



GUYANA

INITIAL NATIONAL COMMUNICATION

IN RESPONSE TO ITS COMMITMENTS TO THE UNFCCC

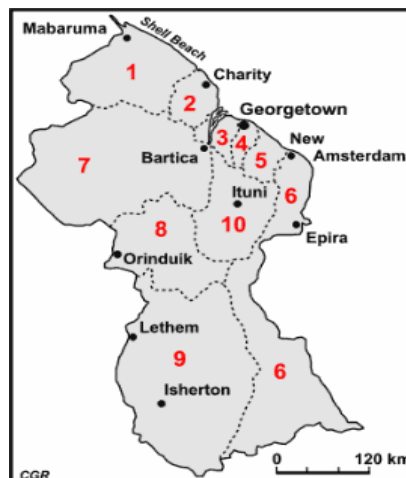
**NATIONAL
CIRCUMSTANCES**

**GREENHOUSE
GAS
INVENTORY**

**VULNERABILITY
AND
ADAPTATION**

**MITIGATION
ANALYSIS**

**MONITORING AND UNDERSTANDING
CLIMATE CHANGE AND IMPACTS**



April 2002

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TABLE OF CONTENTS

ACKNOWLEDGMENTS

DATA SOURCES

ABBREVIATIONS

GLOSSARY OF KEY TERMS

1.0	EXECUTIVE SUMMARY	1
1.1	Introduction	1
1.2	National Circumstances	1
1.3	National Inventory of Greenhouse Gases	3
1.4	Impacts and Vulnerability Assessment	5
1.5	Adaptation Measures	7
1.6	Mitigation Measures	8
1.7	Technology Transfer	8
1.8	Monitoring and Understanding Climate Change and Impacts	9
1.9	Major Recommendations	10
2.0	INTRODUCTION	13
2.1	General	13
2.2	Guyana's Obligations	13
2.3	Convention Guidance	13
2.4	COP Decision Guidance	14
2.5	The Enabling Activity Project	14
	2.5.1 The National Climate Committee (NCC)	15
	2.5.2 The National Task Force	16
	2.5.3 Workshops	16
3.0	NATIONAL CIRCUMSTANCES	17
3.1	Geography	18
	3.1.1 General	18
	3.1.1.1 The Coastal Plain (CP)	18
	3.1.1.2 The Hilly Sand and Clay Region (HSC)	19
	3.1.1.3 The Highland Region (H)	19
	3.1.1.4 The Forested Region (F)	19
	3.1.1.5 The Rupununi Savannah (RS) and Intermediate Savannah (IS)	20
	3.1.2 The Geology of Guyana	20
	3.1.2.1 Plate Tectonics	20
	3.1.2.2 Evidence of Present Tectonic Activity	20
	3.1.2.3 Coastal Subsidence	20
3.2	Climate	21
	3.2.1 General	21
	3.2.2 Different Seasons of the Year	21
	3.2.3 Rainfall	23

3.2.4	Duration of Sunshine.....	23
3.2.5	Temperature, Relative Humidity and Wind	23
3.3	Climate and Weather Systems	23
3.4	History and Demography	24
3.4.1	History	24
3.4.2	Demography	24
3.5	The Economy	25
3.5.1	Agriculture, Forestry and Fishing Sector.....	25
3.5.2	Manufacturing and Service Sector.....	26
3.5.3	Mining & Quarrying.....	26
3.5.4	Construction.....	26
3.5.5	Tourism	27
3.6	Energy	27
3.6.1	Imported Petroleum.....	27
3.6.2	Bagasse and Fuelwood.....	27
3.6.3	Other Sources	28
3.7	Transportation.....	29
3.8	Land Use and Forestry.....	29
3.8.1	Land Use.....	29
3.8.1.1	Spatial Pattern of Land Use.....	30
3.8.1.2	Status of Land Use Planning.....	30
3.8.2	Forestry	31
3.9	Biodiversity.....	31
3.10	Institutional Arrangements for GHG Inventory Preparations.....	32
3.10.1	Existing Arrangements.....	32
3.10.2	Deficiencies In Institutional Strengthening.....	32
4.0	NATIONAL INVENTORY OF GREENHOUSE GASES	34
4.1	Introduction.....	35
4.2	Energy Sector	35
4.3	Industrial Sector.....	41
4.4	Agriculture Sector.....	42
4.5	Land Use Change and Forestry	44
4.6	Waste Sector.....	46
4.7	Summary of Emissions and Removals	48
4.8	Baseline and Trends.....	51
4.9	Sources of Uncertainties	56
4.10	Summary and Conclusions.....	58
5.0	IMPACTS AND VULNERABILITY ASSESSMENT	59
5.1	Introduction	60
5.2	Climate Change and Sea Level Scenarios	60
5.2.1	Observed Climate.....	60
5.2.1.1	Temperature	60
5.2.1.2	Rainfall.....	63

5.2.2	Scenarios of Future Climate Change.....	64
5.2.2.1	CGCM 1.....	65
5.2.2.1.1	Temperature Change.....	67
5.2.2.1.2	Rainfall Change	69
5.2.2.1.3	Evaporation and Water Deficits	69
5.2.2.2	Hadley Centre A-O GCM	71
5.2.2.3	Extreme High Temperature & Precipitation Events	72
5.2.2.4	ENSO And Precipitation Variability.....	72
5.2.2.5	Tropical Cyclones	73
5.2.3	Sea Level Rise	73
5.2.3.1	Past Sea Level Rise	73
5.2.3.2	Future Sea Level Change	74
5.2.3.3	Extremes of Sea Level: Storm Surges and Waves	75
5.3	Climate Change Impacts	76
5.3.1	Impacts on Hydrology and Water Resources	76
5.3.2	Energy Sector	76
5.3.3	Agriculture Sector	80
5.3.3.1	Changes in Mean Crop Yield	80
5.3.4	Forestry Sector	83
5.3.5	Vulnerability of the Coastal Zone	89
5.3.5.1	The Coastal Plain	89
5.3.5.2	Coastal Morphology	91
5.3.5.3	Condition of Sea Defences	93
5.3.5.4	Drainage System	93
5.3.5.5	Climate and Hydrology Factors	93
5.3.5.6	Impact Zones	94
5.3.5.7	Submergence and Inundation of Coastal Wetlands	96
5.3.5.8	Coastal Erosion	97
5.3.5.9	Flooding and Storm Damage	99
5.3.5.10	Increased Salinity in Estuaries and Aquifers	99
5.3.5.11	Water Resources	100
5.3.5.12	Agriculture	100
5.3.5.13	Fisheries	101
5.3.5.14	Human Settlement-infrastructure	101
5.3.5.15	Sluice Gates and Sewer Systems	102
5.3.5.16	Highways, Roads, and Bridges	102
5.3.5.17	Human Suffering and Loss of Life	102
5.3.5.18	Tourism.....	103
5.3.6	Health Effects	104
5.3.7	Conclusion	105
6.0	ADAPTATION MEASURES	106
6.1	Introduction.....	107
6.2	Objectives.....	107
6.3	Climatic Impacts of Importance	107

6.4	Adaptation and Adaptive Capacity	108
6.5	The Adaptation Options.....	108
6.5.1	Capacity Building	108
6.5.1.1	Capacity to Detect Climate Change and its Impacts	109
6.5.1.2	Capacity to Plan for Adaptation to Climate Change	109
6.5.1.3	Capacity to Respond to Adverse Impacts of Climate Change	109
6.6	Adaptation Strategy	109
6.7	Capacity strengthening	110
6.8	Adaptation by sectors	111
6.8.1	Coastal Zone	111
6.8.2	Agriculture and Fisheries	114
6.8.3	Water Resources	116
6.8.4	Energy.....	117
6.8.5	Forestry and Land Use	118
6.8.6	Waste	120
6.8	Conclusion.....	120
7.0	MITIGATION ANALYSIS	121
7.1	Introduction.....	122
7.7.1	Macro economic impacts of response measures.....	122
7.2	Mitigation Options.....	124
7.2.1	Energy sector	127
7.2.2	Industrial Processes Sector.....	129
7.2.3	Agriculture Sector.....	129
7.2.4	Land Use and Forestry Sector.....	131
7.2.5	Waste Sector.....	132
7.3	Summary and Conclusions.....	132
8.0	FINANCIAL ASSISTANCE AND TECHNOLOGY TRANSFER	133
8.1	Relevant Convention Articles	134
8.2	The Need for Assistance.....	134
8.2.1	Capacity Building Needs.....	134
8.2.1.1	Human Capacity	134
8.2.1.2	Organizational Capacity	135
8.2.1.3	Information Assessment and Monitoring Capacity	135
8.3	Barriers to the Transfer of Environmentally Sound Technologies.....	135
8.3.1	Economic and Financial.....	136
8.3.2	Organizational and Institutional.....	136
8.3.3	Human Resources	136
8.3.4	Technological	136
8.3.5	Technology Information	137
8.4	Technology Needs.....	137
8.4.1	Capacity Building	137
8.4.2	Sectoral Considerations.....	137
8.4.2.1	Residential, Commercial and Institutional Building Sector.....	137

8.4.2.2	Transport.....	138
8.4.2.3	Industry	138
8.4.2.4	Energy Supply	138
8.4.2.5	Agriculture.....	139
8.4.2.6	Forestry	139
8.4.2.7	Coastal Adaptation Technologies.....	139
8.4.2.8	Solid Waste Management and Waste Water Treatment.....	139
8.4.2.9	Human Health.....	139
8.5	Conclusions.....	139
9.0	SYSTEMATIC OBSERVATION AND RESEARCH	141
9.1	Introduction.....	143
9.2	Data Collection and Systematic Observation.....	143
9.3	Research Institutions.....	143
9.4	Data Collection Needs.....	144
9.4.1	Equipment.....	144
9.4.2	Training	144
9.4.3	Field Observations.....	144
9.5	Impact Observations by Sector Agencies.....	144
9.6	Research Needs.....	144
9.6.1	Climate Change Detection and Prediction	144
9.6.2	Impacts Detection and Responses Prediction	144
9.7	Data Storage	145
9.8	Conclusion.....	145
10.0	EDUCATION, PUBLIC AWARENESS AND TRAINING.....	146
10.1	The Need for Education and Public Awareness.....	147
10.2	Relevant Sectors.....	147
10.3	Training Needs.....	147
10.4	Strategy for Implementing Education, Public Awareness and Training	148
10.4.1	The NEEPAS (1999) Strategy.....	148
10.4.2	NEEPAS and Climate Change.....	149
10.5	Conclusions.....	150
11.0	CONCLUSIONS	151
	APPENDICES (3A, 4A, and 4B)	152
	Selected Economic Indicators	
	Forestry Production by Category	
	Livestock Population by Category	
	Greenhouse Gas Emissions and Removals - Tables (1990-1998)	
	Uncertainty Tables	
	Bibliography.....	170

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ABBREVIATIONS

ASLR	Accelerated Sea Level Rise
A-OGCM	Atmosphere – Ocean General Circulation Model
CH ₄	Methane
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
COP	Conference of Parties
CFC's	Chlorofluorocarbon
CARICOM	Caribbean Community
CPACC	Caribbean Planning for Adaptation to Climate Change
DBH	Diameter Breast Height
DOC	Degradable Organic Compounds
DSSAT	Decision Support System for Agro Technology Supply
DTR	Diurnal Temperature Range
ENSO	El Nino Southern Oscillation
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency
ET	Evapotranspiration
EST	Environmentally Sound Technology
FAO	Food and Agriculture Organisation
FDS	First Dry Season
FWS	First Wet Season
GDP	Gross Domestic Product
Gg	Gigagramme
GHG	Greenhouse gas
GIS	Geographic Information System
GCM	General Circulation Model
GD	Georgetown Datum
GHGM	Greenhouse Gas Mitigation
GEF	Global Environment Facility
GWP	Global Warming Potential
ICZM	Integrated Coastal Zone Management
IPCC	Intergovernmental Panel on Climate Change
ITCZ	Inter-Tropical Convergence Zone
LPG	Liquefied Petroleum Gas
MACC	Mainstreaming Adaptation to Climate Change in the Caribbean
MSW	Municipal Solid Waste
MAGIC	Model for the Assessment of Greenhouse Gas Induced Climate Change
MAAT	Mean Annual Air temperature
MTAP	Mean Total Annual Precipitation
NM VOC	Non-Methane Volatile Organic Compound
NO _x	Oxides of Nitrogen
N ₂ O	Nitrous Oxide

NCC	National Climate Committee
NRMP	Natural Resources Management Project
NREAC	Natural Resources and Environment Advisory Committee
NGO's	Non Governmental Organisations
NEEPAS	National Environment Education and Public Awareness Strategy
NBS	Net Basin Supply
O ₃	Ozone
PSMSL	Permanent Service for Mean Sea Level
PER	Potential Evapotranspiration Ratio
SWDS	Solid Waste Disposal Sites
SDS	Second Dry Season
SWS	Second Wet Season
TJ	Terajoules
UNFCCC	United Nations Framework Convention on Climate Change
UNCED	United Nations Conference on Environment and Development
UV	Ultra - Violet
WMO	World Meteorological Organisation

A GLOSSARY OF KEY TERMS

Adaptation

The adjustment of an organism or population to a new or altered environment. Also refers to conscious and unconscious decisions made by people to adjust to changes, such as adaptation to climate change.

Alternative Energy

Energy derived from non-fossil fuel sources.

Anthropogenic Emissions

Emissions of greenhouse gases associated with human activities. These include burning of fossil fuels for energy, deforestation and land-use changes.

Atmosphere

The envelope of gases surrounding the earth and bound to it by the earth's gravitational attraction.

Biomass

The total dry organic matter or stored energy content of living organisms. Biomass can be used for fuel directly by burning it (e.g. wood), indirectly by fermentation to an alcohol (e.g. sugar) or extraction of combustible oils (e.g. soybeans).

Capacity Building

A process of constructive interaction between developing countries and the private sector to help them develop the capability and skills needed to achieve environmentally sound forms of economic development. The process makes use of the private sector's modern technologies and management systems, in combination with a competent workforce and appropriate laws and regulations.

Carbon Dioxide (CO₂)

A naturally occurring gas, it is also a by-product of burning fossil fuels and biomass, as well as land use changes and other industrial processes. It is the principal anthropogenic greenhouse gas that affects the earth's temperature.

Carbon Dioxide Fertilization

Enhancement of plant growth or yield as a result of an increase in the anthropogenic concentration of CO₂.

Carbon Sequestration

The long-term storage of carbon or carbon dioxide in the forests, soils, ocean, or underground in depleted oil and gas reservoirs, coal, seams, and saline aquifers.

Carbon Sinks

Natural or man-made systems that absorb carbon dioxide from the atmosphere and store them. Trees, plants, and the oceans all absorb CO₂ and are examples of carbon sinks.

Climate

The climate may be described as the statistical description of weather and atmospheric conditions as exhibited in extremes, averages, and variables of temperature, precipitation, wind and other related atmospheric elements, including patterns of such conditions, globally or in a given region, over a specified period long enough to be representative (usually a number of decades).

Climate Change (UNFCCC definition)

A change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability over comparable time periods.

Climate Models

Large and complex computer programmes used to mathematically simulate global climate. They are based on mathematical equations that seek to present the physical processes that govern the earth atmosphere system.

Climate System

The totality of the atmosphere, hydrosphere, biosphere, and geosphere and their interactions.

Cogeneration

The use of waste heat from electricity generation, such as exhaust from gas turbines, for either industrial purposes or district heating.

Conference of the Parties, or COP

The supreme body of the UNFCCC, comprised of countries that have ratified or acceded to the framework Convention on Climate Change.

Ecosystem

The interacting system of a biological community and its non-living environmental surroundings.

El Nino/La Nina/ ENSO

At irregular intervals, but on average about every four years, widespread warming of the east-central equatorial Pacific sea surface temperature occurs. This warming, which typically lasts for about a year, is called EL Nino event. El Nino can be regarded as the warm phase of a major climate oscillation. During the cold phase, called La Nina, the equatorial Pacific sea surface temperature is cooler than normal. The sea surface temperatures are associated with widespread atmospheric shifts in winds, rainfall etc.

Emissions (UNFCCC definition)

The release of greenhouse gases and/or their precursors into the atmosphere over a specified area and period of time.

Emissions Trading

A market-based approach to achieve environmental objectives that allows those emitters of greenhouse gas (GHG) to trade the excess emissions at another source inside or outside of the country that produced the emission. In general trading can occur at the domestic, international and intra-company levels. Article 17 of the Kyoto Protocol, allows Annex B countries to exchange emissions obligations.

Fossil Fuels

Carbon-based fuels, including coal, oil and natural gas.

Fuel Switching

Supplying energy by using alternative fuels. Often used to refer to actions that reduce CO₂ emissions from electric utilities by switching from coal to natural gas.

General Circulation Models, or GCMs

Large and complex computer programmes that attempt to mathematically simulate global climate. They are based on mathematical equations that seek to represent the physical processes that govern the earth-atmosphere system.

Global Environment Facility, or GEF

A joint funding programme established by developed countries to meet their obligations under various international environmental treaties.

Global Warming

The view that the earth's temperature is being increased, in part, due to emissions of greenhouse gases associated with human activities, such as burning fossil fuels, bio-mass burning, cement manufacture etc.

Global Warming Potential, or GWP

A time dependent index to compare the radiative forcing, on a mass basis, of an impulse of a specific greenhouse gas relative to that of CO₂. For example, methane has a radiative forcing that was estimated over a 100-year period to be 21 times greater than that of CO₂, thus it has a GWP of 21.

Greenhouse Effect

The trapping of heat by naturally occurring heat-retaining atmospheric gases (water vapour, carbon dioxide, nitrous oxide, methane and ozone) that keeps the earth at about 30 °C (86° F) warmer than if these gases did not exist.

Greenhouse Gases, or GHGs

Gases in the earth's atmosphere that absorb and re-emit infra-red radiation. These gases occur through both natural and human-influenced processes. The major GHG is water vapour. Other GHGs include carbon dioxide, nitrous oxide, methane, ozone, and CFCs.

Gross Domestic Product, or GDP

The total value of goods produced and services provided in a country in one year.

Humidity

The degree of moisture in the atmosphere.

Impact Models

Computer programmes used to estimate the impact of specific climate change on natural, social or economic systems.

Intergovernmental Panel on Climate Change, or IPCC

Panel established in 1988, by governments under the auspices of the World Meteorological Organisation and the UN Environment Programme. It prepares assessment, reports and guidelines on the science of climate change, its potential environmental, economic and social impacts, technological developments, possible national and international responses to climate change and cross-cutting issues.

Kyoto Protocol

The Protocol, drafted during the Berlin mandate process, that, on entry into force, would require countries listed in Annex B (developed countries) to meet differential reductions targets for their greenhouse gas emissions relative to 1990 levels by 2008-12.

Laterite

A red or yellow ferruginous clay, friable and hardening in air, used for making roads in tropics.

Lithosphere

The rigid outer part of the earth consisting of the crust and upper mantle.

Methane, or CH₄

One of the six greenhouse gas included under the Kyoto Protocol, it has a relatively short lifetime of 10(+ or -) 2 years. Primary sources of methane are landfills, coal mines, paddy fields, natural gas systems and livestock.

Methane Recovery

Method by which methane emissions, from for example coal mines or waste sites, are captured and then re-used either through cost-effective measurement methods or through power generation.

Montreal Protocol

International agreement under the UN which entered into force in January 1989 to phase-out the use of ozone depleting compounds such as CFCs and methyl chloroform

Nitrous Oxide (N₂O)

One of the six greenhouse gases to be curbed under the Protocol, it is generated by burning fossil fuels and in the manufacture of fertilizer.

Non-Annex 1 Parties

The countries that ratified or acceded to the UNFCCC which are not included in Annex 1 of the Convention.

No Regrets

Actions that result in greenhouse gas limitations and abatement, and which also make good environmental and economic sense in their own rights.

Ozone

Ozone (O₃) is a greenhouse gas. In the atmosphere, or lower part of the atmosphere, ozone can be a constituent of smog. It is created naturally and also by reactions in the atmosphere involving gases resulting from human activities, including nitrogen oxides (NO_x) from motor vehicles and power plants.

Plateau (x)

An area of fairly level ground

Radiative Forcing

A change in the balance between incoming solar radiation and out-going infra-red and short-wave radiation.

Renewables

Energy sources that are constantly renewed by natural process. These include non-carbon technologies such as solar energy, hydropower, and wind as well as technologies based on bio-mass.

Reservoir

A component or components of the climate system where a greenhouse gas or a precursor of a greenhouse gas is stored (UNFCCC definition). The oceans, soils and forests are all carbon reservoirs.

Sinks (UNFCCC Definition)

Any process, activity or mechanism that removes a greenhouse gas or a precursor from the atmosphere.

Source (UNFCCC Definition)

Any process, activity that releases a greenhouse gas or a precursor from the atmosphere.

Trace Gas

This is a minor constituent of the atmosphere. The most important trace gases contributing to the greenhouse effect are carbon dioxide, ozone, methane, nitrous oxide, carbon monoxide, CFCs, HFCs etc.

UN Environment Programme, or UNEP

This U.N. Specialized Agency, established in 1972, to coordinate the environmental activities of the UN. It aims to help reinforce and integrate the large number of separate environmental efforts by Inter-governmental, non-governmental, national and regional bodies. UNEP has fostered the development of the UNFCCC and the Convention on Biological Diversity.

UN Framework Convention on Climate Change, or UNFCCC

A treaty signed at the 1992 Earth Summit in Rio de Janeiro by more than 150 countries. Its ultimate objective is the “stabilization of greenhouse gas concentration in the atmosphere at a level that would prevent dangerous anthropogenic (human induced) interference with the climate system.