

16-May-2006

43446



UN Development Programme

Antigua - Cty Pgmm

Award ID: 00038945

Award Title: PIMS 3359 CC PDF A: Antigua Self-Assessment for SNC

Start Year: 2005

End Year: 2008

Implementing Partner (Executing Agency): National Execution

Budget (US\$) as of 16-May-2006		
Donor	Fund	Amount
GEFTrustee	62000 GEF Voluntary Contribution	409,555.00
Total Budget		409,555.00
Total Expenditure		10,444.60
Award Total		420,000.00
Unprogrammed/Unfunded		0.40

Responsible Party (Implementing Agent): BAR-Government of Antigua

Revision Type: Substantial Revision 1

Brief Description:

The project's budget is amended to increase:-
 the project's life cycle by two years, 2007 and 2008; &
 the budgetary allocation by \$405,000.00

Agreed by:

UNDP

Rosina Wiltshire
Resident Representative

Date: 6 June 2006

Agreed by:

GVT. OF ANTIGUA & BARBUDA

Agreed by:

Chief Environmental Officer



3





Annual Work Plan

Antigua - Cty Pgmm

Award Id: 00038945 **Report Date:** 2/6/2006
Award Title: PIMS 3359 CC PDF A: Antigua Self-Assessment for SNC
Year: 2005

Project ID	Expected Outputs	Key Activities	Timeframe		Responsible Party	Planned Budget				
			Start	End		Fund	Donor	Budget Descr	Amount US\$	
00043446	PIMS 3359 CC: Antigua SNC	MISCELLANEOUS	16/2/05	31/12/06	BAR-Government of Antigua	62000	GEFTrustee	74500	Miscellaneous Expenses	1,905.00
		PREP. OF DRAFT SNC PR	16/2/05	31/12/06	BAR-Government of Antigua	62000	GEFTrustee	71300	Local Consultants	1,021.00
		STAKEHOLDER CONSULT	16/2/05	31/12/06	BAR-Government of Antigua	62000	GEFTrustee	71300	Local Consultants	2,074.00
		STOCKING EXERCISE	16/2/05	31/12/06	BAR-Government of Antigua	62000	GEFTrustee	71300	Local Consultants	5,445.00
TOTAL						10,445.00				
GRAND TOTAL						10,445.00				



Annual Work Plan

Antigua - Cty Pgmm

Award Id: 00038945
 Award Title: PIMS 3359 CC PDF A: Antigua Self-Assessment for SNC
 Year: 2006

Report Date: 2/6/2006

Project ID	Expected Outputs	Key Activities	Timeframe		Responsible Party	Planned Budget				
			Start	End		Fund	Donor	Budget Descr	Amount US\$	
00043446	PIMS 3359 CC: Antigua SNC	EQUIPMENT			BAR-Government of Antigua	62000	GEFTrustee	72200	Equipment and Furniture	12,000.00
		INTERNATIONAL CONS.			BAR-Government of Antigua	62000	GEFTrustee	71200	International Consultants	26,000.00
		LOCAL CONSULTANTS			BAR-Government of Antigua	62000	GEFTrustee	71300	Local Consultants	54,000.00
		MISCELLANEOUS	16/2/05	31/12/06	BAR-Government of Antigua	62000	GEFTrustee	74500	Miscellaneous Expenses	2,555.00
		PREP. OF DRAFT SNC PR	16/2/05	31/12/06	BAR-Government of Antigua	62000	GEFTrustee	71300	Local Consultants	1,000.00
		PROF. SERVICES			BAR-Government of Antigua	62000	GEFTrustee	74100	Professional Services	5,000.00
		SERVICE CONTRACTS			BAR-Government of Antigua	62000	GEFTrustee	72100	Contractual Services-Companie	14,000.00
		STAKEHOLDER CONSULT	16/2/05	31/12/06	BAR-Government of Antigua	62000	GEFTrustee	71300	Local Consultants	1,500.00
		STOCKING EXERCISE	16/2/05	31/12/06	BAR-Government of Antigua	62000	GEFTrustee	71300	Local Consultants	1,500.00
		TRAVEL			BAR-Government of Antigua	62000	GEFTrustee	71600	Travel	10,000.00
		TOTAL								
GRAND TOTAL										
127,555.00										
127,555.00										



Annual Work Plan

Antigua - Cty Pgmm

Report Date: 2/6/2006

Award Id: 00038945
 Award Title: PIMS 3359 CC PDF A: Antigua Self-Assessment for SNC
 Year: 2007

Project ID	Expected Outputs	Key Activities	Timeframe		Responsible Party	Planned Budget			
			Start	End		Fund	Donor	Budget Descr	Amount US\$
00043446	PIMS 3359 CC: Antigua SNC	EQUIPMENT			BAR-Government of Antigua	62000	GEFTrustee	72200 Equipment and Furniture	12,000.00
		INTERNATIONAL CONS.			BAR-Government of Antigua	62000	GEFTrustee	71200 International Consultants	24,000.00
		LOCAL CONSULTANTS			BAR-Government of Antigua	62000	GEFTrustee	71300 Local Consultants	70,000.00
		MISCELLANEOUS	16/2/05	31/12/06	BAR-Government of Antigua	62000	GEFTrustee	74500 Miscellaneous Expenses	3,000.00
		PROF. SERVICES			BAR-Government of Antigua	62000	GEFTrustee	74100 Professional Services	5,000.00
		SERVICE CONTRACTS			BAR-Government of Antigua	62000	GEFTrustee	72100 Contractual Services-Companie	27,000.00
		TRAVEL			BAR-Government of Antigua	62000	GEFTrustee	71600 Travel	13,000.00
TOTAL									
GRAND TOTAL									
154,000.00									



Annual Work Plan

Antigua - Cty Pgmm

Award Id: 00038945 **Report Date:** 2/6/2006
Award Title: PIMS 3359 CC PDF A: Antigua Self-Assessment for SNC
Year: 2008

Project ID	Expected Outputs	Key Activities	Timeframe		Responsible Party	Planned Budget				
			Start	End		Fund	Donor	Budget Descr	Amount US\$	
00043446	PIMS 3359 CC: Antigua SNC	EQUIPMENT			BAR-Government of Antigua	62000	GEFTrustee	72200	Equipment and Furniture	5,000.00
		INTERNATIONAL CONS.			BAR-Government of Antigua	62000	GEFTrustee	71200	International Consultants	13,000.00
		LOCAL CONSULTANTS			BAR-Government of Antigua	62000	GEFTrustee	71300	Local Consultants	63,000.00
		MISCELLANEOUS	16/2/05	31/12/06	BAR-Government of Antigua	62000	GEFTrustee	74500	Miscellaneous Expenses	3,000.00
		PROF. SERVICES			BAR-Government of Antigua	62000	GEFTrustee	74100	Professional Services	5,000.00
		SERVICE CONTRACTS			BAR-Government of Antigua	62000	GEFTrustee	72100	Contractual Services-Companie	30,000.00
		TRAVEL			BAR-Government of Antigua	62000	GEFTrustee	71600	Travel	9,000.00
TOTAL						128,000.00				
GRAND TOTAL						128,000.00				



Government of Antigua and Barbuda

File X	
UNDP FEB 09 2006 9:00S	
Action RM	Info

Environment Division
Ministry of Works, Transportation and Environment
#1 Prime Minister's Drive
ST. JOHN'S ANTIGUA, W.I.
Tel: (268) 462-4625/562-2568
Fax: (268) 462-6398
Email: mail@environmentdivision.info

6 February, 2006

Rosina Wiltshire
Resident Representative
UNDP Office - Barbados
Barbados

Re: Project proposal for the preparation of Antigua and Barbuda's National Communication to the United Nations Convention on Climate Change

On behalf of the Government of Antigua and Barbuda and, in my capacity as GEF Operational Focal Point and the UNFCCC Focal Point, I hereby endorse the request of funding from the Global Environment Facility for the above mentioned project proposal, to be presented through the United Nations Development Programme.

In doing so, I express my agreement with the content of the project proposal and with its implementation arrangements.

We look forward to your kind consideration in this matter.

Sincerely,

D Blackley

.....
Chief Environment Officer
GEF NFP (Antigua and Barbuda)
UNFCCC NFP (Antigua and Barbuda)

UNDP Project Document

Government of Antigua and Barbuda

United Nations Development Programme

ENABLING ACTIVITIES FOR THE PREPARATION OF ANTIGUA AND BARBUDA'S SECOND NATIONAL COMMUNICATION TO THE UNFCCC

Brief description

The project aims at enabling Antigua and Barbuda to prepare and report its Second National Communication (SNC) to the United Nations Framework Convention on Climate Change (UNFCCC) in accordance with its obligations under the UNFCCC and following the guidance established in UNFCCC decision 17/CP.8. The SNC builds upon previous climate change studies and activities and is based on priorities identified in a stocktaking and assessment exercise. The *main components* of the project are: (a) an inventory of greenhouse gases for 2000 and earlier and subsequent years; (b) an analysis of potential measures to abate greenhouse gas emissions in Antigua and Barbuda; (c) an assessment of Antigua and Barbuda's vulnerability to present climate as well as to projected changes in regional and global climate, including identification of climate change adaptation measures required and; (d) preparation and presentation of Antigua and Barbuda's SNC and its submission to the UNFCCC CoP. In addition, the project is expected to substantially strengthen national capacity for responding to climate change, while public awareness activities and stakeholder consultations are expected to enhance general awareness and knowledge of climate change related issues in Antigua and Barbuda.

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Acronyms

ACCC	Adaptation to Climate Change in the Caribbean
AOSIS	Alliance of Small Island States
APUA	Antigua Public Utilities Authority
CARICOM	Caribbean Community
CCCCC	Caribbean Community Climate Change Centre
CDM	Clean Development Mechanism
GCOS	Global Climate Observation System
GEF	Global Environmental Facility
GHG	Greenhouse Gas
CPACC	Caribbean Planning for Adaptation to Climate Change
GWP	Global Warming Potential
INC	Initial National Communication
IPCC	Inter-governmental Panel on Climate Change
LULUCF	Land use, land use change and forestry
MACC	Mainstreaming Adaptation to Climate Change
MDG	Millennium Development Goals
NCM	National Coordinating Mechanism
NCSP	National Communications Support Programme
NCSA	National Capacity Self-Assessment
OECS	Organization of Eastern Caribbean States
SNC	Second National Communication
TAC	Technical Advisory Committee
UNCCD	United Nations Convention to Combat Desertification (Land Degradation)
UNCBD	United Nations Convention on Biological Diversity
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UWI	University of the West Indies
V&A	Vulnerability and Adaptation
WIOC	West Indies Oil Company

1. Elaboration of the Narrative

1.1 Situation Analysis

Antigua and Barbuda is located in the north-eastern Caribbean at 17 N and 43W. The islands comprise 440 sq kms of land space and include a number of offshore isles and rocks. The 2001 provisional population of Antigua and Barbuda¹ is estimated at approximately 75,741² people with over 50% of the population residing in the parish of St. John's. The combination of small population and small land area makes Antigua and Barbuda the second smallest country in the western hemisphere³ and one of the smallest countries in the world.

Topographically, the islands of Antigua and Barbuda consist primarily of low-lying coral and limestone landscapes with some volcanic areas of higher elevation. Despite their small size, the islands contain extensive biodiversity resources particularly in the coastal and marine environment including a number of endemic and threatened species.

Antigua and Barbuda's economy is dominated by the tourism and services sectors. During 2004 the economy of Antigua and Barbuda grew by an estimated 5.2% due primarily to expansion in the tourism, transport and retail and wholesale sectors⁴. Nevertheless a number of obstacles exist to sustained economic growth, arising in many instances from severe diseconomies of scale and scope in production and marketing. These are further compounded by high unit costs of infrastructure and public administration. Antigua and Barbuda is also vulnerable to a range of climatic and non-climate related natural disasters including hurricanes, droughts, earthquakes and volcanic activity⁵.

To address some of the economic challenges facing Antigua and Barbuda, the government has embarked on a programme of fiscal restructuring aimed at improving management of government expenditures and reducing national debt, while promoting private sector led growth in tourism and other productive sectors.

Sustainable management of the natural environment is regarded as a priority concern as is the sustained development of the economy. The Initial National Communication establishes Antigua and Barbuda's vulnerability to existing weather conditions and to future climate change. The Environment Division of the Ministry of Public Works, Transport and the Environment provides the main coordinating center for environmental policy and management, and the preparation of the SNC will be implemented by the Environment Division. This will strengthen the role of that agency in responding to climate change issues and concerns. Project management will include participation of other key agencies in technical oversight and delivery.

¹ Antigua and Barbuda Preliminary Census Report 2001, Department of Statistics, Ministry of Planning and Implementation. Antigua

² This figure is based on estimated resident population, as determined by the results of the 2001 census.

³ The neighboring State of St Kitts and Nevis is the smallest nation in the western hemisphere.

⁴ Eastern Caribbean Central Bank. Annual Economic and Financial Review 2004

⁵ While Antigua and Barbuda is not itself at risk from volcanic activity within its territory, continuing volcanic activity since 1995 on the neighboring territory of Montserrat has resulted in frequent ash falls as well as the resettlement of displaced Montserratans to Antigua and Barbuda.

Other governmental and non-governmental organizations and agencies are expected to be involved in the production of the SNC including the Meteorological Office, the ministry of Agriculture, the Antigua and Barbuda Public Utilities Authority (APUA), and the Barbuda Council. Outputs and synergies with ongoing sustainable development initiatives related to climate change such as biodiversity, ozone depletion, land degradation, and environmental management will be integrated with climate change initiatives through *inter alia* a technical steering committee and the National Coordinating Mechanism for environmental conventions, an ongoing initiative for improved coordination coordinated by the Environment Division. Emphasis will be placed on public awareness of climate change issues and concerns.

In addition to enabling Antigua and Barbuda to prepare and submit its SNC the project is therefore expected to strengthen technical capacities for responding to climate change among sectoral agencies as well as improving general knowledge and awareness of climate change.

1.2. Strategy

The UNDP Sub-Regional Country Assessment (2005) (Barbados and the OECS) identifies risk reduction to natural hazards and climate change as a priority area for action. In this regard, the SNC will respond to a major local, sub-regional and regional concern. At the widest sense the project aims at strengthening the country's capacity for sustainable development and for integrating concerns for climate change into national development. Specifically, the project is aimed at assisting Antigua and Barbuda to meet its reporting obligations under the UNFCCC. In fulfilling these mandates the project is expected to build capacity for responding to development challenges relating to climate change.

The project emphasizes capacity building through training, public awareness, data collection and archiving, and through strengthening institutional cooperation and exchange at national and regional levels. Emphasis will be on building capacity to respond to climate change including strengthening national capacity to prepare subsequent national communications. Significant cooperation is envisaged with the Caribbean Community Climate Change Centre (CCCCC) and other regional projects and programmes supported by the GEF and UN system. Realization of project objectives will support implementation of the UN Millennium Development Goals (MDG) particularly MDG goals for environmental sustainability and developing global partnerships for development.

1.3. Management Arrangements

See Management Arrangements in Appendix B, Section 5.

1.4 Monitoring and Evaluation

Monitoring responsibilities and events

A detailed schedule of project reviews meetings will be developed by the project management, in consultation with project implementation partners and stakeholder representatives and incorporated in the Project Inception Report. Such a schedule will include: (i) tentative time frames for Steering

Committee Meetings, (or relevant advisory and/or coordination mechanisms) and (ii) project related Monitoring and Evaluation activities.

Day to day monitoring of implementation progress will be the responsibility of the Project Coordinator, Director or CTA (depending on the established project structure) based on the project's Annual Workplan and its indicators. The Project Team will inform the UNDP-CO of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely and remedial fashion.

Periodic monitoring of implementation progress will be undertaken by the UNDP-CO through quarterly meetings with the project proponent, or more frequently as deemed necessary. This will allow parties to take stock and to troubleshoot any problems pertaining to the project in a timely fashion to ensure smooth implementation of project activities.

Project Monitoring Reporting

The Project Coordinator in conjunction with the UNDP-GEF extended team will be responsible for the preparation and submission of the following reports that form part of the monitoring process.

(a) *Inception Report (IR)*

A Project Inception Report will be prepared immediately following the Inception Workshop. It will include a detailed First Year Work Plan divided in quarterly timeframes detailing the activities and progress indicators that will guide implementation during the first year of the project. The Report will also include the detailed project budget for the first full year of implementation, prepared on the basis of the Annual Work Plan, and including any monitoring and evaluation requirements to effectively measure project performance during the targeted 12 months time-frame.

The Inception Report will include a more detailed narrative on the institutional roles, responsibilities, coordinating actions and feedback mechanisms of project related partners. In addition, a section will be included on progress to date on project establishment and start-up activities and an update of any changed external conditions that may effect project implementation.

When finalized the report will be circulated to project counterparts who will be given a period of one calendar month in which to respond with comments or queries. Prior to this circulation of the IR, the UNDP Country Office and UNDP-GEF's Regional Coordinating Unit will review the document.

(b) *Quarterly Progress Reports*

Short reports outlining main updates in project progress will be provided quarterly to the local UNDP Country Office and the UNDP-GEF regional office by the project team.

(c) *Technical Reports*

Technical Reports are detailed documents covering specific areas of analysis or scientific specializations within the overall project. As part of the Inception Report, the project team will prepare a draft Reports List, detailing the technical reports that are expected to be prepared on key areas of activity during the course of the Project, and tentative due dates. Where necessary this Reports List will be revised and updated, and included in subsequent APRs. Technical Reports may also be prepared by external consultants and should be comprehensive, specialized analyses of clearly defined areas of research within the framework of the project. These technical reports will represent, as appropriate, the project's substantive contribution to specific areas, and will be used in efforts to disseminate relevant information and best practices at local, national and international levels.

Audit Clause

The Government will provide the Resident Representative with certified periodic financial statements, and with an annual audit of the financial statements relating to the status of UNDP (including GEF) funds according to the established procedures set out in the Programming and Finance manuals. The Audit will be conducted by the legally recognized auditor of the Government, or by a commercial auditor engaged by the Government.

1.5 Legal Context

This Project Document shall be the instrument referred to as such in Article I of the Standard Basic Assistance Agreement between the Government of Antigua and Barbuda and the United Nations Development Programme, signed by the parties [date]. The host country implementing agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the government co-operating agency described in that Agreement.

UNDP acts in this Project as Implementing Agency of the Global Environment Facility (GEF), and all rights and privileges pertaining to UNDP as per the terms of the SBAA shall be extended mutatis mutandis to GEF.

The UNDP Resident Representative is authorized to effect in writing the following types of revision to this Project Document, provided that he/she has verified the agreement thereto by GEF Unit and is assured that the other signatories to the Project Document have no objection to the proposed changes:

- a) Revision of, or addition to, any of the annexes to the Project Document;
- b) Revisions which do not involve significant changes in the immediate objectives, outputs or activities of the project, but are caused by the rearrangement of the inputs already agreed to or by cost increases due to inflation;
- c) Mandatory annual revisions which re-phase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility; and
- d) Inclusion of additional annexes and attachments only as set out here in this Project Document.

2. Total Budget

EXPECTED Outcomes	OUTPUTS (and corresponding indicators)	RESPONSIBLE PARTY	PLANNED BUDGET								
			Source of Funds	Budget Code	Budget Description	Year 1 (US\$)	Year 2 (US\$)	Year 3 (US\$)	Total Budget (US\$)		
Preparation and submission of National Communications	National Circumstances	Environment Division	GEF	71300	Local consultants		\$5,000.00			\$5,000.00	
	Total National Circumstances									\$5,000.00	
	National Greenhouse Gas Inventories	Environment Division	GEF	71300	Local consultants		\$5,000.00	\$6,000.00	\$3,000.00	\$14,000.00	
			GEF	71200	Int. Consultants		\$10,000.00	\$8,000.00		\$18,000.00	
			GEF	71600	Travel		\$4,000.00	\$4,000.00	\$4,000.00	\$12,000.00	
			GEF	72100	Service contracts		\$5,000.00	\$8,000.00	\$5,000.00	\$18,000.00	
					Miscellaneous		\$1,000.00	\$1,000.00	\$1,000.00	\$3,000.00	
	Total National Greenhouse Gas Inventories						\$25,000.00	\$27,000.00	\$13,000.00	\$65,000.00	
	Programmes containing measures to facilitate adequate adaptation to climate change			GEF	71300	Local consultants		\$10,000.00	\$14,000.00	\$7,000.00	\$31,000.00
				GEF	71200	Int. Consultants		\$5,000.00	\$5,000.00	\$5,000.00	\$15,000.00
			GEF	71600	Travel		\$4,000.00	\$4,000.00	\$4,000.00	\$12,000.00	
			GEF	72100	Service contracts		\$7,000.00	\$8,000.00	\$6,000.00	\$22,000.00	

3. Appendices

Appendix A: Summary Report of the Self-Assessment Exercise

A.1 Background

A national climate change self-assessment exercise was undertaken in accordance with GEF Operational Procedures for the Expedited Financing of National Communications from Non-Annex I Parties (*GEF/C.22/Inf.16*). The aim of the self-assessment was to conduct a consultative process of needs assessment, to identify and validate the critical priorities for the SNC process, and to gain stakeholder support for and involvement in the SNC project process.

The methods used for the stocktaking included: (i) review of relevant documents; (ii) internet based consultations with stakeholders; (iii) personal interviews with stakeholders; and (iv) consultative meetings / workshops. The self-assessment activity involved consultations with stakeholders from public and private sectors as well as from NGOs (See matrix of stakeholders consulted below). Special focus was placed on institutions that had played a role in the INC and other earlier climate change related activities, as well as institutions likely to be involved in the SNC, and with the print media in an attempt to advance public information on the upcoming SNC activities.

The self-assessment was initiated through the preparation of the stocktaking report utilizing documented information (including the INC) and stakeholder consultations. This document was then used as the main information source for a series of consultations with a wider circle of stakeholders. A summary document of components of the stocktaking report served as the working document for a consultation involving a broader circle of stakeholders. That consultation was intended to:

- Inform stakeholders of the initiation of project activities;
- Further stakeholder input into project preparation and project activities; and
- Gain stakeholder interest in involvement with the SNC process.

Agencies with which consultations were initiated during the self-assessment activities are identified in the stakeholder matrix below.

A.2 Assessment of INC

Implementation of the climate change Enabling Activity proceeded in two phases. Phase 1 involved activities leading to preparation of the country's INC. This was followed by a "Top-Up" phase intended to address weak areas identified during preparation of the INC.

Preparation of the INC was based on the guidelines for the preparation of initial national communications as outlined in the Appendix to UNFCCC Decision 10/CP.2. Antigua and Barbuda successfully submitted its INC in line with its responsibilities under the UNFCCC.

The National Circumstances chapter of the INC provided a succinct overview of information on the history, climate, geography and geology, political institutions, and economy of Antigua and Barbuda. Statistical tables provide historical rainfall and temperature figures. As recommended in the annex to UNFCCC decision 10CP/2 the National Circumstances chapter also provided a Table, utilizing a standard format provided in 10/CP2, to indicate certain baseline information relevant to providing a context for understanding of climate change issues and concerns.

The INC reports the GHG Inventory in accordance with the requirements of UNFCCC decision 10/CP.2. The GHG Inventory was done on an individual sector basis for the energy; industrial processes; agriculture; land use, land use change and forestry; and wastes sectors. For energy the Inventory covered 1990 and 1994 and 1990 for other sectors. The IPCC Revised 1996 Guidelines for National Greenhouse Gas Inventories (Volumes 1, 2 and 3) and accompanying software were used. Default emission factors provided by the IPCC were utilized. Weaknesses in activity data exists in all sectors, being most significant for the Energy, Land Use, Agriculture, and Waste sectors.

The Inventory identifies Antigua and Barbuda as a net emitter of GHGs. The Energy sector is the major source of GHG emissions, with the electricity generation and road transport sectors comprising collectively for over 90% of emissions. Information on International Bunkers is limited to the aviation sector and there is need for data on maritime transportation. An Uncertainty Analysis of the Inventory is provided using the IPCC software

In relation to V&A, the INC provides an overview of the results of various studies earlier undertaken of climate change impacts and adaptations for Antigua and Barbuda. In particular the report relied heavily on work undertaken in 1996 and 1997 during a United Nations Environment Programme (UNEP) sponsored climate change pilot project in Antigua and Barbuda as well as on work conducted by a team of local consultants. The chapter contains a synopsis of the main findings and conclusions in terms of impacts and adaptations for human settlements and tourism, coastal zones, fisheries, agriculture, water resources, and human health. Synthetic scenarios for climate change are used based on IPCC projections for temperature, rainfall, and sea level rise.

The INC highlights Antigua and Barbuda's existing vulnerability to present day weather events such as hurricanes and droughts, points to a number of likely adverse impacts of climate change on Antigua and Barbuda, and proposes various adaptation options for addressing the various sectoral concerns. Adaptation options are both sector specific (e.g. building setbacks for coastal zone) and macro (e.g. public awareness). Adaptation options are outlined as indicative project proposals but do not provide costs

For the INC a preliminary assessment of climate change mitigation policies and measures was prepared, bringing together information from previous national reports along with information from interviews and from IPCC, UNFCCC and other sources. The report identifies various win/win responses capable of providing sustainable development benefits even without climate change considerations. Chapter 3 of the INC provides an overview of information on Antigua and Barbuda's mitigation options and makes recommendations for Mitigation with regards to institutional development, electricity, renewable energy particularly wind and solar, and road transportation.

In the INC, mitigation options were not comprehensively assessed due to a number of factors including the decision to focus resources on the vulnerability and adaptation and greenhouse gas inventory sections of the

report, the limited analytical tools and models oriented to small island developing States, and limited expertise.

Chapter 5 of the INC looks at a number of other areas of climate change response including Research and Systematic Observation focusing on meteorological and climatological monitoring and observation efforts and capabilities in Antigua and Barbuda; efforts for promoting public awareness of climate change; capacity building measures related to climate change; and initiatives for promoting sustainable development. These sections also provide information on synergies with other conventions and activities related to climate change.

Broad objectives and activities for Financial and Technological Needs are identified in chapter 6 of the INC. These include integrating climate change into development planning, climate change public information and awareness, promoting sustainable energy, and construction of purpose built storm shelters. The financial and technological needs are presented in the form of indicative project concepts but no financial costs or socio-economic analysis were provided.

In relation to institutional arrangements, the project was administered by the Prime Ministers Office which also served as national focal point for UNDP projects. A national project coordinator, an administrative assistant and secretary provided managed day-to-day responsibilities while various national, regional and international consultants provided technical inputs. A Technical Advisory Committee was established comprising representatives from government agencies and an environmental NGO. Problems facing the project in its initial phases included:

- Limited technical capability at the national level;
- Initial lack of interest by some stakeholders in climate change issues and concerns;
- Difficulties in establishing and maintaining coordinating structures;
- Difficulties arising from operating outside of an agency actively involved with sustainable development issues; and
- Limited availability of appropriate technical instructional material.

The project benefited substantially from regional and international cooperation and contacts. This included cooperation with the regional Caribbean Planning for Adaptation to Climate Change (CPACC) project, the National Communications Support Programme (NCSP) training workshops, and from participation at (Association of Small Island States) AOSIS and UNFCCC sponsored conferences and workshops.

A.3 Top-Up Activities

Following the preparation of the INC Antigua and Barbuda has been involved in implementation of a set of “top-up” activities designed to strengthen national capabilities for reporting under the UNFCCC. In Antigua and Barbuda the following activities were conducted as part of the “top-up”:

- **Technology Transfer Needs Assessment:** This involved preparation of a technology needs assessment utilizing available international methodologies and identified six priority areas for technology development to enable Antigua and Barbuda to successfully respond to climate change issues and concerns.
- **GHG Inventory training.** Two training workshops were held aimed at sensitizing national stakeholders with the IPCC GHG Inventory process. Participation involved public and private

sector representatives and included distribution of IPCC software. One national participant subsequently also participated in a UNFCCC/USAID regional workshop.

- Climate Change Impact Assessment of the Tourism Sector. A sensitivity study utilizing a leading national and regional tourism and environment planner was conducted. The study looked at various sub-sectors of the industry (hotels, cruise, and yachting), identified various possible impacts and identified “no regrets” adaptation options.
- Climate Change Impact Assessment of the Health Sector. An in-depth review was done of possible impacts of climate change in Antigua and Barbuda based on projections for climate change and national health issues and parameters.
- Vulnerability and Adaptation assessment training. Two workshops were held to train public and private sector personnel in MAGICC:SCENGEN and other modeling tools.
- Public Awareness activities through a series of articles placed in local newspapers and through lectures at educational institutions.
- Establishment of a climate change web-page on the Environment Division’s web site.

These areas were identified in order to strengthen weaknesses identified during the INC process either in terms of information, as in the case of the tourism and health assessments, or in building local capacity in the form of the GHG and Vulnerability and Adaptation training.

A.4 Synergies with other Programmes

Implementation of the INC involved coordination and cooperation with other environmental initiatives and structures. The most effective synergies related to implementation of the UNFCCC and UNCBD enabling activities. This involved joint workshops and other activities. The NCM coordinated by the Environment Division provided an important forum for exchange of information with a wide range of environmental stakeholder agencies and organizations on a programmed and regular basis.

In addition to the climate change enabling activity project, there were a number of other activities that focused on climate change and sustainable development issues of direct concern to the process of preparation of second national communications. It is important that efforts are made to integrate climate change activities with other sustainable development initiatives given the scientific linkages that exist between such activities and the need to maximize use of limited technical and financial resources. These include outputs from projects and programmes directly linked to climate change such as the Caribbean Planning for Adaptation to Climate Change (CPACC) and Mainstreaming Adaptation to Climate Change (MACC) projects and their successor activities, as well as non-climate change related programmes such as the Convention on Biological Diversity (CBD), the United Nations Convention to Control Desertification (UNCCD) and the National Capacity Self Assessment (NCSA) project. The establishment of the Caribbean Community Climate Change Centre (CCCCC) provides an important source of technical expertise and data for the SNC process.

Opportunities for synergy include sharing and exchange of information among the conventions, holding of joint workshops, and implementation of other activities particularly public awareness. Information generated for the CBD and UNCCD processes will be important to many aspects of the SNC and *vice versa*. Structured efforts should be pursued through steering committees, the NCM and other means to ensure and foster input from these processes into the SNC. The dual coordinating and implementation roles of the Environment Division should assist this process.

A.5 Main Priorities for SNC

The self-assessment process identified a number of information needs for the SNC. Some of these are presented in the tables below.

National circumstances

Information Need	Rationale	Resource Needs	Key Stakeholders/Sources
<p>Expanded baseline climate data including</p> <ul style="list-style-type: none"> ➤ Barbuda rainfall and temperature, ➤ Coastal processes (sea level, tidal movement, sea surface temperatures) ➤ Updated Antigua rainfall and temperature data, ➤ Wind and solar regime data. ➤ Weather events and features. ➤ Regional weather patterns, trends and projections. ➤ Expanded cartographic and photographic coverage. 	<p>To expand and update information in the INC and to provide additional information relevant to various other sectors of the SNC.</p>	<p>Local consultant researcher to do literature search, web-search, interviews, compile maps, and prepare information package for Project managers.</p>	<p>Meteorological Department, Ministry of Agriculture, Environment Department, Fisheries Department, Environmental Awareness Group. CBD and UNCCD documentation.</p>
<p>Expanded and updated socio-economic and environmental data.</p> <ul style="list-style-type: none"> ➤ Updated economic activity data ➤ Energy related data including electricity consumption and growth, cost of petroleum. ➤ Updated demographic 	<p>To update and expand information in the INC and to provide additional information relevant to various other sectors of the SNC.</p>	<p>Local consultant researcher to do literature search, web-search, interviews, compile maps, and prepare information package for Project management. Editorial expertise.</p>	<p>Statistics Division. National Office of Disaster Services. Government ministries (e.g. environment, national finance, health, tourism, labor), private sector organizations (hotel association, employers association, chamber of</p>

<p>information</p> <ul style="list-style-type: none"> ➤ Macroeconomic policy directions and emphases; ➤ Socio-economic costs of weather events e.g. drought and hurricane. 			<p>commerce). Eastern Caribbean Central Bank, Caribbean Development Bank. CBD, NCSA and UNCCD documentation.</p>
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GHG Inventory

Information Need	Rationale	Resource Need	Key Stakeholders
<p><i>Energy sector:</i> Fuel import, export and consumption data for 1994-2004.</p>	<p>Decision 17/CP.8 requires inventory data for 2000. This will fill the gaps since the INC and provide up to date information for the Inventory.</p>	<p>Use of the IPCC Guidelines and GPG is applicable to all aspects of the GHG Inventory. Local consultant for data collation and research. Revised IPCC 1996 GHG Inventory Guidelines and IPCC Good Practice Guidance (GPG).</p>	<p>WIOC, Texaco, Customs, Ministry of Finance, Statistics</p>
<p>Data on International bunkers⁶ including maritime transport;</p>	<p>International bunkers represent high percentage of petroleum imports. No information in INC on maritime transport.</p>	<p>Local consultant for data collation and research.</p>	<p>WIOC, Texaco, Customs, Statistics</p>
<p>Detailed information on road transport fleet;</p>	<p>Road transport represents fastest growth in petroleum use. Only limited data available for INC meant that estimates used in</p>	<p>Local consultant for data collation and research.</p>	<p>Ministry of Finance; Transport Board</p>

⁶ International bunkers are not recorded as national emissions within the IPCC GHG Inventory.

Electricity production and consumption by sector 1990-1994;	some areas. Electricity generation is a major emission source. Sectoral analysis needed for identifying and evaluating mitigation measures.	Local consultant for data collation and research.	APUA, Antigua Power Ltd
Charcoal and other biomass fuel production.	No information was available for this for the INC.	Local consultant for data collation and research.	Ministry of Agriculture. Charcoal producers.
Industrial sector: Additional information on industrial sector	The industrial sector represents a very small sector of greenhouse gas emissions for Antigua and Barbuda.	Local consultant for data collation and research.	Chamber of Commerce. Ministry of Finance and Economy.
Agricultural sector Information on agricultural production.	Small contribution to national greenhouse emissions. Weaknesses in activity data could be improved upon.	Local consultant for data collation and research.	Ministry of Agriculture. CARDI. IICA.
Wastes Information on waste generation and disposal.	The aim should be to improve on estimates used in INC.	Local consultant for data collation and research.	CBH. National Solid Waste Management Authority.
LULUCF Information on land use changes.	Moderate priority. Only very small contribution to GHG emissions. This was a weak area in the INC.	Local consultant for data collation and research.	Ministry of Agriculture. Lands and Survey department.
Training, Management and Preparation of the Inventory	Aim is to build national capacity and promote sustainability of preparation of the	IT hardware and software. Training.	APUA, Environment Division, Statistics Division,

	GHG Inventory.		Ministry of Agriculture, Met Office, Energy Unit, Environmental Awareness Group, State College.
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Vulnerability and Adaptation

Information Need	Rationale	Resource Need	Key Stakeholders
Climatic & Natural Resource data Updated and expanded weather and climatic information. Trends in resource use.	To determine base-line conditions for assessment. Improve on work of INC.	Local consultant for data collation and research. Regional/international consultant for training and guiding process	Meteorology, health, agriculture, tourism, fisheries, water etc. Community knowledge.
Socio-economic data⁷ Population growth rates and projections. Demographic trends and projections. Projections and plans for socio-economic growth.	To determine base-line conditions for assessment. Improve on information in the INC.	Local consultant for data collation and research. Regional/international consultant for training and guiding process	(See also national circumstances above). Sectoral ministries/agencies. Private sector organizations. Eastern Caribbean Central Bank.
Modeling and forecasting Sea-level rise and storm surge. Modeling of climate change. Regional climate models.	To satisfy the more rigorous methodological requirements of 17/CP.8.	Computer software and hardware. Regional/international training expertise. Training workshops for national participants.	Meteorological department. Sectoral ministries/agencies: agriculture, planning, fisheries, environment, and forestry. Regional and international partner

⁷ See also key stakeholders and information sources identified at national circumstances chapter.

			agencies.
Tourism Tourism sector development plans and trends. Physical characteristics of touristic resources.	Tourism is the country's main economic activity. Limited attention paid to tourism in INC.	Local consultant for data collation, research, and monitoring.	Tourism stakeholders in public and private sectors.
Water supply Water sources and characteristics of demand. Demand and supply scenarios. Technology options.	Water resource availability is already a concern and is expected to be further stressed by climate change.	Local consultant for data collation, research. And monitoring.	APUA. Ministry of Agriculture. Ministry of Health.
Human Health Existing health sector characteristics. Existing problems in health sector. Technology options.	Health is a critical component of development. Impacts on health sector from climate change will require the development of appropriate adaptation techniques and methods.	Local consultant(s) for data collation and research.	Ministry of Health, Statistics Division.
Coastal zone Sea level rise data. Cartographic data of coastal areas. Land use patterns and development pressures in coastal areas. Adaptation measures for coastal zone management. Fisheries data and resource characteristics.	Economic activity is centered in, and dependent on, coastal areas and resources. Major impacts are already underway with coastal areas especially vulnerable to climatic forces such as hurricanes and sea level rise.	Local consultant(s) for data collation, climate change modeling and research.	Fisheries Department. Environment Division. Development Control Authority. Hotel association. Environmental activists.
Agriculture Agricultural crop and animal production. Production	Climate change will have direct and indirect impacts on agricultural	Local consultant(s) for data collation, climate change modeling and	Ministry of Agriculture, farmers groups. IICA.

characteristics.	production.	research.	
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Mitigation of climate change

Information Need	Rationale	Resource Need	Key Stakeholders
<p>Electricity Generation Generation capacity, projected demand and supply, costs, equipment types, demand structure, legal and institutional structures. Future plans. Existing problems.</p>	<p>To identify base-line situation and projections for future regarding demand and supply. To improve on the information and level of analysis presented in the INC.</p>	<p>Local consultant for data collation, research, analysis and reporting.</p>	<p>APUA, private sector power generators. Consumer groups. Ministry of Finance. Ministry of Environment.</p>
<p>Road Transportation Vehicle fleet size and breakdown. Assessment of existing energy efficiency. Road transportation policy initiatives. Legal and institutional structures for road transportation</p>	<p>To identify base-line situation and projections for future demand and supply. To improve on the information and level of analysis presented in the INC.</p>	<p>Local consultant for data collation and research.</p>	<p>Antigua and Barbuda Transport Board. Ministry of Finance. Car importers and salespersons. Mechanics.</p>
<p>Renewable Energy Wind, solar, biomass and other data.</p>	<p>To identify base-line situation and projections for future regarding demand and supply. To improve on the information and level of analysis presented in the INC.</p>	<p>Local consultant for data collation and research. International expert for technical assessment of resource.</p>	<p>Meteorological Office. Ministry of Agriculture. Private sector. APUA. Caribbean Renewable Energy Development Project (CREDP).</p>

Other Information

Information Need	Rationale	Resource Need	Key Stakeholders
<p>Systematic research and observation (RSO) Status of national and regional programmes for RSO. Meteorological, atmospheric and oceanographic research findings/info. Needs and priorities for RSO.</p>	<p>This provides information for understanding climate system. Update previous report.</p>	<p>National consultant(s) to do data gathering. Collaboration with GCOS.</p>	<p>National meteorological service, environment division, Fisheries Division, Lands and Survey dept.</p>
<p>Technology needs assessment Technology needs assessment report. Meteorological data relevant to identifying climate change technology needs.</p>	<p>Technology will be critical to efforts for adaptation and mitigation of climate change.</p>	<p>National consultant.</p>	<p>APUA, Ministry of Finance, Transport Board, Environment Division. Public and private sector interests.</p>
<p>Sustainable development activities including linkages with other environmental conventions</p>	<p>The need exists to ensure linkages between climate change and other environmental and development activities.</p>	<p>National consultant to prepare report on linkages and synergies. Consultative process for</p>	<p>Environment Division, National Coordinating Mechanism for Environmental Conventions (NCM), Environmental Awareness Group, NGOs, CBOs. NCSA activities are the UNCCD and CBD conventions.</p>
<p>Constraints and gaps and related financial, Technical and capacity needs</p>	<p>To identify priority areas for responding to climate change and to requirements of the UNFCCC in line with the</p>	<p>National consultant to prepare report and undertake stakeholder consultations.</p>	<p>NCSA outputs and documents. Public and private sector stakeholders.</p>

	requirements of 17/CP.8		
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A.6 Lessons learned

The self-assessment activity identified a number of considerations for guiding implementation of the SNC. These include:

- A critical issue is the need to institutionalize preparation of the climate change enabling activity within a sectoral agency with a clear mandate and the institutional capability for this type of portfolio. The move to institutionalize responsibilities for climate change within the Environment Division should address this need and also promote integration of climate change programmes with UNCBD, NCSA, UNCCD, the Montreal Ozone protocol and other programmes.
- Public awareness of climate change remains limited. The SNC should emphasize increasing public awareness of critical vulnerability/adaptation and mitigation issues relating to climate change. Emphasis should be on providing technical officials and the general public with information relevant to enabling adaptation and mitigation at their levels.
- Greater attention should be placed in the SNC on climate change V&A and mitigation issues in Barbuda in view of that islands particular ecological and climatic conditions, its structure of economic development, and its high level of vulnerability to existing weather and climate.
- For the three principal technical areas of the SNC i.e. GHG Inventory, Vulnerability and Adaptation, and Mitigation there will be the need to contract regional or international expertise to lead the process, provide back-up expert services and advice, and to ensure delivery of a suitable product. The foreign expert should work alongside local counterpart expertise in all cases with a specific mission to support capacity building.
- A specific institutionalization need exists for the preparation of the GHG Inventory, a legal obligation of Antigua and Barbuda under the UNFCCC. The Environment Division would appear to be the most likely lead agency.
- The reconstituting of a project steering committee will be vital to successful project implementation. The steering committee is critical for providing technical guidance, fostering institutional ownership, and supporting the objectives of the convention by incorporating climate change concerns into departmental work plans and activities.
- The active technical participation of the Meteorological Department is essential for moving forward public awareness and scientific investigation into climate change in Antigua and Barbuda. Important technical capacity as well as interest exists within the Department for assisting in implementing climate change related activities.
- Opportunities exist for enhanced cooperation between work relating to climate change and the NCSA project, and the biodiversity, land degradation/desertification and ozone conventions. This includes sharing/pooling of data for the preparation of their respective national reports, and through joint workshops and other joint events e.g. exhibitions and publications.

Attachment A: Stakeholders Matrix

Name of institutions / stakeholders consulted	Stakeholder interests, official position or mandate	Reasons for inclusion	Role in the self-assessment process (e.g. consultation, preparation of draft report, data provider)
Environment Division	Management of the project. Responsible for coordination of environmental issues.	Central stakeholder and project manager.	Coordination and management of project activities. Data provider.
Department of Agriculture	Promotes sustainable agricultural development.	Agriculture sector and issues critical to GHG, V&A and mitigation issues.	Data provider, technical advisory, and awareness roles.
Forestry Division	Responsible for management of forestry resources.	Important to GHG and V&A assessments.	Data provider, technical advisory, and awareness roles.
National Meteorological Department	Responsible for collection, analysis and distribution of weather and climate information.	Will manage V&A component. Important technical resource capabilities.	Data provider, project management, technical advisory, and awareness roles.
Antigua Public Utilities Authority (APUA)	Sole public distributor of electricity. Responsible for management and delivery of potable	Vital to GHG, Mitigation and V&A components. Important technical resource capabilities.	Data provider, technical advisory, and awareness roles.

	water.		
Barbuda Council	Elected local government body responsible for most public services in Barbuda.	Barbuda will be a focus for SNC process.	Data provider, technical advisory, and awareness roles.
Antigua and Barbuda Transport Board	Responsible for regulation of road transportation in Antigua and Barbuda.	Vital to GHG inventory and Mitigation components.	Data provider and awareness roles.
Employers Federation	Principal private sector employer's body.	Important for implementation of adaptation and mitigation.	Data provider and awareness roles.
Fisheries Division	Protection and management of fisheries including habitats.	Important environmental management agency especially in coastal activities.	Data provider and public awareness roles. Participation in project technical advisory roles.
Central Board of Health/Ministry of Health	Responsible for management and delivery of health services.	Health policy and management agency.	Data provider and public awareness roles. Participation in project technical advisory roles.
Environmental Awareness Group	Leading non-governmental environmental pressure group.	Leading awareness and advocacy group. Technical support capabilities.	Data provider and public awareness roles. Participation in project

			technical advisory roles.
National Solid Waste Management Authority	Government agency responsible for collection and management of solid wastes.	Important environmental management agency in health related matters.	Data provider and public awareness roles. Participation in project technical advisory roles.
West Indies Oil Company	Main importer and distributor of petroleum products.	Principal player in relation to petroleum products in Antigua and Barbuda.	Data provider.
Chamber of Commerce	Leading private sector representative body.	Need to sensitize private sector policy makers.	Possible data provider and awareness roles.
Antigua Power Company	Private generator and seller of electricity.	Largest producer of electricity.	Data provider.
National Office of Disaster Services	Responsible for disaster response coordination and management	Information source for climate risk and vulnerability. Implementation role for adaptation.	Data provider and public awareness roles. Participation in project technical advisory roles.
National Refrigerator Repair Association	Promoting awareness of ozone friendly refrigeration practices.	Technical cooperation and exchange with environmental stakeholders.	Data provider and public awareness roles. Participation in project technical

			advisory roles.
National Economic and Social Council	Policy advice on macro socio-economic development.	Statutory responsibility to interface on sustainable development issues.	General awareness.
Planning Unit, Ministry of Finance.	Responsible for coordination of multi-sector planning.	Important for efforts to integrate climate change concerns into development planning and activities.	Enhance coordination and synergy with stakeholders.
Statistics Division	Provider of statistical data. Archiving center.	Important in providing data across a range of INC chapters.	Data provider.
Texaco	Importer of aviation fuels and other petroleum products.	Important distributor of petroleum products.	Data provider.
Observer newspaper	National newspaper	Effort to increase public awareness of climate change.	Public awareness.
Antigua Sun newspaper	National newspaper	Effort to increase public awareness of climate change.	Public awareness
Development Control Authority	Responsibility for regulation of the built environment	Information source for climate risk and vulnerability. Implementation role for adaptation.	Data provider and public awareness roles. Participation in project technical advisory roles.

APPENDIX B: TECHNICAL COMPONENTS OF THE PROJECT PROPOSAL

1. BACKGROUND/CONTEXT

Antigua and Barbuda is an archipelagic small island developing State located in the northeastern Caribbean with a population of 75,000 people and total land area of 440 sq kms. The country consists of two main inhabited islands and a number of islets and rocks. Antigua and Barbuda became a signatory to the UNFCCC in 1992 and subsequently ratified the convention in 1993 and the Kyoto Protocol in 1998. The country submitted its INC in September 2001.

Both main islands are predominantly low-lying coral and limestone formations with Antigua also consisting of areas of volcanic origin. The islands presently experience a tropical maritime climate reflecting the dominant nature of the oceans on local and regional weather.

The Antigua and Barbuda economy is dominated by tourism and other service sectors. Agriculture, including fisheries, presently constitutes approximately 5% of economic activity. Economic growth remains dependent on external factors as was seen in decline in tourist receipts following the 9/11 events in the USA. The country is a member of the Organization of Eastern Caribbean States (OECS) and the Caribbean Community (CARICOM) regional cooperation and integration movements. It shares a number of common services with other OECS countries including a common currency and common judiciary. The country achieved constitutional independence from the United Kingdom in 1981 and remains a member of the Commonwealth of Nations.

Notwithstanding constraints associated with small size and associated structural dependence, Antigua and Barbuda has achieved significant advancement in human development indicators. These include low levels of childhood and infant mortality, access to health facilities, and universal educational opportunity. For 2003, Antigua and Barbuda was ranked at number 56 on the UN Human Development Index, at the top of the Medium Human Development classification. Nevertheless, the country's economy is characterized by high levels of import and technology dependence, high infrastructural costs, limited possibilities for economies of scale, an inflated public sector, and a large external debt. During 2004 and 2005 increased petroleum import costs have constrained economic growth and competitiveness.

Antigua and Barbuda exhibit high degrees of vulnerability to existing weather and climate patterns particularly hurricanes and tropical storms, drought and coastal erosion. IPCC projections for climate change in the Caribbean region such as increased temperatures, greater variability in rainfall, accelerated sea-level rise, warmer ocean temperatures, and possibly more intense hurricane activity will have important adverse consequences for Antigua and Barbuda's sustainable development. Signals of changing regional weather and climate are already being experienced in relation to a number of meteorological variables.

In relation to mitigation of climate change, Antigua and Barbuda is a net emitter of GHGs coming primarily from emissions in the electricity generation and road transport sectors. Rapid and dramatic increases in petroleum prices have adversely affected economic growth and fuelled inflationary pressures. Interest is high in advancing use of available renewable energy sources.

Potential opportunities for renewable energy technologies include solar, wind, and waste to energy.

The islands also lie within an area of seismic activity including earthquakes and volcanoes⁸.

The Environment Division of the Ministry of Public Works, Transport, Communications and Environment has lead responsibility for coordination of environmental management and is also charged with responsibility for implementation of most of the multilateral environmental conventions to which Antigua and Barbuda is signatory. The Environment Division will be responsible for the implementation of the SNC project. Existing environmental problems include solid and liquid waste management, deforestation, and destruction of coastal habitats and processes from development pressures.

2. PROJECT OBJECTIVES

Project Development Objective:

“The project will strengthen technical and institutional capacity to assist Antigua and Barbuda mainstream climate change concerns into sectoral and national development priorities.”

Project Immediate Objective:

“The project will enable Antigua and Barbuda to prepare and submit its second national communication to the UNFCCC and meet its Convention obligations”

3. PROJECT STRATEGY

Implementation of the SNC project is intended to strengthen and develop national capacity to respond to climate change while ensuring linkage with existing development priorities. To achieve this it will be necessary to promote incorporation of climate change concerns into development planning. Measures to achieve this will include training, public awareness, strengthening information capabilities, and enhanced networking among agencies.

The project will utilize skills and resources established under the INC and other initiatives and will network extensively with other Caribbean regional climate change initiatives in training and access to technical expertise. Emphasis on training is intended to establish a cadre of technical expertise at national level. Public awareness activities are intended to begin to inform individual, community, enterprise, and macro level responses to climate change and to assist in building up constituencies of support for climate change adaptation and mitigation measures.

Networking among institutions in project implementation as well as strengthening software and hardware capabilities are intended to promote support for incorporation of climate change concerns, including preparation of national communications, into institutional and policy mandates.

⁸ No active volcano exists in Antigua and Barbuda. However the neighboring island of Montserrat has experienced continuous volcanic activity since 1995 forcing resettlement of displaced persons in Antigua and Barbuda and elsewhere.

4. PROJECT ACTIVITIES

4.1 National circumstances

4.1.1 Priorities and Areas of Work for the SNC

To reflect increased availability of data and to update information in the INC, information in the SNC will include expanded and updated baseline climate data, socio-economic and environmental data and information, and information on institutional arrangements for climate change. The national circumstances chapter will also indicate plans for social and economic development and the relationship with climate change and other sustainable development programmes. Statistical tables, as recommended in UNFCCC decision 17/CP.8 will be used to provide information where appropriate.

Indicative activities are outlined in the project work plan.

4.1.2 Information Sources/Partner Agencies

Meteorological Department. Statistics Division. Environment Division. CBD. UNCCD. NCSA. ECCB.

4.2 Greenhouse Gas Inventory

4.2.1 Priorities and Areas of Work for the SNC

The INC reports the GHG Inventory in accordance with the requirements of UNFCCC decision 10/CP.2. The GHG Inventory was done on an individual sector basis for the energy; industrial processes; agriculture; land use, land use change and forestry; and wastes sectors. The IPCC Revised 1996 Guidelines for National Greenhouse Gas Inventories (Volumes 1, 2 and 3) and accompanying software were used. Default emission factors provided by the IPCC were utilized. Weaknesses in activity data existed in all sectors, being most significant for the Energy and Land Use, Agriculture, and Waste sectors.

The preparation of the GHG Inventory represents one of the principal legal obligations of Antigua and Barbuda under the UNFCCC. It is important that the information presented in the Inventory conforms to the methodological and other standards established by the international community for ensuring consistency and transparency in the reporting of the Inventory. The emphasis of the work relating to preparation of the GHG Inventory under the SNC is to develop the technical and institutional capacity for sustaining preparation of the Inventory utilizing IPCC and other internationally recognized methods. This should involve capacity building through training, data collection and archiving, access to appropriate computer equipment and software.

Hands-on in country training is a priority for fostering technical capability and national ownership of the Inventory and facilitating its preparation. It is also hoped to utilize available training opportunities at regional and international levels to provide training for select leaders of the Inventory process.

In line with the requirements of decision 17/CP.8 the inventory year to be reported is 2000. Inventories will also be prepared for select years between 1991 and 2004 to update information and allow for comparability and assessment of trends.

Antigua and Barbuda will utilize the IPCC “Revised Guidelines for National Greenhouse Gas Inventories” for estimating and reporting its greenhouse gas inventories. Antigua and Barbuda will also utilize the IPCC document “Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories”. Where any national or other non-IPCC methodologies are utilized these will be identified and information provided as to these methodologies to enable consistency and transparency.

Antigua and Barbuda’s second national GHG inventory will cover sources and sinks of greenhouse gases and all gases mandated by UNFCCC 17/CP.8. It will therefore consider three direct GHGs: CO_2 , CH_4 and N_2O and other indirect GHGs such as: CO , NO_x , SO_x and $NMVOG$. In addition, estimates of $HFCs$, $PFCs$ and SF_6 will be provided. Emissions from *bunker fuels* will be estimated and reported separately as instructed by the guidelines. Where possible estimates of the *key sources*, *sensitivity analysis* and *uncertainty level* will be provided. The SNC GHG inventory will report on estimates of aggregated GHG emissions and removals expressed in CO_2 equivalent. In addition, indicators such as CO_2/GDP and $CO_2/Capita$ would be estimated. All of these analyses will be based on the IPCC methodologies and best practices or other internationally recognized and available methods.

IPCC Tier 1 level analysis will be conducted for the SNC making use of available data. To the extent possible a key source analysis will be undertaken using appropriate IPCC methodologies.

Antigua and Barbuda will use both reference and sectoral approaches to estimate emissions. This is intended to enhance the accuracy of the GHG inventory by reducing the level of uncertainty. IPCC software and tools will be used in this exercise.

Additional information is required in all sectors for improving the quality of information to be presented in the Inventory. Efforts will be concentrated on particularly important gaps that relate to the energy sector (e.g. in road transport and electricity self generation) since these gaps are significant in terms of actual volume of GHG emissions. Efforts will also focus on improved information for activity data in agricultural, forestry, land use, and waste sectors. No efforts for development of country specific emission factors are envisaged and emphasis will continue to be on the use of IPCC default emission factors except where more specific documented regional or other data is available.

Information will be provided within the SNC as to the procedures and arrangements established to sustain the process of data collection and archiving for the national greenhouse gas inventory and of experiences in this regards.

Close collaboration should be sought with a number of key data sources including petroleum product suppliers, and electricity producers and various government agencies (e.g. statistics, agriculture, road transport). This is intended to facilitate information sharing and training in use of IPCC inventory methods. In some instances information technologies may be required to advance quality and sustainability of outputs.

Indicative activities are outlined in the project work plan.

4.2.2 Information Sources/Partner Agencies

WIOC, Texaco, Ministry of Finance, APUA, Antigua Power Ltd, Transport Board, Ministry of Agriculture, Environment Division, Statistics Division. Information from the UNCCD and CBD reporting processes will also provide important sources of information.

4.3 Programmes Containing Measures To Facilitate Adequate Adaptation To Climate Change

4.3.1 Priorities and Areas of Work for the SNC

The INC contains a synopsis of the main findings and conclusions in terms of climate change impacts and adaptations for human settlements and tourism, coastal zones, fisheries, agriculture, water resources, and human health. Synthetic scenarios for climate change were used based on IPCC projections for temperature, rainfall, and sea level rise in the Caribbean. The chapter draws heavily on an earlier substantive UNEP study on Antigua and Barbuda climate change impacts and adaptations.

The SNC will attempt to significantly expand the scope and depth of the V&A analysis presented in the INC. This envisages an approach aimed at building capacity through data collection and archiving, as well as the training of technicians from key agencies (Environment, meteorology, health, agriculture etc). Cooperation with regional and international sources for provision of training in V&A will be a priority activity. Additionally it is expected that outputs from earlier projects such as CPACC as well as ongoing initiatives such as those of the CCCCC will feed directly into the V&A assessments to be undertaken.

Sectors and areas to be covered in the SNC are:

- *water resources,*
- *health,*
- *coastal resources and fisheries,*
- *tourism,*
- *Barbuda,*
- *agriculture, and*
- *human settlements.*

These sectors represent the main economic activities of Antigua and Barbuda, or are geographic areas that are vulnerable to existing weather and climate while being critical to overall sustainable development. In many instances collaboration with other ongoing initiatives is foreseen, for example the MACC project implemented through the CCCCC will be conducting an in-depth vulnerability assessment of the water sector in Antigua and information from this will feed into the SNC process. Considerable overlap exists among these sectors and efforts will be aimed at preparing an integrated assessment of climate change impacts.

A special emphasis will be placed on assessment of climate change risks in Barbuda. This reflects the fact that little in-depth climate change assessment has been done on that island, and the need for such an analysis in view of Barbuda's extreme vulnerability to climate and climate change and the consequent need to identify and implement adaptation measures.

Emphasis will be on the use of scientific methods for assessment activities. Various methodological tools and approaches will be utilized. These will include the development of socio-economic, environmental and climate scenarios and the identification of sectoral impacts. Principal among the methodological tools are:

- Modeling tools and applications
- IPCC Technical Guidelines for Assessing Climate Change Impacts and Adaptations
- UNEP Handbook on Methods for Climate Change Impact Assessment and Adaptation Strategies
- UNFCCC Compendium
- UNDP Adaptation Policy Framework.
- Expert knowledge.

Methodologies used will be clearly identified and detailed. Where alternative or new methods are used these will be fully documented and explained to ensure transparency and consistency. Emphasis will be on use of available information with limited research in certain areas. Where possible

Participatory processes are required in preparation of the vulnerability assessment to involve stakeholders through consultations, involvement in technical work, and through public awareness activities.

Adaptation responses in the INC were limited. Greater attention should be paid in the SNC to Adaptation utilizing available methods, tools and knowledge. Adaptation recommendations should be aimed at informing stakeholders at national, regional and international levels as to actions required for increasing adaptive capacity to climate change This will include

- Evaluating/prioritizing adaptation options in terms of costs, and other elements of feasibility, and
- Public awareness, education and information dissemination.

Stakeholder involvement in the development of adaptation responses should be utilized. Emphasis is required on methods for facilitating public awareness and knowledge of V&A findings and results. This is intended to facilitate publicizing key findings and outputs of the project as well as enhancing awareness of climate change impacts generally. Activities include workshops for media personnel and for technical personnel at various levels. Use of information and communications technologies will be critical in this regard. The UNDP/NCSP Adaptation Framework provides a useful guide for assessing Adaptation to climate change.

4.3.2 Information Sources/Partner Agencies

Government ministries and agencies (e.g. Environment, Meteorology, Fisheries, Finance and Economy, Health, Agriculture, NODS, APUA), non-governmental organizations (e.g. Chamber of Commerce, Farmers Association, Hotel and Tourism Association etc), community based organizations.

Indicative activities are outlined in the project work plan.

4.4 Programmes Containing Measures To Mitigate Climate Change

4.4.1 Priorities and Areas of Work for the SNC

The INC provides an overview of information on Antigua and Barbuda's mitigation options and makes recommendations for Mitigation with regards to institutional development, electricity, renewable energy particularly wind and solar, and road transportation. The INC section is based

on a review of mitigation options deriving from the two dominant sources of GHG emissions in Antigua and Barbuda – electricity generation and road transport.

The aim of the mitigation section of the SNC is to provide information on measures that have taken place, are already underway, or being proposed to tackle issues relating to GHG mitigation in Antigua and Barbuda and the region. This includes various regional and multinational measures underway and proposed for mitigation of climate change. The section will expand the level of analysis presented in the INC.

Mitigation activities represent an important issue for Antigua and Barbuda in view of the country's high per capita GHG emissions, the financial costs associated with its growing dependence on petroleum, the coming into force of the Kyoto Protocol and its mechanisms, and various regional initiatives for energy efficiency and supply. Additionally Antigua and Barbuda is embarking on significant renewable energy; forestry⁹ and waste management initiatives that can also be expected to contribute to climate change mitigation goals and objectives. Efforts will be aimed at building capacity for climate change mitigation activities through training and institutional strengthening as part of the SNC process.

Emphasis will be on the identification and assessment of mitigation options that present opportunities for win/win situations through benefits for climate change mitigation and other benefits (e.g. energy efficiency and/or environmental protection). Analysis is also aimed at supporting the identification and implementation of mitigation projects. Developing capacity through short-term training on Mitigation related issues would be a priority concern. Networking with regional and international partners will also be important in strengthening technical competence in public and private sectors. Public information efforts will be aimed at facilitating wider awareness of technical outputs of the project as well as of wider global climate change mitigation concerns.

Mitigation analysis for the SNC should involve identification of Options through

- An assessment of key macro-economic parameters,
- The identification of mitigation options relating to the most important sources and sinks,
- The screening of mitigation options,
- Financial feasibility analysis,
- An assessment of reduction potential and
- Preparation of mitigation project profiles

Efforts should involve stakeholders in public and private sectors through consultation and information exchange.

The Mitigation assessment will seek to identify the various barriers that exist to implementation of climate change mitigation policies and measures with a view to proposing initiatives for overcoming these barriers. This will include:

- Financial and cost barriers.
- Market feasibility.
- Inadequate knowledge of technology options, and
- Inappropriate regulatory and policy framework.

The Mitigation report will be the output of various consultations with stakeholders at national level.

⁹ These include the UNEP/GEF SW Watershed Project being implemented by the Environment Division.

Indicative activities are outlined in the project work plan.

4.4.2 Information Sources/Partner Agencies

APUA, Ministry of Finance, Ministry of Agriculture, Ministry of Health, Solid Waste Management, private sector organizations, Antigua and Barbuda Development Bank, State College.

Documentary sources are likely to include regional sources such as the Caribbean Energy Information System (CEIS), the Caribbean Regional Energy Development Project, and the Caribbean Development Bank.

4.5 Other Information Considered Relevant To The Achievement of the Objective of The Convention

4.5.1 Priorities and Areas of Work for the SNC

Efforts will be directed to updating and expanding information provided in the INC as well as to incorporate information from other sources such as the NCSA, the CBD and the UNCCD.

The chapter will be used for providing information on other activities relevant to implementation of the UNFCCC.

1. Steps taken to integrate climate change into relevant social, economic and environmental policies
2. Efforts for promoting synergy in implementation of international conventions
3. Activities relating to technology transfer
4. Information and networking
5. Climate research and observations
6. Information on climate change related education, training and public awareness activities ongoing and proposed for Antigua and Barbuda.
7. Information on relevant capacity building measures at national and regional levels.

One new substantive area will be information on transfer of climate change technology. This should utilize the work done for the technology needs assessment during the top-up phase as well as any subsequent work. This should look at how issues relating to the transfer of environmentally sound technology are being addressed within Antigua and Barbuda.

Climate change research and observation is also a significant issue where important new information will be available since the INC. Climate research has been conducted in Antigua and Barbuda and other locations in the Caribbean in the period since the INC was prepared. Emphasis should be on identifying and detailing international, regional and national efforts and the requirements for improving scientific understanding of the national, regional and global atmosphere and oceans. This will include the Global Climate Observation System (GCOS) and programmes by regional meteorological institutions.

Enhanced public awareness of climate change concerns has been recognized as essential to advancing Antigua and Barbuda's capability to meet its commitments under the UNFCCC. The SNC process is intended to strengthen capability within the Environment Division to manage this critical aspect of national response. This will include generating public awareness material from activities relating to V&A, Mitigation and other chapters of the SNC as well as initiating specific programmes aimed at promoting public awareness.

This section of the SNC will also be used to report on public awareness activities including those planned and implemented during the SNC. Resources are to be allocated for preparation and distribution of climate change related materials through a variety of medium.

The SNC should also be used to identify needs and requirements for advancing implementation of the UNFCCC in Antigua and Barbuda based on identified constraints and gaps. Information on technical and financial resources for preparation of national communications should include:

- Specific technologies to be used
- Materials and equipment required
- Estimated incremental costs
- Identification of possible sources of financial and technical support
- Specific barriers to implementation.

Indicative activities are outlined in the project work plan.

4.5.2 Information Sources/Partner Agencies

Meteorological services, Environment Division, Ministry of Education, non-governmental agencies and organizations.

Documentary information from the NCSA, CBD and UNCCD will be important sources of information.

4.6 Constraints and Gaps, and Related Financial, Technical and Capacity Needs

4.6.1 Priorities and Areas of Work for the SNC

Article 4 (7) and other provisions of the UNFCCC indicate that the extent to which developing country Parties, such as Antigua and Barbuda, will effectively implement their commitments under the convention will depend on the implementation by developed country Parties of their commitments under the Convention relating to financial resources and transfer of technology. Accordingly, this section of the SNC will seek to include information on the constraints and gaps and the related financial, technical and capacity needs that presently face Antigua and Barbuda in implementation of its response to climate change under the UNFCCC. Other sustainable development projects, particularly the NCSA, are also likely to provide relevant information.

The technology needs assessment completed under the top-up phase identifies specific needs for technology transfer with constraints addressed in terms of barriers. Most of the needs are provided in the form of project ideas. These will form part of the information presented in the SNC.

While undertaking activities, measures and programmes to implement the UNFCCC and to prepare the SNC, difficulties, constraints and gaps relating to financial, technical and capacity needs will have been encountered. The information presented in the SNC will identify these problems where appropriate, as well as any constraints and gaps associated with the preparation and improvement of national communications on a continuous basis. An attempt will be made to identify information on financial and technical resources for the preparation of national communications made available from national sources, the GEF, Annex II Parties, and other bilateral or multilateral institutions and sources.

In this chapter information on projects aimed at reducing emissions by sources and enhancing removals by sinks, as well as projects pertaining to adaptation will be presented. Information on the proposed projects may include:

- Specific technologies to be used
- Materials/ equipment required
- Best practices associated with technology options, and
- An estimate of incremental costs, particularly of the reductions in emissions and increments of removals of greenhouse gases.

New gaps and constraints identified while undertaking each section of the SNC should be reported along with related financial and technical capacity needs.

Information for this chapter will be accessed utilizing various methodological tools including desk reviews, interviews with stakeholders and from various seminars, consultants' reports and SNC workshops and other activities.

Indicative activities are outlined in the project work plan.

4.5.2 Information Sources/Partner Agencies

Meteorological services, Environment Division, Ministry of Education, non-governmental agencies and organizations. Documentary information from the NCSA, CBD and UNCCD will be important sources of information.

5. INSTITUTIONAL FRAMEWORK FOR PROJECT IMPLEMENTATION

The institutional framework for the SNC will aim at expanding and strengthening capacity from the INC. The Environment Division will execute the project. The Environment Division is responsible for the coordination and management of environmental issues and programmes within Antigua and Barbuda. This will place the project within an institutional framework specifically charged with environmental protection and sustainable development. This is aimed at providing greater technical capacity in implementation of the SNC as well as allowing enhanced coordination at programmatic levels between and within ongoing GEF projects being implemented by the Environment Division. The project will significantly strengthen the Environment Division's capability to deal with the issues of climate change and allow for the Environment Division and other agencies to increasingly incorporate climate change concerns into development planning.

A National Project Manager (NPM) within the Environment Division will coordinate the day-to-day project execution activities and be responsible for meeting the objectives of the project. An Administrative and

Finance Assistant and an Information and Public Awareness Assistant will be hired on a full –time basis, and will assist the NPM and the Environment Division in the implementation of project responsibilities. Where feasible, various technical agencies will be charged with responsibility for coordinating preparation of specific technical chapters of the SNC. Possible technical implementing agencies are the:

- GHG Inventory – Environment Division
- V&A – Meteorological Division
- Mitigation – Ministry of Finance and the Economy

A national Technical Advisory Committee (TAC) will provide technical oversight and guidance to the project. The committee will comprise of representatives agencies that have stakeholder interests across a range of the subject areas being addressed in the SNC process particularly

- The Meteorological Department,
- The Ministry of Agriculture¹⁰,
- APUA,
- The Barbuda Council,
- The Development Control Authority,
- Non-governmental representation¹¹, and
- The Environment Division.

The Environment Division will chair and coordinate the work of the TAC. An attempt will be made to dovetail the work of the TAC with that of other environmental and sustainable development coordinating bodies such as the NCM and the CBD and UNCCD project committees. Other key agencies are likely to include the National Office of Disaster Services, the Ministry of Health, the Ministry of Finance and the Economy, the Fisheries Division, the Statistics Division, and the Development Control Authority and these agencies will likely contribute to the work of the technical teams as well as providing technical guidance and input in certain areas.

In addition consideration will be paid to establishing three technical teams drawing on expertise from other agencies, involving respectively a GHG inventory team, a GHG abatement team, and a V&A team to support technical tasks and activities under this project. Short-term consultants will be hired to implement specific activities including training and capacity building. Emphasis should, as far as possible, be on utilizing expertise developed from the INC and other activities (CPACC, MACC, Biosafety etc) and on available regional expertise.

6. ASSESSING PROJECT IMPACT

Two principal goals of the SNC process are:

1. To strengthen national climate change capacity and
2. To encourage integration of climate change concerns into development planning and projects.

Public awareness activities are intended to increase awareness of climate change issues and concerns. Technical activities of training and data collection are intended to strengthen national technical capacities.

¹⁰ The Ministry of agriculture embraces several key sectoral agencies including fisheries, forestry, and agriculture.

¹¹ A representative of the national Refrigeration Association established under the Montreal Ozone convention is suggested.

At the beginning of the project, a practical framework to assess capacity development and the potential impacts of the national communication process will be developed. The framework will identify practical indicators to assess the impacts of the SNC in incorporating climate change concerns into development and sectoral planning, as appropriate. The project management will collaborate with the National Communications Support Programme (NCSP) on developing an impact assessment framework, linked to the different components of the SNC, and the possible indicators that may be used to assess impacts.

The development of the framework will be a country-driven process that seeks to bring the SNC process closer to development priorities in the context of national policy-making, and is aimed at designing an impact assessment framework that meets the country's needs and priorities in terms of facilitating the linkage between the SNC and development issues.

7. BUDGET

See Budget presentation above at section 2 "Total Budget" (pg. 9).

8. DETAILED WORKPLAN

Outputs/Activities	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
Implementation arrangements and project inception:												
1. Contract the project office staff	X											
2. Establish technical teams	X	X										
3. Update the composition of the TAC	X	X										
4. Organize a project initiation workshop	X											
5. Maintain and upgrade the electronic network among experts/institutions			X	X	X	X	X	X	X	X	X	X
4.1: National circumstances												
1. Validate the gaps of information identified under stocktaking					X	X						
2. Identify the respective sources of information					X	X						
3. Collect data and information from different sources					X	X	X					
4. Fill the gaps, update and add the new information					X	X	X					
5. Draft the National Circumstances section under the SNC							X					
6. Circulate the National Circumstances section for comment, get comments.							X					
8. Finalize the National Circumstances section under the SNC							X					
4.2: GHG inventory												
4.2.1 The GHG inventory team maintained and strengthened												
1. Identify and mobilize national and international experts in targeted sectors and related areas of relevance		X										
2. Review the existing information on the previous GHG inventory and familiarize with guidelines	X	X										
4.2.2 IPCC Methodologies for GHG inventory estimates analyzed, selected and validated												
1. Analyze the acceptability of the available methodologies estimates		X										
2. Decide on methods and tools to be used for inventory		X	X									
3. Decide on the source categories to which surveys for filling data gaps will be carried out		X	X									
4.2.3: GHG inventory data collected												
1. Review available activity data already archived		X	X									
2. Identify new activity data needed for estimates of GHG emissions for 1994-2000			X	X								
3. Identify possible sources of data		X										
4. Collect the necessary activity data from the available sources		X	X									
5. Identify gaps.		X	X	X								
Output 4.2.4: A completed national inventory for 2000 and select years prepared												
1. Re-estimate GHG emissions inventory of 1994				X								
2. Estimate the GHG emissions inventory for 2000 and select years				X	X							
3. Prepare a draft inventory for 2000 and select years including key source analysis, and uncertainty analysis.					X	X						
4. Technical peer review performed as part of QA/QC plan						X	X					
5. Organize a national workshop to present findings of the GHG inventory								X				
6. Incorporate comments received from the review process.								X				
10. Finalize the inventory to be submitted for SNC.									X			
Output 4.2.5: GHG inventory data and estimates documented and archived												
1. Archive activity data, emission factors and estimates					X	X	X	X	X	X		

Outputs/Activities	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
4.3. Programmes containing measures to Mitigate climate change												
4.3.1 The Mitigation team established												
1. Identify and mobilize national and international experts in targeted sectors and related areas of relevance		X										
2. Training activities undertaken		X	X	X								
4.3.2: Necessary data and relevant information for scenario development collected, analyzed and taken into consideration for scenario development.												
1. Consider estimates of GHG inventory for the base year 2000				X								
2. Identify methodological tools and approaches.				X								
2. Collect all relevant macro-economic data and set assumptions				X	X							
3. Identify GHG abatement measures presently being undertaken				X								
5. Review the status of the relevant policy and legal framework				X	X							
6. Training activities undertaken.				X	X	X						
4.3.3 GHG baseline scenario developed.												
1. Develop a revised baseline GHG emission scenario for energy & transport						X						
4.3.4: GHG Mitigation measures / technology options identified.												
1. GHG abatement measures /technology options identified.						X						
Output 4.3.4: GHG Mitigation scenario developed / updated												
1. Develop GHG abatement scenario for energy and transport sectors						X						
2. Estimate the GHG reduction potential, and other economic costs for scenarios for energy and transport sector.						X	X					
Output 4.3.5: GHG Mitigation priority measures / technologies identified												
1. Undertake an assessment of measures and select 3-4 priorities.								X				
2. Identify barriers and policy needs for implementation of such measures.								X	X			
3. Training activities undertaken.								X	X			
Output 4.3.6: GHG Mitigation analysis completed for the period 2000-2025.												
1. Develop the draft chapter of the GHG abatement analysis									X			
2. Circulate the draft chapter of GHG abatement analysis for stakeholder review									X			
3. Organize a national workshop to present findings from the GHG abatement analysis									X			
4. Finalize the GHG mitigation analysis chapter to be submitted as a part of the SNC									X	X		
5. Public awareness activities					X	X	X	X	X	X	X	X
6. Archive and document GHG mitigation analysis related studies and estimates							X	X	X	X	X	
4.4. Programmes containing measures to facilitate adequate adaptation to climate change (V&A)												
4.4.1 The Vulnerability and Adaptation team established												
1. Identify and mobilize national and international experts in targeted sectors and related areas of relevance		X										
2. Training activities undertaken		X	X	X								
Output 4.4.2: Specific approaches, tools and methods agreed. Pertinent data and information assembled, analyzed, and synthesized.												
1. Decide on the range of the assessment: scope, approaches, tools and methods		X										
2. Identify and collect the type and scope of data and information needed		X										
3. Develop environmental and socio-economic baselines for use in assessments.		X	X	X								
Output 4.4.3: Vulnerability and risk assessment of priority sectors completed												

Outputs/Activities	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
1. Refine and utilize scenario modeling to determine magnitude of vulnerability.			X	X								
2 Assess vulnerability of climate and sectors in priority areas/sectors			X	X	X							
3. Public awareness activities implemented			X	X	X							
Output 4.4.4: Adaptation measures and action plan identified.												
1. Develop adaptation response measures				X	X							
2. Adaptation Training measures implemented					X	X						
3. Public awareness measures initiated				X	X	X	X	X	X	X	X	X
Output 4.4.5: V&A Chapter completed												
1. Develop the draft chapter of the V&A							X					
2. Circulate the draft chapter of V&A for internal review and comments.								X				
3. Circulate the draft chapter of V&A for stakeholder review								X				
4. Organize a national workshop to present findings from the V&A									X			
5. Finalize the V&A chapter to be submitted as a part of the SNC									X			
6. Archive and document all the V&A related studies and estimates							X	X	X	X		
4.5. Constraints, gaps, and related financial, technical and capacity needs												
Output 4.5.1: Constraint, gaps and related needs (financial, technical and capacity) identified and reported												
1. Review the status of the constraints and gaps from previous studies			X	X								
2. Identify new constraints and gaps for each thematic area					X	X	X					
3. Summarize constraints, gaps and needs identified and draft a synthesis report as a separate chapter								X				
4. Distribute draft chapter for comments, collect comments and reflect in the document								X	X			
5. Finalize the chapter.									X			
4.6. Other information considered relevant to the achievement of the objective of the Convention												
Output 4.6.1: The information compiled, analyzed, and finalized.												
1. Collect, synthesize and provide the overall information relevant to the Article 6 activities			X	X	X	X						
2. Collect, synthesize and provide the information on steps taken to integrate climate change into socio-economic policies.				X	X	X						
3. Collect, synthesize and provide information transfer of and access to environmentally sound technologies.						X	X	X				
4. Collect, synthesize and provide information on the research and systematic observation systems						X	X	X				
5. Collect, synthesize and provide information on relevant ongoing projects						X	X					
6. Summarize all the information collected in a draft chapter. Distribute it for review and comments internally.							X					
7. Incorporate comments to draft chapter and finalize report.							X	X				
8. Public awareness activities undertaken					X	X	X	X	X	X		
Output 4.6.2. SNC produced, translated, submitted and disseminated												
1. Compile draft of SNC									X			
2. Circulate the draft for comments and review and incorporate them									X			
3. Obtain political approval										X		
4. Finalize the SNC											X	
5. Publish SNC											X	
6. Submit SNC to the CoP of the UNFCCC											X	

Appendix C: Terms of Reference (TOR)

1. TOR for National Project Manager

Working within the framework of the overall Environment Division of the Ministry of Public Works, Communications, Transport and Environment, the Project Manager (PM) will be responsible for day-to-day management, co-ordination and supervision of the implementation of the SNC project. Specifically, his/her responsibilities include are but not limited to:

- Supervising and ensuring timely implementation of the project relevant activities as scheduled in the working plan;
- Preparation of a detailed work plan for the project and draft terms of reference for the subcontracts (in consultation with the Environment Division and UNDP);
- Develops the scope of the work and TORs and other procurement documentation required to identify and facilitate recruitment of experts and consultants;
- Coordinate activities of the TAC and other project committees;
- Supervise project support staff and consultants who are recruited to provide technical assistance
- Organize and supervise the workshops and training needed during the project;
- Liaises with the relevant ministries, national and international research institutes, NGOs, and other relevant institutions in order to involve their staff in project activities, and to gather and disseminate information relevant to the project;
- Prepares periodic progress reports of the project;
- Control the expenditures and otherwise ensure adequate management of the resources provided for the project;
- Summarizes and synthesizes the results of the project;
- Works with relevant national authorities to ensure that the SNC process is in the line with guidance provided by the CoP of the UNFCCC and contributes to the improvement of the UNFCCC reporting process.

Qualifications And Experience

- University degree in environment-related studies or related disciplines;
- Good understanding of environment/development issues as well as the three thematic areas under investigations;
- At least three years experience relevant to the project;
- Excellent communication (Written and Oral) Skills;
- Demonstrated experience in project management;
- Expertise in putting together costed, results-oriented action plans;
- Demonstrated experience in working with government, donors and the United Nations system;
- Appropriate experience working with government structures at local levels, and working with NGOs and private sector;
- Substantial experience in Government and in inter-departmental procedures preferred
- Familiarity with international negotiations and processes under the UNFCCC preferred
- Familiarity with computers and word processing

2. TOR for Project Technical Advisory Committee (TAC)

The TAC is expected to provide technical support and oversight to project activities including:

1. Providing technical assistance and support during implementation process of project activities.
2. Review and monitor all technical project components.
3. Review and make necessary comments on draft documents prepared by the national climate change teams
4. Receive information and offer guidance on the status of the implementation of the project activities and problems.
5. Promoting awareness among key stakeholders of climate change issues and concerns
6. Facilitating exchange and dissemination of information on climate change among technical agencies in Antigua and Barbuda and
7. To provide recommendations to policy makers and the general public on matters related to climate change.

The Head of the Environment Division will chair the TAC. Agencies identified for membership on the TAC are:

- APUA
- Barbuda Council
- Meteorological Department
- National Refrigeration Association
- Ministry of Agriculture
- Environment Division

The TAC will be assisted in its work and deliberations by the NPM who will attend meetings of the TAC as an *ex officio* member. The TAC will agree on its own internal working procedures but shall meet at least once monthly.

The TAC will present six monthly written reports of the work of the SNC project to the meetings of the NCM. These reports should provide the NCM with information as to the activities then being implemented under the SNC project including measures for collaboration with other sustainable development activities and measures for enhancing capacity building.

3. TOR for National GHG Inventory Team

The National GHG inventory Team should work in consultation with and under the guidance and supervision of the National Project Manager. Specifically the work of the team is intended to assist the NPM in:

- Establishing the team of experts for performing the GHG inventory on the basis of the roster of experts;
- Oversees the training –of –trainers sessions on GHG inventory.
- Organize GHG inventory relevant training and workshops.
- Review a detailed work-plan for GHG inventory exercise on the basis of the overall project work plan.
- Providing periodic progress report on the GHG inventory thematic area;
- Identifying gaps and key sectors for GHGs inventory;
- Incorporating comments received from the review process.
- Drafting the National Inventory Report and respective chapter of Antigua and Barbuda’s SNC along with the respective part of executive summary.
- Archiving new data and estimates of new inventory.

Members of the team are expected to be technical officers drawn from key agencies such as road transport, agriculture, petroleum importers and distributors, electricity power providers, and the national statistics unit.

4. TOR for GHG Abatement Analysis Team

The GHG Mitigation team should work in consultation with and under the guidance and supervision of the National Project Manager. In particular the team should assist the NPM to:

- Establish the team of experts for performing the GHG mitigation analysis;
- Preparing a detailed work-plan for GHG mitigation analysis on the basis of the overall project work plan.
- Provide periodic progress report to the NPM on the GHG abatement analysis thematic area
- In consultation with NPM decide on methodologies for the elaboration of scenarios for sectors than energy;
- Ensuring synergy with other relevant projects;
- Incorporating comments received from the review process.
- Drafting the GHG mitigation chapter of the SNC along with the respective part of executive summary.
- Oversee the documentation of the studies made and archiving.

Members of the team are expected to be technical officers drawn from key public sector portfolio agencies such as agriculture, road transport, petroleum importers and distributors, electricity power providers, and the national statistics unit.

4. TOR for V&A Team

The Vulnerability and Adaptation sector team leader should work in consultation with and under the guidance and supervision of the National Project Manager. Specifically, the team is expected to assist the NPM in:

- Establishing the team of experts for performing the V&A;
- Preparing a detailed work-plan for V&A on the basis of the overall project work plan.
- Providing periodic progress report to the NPM on the V&A thematic area
- In consultation with NPM decide on approaches (not concluded under stocktaking phase) to be used if necessary;
- Ensuring synergy with other relevant projects
- Incorporating comments received from the review process.
- Drafting the respective chapter of the SNC along with the respective part of executive summary.

Members of the team are expected to be technical officers drawn from key agencies such as Fisheries, Barbuda Council, National Office of Disaster Services, Economic Planning Unit, Development Control Authority, and an environmental NGO.

✓ **Appendix D: Endorsement letters**

- GEF Operational Focal Point
- UNFCCC Focal Point

SIGNATURE PAGE

Country: _____

UNDAF Outcome(s)/Indicator(s): _____
(Link to UNDAF outcome. If no UNDAF, leave blank)

Expected Outcome(s)/Indicator (s): _____
(CP outcomes linked t the SRF/MYFF goal and service line)

Expected Output(s)/Indicator(s): _____
(CP outcomes linked t the SRF/MYFF goal and service line)

Implementing partner: _____
(Designated institution/Executing agency)

Other Partners: _____
(Formerly implementing agencies)

Programme Period: _____
Programme Component: _____
Project Title: _____
Project ID: _____
Project Duration: _____
Management Arrangement: _____

Budget	_____
General Management Support Fee	_____
Total budget:	_____
Allocated resources:	_____
• Government	_____
• Regular	_____
• Other:	_____
○ Donor	_____
○ Donor	_____
○ Donor	_____
• In kind contributions	_____
Unfunded budget:	_____

Agreed by (Government): _____
Agreed by (Implementing partner/Executing agency): _____
Agreed by (UNDP): _____