

GRENADA
Pilot Project for Climate Resilience (PPCR)
First Joint Mission
August 30 - 31, 2010

Aide-Memoire

A. Introduction

1. The Pilot Program for Climate Resilience (PPCR) is the only adaptation funding window of the Climate Investment Fund (CIF), which was established by the multilateral development banks (MDBs) to finance climate change support for their developing member countries (DMCs). PPCR seeks to mainstream climate change adaptation into national development planning processes through a long-term programmatic approach which, ideally, frames all donor climate change adaptation interventions. To date, nine countries and two regions have been invited to participate in the global PPCR program. Grenada is part of Caribbean regional pilot, with an added national element. There are six countries involved in the Caribbean component, including: Dominica, Grenada, Haiti, Jamaica, Saint Lucia and Saint Vincent and the Grenadines.

2. 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 program will be country-led and driven, and will enable pilot countries to transform country-specific plans and investment programs to address climate risks and vulnerabilities, building on national adaptation plans and policies as well as other relevant country studies, plans and strategies.

3. Under the PPCR, up to US \$1.5 million will be allocated for the Caribbean region and split between the six pilot countries for the preparation of the Strategic Program for Climate Resilience (SPCR), and up to US \$60 million will be made available for implementation of the Caribbean pilot program in the identified key vulnerable sectors, with approximately half of the funds available for grant financing and the remaining funds, in the form of highly concessional loans. Regional pilots may be granted additional financing upon request in order to adequately cover additional transaction costs. Pilot countries will not be obliged to accept concessional loan financing as a condition for receiving grants.

4. The PPCR process is divided into two phases. In Phase I, a SPCR and related Investment Plan will be developed, and specific projects/program that are proposed in SPCR will be implemented in Phase II. The indicative timeframe for the Grenada Phase I is in the range of 3 to 5 months, with an understanding that most countries will be able to achieve the aims of the process within half a year from the time of the First Joint Mission. The key activities leading up, to and executed, during Phase I include:

- Joint Scoping Mission to initiate the development of the draft proposal for Phase I;
- First Joint Mission to finalize the proposal for Phase I;
- Tasks related to Phase I including the development of the SPCR;
- Second Joint Mission to review and finalize the SPCR; and
- Submission of the final SPCR and correlating Investment Plan as the output of Phase I.

5. Following a scoping mission by the WB and IDB in November 30 – December 1, 2009, a Joint Mission led by the WB visited Grenada from August 30-31, 2010.¹ The Joint Mission held discussions with relevant government line ministries, the private sector, civil society and key stakeholders (see Appendix 1: List of Persons Met) to: (i) finalize the PPCR Phase I proposal, and subsequently seek its rapid approval from the PPCR Sub Committee and release of funds; (ii) draft the terms of reference for the consultant(s) for Phase 1 of the PPCR, and (iii) meet with stakeholders to increase awareness and understanding of the PPCR process.

6. This Aide Memoire summarizes the First Joint Mission's findings and recommendations, as well as the immediate next steps for Government and the World Bank to take, leading to the completion of the design of Phase 1 and the subsequent submission of the Phase 1 Proposal to the CIF. The Joint Mission discussed this Aide Memoire with: the Ministry of Finance, the National Project Coordination Unit under the Ministry of Finance, and the Ministry of Environment, Foreign Trade and Export Development.

B. Mission Findings

1. Climate Resilience in Grenada

7. Small Island Developing States (SIDS) such as Grenada are characterized by unique circumstances that pose serious challenges to their sustainable development. Among these are their relatively small size; remoteness; limited natural resource base; limited human capacity and resources; limited technological capability; open economies, with a heavy dependence on imports; and fragile ecosystems. Grenada, like many other Caribbean SIDS, is susceptible to the vagaries of international trade, exogenous economic and financial shocks, and natural hazards, including hurricanes and other extreme weather events. The onset of the climate change phenomenon imposes new hazards on Grenada, and exacerbates existing ones.

8. The independent State of Grenada consists of the islands of Grenada, Carriacou and Petit Martinique is located at 11° 58'2" North Latitude and 61° 20'2" 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).

9. 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.

10. Analysis done under the Caribbean Planning for Adaptation to Climate Change Project (CPACC) in 2001 concluded that Grenada's beaches are at risk to significant erosion from rising sea levels. The analysis showed that between 55% and 75% of the Grand Anse beach could disappear if 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.

¹ The mission consisted of Mr. Niels Holm-Nielsen (TTL, Hazard Risk Management Specialist, World Bank), Gerard Meier (Environment and Risk Mitigation Consultant, World Bank), and Justin Locke (Disaster Risk Management Specialist, World Bank)

11. 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. Following the recovery from Hurricane Ivan, Hurricane Emily which struck the Northern part of the island further affected the food crop sector.

12. The Government of Grenada took special care to ensure that PPCR interventions align with ongoing national climate change adaptation and disaster risk management mainstreaming initiatives. The government's well-defined programmatic approach has encouraged donor coordination under the PPCR umbrella as well as the regional Caribbean framework. The country-determined and country-driven approach has taken special measure to ensure that all proposed activities are harmonized with existing government and donor adaptation/disaster risk management initiatives.

13. 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 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.

2. Stock-taking of Climate Change and Climate Data Activities

14. Over the last two decades, Grenada has undertaken, with assistance from development partners, a number of initiatives to respond to climate change. During this timeframe, several assessments were conducted and subsequent policy documents were created to inform stakeholders about climate change issues and to establish climate resilience and mitigation targets. These documents include: National Climate Change Policy and Action Plan 2007-2011; the Initial National Communication (INC) in 2000 to the United Nations Framework Convention on Climate Change (UNFCCC); and the National Water Policy 2007.

15. It was also noted during the Joint Mission that Grenada has conducted many GIS mapping exercises. It was shared that GRENLEC and NAWASA hold spatial maps of their assets and related public infrastructure – including housing and water positions. It was also learned that many sectoral climate change related projects have been or are being implemented, including the JICA-funded Community Development project that has conducted flood hazard maps and strengthened flood related early warning systems; the GEF/UNDP Sustainable Land Management Project; the CARICOM Land-Use Project; and the Caribbean Satellite Disaster Project.

16. Following discussions related to geo-spatial data and expressed need for base / land-use maps and up-to-date satellite imagery, both the private sector (including NAWASA, GLENLEC) and the public sector (Grenada Airport Authority) expressed interested in cost sharing inputs, both technical and financial, towards conducting a LiDAR exercise. It was agreed that each interested institution will provide information and specifications for the proposed LiDAR terms of reference in order to conduct the exercise, with GLENLEC and NAWASA providing specific technical specifications. In addition to this agreement, each institution interested in strengthening their data capture and management capacity will submit a written proposal that includes: 1) a list of data-related needs, 2) expressed interest in conducting a LiDAR exercise and 3) expressed interest in risk modeling capabilities. Institutions will submit their respective proposals to the Grenada PPCR focal point by September 20, 2010, who will then liaise with

the World Bank on the specific data needs. Following the submission of the above-mentioned proposals, a special World Bank mission will be organized comprised of a data and risk modeling specialist to provide technical assistance and move the process forward in terms of filling the gaps of creating a data platform.

C. Mission Recommendations

1. PPCR Focus

17. Given the wide range of potential activities for the PPCR in Grenada, the Joint Mission and Government agreed on a *focused intervention* that would deliver a "transformational" change through a successful pilot program that could be up-scaled with additional CIF PPCR funding.

18. Key activities to be undertaken in Phase 1 include: 1) a cross sectoral analysis to inform the development of the SPCR, 2) expanding on the foundation set forth by the National Climate Change Policy and Action Plan, and 3) conduction of a participatory knowledge and attitude survey to collect information on public understanding and perceptions on climate change for baseline purposes, and 4) analyze national data capture / management capacity including the option to implement a data sharing platform² that facilitates collaboration and includes technical assistance (training of trainers and technical support) during the PPCR process in Grenada.

19. Some factors informing the decision on the focus were:

(i) country needs/priorities, as outlined in the National Climate Change Policy 2007-2011, the National Development Strategy for Grenada, the Initial National Communications Project, and the National Water Policy 2007;

(ii) engagement in a participatory process to ensure that the PPCR process is informed by a wide group of stakeholders – both national and local;

(iii) the need to improve the understanding of climate change impact through better data and analysis;

(iv) the need for cross-sectoral capacity building and institutional strengthening;

(v) national level investments for improved physical resilience;

(vi) phases 1 and 2 resource envelopes for Grenada (likely to be up to US \$300,000 for Phase 1 and at least US \$5 million in grants as well as additional funding options in the form of highly concessional financing for Phase 2); and

(vii) CIF guidelines suggesting that PPCR should complement existing/planned MDB investments and government activities, and build on climate resilience donor/regional organization/NGO initiatives.

² 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.

2. Implementation Arrangements

20. **Government Implementing Agencies.** The Ministry of Environment, Foreign Trade and Export Development is the focal point for the PPCR. This 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 the Grenada National Climate Change Committee, which will act as the PPCR Technical Working Group (TWG). The TWG is comprised of line ministries, non-governmental organizations, representatives from the private sector and is 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.

21. 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.

22. **MDB Arrangements for Phase 1.** As outlined in the Final Phase 1 Proposal, the Ministry of Environment, Foreign Trade and Export Development (with support from the PCU) will be responsible for mobilizing additional resources, and liaising with multilateral and regional agencies, as appropriate. Grenada would like to work with the World Bank for the execution of Phase I.

23. **Phase 1 Consultancy Team.** A team of consultants will be procured to undertake activities during Phase 1 and formulate the SPCR and related Investment Plan. The consultancy team will be comprised of a Team Leader with extensive experience in climate change and managing integrated teams, a GIS / Data Specialist, a Coastal Management Specialist, and a Watershed Management Specialist. The Team Leader will be contracted for the entirety of Phase 1, meanwhile the specialist consultants will be contracted for specific timeframes based on their area of expertise. All the consultants will liaise with the Team Leader and report directly to the Ministry of Environment, Foreign Trade and Export Development and 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 1 Consultancy Team will be highly integrated, and drafted based on the agreed Phase 1 activities and CIF SPCR template. At the end of the process the TWG will review the draft SPCR and provide comments to the Team Leader. Phase 1 will be executed by the World Bank.

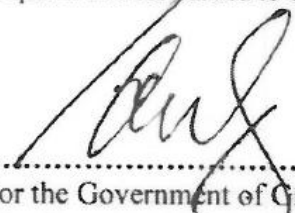
D. Next Steps

24. To keep the desired schedule, the Government and the Joint Mission agreed on the following next steps:

	Action/Agreement	Date	Responsibility
1	Draft Phase 1 Proposal circulated to all national stakeholders	September 3, 2010	Ministry of Environment, Foreign Trade and Export Development
2	Comments on Draft of Phase 1 Proposal submitted to Ministry of Environment, Foreign Trade and Export Development	September 10, 2010	National stakeholders

	Action/Agreement	Date	Responsibility
3	First Draft of the Phase 1 TORs for Consultant Team submitted to the World Bank	September 10, 2010	Ministry of Environment, Foreign Trade and Export Development
4	Final Draft Phase 1 Proposal submitted to the World Bank	September 13, 2010	Ministry of Environment, Foreign Trade and Export Development
5	Comments on TORs for Phase 1 Consultant Team submitted to the Ministry of Environment, Foreign Trade and Export Development	September 14, 2010	World Bank
6	Comments on Final Draft of Phase 1 Proposal submitted to the Ministry of Environment, Foreign Trade and Export Development	September 15, 2010	World Bank
7	Revised TORs for Phase 1 Consultant Team circulated to all national stakeholders	September 15, 2010	Ministry of Environment, Foreign Trade and Export Development
8	Final Phase 1 Proposal and TORs for Phase 1 Consultant Team submitted to PS of Finance	September 20, 2010	Ministry of Environment, Foreign Trade and Export Development
9	Submission of the Phase 1 Proposal to the CIF Secretariat	September 27, 2010	Ministry of Finance

25. The Joint Mission wishes to express its appreciation to the Government, particularly the Ministry of Environment, Foreign Trade and Export Development, for their assistance provided to the Joint Mission. In accordance with CIF guidelines, a publicly available report of the Joint Mission will be prepared and forwarded to CIF.



 For the Government of Grenada:
Mr. Timothy N.J. Antoine
 Permanent Secretary
 Ministry of Finance



 For the Joint Mission:
Mr. Niels Holm-Nielsen
 Hazard Risk Management Specialist
 The World Bank

Date: September 1, 2010

ANNEX 1: People and Agencies Met

PCU & Ministry of Finance	
Name	Title
Timothy Antoine	Permanent Secretary
Margaret Belfun	Coordinator, Project Coordination Unit
Roxanne Neckles	Project Officer
NAWASA	
Dave Marquez	Technical Officer
Lauriston Hoster	Director
Marcia Lawrence	Technical Officer
National Disaster and Management Agency (NaDMA)	
Benedict Peters	National Disaster Coordinator
Terrence Walters	Deputy Disaster Coordinator
Gilliam Primus	Administrative Assistant
Ministry of Environment, Foreign Trade and Export Development	
Joseph Antoine	Communications Officer
Sally Anne Bagwhan Logie	Acting Permanent Secretary
Joyce Thomas	Coordinator
Paul E. Phillip	Senior Environment Officer
Airport Authority of Grenada	
Lester Andall	General Manager
Physical Planning Unit	
Fabian Purcell	Head
Raphael Roberts	Technical Officer
Ministry of Housing and Community Development	
Verance Msacky	Director of Lands
Ministry of Agriculture	
Justin Ronnie	Chief Fisheries Officer
Michael Mason	Land Use Officer
Gelia Edwards	Land Use / Irrigation Officer
Michael Church	Technical Officer
Daniel Lewis	Chief Technical Officer
Ministry of Health	
Andre Worme	Chief Environmental Officer
Grenada Solid Waste Management Authority	
Vaughn Forsth	Operations Manager
Department of Public Administration	
Aarone Moses	Project Manager
Ministry of Tourism	
George A. Vincent	Consultant
Grenada Board of Tourism	
Kirl Grant-Hoschtialele	Vice President – Development Office
Aune Porchethwauli	Deputy Vice President

Global Environment Facility	
Lionel Goddard	Executive Director
People in Action	
Sophia Roberts	Volunteer Environmental Scientist
Denyse Ogilvie	CEO
Aria Johnson	Volunteer Marine Biologist
Agency for Rural Transformation	
Sandra C.A. Fegusm	Secretary General
Grenada Red Cross Society	
Terry Charles	Director General
GRENLEC	
Don Forsyth	Director

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° 58'2" North Latitude and 61° 20'2" 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 be 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	<p>Meeting with Ministry of Environment, Foreign Trade and Export Development/Ministry of Finance/PCU</p> <ul style="list-style-type: none"> (a) Update on Country Track and Regional Track (b) Discussion on coordination and operational details of PPCR Programme (c) Discussion on Project Proposal (d) Discussion of Phase 1 activities; (e) Discussion on the financing arrangements <ul style="list-style-type: none"> ▪ Discussion on institutional capacities and arrangements of the implementation stakeholders of the PPCR.
10:00- 12:00	<p>Meeting with Environmental NGO's, Private Sector and Hotel Association</p> <p>Presentation on goals and objectives of the PPCR</p> <p>Discussion on Phase 1 and involvement of the private sector and NGOs</p>
1:30 – 4:00	<p>Presentation on Regional Track with a focus on Data</p> <p>Questions/Discussion with organisations involved in GIS/data management/risk assessment on climate change data needs and gaps</p> <p>Relevant project activities under Phase 1 Phase 2</p>
End of Session 1	

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

Day 2	All PPCR Stakeholders Meeting
Time	Session
	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 consultations³ and seven (7) community fora⁴ 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 period⁵ 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 gas⁶ (GHG) emissions in the atmosphere, mostly from activities by developed economies over the last one hundred and fifty years. 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 2030⁷.

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 (CO₂e). These concentrations are increasing by 2.5 ppm CO₂e per year and will reach 450 ppm CO₂e 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°C increase in temperatures by the middle of this century. This temperature level will *inter alia* trigger the

³Public 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.

⁴One in each parish, including Carriacou and Petite Martinique

⁵Grenada's Initial National Communication on Climate Change (2001); CPACC Coastal Vulnerability and Risk Assessment Pilot Project (2001); National Capacity Self Assessment (2005).

⁶The GHGs that are covered by the United Nations Framework Convention on Climate Change (UNFCCC) are CO₂ - Carbon dioxide, CH₄ - Methane, N₂O - Nitrous oxide, PFCs - Perfluorocarbons, HFCs - Hydrofluorocarbons and SF₆ - Sulphur hexafluoride

⁷The World Energy Outlook 2006, International Energy Agency

“onset of irreversible melting of the Greenland ice sheet”⁸, 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°C 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.

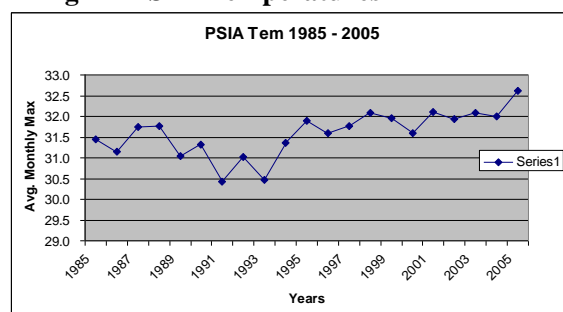
2. CLIMATE CHANGE AND GRENADA

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.

Fig 1 – PSIA Temperatures



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 hurricanes⁹; in the bleaching of over 25% of the coral reefs that occurred in some parts of the region in 2005¹⁰; and farther afield, in the rapid increase in the rate of melting of the Greenland ice sheet¹¹ 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)¹².

Analysis done under the Caribbean Planning for Adaptation to Climate Change Project (CPACC) in 2001¹³ 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.

⁸ Stern Review on the Economics of Climate Change, Executive Summary, pg. v

⁹ 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.

¹⁰ The National Oceanic and Atmospheric Administration (NOAA), Coral Reef Watch

¹¹ 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.

¹² Maslin, Mark (2004). Global Warming: A Very Short Introduction

¹³ CPACC Coastal Vulnerability and Risk Assessment Pilot Project (2001)

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.

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:

- Increases in average temperatures of between 1.8 C and 6.4 C within the next 100 years¹⁴.
- 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.¹⁵
- More intense hurricanes.¹⁶
- 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 region¹⁷.
- 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 hurricanes¹⁸.

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

¹⁴This 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.

¹⁵ Ibid

¹⁶ Ibid

¹⁷ *Glimpses of the Future*. Report from the Precip Caribbean Climate Change Project

¹⁸ 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.

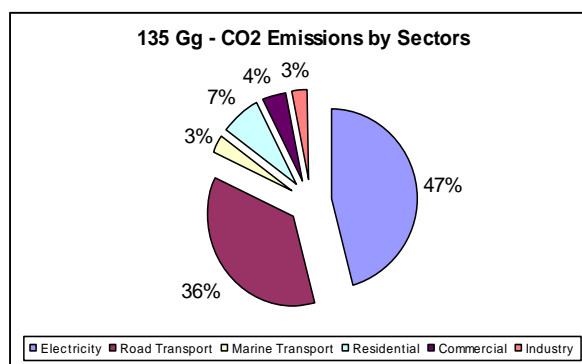
change on any of the main socio-economic sectors and no attempt has been made to initiate any response programming.

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

- Absence of adequate agricultural soil and water conservation practices;
- Uncontrolled/Poorly managed exploration of the coral reefs by divers and tourists;
- Sand mining on the beaches;
- Mangrove harvesting for firewood; and
- 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 1994¹⁹ 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 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.

¹⁹Base 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.

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 pursuing 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:

- (a) 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.
- (b) 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.
- (c) Commissioning of technical vulnerability analyses of the threats that have the potential to create significant socio-economic disruption, including:
 - i. Erosion at Grand Anse Beach;
 - ii. Sea level rise in coastal communities;
 - iii. Long term impact on the water sector;
 - iv. 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:

- (a) Development of human capacity to assess climate change impacts and plan responses to climate change
 - i. Inclusion of Climate Change on Government's priority list for training
 - ii. Short-term training for planning and technical personnel from each affected sector in impact assessment for their sector
 - iii. Longer term university level training in climate change
 - iv. Targeted university level training in a range of skills that are necessary to respond to climate change
- (b) Retention and utilisation of trained personnel to conduct more rigorous analysis of climate change impact on relevant sectors and propose more rigorous response measures.
- (c) 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."²⁰ 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:

²⁰United Nations Framework Convention on Climate Change, Article 2

- (a) Creating the enabling environment for the use of renewable energy:
 - i. Revise Electricity Act to allow other parties to generate renewable electricity and sell to the grid.
 - ii. 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.
 - iii. 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.
- (b) 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.
- (c) Public education on reducing domestic energy consumption.
- (d) Support for the implementation of a waste-to-energy process at the Perseverance Landfill.
- (e) Development and implementation of a re-afforestation program to replant the forests and to encourage the planting of trees.
- (f) 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:
 - i. A KAP (Knowledge, Attitudes and Practices) Survey on Climate Change.
 - ii. Development and maintenance of a National Climate Change Website.
 - iii. Mass production of simple climate change educational materials for public dissemination e.g. brochures, calendars and the like.
 - iv. 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. Marrayshow 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:

- (a) 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.*
- (b) 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:

- (f) Allocations from the National Budget;
- (g) 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.
- (h) Bilateral financing and technical support from friendly countries.
- (i) 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.*

- (a) 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.
- (b) 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.

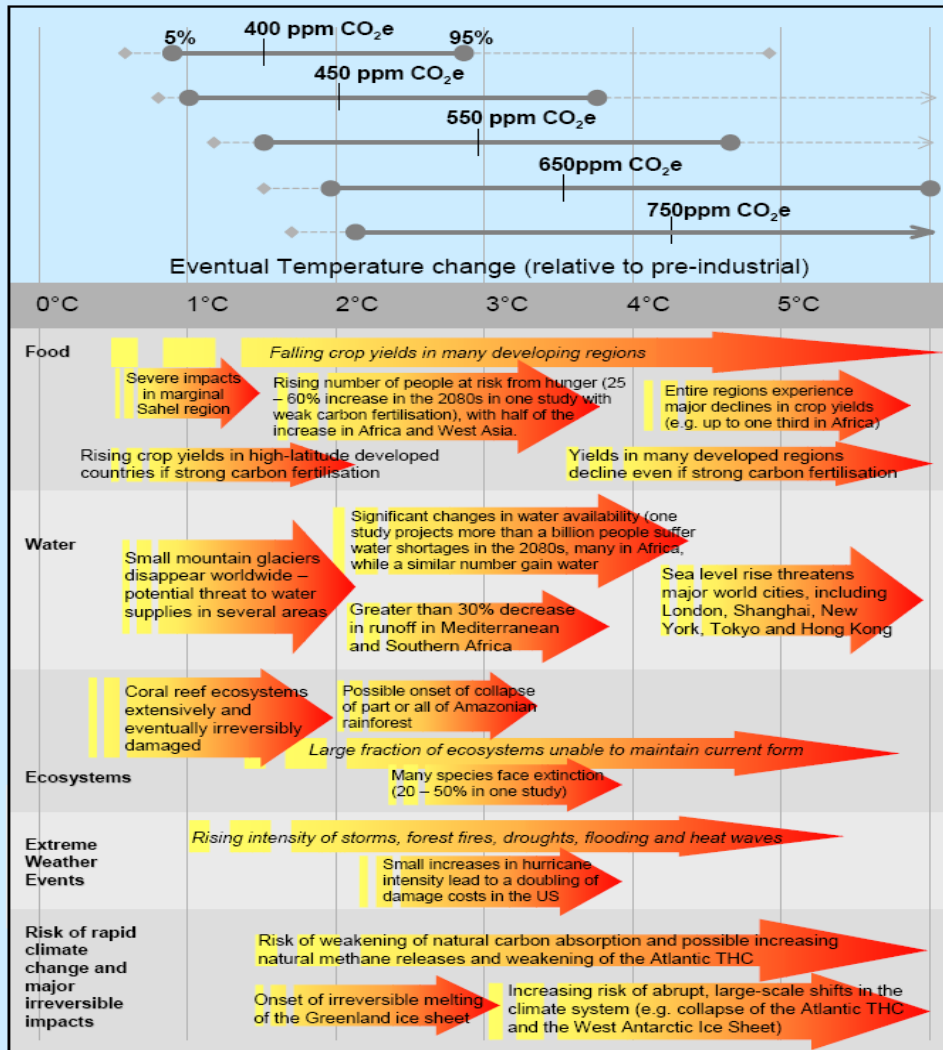
There is also a need to ensure that the institutional mechanism provides for integration of the Climate Change programming with the work being done under other multilateral conventions e.g. the Convention on Land Desertification and the Convention on Biological Diversity. It is also important that the 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 CO₂e at equilibrium. The solid horizontal lines indicate the 5 - 95% range based on climate sensitivity estimates from the IPCC 2001² and a recent Hadley Centre ensemble study³. The vertical line indicates the mean of the 50th percentile point. The dashed lines show the 5 - 95% range based on eleven recent studies⁴. 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	<p>(a) Require all new projects to include climate sensitivity analysis</p> <p>(b) Each sector to incorporate obvious climate risks into current programming</p> <ul style="list-style-type: none"> - Health - Agriculture - Disaster Management - Water - Tourism <p>(c) Commission technical V&A analysis of the threats that have the potential to create significant socio-economic disruption</p> <ul style="list-style-type: none"> - Erosion at Grand Anse Beach - Sea level rise in coastal communities - Long term impact on 	<ul style="list-style-type: none"> ▪ 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. ▪ Ministry of Finance to specifically request relevant ministries to present a proposal for incorporating climate risks into current programming ▪ Ministry of Finance to specifically request relevant Ministries to initiate action with relevant agencies e.g. <ul style="list-style-type: none"> - Agriculture could approach FAO who has initiated climate change programming - Coastline threats could be addressed through bilateral cooperation with other countries 	<ul style="list-style-type: none"> ▪ 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 ▪ PS to issue request and follow-up on implementation through Focal Point ▪ PS to issue request and follow-up on implementation through Focal Point 	<ul style="list-style-type: none"> ▪ To be borne by project developers ▪ To be borne by National Budget in collaboration with relevant international organizations e.g. WHO, FAO US\$40,000 ▪ Bilateral and multilateral cooperation ▪ Resource Allocation Framework US\$100,000

	<p>the water sector</p> <ul style="list-style-type: none"> - Impact on survival and productivity of current crop varieties and consideration of alternative varieties 			
STRATEGIES	ACTIONS	ACTIVITIES	RESPONSIBILITY	FINANCING
2. Strengthen the collection, analysis and use of climate-related data and impacts	<p>(a) Establish and Equip National Met service to address needs of Aviation, National Disaster, Water, Agriculture, Health, General Public</p> <p>(b) Document anecdotal information of climate-related impacts to supplement gaps in data record</p> <p>(c) Use of available data for decision-making</p>	<ul style="list-style-type: none"> • Conduct review of systematic observation needs and propose development and training plan • Rationalisation of systematic observation • Initiate school-based and community-based projects to document anecdotal impacts of climate sensitive changes • Incorporated into decision-making processes 	<ul style="list-style-type: none"> • Climate Change Focal Point • Cabinet decision • Climate Change Focal Point • All senior managers – to insist on rigorous justification of proposals 	<ul style="list-style-type: none"> • UNFCCC Second National Communication US\$10,000 • Will depend on recommendation from review process and may be 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	<p>(a) Sector specific short-term training for planning officer and technical officer from each affected sector (12 – 15 persons)</p> <p>(b) Use trained</p>	<ul style="list-style-type: none"> ▪ 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 	<ul style="list-style-type: none"> ▪ Climate Change Focal Point through the bilateral technical cooperation agreements 	<ul style="list-style-type: none"> ▪ RAF – 3 month in-house course with resource person – US\$50,000 ▪ Done as part of bi-lateral technical cooperation

	<p>personnel to conduct more rigorous impact assessment to inform future actions</p> <p>(c) Long term university level training in climate change</p>	<p>relevant ministries, monitored by Ministry of Finance</p> <ul style="list-style-type: none"> ▪ DHR to include Climate Change in priority listing for scholarships and to negotiate with universities for inclusion in program offerings 		agreements
STRATEGIES	ACTIONS	ACTIVITIES	RESPONSIBILITY	FINANCING
<p>4. Reducing Greenhouse Gas Emissions through increased energy efficiency and use of renewable energy</p>	<p>(a) Strengthen the enabling environment for renewable energy</p> <ul style="list-style-type: none"> - Review Electricity Act to permit sale to the grid - Provide tax and other fiscal incentives for renewable energy <p>(b) Encourage energy efficiency through:</p> <ul style="list-style-type: none"> - Reduce import duties and taxes on EE products - Establish minimum standards for importation of vehicles, appliances, equipment and machinery 	<ul style="list-style-type: none"> ▪ Development of draft legislation for Cabinet consideration ▪ Development of incentive proposal by Ministry of Finance ▪ Development of incentive proposal by Ministry of Finance ▪ Proposal to be developed by Grenada Bureau of Standards and Energy Unit ▪ Proposal to be developed 	<ul style="list-style-type: none"> ▪ Energy Officer, Ministry of Agriculture ▪ Climate Change Focal Point and Energy Officer ▪ Energy Officer ▪ Energy Officer ▪ Manager, GSWMA 	<p>The Climate Institute/RAF US\$10,000</p> <p>The Climate Institute/RAF</p>

	<p>(c) Design and implement Waste-to-Energy Project at Perseverance</p> <p>(d) Re-afforestation Programme</p> <p>(e) Creation of Green Spaces</p>	<p>by Grenada Solid Waste Management Authority</p> <ul style="list-style-type: none"> ▪ Proposal to be developed by Forestry Division ▪ Draft guidelines for Cabinet approval 	<ul style="list-style-type: none"> ▪ Climate Change Focal Point and Forestry Officers ▪ Physical Planning Unit 	<p>US\$10,000</p> <p>RAF/US\$20,000</p>
<p>5. Elimination of unsustainable livelihood and development practices that increase climate change vulnerability</p>	<p>(a) Ministry of Finance to identify such practices and develop responses. These could include:</p> <ul style="list-style-type: none"> - 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
<p>6. Sustained Public Education Programs</p>	<p>(a) Educational activities targeted at strengthening the knowledge base of decision makers</p> <p>(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</p>	<ul style="list-style-type: none"> ▪ Parliamentary Seminar ▪ Annual update to Cabinet on “New Developments in Climate Change” ▪ Targeted presentations and seminars to senior decision-makers in public and private sector ▪ A KAP (Knowledge, Attitudes and Practices) Survey on Climate Change. ▪ Development and maintenance of a National Climate Change Website. 	<ul style="list-style-type: none"> ▪ Climate Change Focal Point and National Climate Change Committee 	<ul style="list-style-type: none"> ▪ Second National Communication ▪ National Budget US\$3,000 US\$5,000 US\$5,000 US\$5,000

	<p>impacts</p> <p>(c) Community level demonstration projects</p> <p>(d) Support the teaching of Climate Change at all levels of the education system</p>	<ul style="list-style-type: none"> ▪ Mass production of simple climate change educational materials for public dissemination e.g. brochures, calendars and the like. ▪ Community level presentations, discussions and public fora on climate change and its implications for Grenada. ▪ Development and implementation of CBO and NGO supported community demonstration projects ▪ Work with the Ministry of Education to develop relevant climate change 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. 		<p>US\$10,000</p> <p>US\$10,000</p> <p>US\$20,000</p> <p>US\$10,000</p>
STRATEGIES	ACTIONS	ACTIVITIES	RESPONSIBILITY	FINANCING
7. Foreign Policy	<p>(a) Government officials including references to climate change in major speeches and statements</p> <p>(b) Inclusion of Climate Change on the listing of priorities</p>	<ul style="list-style-type: none"> ▪ Inclusion of climate change references in speeches CARICOM, OECS, Commonwealth and United Nations Meetings ▪ Climate Change to be placed on the agenda for bilateral discussions with 	<ul style="list-style-type: none"> ▪ Cabinet ▪ Ministry of Foreign Affairs ▪ Ministry of Foreign Affairs 	<ul style="list-style-type: none"> ▪ Nil ▪ Nil

	<p>that are discussed with friendly countries when seeking bilateral development assistance and support.</p> <p>(c) Adoption of a more proactive and participatory approach within international organizations like the Global Environment Facility, the UNFCCC Adaptation Fund and the like.</p>	<p>friendly countries</p> <ul style="list-style-type: none"> ▪ Increased participation in selected international for a dealing with climate change e.g. GEF 	<ul style="list-style-type: none"> ▪ Ministry of Finance 	<ul style="list-style-type: none"> ▪ Nil
<p>8. Joint Implementation and Regional Networking</p>	<p>(j) Grenada to take lead in encouraging regional Governments to prioritise climate change</p> <p>(k) Developing sub-regional projects through OESC – ESDU</p> <p>(l) Developing regional projects through Caribbean Community Climate Change Centre</p> <p>(m) Project development and implementation in collaboration with other Small Island Developing States (SIDS)</p>	<ul style="list-style-type: none"> ▪ 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 	<ul style="list-style-type: none"> ▪ 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 	<ul style="list-style-type: none"> ▪ Nil ▪ Nil ▪ Nil ▪ Nil

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ANNEX 5: PPCR Caribbean – Regional Track

This document was developed by the PPCR Caribbean participating countries and key regional organizations during the Caribbean Kick-off Meeting (Oct 28-29, 2009, held at IDB's Headquarters) and further developed during the Videoconference held on February 1st, 2010. This document also reflects some of the ideas/suggestions coming out of the scoping missions to the PPCR countries in the region. This outline states the five main topics as the main areas to be potentially developed under the PPCR regional track by Caribbean regional organizations. The options provided under the five headings are intended to assist future discussions on the regional program.

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

1. Monitoring and climate modeling activities

- 1.1 Strengthening climate change modeling and monitoring capacity of regional organizations or regional group – e.g. strengthen the modeling 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. Development/implementation of Disaster Risk Management 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.
- 1.3 Strengthening monitoring capacity by increasing the number of monitoring stations in the Caribbean especially in those countries with very limited resources e.g. Haiti. Provide pertinent training of maintenance, data collection and analysis.
- 1.4 Strengthen linkages between regional modeling and monitoring networks with the PPCR pilot countries.

2. Enabling environment (policy and institutional framework)

- 2.1 Expansion of the Comprehensive Disaster Risk Management program in the Caribbean; Insure 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 “upstreaming” the issues to the political level?
- 3.2 What is the role of regional organizations 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 members 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 CC training packages for:
 - Policy/decision makers of key vulnerable economic sectors

- High level politicians
- Public awareness and communities
- 4.3 Provide training on climate change modeling to scientists in the Caribbean (particularly those who are not part of the Caribbean climate modeling 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 CC into development and budget planning

- 5.1 Enable 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 PPCR can provide seed funding to support piloting and/or scaling-up of such financial mechanisms.