Government of the Republic of Trinidad and Tobago

National Climate Change Policy

June 2025

FOREWORD: THE CLIMATE CHANGE POLICY AND YOU

Climate Change presents an urgent threat to our survival because it directly and indirectly threatens the natural ecosystems upon which human survival is dependent, as well as the built environment, with irreversible damage. Climate change impacts are already being felt in Trinidad and Tobago which present a complex development challenge that requires a flexible national approach. Small Island Developing States (SIDs), such as Trinidad and Tobago, are among the most vulnerable to climate change due to inherent characteristics such as limited land space; limited financial, technological, and human capacity; and limited resources. Long-term changes to climate patterns, as well as short to medium term variability and extremes associated with climate change, have already begun to alter environmental trends and the integrity of vital ecosystems on which Trinidad and Tobago has relied for generations, with the attendant biophysical and socio-economic impacts.

The National Climate Change Policy (NCCP) articulates Trinidad and Tobago's commitment to address with urgency the drivers and impacts of climate change. While it contains a provision for updating every five years, the decision was taken to delay its update considering the adoption of the Paris Agreement in 2015 and the finalisation of the rules of implementation of the Paris Agreement, which was completed in 2022. Accordingly, the updated Policy now includes the relevant provisions of the Paris Agreement, inclusive of the decisions taken for its implementation, which will provide the international guidance for domestic implementation. The provisions of the Paris Agreement represent new and evolving issues that are relevant to addressing climate change, including issues related to a just transition of the workforce, recognition of the right to a healthy environment and issues germane to women, children, and indigenous peoples. The success of the Policy will depend on a common understanding by everyone of their respective roles and responsibilities regarding climate change while in pursuit of their interests. The updated relevance of this NCCP is based on extensive stakeholder consultations and it is envisioned that:

For government entities, public officials and decision-makers the updated NCCP serves as the primary policy guidance on addressing climate change. As such, its contents should be used to establish the appropriate institutional, administrative, policy and legislative framework to engender climate action. This includes mainstreaming climate considerations, inclusive of mitigation and adaptation concerns and issues, into all sectoral policies and work programmes to ensure policy integration and harmonisation at all levels. Government entities shall use their powers to support the achievement of the NCCP's directives and strategies.

For entrepreneurs, industry, labour and commerce the updated NCCP is a clear commitment by the Government to support the transition towards a low-carbon regenerative economy that builds climate resilience, prioritises circularity, and creates decent jobs in the regenerative economy. As such, the policy provisions should be used as guidance and a source of education towards pursuing economic opportunities that could yield social and environmental value.

For civil society, community-based organisations and non-governmental organisations the updated NCCP maps the expectations of all stakeholders in addressing climate change and details the Government's strategies for achieving a resilient future aligned with a low-emissions and climate-resilient development pathway. Thus, it should be used as a benchmark for social and public accountability and for overall guidance on the execution of programmes on education, adaptation, mitigation, and justice.

For international donors, development and funding agencies the updated NCCP provides the foundation for mutual accountability, additionality, and equity in addressing climate change. It identifies the national climate change priorities for Trinidad and Tobago and should serve as the nucleus around which technical assistance and financing are provided, targets are set, and outcomes are measured.

For traditional and social media bodies the updated NCCP serves as strategic policy guidance for curating and creating content to raise public awareness, and for education. Behavioural change is necessary across all strata of society and a key driver for this is high-quality, scientifically-sound reporting on issues relevant to the national agenda.

For members of the public the updated NCCP is a reminder of the Government's commitment to an improved quality of life for all generations of citizens. It is a call to action for citizens to participate in climate action at their homes, work and social gatherings so that no one is left behind.

For youth the updated NCCP is a working document for the pursuit of a low-carbon and climate-resilient development pathway that should guide critical thinking for ensuring inputs into solution-oriented approaches based on ecological restoration, community protection, equitable partnerships, justice, and full and fair participatory processes.

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List of Acronyms and Abbreviations

°C	Degrees Celsius
ACE	Action for Climate Empowerment
AR6	Sixth Assessment Report of the Intergovernmental Panel on Climate Change, 2022
CARICOM	Caribbean Community
CCCCC	Caribbean Community Climate Change Centre
CH_4	Methane
cm	Centimetre
CMA	Conference of Parties serving as the Meeting of Parties to the Paris Agreement
CO_2	Carbon Dioxide
COP	Conference of Parties to the United Nations Framework Convention on Climate Change
ESG	Environmental, Social and Governance
ESMS	Environmental and Social Management Systems
GCF	Green Climate Fund
GHG GWP	Greenhouse Gases Global Warming Potential
Gg	Gigagrams
HADCM	Hadley Climate Model
in	Inches
IPCC	Intergovernmental Panel on Climate Change
IPPU	Industrial Process and Product Use
ITCZ	Inter-Tropical Convergence Zone
mm	Millimetre
N_2O	Nitrous Oxide
NCDC	National Climate Data Center of the United States of America
LNG MEAU	Liquefied Natural Gas Multilateral environmental Agreements Unit
NEP	National Environmental Policy
NMVOCs	Non-Methane Volatile Organic Compounds

NOAA	National Oceanographic and Atmospheric Administration of the United States of America
NOx	Oxides of Nitrogen
PRECIS	Providing Regional Climates for Impact Studies
ppm	Parts Per Million
RAC	Refrigeration and Cooling
SDG	Sustainable Development Goals
SIDS	Small Island Developing States
SLR	Sea Level Rise
SST	Sea Surface Temperature
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
WMO	World Meteorological Organization

1.0 INTRODUCTION

1.1 Climate Change – A Code Red for Humanity and All Life.

The science is unequivocal: human influence has warmed the atmosphere, oceans, and land. According to the Intergovernmental Panel on Climate Change (IPPC), each of the last four decades has been successively warmer than any decade preceding it since 1850, with global surface temperatures in the first two decades of the 21st century (2001–2020) being 0.99 °C higher than the period 1850–1900. This current rate of warming is unsustainable and threatens all ecosystems and, by extension, the societies that depend on these systems.

The present day increases in temperature has already proven to be detrimental to some cultures, traditions, and languages, such as the Inuit peoples who are indigenous to Arctic regions and whose cold-weather culture is under threat as the volume of ice in Polar Regions continues to decline. Residents of low-lying SIDS such as the Caribbean also face immediate existential threats to their cultures due to rising sea levels and increasingly harsh weather-related disasters.

The international policy response to climate change has been the adoption of three legal instruments: the 1992 United Nations Framework Convention on Climate Change (UNFCCC), its 1997 Kyoto Protocol, and its 2015 Paris Agreement. Trinidad and Tobago ratified these instruments in 1994, 1999, and 2018, respectively. The ultimate objective of the UNFCCC is "*the stabilisation of greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous human interference with the climate system and in a timeframe that would allow ecosystems to adapt naturally, will not hamper food production and allow sustainable economic development*." The Paris Agreement further defined what the level of greenhouse gas concentrations should be in temperature terms, and has set a temperature goal through ambitious mitigation action: "*Limit global warming to well below 2°C, preferably to 1.5°C, compared to pre-industrial levels via the economic and social transformations*" which it says can only be done by achieving "*a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century.*" This sets the world a target of becoming carbon neutral by 2050 and beyond.

As of August 2022, the planet stood at 1.1℃ warming above pre-industrial levels, with a projected trajectory of over 3°C by 2100. Under these temperature conditions, Small Island Developing States (SIDS) such as Trinidad and Tobago face irreversible impacts on water resources, human health, agriculture, and food production, declines in marine ecosystems and elevated sovereign risks, including those posed by socio-economic disruption through loss of livelihoods, amenities, infrastructure and food and water scarcity. As such, this policy sets the enabling framework for urgent institutional, administrative, and economic-wide action needed to avert the climate emergency.

1.1.1 Science and Impacts of Climate Change

Global warming and climate change are not new phenomena and have been occurring naturally for millions of years at a rate that allowed ecosystems to adapt naturally. The Earth maintains a temperature that allows life because of the natural release into the atmosphere of heat-trapping greenhouse gases such as carbon dioxide, methane and oxides of nitrogen. However, due to human activity - primarily the burning of fossil fuels for energy, industrial activity and waste generation - the continuous emission of these greenhouse gases is now causing a build-up in concentration in the atmosphere which is causing additional warming. The increased heat energy of the Earth's atmosphere is dissipated through the climate system, resulting in climate variability and change. The rate of warming and changes in the climate is occurring faster than ecosystems and humans can adapt to them and is therefore an increasing cause for concern.

Scientific evidence as reported by the IPCC in its Sixth Assessment Report (AR6) released in 2022, revealed that human-induced climate change is already affecting many weather and climate extremes in every region across the globe. Evidence of observed changes in extremes such as heatwaves, heavy precipitation, droughts and tropical cyclones, and their attribution to human influence, has strengthened.

1.1.2 Projected Global Impacts of Climate Change

The IPPC Sixth Assessment Report (AR6, 2022) projects that global surface temperature will continue to increase until at least mid-century under all emissions scenarios considered. Global warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in carbon dioxide and other greenhouse gas emissions are achieved in the coming decades.

The consequences of this warming are not homogenous and vary throughout the world. However, SIDS, coastal populations, and Least Developed Countries stand to bear disproportionate impacts relative to their global GHG contributions. Current trends in extreme weather and climate variability are expected to worsen with many parts of the world facing increased frequency and intensity of hot extremes, marine heatwaves, heavy precipitation and, in some regions, agricultural and ecological droughts; an increase in the proportion of intense tropical cyclones; and reductions in Arctic Sea ice, snow cover and permafrost.

1.1.3 Projected Climate Change Impacts for the Caribbean Region

The following details projected impacts of climate change to the Caribbean Region. These projections are based on those estimated by the IPCC AR6 (2020) and expressed in terms of levels of confidence. [1]

1. There is a high confidence of an increase in mean air temperature and extreme heat for the region.
2. There is high confidence in a decrease in the mean precipitation expected to be experienced by the region. Consequently, there is medium confidence in an increase of aridity, agricultural and ecological drought in the region.
3. Similarly, there is medium confidence in an increase in tropical cyclones.
4. Coastal and oceanic climatic impacts such as rising sea level, coastal flood, coastal erosion, marine heatwaves and ocean and lake acidity are in high confidence of an increase.

[1] High confidence: 80% chance; Medium confidence: 50% chance

Table 1 IPCC AR6 (2022) Projections for the Caribbean.

Climatic Impacts	Confidence Level		
	High confidence of increase	Medium confidence of increase	High Confidence of decrease
Mean Air Temperature	X		
Extreme Heat	X		
Mean Precipitation			X
Aridity		X	
Agricultural and Ecological Drought		X	
Tropical Cyclones		X	
Sea Level	X		
Coastal Flood	X		
Coastal Erosion	X		
Marine Heat Waves	X		
Ocean and Lake Acidity	X		

2.0 SITUATIONAL ANALYSIS

2.1 National Circumstances

2.1.1 Geographic Profile

The Republic of Trinidad and Tobago is an archipelagic state in the southern Caribbean, lying roughly between 10°N and 11.5°N latitude and between 60°W and 62°W longitude. It also shares maritime boundaries with Barbados to the northeast and Guyana to the southeast. The country covers an area of 5,128 square kilometres (1,979 square miles) and consists of two main islands, Trinidad and Tobago. Trinidad is the larger and more populous of the two; Tobago is much smaller, comprising about six percent of the total area and four percent of the population. Trinidad and Tobago lies on the southern margins of the Atlantic Hurricane belt and normally escapes the passage of cyclones and hurricanes.

2.1.2 Land Use

Trinidad and Tobago has a tropical maritime climate with distinct wet and dry seasons which are heavily influenced by the northeast trade winds. This climate combined with its geological origins as a former part of South America results in a wide array of distinct physical features and natural ecosystems. These include rivers, streams, mangrove forests, evergreen and deciduous forests, savannahs, beaches, seagrass beds and coral reefs. This diversity of habitats also makes it one of the most biologically diverse places on the planet.

Land usage within the state is broken down into three distinct categories, forested areas, agriculture, and human use. Forested areas are approximated to make up 44 percent of the island's land use, while 10 percent is attributed to agriculture. The remaining 45 percent is occupied by housing, commerce, industry, and recreation.[2] A large degree of residential development occurs in the valleys and adjacent mountain sides on the island.[3] In terms of economic activity, approximately 80 percent of all economic activity, including the country's oil and gas infrastructure, is located along the coastal zone. [4]

2.1.3 Population Size and Demographics

Trinidad and Tobago has an estimated population of 1,363,985, with a density of 272 people per square kilometre, which places it at 159 on the world's population ranking[2]. About 96 percent of the population lives in Trinidad and is concentrated in the western half of the island; the remaining four percent lives in Tobago, mostly in the southern half of the island. Most of Trinidad's population, 52.4 percent, is urban with an estimated 544,000 persons living in the capital city of Port of Spain and adjacent areas. In terms of gender, males make up 684,350 (50.2%) while females make up 679,635 (49.8%).[5]

2.1.4 Economy

The economy is based mainly on industrial activities. The oil and gas sector accounts for the largest portion of GDP, contributing about 40 percent. Other key contributors include the food and beverage industry, manufacturing, cement production and downstream energy industries such as Liquefied Natural Gas (LNG),

[2] Government of Trinidad and Tobago. (2021). "*First Biennial Update Report of the Republic of Trinidad and Tobago to the United Nations Framework Convention on Climate Change*".

[3] Spence, J. (2006) "*Land use Change in Trinidad and Tobago*" Trinidad and Tobago Field Naturalist Club.

[4] Hassanali, K. (2013). "*Examining Ocean and Coastal Governance Framework in Trinidad and Tobago: Transitioning Towards Integrated Coastal Zone Management*" United Nations-Nippon Foundation of Japan Fellowship Programme.

[5] Government of Trinidad and Tobago. (2021). "*First Biennial Update Report of the Republic of Trinidad and Tobago to the United Nations Framework Convention on Climate Change*".

ammonia, methanol and steel. Agriculture is also a contributor to GDP although its contributions are not as pronounced.[6]

Trinidad and Tobago's high dependence on oil and natural gas leaves it vulnerable to global oil and gas fluctuations. Trinidad and Tobago is currently being affected by depleting resources with oil production declining from 114.257 thousand bbl/day in 2008 to 58.904 thousand bbl/day in 2019.[7]

2.1.5 Labour

The participation rate of the labour force in Trinidad and Tobago averaged 60.64 percent for the period 1991 until 2022, reaching an all-time high of 64.5 percent in the fourth quarter of 2004 and a record low of 53.4 percent in the third quarter of 2021.[8] The Labour Force Participation Rate in Trinidad and Tobago increased to 55.9 percent in the first quarter of 2022, pushing the total labour force to 604,900 individuals[9].

2.1.6 Energy Mix

Trinidad and Tobago's energy needs are met largely through its access to oil and natural gas resources. The country's natural gas production outpaces petroleum production and natural gas provides the foundation for economic exports, domestic electrical power generation and petrochemical feedstock. However, while natural gas accounts for the lion's share of all power generated, renewable energy usage does occur within Trinidad and Tobago in the form of solar. This energy source accounts for less than one terawatt-hour.[10]

2.2 Description of the General Climate and Observations Related to Climate Variability and Change in Trinidad and Tobago

Trinidad and Tobago's overall climate is shaped by several interacting and counteracting forces but its geographical position is the predominant factor. The country is relatively close to the equator which places it within the zones of influence of the Inter-Tropical Convergence Zone (ITCZ), the North Atlantic Sub-Tropical High-pressure cell and the Tropical Atlantic Cyclone or Hurricane Belt which collectively contribute to the temperature, rainfall and wind regimes experienced on the twin-island republic. Due to this, the country experiences two distinct climatic seasons: the wet seasons and the dry season. These two are characterized as follows:

- *The Dry Season*: Maritime climate which occurs from January to May and is cooler with warm days and cool nights with mostly localised rainfall of relatively low amounts in the form of showers which are influenced by the islands' proximity to the sea, and daytime convection.
- *Wet season*: with characteristics of a Modified Moist Equatorial climate, this season occurs from June to December and is warmer with more hot, humid days and nights, relatively low wind speeds and increased rainfall, which often causes flooding.

[6] Government of Trinidad and Tobago. (2021). "*First Biennial Update Report of the Republic of Trinidad and Tobago to the United Nations Framework Convention on Climate Change*".
[7] Bell-Eversley, J., Ramnath, C., Alexander, D., Maharaj, R., & Boodlal, D. (2022). "*The Potential of Utilizing Geothermal Energy Coupled with Geomechanics: A Case Study for Trinidad and Tobago."* International Journal of Renewable Energy Research (IJRER), 12(1), 305-319.
[8] Trade Economics (2022) "*Trinidad and Tobago Labor Force Participation Rate*"
[9] Central Bank of Trinidad and Tobago (2022) *"Labour Force Quarterly".*
[10] Our World in Data (2022) "*Trinidad and Tobago: Energy Country Profile"*

Rainfall during this period is highly variable in space and time and is characterised by a bimodal pattern due to equatorial and tropical weather systems such as the ITCZ, tropical waves and tropical cyclones among others. Subsumed within the wet season is the North Atlantic Hurricane season, during which the country is occasionally threatened or impacted by tropical cyclones.

2.2.1 Temperature Distribution

Temperatures across both islands are relatively constant with generally small annual and seasonal variations. The average temperature for both islands is about 27.4°C with an average maximum temperature of 31.7°C and an average minimum temperature of 22.5°C. In terms of monthly distribution, on average the month of September is the warmest month of the year with an average maximum temperature of 32.6°C, followed by April with an average of 32.5°C. The period March to October which experiences maximum temperatures, often exceeding 33°C, greatly influences the country's cooling needs which impact energy usage.[11]

Climatic data obtained from the Trinidad and Tobago Meteorological Office indicates that Trinidad and Tobago's climate is experiencing ongoing and consistent warming trends.[12] The average annual temperature has warmed by about 2.1°C during the period 1946 to 2019, at a rate of 0.28°C per decade. This is approximately two and a half times the global average. The year 2019 was about 1.1°C above the long-term 1961–1990 levels and since 1993, annual temperatures have averaged 0.5°C to 2.1°C higher than the 1961–1990 average.

The wet season shows stronger trends in warming than the dry season. Most notably, seven of the last ten years ranked among the twelve warmest years. In Trinidad and Tobago, record warm years have usually corresponded with moderate to strong El Niño events. Consequently, 2010 is the warmest year on record followed by 2016 and 2015, all of which were El Niño years.

2.2.2 Precipitation

Due to the small variation in temperatures, annual rainfall differs, both spatially and temporally across the two islands. The north-eastern and eastern areas are usually the wettest year-round, while the western and southwestern areas are the driest. The wet season accounts for 75 to 80 percent of annual rainfall.

The records appear to indicate that Trinidad and Tobago has become drier. Since 1946 the total annual rainfall recorded at the country's reference point station (Piarco) has shown signs of decreasing, with the decrease becoming more pronounced over the last 38 years (1982-2019). [13]

Typically, the June-July-August season is the country's wettest period. However, since 1946 shifts have been observed that indicate a decrease in the June-July-August season rainfall. Over the last decade (2010-2019) there has been an 11 percent decrease when compared to the same period in the years 1961-1990. Contrastingly, monthly rainfall totals for October at Piarco have significantly increased since 1946.

[11] Trinidad and Tobago Meteorological Service. www.metoffice.gov.tt

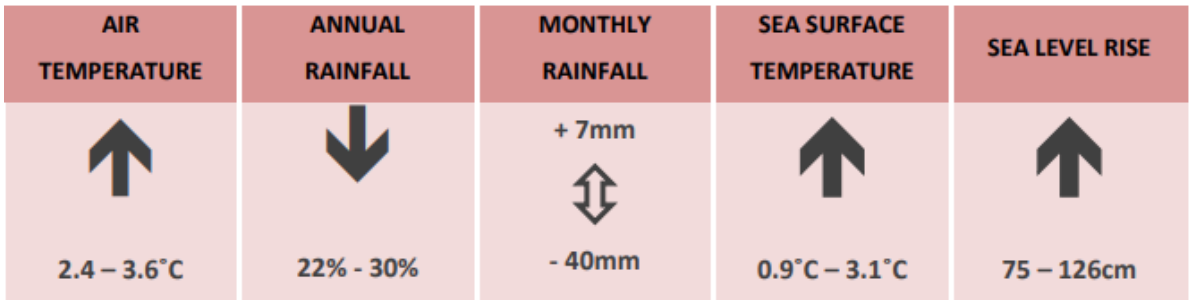
[12] *Ibid.*

[13] De Berdt Romilly, G., et al. (2019) "Vulnerability and Capacity Assessment Report: Trinidad and Tobago"

2.3 Projected Impacts of Climate Change in Trinidad and Tobago

Projected climate trends have been assessed using General Circulation Models (GCM) and Regional Climate Models (RCM) outputs from climate modelling work recently conducted for Trinidad and Tobago as well as Caribbean regional data from the IPCC's AR6.[14,15,16] Projected climate trends have been assessed using GCM and RCM. A summary of findings is presented below.

Figure 1: Summary of projected climate change trends for Trinidad and Tobago until 2100



Tidal gauging stations around the Caribbean reveal an increase in sea level rise (SLR) of about 1.5 mm – 3 mm per year. IPCC projections range between 0.18 to 0.56 m by 2100 under emissions scenarios A2, whilst alternative scenarios based on accelerating ice sheet melt indicate increases of up to 1.45 m.[6,7]

Additionally, increases in global temperature and climate change have been linked to increases in Sargassum and Saharan dust events. The blooming of pelagic sargassum seaweed across the equatorial Atlantic has become a problem since 2011, disrupting the fishery and tourism sectors while causing harm to coastal ecosystems and livelihoods. These unprecedented blooms have been linked to pressing issues such as climate change and ocean eutrophication, therefore the formation of these blooms can/are becoming the new Caribbean norm.[17,18,19]

The extension of desert areas in subtropical latitudes of both hemispheres is increasing, with the Sahara Desert expected to expand further due to different human activities including overgrazing and agriculture. Climatic factors in areas close to deserts, such as increases in temperature and drought, can increase soil sensitivity to erosion that, in turn, can cause an increase in dust storms.[20]

2.4 Greenhouse Gas Emissions for Trinidad and Tobago

Greenhouse gas inventories for all emitting sectors including power generation, transportation, industry, waste and agriculture have been conducted as part of the reporting obligations of Trinidad and Tobago as a signatory to

[14] CARIBSAVE (2012). "*Climate Change Risk Atlas (CCRA*)" Unpublished profile for Trinidad and Tobago. Funded by the UK Department for International Development (DFID) and the Australian Agency for International Development (AusAID) [Restricted Access]

[15] Intergovernmental Panel on Climate Change (IPCC) (2021). "*Summary for Policymakers*". In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate.

[16] Government of Trinidad and Tobago. (2019) "*TAEP Vulnerability and Capacity Assessment Report Trinidad and Tobago."*

[17] Juman R, A. (2021) "Massive Sargassum Influx on Caribbean Shorelines linked to Climate Change: Hazard or Hope". IMA

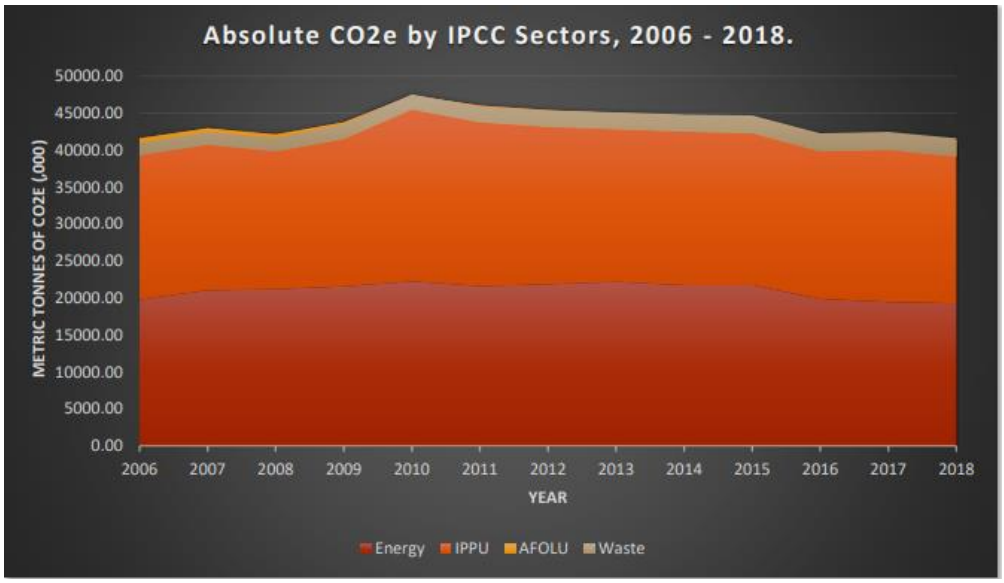
[18] Desrochers, A., S-A. Cox, H.A. Oxenford and B. van Tussenbroek. (2020)." *Sargassum uses guide: a resource for Caribbean researchers, entrepreneurs and policy makers*". UWI. CERMS Technical Report.

[19] Burrows, R., Wabnitz, C. and Eyzaguirre, J. (2019) "The Great Sargassum Disaster of 2018". ESSA Technologies

[20] Salvador, P., Pey, J., Pérez, N., Querol, X., & Artíñano, B. (2022). *"Increasing atmospheric dust transport towards the western Mediterranean over 1948–2020*". npj Climate and Atmospheric Science, 5(1), 1-10.

the UNFCCC. Trinidad and Tobago is often cited as having among the highest per capita emissions in the world due to its relatively small population and thriving oil and gas sector.[21] The most current inventory conducted for the period 2006 – 2018 using the IPCC's 2006 methodology indicates that the country's emissions in 2010 was at 47,549,610 tCO2e – or 35.36 tCO2e per person – and has been on a steady decline since.

Figure 2 Breakdown of Trinidad and Tobago's absolute emissions



2.4.1 Industrial Process and Product Use (IPPU) sector

In the analysis of the 2006-2018 greenhouse gases inventory, IPPU was found to be the top emitter, accounting for 48 percent of emissions and included downstream industrial activities such as ammonia and methanol production. This sector is mostly driven by natural gas consumption as a feedstock because of the intensity of the ammonia and methanol-related emissions which together contribute over 90 percent of sectoral emissions. [22]

The main greenhouse gases produced by the IPPU sector are CO_2, CH_4 and N_2O. The greenhouse gas most produced by this industry is CO_2 followed by CH_4 and N_2O. Regarding emissions by subsector, Ammonia leads the way with 74 percent, followed by Methanol (17%), Nitric Acid (5%), Iron and Steel (3%) and Mineral (1%).

2.4.2 Energy Sector

The energy sector is the second most emitting segment with emissions recorded at 42 percent. In general, the emissions trends in the energy sector can be correlated to natural gas consumption. Therefore, within the energy sector of Trinidad and Tobago, natural gas consumption can therefore be identified as the main driver of emissions. [23]

[21] Environmental Management Authority. (2014). "Assessment of the State of the Environment Report 2013: Climate Change effects, impacts and responses 1990 – 2013". Annual Report. Accessed from: EMA Annual Report 2013.pdf – Google Drive

[22] Government of Trinidad and Tobago. (2021). "*First Biennial Update Report of the Republic of Trinidad and Tobago to the United Nations Framework Convention on Climate Change*".

[23] *Ibid.*

In terms of emissions by sub-sector, emissions can be broken down by Power Generation (30%), LNG (24%), Oil and Gas (20%), Transport (14%), Refining (8%), Gas Processing (3%) and Manufacturing and Construction (1%).

2.4.3 Agriculture, Forests and Other Land Use (AFOLU).

Large data gaps exist for this sector making it very difficult to estimate emissions. However, this sector is a net sink owing to the large contribution of the forest land biomass sub-category. The main sub-category emissions for this sector include as follows: Forested Land remaining (biomass) (83%), indirect N2O emissions (11%), enteric emissions (3%), biomass burnt (forest) (2%) and urea (1%). In terms of greenhouse gas characterisation, carbon dioxide is the most prominent gas, followed by methane, oxides of nitrogen and nitrous oxide.

2.4.4 Waste

The waste sector, while increasing during the inventory period 2006-2018, is a relatively small contributor to total emissions. There is, however, a noted relationship between population growth/economic growth and waste generation in Trinidad and Tobago. The GHG emissions from this sector are divided into emissions associated with solid waste and wastewater which are also different from industrial and domestic waste. The main sub-category emissions for this sector include: solid waste (89%), liquid industrial (9%) and liquid domestic (2%) while the main greenhouse gas produced is methane.

2.4.5 The Refrigeration & Air Conditioning (RAC) Sector

Greenhouse gas emissions in the RAC sector result from fossil fuel combustion for electricity generation (indirect emissions) and account for approximately 84 percent of the cooling sector nationally. Additionally, the release of fluorinated gases (F-gases) used as refrigerants for cooling purposes, accounts for 16 percent of direct emissions within cooling appliances.

2.4.6 Role of Sinks

Ecosystems such as forests absorb carbon dioxide, and the net emissions would therefore be the difference between emissions and sinks. The UNFCCC specifically recognises that emissions from developing countries will continue to increase as these countries pursue their development paths towards improving their standards of living and reducing poverty. Trinidad and Tobago is no exception to this expectation and trend.

2.5 Sectoral Vulnerability in Trinidad and Tobago

Trinidad and Tobago has multiple economic sectors, some of which are more vulnerable than others. This section highlights the better studied sectors.

2.5.1 Agriculture and Food Security

- Projected increases in ambient air temperature are likely to result in increased aridity of soils and decreased crop yields due to the intolerance of some crop varieties to increasing temperatures.

- Projected decreased precipitation is likely to result in increased aridity of soils and decreased crop yields due to less availability of irrigation water.
- Projected rise in sea level is likely to result in inundation of coastal areas and salinisation of productive soils, leading to a decrease in crop yields and available areas for agricultural production.
- Projected increases in the incidence of invasive species, pests and diseases.

2.5.2 Human Health

- Projected increases in ambient air temperature are likely to result in the increased spread of vector borne diseases due to increased humidity, while also providing more favourable conditions for an increase in vector populations.
- Projected decreased precipitation is likely to result in reduced availability of potable water. Additionally, reduced rainfall will indirectly affect food availability due to inability to water crops.
- Projected increases in sea level and precipitation intensity are likely to result in an increase in the incidence of water-borne diseases such as leptospirosis, which is already occurring in permanently or often flooded areas.

2.5.3 Infrastructure and Human Settlements

- Projected increases in intensity or heavy precipitation events[24] in concert with deforestation can result in an increased incidence of flooding in flood plains which can have adverse impacts on human settlements and human health. This may result in disruption of settlements, commerce, transport and towns and villages due to flooding which can add further pressures on urban and rural infrastructure and loss of property.

2.5.4 Coastal Zones Resources

Climate change impacts in the coastal zone are expected to be multi-sectoral because in Trinidad and Tobago settlements are concentrated within the coast and any impacts will be far reaching. These impacts will arise largely because of:

- Sea Level Rise: increased inundation, increased erosion and loss of coastline and coastal amenities such as human settlements; natural resources such as wetlands and associated ecosystem goods and services; and loss of coastal agricultural lands due to soil salinization.
- Temperature increase: increase in sea surface temperature will lead to loss of natural coastal defences such as coral reefs, further leading to loss of fisheries and increased erosion and inundation because of increased wave energy reaching the coast. Increases in air temperature will have negative impacts on forest biodiversity, temperature-sensitive species such as turtles, and lead to spatial changes in species distribution.

[24] IPCC, 2021: Summary for Policymakers. In: Climate Change 2021: Impacts, Adaptation and Vulnerability.

- Ocean acidification: increased carbon dioxide in the atmosphere dissolves in the ocean resulting in a lower seawater pH which can be detrimental to coral reefs and fisheries.

2.5.5 Water Resources

Impacts in the water resources sector are expected to rise because of:

- Temperature increase: loss of available surface water because of increased evapotranspiration;
- Decreased precipitation: reduced percolation and recharge of groundwater reserves in aquifers; reduced availability of surface water and potable water;
- Saltwater intrusion: saline water entering freshwater aquifers, reducing available freshwater; and
- Increased rainfall intensity: Flash flooding will contaminate surface water and increase the cost of potable water production in addition to creating water supply disruptions.

2.5.6 Biodiversity

Impacts to biodiversity are expected to arise because of:

- Sea Level Rise: loss, damage, erosion or retreat of ecosystems. Coastal inundation leading to loss of fishery nurseries, freshwater ecosystems, turtle nesting sites, agriculture and related saltwater intrusion.
- Sea Level Rise and storm surge: damage to fisheries and loss of marine nesting sites, loss of habitat, destruction to the nesting sites of migratory and local bird species with an impact on nesting turtles resulting from the accelerated loss of beach sediment.
- Temperature increase: increase in sea surface temperature will lead to loss of natural coastal defence such as coral reefs, further leading to loss of fisheries and increased erosion and inundation because of increased wave energy reaching the coast. Increases in air temperature will have negative impacts on forest biodiversity, temperature sensitive species such as turtles, and lead to spatial changes in species distribution.
- Increases in extreme weather events: events like heatwaves, hurricanes and flash flooding can cause extensive damage to habitats and/or resources. Heat waves can lead to heat stress on biodiversity disrupting key biological cycles.

2.5.7 Financial Services

The financial services sector encompasses finance, insurance and real-estate. While these institutions are heavily invested in credit and risk management, they too can be affected by climate change. Climate change will increase costs for the financial sector. Banks and investors in particular need a clear regulatory framework on climate policy to inform and guide investment and lending decisions, while insurers face the prospect of heavy losses.

2.5.8 Tourism

While tourism contributes to the Gross Domestic Product (GDP) of Tobago, and given its dependence on the viability of other sectors such as agriculture, human health, biodiversity, energy, coastal zone management and infrastructure, it is not treated as a stand- alone sector with respect to biophysical impacts. Accordingly, adverse impacts on the supporting sub-sectors will have a multiplier effect on the overall impact on the tourism product.

3.0 JUSTIFICATION FOR NEEDED ACTION

A lag time of about six to seven decades exists between emissions of greenhouse gases and the reaction of the atmosphere in terms of climate change. Consequently, the world can expect some degree of climate change because of past emissions, even if emissions were to be drastically reduced. This means that there will be inevitable impacts of future climate change even if global greenhouse gas emissions were to be reduced immediately. Adaptation and mitigation therefore remain a priority for highly vulnerable countries such as Trinidad and Tobago. As a SIDS, Trinidad and Tobago will be severely impacted by the adverse effects of climate change because of its inherent characteristics such as small land space, limited technical and technological capacity, limited human capacity and susceptibility to the vagaries of international trade and exogenous economic shocks.

Although Trinidad and Tobago accounts for less than one percent of absolute global greenhouse gas emissions, its emissions portfolio is expected to increase as development continues notwithstanding efforts towards a low carbon economy, and because Trinidad and Tobago's economy is largely dependent on oil and gas, and petrochemical production. The Government recognises climate change as a national development issue, and acknowledges the need to integrate climate considerations and risks into the national development process in order to build climate resilience in the face of adverse impacts. Accordingly, such integration is guided by a policy framework and is in accordance with the stated principles of this and other relevant policies, as well as those of the UNFCCC and the international climate policy framework. To this end, the Government has identified the following reasons for such action:

1. Climate change will undermine sustainable development efforts under the seven pillars of sustainable development, thereby posing significant challenges to achieving sustainable development objectives in accordance with 17 Sustainable Development Goals (SDGs) and the Paris Agreement.

2. Given the significant projected impacts on all sectors, including biophysical and socio-economic systems, and their mutual dependency and inter-linkages, climate change is widely acknowledged to pose existential threats to SIDS such as Trinidad and Tobago.

3. The need to achieve energy security through a sustainable energy transition, and exploiting the co-benefits of mitigation action such as increased use of alternative fuels, renewable energy and cleaner production technology which will increase the quality of the ambient air and reduce the incidence of respiratory illnesses and the associated provision of health care, thereby improving the quality of lives of the citizens of Trinidad and Tobago. The conservation of natural carbon sinks such as forests and coastal ecosystems will also ensure continuous provision of food and sustainable livelihoods for communities.

4. The need to exploit and maximise economic opportunities amidst the challenges posed by climate change through economic growth and job creation by greater deployment of green technologies, and development of green industries.

5. The need for economic diversification away from fossil fuels towards a circular economy will also realise cost savings in respect of reduced waste management costs through cleaner production technology, and lead to economic growth. The manufacturing sector can benefit from increased demand for renewable energy technology through research and development of such technology.

4.0 POLICY CONTEXT

Climate change impacts are very specific in the context of geographical location, sectoral characteristics and cross-sectoral interactions. The climate change policy provides for domestic implementation of climate action in accordance with the international and regional climate policy guidance, and in harmony with the national policy framework.

4.1 International

4.1.1 UNFCCC and Kyoto Protocol

Trinidad and Tobago, as a ratified signatory to the UNFCCC, is committed under its Article 4 to, *inter alia*:

a. develop, periodically update and publish national inventories of anthropogenic emissions by sources and removals by sinks of greenhouse gases;

b. formulate, implement, publish and regularly update national programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of greenhouse gases and measures to facilitate adequate adaptation to climate change;

c. promote and cooperate in the development, application and diffusion, including transfer, of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of greenhouse gases in all relevant sectors, including the energy, transport, industry, agriculture, forestry and waste management sectors;

d. promote sustainable management, the conservation and enhancement of sinks and reservoirs of greenhouse gases including biomass, forests and oceans as well as other terrestrial, coastal and marine ecosystems;

e. prepare for adaptation to the impacts of climate change; develop and elaborate appropriate and integrated plans for coastal zone management, water resources and agriculture, and for the protection and rehabilitation of areas affected by drought and desertification, as well as floods;

f. to the extent possible, take climate change considerations and their relevant social, economic and environmental policies and actions into account, and employ appropriate methods such as impact assessments formulated and determined nationally, with a view to minimising adverse effects on the economy, on public health and on the quality of the environment, of projects or measures undertaken by them to mitigate or adapt to climate change";

g. promote scientific, technological, technical, socio-economic and other research; systematic observation and development of data archives related to the climate system and intended to further the understanding of, and reduce or eliminate the remaining, uncertainties regarding the causes, effects, magnitude and timing of climate change and the economic and social consequences of various response strategies;

h. Promote open exchange of relevant scientific, technological, technical, socio-economic and legal information related to the climate system and climate change, and the economic and social consequences of various response strategies; and

i. promote education, training and public awareness related to climate change and encourage the widest participation in this process, including that of non-governmental organisations.

Although the Kyoto Protocol is no longer the driving framework for climate action, our outstanding commitments are to:

I. formulate, where relevant and to the extent possible, cost-effective national programmes to improve the quality of local emission factors, activity data and/or models which reflect the socio-economic conditions for the preparation and periodic updating of national inventories of anthropogenic emissions by sources and of removals by sinks of greenhouse gases; and

II. formulate, implement, publish and regularly update national programmes containing measures to mitigate climate change and measures to facilitate adequate adaptation to climate change. Such programmes would, inter alia, concern the energy, transport and industry sectors as well as agriculture, forestry and waste management. Furthermore, adaptation technologies and methods for improving spatial planning would improve adaptation to climate change.

The implementation of this policy would, therefore, seek to fulfil the commitments of Trinidad and Tobago to the UNFCCC and the Kyoto Protocol.

4.1.2 Paris Agreement

The Government of the Republic of Trinidad and Tobago (GORTT) ratified the Paris Agreement on February 22, 2018. The Paris Agreement represents an evolution and refinement of the UNFCCC and addresses crucial areas necessary to combat climate change, and its provisions are applicable to all countries. Key aspects of the Agreement and commitments are outlined below:

- **Article 2 Long- Term Temperature Goal**

  I. Holding the increase in global average temperature to well below 2^0 C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5^0 C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change.

  II. Increasing the ability to adapt to the adverse impacts of climate change and to foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production.

  III. Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.

  IV. This Agreement will be implemented to reflect equity and the principle of common but differentiated responsibilities and respective capabilities in light of different national circumstances.

- **Article 4 Global Peaking, "Climate Neutrality", and Mitigation**

    I. Each Party shall prepare, communicate and maintain successive nationally determined contributions that it intends to achieve. Parties shall pursue domestic mitigation measures with the aim of achieving the objectives of such contributions.

    II. Each Party's successive nationally determined contribution will represent a progression beyond the Party's then current nationally determined contribution and reflect its highest possible ambition with its common but differentiated responsibilities and respective capabilities, in light of different national circumstances.

    III. Developed country Parties should continue taking the lead by undertaking economy-wide absolute emission reduction targets. Developing country Parties should continue enhancing their mitigation efforts and are encouraged to move over time towards economy-wide emission reduction or limitation targets in light of different national circumstances.

    IV. The least developed countries and Small Island Developing States may prepare and communicate strategies, plans and actions for low greenhouse gas emissions development reflecting their special circumstances.

    V. In communicating their NDC, all Parties shall provide the information necessary for clarity, transparency and understanding in accordance with decision 1/CP.21 and any relevant decisions of the Conference of the Parties serving as the meeting of the Parties to this Agreement.

    VI. Each Party shall communicate an NDC every five years in accordance with decision 1/CP.21 and any relevant decisions of the Conference of the Parties serving as the meeting of the Parties to this Agreement and be informed by the outcomes of the global stock-take referred to in Article 14.

    VII. Parties shall account for their NDC. In accounting for anthropogenic emissions and removals corresponding to their nationally determined contributions, Parties shall promote environmental integrity, transparency, accuracy, completeness, comparability and consistency, and ensure the avoidance of double counting in accordance with guidance adopted by the Conference of the Parties serving as the meeting of the Parties to this Agreement.

    VIII. In the context of their NDC, when recognizing and implementing mitigation actions with respect to anthropogenic emissions and removals, Parties should consider, as appropriate, existing methods and guidance under the Convention, in light of the provisions of paragraph 13 of this Article.

    IX. Parties shall take into consideration in the implementation of this Agreement the concerns of Parties with economies most affected by the impacts of response measures, particularly developing country Parties.

    X. All Parties should strive to formulate and communicate long-term low greenhouse gas emission development strategies, mindful of Article 2, considering their common but differentiated responsibilities and respective capabilities, in light of different national circumstances.

- **Article 5 Sinks and Reservoirs**

    I. Parties should take action to conserve and enhance, as appropriate, sinks and reservoirs of greenhouse gases as referred to in Article 4, paragraph 1(d) of the Convention, including forests.

    II. Parties are encouraged to take action to implement and support, including through results-based payments, the existing framework as set out in related guidance and decisions already agreed under the Convention.

- **Article 7 Adaptation**

    I. Parties hereby establish the global goal on adaptation of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change, with a view to contributing to sustainable development and ensuring an adequate adaptation response in the context of the temperature goal referred to in Article 2.

    II. Parties acknowledge that adaptation action should follow a country-driven, gender responsive, participatory and fully transparent approach, taking into consideration vulnerable groups, communities and ecosystems, and should be based on and guided by the best available science and, as appropriate, traditional knowledge, knowledge of indigenous peoples and local knowledge systems, with a view to integrating adaptation into relevant socio-economic and environmental policies and actions, where appropriate.

    III. Each Party shall, as appropriate, engage in adaptation planning processes and the implementation of actions, including the development or enhancement of relevant plans, policies and/or contributions, which may include:

        (a) the implementation of adaptation actions, undertakings and/or efforts;

        (b) the process to formulate and implement national adaptation plans;

        (c) the assessment of climate change impacts and vulnerability with a view to formulating nationally determined prioritised actions, considering vulnerable people, places and ecosystems;

        (d) monitoring and evaluating and learning from adaptation plans, policies, programmes and actions; and

        (e) building the resilience of socio-economic and ecological systems, including through economic diversification and sustainable management of natural resources;

    IV. the submission and periodic update, as appropriate, by each Party of an adaptation communication, which may include its priorities, implementation and support needs, plans and actions, without creating any additional burden for developing country Parties.

    V. The submission and periodic update, as appropriate, of the adaptation communication referred to in paragraph 10 of this Article as a component of, or in conjunction with, other communications

or documents, including a national adaptation plan, a nationally determined contribution as referred to in Article 4, paragraph 2, and/or a national communication.

- **Article 8 Loss and Damage**

    I. Parties recognize the importance of averting, minimising and addressing loss and damage associated with the adverse effects of climate change, including extreme weather events and slow onset events, and the role of sustainable development in reducing the risk of loss and damage.

    II. Parties should enhance understanding, action and support, including through the Warsaw International Mechanism, as appropriate, on a cooperative and facilitative basis with respect to loss and damage associated with the adverse effects of climate change.

- **Article 9 Finance**

    I. Other Parties are encouraged to provide or continue to provide such support voluntarily.

- **Article 11 Technology and Capacity- Building Support**

    I. Capacity-building should be country-driven, based on and responsive to national needs and foster country ownership of Parties for developing country Parties, including at the national, sub-national and local levels. Capacity-building should be guided by lessons learned, including those from capacity-building activities under the Convention, and should be an effective, iterative process that is participatory, cross-cutting and gender responsive.

- **Article 12 Climate Change Education, Training, Public Awareness and Public Access to Information**

    I. Parties shall cooperate in taking measures, as appropriate, to enhance climate change education, training, public awareness, public participation and public access to information, recognising the importance of these steps with respect to enhancing actions under this Agreement.

- **Article 13 Transparency**

    I. Each Party shall regularly provide the following information:

        i. A national inventory report of anthropogenic emissions by sources and removals by sinks of greenhouse gases, prepared using good practice methodologies accepted by the Intergovernmental Panel on Climate Change and agreed upon by the Conference of the Parties serving as the meeting of the Parties to this Agreement; and

        ii. Information necessary to track progress made in implementing and achieving its nationally determined contribution under Article 4.

II. Each Party should also provide information related to climate change impacts and adaptation under Article 7, as appropriate.

III. Developing country Parties should provide information on financial, technology transfer and capacity-building support needed and received under Articles 9, 10 and 11.

4.1.3 Kigali Amendment to the Montreal Protocol

Trinidad and Tobago is also signatory to the Kigali Amendment to the Montreal Protocol which aims to phase down the potent greenhouse gas hydrofluorocarbons (HFCs) commonly used in refrigeration and air conditioning as substitutes for ozone-depleting substances. As part of the global commitment under this Amendment, Trinidad and Tobago is obligated to take action to contribute to a cut in the production and consumption of HFCs by more than 80 percent over the next 30 years. The implementation of the Kigali Amendment synergises with the objectives of the UNFCCC, its Kyoto Protocol and Paris Agreement to stabilise greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. The HFC phase-down schedule under the Kigali Amendment is expected to avoid more than 80 billion metric tons of carbon dioxide equivalent emissions by 2050.

4.1.4. Sendai Framework for Disaster Risk Reduction 2015-2030

The Sendai Framework for Disaster Risk Reduction (2015-2030) was adopted at the Third United Nations World Conference on Disaster Risk Reduction, held from 14 to 18 March 2015 in Sendai, Miyagi, Japan. The framework replaces the Hyogo Framework for Action (2005–2015).

Paragraph 13:

Addressing climate change as one of the drivers of disaster risk, while respecting the mandate of the United Nations Framework Convention on Climate Change, represents an opportunity to reduce disaster risk in a meaningful and coherent manner throughout the interrelated intergovernmental processes.

Paragraph 42:

Disasters can disproportionately affect SIDS owing to their unique vulnerabilities. The effects of disasters, some of which have increased in intensity and have been exacerbated by climate change, impede their progress towards sustainable development. Given the special case of SIDS, there is a critical need to build resilience and to provide support through the implementation of the SIDS Accelerated Modalities of Action (SAMOA) Pathway in disaster risk reduction.

Paragraph 47 (D):

To incorporate disaster risk reduction measures into multilateral and bilateral development assistance programmes within and across all sectors, as appropriate, related to poverty reduction, sustainable development, natural resource management, the environment, urban development and adaptation to climate change.

4.1.5 Sustainable Development Goals

Trinidad and Tobago, as a UN Member State, adopted the 2030 Agenda for Sustainable Development in 2015. This Agenda provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At the centre of this Agenda there are 17 Sustainable Development Goals (SDGs) which are an urgent call for action by all countries - developed and developing - in a global partnership. SDG 13 focuses on climate action with targets on strengthening resilience and adaptive capacity and integrating climate change measures into policies and planning.

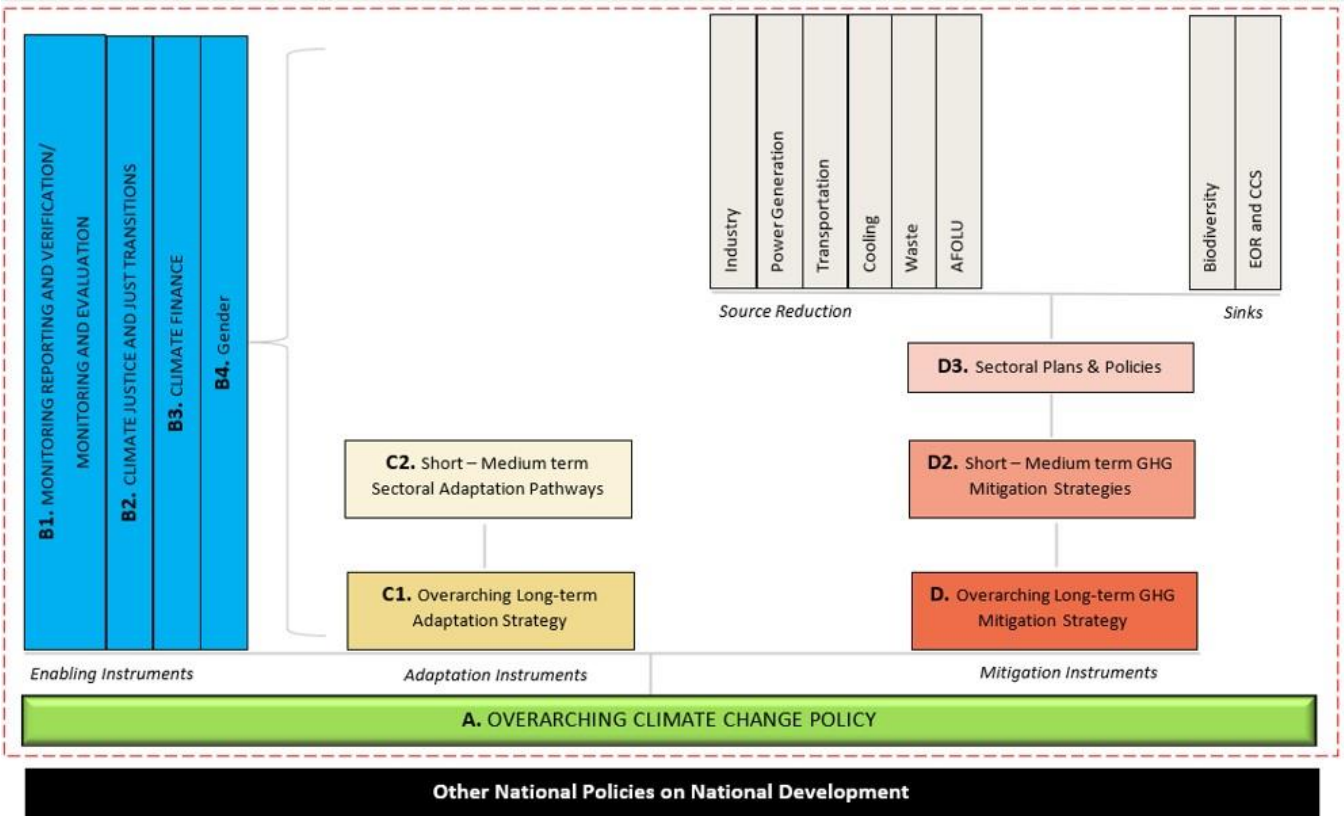
4.2 Regional

The Caribbean Community (CARICOM) has agreed that climate change is an urgent issue for the countries of the region and therefore, regional Governments have committed to addressing the issue at the local, regional and international levels. CARICOM has also presided over the formulation and execution of regional projects on climate change in which Trinidad and Tobago has participated. CARICOM Governments have established a Caribbean Community Climate Change Centre (CCCCC) which would have the responsibility of providing the necessary backstopping for countries of the region to implement climate change programmes and obligations under the UNFCCC, the Kyoto Protocol and the Paris Agreement.

4.3 National

The GORTT has focused heavily on reducing its GHG emissions through policy and applied action as far back as 1990. Figure 3 is a simplified overview of the total climate change legislative framework.

Figure 3- Simplified overview of the National Policy Framework for Addressing Climate Change.



Existing national policies and legislation that have relevance to climate change include:

- Draft E-mobility Policy (TBD): Creates the framework for the transition to electric vehicles in Trinidad and Tobago.
- Draft Just Transition of the Workforce Policy: Aims to ensure that transformative economic action is taken in response to the decarbonization of the economy while securing meaningful and sustainable employment for the people of Trinidad and Tobago, as well as addressing issues related to loss of livelihoods because of the adverse impacts of climate change in keeping the principle of no one left behind.
- National Adaptation Plan (2023): Provides overarching adaptation vision, principles and objectives; identifies key vulnerable areas and the costs of potential adaptation responses; ensures that mitigative efforts are not eroded by climate hazards; and calls for adaptation approaches to be considerate of mitigation goals when developing “climate resilient pathways” of development.
- Long-term Low-Emissions Development Strategy (2021): Provides direction for low-emissions development including clear targets to be achieved before, by and after 2050.

- National Cooling Strategy for Trinidad and Tobago (2020): Sets strategies for GHG emissions reductions from the cooling sector that lowers future climate risks.
- Integrated Coastal Zone Management Policy (2019): Supports healthy coastal ecosystems and provides a coordinated mechanism for coastal activities, reduces vulnerabilities of people, properties and livelihoods.
- National Protected Areas System Plan (2019): Reduces ecosystem vulnerability and promotes ecosystem-based management.
- National Environmental Policy (2018): Places emphasis on "Addressing Climate change and Environmental and Natural Hazards" as one of the six priority areas for Trinidad and Tobago.
- Integrated Water Resource Management Policy (2017): Recognises the adverse effects of climate change on watersheds and water systems, as well as the roles that water systems, such as wetlands, can play in adaptation.
- Nationally Determined Contributions (2015): Sets Targets for GHG emissions reductions in accordance with obligations under the Paris Agreement that lowers future climate risks.
- NDC Implementation Plan (2017): Outlines strategies and actions for achieving GHG emissions reductions consistent with the NDC.
- Carbon Reduction Strategy (2015): Sets Strategies for GHG reduction that lowers future climate risks.
- Comprehensive Disaster Risk Management Policy Framework (2014): Proposes structure for assessing and undertaking disaster risk efforts.
- National Spatial Development Strategy for Trinidad and Tobago (2013): Commits to energy efficient, well-planned development aligned with specific policy statements that "individually or in combination seek to lower emissions of carbon into the atmosphere".
- National Forest Policy (2011): Supports ecosystem services from forests.
- National Protected Areas Policy (2011): Supports ecosystem services from forests.
- National Tourism Policy (2010): Supports Environmental Protection, especially of costal resources.
- National Policy and Programmes on Wetland Conservation for Trinidad and Tobago (2001): Supports wetland conservation.
- Environmental Management Act and its subsidiary legislations (2001+): Creates an authority with the broad mandate to address environmental issues and the power to create subsidiary legislation. Mandates for education and pollution control are exercised through subsidiary legislation.
- Miscellaneous Taxes Act and Green Fund Regulations (2007+): Provides funding to civil society organisations (CSOs) and Government entities for environmental efforts.
- Tobago House of Assembly Act (1996): Creates governing body for Tobago with a responsibility for *inter alia*, the environment.

- Disasters Measures Act (1978): Establishes an Authority with the mandate to undertake relief action in the face of disasters.
- Comprehensive Economic Development Plan Tobago

5.0 VISION

Trinidad and Tobago is committed to pursuing a low-carbon development path, consistent with the principles of sustainable development and strategically aligned with climate change adaptation and long-term resilience building.

This will be done through the development and delivery of strategies and actions for maximising mitigation opportunities and co-benefits such as renewable energy resources, clean energy and clean production technology, as well as adapting to the adverse impacts of climate change through integration within all aspects of national development in its infrastructural, biophysical, and human and socio-economic systems, at an acceptable balance of costs and benefits. The adoption of a robust mitigation, adaptation, and climate risk management framework inclusive of climate-smart, low emissions development pathways, will eventually allow for enhanced and long-term climate change resilience building in Trinidad and Tobago along with addressing climate justice. Long-term resilience building is dependent on meaning and concerted efforts, collaboration, and participation from relevant sectors of society such as organizations in business and industry, community-based organizations (CBOs), public and private sector, non-governmental organizations (NGOs), trade unions, financial institutions, academia, and the public.

6.0 GOAL

The National Climate Change Policy will aim to provide a strategic framework for the pursuance of a low-carbon development path and long-term climate resilience for Trinidad and Tobago through suitable and relevant strategies and actions to address climate change, including sectoral, cross-sectoral and spatial adaptation and mitigation measures, along with loss and damage , as well as the development of an appropriate institutional, administrative and legislative framework, in harmony with other sectoral policies.

7.0 OBJECTIVES

The objectives of the Policy are to:

I. Reduce or avoid greenhouse gas emissions from all emitting sectors in accordance with NDCs committed to under the Paris Agreement to contribute to the global goal of limiting global temperatures to below 2 degrees Celsius, with efforts to further limit the increase to 1.5 degrees.

II. Enhance existing carbon sinks

III. Protect the natural environment and human health while ensuring improved quality of life, with equitable opportunities for participation from all sections of society inclusive of vulnerable groups such as the youth, the elderly and indigenous people, and cognizant and responsive to gender equality.

IV. Implement urgent actions to build resilience, improve adaptive capacity and combat climate change.

V. Facilitate the just movement/transition from an extractive economy towards a low-carbon regenerative one, that builds resilience and creates green, decent jobs, while also addressing disenfranchisement and loss of livelihoods arising from the adverse impacts of climate change in keeping with the principle of "no one left behind".

VI. Conserve and build resilience of human and natural systems to adapt to the adverse impacts of climate change, including through capacity building, the application of cleaner and energy efficient technologies, and relevant research and development.

VII. Efficiently manage and protect ecosystems to preserve the services and resources for future generations, in keeping with the principle of intergenerational equity.

VIII. Create a system of transparency for climate actions while educating the wider public on the potential impacts of climate change and the recommended adaptation and mitigation strategies.

IX. Enhance agricultural production and food security.

X. Conserve and guarantee a sustainable supply of potable water.

XI. Enhance public education about the impacts and drivers of climate change.

XII. Support research towards accelerating the decarbonisation of carbon-intensive sectors.

8.0 GUIDING PRINCIPLES

The climate change policy and strategy for Trinidad and Tobago shall adhere to the following guiding principles:

A. The response to climate change must leave no one behind and ensure intergenerational equity.

Leaving no one behind puts the most vulnerable people front and centre, helping people to survive and adapt to a world irreversibly disrupted by climate variability and change, including extremes. The Government will therefore adopt policies, strategies and plans that focus on those disproportionately affected by climate change, including the youth and those adversely impacted by mitigation actions, which will ensure inter-generational equity.

B. The response to climate change will require circularity and decoupling economic growth from GHG emissions.

The Government will adopt strategies and actions that are environmentally sustainable and which allow for economic growth that moves away from the linear economy to incorporate the principles of circularity while remaining compatible with the necessary economic and social growths required to sustain the nation.

C. The response to climate change will require a consultative and multi-partite approach.

Given the nature of the challenge, which pervades all sectors and impacts on all citizens, the Government shall engage with all relevant stakeholders including academia, research institutions, public and private sectors,

non-governmental organisations (NGOs), community-based organisations (CBOs), business and industry organisations, and the citizenry at large in developing strategies and approaches to address climate change both from a mitigation and adaptation perspective, as well as addressing issues related to loss and damage.

D. The response to climate change must be transparent.

All actions and data collected must be shared with all stakeholders to ensure inclusion and the avoidance of working in silos. Work must be done in a collaborative approach.

E. The response to climate change must follow the precautionary approach.

The Government shall develop, through a process of thorough consultation, win-win or no-regrets solutions, or "actions worth doing anyway" which will redound to the benefit of the citizens of Trinidad and Tobago, for current and future generations, consistent with the principles of sustainable development and intergenerational equity.

F. The response to climate change must be multi-sectoral and include both mitigation and adaptation actions.

In recognition that all countries have an obligation to address climate change both from a mitigation as well as an adaptation perspective, the Government shall take its obligations under the UNFCCC and Paris Agreement seriously and act in a manner that will contribute to the achievement of the ultimate objective of the UNFCCC and Paris Agreement. To achieve this, strategies and actions shall consider different socio-economic contexts, be comprehensive, cover all relevant sectors and their inter-and cross-sectoral linkages, all relevant sources, sinks and reservoirs of greenhouse gases, and build climate resiliency and adaptation, and comprise all economic sectors,

G. The response to climate change must be evidence-based.

Consistent with the precautionary principle and in recognition of the uncertainties associated with climate change projections, the policy shall be considered a living document and will be revised in light of new scientific findings.

9.0 POLICY DIRECTIVES AND STRATEGIES

9.1 Policy Implementation and Integration

Addressing climate change at the scale and urgency required to meet the global goals on mitigation and adaptation, as well as to prevent irreversible losses and damages to developing states, requires action from all stakeholders. The government shall adopt an "all-of-Government" approach to implementing this climate change Policy by ensuring that climate change directives and strategies are integrated into current and proposed policy, policy instruments, and legislation, and into the national development process itself. Moreover, it will actively create a policy, legislative, institutional and administrative enabling environment that encourages and supports all stakeholders in climate action. These stakeholders include the public sector, the private sector, financial institutions, academia, the public, non-governmental organisations, civil society, and vulnerable groups.

The Ministry with the responsibility for the environment serves as the National Focal Point for several multilateral environmental agreements and is also the Nationally Designated Authority to the Green Climate Fund. Under the auspices of this Ministry, its Multilateral Environmental Agreements Unit (MEAU), which is responsible for coordinating international negotiations and implementation of obligations under the UNFCCC, Kyoto Protocol, Paris Agreement, and other multilateral environmental agreements, shall coordinate the implementation of this policy, and the international finance support mechanisms including the GEF, and GCF-related matters.

The implementation of the NCCP shall follow best industry practice. Under the guidance of the MEAU, implementation shall be done through stakeholder networks designed to facilitate self-monitoring and reporting, utilizing existing stakeholder networks and coordinating bodies.

9.1.1 Policy Integration

To ensure that Trinidad and Tobago's international obligations under the UNFCCC and the Paris Agreement are satisfied, and that its climate change priorities are mainstreamed throughout all sectors and activities, the Government shall:

a) within one (1) year of the approval of this NCCP, prepare a Country Programme that outlines Trinidad and Tobago's climate change priorities that will guide the harmonisation of national and sectoral policy, action, and financing, in accordance with the provisions of this policy, as appropriate;

b) engage with all stakeholders to prepare and/or update national and sectoral policies and strategies that advance the directives of this NCCP, and the achievement of Trinidad and Tobago's NDCs and other obligations, through integrating and mainstreaming the provisions of this policy;

c) collaborate with competent sub-national and multi-national entities to provide technical guidance on the inclusion of climate change considerations into organisation-level sustainability strategies and action plans;

d) Use all appropriate and available channels to provide financing for integrating and mainstreaming climate change considerations into national and sectoral policies, and the implementation of national and sectoral policies that have direct climate mitigation, adaptation, and climate-resilience building benefits. Financing sources include, but are not limited to:

    i. The National Green Fund

    ii. The Public Sector Investment Programme

    iii. The Social Sector Investment Programme

    iv. The Global Environment Facility, and GEF-supported facilities

    v. The Green Climate Fund and its various programmes including the Readiness Support Programme, Private Sector Facility, and Project Preparation Facility

    vi. The private sector

    vii. Public-Private Partnerships

    viii. Innovative sources, including finance leveraging through carbon pricing, or other mechanisms

ix. Multilateral Development Banks

x. Bilateral and multilateral financing arrangements

xi. Multi-country donor programming

9.1.2 Implementation Framework

Considering the diverse and cross-cutting nature of climate change, and the need to formalise an administrative, policy, institutional, and legislative enabling framework to ensure that climate action is mainstreamed into the national agenda, the Government shall:

a) within two (2) years of the approval of this NCCP, prepare new legislation, or amend existing legislation to:

   i. formalise institutional arrangements for the implementation of Trinidad and Tobago's obligations under the UNFCCC and the Paris Agreement;

   ii. formalise institutional arrangements for exploiting and accessing all sources of climate finance, including through the Green Climate Fund;

b) within two (2) years of the approval of the NCCP:

   i. establish a Coordinating Ministerial Climate Change Committee (CMCCC) as a high-level multi-partite coordinating mechanism for mainstreaming climate action to provide policy guidance and resolve implementation bottlenecks;

   ii. establish a Directorate on Climate Change to support the work of the CMCCC, including through the provision of technical and scientific advice;

   iii. establish a coordinating mechanism to reconcile and harmonise the responsibilities of the public and private sector, including the financial sector, to develop innovative approaches, including public-private partnerships;

   iv. formalise arrangements for national reporting on progress made towards achieving national climate goals and targets, including on reporting obligations under the UNFCCC and the Paris Agreement;

   v. establish a climate change window under the Green Fund;

   vi. establish a national budget line item on climate change to facilitate domestic financing of climate action in the national development process through sectoral integration;

   vii. formalise a system of GHG monitoring, reporting and mitigation compliance, as well as other national reporting as may be required under the Paris Agreement and the UNFCCC;

   viii. ensure meaningful public participation in decision-making on climate change; and

   ix. integrate national adaptation planning as part of the national development process, in line with a pathways approach, across and within all socio-economic sectors.

9.2 GHG Mitigation.

Cognisant of the need to accelerate a clean and just energy transition, and achieve net-zero emissions before 2100, the Government is committed to ensuring that national GHG emissions follow a peak-plateau-decline trajectory, decoupled from economic growth. Trinidad and Tobago shall continue to develop all relevant sectors, including its industrial sector, as it aspires towards sustainable development, through decarbonising these sectors. The Government shall do this by pursuing low-emission development pathways across all sectors while systematically enhancing emission sequestration options and deploying clean technology. Blended approaches that achieve both mitigation and adaptation goals will be prioritised.

In line with this strategy, the Government is committed to reducing its emissions through mitigation planning, renewable and alternative energy, energy efficiency, electrification of the transport sector, green and blue carbon sinks, carbon abatement technologies, sustainable cooling, carbon markets, as well as non-market mechanisms and research and development, and the development of a hydrogen economy driven by green hydrogen. These efforts align with the commitments established under Articles 2, 4, 5, 6 and 10, of the Paris Agreement; SDG 13; and Sections 2.02, 2.07, 2.08, 2.09, 2.13, 2.14, 2.17, and 2.23 of the NEP.

9.2.1 Mitigation Planning

In keeping with the Government's commitment to contribute to the achievement of the ultimate objective of the UNFCCC and the Paris Agreement, it recognises that this would entail systematic, increasingly ambitious climate mitigation and planning. Thus, the Government shall:

a) within two (2) years of the approval of this NCCP, prepare and adopt a *Long-term Low Emissions Development Strategy (LT-LEDS/LEDS)* in keeping with the best practice provided by the UNFCCC and the Paris Agreement;

b) within two (2) years of the approval of this NCCP, prepare and adopt a Net-Zero Roadmap to guide the achievement of a net-zero GHG State before 2100;

c) within one (1) year of the approval of this NCCP, develop strategies for electrification of the transportation sector;

d) periodically increase the NDC-cycling ambition in accordance with the Paris Agreement by expanding the economic sectors covered by the NDC and/or increasing its emission reduction targets, as practical and achievable in keeping with the objective of developing economy-wide mitigation targets;

e) prepare an *NDC Implementation Plan* that is aligned with its current NDCs, including financial investment plans; and

f) facilitate the provision of the technical, technological, and financial support necessary for developing and/or enhancing systems for measuring and reporting on GHG-emissions and mitigation efforts. This includes, but is not limited to:

    a. The National Transparency System and Biennial Transparency Reports to the UNFCCC.

    b. National Communications to the UNFCCC.

9.2.2 Renewable and Alternative Energy, and Green Hydrogen

The transition to clean sources of energy and decarbonising the industrial sector are global imperatives. In the context of Trinidad and Tobago, utilising renewable energy and alternative low-emission energy sources, and decarbonising the downstream petrochemical sector creates several co-benefits such as improved air quality and increased global competitiveness while increasing the availability of natural gas for processing and export. Thus, it is the Government's aim to increase the use of renewable energy in residential, commercial and industrial operations, and to facilitate the development of a green hydrogen sector. The Government shall:

a) within one (1) year of the approval of the NCCP amend the appropriate legislation to permit the domestic use and sale of renewable energy to the national grid (i.e., Feed-in Tariff).

b) develop suitable fiscal incentives to encourage widespread adoption of residential and commercial-scale renewable energy;

c) develop fiscal measures to incentivise the development of a green hydrogen sector, including through public-private-partnerships, as appropriate;

d) develop renewable energy policy and standards;

e) participate in public-private partnerships to introduce utility-scale renewable energy into the grid towards a goal of 30% energy from RE sources by 2030;

f) encourage financial institutions to develop financial products that support the residential and commercial adoption of renewable, low-emission, and/or zero emission energy sources.

g) embark on creating and enhancing electric vehicle charging infrastructure, drawing on experiences and lessons learned in the CNG fuel-switching programme, including consideration of fiscal incentives for the private sector to establish such stations;

h) explore waste minimisation technologies related to emissions such as combined heat and power, and energy from waste for industrial and commercial applications; and

i) participate in international and bi-lateral programmes that support the just and clean energy transition of Trinidad and Tobago's industrial, power generation, transportation, and other sectors to minimise any unintended consequences, and in keeping with the principle of no one left behind.

9.2.3 Energy Efficiency and Conservation

The Government recognises that improving energy efficiency and demand-side conservation can result in lower emissions from commercial and residential buildings, while simultaneously delaying the need for new energy infrastructure to satisfy growing demand including in the cooling sector. Additionally, it recognises the potential of energy efficiency improvements in industrial operations in achieving emission-reduction gains. Thus, the Government makes a commitment to:

a) develop a "Green Building Code" that will seek to maximize renewable energy and energy efficiency in existing and new residential and commercial buildings;

b) formulate and adopt energy efficiency standards for buildings, equipment and appliances that are aligned to international standards and best practices through the Trinidad and Tobago Bureau of Standards;

c) replace conventional street and public lighting with solar powered Light Emitting Diodes (LEDs) utilising a phased approach through routine maintenance programmes;

d) adopt energy efficiency and conservation measures across all Government Ministries, Divisions, and Agencies;

e) foster the growth and development of Energy Service Companies (ESCOs) in Trinidad and Tobago through targeted support and market-making efforts of Government Ministries, Divisions, and Agencies;.

f) develop fiscal incentives to encourage energy efficiency measures in residential and commercial buildings.

g) develop suitable fiscal incentives to encourage the use of RAC equipment in accordance with Class B of the Trinidad and Tobago Bureau of Standards (TTBS) Minimum Energy Performance Standard (MEPS) for ACs TTS/CRS 59:2021, GWP of 150 or less, and zero ozone depleting potential (ODP);

h) ensure that all RAC equipment imported conforms to national standards on energy efficiency labelling specifically the Energy Labelling-Air Conditioners – Requirements (TTS/CRS 59:2021) and TTS/CRS 57:2021- Energy Labelling - Refrigerating Appliances; and

i) ensure that all imported factory assembled air conditioning equipment meet the specifications of Class B of the Trinidad and Tobago Bureau of Standards (TTBS) Minimum Energy Performance Standard (MEPS) for ACs TTS/CRS 59:2021.

9.2.5 GHG Abatement Technologies

To decouple the growth of Trinidad and Tobago's manufacturing and industrial sectors from emissions, there must be an increase in cleaner technologies that avoid, significantly reduce, or sequester GHGs. To this end, the Government shall:

a) develop regulatory approaches and technology standards;

b) create an enabling environment of technical, technological and financial support for retrofitting with cleaner technologies;

c) provide fiscal incentives for cleaner technologies and fiscal disincentives for high-emission technology;

d) encourage financial institutions to develop and deploy financial instruments that support green technologies, and the greening of traditionally 'brown' technologies such as green bonds;

e) promote the use of Information and Communication Technology, as well as Artificial Intelligence, to reduce emission-generating activities;

f) support an industrial ecology approach to minimize wastage and improve circularity between industrial facilities;

g) adopt and facilitate, as far as practicable and feasible, Carbon Capture, Use and Storage (CCUS) technology to sequester carbon emissions;

h) develop national policy, legislation amendments, legislation and programmes that support the adoption of methane-reducing technologies from the energy, waste and agricultural sectors; and

i) participate in global and multilateral initiatives that support the reduction of methane from energy, waste and agricultural sectors.

9.2.6 Green and Blue Carbon Sinks and Reservoirs

The Government recognises that climate change and biodiversity loss are inextricably linked and that protecting, conserving and restoring nature and ecosystems, and the services they provide, such as carbon sequestration and adaptation resiliency, are critical for effective and sustainable climate action. Accordingly, the Government shall:

a) conserve forests, including mangrove forests, and other coastal and marine ecosystems, and protect natural systems through appropriate policy and legislative instruments;

b) rehabilitate degraded land as well as terrestrial, coastal and marine ecosystems that contribute to carbon sequestration, including quantification of carbon sequestration potential and carbon stocks;

c) adopt fiscal incentives and payment systems that promote the conservation of soil, forests, and coastal ecosystems;

d) explore the use of financial instruments that channel private sector financing towards the conservation, protection and restoration of ecosystems of high-sequestration value;

e) explore approaches that can maximise financial leveraging such as debt for climate swaps; and

f) encourage and incentivise private sector efforts that enhance the quality of terrestrial (green carbon) and marine ecosystems (blue carbon) to maximise carbon sequestration.

9.2.7 Sustainable Cooling

Refrigeration and Air Conditioning (RAC) is contributing significantly to climate change, as the chemical hydrofluorocarbon (HFCs) used in RAC are currently among the most potent GHGs, trapping thousands of times more heat in the Earth's atmosphere than carbon dioxide. Cooling also contributes to climate change by increasing demand for electricity. Conventional cooling devices – such as refrigerators, room air conditioners, industrial scale chillers, and other devices – account for as much as 10% of all global greenhouse gas emissions. Emissions from the cooling sector are expected to grow substantially in the coming decades, and Trinidad and Tobago in particular has seen an exponential growth in the cooling sector in the last few years. To ensure that the rising national demand for cooling systems can be met without significantly contributing to GHG emissions, it is vital that cooling systems and operation of the RAC sector are as sustainable as possible.

To enhance sustainable, climate friendly and energy efficient cooling, the Government shall:

a. develop standards, and procurement and disposal guidelines for public and private entities for RAC equipment which address energy efficiency, GWP and ozone depleting potential. Such standards and guidelines shall include the requirement for all public bodies to consider, where practical, technologies such as district cooling, and natural refrigerants;

b. ensure that new RAC equipment procured by public bodies complies with the standards and public procurement and disposal guidelines. This includes all Ministries, Departments of Government, the Tobago House of Assembly (THA), Statutory Bodies, and all State Enterprises procuring for their own use or on behalf of the GORTT, including procurement by such public

bodies through or supervised by the Central Tenders Board (CTB) or under the supervision of the Office of the Procurement Regulator (OPR);

c. conduct an inventory of RAC equipment within the public sector, including, where available, information on energy efficiency and the type of refrigerant in use, within one year of the adoption of the policy. This will inform future policy decisions on the retirement and replacement of public sector RAC assets;

d. promote the use of low GWP and non-ODS refrigerants in the refrigeration and air conditioning sector, in particular natural refrigerants or any other refrigerant with zero ODP and a GWP of 150 or less;

e. implement a quota system for all imports of refrigerant gases in accordance with the phase down schedule of the Kigali Amendment to the Montreal Protocol; and

f. develop a licensing and certification system for RAC technicians that supports and promotes the use of low GWP and non-ODS Refrigerants, in particular natural refrigerants.

To ensure compliance with implementation of the provisions of the Kigali Amendment the Government shall after January 1st, 2025:

a) ensure that domestic refrigeration equipment imported uses a refrigerant with zero ozone ODP and a GWP of 150 or less;

b) ensure that commercial and industrial refrigeration equipment imported uses a refrigerant with zero ozone ODP and a GWP not exceeding 300, but where technology is available and applicable for use, a GWP of 150 or less;

c) ensure that residential and commercial air conditioning equipment and chillers imported use a refrigerant with zero ozone ODP and a GWP not exceeding 700, but where technology is available and applicable for use, a GWP of 150 or less; and

d) ensure that imported motor vehicle air conditioning use a refrigerant with zero Ozone Depletion Potential (ODP) and where technology is available and applicable for use, a GWP of 150 or less.

9.2.8 Carbon Pricing and the Carbon Market

Carbon pricing mechanisms include, inter alia, emission trading schemes and carbon taxes. The Government of Trinidad and Tobago recognises the potential of the carbon market at the national and organisational levels towards realising carbon mitigation and carbon neutral ambitions.

Government shall pursue actions that directly result in avoided or reduced emissions as the primary strategy towards net-zero and the use of carbon offsetting via carbon markets will be complementary, as use of the carbon market will not achieve the desired level of mitigation required. As Trinidad and Tobago's mitigation ambitions increase, carbon taxes may be considered as a viable tool to ensure deep emission cuts. Accordingly, the Government shall:

a) develop a carbon pricing/ carbon trading policy to guide the participation in the market mechanisms under the Paris Agreement in alignment with the modalities, procedures, rules and guidelines adopted thereunder, as well as in the voluntary carbon market in order to align with national climate action, that will:

    a. strengthen institutional capacity to participate in carbon markets, including in the private sector;

    b. explore the feasibility of cap-and-trade regimes within, and across emitting sectors;

    c. develop fiscal incentives for participation in feasible domestic cap-and-trade regimes;

    d. explore the feasibility of national, sectoral, and activity-specific carbon taxes.

    e. create a harmonised reporting framework for carbon market activity, in order to facilitate carbon accounting.

b) Prepare new legislation, or amend existing legislation, as applicable and appropriate, to formalise an appropriate carbon pricing mechanism(s).

9.2.9 Non-market Approaches and Research and Development

Under the Paris Agreement, non-market approaches include all mitigation actions occurring without the use of the formal market-based approaches. The GORTT will institute measures in keeping with the international rules, modalities, procedures and guidelines for non-market-based approaches, and shall:

a) actively participate in bilateral and multilateral initiatives to support technology transfer and the fostering of innovation, research and development locally;

b) encourage research and development into alternative sources of energy such as solar, wind, biogas, geothermal, oceans and tidal by developing incentives and institutional arrangements for multipartite efforts;

c) establish an enabling environment, inclusive of incentives, for private sector investment in the development and manufacturing of renewable energy technologies such as fuel cells and solar cells;

d) encourage corporate social responsibility measures by the private sector aimed at activities that can result in emissions reductions;

e) explore the potential of emerging innovative technologies such as those utilising carbon emissions as an input for chemical production;

f) examine the potential feasibility of replacing traditional fuels with biofuels for domestic production and consumption; and

g) facilitate institutional collaborations between countries to support the development of voluntary sustainability and climate change targets.

9.3 Adaptation and Resilience-building

Trinidad and Tobago as a SIDS is particularly vulnerable to the adverse impacts of climate change which are cross-sectoral and multi-faceted. Considering the complexity and uncertainties that exist around the intensity of climate impacts and viability of adaptation interventions, the Government has opted for a *pathways approach* to adaptation. This approach is iterative, country-driven, gender-responsive, participatory and fully transparent, taking into consideration vulnerable groups, communities, and ecosystems, and guided by the best available science and traditional knowledge. Through a pathways approach, measures will be integrated into the national development agenda across all sectors to manage climate risks and build the climate resilience of communities, ecosystems, and the economy, with the aim of long-term adaptation.

In keeping with this strategy, the Government will build and enhance climate resilience through cross-sectoral efforts by acting in the areas of adaptation planning, risk management, and adaptive capacity.

9.3.1 Adaptation Planning

In keeping with the pathways approach, planning for long term adaptation must be flexible and responsive to changing contexts, scientific and indigenous knowledge, climate risks, and threats. Planning must therefore be iterative, participatory, informed by the latest science, continuous climate risk and vulnerability assessments, and communicated at all levels. Thus, the Government shall:

a) enhance and formalize into legislation, the national transparency system to include adaptation and climate resiliency indicators and data in the climate change knowledge management system, to facilitate reporting requirements under the UNFCCC and the Paris Agreement;

b) ensure that a risk-based, pathways approach to climate resilient adaptation planning is mainstreamed into national and sectoral development plans and policies as well as at the national and local government levels, that will include a consideration of the most current findings from vulnerability assessments, climate risk assessments, and climate models; and

c) develop an asset management approach to assess climate resiliency and vulnerability of existing infrastructure and incorporate climate risks into engineering designs with a view to climate-proofing new infrastructure and retrofitting existing infrastructure.

9.3.2 Climate Risk Management

The GORTT contends that climate resiliency refers to adequately managing climate risks through appropriate strategies and programmes that aim to give individuals, communities and ecosystems the ability to withstand and rebound as far as possible, from current and projected climate shocks. Considering this, the Government shall adopt a risk-based approach to building, enhancing, and securing climate resiliency. Accordingly, the Government shall:

a) within one (1) year of the approval of this NCCP, prepare a *Strategic Programme for Climate Risk Management* that will aim to enhance the institutions and institutional arrangements relevant to climate change adaptation and climate resilience-building through, inter alia, capacity building, training and institutional strengthening;

b) strengthen existing institutional arrangements for systematic observations, climate early warning systems in all vulnerable sectors, research and climate change modelling, including through cooperation with academia, NGOs and the private sector;

c) strengthen existing institutional arrangements at all levels for conducting climate risk assessments, identifying intervention options, including technology and technological applications, and mainstreaming climate risks into sectoral strategies and plans;

d) facilitate and incentivise investment in sovereign, community, and individual-level risk transfer financial instruments such as parametric disaster insurance, or livelihood protection-focused micro-insurance;

e) encourage and incentivise the private sector to incorporate climate and nature-related risk into their investment practices and operations, and develop and formalize a reporting framework, including environment, social and governance (ESG) reporting, to periodically disclose these risks using internationally accepted best practices; and

f) facilitate knowledge-sharing between sub-national, national and international stakeholders on climate risk-management.

9.3.3 Adaptive Capacity

Increasing adaptive capacity in socio-economic and biophysical systems to cope with climate risks and climate change is a recognised component of building and enhancing climate resiliency and adaptation. Building the psychological, physical, social, economic and environmental security of individuals, communities, and resiliency of ecosystems can be done through social measures as well as physical interventions using hard engineering solutions, or nature-based solutions (NbS). To enhance the country's adaptive capacity at all necessary and relevant levels, the Government shall:

a) promote ecosystem-based adaptation (EbA) measures that enhance the resilience of biophysical systems while providing socio-economic co-benefits;

b) adopt green infrastructure practices as a method of reducing disaster risks associated with excessive rainfall;

c) develop a system of protected areas to enhance the resilience of natural ecosystems that provide coastal defence, flood alleviation, and land-slide protection services such as forests, mangroves and coral reefs;

d) promote community-based adaptation through expanded use of the Green Fund for capacity building and enhancing resilience;

e) support participatory, community-based vulnerability assessments and climate change education programmes;

f) promote climate-smart agricultural practices and interventions that improve agricultural resilience and food security;

g) adopt engineering solutions for adaptation where appropriate, after fully considering adverse socio-environmental impacts caused by the intervention;

h) undertake efforts to mainstream climate change across all socio-economic sectors and communities;

i) proactively undertake preventative maintenance programmes on all public assets including roads, utilities and emergency services assets, based on an asset management approach, and by incorporating climate risks into engineering designs; and

j) utilise partnerships and techniques to unlock private sector finance for adaptation and/or access multilateral funding for adaptation efforts.

9.4 Loss and Damage

The issue of irreversible loss and damage is recognised as what happens when the limits of adaptation are reached, and therefore distinct from adaptation. The Paris Agreement provides for addressing loss and damage through a dedicated and separate article. The GORTT recognizes that the consideration of loss and damage is integral in dealing with the adverse impacts of climate change. In this context, these considerations involve dealing with the irreversible loss and damage to lives, livelihoods, property, amenities, and infrastructure due to climate change. While physical loss and damage can be evaluated in economic terms, loss and damage can also involve non-economic impacts to culture, identity, ecosystem services and biodiversity which cannot always be easily priced and quantified financially. Loss and damage can accrue from both climate extreme events such as storms, hurricanes, floods, and droughts, as well as through slow-onset events typified by climate change such as ambient temperature increases, sea surface temperature increases, increases in ocean acidity, and sea level rise, and associated impacts.

Towards enhanced understanding, action and support of loss and damage, the Government shall:

a) utilise mechanisms established under the UNFCCC and Paris Agreement, including but not limited to the Warsaw International Mechanism, Santiago Network, and Glasgow Dialogues, as well as any evolving issues determined by the governing bodies of the UNFCCC and the Paris Agreement., to address issues related to loss and damages;

b) facilitate social and scientific research and studies to better approximate, model, and valuate loss and damage at the community, sectoral, and national scales, including assessing non-economic losses, and loss and damage associated with slow onset events; and

c) actively pursue international, and other sources of financing to address loss and damage, to support efforts for recovery, rehabilitation, and restoration.

9.5 Finance

The cost of Trinidad and Tobago's NDCs can only be satisfied through a combination of public, private, blended financing, and multilateral financing using different financial instruments. It would also require technical and technological capacity building across civil society, Government and the private sector.

In keeping with Articles 9, 10, and 11 of the Paris Agreement and Sections 2.18 and 2.23 of the NEP, the Government is committed to planning for climate finance, sustainably allocating public funds, unlocking private sector finance, and accessing multilateral financing.

9.5.1 Climate Financial Strategy

As the true cost of climate change is ever-evolving and ever-growing, the Government shall:

a) periodically update its NDC Financial Investment Plan that aligns with its current NDC;

b) prepare a *Disaster Management Financing Policy* that is aligned with the Government's disaster management framework and includes specific *ex ante* and *ex post* instruments to address the liquidity gap between disasters occurring and recovery;

c) Develop a comprehensive climate finance taxonomy to guide climate-related investments, and

d) enhance the national transparency system to include climate finance indicators and data into the climate change knowledge management system to inform future strategy.

9.5.2 Public Funding

To ensure that public funds are used towards low-carbon, climate resilient development compatible with sustainable development, the Government shall:

a) include a dedicated budget-line for climate change in the national budget;

b) establish a 'climate change window' in the National Green Fund for financing climate projects;

c) report annually to Parliament on the financial allocation and use of money allocated to addressing climate change and disaster risk reduction;

d) streamline the National Green Fund to offer controlled, rapid disbursement of funding aligned with Trinidad and Tobago's climate change agenda*,* including rebates for climate-friendly investments*;*

e) undertake targeted stakeholder capacity-building sessions annually to enhance the capacity of governmental agencies, private sector, and civil society to access climate financing;

f) increase its fiscal allocations to Local Government and disaster management agencies to support flood prevention, management, and recovery efforts;

g) provide fiscal incentives for green businesses, including eco-entrepreneurs, women-led firms, green SMMEs, and green manufacturing; and

h) explore individual-scale micro-insurance options for vulnerable populations directly affected by climate change, including but not limited to those in the agricultural, fisheries, and agricultural-adjacent sectors.

9.5.3 Private Sector Financing

Unlocking private sector financing is critical to achieving Trinidad and Tobago's nationally determined contributions, as well as building climate resiliency. The Government shall:

a) encourage financial institutions to incorporate climate risk into their investment and credit decision-making and to disclose these climate considerations using an appropriate international framework;

b) encourage financial institutions to develop affordable financing for individuals to effect climate action at the domestic and commercial levels, including through low-interest loans and favourable mortgage rates for climate resilient development;

c) explore the use of green and blue bonds, and other forms of climate-progressive financial instruments to unlock private sector financing;

d) undertake public-private partnerships where appropriate to advance climate action;

e) mainstream through the Central Bank the adoption of sustainable finance strategies that address climate- and nature-based risk by financial institutions, and the establishment of systems to manage these risks including but not limited to:

   i. Environmental and Social Management Systems (ESMS)

   ii. Environmental and Social Risk Assessment (ESRA) Systems

   iii. Environmental, Social and Governance (ESG) Disclosures

   iv. Taxonomies for blue and green financial investment

f) provide incentives to financial institutions that offer green and blue lending lines, green financial technology, or insurance products that directly address climate change impacts;

g) create the requisite enabling environment to encourage and incentivize climate-related investments;

h) develop a carbon pricing mechanism, and instruments to leverage private sector finance;

i) establish and/or participate in innovative financial mechanisms that utilise blended finance to de-risk private sector investment into priority areas for climate resilience and the clean energy transition;

j) explore the use of financial technologies (fin tech) to unlock climate finance for enterprises that support the transition to a blue-green economy; and

k) explore fiscal incentives, and financial and technical support to develop a pipeline of private-sector investment worthy projects in climate resilience and clean energy.

9.5.4 Bilateral and Multilateral financing

The Government recognises that most of its climate finance needs will be met through international sources of funding using various instruments. Thus, the Government shall:

a) enhance the capacity of the National Designated Authority (NDA) of the Green Climate Fund to ensure that it has adequate staffing and technical capacity to perform its functions relevant to the Green Climate Fund;

b) collaborate with civil society and the private sector to develop concept notes and financing proposals to the Green Climate Fund through the GCF's various programmatic windows;

c) explore the establishment of a trust fund or other appropriate mechanism to accept international climate financing;

d) strengthen the capacity of institutions to access all forms of climate financing including but not limited to the Green Climate Fund, Global Environmental Facility, and Adaptation Fund as well as financing from multilateral development banks, and guided by climate finance taxonomies;

e) collaborate with other States to enhance local institutional capacity and programmes that support climate action, as appropriate; and

f) participate in innovative financial vehicles that can generate financial returns for climate-linked investments.

9.6 Education, Training, Public Awareness, Capacity Building and Public Access to Information.

An environmentally aware and empowered population is critical for achieving nation-wide climate action and building resilience across the society. In keeping with Article 12 of the Paris Agreement; SDGs 4, 9, 13 and 17 and Sections 2.19 and 2.20 of the NEP, the Government shall undertake climate education and awareness efforts, training and capacity building efforts, and improve access to climate information.

9.6.1 Education and Awareness

Towards formal and informal education on climate change, and to ensure that it resonates in the general consciousness of all, the Government shall:

a) within one (1) year of the approval of the NCCP, prepare a national *Strategy for Action on Climate Empowerment (ACE) and Climate Change Communication Plan* consistent with Article 6 of the UNFCCC and Article 12 of the Paris Agreement, and with the meaningful participation of civil society;

b) integrate educational programmes on climate change impacts, mitigation and adaptation into primary and secondary school curricula;

c) implement national programmes that are designed to encourage behavioural change among the public;

d) conduct continuous public awareness programmes and initiatives targeting key audiences and utilising a variety of methods and media (including the internet, film and radio); and

e) integrate education and awareness programming across all sectors on the issues of climate justice, the clean and just transition, and the meaningful participation and empowerment of vulnerable groups, including women, LGBT+, and youth.

9.6.2 Capacity Building

The Government shall:

a) ensure the enhancement of capacity building and institutional strengthening through the training of public officers in academia, CBOs and NGOs via attachments to overseas Centres of Excellence, including the Caribbean Community Climate Change Centre, in areas that are critical to climate change such as vulnerability analyses, climate modelling, greenhouse gas inventorying and negotiation skills;

b) integrate climate risk assessments in all public sector programmes through training in climate risk assessments utilising appropriate climate risk models;

c) facilitate climate justice education and gender equality training so that disproportioned and vulnerable groups can contribute while those in higher social standings are informed;

d) partner with tertiary institutions to develop climate change and climate-relevant education, research and entrepreneurship programmes;

e) sensitize and train financial institutions on energy efficiency and climate change issues and factor these into decisions on providing financing for small, medium and large investments, including for RAC equipment; and

f) ensure the full consideration of gender sensitivity in decision-making processes of public policies, and in capacity building and training activities, as well as stakeholder engagement activities.

9.6.3 Public Access to Information

To ensure that all stakeholders can meaningfully participate in climate action, the Government shall:

a) establish public interfaces, including public registries as appropriate, to allow for timely access to aggregated climate change data on mitigation, adaptation and financing;

b) ensure that national and local stakeholders such as indigenous, LGBTQ+ and youth have equitable access to, and benefit from information and knowledge on climate change impacts, mitigation and adaptation, including information and knowledge from foreign stakeholders and researchers; and

c) adopt a practice of annual reporting on climate change efforts to Parliament.

9.7 Transparency

Climate transparency involves a detailed review of a country's climate actions in its transition to a net zero emissions economy. The GORTT recognises that relevant data is critical to the implementation of this policy and it is therefore being collected and housed in various Government ministries and agencies. This is in alignment with Article 13 of the Paris Agreement, SDG 10, and Section 3 of the NEP. Accordingly, the Government shall institute a policy of free exchange of information and data among ministries and agencies for use towards the implementation of this policy.

Towards greater accountability on climate change, the Government shall:

a) develop an enhanced climate monitoring, reporting and verification (MRV) and National Transparency system aligned to the Paris Agreement and associated decisions taken thereunder on climate

transparency, and which includes at a minimum: sectoral GHG inventories, indicators of GHG mitigation, adaptation measures and associated indicators, and climate financial disclosures;

b) provide a centralised repository and integrated climate change knowledge management system for climate-relevant data at the Environmental Management Authority, or another equivalent entity;

c) formalise the national transparency system (NTS) in law to ensure that institutional arrangements are galvanised into the national development agenda;

d) submit reports to the UNFCCC in a timely manner on the status of climate action through the various vehicles prescribed by the UNFCCC and Paris Agreement, including but not limited to: National Communications, Biennial Transparency Reports, and Adaptation Communications; and

e) mandate that all Government Ministries and Agencies prepare climate risk and climate financial disclosures as part of its annual reporting, and that these reports be submitted to Parliament.

9.8 Climate Justice and the Just Transition

The Government recognises the need for accelerated climate action based on the best available scientific knowledge, and equity, reflecting common but differentiated responsibilities and respective capabilities in light of different national circumstances and in the context of sustainable development and efforts to eradicate poverty. In keeping with the Paris Agreement; SDGs 5, 8 and 10; and Sections 2.20, 2.22, and 2.23 of the NEP, the Government shall act to adopt, and effect just and equitable transitions, and human rights approaches to climate action.

9.8.1 Just and Equitable Transitions

The Government recognises that the transition to low GHG emission development pathways must be just and inclusive. Sustainable and just solutions that spur economic development and the eradication of poverty decoupled from emissions can only be found through meaningful and effective social dialogue with all stakeholders. The transformational shift in society's structure must be nationally determined, and will include energy, socio-economic, workforce and other dimensions as well as social protection measures to mitigate 'transition shocks 'associated with changing the way we live and do business. This also includes inequities arising from the adverse impacts of climate change, such as loss of livelihoods. Thus, in keeping with the principle of "leaving no one behind", the Government shall:

a) within one (1) year of the approval of this NCCP, adopt a *Just Transition Policy*, informed by the public and key transition stakeholders including but not limited to the labour movement, academic and training institutions, and private sector actors involved in energy and industry, CSOs and NGOs;

b) ensure that the voices of youth, indigenous peoples, women, and LGBT+, among others are represented at all levels of policy formation and decision making, including through representation on climate change steering committees and national dialogues;

c) ensure that all climate change projects undertaken by the Government are gender sensitive, and do not increase the vulnerabilities of climate-vulnerable populations;

d) develop fiscal incentives and non-financial initiatives to encourage the transition of the workforce into sustainable green and blue economies, with special emphasis on women, youth, and the socially displaced;

e) facilitate the development of training programmes for upskilling, retooling, re-skilling and re-schooling of the workforce necessary for the transition, and to minimize unintended consequences of the transition, and

f) enhance social safety nets through appropriate Government institutions to ensure protection against the physical, social or policy shocks associated with climate change.

9.8.2 Human Rights and Human Approaches to Climate Action.

The Government is pellucid on its responsibility to ensure that all persons within Trinidad and Tobago are entitled to their freedom, dignity, the highest attainable standards of physical and mental health, adequate standard of living, and the right to education and development and to a healthy environment. Thus, in the pursuit of low-carbon, climate-resilient growth compatible with sustainable development, the Government shall:

a) ensure there is no discrimination based on gender, sexual orientation, race, or socio-economic status;

b) promote the empowerment of women and girls;

c) promote the empowerment and meaningful inclusion of children and youth based on the principle of intergenerational equity;

d) treat with respect and sensitivity those experiencing the disproportionate effects of climate change including indigenous people, youth, women and girls, refugees and internally displaced persons and persons with physical or mental disabilities;

e) encourage multi-level cooperative action and the mobilization of indigenous peoples, local communities, cities and civil society, including youth and children and other vulnerable groups, in addressing and responding to climate change; and

f) encourage and support youth-led initiatives undertaken in the non-governmental and private sector.

10.0 ACCOUNTABILITY

Implementation of this policy will be done through the establishment of relevant stakeholder networks designed to facilitate self-monitoring and reporting.

The climate change policy will be revised every five (5) years with public review to determine its overall effectiveness in achieving its objectives and to update the policy based on the findings of the review while simultaneously incorporating new scientific data.

There shall be mandatory reporting by relevant entities to Parliament on climate action undertaken. This will be enabled through relevant legislation with defined guidelines on the content and the preparatory process.