and capacity building processes that have been initiated, thus enabling the development of a sustained national response to climate change.

3.3. Strategies

The Strategic Objective will be achieved through the pursuit of eight (8) inter-related strategies, that will be implemented as an integrated package of measures, viz:

(a) Climate-proofing present and future national development activities by requiring a climate risk analysis of all ongoing and new development initiatives.

(b) Strengthening the collection, analysis and use of climate-related data and impacts.

(c) Building local human capacity to assess and respond to climate change, including through the access and use of appropriate technologies.

(d) Reducing greenhouse gas emissions through increased energy efficiency and the use of renewable energy.

(e) Eliminating unsustainable livelihood and development practices that increase climate change vulnerabilities.

(f) Sustained Public Awareness and Education Programming.

(g) Foreign policy advocacy for international action on climate change.

(h) Joint Implementation and networking with OECS and CARICOM partners and with other Small Island Developing States.

3.4. Specific Goals

The specific goals to be achieved during the 2007 – 2011 period, in pursuit of the strategic objective are:

(a) Provisions for reducing climate change vulnerability incorporated into all new development projects approved from January 2008.

(b) Incorporation of climate change considerations and response measures in sectors where obvious climate risks exist – e.g. health, agriculture, water, housing and human settlements, coastal development - following the presentation of the 2008 National Budget.

(c) Establishment of a National Meteorological Service that will collect, collate, analyse and disseminate climate related data to all potential users, including the Point Salines International Airport, the Agricultural Sector, the Water Sector, the National Disaster Management Agency and the Ministry of Health, by the end of 2008.

(d) Completion of technical analysis for decision-making with regards to appropriate response measures for tackling the most serious long term impacts of climate change e.g. erosion of Grand Anse beach, reduction in water supply, reduction in agricultural productivity and human settlement impacts, by the end of 2008.

(e) A cadre of technical personnel capable of conducting basic, scientific analysis of climate change impacts at the sectoral level, with the ability to propose response measures, available in each sector by the end of 2008.

(f) Detailed sector impact assessments and initial response plans by the end of 2010.

(g) Students pursing university degrees related to climate change by the end of 2008.

(h) Incentives for the use of renewable energy included in the 2008 Budget.

(i) 100% importation and use of energy saving appliances and equipment by 2010.

(j) More integrated approach to national development and reduction in unsustainable practices by 2010.

(k) A literate and informed public that will demand and support public policies aimed at building national resilience to climate change.

It is expected that the detailed sector impact assessments and initial response plans

referred to in (f) above, will inform the formulation of the Action Plan for the period 2012 – 2016. This Action Plan should be developed during 2011, so as to avoid any gap between the completion of the current plan and the start of the new one.

4. ACTION PLAN 2007 – 2011

The actions in support of these strategies will evolve during the implementation process. An initial list of actions is described in this section and elaborated in the Strategy Matrix in Annex 2. This listing does not represent any prioritization of the actions to be taken as these are not seen as discrete actions but, rather as part of a package of responses. It also does not preclude the initiation of other actions that are consistent with the policy framework.

4.1. Climate-proofing present and future national development activities.

This strategy is consistent with best practice as recommended by the World Bank and requires a climate risk analysis of all ongoing and new development initiatives by posing the questions "Are they vulnerable to climate variability and climate change? And if they are, how can we redesign those projects so that they are less vulnerable to current climate variability and projected changes in climate?"

The actions that will be undertaken in support of this strategy include:

- Institutionalisation of a new requirement by the government that climate change risk analysis become a mandatory part of the feasibility analysis of all new projects.

- A new requirement by the government that each sector immediately incorporate response strategies for the most obvious climate-related risks to their sector, into their regular programming, viz:
  i. Health – strengthening vector monitoring and control and making contingency plans for incidences of heat stress;
  ii. Agriculture – strengthening programming for soil and water conservation;
  iii. Water – stream flow monitoring and waste reduction strategies;
  iv. Disaster Management – add vulnerability analysis and planning for flash floods and landslides.
  v. Housing and human settlement – strengthening building standards to accommodate possibility of more Category 4 and Category 5 hurricanes.

vi. Coastal Development – Incorporating sea level rise considerations into development projects.
vii. Tourism – Review and modification of the National Tourism Strategy in view of the negative impacts that Climate Change could have on key tourism assets and on the economic competitiveness of the tourism industry.

- Commissioning of technical vulnerability analyses of the threats that have the potential to create significant socio-economic disruption, including:
  - Erosion at Grand Anse Beach;
  - Sea level rise in coastal communities;
  - Long term impact on the water sector;
  - Impact on survival and productivity of current crop varieties and consideration of alternative varieties.

4.2. Strengthening the collection, analysis and use of climate-related data and impacts.

This strategy is aimed at providing the information base that will facilitate monitoring of climate change impacts at the local level and provide an objective basis for the development of national response strategies.

The actions that will be undertaken in support of this strategy include:

(a) Establishment and equipping of a National Meteorological service that will address the data-related needs of Aviation, National Disaster, Water, Agriculture, Health, General Public.

(b) Documentation of traditional knowledge and anecdotal information on climate-related impacts to supplement gaps in the data record.

(c) Demonstrated commitment by senior decision-makers to use the available data as the basis for decision-making, where appropriate.

4.3. Building local human capacity to assess and respond to climate change, including through the access and use of appropriate technologies.

This strategy is aimed at developing the human capacity to develop and implement a sustained national response to climate change. It is one of the critical success factors that will determine whether or not Grenada will be able to develop an adequate long term response to climate change.

The actions that will be undertaken in support of this strategy include:

2. Development of human capacity to assess climate change impacts and plan responses to climate change
   - Inclusion of Climate Change on Government's priority list for training
   - Short-term training for planning and technical personnel from each affected sector in impact assessment for their sector
   - Longer term university level training in climate change
   - Targeted university level training in a range of skills that are necessary to respond to climate change

3. Retention and utilisation of trained personnel to conduct more rigorous analysis of climate change impact on relevant sectors and propose more rigorous response measures.

4. Development of implementation capacity at all levels of the economy. This will require *inter alia* training in project management skills and the development and effective implementation of performance management systems.

4.4. Reducing greenhouse gas emissions through increased energy efficiency and the use of renewable energy.

This strategy is aimed at fulfilling Grenada's obligations under the UNFCCC to contribute to the "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system."[31]. Given the high cost of energy to the economy, successful implementation of this strategy will bring economic benefits at both the macroeconomic and microeconomic levels.

The actions that will be undertaken in support of this strategy include:

8. Creating the enabling environment for the use of renewable energy:

   - Revise Electricity Act to allow other parties to generate renewable electricity and sell to the grid.

   - Create incentives to support fledgling renewable energy initiatives through reduction in import duties and taxes; tax rebates and other appropriate fiscal measures for use of wind and solar generated electricity.

[31] United Nations Framework Convention on Climate Change, Article 2

- Incorporate into the Land Use Policy, the zoning of land for use in the establishment of wind farms and the planting of crops to use as biofuels.

9. Encouraging the use of energy efficient options at the domestic level by:

    i. Benchmarking electricity generation equipment to ensure highest levels of energy efficiency in electricity generation.

    ii. Making energy efficient appliances, lighting, etc. more price competitive by reducing the import duties and taxes.

    iii. Stipulating higher standards for appliances and other energy-using machinery that is imported into Grenada e.g. Use Class A.

    iv. Stipulating emission standards for vehicles that are imported into Grenada and revising the taxation on vehicles to encourage the importation of vehicles that meet the stipulated emission standards.

10. Public education on reducing domestic energy consumption.

11. Support for the implementation of a waste-to-energy process at the Perseverance Landfill.

12. Development and implementation of a re-afforestation program to replant the forests and to encourage the planting of trees.

13. The deliberate creation of green spaces within urban development projects.

4.5. Eliminating unsustainable livelihood and development practices that increase climate change vulnerabilities.

This strategy is aimed at increasing the resilience of Grenada's ecosystems to the impacts of climate change by removing man-made stressors that degrade them and weaken their ability to withstand climate change impacts.

The actions that will be undertaken in support of this strategy include:

(a) Initiate measures to prohibit sand mining on beaches and to strengthen enforcement of these prohibitions.

(b) Initiate measures to regulate the harvesting of mangroves for use as firewood and other domestic and commercial purposes and introduce incentives to encourage their replanting and conservation.

(c) Development and enforcement of a Land Use Policy.

(d) Revision and enforcement of building setbacks.

(e) Management and control of the utilization of coral reefs and other marine ecosystems.

(f) Promotion of integrated watershed and coastal zone management.

(g) Strengthening of waste disposal management practices to include prohibitions on dumping in the rivers and the sea.

4.6. Sustained Public Education Programming.

This strategy is aimed at strengthening the knowledge base on climate change at all levels of society, with special emphasis on decision-makers and the general public. It is envisaged that such strengthening will result in more informed decision-making and in increased public support for climate change initiatives.

The actions that will be undertaken in support of this strategy include:

(a) Educational activities targeted at strengthening the knowledge base of decision makers, viz:

i. Parliamentary Seminar on "Climate Change and its implications for Grenada" during the second quarter of 2007.

ii. Annual year-end Cabinet Updates on "Recent Developments in Climate Change" aimed at keeping government officials abreast of new developments in the understanding of the science and impacts of climate change and the implications for Grenada.

iii. Targeted presentations and seminars to senior decision-makers in the public and private sector.

(b) Public awareness programming to generate a national awareness of climate change and its impacts and the role of the individual in responding to the impacts, viz:

3. A KAP (Knowledge, Attitudes and Practices) Survey on Climate Change.

4. Development and maintenance of a National Climate Change Website.

5. Mass production of simple climate change educational materials for public dissemination e.g. brochures, calendars and the like.

6. Community level presentations, discussions and public fora on climate change and its implications for Grenada.

(c) Implementation of practical demonstration projects at the community level that can be used to highlight the impacts of climate change and the potential of community led response activities.

(d) Support the teaching of Climate Change at all levels of the education system, viz:

i. Work with the Ministry of Education to develop relevant climate change modules in the school syllabus.

ii. Provide materials and information to teachers on an as required basis.

iii. Seminars and presentations to teachers and/or students on specific aspects of climate change, as required.

iv. Inclusion of climate change projects into the activities done by students at the secondary schools, the T.A. Marryshow Community College and the St. George's University.

It should also be noted that public awareness programming will also be included in the implementation strategies of the other elements of this Action Plan.

4.7. Foreign Policy advocacy for international action on climate change.

This strategy is aimed two achieving two objectives, viz:

1. Strengthening the international lobby calling for significant reductions in GHG emissions. This is especially important to Grenada and other small

island states and developing countries as they will be among the first to suffer from the impacts of climate change and will experience the worst impacts. It is based on the recognition that the best way to minimise the impacts of climate change is to limit and reduce greenhouse gas emissions on the global scale as early as possible. In this context, *it is ironic that all the current calls for emission reductions are coming from developed countries*.

2. Positioning Grenada to access international resources to finance its efforts to combat climate change. Grenada, and other small countries, cannot generate the resources to combat climate change on its own. This is recognized by the international community and there are a number of initiatives being formulated to respond to this reality. However, the experience of the Global Environment Facility (GEF) to date has indicated that the major benefits from these international institutions flow to the countries which actively participate in their operations.

The actions that will be undertaken in support of this strategy include:

(a) Government officials including references to climate change in major speeches and statements at regional and international fora including the CARICOM and OECS Heads of Government meetings, the General Assembly of the United Nations and the Commonwealth Heads of Conference meetings.

(b) Inclusion of Climate Change on the listing of priorities that are discussed with friendly countries when seeking bilateral development assistance and support.

(c) Adoption of a more proactive and participatory approach within international organizations like the Global Environment Facility, the UNFCCC Adaptation Fund and the like.

4.8. Joint Implementation and Networking with OECS and CARICOM partners and with other Small Island Developing States.

This strategy recognizes the fact that many small islands face similar challenges and that it is sometimes more cost-effective to approach common concerns on a sub-regional or regional basis, as was successfully demonstrated by the Caribbean Planning for Adaptation to Global Climate Change (CPACC) Project. It also recognizes that the international donor community has adopted a predominantly multilateral approach to providing support for the Caribbean region.

The actions that will be taken in support of this strategy include:

(a) Grenada taking the lead in encouraging the regional Governments to make Climate Change a priority issue for the region and mainstreaming in into foreign policy strategies.

(b) Working through the OECS Environment and Sustainable Development Unit to develop sub-regional projects aimed at addressing and implementing the issues specified in this Action Plan.

(c) Working in collaboration with the Caribbean Community Climate Change Centre to develop sub-regional and regional projects aimed at addressing and implementing the issues specified in this Action Plan.

(d) Working in collaboration with other small island states to jointly develop and implement projects, as appropriate.

5. COSTS, FINANCING AND TECHNICAL SUPPORT

The implementation of the actions contained in the Action Plan will cost a minimum of US$403,000. These costs could be reduced if support for some of the activities is obtained through bilateral cooperation arrangements. Options for sourcing these funds include:

- Allocations from the National Budget;

- Utilisation of Grenada's Climate Change allocation under the GEF's Resource Allocation Framework (RAF). Grenada currently has a maximum allocation US$1.5M for the 2007 – 2011 period and this Policy and Action Plan will be used as the basis for Grenada's submission to the Climate Change Allocation of the RAF. It must be noted however that the GEF funds can only be used for projects that have a global environmental benefit.

- Bilateral financing and technical support from friendly countries.

- Other sources of funding through the international climate change processes including the Clean Development Mechanism, the Special Climate Change Fund and the GEF Small Grants Program.

6. MANAGEMENT AND ADMINISTRATION

6.1. National Climate Change Management

The Policy and Action Plan envisages that responsibility for managing Climate Change impacts will remain under the aegis of the Ministry of Finance. This is deemed as absolutely necessary given the cross-cutting nature of the potential climate change impacts. In this regard, Climate Change should be considered as a developmental issue that has to be mainstreamed into all aspects of Grenada's socio-economic landscape.

It must be noted however that implementation of this Action Plan will require more dedicated human resources than is currently available to the Climate Change Programme. It is therefore recommended that the Ministry give consideration to one of the following options, bearing in mind that *the current Climate Change Focal Point is the only person within the Ministry (and country) with formal training in Climate Change*.

- Relieve the current Climate Change Focal Point of some of the non-climate change duties so that more attention could be placed on the implementation of climate change activities within the current structure.

- Restructure the management of the MEAs within the Ministry, by setting up a Sustainable Development Unit, which will be responsible inter alia for managing the interface with the Global Environment Facility. That Unit will therefore have responsibility for managing the implementation of the Resource Allocation Framework and the programs that are financed through it i.e the Climate Change and Biodiversity projects.

The work of the Ministry should be supported by a reconstituted National Climate Change Committee (NCCC). This reconstitution of the NCCC should be informed by a review of its membership, structure and functioning.

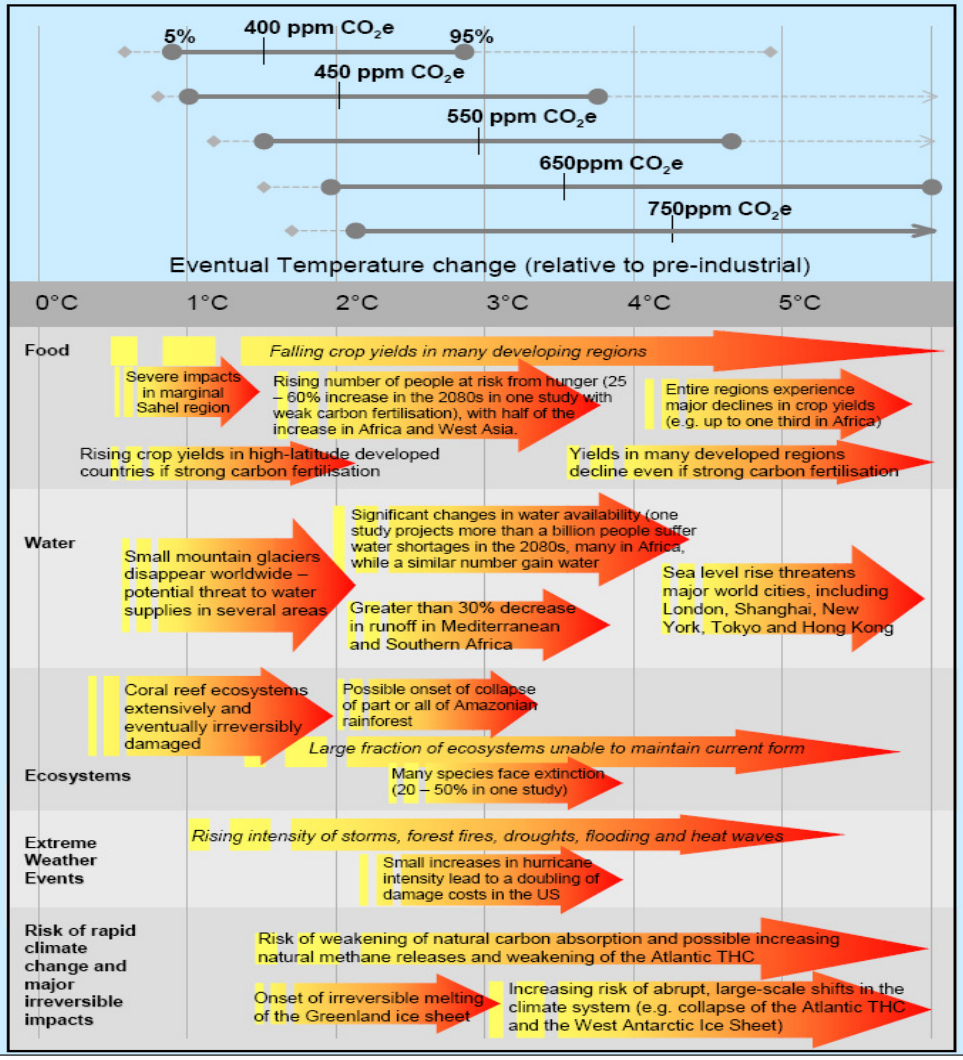
There is also a need to ensure that the institutional mechanism provides for integration of the Climate Change programming with the work being done under other multilateral conventions e.g. the Convention on Land Desertification and the Convention on Biological Diversity. It is also important that the activities conducted under the National Physical Development Plan and the National Environmental Management Strategy be informed by the provisions of this Policy and Action Plan.

6.2. Clean Development Mechanism (CDM)

The Designated National Authority for the CDM currently resides in the office of the Energy Officer. It is recommended that this responsibility be transferred to the Climate Change Focal Point, in order to provide for better harmonization of CDM activities within the broader climate change programming framework.

Figure 2 Stabilisation levels and probability ranges for temperature increases

The figure below illustrates the types of impacts that could be experienced as the world comes into equilibrium with more greenhouse gases. The top panel shows the range of temperatures projected at stabilisation levels between 400ppm and 750ppm CO_2e at equilibrium. The solid horizontal lines indicate the 5 - 95% range based on climate sensitivity estimates from the IPCC 2001[2] and a recent Hadley Centre ensemble study[3]. The vertical line indicates the mean of the 50th percentile point. The dashed lines show the 5 - 95% range based on eleven recent studies[4]. The bottom panel illustrates the range of impacts expected at different levels of warming. The relationship between global average temperature changes and regional climate changes is very uncertain, especially with regard to changes in precipitation (see Box 4.2). This figure shows potential changes based on current scientific literature.



[2] Wigley, T.M.L. and S.C.B. Raper (2001): 'Interpretation of high projections for global-mean warming', Science **293**: 451-454 based on Intergovernmental Panel on Climate Change (2001): 'Climate change 2001: the scientific basis. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change' [Houghton JT, Ding Y, Griggs DJ, et al. (eds.)], Cambridge: Cambridge University Press.

[3] Murphy, J.M., D.M.H. Sexton D.N. Barnett et al. (2004): 'Quantification of modelling uncertainties in a large ensemble of climate change simulations', Nature **430**: 768 - 772

[4] Meinshausen, M. (2006): 'What does a 2°C target mean for greenhouse gas concentrations? A brief analysis based on multi-gas emission pathways and several climate sensitivity uncertainty estimates', Avoiding dangerous climate change, in H.J. Schellnhuber et al. (eds.), Cambridge: Cambridge University Press, pp.265 - 280.

STRATEGIES	ACTIONS	ACTIVITIES	RESPONSIBILITY	FINANCING
1. Climate Proof National Present and Future National Development Activities	(a) Require all new projects to include climate sensitivity analysis	▪ Ministry of Finance issue circular to all ministries and departments providing guidelines for assessment of new development projects. This will also be applicable to all private sector development projects that require government approval.	▪ PS issue circular ▪ Climate Change Focal Point to provide guidelines consistent with best practice as developed by World Bank and to conduct orientation training as necessary ▪ Project officers to ensure that guidelines be used in project feasibility assessments	▪ To be borne by project developers
	(b) Each sector to incorporate obvious climate risks into current programming - Health - Agriculture - Disaster Management - Water - Tourism	▪ Ministry of Finance to specifically request relevant ministries to present a proposal for incorporating climate risks into current programming	▪ PS to issue request and follow-up on implementation through Focal Point	▪ To be borne by National Budget in collaboration with relevant international organizations e.g. WHO, FAO US$40,000
	(c) Commission technical V&A analysis of the threats that have the potential to create significant	▪ Ministry of Finance to specifically request relevant Ministries to initiate action with relevant agencies e.g. - Agriculture	▪ PS to issue request and follow-up on implementation	▪ Bilateral and multilateral cooperation ▪ Resource Allocation Framework

	socio-economic disruption - Erosion at Grand Anse Beach - Sea level rise in coastal communities - Long term impact on the water sector - Impact on survival and productivity of current crop varieties and consideration of alternative varieties	could approach FAO who has initiated climate change programming - Coastline threats could be addressed through bilateral cooperation with other countries	through Focal Point	US$100,000
STRATEGIES	**ACTIONS**	**ACTIVITIES**	**RESPONSIBILITY**	**FINANCING**
2. Strengthen the collection, analysis and use of climate-related data and impacts	(a) Establish and Equip National Met service to address needs of Aviation, National Disaster, Water, Agriculture, Health, General Public	Conduct review of systematic observation needs and propose development and training plan Rationalisation of systematic observation	Climate Change Focal Point Cabinet decision	UNFCCC Second National Communication US$10,000 Will depend on recommendation from review process and may be

	(b) Document anecdotal information of climate-related impacts to supplement gaps in data record (c) Use of available data for decision-making	Initiate school-based and community-based projects to document anecdotal impacts of climate sensitive changes Incorporated into decision-making processes	Climate Change Focal Point All senior managers – to insist on rigorous justification of proposals	possible from RAF. US$50,000 UNFCCC Second National Communication/GEF Resource Allocation Framework (RAF) US$35,000
3. Build local human capacity to assess and respond to climate change	(a) Sector specific short-term training for planning officer and technical officer from each affected sector (12 – 15 persons) (b) Use trained personnel to conduct more rigorous impact assessment to inform future actions (c) Long term university level training in climate change	▪ Identify sources of short-term training in specific sector assessment. This can be done on a bi-lateral basis with Cuba and China. ▪ Permanent Secretaries in relevant ministries, monitored by Ministry of Finance ▪ DHR to include Climate Change in priority listing for scholarships and to negotiate with universities for inclusion in program offerings	▪ Climate Change Focal Point through the bilateral technical cooperation agreements	▪ RAF – 3 month in-house course with resource person – US$50,000 ▪ Done as part of bi-lateral technical cooperation agreements

STRATEGIES	**ACTIONS**	**ACTIVITIES**	**RESPONSIBILITY**	**FINANCING**
4. Reducing Greenhouse Gas Emissions through increased energy efficiency and use of renewable energy	11. Strengthen the enabling environment for renewable energy - Review Electricity Act to permit sale to the grid - Provide tax and other fiscal incentives for renewable energy 12. Encourage energy efficiency through: - Reduce import duties and taxes on EE products - Establish minimum standards for importation of vehicles, appliances, equipment and machinery	1.0 Development of draft legislation for Cabinet consideration 2.0 Development of incentive proposal by Ministry of Finance 3.0 Development of incentive proposal by Ministry of Finance 4.0 Proposal to be developed by Grenada Bureau of Standards and Energy Unit 5.0 Proposal to be developed by Grenada Solid Waste Management Authority	8.0 Energy Officer, Ministry of Agriculture 9.0 Climate Change Focal Point and Energy Officer 10.0 Energy Officer 11.0 Energy Officer 12.0 Manager,	The Climate Institute/RAF US$10,000 The Climate Institute/RAF US$10,000

	13. Design and implement Waste-to-Energy Project at Perseverance 14. Re-afforestation Programme 15. Creation of Green Spaces	6.0 Proposal to be developed by Forestry Division 7.0 Draft guidelines for Cabinet approval	GSWMA ▪ Climate Change Focal Point and Forestry Officers ▪ Physical Planning Unit	RAF/US$20,000
5. Elimination of unsustain-able livelihood and development practices that increase climate change vulnerability	(a) Ministry of Finance to identify such practices and develop responses. These could include: - Develop a Land Use Policy - Control of sand mining - Managed use of marine ecosystems - Mangrove harvesting - Integrated coastal and watershed management			
STRATEGIES	**ACTIONS**	**ACTIVITIES**	**RESPONSIBILITY**	**FINANCING**
6. Sustained Public Education Programs	(a) Educational activities targeted at strengthening the knowledge base of decision makers	(ιιι) Parliamentary Seminar (ιϖ) Annual update to Cabinet on "New Developments in Climate Change"	▪ Climate Change Focal Point and National Climate Change Committee	▪ Second National Communication ▪ National Budget US$3,000

	(b) Public awareness programming to generate a national awareness of climate change and its impacts and the role of the individual in responding to the impacts	(ϖ) Targeted presentations and seminars to senior decision-makers in public and private sector		US$5,000
		▪ A KAP (Knowledge, Attitudes and Practices) Survey on Climate Change.		US$5,000
		▪ Development and maintenance of a National Climate Change Website.		US$5,000
		▪ Mass production of simple climate change educational materials for public dissemination e.g. brochures, calendars and the like.		US$10,000
	(c) Community level demonstration projects	▪ Community level presentations, discussions and public fora on climate change and its implications for Grenada.		US$20,000
		▪ Development and implementation of CBO and NGO supported community demonstration projects		
	(d) Support the teaching of Climate Change at all levels of the education system	▪ Work with the Ministry of Education to develop relevant climate change		US$10,000

		modules in the school syllabus ▪ Provide materials and information to teachers on an as required basis ▪ Seminars and presentations to teachers/students on an as required basis.		
STRATEGIES	**ACTIONS**	**ACTIVITIES**	**RESPONSIBILITY**	**FINANCING**
7. Foreign Policy	(a) Government officials including references to climate change in major speeches and statements	▪ Inclusion of climate change references in speeches CARICOM, OECS, Commonwealth and United Nations Meetings	▪ Cabinet ▪ Ministry of Foreign Affairs	▪ Nil
	(b) Inclusion of Climate Change on the listing of priorities that are discussed with friendly countries when seeking bilateral development assistance and support. (c) Adoption of a more proactive and participatory approach within	▪ Climate Change to be placed on the agenda for bilateral discussions with friendly countries ▪ Increased participation in selected international for a dealing with climate change e.g. GEF	▪ Ministry of Foreign Affairs ▪ Ministry of Finance	▪ Nil ▪ Nil

	international organizations like the Global Environment Facility, the UNFCCC Adaptation Fund and the like.			
8. Joint Implementation and Regional Networking	● Grenada to take lead in encouraging regional Governments to prioritise climate change ● Developing sub-regional projects through OESC – ESDU ● Developing regional projects through Caribbean Community Climate Change Centre ● Project development and implementation in collaboration with other Small Island Developing States (SIDS)	▪ Inclusion of Climate Change on agenda of regional meetings and proposing response actions at regional level ▪ Proposing and coordinating development of sub-regional projects on climate change at the sub-regional level. ▪ Proposing and coordinating development of regional projects on climate change at the regional level ▪ Proposing and coordinating development of regional projects on climate change at the SIDS level	▪ Cabinet ▪ Environmental Affairs Department and Climate Change Focal Point ▪ Climate Change Focal Point and National Climate Change Committee ▪ Climate Change Focal Point and National Climate Change Committee	▪ Nil ▪ Nil ▪ Nil ▪ Nil

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GOVERNMENT OF GRENADA

PROPOSAL

FOR

PHASE ONE

PILOT PROJECT ON CLIMATE RESILIENCE

SUMMARY OF PHASE I GRANT PROPOSAL

1. **Country/Region:** Grenada, Caribbean Region		2. **CIF Project ID #:**	{Trustee will assign ID.}
3. **Date of First Joint Mission:**	August 30 - 31, 2010		
4. **Funding request:**	**$271,000**		
5. **Type of request:**	Accelerated funding for phase 1		
6. **Multilateral Development Banks/focal points:**	World Bank-Mr. Niels Holm-Nielsen; Inter-American Development Bank-Mr. Gerard Alleng; Mr.Alfred Grünwaldt		
7. **National Implementing Agency**: Ministry of Finance, Economic, Energy and Cooperation, and the Project Coordination Unit housed within the Ministry of Finance, Economic, Energy and Cooperation			

8. **Project Description:**

(i) ***Key development challenges*** *(vulnerability) related to climate change/variability:* Water Resources; Coastal and Marine Resources; Human Health; Agriculture; Infrastructure and Human Settlements; Tourism; Disaster Risk Management; Data capture and management.

(ii) ***Areas of intervention*** – sectors and themes (indicative):

The areas of intervention identified in Phase I for Grenada include all key sector and have cross sectoral benefits:

- Conduct of various assessments and studies that will provide the technical foundation for the preparation of a comprehensive Strategic Programme for Climate Resilience (SPCR) and related Investment Plan, including:

  - Preparation of the SPCR and related Investment Plan for the Pilot Programme for Climate Resilience (PPCR), inclusive of the development of a programme results framework with performance indicators tailored to the specific sectors most vulnerable to climate variability and change;
  - Public education/outreach surrounding context-specific climate impacts;
  - Building capacity in, and support for, data management to facilitate linkages with, and benefit from, data and knowledge generation by regional agencies; and
  - Data capture and analysis of climate change adaptation resources, in collaboration with activities to be conducted under the regional track.

(ι) **Expected Outcomes**: a) In line with regional policy frameworks and based on the results and recommendations completed and on-going national projects and activities; b) in consideration of the capacity needs of key agencies such as the Physical Planning Unit; and c) with regard to discussions surrounding progress and identified gaps expected outcomes include:

- Framework and near-term (5 years) objectives;
- Identify strategy to engage general public and sector-specific policy and decision makers on climate change impacts and the risks it poses to livelihoods in Grenada;
- Provide an SPCR integrating public and sectoral inputs through a participatory, consultative process;
- Comprehensive, holistic and integrated programme for climate resilience that is inclusive of key sectors and vulnerable groups;
- Identify initial strategy for strengthening national capacity in, *inter alia*, Geographic Information Systems (GIS), data collection and management, climate impact assessment and related areas, that will facilitate linkages with, and benefits from data and knowledge generation by regional agencies;
- Enhanced coordination and facilitation of the PPCR in Grenada; and
- Final SPCR and related Investment Plan for submission.

(ιι) Key Results:

- Initial guidance framework for the integration of climate change into national development planning achieved;
- Phase II outreach strategy developed for engaging public and policy decision-makers to support the integration of climate change into social and physical development activities;
- Provisional climate impact baseline established from existing data, and initial future data needs identified;
- Operational framework for Grenada to address climate change in a cross sectoral, integrative manner, through the formulation of an initial climate resilience-focused investment plan;
- Phase II strategy developed to address data collection, capture, sharing and overall management amongst agencies in

Grenada in partnership with regional agencies; and

- An integrated framework and initial activities identified for Phase II.

9. **Budget (indicative): $271,000**

Expenditures

Consultants: (see below)

Activity[1]	**Cost in USD**
(i) Technical specialist with overall responsibility in coordinating the constancy team and lead author for the preparation of the SPCR, Investment Plan and Programme Results Framework. - Phase 1 Lead Consultant	$48,000
(ii) Technical assistance to lend support to, and build capacity in data management, including Geographic Information Systems, data collection and management, climate impact assessment and other related areas. - GIS/Data Management Specialist	$25,000
(iii) Specialist to provide technical support on water resources and watershed management issues for Grenada and contribute to appropriate sections of the SPCR - Watershed Management Specialist	$25,000
(iv) Specialist to provide technical support on coastal management and sea-level rise issues for Grenada and contribute to appropriate sections of the SPCR. - Coastal Management Specialist	$25,000
(v) Inter-governmental coordination and project management - PPCR National Project Coordinator	$60,000
Subtotal:	**$183,000**

Equipment: Operational cost (i.e. local transport, administrative supplies, administrative support, etc.) - **$20,000**

Workshops/seminars:
1) Holding of eight (8) days of national consultations (approximately 15 persons per consultation): $10,000
2) Sub-national consultation in Carricou: $3,000
3) National launch of the PPCR: $5,000

Subtotal: $18,000

Consultancy team and staff travel costs:[2] **$50,000**

Total Cost: $271,000

10. **Timeframe (tentative) – milestones**

- Scoping Mission for project introduction, planning and preparation: December 02-04, 2009
- First Joint Mission to finalise a proposal for Phase I: August 30-31, 2010
- Tasks related to the development of the SPCR: August 2010-January 2011
- Second Joint Mission to review and finalise the SPCR: January 2011
- Submission of the final SPCR with specific investment recommendations as the output of Phase I: February 2011

Submission for Trust Fund Committee approval:
Phase I – Second Joint Mission: January 2011
SPCR for Trust Fund Committee approval: February 2011

[1] Where the required experience and skills sets are available, consultants will be recruited at the regional level. If consultants cannot be identified at the regional level, international consultants will be recruited.

[2] This is an indicative figure that includes cost of workshop travel (i.e. to Carriacou) as well as travel costs for consultants and the National PPCR Coordinator's visits to regional agencies to hold discussions on the regional component and formulation of Grenada's SPCR.

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1. PROJECT BACKGROUND

As a Small Island Developing State (SIDS) with a high level of vulnerability to climate change, Grenada has been invited to participate in the Pilot Programme for Climate Resilience (PPCR) as a pilot country under the Caribbean regional pilot program. Within this regional pilot program, there are six countries involved in the Caribbean pilot: Haiti and Jamaica as well as four OECS countries, namely Dominica, Grenada, Saint Lucia and Saint Vincent and the Grenadines.

The objective of the PPCR is to provide incentives for scaled-up action and transformational change through pilot projects that demonstrate how to integrate climate risk and resilience into core development planning, while complementing other ongoing development activities in pilot countries.

The PPCR programme in Grenada is therefore led by the Ministry of Environment, Foreign Trade and Export Development, in collaboration with the Ministry of Finance, Economic, Energy and Cooperation. The programme will enable Grenada to transform some of its current practices in order to better address climate risks and vulnerabilities. It is expected that at the end of implementation of Phase II Grenada will be able to more strategically, and measurably begin to reduce climate vulnerability across different sectors.

Grenada shares climate change adaptation challenges with its Caribbean neighbours. Common challenges that are more efficiently addressed at a regional level, which have been identified by participating countries in the Caribbean pilots, will be addressed through the regional track of the Caribbean Pilot to the potential benefit of all CARICOM members. The regional track of the PPCR will focus on five broad lines of activities:[3] (1) climate change and climate change impact monitoring and modelling, (2) enabling environment for climate resilient development planning, including for private sector involvement, (3) technical assistance for improving land use management and spatial planning, (4) awareness raising on climate change issues, and (5) development of support tools for better integration of climate change impacts into development planning To achieve this, the regional track of the PPCR will provide financing for critical activities within these themes with medium and long-term implications which must be done at a regional scale and support the development of harmonized approaches, promoting cross-learning and potential for replication across the Caribbean.

According to the latest available information it is understood that the Caribbean Regional Program will benefit from 60-75 million United States dollars (USD) in grant resources for the preparation and implementation of the SPCR for six participating pilot countries linked by a regional track.

For planning purposes, it is anticipated that Grenada will benefit from at USD $5 million in grants to carry out pilot activities in phase II. Further, the PPCR also allows for highly concessional loans (0.25%) at an initial ceiling of twenty percent of the total available concessional finance amount per pilot program.

[3] See details in Appendix 2.

In Phase I, a Strategic Program for Climate Resilience (SPCR) will be developed for Grenada that is consistent with the regional framework, and specific projects/programmes that are proposed in SPCR will be implemented in Phase II. The indicative timeframe for Phase I for Grenada is months 3 to 5 months with an expected presentation of the SPCR to the PPCR Sub-Committee (PPCR-SC) after 4 months[4]. The key activities leading up, to and executed, during Phase I include:

- Scoping Mission for project introduction, planning and preparation (held in November 30 to December 1, 2009);
- First Joint Mission to finalise a proposal for Phase I (held from August 30 – 31, 2010);
- Tasks related to the development of the SPCR;
- Second Joint Mission to review and finalize the SPCR (anticipated January 2011); and
- Submission of the final SPCR with specific investment recommendations as the output of Phase I (February 2011).

1.1. National Overview

The independent State of Grenada consists of the islands of Grenada, Carriacou and Petit Martinique is located at 11' 58′ North latitude and 61' 20′ west longitude and lies between Trinidad and Tobago to the south and St. Vincent and the Grenadines to the north. It is the southernmost of the Windward Islands. Prior to 2004 Grenada was considered to be "outside of the hurricane belt" due to its location in the southern Caribbean.

Grenada is a Small Island Developing State (SIDS) comprising three islands with the largest being Grenada which is 34 km (21 miles) long and 18km (12 miles) wide and the three islands taken together have a land area of 345 sq. km (133 sq. miles).

1.2. Country Context

The country is characterized by humid tropical climate, with relatively constant temperatures throughout the year averaging 26 degrees centigrade. The mean maximum temperature is 31.4 degrees centigrade while the mean minimum is 24.0 degrees centigrade.

The dry season typically runs from January to May and the rainy season from June to December. Carriacou and Petit Martinique generally receive lower levels of rainfall and during the dry season can experience severe drought conditions.

Economy: The economy of Grenada has been hit hard by the global crisis. The economic downturn had stronger impact than was predicted in 2008 which is reflected in declining tourism receipts, Foreign Direct Investment (FDI), and remittances. Tourism, which is the main sector and contributor to the GDP, is expected to experience a 20 percent decline in stay-over arrivals in 2010; FDI is almost at a standstill contributing to unemployment in the construction sector which is projected to fall by 35 percent, the fourth consecutive year of double-digit declines. The weak economy has led to rising unemployment, while poverty

[4] Grenada will build its SPCR on a large number of analysis, reports and consultations that have been carried out over the past years. These are described in more detail in the main text of this proposal.

remains widespread. According to a preliminary draft of the Country Poverty Assessment, the unemployment rate stood at 25 percent in June 2008. Compounding matters, the authorities believe that labor market conditions have softened further in 2009 leading to unemployment rates closer to 30 percent. Some 38 percent of the population lives below the poverty line.

Grenada has a tourism driven economy and the industry is mainly concentrated in the southwest region, where the country's idyllic beaches are located. In addition to conventional beach and water sports tourism, the country offers eco-tourism, deriving from rare natural vistas- the Grand Etang, mountains and distinctive flora. The agricultural sector is its second major source of export growth. The recent Hurricanes Ivan (2004) and Emily (2005) severely damaged both the tourism and agricultural sectors.

***Population**:* According to the 2008 Poverty Assessment Report the population is estimated at 103,538 persons, but the report also purports that the population might have fallen as a result of "a larger than usual external migration in the light of the major hurricanes that the country has experienced."

1.3. Vulnerability Context

Grenada is vulnerable to climate related hazards such as tropical cyclones, floods and storm surge and prolonged dry periods. The water sector, agriculture and tourism sectors are all climate sensitive sectors and are impacted by climate related hazard events. Tourism and Agriculture are the two main sectors of the economy and the projections for increased climate related hazards would mean that the vulnerability of those sectors would increase in the future. Grenada has developed policies and actions plans for Vulnerability to Climate Change. Grenada has developed policies and actions plans for disaster mitigation, water resources and climate change however, these policies have not being implemented because of lack of human capacity and resources. In order to increase its resilience against these climate related hazards the policies and action plans must be implemented.

Grenada is already experiencing climate variability. Two hurricanes in the space of 10 months followed a prolonged dry period contributed to defining Grenada's current socio-economic situation. Hurricane Ivan which impacted the country in September 2004, severely damaged the productive sectors, resulting in the contraction of the productive sector, dislocating the labour force and disrupting key infrastructure especially electricity. Hurricane Emily, which struck the Northern part of the island, caused extensive damage to the food crop sector, which was in the process of recovering from Hurricane Ivan. In November a drought alert was issued for Grenada and the decline in water production became obvious from February to June 2010. Food production also declined from December 2010 and the recovery is slow.

Small islands were among the hotspots which have been identified by the Global Water Partnership as one of the hot spots where climate change impacts were forecasted to be felt within the next few years and where urgent attention is need in the water sector. Grenada is one of those small islands where the impact of the prolonged dry period was experienced between November 2009 and June 2010.

2. PARTICIPATORY PROCESS FOR THE PROPOSAL

The PPCR emphasizes the need for broad-based consultations. To date, such consultations have included respective government agencies, the private sector and non-government organisations. Leading up to the PPCR, a number of assessments were conducted and several policy documents were created to inform stakeholders about climate change issues and to establish climate resilience and mitigation targets. The Ministry of Environment, Foreign Trade and Export Development, in collaboration with the Ministry of Finance recently held consultations with Environmental Non-Government Organisations operating in Grenada in preparation for the PPCR First Joint Mission. The Grenada Hotel and Tourism Association was also consulted as part of the private sector while the Grenada Chamber of Industry and Commerce will be the other body consulted on behalf of the private sector. The National Climate Change Committee which brings together broad-based representatives will be consulted on behalf of the public service.

A number of previous processes were built on during the PPCR participatory development of Phase I. These include the Initial National Communication (INC) in 2001, National Development Strategic Plan, Water Policy, National Mitigation Policy and Plan and that National Climate Change Policy.

2.1. National Climate Change Policy

The National Climate Change Policy and Action Plan was developed based on Nine (9) stakeholder consultations and seven (7) community consultations which were held during the period September 20, 2006 to October 31, 2006 and were attended by approximately seven hundred (700) persons. It included representatives from the Public Sector Board of Management, staff of the Ministry of Sports and Community Development, Youth and Students, Statutory Bodies, Energy Sector Employees, Agricultural Sector, Carriacou and Petit Martinique Public Sector Employees, Grenada Institute for Professional Engineers, Sustainable Development Council. There were also parish public consultations in Grenada Carriacou and Petit Martinique.

These analyses have been supplemented by anecdotal information on climate sensitivity provided during the Stakeholder Consultations that informed the Policy and Action Plan. These anecdotal references included:

- Examples of beaches/coastline that has already been “lost” due to the rising seas;
- Examples of difficulties being encountered by farmers as a result of the inability of their seeds and/or plants to withstand current heat and humidity; and
- References to reduced rainfall and reduced stream flows.

These analyses and observations about climate sensitivity are consistent with the projections on the future impact of climate change in the Caribbean region. These projections include:

- Increases in average temperatures of between 1.8 C and 6.4 C within the next 100 years[5].

- Rising sea levels caused by the melting of the arctic ice and the thermal expansion of the sea water. The Caribbean Sea has already been rising by 1mm per year and global sea levels are expected to rise by between 0.18 m and 0.59 m over the next 100 years.[6]

- More intense hurricanes.[7]

- Longer dry seasons and wetter wet seasons, accompanied by reductions in total rainfall with at least 25% reduction in total rainfall has been predicted for the Caribbean region[8].

- More intense rainfall when it occurs.

These impacts are expected to affect all aspects of Grenada's socio-economic landscape including human settlements, agricultural production, food supply, water supply, health and tourism. In addition, it will expose Grenadians to additional hazards including the danger of landslides, flash flooding and more intense tropical storms and hurricanes[9].

The Stakeholder Consultations also noted that unsustainable livelihood and development practices are increasing Grenada's vulnerability to climate change impacts. These include:

(i) Absence of adequate agricultural soil and water conservation practices;

(ii) Uncontrolled/Poorly managed exploration of the coral reefs by divers and tourists;

(iii) Sand mining on the beaches;

(iv) Mangrove harvesting for firewood; and

(v) Use of sensitive land and marine areas for developmental purposes, without putting in place necessary safeguards.

2.2. Initial National Communications

The preparatory process for the Initial National Communications on Climate Change

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5 This is based on the Report entitled *Climate Change 2007: The Physical Science – Summary for Policymakers"* issued by Working Group 1 of the Intergovernmental Panel on Climate Change (IPCC) in February 2007 as part of its Fourth Assessment Report.

6 Ibid

7 Ibid

8 *Glimpses of the Future.* Report from the Precis Caribbean Climate Change Project

9 These expected impacts are detailed in Grenada's First National Communication to the UNFCCC. They are based on expert analysis of the potential impacts of climate change.

involved a series of consultations, meetings and peer reviews by a wide range of stakeholders, aimed at validating the results of the technical analyses and providing inputs into the recommended strategies and actions.

2.3. CPACC

Analysis done under the Caribbean Planning for Adaptation to Climate Change Project (CPACC) in 2001[10] concluded that Grenada's beaches are at risk of significant erosion from the rising sea levels. The analysis showed that between 55% and 75% of the Grand Anse beach could disappear if the sea levels rose by 0.5 metres (1.5 feet), while the beaches between Conference and Marquis could lose 65 percent of their current widths and 83% of the beaches in Carriacou could disappear. These include the beaches at Hillsborough, Paradise, Lillette and Windward.

The CPACC analysis also concluded that key coastal infrastructure will be inundated by a 1 metre (3 feet) sea level rise, including an estimated 18 hectares of land on the Carenage, St. George's, which is currently less than 0.20 metres (0.6 feet) above average mean sea-level, containing important buildings including the Financial Complex, the Carenage Sports Complex, the Carenage Road, the Cable & Wireless telephone exchange and the St. George's sewerage system pump station.

Other at-risk areas included the main hotel belt in Grand Anse, sections of the coastline close to the Point Salines International Airport, the Eastern Main Road leading out of Grenville and passing through Soubise and Marquis and the front streets in Hillsborough and Harvey Vale in Carriacou.

It must be noted however, that, outside of the CPACC analysis of the vulnerability of some sections of the coastline to sea level rise, no scientific analysis has been done of the specific potential impact of climate change on any of the main socio-economic sectors and no attempt has been made to initiate any response programming.

Grenada also participated in several regional and national level participatory workshops, including, the Adaptation to Climate Change in the Caribbean (ACCC) and the Mainstreaming Adaptation to Climate Change (MACC) workshop. These consultations covered various sectors and sub-sectors of climate, which raised national level awareness on the sectoral implications of climate variability and change.

3. KEY PPCR ISSUES

Based on past, present and planned climate change activities, and confirmed by the National Climate Change Policy and Action Plan 2007-2011 as well as the intensive consultative process undertaken under the Initial and Second National Communications Project (SNC), the most vital sectors susceptible to climate change are: water resource management, human

[10] CPACC Coastal Vulnerability and Risk Assessment Pilot Project (2001)

health, agriculture, tourism and coastal infrastructure. The SPCR under the PPCR will thus focus on these areas - particularly the priority areas and recommendations that have emerged from the National Climate Change Policy and Action Plan 2007-2011 aimed at addressing climate change issues and building climate resilience in Grenada.

Below is a breakdown by sector of key issues that will be addressed under the national and regional track of the PPCR:

Agriculture: Agriculture is one of the most critical sectors for the Grenada economy. The sector plays a significant role in the livelihoods of rural communities often as their lone source of income. The agriculture sector is vulnerable to the impact of climate natural hazards. With the 2004 and 2005 hurricanes the industry suffered widespread damage. The contribution of agriculture to national development dropped from 8.65 to 4.50 on 2005.

In 2009-2010 the agricultural sector was affected by the prolonged dry period. Food production declined from January 2010. The sector is still recovering and as of August 2010 Grenada had to resort to the importation bananas until banana production recovers. Carriacou accounts for a significant percentage of livestock production. Livestock is vulnerable to drought conditions and the prolonged dry periods in 1984 and 1992 reduced livestock population in Carriacou by 20% and 40% respectively. The 2009-2010 prolonged dry period also affected the livestock in Carriacou and the Ministry of Agriculture encouraged farmers to reduce their livestock population as an adaptation measure.

The Ministry of Agriculture established an Irrigation Management Unit in 2000 and in 2008 a project was launched to provide irrigation technology to farmers in the rural areas.

Water Resources: Grenada's water supply system depends mainly on gravity flow surface water and to a lesser extent on bore holes while Carricacou and Petit Martinique relies on ground water and rain water harvesting.

The prolonged dry period resulted in the decline in water production between December 2009 to June 2010; and decline in production became obvious as of February of 2010. The decline in water production affected more than 10,000 persons in the parish of St. George alone. It also affected hotels, apartments, schools and manufacturing sector. A truck delivery and valve schedule system was instituted and it was complimented by a ban on the use of water for irrigation of lawn and washing of vehicles.

In collaboration with the CARIWIN project, the Government of Grenada launched its National Water Information System (NWIS) in January 2009, as a tool to address the problems of compartmentalized data, lack of central storage, and limited access to data for decision-making in the country. The NWIS allows not only the archiving of data, but also displays the information in a very comprehensive and visual manner to give a snapshot of the water resources at any time and geographical scale. It was developed through a collaborative process engaging data collectors, data users and stakeholders throughout the development of the system and significantly expanded on the capabilities of earlier Water Information Systems.

The NWIS provides data to the Caribbean Drought and Precipitation Monitoring Network which was launched in 2009 and provides early warning for drought conditions.

However, water resources management remains an outstanding issue and funds from the PPCR Phase 1 could be used to implement the strategies in the Water Policy.

Disaster Risk Management: In 1999 Grenada was one of many Eastern Caribbean islands which were affected by storm surge from Hurricane Lenny. Grenada implemented mitigation measures under a World Bank funded Emergency Recovery and Disaster Management Project.

The Government of Grenada is currently negotiating funding from the World Bank for a multi-sectoral disaster risk reduction project. The PPCR has started the collaboration with the project and well strengthen the collaboration during Phase I.

Tourism Sector: The high vulnerability of the tourism sector most of which is located on the coastline is well documented. The hotel sector suffered much damage from the 1999 Hurricane Lenny Storm Surge and the 2004 Hurricane Ivan damage. Some hotels invested in mitigation measures to reduce the impact from hurricanes and storm surge. But the prolonged dry season also exposed another aspect of the vulnerability of the tourism sector to climate variability and change. Water based tourism activities were interrupted by the reduced river flow and bird watching was affected by the damage to the dry forest by fires.

Human Health: There is a projection for climate variability and change to lead to an increase in vector borne diseases and Grenada has been experiencing an increase in vector mosquitoes. The increase in the mosquito population coincided with an outbreak of dengue in February 2010, with months of July and August recording the highest number of confirmed cases.

The impact of climate variability and change on human health has not been given much attention in Grenada and there is a need to study that area and to prepare the health sector to adapt to climate variability and change. The assessment of the impact of climate variability and change on the human health and the building of capacity within the health sector to adapt to the impact of climate variability and change will be a critical part of Phase 1 of the PPCR.

4. COOPERATION ARRANGEMENTS WITH DEVELOPMENT PARTNERS

The cooperation arrangements with development/investment partners are still evolving. This will become more defined as the SPCR and Investment Plan are developed.

A PPCR Scoping Mission held in December 2009 involved the following partners:

- World Bank, represented by Mr. Niels Holm-Nielsen, Disaster Risk Management Specialist, and Ms. Tiguist Fisseha, Urban Planning Consultant.

- Inter-American Development Bank, represented by Mr. Gerard Alleng (Climate Change Specialist) and Ms. Laura Gaensly (Climate Change Consultant and CIF Programmes Coordinator for IDB).

The First Joint Mission was held in August 2010. The composition of the team that participated in Grenada's First Joint Mission are as follow:

- World Bank, represented by Mr. Niels Holm-Nielsen, Disaster Risk Management Specialist; Gerald Meier, Coastal Zone Management Specialist; and Justin Locke, Disaster Risk Management Specialist.[11]

The PPCR process will also seek to build on past and ongoing projects, as discussed in previous sections.

Other potential partners, in addition to those identified in the foregoing include, but are not limited to:

- Caribbean Development Bank (CDB)
- Caribbean Community Climate Change Centre (CCCCC)
- International Union for the Conservation of Nature and Natural Resources–World Conservation Union (IUCN)
- The Nature Conservancy (TNC)
- Organisation of Eastern Caribbean States (OECS)
- United States Agency for International Development (USAID)
- United Nations Development Programme (UNDP)
- United Nations Economic Commission for Latin America and the Caribbean
- United Nations Environment Programme-Caribbean Environment Programme (UNEP-CEP)
- University of the West Indies (UWI)

It is anticipated that cooperation arrangements with development partners for Grenada's PPCR, both at the national and regional level, will evolve over time as priorities are defined during the Phase 1 process. However, it is anticipated that Phase I will be Grenada-led and executed through the World Bank. Cooperation arrangements at the national level are addressed in Section 7.0.

5. PPCR LINKAGES TO NATIONAL PROCESSES

The objectives of the PPCR are closely linked with objectives of the Grenada National Climate Change Policy. The objectives of both the PPCR and the Grenada National Climate Change Policy are intended to integrate climate resilience into development policies and

[11] Following the CIF Guidelines, the Inter-American Development Bank and development partners were invited to participate in the Joint Mission; however, no representatives were able to attend.

planning, strengthen local capacity in climate change and implement climate resilient investments and to collaborate with relevant initiatives such as disaster risk reduction.

The PPCR Strategic Programme for Climate Resilience (SPCR) will complement the National Climate Change Action Plan. The PPCR Phase II will therefore seek to implement the activities of the Action Plan. These actions include strengthening the collection, analysis and use of climate-related data and impacts, building local human capacity and Public Education Programming.

A National Water Policy was also developed in 2007. The National Water Policy was developed to address the need to plan for, among other things, the impact of natural disaster and climate change. Water resources management is also one the critical areas identified in the Grenada National Climate Change Policy. One of the objectives of the Water Policy is to provide a framework for the integrated/rational use, management and regulation of water resources and services, with a view to achieving sustainable development of the sector. Among the actions included in the policy is the planning for prevention and mitigation of disasters related to floods and droughts and emergency responses. The PPCR SPCR will also complement the Water Policy strategies and these strategies will be implemented during Phase II.

The National Development Strategy for Grenada was developed in 2007 and it has as an objective to promote and provide for disaster risk reduction and climate change adaptation. However, the strategy has not been implemented to date. The PPCR supports the objectives of Grenada's National Development Strategy.

6. STRENGHTING NATIONAL LEVEL CLIMATE RESILIENCE AND ENHANCING PPCR IMPLEMENTATION

The Ministry of Environment, Foreign Trade and Export Development is the focal point for the PPCR. The ministry will coordinate all activities of the PPCR working in tandem with the National Project Coordination Unit (PCU) and the Ministry of Finance. All PPCR-related activities will be advised by Grenada National Climate Change Committee (NCCC) which will act as the PPCR Technical Working Group (TWG). The TWG is comprised of line ministries, non-governmental organizations, the private sector and chaired by the Ministry of Environment, Foreign Trade and Export Development. It was recommended that the TWG should keep an open membership in order to grow its membership and expertise. It will convene at regular intervals to receive updates on the PPCR process as well as to report on the implementation of the PPCR activities.

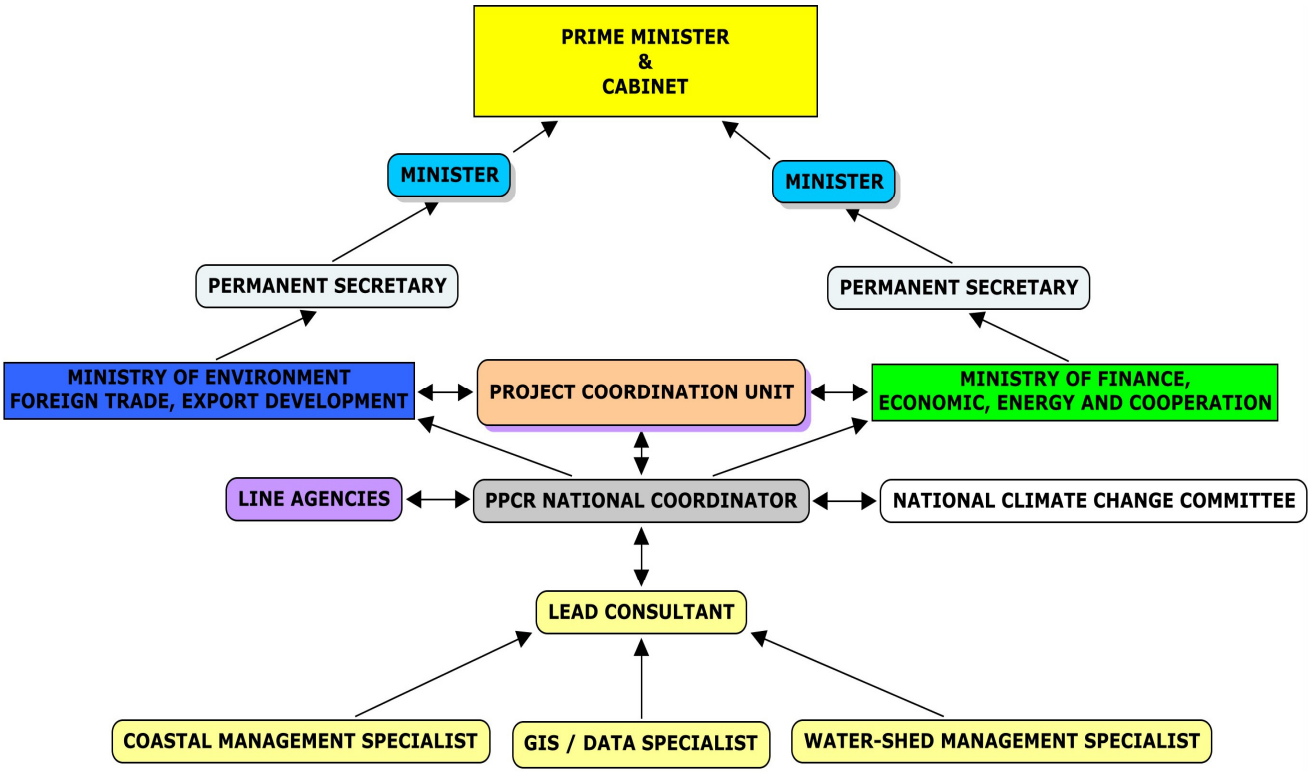
In addition to the Government arrangements, it is vital for PPCR success that political leadership on a whole-of-government cross sectoral climate change adaptation mainstreaming approach through utilizing existing and creating new government-non government, civil society and private sector partnership mechanisms to facilitate a participatory PPCR-decision making process.

The Ministry of Finance, Planning, Economy, Energy and Cooperatives will take the lead in

the all the fiduciary activities, policy coordination, mobilizing of additional resources, liaising with multilateral agencies and national stakeholders in a collaborative process - including pulling together the line ministries when needed. The Project Coordinating Unit housed within the Ministry of Finance will handle day-to-day responsibility for fiduciary aspects and safeguards aspects, and the Ministry of Environment, Foreign Trade, and Export Development will be responsible for leading program preparation and implementation from a technical point of view.

Phase 1 Consultancy Team: A team of four consultants will be procured to undertake activities during Phase I and formulate the SPCR and related Investment Plan. The consultancy team will be comprised of a Lead Consultant with extensive experience in climate change and managing integrated teams, a GIS / Data Specialist, a Coastal Management Specialist, and a Watershed Management Specialist. The Lead Consultant will be contracted for the entirety of Phase I, meanwhile the specialist consultants will be contracted for specific timeframes based on their area of expertise. All the consultants will liaise with the Lead Consultant and report directly to the Ministry of Environment, Foreign Trade and Export Development and the Ministry of Finance. The respective specialist consultants will work with the appropriate line ministry to collate the information and data needed to complete their respective section of the SPCR and related Investment Plan. The Team Leader will be responsible for managing and delivering all the proposed deliverables / activities under Phase 1 – most importantly, the SPCR and the Investment Plan. The terms of reference for the Phase I Consultancy Team will be highly integrated, and drafted based on the agreed Phase I activities and CIF SPCR template. At the end of the process, the TWG will review the draft SPCR and provide comments to the Lead Consultant. Phase I will be executed by the World Bank.

Figure 1: Institutional Arrangements



7. OUTLINE OF KEY ACTION AREAS IN PREPARING THE STRATEGIC PROGRAMME

Taking the National Climate Change Policy and Action Plan as a point of departure, key activities to be undertaken to produce the SPCR and related Investment Plan in Phase I include: 1) a cross sectoral analysis to inform the development of the SPCR and related Investment Plan; 2) design and formulation of a public outreach strategy to raise awareness on Grenada-specific climate impacts risks it poses to livelihoods, and 3) analyze national data capture / management capacity and needs, and identify initial strategy for strengthening national capacity - including the option to implement a data sharing platform[12] that facilitates collaboration and includes technical assistance (training of trainers and technical support) during the PPCR process in Grenada. These activities will be led by the Government of Grenada and undertaken by the team of consultants referenced in section 6.

[12] The GeoNode is an open source web-based geospatial data sharing platform that has been developed by the World Bank as a part of the CAPRA initiative. It serves to provide a system to break down the barriers to data sharing and collaboration within and between institutions and governments. The GeoNode is currently in its final testing phases and will be ready for deployment in the near future.

8. OUTLINE OF KEY ACTION AREAS IN PREPRING THE STRATEGIC PROGRAMME WITHIN THE CARIBBEAN REGIONAL FRAMEWORK AND PPCR REGIONAL TRACK

Under the PPCR Caribbean Regional track, PPCR resources will be used to engage regional institutions and countries in the development and use of models and tools that, tailored to a country's needs, will progress towards the integration of climate resilience into relevant plans. It is anticipated that all Caribbean states would be able to benefit from the regional activities through regional workshops and training events, dissemination of lessons, and provision of regionally relevant information, such a monitoring of sea level rise and ocean temperatures. Preliminary meetings have been held to define the regional track. (see Annex 1).

Based on this, the regional track of the PPCR is likely to focus on five broad lines of activities: (1) climate change and climate change impact monitoring and modelling (2) enabling environment for climate resilient development planning, including for private sector involvement, (3) technical assistance for improving land use management and spatial planning, (4) awareness raising on climate change issues, and (5) development of support tools for better integration of climate change impacts into development planning. Overall, the PPCR regional track Phase 1 preparation will draw upon expertise from, and complement planned and ongoing initiatives by the regional organizations, and bilateral and multilateral development partners. A number of regional initiatives developed by those organizations are already underway and can be built upon through the PPCR, relevant examples include: the Caribbean Carbon Neutral Tourism Project, which includes a component focusing on financing integration of climate resilience into development plans - executed by CCCCC; a Caribbean Risk Atlas – with the University of West Indies (UWI); and initiatives relating to Community Based Landslide Risk Reduction – by the World Bank ; and Regional Monitoring and Evaluation Framework for Disaster Risk Management and Climate Change Adaptation in the Caribbean Tourism Sector – executed by CDEMA and; Mainstreaming Disaster Risk Management in OECS Countries – executed by the Caribbean Development Bank.

The table below illustrates ideas expressed at the First Joint Mission in Grenada held August 30 – September 1, 2010, and ideas expressed at the First Joint Mission for the regional track held June 14-15, 2010; however, details are still subject to change in accordance with agreements reached with regional agencies.

Figure 2: Draft PPCR Structure for Regional Track Integration in a County-Led Process

The regional track of the PPCR is a reflection of the collective national priorities of the PPCR Caribbean country pilots, namely: Haiti, Jamaica, Saint Vincent and the Grenadines, Grenada, Saint Lucia and Dominica. The defined activities will have benefits for all CARICOM member states.

The regional track will focus on five broad lines of activities: (1) climate change and climate change impact monitoring and modelling; (2) enabling environment for gender empowerment and private sector involvement; (3) technical assistance to CARICOM member states for improving land use management and spatial planning; (4) awareness raising and education on climate change-related issues; and (5) development of support tools for better integration of climate change impacts into development planning.

To achieve this, the regional track of the PPCR will provide financing for critical activities with medium and long-term implications that will be undertaken at a regional scale to support the development of harmonized approaches, promoting cross-learning and potential for replication across the greater Caribbean.

Indicative Regional Agency Activities under PPCR

Improvement of Data and Knowledge Management:

- Improve accessibility to data between national and regional levels through better hardware, instrumentation, software and training for countries and regional agencies
- Creation of knowledge sharing platform for best practice and lessons learned related to climate change adaptation (e.g. gender, public private sector partnership, etc.)
- Development of regional policies and standards such as meta data

limate Change Impact Assessment:

On a pilot and demand basis provide climate change impact assessments

Improved sub-regional modelling through training and investments for understanding and interpreting climate impact models and assessments

Development of climate change adaptation decision support tools

Climate Change Awareness and Education:

- Develop material for and carry out a campaign to raise awareness and to educate policy makers on climate change issues
- Develop regional policies and standards for data storing and management
- Develop capacity to advise and support countries on data management and data collaboration

Country-specific Activities under PPCR

National level implementation will be country led and driven. Regional level execution will occur where there are distinct commonalities and overlap between country-specific needs and identified activities, and where there is a comparative advantage to undertake activities at the regional level. Regional level activities will be implemented by identified regional agencies based on mandate with the aim to benefit all CARICOM member states.

Haiti

Jamaica

Grenada

- Expand on the foundation set forth by the National Climate Change Policy and Action Plan
- Training and investments for improved data capture, collection, and management, for climate change impact assessments and interpretation purposes in collaboration with the private sector/quasi-government
- National level-specific infrastructure investments

Saint Lucia

- Promotion of private investments in data capture and sharing as well as risk modelling for climate resilience
- Training and investments for understanding and interpreting climate impact models and assessments
- Identification and analysis of knowledge and research gaps that exist and institutional capacity needs for the implementation of the PPCR
- National level-specific infrastructure investments

Dominica

A human resource limitation within the Ministry of Environment, Foreign Trade and Export Development as a whole, and the Ministry of Finance, is expected to be a limiting factor during Phases I and II of the PPCR, for which consultants will be hired under Phase I to conduct tasks as delineated below and in the proposed work programme in Table 4. These consultants will report to the Ministry of Environment, Foreign Trade and Export Development, who will provide oversight of the PPCR Project and is also Grenada's Technical Focal Point on climate change.

In line with regional policy frameworks, such as the Saint George Declaration of Principles for Environmental Sustainability in the OECS and the OECS Development Charter; based on the results and recommendations of completed and ongoing national projects and activities; in consideration of the capacity needs of key ministries such as the Ministry of Environment, Foreign Trade and Export Development; and with regard to discussions in progress and identified gaps; the following are deemed to be important inputs for Phase I of the PPCR for Grenada:[13]

- Technical specialist with overall responsibility in coordinating the constancy team and lead author for the preparation of the SPCR, Investment Plan and Programme Results Framework;

- Technical assistance to lend support to, and build capacity in data management, including Geographic Information Systems, data collection and management, climate impact assessment and other related areas;

- Specialist to provide technical support on water resources and watershed management issues for Grenada and contribute to appropriate sections of the SPCR; and

- Specialist to provide technical support on coastal management and sea-level rise issues for Grenada and contribute to appropriate sections of the SPCR.

9. WORK PROGRAMME, TIMETABLE AND FUNDING REQUIREMENTS

While there has been substantial progress in the realm of climate change over the years, there are still limitations, including, but not limited to: policy and legislative deficiencies; insufficient inter-agency collaboration; technical and technological constraints; human resource constraints and inadequate financial resources.

As indicated previously, the Ministry of Environment, Foreign Trade and Export Development will take the lead in the PPCR – ensuring that the proper technical assistance is provided.

Likewise, as indicated previously, the Ministry of Finance (with support from the PCU) will be responsible for fiduciary activities, mobilizing of additional resources, and liaising with

[13] Needs related to data management, data capture and analysis of climate change adaptation resources will be linked and contribute towards delivering the overall objectives of the Caribbean PPCR Regional Programme.

multilateral agencies, as appropriate, in collaboration with the Ministry of Environment, Foreign Trade and Export Development.

Based on the foregoing discussion, the following indicative work programme, schedule and budget, are proposed for Phase I of the PPCR, culminating in the development of the SPCR and an Investment Plan.

Indicative Work Programme and Schedule under Phase I of the PPCR

ACTIVITY	Oct 09	Nov 09	Dec 09	Jan 10	Feb 10	Mar 10	Apr 10	May 10	Jun 10	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11
1. Launching of PPCR in Washington	X																
Acceptance offer and confirmation by PPCR SC		X															
2. Scoping Mission- Presentation of PPCR to authorities		X															
3. Endorsement of Aide Memoire					X												
4. Sourcing alternative technical assistance for Phase I*)*					X	X	X	X	X	X	X	X					
5. Request for Joint Mission I to finalise the Proposal for Phase I, including preparation of requisite TOR										X							
6. Joint Mission 1to finalise the Proposal for Phase I											X						
7. Submission of Phase 1 Proposal to CIF												X					
8. Preparation of Consultant Team TORs												X					
9. Approval of Proposal for Phase I and release of funds													X				
10. Hiring of Lead Consultant for development of SPCR, Investment Plan and Programme Results Framework *(For detailed deliverables by consultant, refer to Outline of Key Action Areas in preparing the SPCR*													X	X			

ACTIVITY	Oct 09	Nov 09	Dec 09	Jan 10	Feb 10	Mar 10	Apr 10	May 10	Jun 10	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11
above)																	
11. Hiring of Specialist Consultants: GIS/Data Specialist, Water-shed Management Specialist, and Coastal Management Specialist													**X**				
12. National PPCR Launch														**X**	**X**		
13. First Round of Formal National sector consultations															**X**		
14. Sub-National consultations in Carriacou																**X**	
15. Preparation and refinement of draft SPCR, Investment Plan and Programme Results Framework by Lead Consultant, in collaboration with Section and stakeholders														**X**	**X**	**X**	**X**
16. Second Round of formal national sector consultations																**X**	
17. Request for Joint Mission 2 to finalise SPCR and Investment Plan																**X**	
18. Joint Mission 2 to finalise SPCR, Investment Plan and Programme Results Framework																**X**	
19. Presentation of SPCR to national stakeholders																**X**	
20. Finalization of SPCR, Investment Plan and Programme Results																**X**	

ACTIVITY	Oct 09	Nov 09	Dec 09	Jan 10	Feb 10	Mar 10	Apr 10	May 10	Jun 10	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11
Framework																	
21. Preparation of a brief/memo for the Cabinet of Ministers on the PPCR, specifically the SPCR and Investment Plan																**X**	
22. Submission of SPCR, Investment Plan, inclusive of Programme Results Framework to CIF for approval																	**X**

10. APPENDIX

ANNEX 1: PPCR Caribbean Regional Track: Possible Regional Activities

This document was developed by the PPCR Caribbean participating countries and key regional organisations during the Caribbean Kick-off Meeting (October 28-29, 2009, held at IDB's Headquarters) and further developed during the Videoconference held on February 01, 2010. This document also reflects some of the ideas/suggestions emerging from the scoping missions to the PPCR countries in the region. This outline states five main topics as the main areas to be potentially developed under the PPCR regional track by Caribbean regional organisations. The options provided under the five headings are intended to assist future discussions on the regional programme.

The proposed options for regional activities under the PPCR Regional Caribbean are as follows:

1. Monitoring and climate modelling activities

1.1 Strengthening climate change modelling and monitoring capacity of regional organisations or regional groups – e.g. strengthen the modelling group of CCCCC/UWI/ISMNET.
1.2 Development of standards/protocols for collecting and managing data – this would also include improving the human and institutional capacity to collect and manage data.
1.3 Development/implementation of Disaster Risk Management (DRM) and Climate Change adaptation indicators in key economic sectors. Within this context, there could be the development of standards/protocols related to monitoring, evaluation and reporting of these indicators.
1.4 Strengthening monitoring capacity by increasing the number of monitoring stations in the Caribbean, especially in those countries with very limited resources e.g. Haiti.
1.5 Provision of pertinent training in maintenance, data collection and analysis.
1.6 Strengthening linkages between regional modelling and monitoring networks with the PPCR pilot countries.

2. Enabling environment (policy and institutional framework)

2.1 Expansion of the Comprehensive DRM programme in the Caribbean; Ensure greater integration of DRM approaches with measures to integrate resilience to climate change (including measures to manage the impacts of climate change over the medium and longer-term) in the Caribbean. Consider using pilot countries of the PPCR as case studies.

2.2 There is an opportunity for the expansion of policy/legal framework to deal with issues related to climate change e.g. revamping of the land use or spatial planning legislation in the Caribbean to incorporate climate change resilience; development of new land codes/practices and guidelines.

3. Raising the political profile of the importance of factoring in climate risks into sustainable land-use management and spatial planning

3.1 What are the outreach opportunities or options for "up streaming" the issues to the political level?

3.2 What is the role of regional organisations to facilitate awareness raising at the political levels?

4. Capacity building and awareness raising aimed at different levels, including sectors and policy makers)

4.1 Development and/or expansion of a platform for sharing information/data/best practices/case studies to all member states (in all major languages used in the Caribbean – English, French, Spanish and Dutch). Is there an existing platform that can be used for these purposes?

4.2 Development of practical/user-friendly climate change training packages for:
- Policy/decision makers of key vulnerable economic sectors
- High level politicians
- Public awareness and communities

4.3 Provision of training on climate change modelling to scientists in the Caribbean (particularly those who are not part of the Caribbean climate modelling group and may have less capacity).

4.4 Provision of "adequate information" on climate change and the impact of climate change in selected productive sectors.

4.5 Strengthening regional coordination, planning and active participation in the UNFCCC.

5. How to integrate climate change into development and budget planning

5.1 Enabling dialogues at the regional level with policy makers from different sectors – Planning, Finance, Agriculture, Education, Water, etc.)

5.2 Need for innovative financial mechanisms to support the implementation of adaptation measures in the different sectors e.g. explore use of carbon taxes/levies and how the PPCR can provide seed funding to support piloting and/or scaling-up of such financial mechanisms. **ANNEX 3: Terms of Reference (Draft) For Climate Change Mainstreaming Consultant**

Pilot Program for Climate Resilience (PPCR) in Grenada

I. BACKGROUND

All Caribbean countries are particularly vulnerable to climate change, with the expected main impacts to include shifts in precipitation patterns, with more intense storms and longer dry spells, increased hurricane intensity and unrelenting sea-level rise. These unavoidable consequences of global warming are coupled with the fact that most are Small Islands, with the majority of their populations and main commercial activities on, or near, the coastline and with limited surface and groundwater resources.

In response for the need to urgently scale up investments in climate risk and resilience measures for highly vulnerable countries, the Pilot Program for Climate Resilience (PPCR) was designed under the Strategic Climate Fund (SCF) to pilot and demonstrates ways to integrate climate risk and resilience into developing countries' core development planning. The pilot programs implemented under the PPCR are primarily country led but for the Caribbean and the Pacific regional programs are also being implemented. The PPCR provides incentives for scaled-up action and transformational change and offers additional financial resources to help fund public and private sector investment for climate resilient development plans.

The objectives of the PPCR are to pilot and demonstrate approaches for integration of climate risk and resilience into development policies and planning; to strengthen capacities at the national levels to integrate climate resilience into development planning; to scale-up and leverage climate resilient investment, building upon other ongoing initiatives; and to enable learning-by-doing and sharing of lessons at the country, regional and global levels. In addition, regional PPCR pilots will aim to achieve economies of scale in supporting action at the national level in countries participating in the pilot program and to strengthen cooperation and capacity at the regional level to integrate climate resilience into national and appropriate regional development planning and processes

For the Caribbean, the approach to be taken for the PPCR will be a regional approach that will proceed along two linked tracks of activities. These activities will include: (i) country led activities or investments and (ii) a regional tract of activities focusing on climate monitoring, institutional strengthening, capacity building, and knowledge sharing. The dual tracts are expected to be synergistic with the expectation that the regional activities will supplement country–led activities. A select number of islands were chosen to pilot or demonstrate the approach of the PPCR under the country-led track under a general theme of

integrating climate resilience in coastal zone development. Grenada was chosen as one of the pilot countries under the regional PPCR, together with Jamaica, Haiti and three other island states from the Organization of Eastern Caribbean States (Dominica, St. Lucia and St. Vincent and the Grenadines).

The PPCR for the Caribbean is being implemented jointly by the Inter-American Development Bank (IDB) and the World Bank (WB) in a multi-sectoral and integrated manner involving public, private and civil society entities.

II. OBJECTIVE

The purpose of this consultancy is to assist the government of Grenada to mainstream climate change into development planning and investments through the coordination and implementation of PPCR activities in the country.

III. SCOPE OF SERVICES

The consultant will undertake the following activities but not restricted to these:

a. Assist in the development of a work plan, budget and timetable for the implementation of Phase 1 of the PPCR and the preparation of the "*Strategic Program for Climate Resilience*" (SPCR) for Grenada.

b. Provide support to the Ministry of Finance, Planning, Economy, Energy and Cooperatives and Ministry of the Environment, Foreign Trade and Export Development, which are coordinating the PPCR efforts in Grenada, in the preparation of the "*Strategic Program for Climate Resilience*" (SPCR) under Phase 1 of the program, including:

    i. Dissemination and sensitization of the PPCR across key sectors and to private sector, civil society and international agencies.

    ii. Compilation and update of information related to climate change in Grenada, especially to ongoing initiatives, programs and/or projects linked with resilience and adaptation to climate change.

    iii. Identification and analysis of knowledge and research gaps that exist and institutional capacity needs for the implementation of the PPCR.

    iv. Assist in the coordination of consultants working on the preparation of the SPCR where needed.

v. Support the preparation of the Terms of Reference for the official Joint Missions of the PPCR to Grenada.

vi. Support the development of the Joint Mission's program and composition.

c. Assist the Ministry of Finance, Planning, Economy, Energy and Cooperatives and Ministry of the Environment, Foreign Trade and Export Development in the coordination and supervision of technical and administrative activities related to the implementation and execution of the PPCR, including the organization of meetings, workshops, facilitate stakeholder consultations, preparation of documents and minutes of meetings, among other things.

d. Assist the technical team from the World Bank and the IDB during the official joint missions with the Government of Grenada.

IV. SPECIFCATION OF SERVICES

The consultancy will consist of the following:

Type of consultant: Individual local consultant.

Duration of contact: The consultancy will be for 12 months from the signing of the contact and is expected to begin on __ to _____.

Place and time of work: The consultant will be based in the offices of the Ministry of the Environment and will follow normal working hours.

Qualifications: Bachelors' degree or equivalent professional experience, in political sciences, environmental economics, environmental management or similar areas.

Experience: Minimum 5 (five) years experience in the coordination and management of projects, preferably climate change related projects; knowledge and understanding of the adaptation to climate change; working experience in Grenada; working knowledge of MS Office (Word, Excel, Powerpoint, etc.).

V. REPORTING

A progress report will be submitted at the end of the first quarter of the consultancy. This report shall be limited to 5 pages and shall contain a summary of the progress of the work, operations in preparation and implementation until the date of delivery

of the various SPCRs, difficulties encountered and recommendations and next steps.

A draft of the final report of the consultancy will be submitted for review at the end of the consultancy to the Ministry of the Environment. The draft report should contain a summary of the status of activities undertaken by the consultant, areas of difficulty and any outstanding activities. A final version of the report will be submitted ten (10) working days after receiving the comments to the draft. The consultancy report format shall be agreed with the supervisor at the Ministry of the Environment. The consultant shall keep a record of all primary and secondary information that is used to prepare such reports.

VI. PAYMENT

In consideration of the services to be performed under this contract, the consultant will be remunerated in the form of "lump-sums," subject to the successful delivery of reports and products. The schedule of payments shall be made as follows: 50 % after first quarter report and 50 % final report.

VII. SUPERVISION/COORDINATION

The consultant will work under the supervision of the Permanent Secretary, Ministry of the Environment, Foreign Trade and Export Development.

ANNEX 2: Terms of Reference for the First Joint Mission for the Pilot Programme on Climate Resilience (PPCR)

1. Background

The independent State of Grenada consists of the islands of Grenada, Carriacou and Petit Martinique is located at 11° 582 North Latitude and 61° 202 west longitude and lies between Trinidad and Tobago to the south and St. Vincent and the Grenadines to the north. It is the southernmost of the Windward Islands.

Grenada is a Small Island Developing State (SIDS) comprising three islands with the largest being Grenada which is 34 km (21 miles) long and 18km (12 miles) wide and the three islands taken together have a land area of 345 sq. km (133 sq. miles).

The country is characterized by humid tropical climate, with relatively constant temperatures throughout the year averaging 26 degrees centigrade. The mean maximum temperature is 31.4 degrees centigrade while the mean minimum is 24.0 degrees centigrade. The dry season typically runs from January to May and the rainy season from June to December. Carriacou and Petit Martinique generally receive lower levels of rainfall and during the dry season can experience severe drought conditions.

2. Economy

The economy of Grenada has been hit hard by the global crisis. The economic downturn had stronger impact than was predicted in 2008 which is reflected in declining tourism receipts, Foreign Direct Investment (FDI), and remittances. Tourism, which is the main sector and contributor to the GDP, is expected to experience a 20 percent decline in stay-over arrivals in 2010; FDI is almost at a standstill contributing to unemployment in the construction sector which is projected to fall by 35 percent, the fourth consecutive year of double-digit declines. The weak economy has led to rising unemployment, while poverty remains widespread. According to a preliminary draft of the Country Poverty Assessment, the unemployment rate stood at 25 percent in June 2008. Compounding matters, the authorities believe that labor market conditions have softened further in 2009 leading to unemployment rates closer to 30 percent. Some 38 percent of the population lives below the poverty line.

Grenada has a tourism driven economy and the industry is mainly concentrated in the southwest region, where the country's idyllic beaches are located. In addition to conventional beach and water sports tourism, the country offers eco-tourism, deriving from rare natural vistas- the Grand Etang, mountains and distinctive flora. The agricultural sector is its second major source of export growth. The recent Hurricanes Ivan (2004) and Emily (2005) severely damaged both the tourism and agricultural

sectors.

3. Population

According to the 2008 Poverty Assessment Report the population is estimated at 103,538 but the report also purports that the population might have fallen as a result of "a larger than usual external migration in the light of the major hurricanes that the country has experienced."

4. Vulnerability to Climate Change

Small islands were among the hotspots which have been identified by the Global Water Partnership as one of the hot spots where climate change impacts were forecasted to be felt within the next few years and where urgent attention is need in the water sector. Grenada is one of those small islands where the impact of the prolonged dry period was experienced between November 2009 and June 2010.

5. Timeframe

The Initial Joint Mission will be conducted during the period August 31- September 1, 2010. The three-day mission is based on the submission of the draft project proposal for phase one, two weeks prior to the arrival of the mission.

6. Mission objectives

- To assist Grenada to define a clear process for formulating a Strategic Program for Climate Resilience.
- To assist Grenada to finalize the proposal for undertaking the tasks for Phase 1 of the PPCR pilot program.
- To assist Grenada with the Scope of work for the development of the Strategic Programme for Climate Resilience
- To participate in the stock-taking exercise for climate change related country level activities underway by state, non-state actors and development partners

7. Stock-taking Exercise

The mission will focus on key issues that contribute to the design of a Strategic Program, such as a Climate change diagnosis. The mission will review the adequacy of existing data on climate change impacts, vulnerabilities and adaptation.

8. Data

- The mission will also review the following:

- The existing quantitative data and complementary qualitative information
- Accessibility of data for policy analysis
- Efforts to improve data collection and analysis
- Adequacy of climate data timeframes and spatial resolution for all key stakeholders, particularly given the specific needs of the private sector.
- Integration of climate change into sectors

The mission will review the following:

- Existence of country or sectoral-specific vulnerabilities to climate risks.
- Efforts to identify the key social, economic and institutional constraints to climate resilience
- Outcomes of past and existing activities on climate resilience
- The status of preparation of new activities on climate resilience, whether domestically or externally supported.
- The impact of relevant national and sectoral policies on country-specific climate risks and how they affect the ability of communities, sectors (including private sector), country to respond to climate shocks

Sector assessments

In keeping with its Climate Change Policy Grenada has identified Integrated Water Resources Management, data acquisition and management and capacity building as its priorities for phase one
of the PPCR. As a result, the stocktaking exercise will focus on the sectors relevant to the priority areas. These sectors include but are not limited to:

- The Ministry of Agriculture: Extension Division, Irrigation Division, Forestry Department, Land Use Division
- National Water and Sewerage Authority
- National Disaster Management Authority
- Ministry of Tourism
- Ministry of Health
- The Meteorological Office Point Salines Airport
- Physical Planning Unit
- Ministry of Communications and Works

9. Broad-based consultations

The PPCR emphasizes the need for broad-based consultations. These consultations will include the private sector and the non-government organisations.

The Ministry of the Environment recently held consultations with Environmental Non-Government Organisations operating in Grenada. This group will therefore represent non-government organisations to be consulted. The Grenada Hotel and Tourism Association will consulted as part of the private sector while the Grenada Chamber of Industry and Commerce will be the other body consulted on behalf of the private sector. The National Climate Change Committee which brings together broad-based representatives will be consulted on behalf of the public service.

10. Identification and outline of Phase 1 Activities

The mission will discuss the following activities to be included in phase 1:

- Implementation of activities/recommendations included in the Grenada Water Policy
- Implementation of capacity building activities for the health, agriculture, tourism, environment, water, forestry and fisheries sectors.
- Data acquisition and management
- Public awareness
- Scope of works. outline and process for development of SPCR
- Budget for Phase 1
- Timetable
- Work-programme for Phase 1
- Work-programme and funding for PPCR

11. Mission Outcome

At the end of the mission it is expected the following will be achieved:

a. The first draft of proposal for the development of the Grenada Strategic Program for Climate Resilience.

The proposal should include:
a. Stocktaking of past, present and planned activities;
b. Work program and indicative timetable of activities;
c. Coordination with other development partners;
d. Link to the regional SPCR;
e. Any analytical work urgently needed to support the policy, institutional and investment choices of the PPCR

Other Mission outcomes include:

- Agreement on the proposal for financing phase 1 of the PPCR
- Finalised project proposal for Phase 1

- Agreement on the development Partners who will be involved in Phase 1 of the PPCR
- Agreement on which local departments or agencies will be participate in Phase 1

Development Partners
- USAID/OECS
- UNDESA
- CARICOM
- IUCN

ANNEX 3: Agenda for Grenada's First PPCR Joint Mission

World Bank

Inter-American Development Bank

Monday, August 30-Tuesday, September 1, 2010

Day 1	**Meeting with Joint IDB / World Bank Team**
Time	**Session**
9:00 -10:00	Meeting with Ministry of Environment, Foreign Trade and Export Development/Ministry of Finance/PCU ● Update on Country Track and Regional Track ● Discussion on coordination and operational details of PPCR Programme ● Discussion on Project Proposal ● Discussion of Phase 1 activities; ● Discussion on the financing arrangements • Discussion on institutional capacities and arrangements of the implementation stakeholders of the PPCR.
10:00- 12:00	Meeting with Environmental NGO's, Private Sector and Hotel Association Presentation on goals and objectives of the PPCR Discussion on Phase 1 and involvement of the private sector and NGOs
1:30 – 4:00	Presentation on Regional Track with a focus on Data Questions/Discussion with organisations involved in GIS/data management/risk assessment on climate change data needs and gaps Relevant project activities under Phase 1 Phase 2
End of Session 1	

Day 2	**All PPCR Stakeholders Meeting**
Time	**Session**
9:00 - 9:05	Welcome Remarks- Permanent Secretary Ministry of Environment, Foreign

Day 2	**All PPCR Stakeholders Meeting**
Time	**Session**
	Trade and Export Development
	Introduction of Participants
	Presentation and Questions: Overview/Status of PPCR
	Discussion on the Process for the development of the Strategic Programme for Climate Resilience and Activities Phase 1 and Phase 2
	Presentation Grenada Draft Proposal Discussion on Draft proposal
	Discussion on Climate Change Action Plan Discussion Water Policy strategy Discussion Data/institutional capacity/arrangements for implementation/areas of overlap with disaster risk reduction project and other projects
	Next steps
	End of Day 2

Day 3	**Meeting with Joint IDB / World Bank Team**
Time	**Session**
	Discussion on Refinement of Proposal for Release of Phase 1 Funds /Terms of Reference for Consultants
	Discussion with PCU/Ministry of Finance/ Ministry of Environment, Foreign Trade and Export Development/ Key Ministries
End of Session 3	

ANNEX 4: Grenada National Climate Change Policy 2007-2011

INTRODUCTION

This Climate Change Policy and Action was developed through an extensive consultative process with stakeholder groups and the public at large.

Nine (9) stakeholder consultations[14] and seven (7) community fora[15] were held during the period September 20, 2006 to October 31, 2006 and were attended by approximately seven hundred (700) persons. These Consultations considered the results of technical work done on climate change in Grenada during the 1999 – 2005 period[16] and made recommendations thereon.

A First Draft of the Policy and Action Plan was developed based on the recommendations from these consultations, the technical imperatives that were highlighted by the aforementioned technical assessments, and the commitments and opportunities arising out of Grenada's status as a signatory to the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol (KP).
This First Draft was reviewed by the National Climate Change Committee (NCCC) and the Sustainable Development Council (SDC) during February 2007 and March 2007 respectively. Their feedback and inputs were incorporated into a Second Draft.

The Second Draft was the subject of discussion at a National Roundtable on Climate Change that was held on April 05, 2007, under the auspices of the Minister of Finance. This Roundtable was attended by 32 persons, including senior personnel from government departments, members of the diplomatic community and representatives from civil society. Their feedback and inputs have been incorporated into this formal submission to Cabinet.

1. THE GLOBAL CONTEXT

Climate Change is a global problem with local impacts.

It is the result of a buildup of greenhouse gas[17] (GHG) emissions in the atmosphere, mostly from activities by developed economies over the last one hundred and fifty years.

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[14] Public Sector Board of Management, Staff of Ministry of Sports and Community Development, Youth and Students, Statutory Bodies, Energy Sector Companies, Agricultural Sector, Carriacou and Petit Martinique Public Sector Employees, Grenada Institute of Professional Engineers, Sustainable Development Council.

[15] One in each parish, including Carricaou and Petite Martinique

[16] Grenada's Initial National Communication on Climate Change (2001); CPACC Coastal Vulnerability and Risk Assessment Pilot Project (2001); National Capacity Self Assessment (2005).

[17] The GHGs that are covered by the United Nations Framework Convention on Climate Change (UNFCCC) are CO_2 - Carbon dioxide, CH_4 – Methane, N_2O - Nitrous oxide, PFCs – Perfluorocarbons, HFCs - Hydrofluorocarbons and SF_6 - Sulphur hexafluoride

Rapidly growing developing countries are now beginning to contribute an increasingly greater share, with the emissions from developing countries forecast to exceed those of developed countries by 2030[18].

Scientists have warned that the buildup of GHGs is now at dangerously high levels, with the Stern Report citing the current level at 430 parts per million (ppm) of carbon dioxide equivalent (CO_2e). These concentrations are increasing by 2.5 ppm CO_2e per year and will reach 450 ppm CO_2e within ten (10) years, if no significant action is taken to significantly reduce GHGs by then.

That level (450 ppm) is considered by many scientists to be a critical threshold, which will trigger a 2^oC increase in temperatures by the middle of this century. This temperature level will *inter alia* trigger the "onset of irreversible melting of the Greenland ice sheet" [19], which can result in a 7M increase in sea levels, as well as cause irreversible damage to coral reefs and other ecosystems.

Either of the above impacts will have significant negative impacts on Grenada and other small island states, given the concentration of population and human activity on the coastline and the importance of coral reefs and other marine ecosystems for coastline protection and marine (food) habitats.

The scientific community has therefore issued an urgent call for political action to halt these increases in GHGs within the next ten years, before this threshold is breached and the European Union (EU) has set this 2^oC as their target stabilization level for temperature increases resulting from climate change.

Annex 1 contains a summary of the probable effects of different concentrations of GHGs and their associated temperature impacts.

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18 The World Energy Outlook 2006, International Energy Agency

19 Stern Review on the Economics of Climate Change, Executive Summary, pg. v

2. CLIMATE CHANGE AND GRENADA

2.1. Climate Change Impacts

The reality of global climate change is upon us.

It is evident in the increases in temperatures being experienced, with data from Point Salines International Airport (PSIA) showing that 2005 was the hottest year on record and that the five hottest years on record occurred since 1998 – Fig 1.

It is also evident in the increased intensity of hurricanes worldwide, with a doubling of Category 4 and Category 5 hurricanes since 1970 and a 50% increase in wind speed and duration of all hurricanes[20]; in the bleaching of over 25% of the coral reefs that occurred in some parts of the region in 2005[21]; and farther afield, in the rapid increase in the rate of melting of the Greenland ice sheet[22] which is predicted to increase global sea levels by 0.9 metres (3 feet) over the remainder of this century and which, if totally melted, can cause the sea levels to rise by as much as 7 metres (21 feet)[23].

Analysis done under the Caribbean Planning for Adaptation to Climate Change Project (CPACC) in 2001[24] concluded that Grenada's beaches are at risk of significant erosion from the rising sea levels. The analysis showed that between 55% and 75% of the Grand Anse beach could disappear if the sea levels rose by 0.5 metres (1.5 feet), while the beaches between Conference and Marquis could lose 65% of their current widths and 83% of the beaches in Carriacou could disappear. These include the beaches at Hillsborough, Paradise, Lillette and Windward.

The CPACC analysis also concluded that key coastal infrastructure will be inundated by a 1metre (3 feet) sea level rise, including an estimated 18 hectares of land on the Carenage, St. George's, which is currently less than 0.20 metres (0.6 feet) above average mean sea-level, containing important buildings including the Financial Complex, the Carenage Sports Complex, the Carenage Road, the Cable & Wireless telephone exchange and the St. George's sewerage system pump station.

Other at-risk areas included the main hotel belt in Grand Anse, sections of the coastline

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20 A recent study by Georgia Institute of Technology researchers found that the number of Category 4 and 5 hurricanes around the world has nearly doubled over the past 35 years. According to a study by Kerry Emanuel, a professor of atmospheric science at the Massachusetts Institute of Technology, the duration and strength of hurricanes have increased by about 50 percent over the last three decades.

21 The National Oceanic and Atmospheric Administration (NOAA), Coral Reef Watch

22 Maslin, Mark (2004). Global Warming: A Very Short Introduction ; Professor Eric Rignot, California Institute of Technology – Presentation at the annual meeting of the American Association for the Advancement of Science.

23 Maslin, Mark (2004). Global Warming: A Very Short Introduction

24 CPACC Coastal Vulnerability and Risk Assessment Pilot Project (2001)

close to the Point Salines International Airport, the Eastern Main Road leading out of Grenville and passing through Soubise and Marquis and the front streets in Hillsborough and Harvey Vale in Carriacou.

These analyses have been supplemented by anecdotal information on climate sensitivity provided during the Stakeholder Consultations that informed this Policy and Action Plan. These anecdotal references included:

- Examples of beaches/coastline that has already been "lost" due to the rising seas;

- Examples of difficulties being encountered by farmers as a result of the inability of their seeds and/or plants to withstand current heat and humidity; and

- References to reduced rainfall and reduced stream flows.

These analyses and observations about climate sensitivity are consistent with the projections on the future impact of climate change in the Caribbean region. These projections include:

(vi) Increases in average temperatures of between 1.8 C and 6.4 C within the next 100 years[25].

- Rising sea levels caused by the melting of the artic ice and the thermal expansion of the sea water. The Caribbean Sea has already been rising by 1mm per year and global sea levels are expected to rise by between 0.18 m and 0.59 m over the next 100 years.[26]

- More intense hurricanes.[27]

- Longer dry seasons and wetter wet seasons, accompanied by reductions in total rainfall with at least 25% reduction in total rainfall has been predicted for the Caribbean region[28].

- More intense rainfall when it occurs.

These impacts are expected to affect all aspects of Grenada's socio-economic landscape

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[25] This is based on the Report entitled *Climate Change 2007: The Physical Science – Summary for Policymakers"* issued by Working Group 1 of the Intergovernmental Panel on Climate Change (IPCC) in February 2007 as part of its Fourth Assessment Report.

[26] Ibid

[27] Ibid

[28] *Glimpses of the Future.* Report from the Precis Caribbean Climate Change Project

including human settlements, agricultural production, food supply, water supply, health and tourism. In addition, it will expose Grenadians to additional hazards including the danger of landslides, flash flooding and more intense tropical storms and hurricanes[29].

It must be noted however, that, outside of the CPACC analysis of the vulnerability of some sections of the coastline to sea level rise, no scientific analysis has been done of the specific potential impact of climate change on any of the main socio-economic sectors and no attempt has been made to initiate any response programming.

The Stakeholder Consultations also noted that unsustainable livelihood and development practices are increasing Grenada's vulnerability to climate change impacts. These include:

(vi) Absence of adequate agricultural soil and water conservation practices;

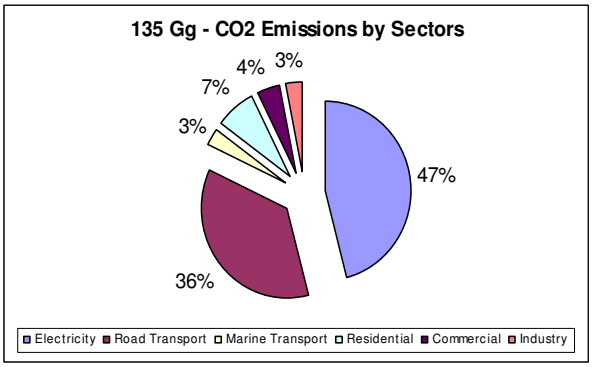
(vii) Uncontrolled/Poorly managed exploration of the coral reefs by divers and tourists;

(viii) Sand mining on the beaches;

(ix) Mangrove harvesting for firewood; and

(x) Use of sensitive land and marine areas for developmental purposes, without putting in place necessary safeguards.

2.2. Greenhouse Gas Emissions (GHG)



An Inventory of Grenada's Greenhouse gases for the year 1994[30] showed that Grenada emitted a total of 135,000 tonnes of carbon dioxide, 92,000 of which were absorbed by the forests. The main sources of carbon dioxide emissions were electricity (47%) and road transport (36%). 70,000 tonnes of methane were also produced from our solid waste disposal landfill.

There is emerging private sector interest in developing wind and solar energy applications and in the importation and sale of energy efficient lighting and appliances, both of which can contribute to a reduction in the Grenada's greenhouse gas emissions. A

[29] These expected impacts are detailed in Grenada's First National Communication to the UNFCCC. They are based on expert analysis of the potential impacts of climate change.

[30] Base year established by the United Nations Framework Convention on Climate Change (UNFCCC) in order to facilitate international comparability. A new one with a base year of 2000 is scheduled to be done in 2007.

small number of initiatives are on stream, but their development have been constrained by two factors, viz::

- The monopoly granted to GRENLEC through the Electricity Supply Act, which means that private producers of electricity have to negotiate and get a license from GRENLEC for power generation and for selling excess power back to the grid. This is a disincentive given that GRENLEC is also a competitor for the supply of electricity.

- High duties and taxes on renewable energy equipment components and energy efficient applications, in excess of 50% in some cases, have meant that these products are not competitive on the market.

2.3. Adaptive Response Capacity

The National Capacity Self Assessment Project, conducted in 2005, concluded that Grenada is lacking in the skills, data and technology to adequately assess and plan responses to the impact of climate change within the main socio-economic sectors. In addition, there is a lack of consistent, time series data with which to assess historical climate trends and make future projections.

3. NATIONAL POLICY FRAMEWORK

3.1. Vision Statement

An empowered Grenadian population capable of managing the risks from climate change, at the individual, community and national levels.

This vision statement implies that all levels of the Grenadian society will be empowered to respond to climate change in a manner that is consistent with their responsibilities, viz:

- *General Public* – willing and able to support national initiatives and to take personal initiatives, as appropriate;

- *Technical Personnel* – have the technical knowledge and tools required to conduct appropriate technical analyses and provide advice to policy and decision-makers, as appropriate;

- *Policy and decision-makers* – have access to the requisite information and willing and able to make relevant decisions, as appropriate.

3.2. Strategic Objective

The strategic objective of the National Policy and Action Plan for the period 2007 – 2011 is "*to lay the foundation for an organised long term response to Climate Change*".

This objective is based on the absence of specific analyses on which to plan response actions and the lack of capacity to conduct assessments and plan responses. One of the major outcomes of the Action Plan will therefore be the strengthening of the analytical and capacity building processes that have been initiated, thus enabling the development of a sustained national response to climate change.

3.3. Strategies

The Strategic Objective will be achieved through the pursuit of eight (8) inter-related strategies, that will be implemented as an integrated package of measures, viz:

(a) Climate-proofing present and future national development activities by requiring a climate risk analysis of all ongoing and new development initiatives.

(b) Strengthening the collection, analysis and use of climate-related data and impacts.

(c) Building local human capacity to assess and respond to climate change, including through the access and use of appropriate technologies.

(d) Reducing greenhouse gas emissions through increased energy efficiency and the use of renewable energy.

(e) Eliminating unsustainable livelihood and development practices that increase climate change vulnerabilities.

(f) Sustained Public Awareness and Education Programming.

(g) Foreign policy advocacy for international action on climate change.

(h) Joint Implementation and networking with OECS and CARICOM partners and with other Small Island Developing States.

3.4. Specific Goals

The specific goals to be achieved during the 2007 – 2011 period, in pursuit of the strategic objective are:

(a) Provisions for reducing climate change vulnerability incorporated into all new development projects approved from January 2008.

(b) Incorporation of climate change considerations and response measures in sectors where obvious climate risks exist – e.g. health, agriculture, water, housing and human settlements, coastal development - following the presentation of the 2008 National Budget.

(c) Establishment of a National Meteorological Service that will collect, collate, analyse and disseminate climate related data to all potential users, including the Point Salines International Airport, the Agricultural Sector, the Water Sector, the National Disaster Management Agency and the Ministry of Health, by the end of 2008.

(d) Completion of technical analysis for decision-making with regards to appropriate response measures for tackling the most serious long term impacts of climate change e.g. erosion of Grand Anse beach, reduction in water supply, reduction in agricultural productivity and human settlement impacts, by the end of 2008.

(e) A cadre of technical personnel capable of conducting basic, scientific analysis of climate change impacts at the sectoral level, with the ability to propose response measures, available in each sector by the end of 2008.

(f) Detailed sector impact assessments and initial response plans by the end of 2010.

(g) Students pursing university degrees related to climate change by the end of 2008.

(h) Incentives for the use of renewable energy included in the 2008 Budget.

(i) 100% importation and use of energy saving appliances and equipment by 2010.

(j) More integrated approach to national development and reduction in unsustainable practices by 2010.

(k) A literate and informed public that will demand and support public policies aimed at building national resilience to climate change.

It is expected that the detailed sector impact assessments and initial response plans

referred to in (f) above, will inform the formulation of the Action Plan for the period 2012 – 2016. This Action Plan should be developed during 2011, so as to avoid any gap between the completion of the current plan and the start of the new one.

4. ACTION PLAN 2007 – 2011

The actions in support of these strategies will evolve during the implementation process. An initial list of actions is described in this section and elaborated in the Strategy Matrix in Annex 2. This listing does not represent any prioritization of the actions to be taken as these are not seen as discrete actions but, rather as part of a package of responses. It also does not preclude the initiation of other actions that are consistent with the policy framework.

4.1. Climate-proofing present and future national development activities.

This strategy is consistent with best practice as recommended by the World Bank and requires a climate risk analysis of all ongoing and new development initiatives by posing the questions "Are they vulnerable to climate variability and climate change? And if they are, how can we redesign those projects so that they are less vulnerable to current climate variability and projected changes in climate?"

The actions that will be undertaken in support of this strategy include:

- Institutionalisation of a new requirement by the government that climate change risk analysis become a mandatory part of the feasibility analysis of all new projects.

- A new requirement by the government that each sector immediately incorporate response strategies for the most obvious climate-related risks to their sector, into their regular programming, viz:
  i. Health – strengthening vector monitoring and control and making contingency plans for incidences of heat stress;
  ii. Agriculture – strengthening programming for soil and water conservation;
  iii. Water – stream flow monitoring and waste reduction strategies;
  iv. Disaster Management – add vulnerability analysis and planning for flash floods and landslides.
  v. Housing and human settlement – strengthening building standards to accommodate possibility of more Category 4 and Category 5 hurricanes.

vi. Coastal Development – Incorporating sea level rise considerations into development projects.
vii. Tourism – Review and modification of the National Tourism Strategy in view of the negative impacts that Climate Change could have on key tourism assets and on the economic competitiveness of the tourism industry.

- Commissioning of technical vulnerability analyses of the threats that have the potential to create significant socio-economic disruption, including:
  - Erosion at Grand Anse Beach;
  - Sea level rise in coastal communities;
  - Long term impact on the water sector;
  - Impact on survival and productivity of current crop varieties and consideration of alternative varieties.

4.2. Strengthening the collection, analysis and use of climate-related data and impacts.

This strategy is aimed at providing the information base that will facilitate monitoring of climate change impacts at the local level and provide an objective basis for the development of national response strategies.

The actions that will be undertaken in support of this strategy include:

(a) Establishment and equipping of a National Meteorological service that will address the data-related needs of Aviation, National Disaster, Water, Agriculture, Health, General Public.

(b) Documentation of traditional knowledge and anecdotal information on climate-related impacts to supplement gaps in the data record.

(c) Demonstrated commitment by senior decision-makers to use the available data as the basis for decision-making, where appropriate.

4.3. Building local human capacity to assess and respond to climate change, including through the access and use of appropriate technologies.

This strategy is aimed at developing the human capacity to develop and implement a sustained national response to climate change. It is one of the critical success factors that will determine whether or not Grenada will be able to develop an adequate long term response to climate change.

The actions that will be undertaken in support of this strategy include:

2. Development of human capacity to assess climate change impacts and plan responses to climate change
   - Inclusion of Climate Change on Government's priority list for training
   - Short-term training for planning and technical personnel from each affected sector in impact assessment for their sector
   - Longer term university level training in climate change
   - Targeted university level training in a range of skills that are necessary to respond to climate change

3. Retention and utilisation of trained personnel to conduct more rigorous analysis of climate change impact on relevant sectors and propose more rigorous response measures.

4. Development of implementation capacity at all levels of the economy. This will require *inter alia* training in project management skills and the development and effective implementation of performance management systems.

4.4. Reducing greenhouse gas emissions through increased energy efficiency and the use of renewable energy.

This strategy is aimed at fulfilling Grenada's obligations under the UNFCCC to contribute to the "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system."[31]. Given the high cost of energy to the economy, successful implementation of this strategy will bring economic benefits at both the macroeconomic and microeconomic levels.

The actions that will be undertaken in support of this strategy include:

8. Creating the enabling environment for the use of renewable energy:

   - Revise Electricity Act to allow other parties to generate renewable electricity and sell to the grid.

   - Create incentives to support fledgling renewable energy initiatives through reduction in import duties and taxes; tax rebates and other appropriate fiscal measures for use of wind and solar generated electricity.

[31] United Nations Framework Convention on Climate Change, Article 2

- Incorporate into the Land Use Policy, the zoning of land for use in the establishment of wind farms and the planting of crops to use as biofuels.

9. Encouraging the use of energy efficient options at the domestic level by:

    i. Benchmarking electricity generation equipment to ensure highest levels of energy efficiency in electricity generation.

    ii. Making energy efficient appliances, lighting, etc. more price competitive by reducing the import duties and taxes.

    iii. Stipulating higher standards for appliances and other energy-using machinery that is imported into Grenada e.g. Use Class A.

    iv. Stipulating emission standards for vehicles that are imported into Grenada and revising the taxation on vehicles to encourage the importation of vehicles that meet the stipulated emission standards.

10. Public education on reducing domestic energy consumption.

11. Support for the implementation of a waste-to-energy process at the Perseverance Landfill.

12. Development and implementation of a re-afforestation program to replant the forests and to encourage the planting of trees.

13. The deliberate creation of green spaces within urban development projects.

4.5. Eliminating unsustainable livelihood and development practices that increase climate change vulnerabilities.

This strategy is aimed at increasing the resilience of Grenada's ecosystems to the impacts of climate change by removing man-made stressors that degrade them and weaken their ability to withstand climate change impacts.

The actions that will be undertaken in support of this strategy include:

(a) Initiate measures to prohibit sand mining on beaches and to strengthen enforcement of these prohibitions.

(b) Initiate measures to regulate the harvesting of mangroves for use as firewood and other domestic and commercial purposes and introduce incentives to encourage their replanting and conservation.

(c) Development and enforcement of a Land Use Policy.

(d) Revision and enforcement of building setbacks.

(e) Management and control of the utilization of coral reefs and other marine ecosystems.

(f) Promotion of integrated watershed and coastal zone management.

(g) Strengthening of waste disposal management practices to include prohibitions on dumping in the rivers and the sea.

4.6. Sustained Public Education Programming.

This strategy is aimed at strengthening the knowledge base on climate change at all levels of society, with special emphasis on decision-makers and the general public. It is envisaged that such strengthening will result in more informed decision-making and in increased public support for climate change initiatives.

The actions that will be undertaken in support of this strategy include:

(a) Educational activities targeted at strengthening the knowledge base of decision makers, viz:

i. Parliamentary Seminar on "Climate Change and its implications for Grenada" during the second quarter of 2007.

ii. Annual year-end Cabinet Updates on "Recent Developments in Climate Change" aimed at keeping government officials abreast of new developments in the understanding of the science and impacts of climate change and the implications for Grenada.

iii. Targeted presentations and seminars to senior decision-makers in the public and private sector.

(b) Public awareness programming to generate a national awareness of climate change and its impacts and the role of the individual in responding to the impacts, viz:

3. A KAP (Knowledge, Attitudes and Practices) Survey on Climate Change.

4. Development and maintenance of a National Climate Change Website.

5. Mass production of simple climate change educational materials for public dissemination e.g. brochures, calendars and the like.

6. Community level presentations, discussions and public fora on climate change and its implications for Grenada.

(c) Implementation of practical demonstration projects at the community level that can be used to highlight the impacts of climate change and the potential of community led response activities.

(d) Support the teaching of Climate Change at all levels of the education system, viz:

i. Work with the Ministry of Education to develop relevant climate change modules in the school syllabus.

ii. Provide materials and information to teachers on an as required basis.

iii. Seminars and presentations to teachers and/or students on specific aspects of climate change, as required.

iv. Inclusion of climate change projects into the activities done by students at the secondary schools, the T.A. Marryshow Community College and the St. George's University.

It should also be noted that public awareness programming will also be included in the implementation strategies of the other elements of this Action Plan.

4.7. Foreign Policy advocacy for international action on climate change.

This strategy is aimed two achieving two objectives, viz:

1. Strengthening the international lobby calling for significant reductions in GHG emissions. This is especially important to Grenada and other small

island states and developing countries as they will be among the first to suffer from the impacts of climate change and will experience the worst impacts. It is based on the recognition that the best way to minimise the impacts of climate change is to limit and reduce greenhouse gas emissions on the global scale as early as possible. In this context, *it is ironic that all the current calls for emission reductions are coming from developed countries*.

2. Positioning Grenada to access international resources to finance its efforts to combat climate change. Grenada, and other small countries, cannot generate the resources to combat climate change on its own. This is recognized by the international community and there are a number of initiatives being formulated to respond to this reality. However, the experience of the Global Environment Facility (GEF) to date has indicated that the major benefits from these international institutions flow to the countries which actively participate in their operations.

The actions that will be undertaken in support of this strategy include:

(a) Government officials including references to climate change in major speeches and statements at regional and international fora including the CARICOM and OECS Heads of Government meetings, the General Assembly of the United Nations and the Commonwealth Heads of Conference meetings.

(b) Inclusion of Climate Change on the listing of priorities that are discussed with friendly countries when seeking bilateral development assistance and support.

(c) Adoption of a more proactive and participatory approach within international organizations like the Global Environment Facility, the UNFCCC Adaptation Fund and the like.

4.8. Joint Implementation and Networking with OECS and CARICOM partners and with other Small Island Developing States.

This strategy recognizes the fact that many small islands face similar challenges and that it is sometimes more cost-effective to approach common concerns on a sub-regional or regional basis, as was successfully demonstrated by the Caribbean Planning for Adaptation to Global Climate Change (CPACC) Project. It also recognizes that the international donor community has adopted a predominantly multilateral approach to providing support for the Caribbean region.

The actions that will be taken in support of this strategy include:

(a) Grenada taking the lead in encouraging the regional Governments to make Climate Change a priority issue for the region and mainstreaming in into foreign policy strategies.

(b) Working through the OECS Environment and Sustainable Development Unit to develop sub-regional projects aimed at addressing and implementing the issues specified in this Action Plan.

(c) Working in collaboration with the Caribbean Community Climate Change Centre to develop sub-regional and regional projects aimed at addressing and implementing the issues specified in this Action Plan.

(d) Working in collaboration with other small island states to jointly develop and implement projects, as appropriate.

5. COSTS, FINANCING AND TECHNICAL SUPPORT

The implementation of the actions contained in the Action Plan will cost a minimum of US$403,000. These costs could be reduced if support for some of the activities is obtained through bilateral cooperation arrangements. Options for sourcing these funds include:

- Allocations from the National Budget;

- Utilisation of Grenada's Climate Change allocation under the GEF's Resource Allocation Framework (RAF). Grenada currently has a maximum allocation US$1.5M for the 2007 – 2011 period and this Policy and Action Plan will be used as the basis for Grenada's submission to the Climate Change Allocation of the RAF. It must be noted however that the GEF funds can only be used for projects that have a global environmental benefit.

- Bilateral financing and technical support from friendly countries.

- Other sources of funding through the international climate change processes including the Clean Development Mechanism, the Special Climate Change Fund and the GEF Small Grants Program.

6. MANAGEMENT AND ADMINISTRATION

6.1. National Climate Change Management

The Policy and Action Plan envisages that responsibility for managing Climate Change impacts will remain under the aegis of the Ministry of Finance. This is deemed as absolutely necessary given the cross-cutting nature of the potential climate change impacts. In this regard, Climate Change should be considered as a developmental issue that has to be mainstreamed into all aspects of Grenada's socio-economic landscape.

It must be noted however that implementation of this Action Plan will require more dedicated human resources than is currently available to the Climate Change Programme. It is therefore recommended that the Ministry give consideration to one of the following options, bearing in mind that *the current Climate Change Focal Point is the only person within the Ministry (and country) with formal training in Climate Change*.

- Relieve the current Climate Change Focal Point of some of the non-climate change duties so that more attention could be placed on the implementation of climate change activities within the current structure.

- Restructure the management of the MEAs within the Ministry, by setting up a Sustainable Development Unit, which will be responsible inter alia for managing the interface with the Global Environment Facility. That Unit will therefore have responsibility for managing the implementation of the Resource Allocation Framework and the programs that are financed through it i.e the Climate Change and Biodiversity projects.

The work of the Ministry should be supported by a reconstituted National Climate Change Committee (NCCC). This reconstitution of the NCCC should be informed by a review of its membership, structure and functioning.

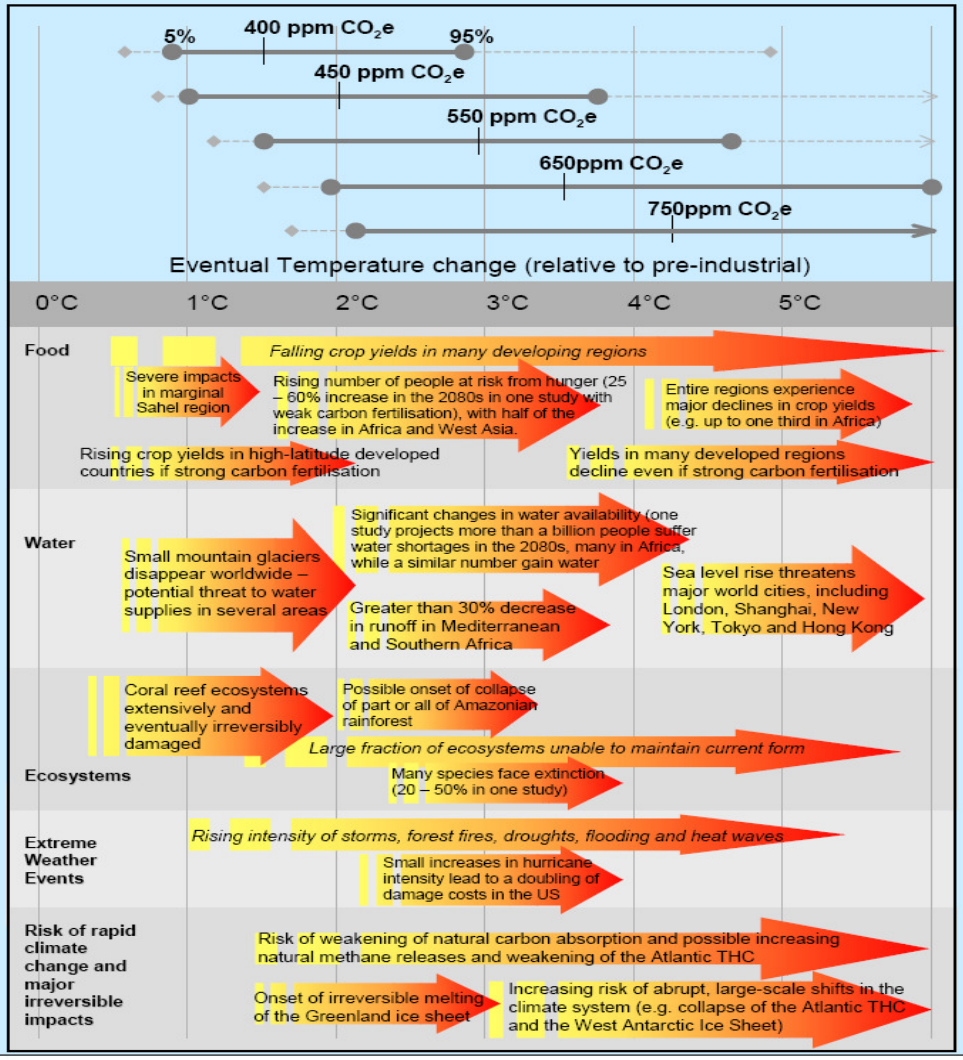
There is also a need to ensure that the institutional mechanism provides for integration of the Climate Change programming with the work being done under other multilateral conventions e.g. the Convention on Land Desertification and the Convention on Biological Diversity. It is also important that the activities conducted under the National Physical Development Plan and the National Environmental Management Strategy be informed by the provisions of this Policy and Action Plan.

6.2. Clean Development Mechanism (CDM)

The Designated National Authority for the CDM currently resides in the office of the Energy Officer. It is recommended that this responsibility be transferred to the Climate Change Focal Point, in order to provide for better harmonization of CDM activities within the broader climate change programming framework.

Figure 2 Stabilisation levels and probability ranges for temperature increases

The figure below illustrates the types of impacts that could be experienced as the world comes into equilibrium with more greenhouse gases. The top panel shows the range of temperatures projected at stabilisation levels between 400ppm and 750ppm CO_2e at equilibrium. The solid horizontal lines indicate the 5 - 95% range based on climate sensitivity estimates from the IPCC 2001[2] and a recent Hadley Centre ensemble study[3]. The vertical line indicates the mean of the 50th percentile point. The dashed lines show the 5 - 95% range based on eleven recent studies[4]. The bottom panel illustrates the range of impacts expected at different levels of warming. The relationship between global average temperature changes and regional climate changes is very uncertain, especially with regard to changes in precipitation (see Box 4.2). This figure shows potential changes based on current scientific literature.



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STRATEGIES	ACTIONS	ACTIVITIES	RESPONSIBILITY	FINANCING
1. Climate Proof National Present and Future National Development Activities	(a) Require all new projects to include climate sensitivity analysis	▪ Ministry of Finance issue circular to all ministries and departments providing guidelines for assessment of new development projects. This will also be applicable to all private sector development projects that require government approval.	▪ PS issue circular ▪ Climate Change Focal Point to provide guidelines consistent with best practice as developed by World Bank and to conduct orientation training as necessary ▪ Project officers to ensure that guidelines be used in project feasibility assessments	▪ To be borne by project developers
	(b) Each sector to incorporate obvious climate risks into current programming - Health - Agriculture - Disaster Management - Water - Tourism	▪ Ministry of Finance to specifically request relevant ministries to present a proposal for incorporating climate risks into current programming	▪ PS to issue request and follow-up on implementation through Focal Point	▪ To be borne by National Budget in collaboration with relevant international organizations e.g. WHO, FAO US$40,000
	(c) Commission technical V&A analysis of the threats that have the potential to create significant	▪ Ministry of Finance to specifically request relevant Ministries to initiate action with relevant agencies e.g. - Agriculture	▪ PS to issue request and follow-up on implementation	▪ Bilateral and multilateral cooperation ▪ Resource Allocation Framework

	socio-economic disruption - Erosion at Grand Anse Beach - Sea level rise in coastal communities - Long term impact on the water sector - Impact on survival and productivity of current crop varieties and consideration of alternative varieties	could approach FAO who has initiated climate change programming - Coastline threats could be addressed through bilateral cooperation with other countries	through Focal Point	US$100,000
STRATEGIES	**ACTIONS**	**ACTIVITIES**	**RESPONSIBILITY**	**FINANCING**
2. Strengthen the collection, analysis and use of climate-related data and impacts	(a) Establish and Equip National Met service to address needs of Aviation, National Disaster, Water, Agriculture, Health, General Public	Conduct review of systematic observation needs and propose development and training plan Rationalisation of systematic observation	Climate Change Focal Point Cabinet decision	UNFCCC Second National Communication US$10,000 Will depend on recommendation from review process and may be

	(b) Document anecdotal information of climate-related impacts to supplement gaps in data record (c) Use of available data for decision-making	Initiate school-based and community-based projects to document anecdotal impacts of climate sensitive changes Incorporated into decision-making processes	Climate Change Focal Point All senior managers – to insist on rigorous justification of proposals	possible from RAF. US$50,000 UNFCCC Second National Communication/GEF Resource Allocation Framework (RAF) US$35,000
3. Build local human capacity to assess and respond to climate change	(a) Sector specific short-term training for planning officer and technical officer from each affected sector (12 – 15 persons) (b) Use trained personnel to conduct more rigorous impact assessment to inform future actions (c) Long term university level training in climate change	▪ Identify sources of short-term training in specific sector assessment. This can be done on a bi-lateral basis with Cuba and China. ▪ Permanent Secretaries in relevant ministries, monitored by Ministry of Finance ▪ DHR to include Climate Change in priority listing for scholarships and to negotiate with universities for inclusion in program offerings	▪ Climate Change Focal Point through the bilateral technical cooperation agreements	▪ RAF – 3 month in-house course with resource person – US$50,000 ▪ Done as part of bi-lateral technical cooperation agreements

STRATEGIES	**ACTIONS**	**ACTIVITIES**	**RESPONSIBILITY**	**FINANCING**
4. Reducing Greenhouse Gas Emissions through increased energy efficiency and use of renewable energy	11. Strengthen the enabling environment for renewable energy - Review Electricity Act to permit sale to the grid - Provide tax and other fiscal incentives for renewable energy 12. Encourage energy efficiency through: - Reduce import duties and taxes on EE products - Establish minimum standards for importation of vehicles, appliances, equipment and machinery	1.0 Development of draft legislation for Cabinet consideration 2.0 Development of incentive proposal by Ministry of Finance 3.0 Development of incentive proposal by Ministry of Finance 4.0 Proposal to be developed by Grenada Bureau of Standards and Energy Unit 5.0 Proposal to be developed by Grenada Solid Waste Management Authority	8.0 Energy Officer, Ministry of Agriculture 9.0 Climate Change Focal Point and Energy Officer 10.0 Energy Officer 11.0 Energy Officer 12.0 Manager,	The Climate Institute/RAF US$10,000 The Climate Institute/RAF US$10,000

	13. Design and implement Waste-to-Energy Project at Perseverance 14. Re-afforestation Programme 15. Creation of Green Spaces	6.0 Proposal to be developed by Forestry Division 7.0 Draft guidelines for Cabinet approval	GSWMA ▪ Climate Change Focal Point and Forestry Officers ▪ Physical Planning Unit	RAF/US$20,000
5. Elimination of unsustain-able livelihood and development practices that increase climate change vulnerability	(a) Ministry of Finance to identify such practices and develop responses. These could include: - Develop a Land Use Policy - Control of sand mining - Managed use of marine ecosystems - Mangrove harvesting - Integrated coastal and watershed management			
STRATEGIES	**ACTIONS**	**ACTIVITIES**	**RESPONSIBILITY**	**FINANCING**
6. Sustained Public Education Programs	(a) Educational activities targeted at strengthening the knowledge base of decision makers	(ιιι) Parliamentary Seminar (ιϖ) Annual update to Cabinet on "New Developments in Climate Change"	▪ Climate Change Focal Point and National Climate Change Committee	▪ Second National Communication ▪ National Budget US$3,000

	(b) Public awareness programming to generate a national awareness of climate change and its impacts and the role of the individual in responding to the impacts	(ϖ) Targeted presentations and seminars to senior decision-makers in public and private sector		US$5,000
		▪ A KAP (Knowledge, Attitudes and Practices) Survey on Climate Change.		US$5,000
		▪ Development and maintenance of a National Climate Change Website.		US$5,000
		▪ Mass production of simple climate change educational materials for public dissemination e.g. brochures, calendars and the like.		US$10,000
	(c) Community level demonstration projects	▪ Community level presentations, discussions and public fora on climate change and its implications for Grenada.		US$20,000
		▪ Development and implementation of CBO and NGO supported community demonstration projects		
	(d) Support the teaching of Climate Change at all levels of the education system	▪ Work with the Ministry of Education to develop relevant climate change		US$10,000

		modules in the school syllabus ▪ Provide materials and information to teachers on an as required basis ▪ Seminars and presentations to teachers/students on an as required basis.		
STRATEGIES	**ACTIONS**	**ACTIVITIES**	**RESPONSIBILITY**	**FINANCING**
7. Foreign Policy	(a) Government officials including references to climate change in major speeches and statements	▪ Inclusion of climate change references in speeches CARICOM, OECS, Commonwealth and United Nations Meetings	▪ Cabinet ▪ Ministry of Foreign Affairs	▪ Nil
	(b) Inclusion of Climate Change on the listing of priorities that are discussed with friendly countries when seeking bilateral development assistance and support. (c) Adoption of a more proactive and participatory approach within	▪ Climate Change to be placed on the agenda for bilateral discussions with friendly countries ▪ Increased participation in selected international for a dealing with climate change e.g. GEF	▪ Ministry of Foreign Affairs ▪ Ministry of Finance	▪ Nil ▪ Nil

	international organizations like the Global Environment Facility, the UNFCCC Adaptation Fund and the like.			
8. Joint Implementation and Regional Networking	● Grenada to take lead in encouraging regional Governments to prioritise climate change ● Developing sub-regional projects through OESC – ESDU ● Developing regional projects through Caribbean Community Climate Change Centre ● Project development and implementation in collaboration with other Small Island Developing States (SIDS)	▪ Inclusion of Climate Change on agenda of regional meetings and proposing response actions at regional level ▪ Proposing and coordinating development of sub-regional projects on climate change at the sub-regional level. ▪ Proposing and coordinating development of regional projects on climate change at the regional level ▪ Proposing and coordinating development of regional projects on climate change at the SIDS level	▪ Cabinet ▪ Environmental Affairs Department and Climate Change Focal Point ▪ Climate Change Focal Point and National Climate Change Committee ▪ Climate Change Focal Point and National Climate Change Committee	▪ Nil ▪ Nil ▪ Nil ▪ Nil

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