Government of Trinidad and Tobago

United Nations Development Programme

ENABLING ACTIVITIES FOR THE PREPARATION OF TRINIDAD AND TOBAGO'S SECOND NATIONAL COMMUNCIATION TO THE UNFCCC

PIMS 3152 CC EA SNC Trinidad and Tobago

Brief description

This aim of this project is to enable Trinidad and Tobago to prepare and report its Second National Communication (SNC) to the Conference of Parties (CoP) of the UN Framework Convention on Climate Change (UNFCCC) in accordance with Decision 17/ CP8. Through a stocktaking exercise the project will first follow up on the activities of the Initial National Communication (INC). This will then serve as the basis for identifying gaps and through further consultation allow for the selection of priority areas for the SNC. The project is expected to ensure that funds are allocated to the areas and sectors that need them most in an efficient and effective manner. The areas of focus for the project are: (a) preparation of a greenhouse gas inventory for the year 2000; (b) an update on the activities related to vulnerability studies and adaptation assessments; (c) training, research and capacity building.

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Acronyms

CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon dioxide
EMA	Environmental Management Authority
GHG	Greenhouse Gas
INC	Initial National Communication
N_2O	Nitrous oxide
NMVOCs	Non-methane volatile organic compounds
NO_x	Nitrogen oxides
SNC	Second National Communication
SO_2	Sulphur dioxide
T&T	Trinidad and Tobago
UWI	University of the West Indies

1. Elaboration of the Narrative

1.1 Situation Analysis

The population of Trinidad and Tobago (T&T) is approximately 1.3 million. This twin island state has a highly industrialised economy in comparison to the other countries of the insular Caribbean. The island of Trinidad has large reserves of petroleum and natural gas, and well developed heavy industries such as iron and steel, methanol, nitrogenous fertilizers and petroleum products. Tobago has a largely tourism based economy. Today T&T continues to be one of the leading Caribbean producers of oil and gas and the country's energy sector continues to expand and contributes approximately 34.1% to the country's GDP. The annual percentage increase in industrial production (which includes manufacturing, mining and construction was estimated to be 5.2% in 2003. The tourism sector in Tobago has also been targeted for expansion and is growing.

The principal environmental threats to T&T include activities related to population growth, mismanaged planned development, unplanned development, squatting, deforestation, forest fires, domestic and industrial pollution and over harvesting of commercially important species. The most recent scientific estimates indicate that by the year 2100, the world will on average experience a temperature rise of 1 °C to 3.5 °C, a sea level rise of 15 to 95 cm plus a rainfall deficit of about 15%. This is expected to have consequences on T&T as the climate may therefore become hotter and drier, posing significant threats to our valuable marine and terrestrial ecosystems.

While there are several government Ministries, Departments or Divisions within other Ministries, Statutory Authorities (State Enterprises) and Municipal Corporations that have jurisdiction in several aspects of the environment, the overall responsibility for all environmental affairs fall under the Ministry of Public Utilities and the Environment. The Environmental Management Authority (EMA) falls under the jurisdiction of this Ministry and its major responsibility is to coordinate, facilitate and oversee execution of the national environmental strategies and programmes. The EMA is also responsible for creating public awareness on environmental issues and enactment of legislation.

1.2 Strategy

The Second National Communication project will enable T&T to prepare the Second National Communication to the Conference of Parties in accordance with Article 12 of the UNFCCC after the successful completion and submission of the First National Communication to the COP8 in 2001. It will develop and enhance national capacities to fulfill T&T's commitments to the Convention on a continuing basis; enhance general awareness and knowledge of government planners on issues related to climate change and control of greenhouse gas emissions, thus enabling them to take such issues into account into the national development agenda; and mobilize additional resources for projects related to climate change and mitigation of greenhouse gases; projects which may be eligible also for further funding or co-funding by GEF or other multilateral or bilateral organizations.

In order to strengthen national capacity, the UNDP Country Programme for T&T is currently assisting with Enabling Activity projects for implementation of the Convention. These projects (Self-assessment for the United Nations Framework Convention on Climate Change, and the Climate Change Enabling Activity II), under the Energy and Environment programme area, will help to strengthen local agencies to discharge the country's obligations under the UNFCCC.

1.3. Management Arrangements

It is expected that the institutional arrangements which existed for the Initial National Communication (INC) will remain in place for preparation of the Second National Communication (SNC). The project will be implemented by the Environmental Management Authority and supervised by the Cabinet-appointed Working Group. This Working Group was set up to determine the Implications of Global Warming, Climate Change and Sea Level Rise. The Working Group has representation from relevant government ministries, NGO's and the private sector.

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 the Republic of Trinidad and Tobago and the United Nations Development Programme, signed by the parties. The EMA as 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 and Workplan

Award ID:	**00034324**							
Award Title:	**PIMS # 3152 CC EA SNC of Trinidad and Tobago**							
Project ID	**00036383**							
Project Title:	**PIMS # 3152 CC EA Second National Communication of Trinidad and Tobago**							
Executing Agency:	**Environmental Management Agency (EMA)**							
OUTPUTS (and corresponding indicators) indicators)	RESP. PARTY	PLANNED BUDGET						
		Source of funds	Budget Code	Budget Description	Year 1 (USD)	Year 2 (USD)	Year 3 (USD)	Total Budget (USD)
1- National Circumstances	Environmental Management Authority	62000	71300	Local Consultants	2,500	2,500	-	**5,000**
		62000	71400	Contractual services	2,500	2,500	-	**5,000**
Sub-total					**5,000**	**5,000**	**0**	**10,000**
2- National Greenhouse Gas Inventories	Environmental Management Authority	62000	71300	Local Consultants	20,000	20,000	8,000	**48,000**
		62000	71405	Service Contracts- Individuals	5,000	5,000	5,000	**15,000**
		62000	71600	travel	4,000	3,000	2,000	**9,000**
		62000	71400	Contractual services	3,500	11,500	3,000	**18,000**
Sub-total					**32,500**	**39,500**	**18,000**	**90,000**
3. Programmes containing measures to mitigate CC	Environmental Management Authority	62000	71200	International consultants	3,000	2,500	2,500	**8,000**
		62000	71405	Service Contracts- Individuals	9,000	9,000	8,000	**26,000**
		62000	71400	Local Consultants	6,000	6,000	6,000	**18,000**
		62000	71600	travel	6,000	6,000	6,000	**18,000**
Sub-total					**24,000**	**23,500**	**22,500**	**70,000**

OUTPUTS (and corresponding indicators) indicators)	RESP. PARTY	PLANNED BUDGET						
		Source of funds	Budget Code	Budget Description	Year 1 (USD)	Year 2 (USD)	Year 3 (USD)	Total Budget (USD)
4-Programmes containing measures to facilitate adequate adaptation	Environmental Management Authority	62000	71200	International consultants	5,000	5,000	5,000	15,000
		62000	71405	Service Contracts-Individuals	8,000	8,000	8,000	24,000
		62000	71400	Local Consultants	8,000	7,000	7,000	22,000
		62000	71600	travel	7,000	5,000	7,000	19,000
Sub-total					**28,000**	**25,000**	**27,000**	**80,000**
5-Other relevant information	Environmental Management Authority	62000	71400	Local consultants	3,000	3,000	3,000	**9,000**
		62000	71405	Service Contracts-Individuals	1,000	1,000	1,000	**3,000**
		62000	71600	travel	2,000	2,000	1,000	**5,000**
		62000	74210	Printing and Publications	-	1,500	1,500	**3,000**
Sub-total					**6,000**	**7,500**	**6,500**	**20,000**
6- Constraints & Gaps; Related Financial, Technical, & Capacity Needs	Environmental Management Authority	62000	71405	Service Contracts-Individuals		2,500	2,500	5,000
		62000	71200	International consultants		2,500	2,500	5,000
Sub-total						**5,000**	**5,000**	**10,000**
7- Technical Assistance	Environmental Management Authority	62000	71405	Service Contracts-Individuals	**3,500**	**3,500**	**3,000**	10,000
Sub-total					**3,500**	**3,500**	**3,000**	**10,000**
8- Compilation, including Executive summary, Production & Dissemination	Environmental Management Authority	62000	71405	Service Contracts-Individuals	-	4,500	4,500	9,000
			74210	Printing and Publications	-	-	6,000	6,000
Sub-total					-	**4,500**	**10,500**	**15,000**

Corresponding indicators) indicators)	PARTY	Source of funds	Budget Code	Budget Description	Year 1 (USD)	Year 2 (USD)	Year 3 (USD)	Total Budget (USD)
9- Project Management	Environmental Management Authority	62000	71405	Service Contracts- Individuals	25,000	25,000	25,000	75,000
		62000	72200	Equipment and Furniture	5,000	5,000		10,000
Sub-total					**30,000**	**30,000**	**25,000**	**85,000**
10- Monitoring & Reporting	Environmental Management Authority	62000	74100	Professional Services	1,900	1,900	1,900	5,700
		62000	74210	Printing and Publications	900	900	900	2,700
		62000	74110	Audit Fees	2,200	2,200	2,200	6,600
Sub-total					**5,000**	**5,000**	**5,000**	**15,000**
Grand Total		62000			**134,000**	**148,500**	**122,500**	**405,000**

3. Appendices

Appendix A: Summary report of the self-assessment exercise

Methodology

The methodology used to carry out the self-assessment exercise included an analysis of the INC to identify areas covered, gaps and priorities for improvement, the Phase II Enabling Activities, other related projects such as CPACC, ACCC/MACC, and relevant national programmes such as public education and awareness. Sectoral consultations with key departments and agencies as well as local experts were also conducted.

National Circumstances

The national circumstances section of T&T's INC aimed to provide a relatively comprehensive overview of the country's situation. As such this section contained information on:

- Physiography
- Climate – climate determinants, rainfall, temperature, flooding, El Niño.
- Political Structure
- Demographics
- Agriculture, Forestry, Land Use, Biodiversity
- Economic Profile
- Energy Profile
- Transport
- Institutional arrangements, national environmental policy and related natural resource policies.

The information and data provided in this and other sections covered a timeframe of 1990-1999. The information was obtained from various government departments and agencies which included but were not limited to:

- Ministry of Energy and Energy Industries
- Ministry of Food Production and Marine Resources
- Ministry of Works and Transport
- Central Bank
- Central Statistical Office
- Water and Sewerage Authority (WASA)
- Environmental Management Authority (EMA)
- Petroleum Company of Trinidad and Tobago (Petrotrin)

While most of the information provided under this section of the INC still remains relevant there may be a need for update in certain areas. Since submission of the INC there would have been changes with respect to land use, sectors such as agriculture and energy and also national policies. The SNC should especially address the accelerated pace of development in the energy sector and conversion of forested lands which has occurred since the reporting timeframe of the INC.

Greenhouse Gas Inventories

The INC provided the first national inventory of GHG emissions for the base year 1990. It was compiled and reported using the IPCC 1996 Revised Guidelines for National GHG Inventory. The inventory was prepared from data already documented in public institutions and private industries. The three GHGs inventoried in the INC were:

1) Carbon dioxide (CO_2)
2) Methane (CH_4)
3) Nitrous oxide (N_2O)

The indirect acting GHG covered in the INC were:

1) Nitrogen oxides (NO_x)
2) Carbon Monoxide (CO)
3) Non-methane volatile organic compounds (NMVOCs)
4) Sulphur dioxide (SO_2)

Inventorying was done according to the following sectors: (1) Energy (2) Industrial activity (other than energy) (3)Agriculture (4) Land Use Change and Forestry (5) Waste (6) International Bunkers. In the INC, CO_2 fuel combustion emissions were estimated and reported using both the sectoral and reference approaches. Three other direct-acting GHGs not inventoried in the INC were: hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6). A GHG was also not prepared for the solvent and other product use category due to lack of data in this area for the year 1990.

No direct measurements were carried out for the purpose of the compilation or verification of this inventory. It was further highlighted in the INC that data gaps exist with respect to taking proper inventory of private sector companies and their output. Additionally the INC did not provide the uncertainties associated with the estimates of production output. Significant uncertainty also resulted from the use of default emission factors provided in the IPCC guidelines. This uncertainty was created by the lack of emission factors that would be suitable and relevant to the scale of activities in Small Island Developing States (SIDS) and represents an area that needs to be addressed in future research. In the INC there was also a very significant discrepancy (40% difference) when CO_2 emissions were estimated using the sectoral and reference approach. It was thought that this discrepancy was due to the limitations in data collection from the variety of sources of original data used for the preparation of the inventory.

Through preparation of the INC the following concerns were noted:

1) The systems for management of data required for preparing GHG inventories need much improvement in the following areas :
    - systems to allow for increased use of direct measurements and surveys
    - proper inventory of private companies
    - standardization of methods used for estimating production output
2) Suitable and relevant emission factors need to be developed
3) Arrangements (institutional) need to be made to sustain data collection and archiving to ensure inventory preparation is a continuous process.

While the INC recognized the presence of data gaps and sources of uncertainty when preparing the GHG inventory, it did not propose an inventory system which could be used for data managing and archiving. It is therefore necessary for provisions to be made such that proposals are put forward in the SNC to create and implement an inventory management system. Data sharing has indeed been highlighted as one of the major obstacles in achieving obligations under the UNFCCC. It has been recommended that a policy for data sharing be developed to overcome this obstacle. It has been stated in the Guidelines for Reporting on Climate Change that the national GHG inventory is a key element of the national communications. As such the shortcomings of the systems used to develop the national GHG inventory in the INC must be adequately addressed in the SNC. It must also be ensured that data is available to report on those emissions not covered in the INC.

Programmes containing measures to facilitate adequate adaptation to climate change

The INC future climate scenarios focused on four main areas as follows: temperature, rainfall, sea level and extreme events. The INC further stated that to determine the possible impacts of climate change on the physical, biological and human resources of T&T would involve an "ongoing, long term and detailed technical assessment". It was expected that the assessment would rely largely on the use of models. A major handicap identified at the time of the INC was that of insufficient relevant technologies and institutional and human

technical capacity to conduct the required research. As such only one vulnerability study -- of the sugar industry – was carried out under the INC.

In this study the performance of sugar cane in Trinidad for the period 1970 to 1995 was measured in relation to climatic circumstances for the same period. The major finding of this study was that for every 1°C rise in temperature, the sugar cane yield was reduced by approximately three tonnes per acre. Therefore a continuation of the current trends in temperature rise which is consistent with climate change models could result in reduced sugar yields. Options put forward in the INC for adapting the sugar cane industry to climate change include diversification and the introduction of temperature resistant cultivars. Given the recent decline in the sugar industry this may no longer be relevant. However it has been recognized that there is a need for detailed vulnerability assessments within the different agricultural industries.

Other vulnerable sectors identified in the INC were:

- Terrestrial ecosystems (forestry, biodiversity)
- Aquatic ecosystems (coastal resources, fisheries and coral reefs)
- Hydrology and water resources management
- Infrastructure
- Human health

Specific vulnerable areas identified were the Caroni Basin, Nariva Swamp and Point Lisas Industrial Estate. The Caroni Basin was recognized in the INC and still is the most densely populated area of the country. It contains the greatest reserves of surface and groundwaters which supply a significant proportion of the needs of Trinidad. More seriously it is considered to be most vulnerable to the impacts of climate change. The Nariva Swamp is the largest and most diverse wetland ecosystem in T&T. It is described in the INC as "environmentally diverse and ecologically complex". It is also of economic importance since the area is utilized for agriculture and fishing. The INC states that due to its susceptibility to saltwater intrusion the Nariva Swamp is likely to be extremely vulnerable to sea level rise. The Point Lisas Industrial Estate has been developed on some portion of reclaimed land. Since the estate is just above sea level it is vulnerable to sea level rise and tidal variation. Given that the estate is one of the country's major GDP providers, the INC recognized that the vulnerability of its physical infrastructure and the resulting economic implications was a very important consideration.

While the INC has recognized these three very vulnerable areas, detailed assessments and adaptation programmes have not yet been developed. Point Lisas was included in a pilot study done through participation in the CPACC project. However they still therefore represent significant priority areas for the SNC.

It was stated in the Initial National Communication that T&T accounted for a miniscule fraction of global GHG emissions. As such, options for adapting to the impacts of climate change were recognized as a priority compared to GHG emission abatement. The INC has made reference to steps which could be taken at the national level to adapt to climate change. These included:

- Vulnerability studies
- Construction of structures such as sea walls, gabion baskets and offshore breakwaters
- Development of policies to restrict development in vulnerable areas
- Implementation and enforcement of existing policies related to land use, water resources, biodiversity, forestry etc.
- Training in the areas of climate change impact assessment, predictive computer modeling etc.

T&T has also participated in several regional adaptation programmes as follows:

- Caribbean Planning for Adaptation to Climate Change (CPACC) - 1997 to 2001
- Adaptation to Climate Change in the Caribbean (ACCC) – 2001 to 2004
- Mainstreaming Adaptation to Climate Change (MACC) – 2003-2007

CPACC

The CPACC project was designed with the overall objective of supporting Caribbean countries in preparing to cope with the adverse effects of global climate change namely sea level rise, in coastal and marine areas through vulnerability assessment, adaptation planning and capacity building linked to adaptation planning. The CPACC project was based on nine components which were either regional-based or pilot-based. The four regional components which T&T was a part of were:

1. Design and establishment of sea level/climate monitoring network
2. Establishment of data bases and information systems
3. Inventory of coastal resources and use
4. Formulation of a policy framework for integrated coastal and marine management.

Participation in the regional based components allowed for the following:

- Designation of a National Focal Point (NFP) i.e. the local agency and person responsible for coordinating all CPACC related issues in the country. The NFP in T&T was the EMA. The EMA has continued in this capacity and still serves as the technical focal point for local UNFCCC activities under the guidance of the Cabinet appointed Climate Change Working Group.
- Setting up of a national repository for climate change data and information. The agency designated as the national repository was the Institute of Marine Affairs (IMA). The agency was also provided with a Coastal Resource Inventory System (CRIS).
- The Regional Archiving Centre (RAC) was established at the Centre for Geospatial Studies, UWI, St. Augustine). The RAC is responsible for the sea level and climate monitoring data received from the 18 monitoring stations sited throughout the region.
- Provision of 3 automated sea level and meteorological monitoring stations linked by satellite that provide ready and free access to data at any time – At present these 3 stations are not working due to institutional inadequacies. This therefore represents an area that needs to be addressed for the Second National Communication.
- Initiation of the development of a National Climate Change Adaptation Policy – The Climate Change Working Group/EMA was given the responsibility for coordinating the development of this policy through consultation with government agencies, the public etc. Following this it was expected that a draft Policy Paper and the Implementation Plan would be prepared and submitted to the CPACC Regional Project Implementation Unit for review. Work on this policy is still in progress and represents yet another area that will require attention in the Second National Communication.

The pilot based component in which T&T took part, consisted of a pilot study on the economic valuation of resources in the largest industrial area located along the west coast from Point Lisas in the south to Waterloo in the north. The primary activities identified for this pilot study were: industrial, fishing, wetlands, agriculture, residential and commercial land use, limited domestic recreation. The results of this study can be used to further develop and circulate appropriate techniques for use throughout the country.

ACCC and MACC

The ACCC project was designed to maintain continuity on climate change issues after CPACC. It was stated that one of the key objectives of the project was to create conditions under which the region will be able to sustain climate change activities follwing the conclusion of CPACC. The ACCC project was funded by the Canadian International Development Agency and served as a bridge between CPACC and MACC by providing initial support to MACC activities. It was expected that MACC would use the institutional framework and response capacity developed under CPACC to mainstream climate change into development planning. It should be noted that MACC is still an ongoing project. However the implementation of MACC would have been implemented through some of the following activities:

- Expansion and strengthening of the existing knowledge base to facilitate global climate change impact assessment as a basis for decision making on adaptation to climate change. This process would allow for further enhancement of existing information and information tools developed under CPACC.
- Integration of climate change concerns into the planning and practices of highly vulnerable sectors and issues such as water resources, agriculture, forestry, food security, tourism, fisheries and health.

- Development of strategies to address the impacts of climate change across key economic sectors. This would include land use planning, infrastructure, disaster prevention and insurance.

Education and Public Awareness at the National Level

T&T had developed a public awareness programme for issues concerning global warming, climate change and sea level rise. The programme was executed by the EMA and targeted school children. It took the form of pamphlets, TV commercials, posters, competitions and lectures. A significant part of the programme also included cooperation with non governmental organizations and community based organizations in reaching out to coastal communities and stakeholders. A 2001 update on C7 implementation in T&T highlighted the following specific activities that were already ongoing or being planned:

- The Secondary Entrance Assessment exam now includes several sections dealing with climate change
- A number of pamphlets have been developed including "Climate Change for Kids"
- Discussions on the production of a video on the Environment which would include a segment on climate change
- Development of a 13 part video series on the Environment which would also include segments on climate change and its impacts.

Current Institutional Arrangements

Responsibility for environmental management in T&T lies with the Ministry of Public Utilities and Environment. The Environmental Management Authority falls under the jurisdiction of this Ministry and continues to serve as the technical focal point for all climate change activities in T&T. There is only one officer at the EMA assigned to Climate Change on a part-time basis. The officer chairs the Climate Change Working Group appointed by Cabinet since 1990 and also serves as the Secretariat. One of the identified strengths of the Working Group is that it has representation from relevant groups which include government ministries, NGOs and the private sector. Through participation in CPACC an institutional framework was developed wherein the EMA serves as the focal point for climate change activities. However, although the EMA serves as the focal point and the coordinating agency for all climate change activities, it is necessary for other relevant sectors to be involved in a more meaningful way. This is because it has been recognised that climate change is not strictly an environmental management issue. It is a cross-cutting issue that will impact on all sectors of the country.

Phase II Enabling Activities

The project for preparation of the Initial National Communication (First Phase) focused on a wide range of capacity building activities in the area of vulnerability and adaptation, greenhouse gas inventories and energy related issues. A number of workshops and training exercises were also utilized during the course of the first phase to assist in its completion. It was stated in the Initial National Communication that expert judgement of T&T's level of vulnerability and adaptive capacity could only be provided through a series of consultations and workshops with key stakeholders. It therefore recognised that the assessment was not a quantitative or comprehensive one.

Subsequent to the completion of the Initial National Communication, it was proposed that Phase II enabling activities should be undertaken to maintain the capacity built during Phase I and build upon activities completed in the context of T&T's first national communication. It was expected that Phase II activities would allow the country "to extend current knowledge, facilitate the emergence of national networks, and promote the integration of climate change concerns into development planning dialogue" [Project Proposal titled Trinidad and Tobago: Climate Change Enabling Activity (Additional Financing for Capacity Building in Priority Areas)].

Activities under the Phase II project includes a technology needs assessment (TNA), which is currently being finalised, and a capacity assessment for participation in systematic observing systems, which is completed. The TNA is expected to be completed by August 2006 due to unexpected delays in gathering information and

data. The salient issues arising from the outputs of these studies is expected to be included in the second national communications. Additionally, public awareness and outreach activities continue under the Phase II, including the development of a strategic plan of action.

Stakeholders consulted

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)
Kishan Kumarsingh (EMA)	Technical Coordinator (Environmental Resources Management)- EMA Chairman of Cabinet-appointed Climate Change Working Group	- Project Manager for INC - Contributing author to the INC	Data provider
Professor Dyer Narinesingh (UWI)	Dean, Faculty of Science and Agriculture	Contributing author to the INC	Consultation
Dr. Gregory Gouveia (UWI)	Head, Department of Food Production	- Contributing author to the INC - Teaches a course on Climate Change	Consultation
Steve Pollonais	Consultant	- Project Coordinator for INC - Contributing author to INC - Consultant for Phase II Climate Change Enabling Activity	Consultation

Other Stakeholders Consulted

Trinidad:

Mr. Ossley Francis
Executive Chairman
Land Settlement Agency
George Street
Port of Spain

Professor Keith Miller
Department of Land Surveying
University of the West Indies
St. Augustine

Ms. Charmaine O'Brien-Delpish
Ag. Manager
Technical Advisory Services
Institute Of Marine Affairs

Mr. Lionel De Freitas
Ministry of Health
Independence Square

Mr. David Persaud
Ministry of Public Utilites and the Environment
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Mr. Richard Laydoo
National Co-ordinator
GEF/ Small Grants Programme
United Nations Development Programme
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Dr. Steve Fletcher
Ag. Director
Water Resources Agency
St. Joseph

Ms. Gail Kowlessar-George
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Manager Health, Safety and the Environment
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Mr. Horace Achille, Director of Land Development, THA

Mr. Norris Jack, Adviser to the Chief Secretary, THA

Ms Karen Shaw, Director of Marketing Department

Mr. Paul Thomas, Agriculture Department

Mr. Oswin Edmund , Water and Sewerage Authority (WASA)

Dr. Anslem Richards, PRDI

Mr. Owen Sandy, NEMA

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Appendix B: Technical components of the project proposal

1. Background/Context

Trinidad and Tobago (T&T) signed and ratified the United Nations Framework Convention on Climate Change (UNFCCC) in 1994. The ultimate objective of this Convention as stated in Article 2 is the "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system". The Parties to the Convention are required to report on the steps that they are taking or envisage undertaking to implement the Convention. The report on these steps is known as a National Communication. In recognition of the principle of "common but differentiated responsibilities" enshrined in the Convention, the required contents of these National Communications and the timetable for their submission vary with the country. The Convention classifies Trinidad and Tobago as a non-Annex I country. As such, according to the Convention, it is required to submit its initial National Communication within 3 years of entry into force of the Convention or on the availability of financial resources.

The Initial National Communication of T&T was prepared in February 2001. It was executed by the Environmental Management Authority (EMA) and the Ministry of the Environment, under the supervision of a Cabinet–appointed Working Group to determine the Implications of Global Warming, Climate Change and Sea Level Rise. This Working Group was appointed in 1990 due to the government's recognition of climate change and its impact.

2. Project Objectives

An initial review of several documents and reports reveal that a fair amount of work has been done to deal with the issue of climate change and its impacts both before and after submission of the Initial National Communication. The Project will have two objectives as follows:

Development Objective: The project will strengthen technical and institutional capacity to assist Trinidad and Tobago's mainstream climate change concerns into sectoral and national development priorities.

Immediate Objective: The project will enable Trinidad and Tobago to prepare and submit its second national communication to the UNFCCC and meet its obligation under the Convention.

3. Project Strategy

The strategy of the project is to put mechanisms in place to ensure that the preparation of the SNC will contribute to local capacity development. These mechanisms will include the reconstitution of the Climate Change Working Group (Project Steering Committee) to provide timely guidance and technical inputs; recruitment of an experienced and highly motivated project implementation team; systematic sectoral and public consultations; the identification of key beneficiaries of the results of this project and their involvement in selected aspects of this project as appropriate; and the development and implementation of targeted training activities. These activities are aimed at promoting sustainability of project outputs including through training, data collection and archiving, and public awareness.

4. Project activities

4.1 National circumstances

The INC was able to adequately capture all the required information for its National Circumstances section. Therefore for the SNC it is not necessary for the national circumstances to be substantially updated. Some of the elements of this section, which would require minor adjustments, can be outlined as follows:

- Approaches and achievements to date
- Public awareness and outreach programmes
- Population statistics and population growth rate – In the INC statistics were provided for the period 1990-1998
- Agriculture, forestry and land use – Information for agriculture was provided for the period 1989-1996 while information on forest cover was provided for only 1998.
- New legislation, policies and policy revisions – The National Environmental Policy (1998) was highlighted in the INC. Some of the sections, for example those related to air pollution and greenhouse gases have since been revised.
- Changes in Institutional Arrangements – This relates mainly to the merging of the Environment and Public Utilities Ministries.
- The rapid rate of development in the industrial and petrochemical sectors needs to be addressed.

4.2 Greenhouse gas inventory

The greenhouse gas (GHG) inventory provided in the INC contained several gaps and uncertainties due to data constraints. The available data allowed for carbon dioxide, methane and nitrous oxide to be inventoried. However due to lack of data three other direct acting GHGs hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride- were not inventoried. Through consultation one of the major problems highlighted for this section of the INC was the lack of reliable activity data to not only prepare the inventory but also to make informed decisions. There was a heavy reliance on the use of estimates and indirect data. While the Ministry of Energy was commended for being able to provide a significant amount of reliable data for the energy sector, the opposite was the case for the agriculture and forestry sector. It was stated that the Ministry of Agriculture especially lacked reliable data. Another problem with the inventory provided in the INC was the high degree of uncertainty that was incurred through the use of default emission factors provided in the IPCC 1996 Revised Guidelines.

In the SNC it is expected that there will be improvements in the GHG inventory preparation so that previous data gaps are filled. The inventory year to be reported for the SNC is 2000. In accordance with decision 17/CP.8 the Revised IPCC 1996 GHG Inventory Guidelines will be used. Countries are also encouraged to use, as feasible, the IPCC Best Practice Guidelines. Where local or other methodologies are used these will be identified. Three of the direct acting GHGs not inventoried in the INC- hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride- will be included in the SNC. This is in addition to the GHGs that were inventoried in the INC namely carbon dioxide, methane, nitrous oxide, nitrogen oxides, carbon monoxide, non methane volatile organic compounds and sulphur dioxide.

While it has been stated that data will be available for the year 2000 it is not certain whether higher tiers of the IPCC methodology would be adopted for specific source categories. There is a need for emission factors to be developed to suit national circumstances and work has already begun in this area. Please specify what kind of work is under way. This represents a priority area which will be further addressed in the SNC. Which EF do you intend to address EF in the SNC? Note that development of emission factors can be complex stask that usually involve high resources in terms of funds and technical capacity. Unless there is confidence on the work (scope and methodologies) and technical capacity, development of local EF may not be feasible in the context of the SNC. Unless this activity would be limited to exploring the EFs that are most suitable or to use higher tiers, such as in the case of EF for enteric fermentation. The institutional arrangements and procedures for collecting and archiving data for preparation of national GHG inventories have also been identified as a priority for attention. Collaboration with the Central Statistical Office in the collection of data for the GHG inventory is expected to increase accuracy of data input to the inventory process from public and private sources.

Graduates from the University of the West Indies' climate change and impact programme will be directly involved in the inventory process as understudies to the international experts, having been trained in GHG inventory as part of their course requirements.

4.3 Programmes containing measures to facilitate adequate adaptation to climate change

The INC was able to provide a comprehensive overview of all the sectors likely to be vulnerable to climate change. Chapter 3 of the INC detailed not only the areas in which T&T was most vulnerable but also suggested ways in which we could adapt to climate change. Some of the vulnerable sectors identified in the INC were terrestrial and aquatic ecosystems, hydrology and water resources management, food and fibre production, human infrastructure and human health. However apart from a vulnerability study done on the sugar cane industry, the INC was not able to report on any further studies or quantitative assessments done in the vulnerable sectors identified. The SNC should provide more detailed information on adaptation programmes undertaken through participation in regional programmes such as CPACC, ACCC and MACC. This should include the detailed findings of the pilot study done on the economic valuation of resources in selected coastal ecosystems at risk from sea level rise. There should also be follow up on the progress of some of the findings and measures highlighted in the INC. These included:

- Implementation of an integrated water resources planning and management programme to address water allocation in sectors such as agriculture, industry and tourism.
- Watershed management programme.
- Intensive ongoing research programmes to address the issue of crop suitability, diversification and resiliency in light of projected temperature and sea level rise.
- Public awareness and education programmes
- Incorporation of climate change into all relevant aspects policy, planning and development.

The above were highlighted as measures either ongoing or necessary to adapt to climate change. The SNC will therefore provide information on what has been done thus far to implement these measures. As it is likely that not all of these measures and recommendations put forward for adaptation would have been achieved, the SNC will also identify the constraints and barriers faced. It should be noted that during the consultation process, studies on vulnerability and adaptation to climate change were identified as significant priority needs for T&T. The INC made mention of Global Circulation Models (GCMs) which can give an indication of likely future climate changes for T&T. However, there is a high degree of uncertainty in the projections for small islands such as T&T. The INC recommended training in predictive computer modeling, interpretation of models for Global Change Scenarios and climate change impact assessment. Further to this it has been recognized that there is a need for statistical downscaling of global models so that climate change projections allow for a higher degree of certainty. The downscaling should be assessed carefully as it does not necessarily mean less uncertainty. The NCSP is currently developing guidance on the pros and cons of developing climate scenarios, including downscaling, which will be distributed to countries soon. This is necessary to ensure proper assessment of vulnerability level and adaptation options in the various sectors. While some work has already been initiated with respect to statistical downscaling of global models, this is an area that will be further addressed in the SNC.

A significant part of the INC addressed "concerns, obscurities and areas for capacity building and improvements in understanding the systems being impacted on" (INC of T&T under the UNFCCC, 2001). Many of the priorities identified in the INC do not vary greatly from those identified in the consultation process for this proposal. During the consultation process it was stated that the following priority needs, if undertaken, would contribute significantly to T&T's obligations under the UNFCCC:

- Data generation, data collection and the required policy to ensure data availability and data sharing
- Vulnerability studies and adaptation assessments
- Training and Research
- Institutional arrangements to ensure efficient access/sharing of reliable data.

It is very clear that many of the priorities identified in the INC have not changed. The SNC will therefore serve as a continuation of the areas of work and priorities identified in the INC. The SNC will now detail specific national programmes to deal with these priority areas. There is also a need for studies and assessments in these areas to be more quantitative and comprehensive. The SNC will therefore outline the efforts required to achieve this.

Priority sectors to be examined will include coastal zone, water resources, agriculture, human health, and sustainable livelihoods. Additionally, adaptation options will be explored as is practicable to complement mitigation strategies, e.g. feasibility of biofuels and sustainable agriculture in the economic diversification of the country's GDP.

4.4 Programmes containing measures to mitigate climate change

T&T contributes only a miniscule fraction of global GHG emissions. As such, adaptation options were recognized as a priority compared to GHG emission abatement. Despite this it was stated in the 2000 SOE Report that T&T was the most industrialized country in the Commonwealth Caribbean region and one of the major contributors to GHG emissions among developing countries on a per capita basis. It was also found that T&T's transportation sector had a significant impact on air quality. The GHG inventory in the INC identified the transportation sector as a significant contributor to GHG emissions. It is expected that this situation is such that at present the transportation sector continues to be a significant source of air pollution. Furthermore since the 2000 SOE Report the energy sector of T&T has only continued to expand at an aggressive pace suggesting that T&T would still be a major contributor to GHG emissions in the developing world. Urbanization and industrialization have also contributed to changes in land use. Based on the results of the GHG inventory exercise, emitting sectors with the largest potential for mitigation will be addressed e.g. the use of natural gas as a less carbon intensive fuel in the transport sector will be considered as an abatement option.

As T&T's industrial, manufacturing and transportation sector continue to expand at a rapid rate, the SNC will need to address the issue of GHG emission abatement, land use change and forest availability for carbon sequestration. In addition to air pollution regulations and sections dedicated to air pollution, motor vehicle emissions and GHGs in the National Environmental Policy, the SNC must also focus on mitigation studies. Work done by the EMA on continuous air monitoring and development of emission standards and limits should be detailed in the SNC.

4.5 Other information considered relevant to the achievement of the objective of the Convention

Outputs from activities carried out under Phase II Enabling Activity, such as, technology needs assessment, will provide information on the country's progress with respect to technology needs assessments, climate observing systems and capacity building. Additionally, proposals for funding potential technology transfer will be identified in the SNC. Specific recommendations outlined in the report on capacity building for participation in systematic observation under the Phase II activity will be developed further to identify training opportunities for possible funding. In the area of capacity building the SNC will report on the advances made in the area of education on climate change. The availability of a university course on climate change and plans for further courses, training and research will be documented. The recommendations for capacity building will also focus on the need for monitoring equipment in the areas of rainfall, air and sea surface temperatures and salinity indicators and also for training in the downscaling and interpretation of climate models. Recommendations and strategies will also be put forward to deal with current institutional barriers and shortcomings of the systems in place to deal with climate change.

4.6 Constraints and gaps, and related financial, technical and capacity needs

A section of the SNC will also be dedicated to addressing constraints and gaps encountered when preparing each section of the Communication. This will also include any related financial, technical and capacity

needs. The constraints, gaps and needs highlighted in the INC will also be outlined with a view to determining whether they have been addressed and their current status. Problems with the overall implementation of the UNFCCC will also be highlighted.

5. Institutional Framework for Project Implementation

It is expected that institutional arrangements which existed for the INC will remain in place for preparation of the SNC. The project will be executed by the Environmental Management Authority (EMA) and the Ministry of the Environment, under the supervision of a Climate Change Working Group appointed by Cabinet to determine the Implications of Global Warming, Climate Change and Sea Level Rise. The Working Group will co-opt and engage appropriate sectoral teams in the execution of the SNC. The Working Group has representation from relevant groups which include government ministries, NGOs and the private sector. Consultants will be hired as appropriate to undertake specific activities detailed in the work plan.

6. Assessing project impact

The impacts of the SNC project will be assessed by an independent consultant recruited specifically for this purpose. Impacts will be assessed in each of the following five categories; namely: Capacity Development (at systemic, institutional and individuals levels); Innovations and New Methodologies; Leveraging Experience and Investments (including uptake of results); Awareness Raising; Prospects for Sustainability (of project benefits). For this exercise to produce useful information, it is necessary that a baseline survey of the situation in each of these categories be carried out at the start of the SNC project. This will provide tangible data for comparison with the situation at the end of the project

7. Budget Summary

Activity in Second National Communications	Total US$
I. NATIONAL CIRCUMSTANCES	10,000
Development priorities, objectives and circumstances, etc.	
Review of existing data/information and preparation of report	
II. NATIONAL GREENHOUSE GAS INVENTORIES	90,000
Arrangements to collect and archive data for continuous inventory preparation	
National GHG Inventory prepared, including level of uncertainty	
Report reviewed and revised	
III. PROGRAMMES FOR ADAPTATION TO CLIMATE CHANGE	80,000
Statistical downscaling of Global Climate Models	
Vulnerability assessment by sectors of adverse effects of climate change	
Adaptation options for climate change	
Policy framework for developing and implementing adaptation strategies	
IV. PROGRAMMES FOR MITIGATION OF CLIMATE CHANGE	70,000
Mitigation assessment by sector (e.g. transport, energy, etc)	
Mitigation options for climate change	
Policy framework for developing and implementing mitigation strategies	
V. OTHER RELEVANT INFORMATION	20,000
Integrating climate change considerations into social, economic and environmental policies and actions	
Transfer of, and access to ESTs, development of endogenous capacities; enabling environments	
Climate Change research and systematic observation	
Climate Change education, training and public awareness	
Capacity Building Activities, Options and Priorities	
Efforts to promote information sharing and networking	
VI. CONSTRAINTS & GAPS; RELATED FINANCIAL, TECHNICAL, & CAPACITY NEEDS	10,000
Constraints, gaps and needs, and activities for overcoming gaps, etc.	
Database development for GHG information	
Climate change impact assessment and predictive computer modeling	
VII. TECHNICAL ASSISTANCE	10,000
VIII. COMPILATION, PRODUCTION OF COMMUNICATION, INCLUDING EXECUTIVE SUMMARY & ITS TRANSLATION	15,000
IX. PROJECT MANAGEMENT (BASED ON 3 YEARS DURATION)	85,000
X. MONITORING AND REPORTING	15,000
TOTAL	**405,000**

8. Detailed Workplan

Outputs/activities	Year 1				Year 2				Year 3			
	1st Q	2nd Q	3rd Q	4th Q	1st Q	2nd Q	3rd Q	4th Q	1st Q	2nd Q	3rd Q	4th Q
1. National circumstances												
Development priorities, objectives and circumstances, etc	X											
Review of existing data/information and preparation of report	X	X	X									
2. Greenhouse gas inventory												
Arrangements to collect and archive data for continuous inventory preparation		X										
National GHG Inventory prepared, including level of uncertainty		X	X	X	X	X						
Report reviewed and revised						X	X					
3. Programmes containing measures to facilitate adequate adaptation to climate change												
Statistical downscaling of Global Climate Models					X	X	X					
Vulnerability assessment by sectors of adverse effects of climate change							X	X	X	X		
Adaptation options for climate change										X		
Policy framework for developing and implementing adaptation strategies											X	
4. Programmes containing measures to mitigate CC												
Mitigation assessment by sector (e.g. transport, energy, etc)					X	X	X					
Mitigation options for climate change							X					
Policy framework for developing and implementing mitigation strategies								X				
5. Other relevant information												
Integrating climate change considerations into social, economic and environmental policies and actions		X	X									
Transfer of, and access to ESTs, development of endogenous capacities; enabling environments			X									
Climate Change research and systematic observation		X										
Climate Change education, training and public awareness		X		X								
Capacity Building Activities, Options and Priorities				X								
Efforts to promote information sharing and networking		X		X								
6. Constraints and Gaps												
Constraints, gaps and needs, and activities for overcoming gaps, etc.					X	X						
Database development for GHG information						X	X					
Climate change impact assessment and predictive computer modeling						X	X	X				
7. Technical Assistance					X		X		X		X	
8. Compilation and production of reports												X
9. Project Management	X	X	X	X	X	X	X	X	X	X	X	X
10. Monitoring and reporting				X				X				X
11. SNC Preparation &submission												X

Appendix C: Terms of Reference

1. TOR for National Project Manager

In consultation with the Project Steering Committee (PSC), the Project Manager (PM) is responsible for day-to-day management, co-ordination and supervision of the implementation of the above project. Specifically, his\her responsibilities will include the following:

- Supervises and ensures the timely implementation of the project relevant activities as scheduled in the working plan
- Prepares a detailed work plan for the project and draft terms of reference for the subcontracts (in consultation with the PSC and UNDP);
- Compiles the scope and content of the overall SNC report and relevant sections in consultation with Team Leaders;
- Develops the scope of the work and TORs and other procurement documentation required to identify and facilitate recruitment of experts and consultants;
- Identifies and hire/subcontract the national experts and institutions (in consultation with the PSC and UNDP);
- Supervise project support staff and national consultants who are recruited to provide technical assistance
- Collaborates with all relevant stakeholders and the Project Steering Committee to fulfill the project purpose;
- Organizes 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;
- Identifies the follow up activities and mobilizes other resources at the extend possible;
- Identifies and ensures synergy of the SNC with other relevant ongoing / new projects.
- Finalizes the Second National Communication of Trinidad and Tobago along with government personnel and national experts;
- Ensures 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

- Preferably master's degree in an environmental science/natural science or related discipline;
- Good understanding of Trinidad and Tobago's environment/development issues especially issues related to climate change;
- At least five years direct and relevant experience to the project;
- Excellent communication and interpersonal 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;
- Extensive experience working with government or statutory institutions at local levels, and working with NGOs and private sector;
- Some involvement in the preparation of the national GHG inventory and the initial National Communication is desirable ;

- Substantial knowledge of methodologies for inventories (*IPCC Revised 1996 Guidelines* and *Good Practice Guidance, LEAP etc*)
- Familiarity with international negotiations and processes under the UNFCCC preferred

2. TOR for National GHG Inventory Team Leader

The National GHG inventory Team Leader will work in consultation with and under the guidance and supervision of the National Project Manager (NPM). Specifically, his\her responsibilities will include the following:

- Assists 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.
- Assists NPM to organize GHG inventory relevant training and workshops.
- Prepares a detailed work-plan for GHG inventory exercise on the basis of the overall project work plan.
- Provides periodic progress report to the NPM on the GHG inventory thematic area;
- Develops the scope of work and respective terms of reference for the team members;
- Leads the data collection process, including surveys.
- Leads and oversees the team to conduct the GHGs national inventory;
- Ensures synergy with Regional Project on GHG inventories;
- Ensure the timely and effective management of the activities as scheduled;
- In consultation with NPM select and implement the methodologies for the conducting of GHGs inventory;
- Identifies gaps and key sectors for GHGs inventory;
- Incorporates comments received from the review process.
- Drafts the National Inventory Report and respective chapter of Albania's SNC along with the respective part of executive summary.
- Leads and coordinates the updating the Manual of Procedures in the light of the new findings under the SNC exercise.
- Archives new data and estimates of new inventory.

Qualifications and experience

- An advanced degree in natural science, environmental management or other field relevant to the project;
- A minimum of 5 years of direct experience in Climate Change or related area;
- Substantial involvement in the preparation of the First National Communication is mandatory (GHG inventory and abatement analysis) ;
- Good understanding of GHGs inventory process and demonstrable knowledge of IPCC and GPG;
- Demonstrated ability of analytical and drafting work;

3. TOR for GHG Abatement Analysis Team Leader

The team leader of GHG abatement analysis will work in consultation with and under the guidance and supervision of the National Project Manager. Specifically, his\her responsibilities will include the following:

- Assists the NPM in establishing the team of experts for performing the GHG abatement analysis on the basis of the roster of experts;
- Prepares a detailed work-plan for GHG abatement analysis on the basis of the overall project work plan.
- Provides periodic progress report to the NPM on the GHG abatement analysis thematic area
- Develops the scope of work and respective terms of reference for the team members;
- Leads the data and information collection process.
- In consultation with NPM, decide on methodologies for the elaboration of scenarios for relevant sectors;
- Leads and oversees the scenario development and update
- Organize the scheduled consultations/workshops and ensure their success;
- Ensures synergy with other relevant projects;
- Ensure the timely and effective management of the activities as scheduled;
- Incorporates comments received from the review process.
- Drafts the GHG Abatement Analysis Report and respective chapter of Trinidad and Tobago's SNC along with the respective part of executive summary.
- Oversees the documentation of the studies made and archiving.

Qualifications and experience

- An advanced degree in natural science, environmental management or other field relevant to the project;
- A minimum of 5 years direct experience in Climate Change or related area;
- Substantial involvement in the preparation of the First National Communication is mandatory (inventory and abatement and analysis);
- Good understanding of GHGs inventory process and projection;
- Demonstrable knowledge of IPCC 1996, IPCC GPG, etc.
- Demonstrated ability of analytical and drafting work;

4. TOR for V&A Team Leader

The Vulnerability and Adaptation sector team leader should work in consultation with and under the guidance and supervision of the National Project Manager. Specifically, his\her responsibilities will include the following:

- Assists the NPM in establishing the team of experts for performing the V&A on the basis of the roster of experts;
- Prepares a detailed work-plan for V&A on the basis of the overall project work plan.
- Provides periodic progress report to the NPM on the V&A thematic area
- Develops the scope of work and respective terms of reference for the team members;
- Leads the data and information collection process for performing the V&A study.
- In consultation with NPM decide on priority areas or sectors;
- Leads and oversees the development baseline climate and socio-economic scenario and impact of climate change.
- Organize the scheduled consultations/workshops and ensure their success;
- Ensures synergy with other relevant projects
- Ensure the timely and effective management of the activities as scheduled;
- Incorporates comments received from the review process.

- Drafts the V&A Report and respective chapter of Trinidad and Tobago's SNC along with the respective part of executive summary.
- Oversees the documentation of the studies made and archiving.

Qualifications and experience

- An advanced degree in natural science, environmental management or other field relevant to the project;
- A minimum of 5 years of direct experience in Climate Change or related area;
- Substantial involvement in the preparation of the initial National Communication is mandatory (V&A);
- Good understanding of climate change and sustainable development issues;
- Demonstrated ability of analytical and drafting work;
- Demonstrable knowledge of IPCC 1994, etc.

Generic terms of reference for scoping and implementing the V&A component of the National Communication

These generic terms of reference for the preparation of the V&A studies identify the basic set of activities that the V&A expert/consultant will be responsible for under the supervision of the National Communication's Coordinator. It is important to note that these generic terms of reference do not intend to limit the work of the expert but to guide countries on the general profile of the V&A expert and on the activities generally expected to be carried out.

Profile of the V&A expert/consultant

The V&A expert should be very knowledgeable and with hands-on experiences on V&A issues, have a solid understanding of the gaps and needs for developing/improving vulnerability assessments, and have technical expertise in the formulation of adaptation options. The V&A expert should be able to scope technical studies in the V&A area and design an implementation strategy to carry out the different V&A activities within the framework of the NC. He/She should also have a solid understanding of the institutional arrangements and resources required to carry out the V&A work.

Although the NC project document already provides the framework for the V&A studies, the expert should be able to advise on any adjustments if needed, both at the organizational and technical levels, for a successful implementation of the V&A studies.

Activities

In general, the V&A expert/consultant should be responsible for ensuring that the following set of activities is carried out. Emphasis on different activities will depend on the scope of the work already described in the NC project document and/or on the specific activities the V&A expert would be assigned to.

Policy and institutional issues

1. Identify the key policy issues the V&A study of the SNC project aims to address, e.g.,
   a. to scope the scale of risks associated with projected climate change;
   b. to aid in the identification of priorities for adaptation;
   c. to support the development of a national adaptation strategy.

2. Identify the expected output of the V&A study of the SNC project on the basis of the project document, e.g.,
   a. impacts assessment at the sectoral level for the given priorities identified in the project document;
   b. a national adaptation strategy, including policies, programs and projects.

3. Develop a clear strategy to link the V&A outputs to national development planning. This would include, among others:
   a. assessment of institutional arrangements/stakeholders engagement required to facilitate linking the outcome of the V&A studies to sectoral or national planning;
   b. framework for assessing how the above linkage can be monitored and measured in the short and long terms, for instance through the development of practical indicators.

Technical issues

Scope of the V&A study

4. Elaborate on the scope (geographic, thematic, sectoral coverage, time horizon) of the V&A study, e.g.,
   a. designing a strategy to build on but advance what was done within INC, and while applicable, NAPA project;
   b. elaborating on the scope of studies to address sectors/regions not covered by INC, sectors/regions identified as sensitive/vulnerable to climate change, as per the NC project proposal;
   c. preparing a detailed workplan for each of the study to be carried out, including a strategy to involve the relevant stakeholders, timeline, etc.;

d. designing a strategy, as applicable, to link the V&A studies with previous and ongoing related projects/activities (e.g., land degradation, biodiversity, international waters.)

Methodological framework

5. Elaborate on the overall methodological framework for the V&A study as per the project document and in consultation with the project coordinator. In doing so, the V&A expert should ensure that:
   a. The proposed methodological framework is the most appropriate given the policy questions to be addressed, the characteristics of the study (e.g., sectoral focus, spatial and temporal scales, stakeholders involved, and data requirement, etc.), and data availability;
   b. In-country expertise required for such a methodological framework is available. If needed, the V&A expert should develop a strategy to address technical capacity gaps. For instance, by exploring the possibility of applying another framework in which more in-country expertise exists, or by designing a training/technical backstopping strategy, etc.

Scenarios development

6. Identify the types of scenarios required to conduct the V&A assessment, e.g., climate, socio-economic, sea level, adaptive capacity, technology, land-use land-cover.

7. Identify the temporal and spatial resolution needed for these scenarios (e.g., national, sub-national, watershed, community, farm level, multi-decadal average, annual, monthly, daily, mean conditions, extreme events, etc.). In doing so, the expert should justify the choices.

8. Develop the strategies for developing such scenarios, e.g., model-based. expert judgment, etc.

In the preparation of the scenarios development strategy, the expert should assess the feasibility of the scenario needs and the methods for developing these scenarios, given the characteristics of the studies, and data availability. For instance, the expert would be expected to advice on alternative options to running regional climate models or other resource intensive and time consuming exercises. The V&A expert would also assess whether there is enough in-country expertise to develop such scenarios and/or identify options to address the needs for additional expertise.

Sectoral assessment (to be considered by each of the sectors to be covered in the V&A study)

9. Elaborate on the methods and tools, as per the project document, chosen to undertake sectoral assessments, e.g., numerical models, elicitation of expert views, stakeholder consultations, focus groups, etc. In doing so, the expert will advise on any adjustments needed to the options identified in the project document.

10. Provide justifications for the selection of the methods/tools considering the research questions, characteristics of the study, and requirements of data and technical expertise of these methods/tools.

11. Assess in-country expertise required to apply the selected methods/tools and prepare training/technical backstopping strategy as required.

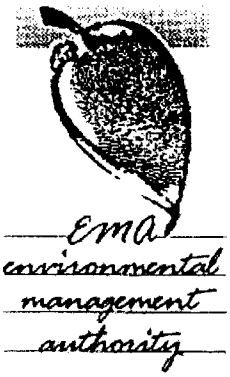
12. Develop a strategy to integrate findings from sectoral assessment, as needed. For instance, by applying an integrated model, synthesizing sectoral information, etc.

Technical assistance needs

13. Develop a technical backstopping/training strategy to strengthen the national capacity needed to carry out the different V&A studies, This would include details on the type of support needed (training courses on particular methodological frameworks/tools, guidance material, technical documents and good practice) and the, timeline for such support.

Appendix D: Endorsement letters

.GEF Operational Focal Point



15 November 2005

Dr Inyang Ebong-Harstrup
Resident Representative
UNDP
UN House
3 Chancery Lane
PORT OF SPAIN

Dear Dr Ebong-Harstrup

PROJECT PROPOSAL FOR THE PREPARATION OF TRINIDAD AND TOBAGO'S SECOND NATIONAL COMMUNICATION TO THE UNITED NATIONS CONVENTION ON CLIMATE CHANGE

On behalf of the Government of the Republic of Trinidad and Tobago and, in my capacity as the GEF Operational 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,
ENVIRONMENTAL MANAGEMENT AUTHORITY

Dave McIntosh
Managing Director/CEO
GEF Operational Focal Point

KK DM1 nuhunep BGI nung copIII

.GEF CC Focal point

MINISTRY OF PUBLIC UTILITIES AND THE ENVIRONMENT

Sacred Heart Building, 16-18 Sackville Street, Port of Spain, Trinidad W.I.
Phone: (868)-625-6083 Fax: (868)-625-7003 Email: environment@tstt.net.tt

MPUE: 14/5/9

November 29, 2005

Dr. Inyang Ebong-Harstrup
Resident Representative
United Nations Development Programme
UN House
3 Chancery Lane
PORT OF SPAIN

Dear Dr. Ebong-Harstrup,

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

The subject at caption refers.

This serves to endorse the request for funding from the Global Environment Facility (GEF) for the above mentioned project proposal, in my capacity as the Trinidad and Tobago National Focal Point for the United Nations Framework Convention on Climate Change and Political Focal Point for GEF.

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 of this matter.

Sincerely,

Earl Nesbitt
Permanent Secretary
Ministry of Public Utilities and the Environment

SIGNATURE PAGE

Country: Trinidad and Tobago

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)*	Phase out of ODS from 50% of Commercial Refrigeration and Mobile Air Condition Sectors and Inventorying of POPS Significant Reduction in National Contribution to Environmental Hazards
Expected Output(s)/Indicator(s): *(CP outcomes linked t the SRF/MYFF goal and service line)*	_____ _____
Implementing partner: *(designated institution/Executing agency)*	Environmental Management Authority (EMA) and supervised by cabinet-appointed Climate Change Working Group
Other Partners: *(formerly implementing agencies)*	_____ _____

Programme Period: 2006-2009
Programme Component: _____
Project Title: **PIMS 3152 CC EA Second National Communication of Trinidad and Tobago**
Project ID: 00036383
Project Duration: 3 years
Management Arrangement: NEX
Implemented by EMA

Budget $405,000
General Management Support Fee _____
Total budget: $405,000
Allocated resources: _____
- Government _____
- Regular _____
- Other:
  - Donor _____
  - Donor _____
  - Donor _____
- In kind contributions _____

Unfunded budget: _____

Agreed by (Government): _____ date: 15/8/07
Agreed by (Implementing partner/Executing agency): _____ date: 15 Aug. 06
Agreed by (UNDP): _____ date: 8th Aug. 06