



Greenhouse Gas Emissions in the Eastern and Southern Caribbean Region

Numbers at a Glance (2011)

Country	GHG Emissions (MtCO ₂ e) (4 sectors) ¹	Total GHG Emissions (MtCO ₂ e) (5 sectors) ²	% of global emissions ³	Population	tCO ₂ e per capita	GDP (Million US\$) ⁴	tCO ₂ e/ million US\$ GDP	Change in GHG emissions (1990–2011) (MtCO ₂ e)
Antigua and Barbuda	0.52	1.12	0.002%	88,152	12.72	994	1,128	+0.62 (+123%)
Barbados	2.12	3.56	0.008%	281,804	12.64	4,064	876	+0.51 (+17%)
Dominica	0.18	0.28	0.001%	71,401	3.92	442	633	+0.16 (+133%)
Grenada	1.50	1.80	0.004%	105,074	17.16	670	2,691	+0.25 (+16%)
Guyana	5.38	7.08	0.015%	790,882	8.95	969	7,308	+1.24 (+21%)
Saint Kitts and Nevis	0.08	0.38	0.001%	52,971	7.19	572	666	+0.28 (+285%)
Saint Lucia	0.72	1.12	0.002%	179,271	6.26	1,051	1,068	+0.41 (+57%)
Saint Vincent and the Grenadines	0.05	0.25	0.001%	109,357	2.26	586	421	+0.16 (+187%)
Suriname	5.76	7.96	0.017%	529,761	15.03	2,325	3,424	+3.30 (+71%)
Trinidad and Tobago	1.93	54.14	0.115%	1,333,082	40.61	18,685	2,897	+34.49 (+176%)
Regional Total	18.25	77.70	0.166%	3,541,755	21.94	30,358	2,559	+41.41 (+114%)
World	12,251	46,906	100%	6,964,618,177	6.73	54,034,488	868	+12,969 (+38%)

Source: World Resources Institute Climate Analysis Indicators Tool (WRI CAIT 2.0, 2016) and US Energy Information Administration (EIA), International Energy Statistics – Total Carbon Dioxide Emissions from the Consumption of Energy (2011) (EIA, 2016).

Of the ten countries included in the Eastern and Southern Caribbean (ESC) regional mission, Trinidad and Tobago has the highest greenhouse gas (GHG) emissions, followed by Suriname, Guyana, Barbados, Grenada, Saint Lucia, Antigua and Barbuda, Saint Kitts and Nevis, Dominica, and Saint Vincent and the Grenadines, according to data from the World Resources Institute Climate Analysis Indicators Tool (WRI CAIT) and the US Energy Information Administration (EIA).

¹ World Resources Institute Climate Analysis Indicators Tool (WRI CAIT 2.0, 2016). Emissions are in million metric tons of carbon dioxide equivalent (MtCO₂e). WRI CAIT uses global warming potentials (GWP) from the Intergovernmental Panel on Climate Change (IPCC) Second Assessment Report (SAR). This column presents GHGs from four sectors only: Land-use change and forestry (LUCF), agriculture, waste, and industrial processes (IP); energy data are available only for Trinidad and Tobago. As of February 2017, 2013 data from the four sectors are available but there is no energy data for any year except for Trinidad and Tobago.

² Total GHG emissions are approximated by summing WRI CAIT data for LUCF, agriculture, waste, and IP with energy sector data from the US Energy Information Administration (EIA). [International Energy Statistics – Total Carbon Dioxide Emissions from the Consumption of Energy \(2011\)](#). (EIA, 2016). Download – ESC countries.

³ The percent of global emissions is based on total national emissions from five sectors, including the energy sector.

⁴ Gross Domestic Product (GDP) in constant 2005 US\$.

The ESC Region's GHG emissions represent less than 0.17% of global emissions. However, per capita emissions in the region, and for seven of the ESC countries, are higher than the world average. Only the per capita emissions of Saint Vincent and the Grenadines, Dominica, and Saint Lucia are below the world average. The region's GDP carbon intensity is almost triple the world average, with only three countries (Saint Vincent and the Grenadines, Saint Kitts and Nevis, and Dominica) emitting fewer GHGs relative to GDP than the world average. Between 1990 and 2011, total regional GHG emissions more than doubled, increasing 114%, compared to world average growth of 38%.

The region's GHG emissions by sector, their change over time, and the drivers of key sources of GHG emissions in the region are described below, followed by an outline of key national climate change commitments and policies as described in the countries' Intended Nationally Determined Contributions (INDCs).

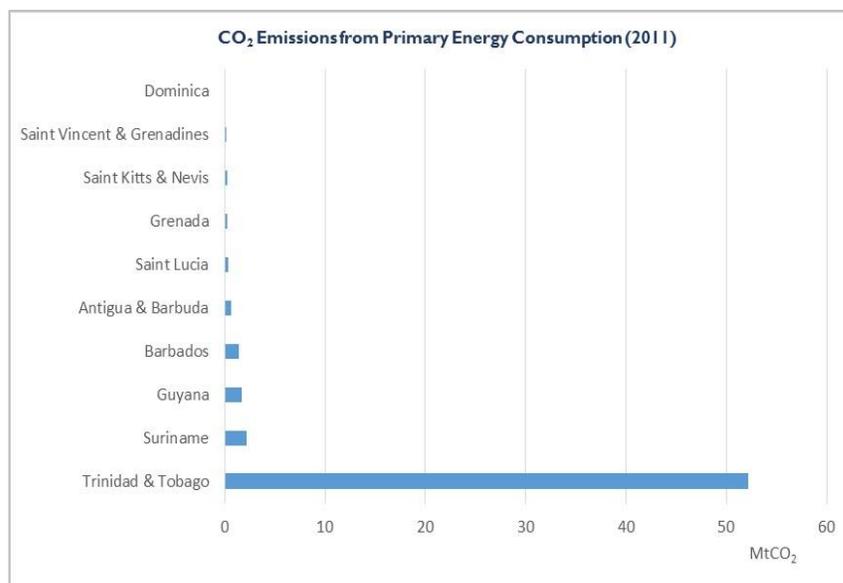
GHG Emissions by Sector (2011)

To provide context for the region's energy sector emissions and total national GHG emissions, this fact draws on GHG emissions data available from WRI CAIT for the land-use change and forestry (LUCF), waste, agriculture, and industrial processes (IP) sectors. It supplements WRI CAIT data by using US Energy Information Administration (EIA) data on carbon dioxide emissions⁵ from primary energy consumption to approximate the energy sector emissions of each of the ESC countries.⁶

According to the [National Communications](#) submitted by countries to the UNFCCC, energy is the highest emitting sector in most of the ESC countries, due to their being Small Island Developing States (SIDS) that are heavily dependent on fossil fuels for electricity production and transport.⁷ Using EIA energy data in conjunction with WRI CAIT data to approximate national total GHG emissions, as shown in the table above, also shows the energy sector to be the region's leading source of GHG emissions.

The importance of the energy sector in the region is due to the impact of energy sector emissions from Trinidad and Tobago, which in 2011 contributed 88% of the region's carbon dioxide emissions from primary energy consumption. The next highest energy sector emitters, Suriname, Guyana, and Barbados, contribute 4%, 3%, and 2%, respectively.⁸

At the country level, EIA data show energy to be the leading source of GHG emissions for five countries. They are: Trinidad and Tobago, Antigua and Barbuda, Saint Kitts and Nevis, Saint Vincent and the Grenadines, and Dominica.



Source: EIA, 2016.

⁵ According to the EIA, carbon dioxide (CO₂) emissions are the largest share of energy sector GHG emissions. In 2009, energy-related CO₂ accounted for 98% of the United States' CO₂ emissions. See EIA, [Emissions of Greenhouse Gases in the US](#), viewed on January 5, 2017.

⁶ Primary energy is energy in the form that it is first accounted for in a statistical energy balance, before any transformation to secondary or tertiary forms of energy. For example, coal can be converted to synthetic gas, which can be converted to electricity; in this example, coal is primary energy, synthetic gas is secondary energy, and electricity is tertiary energy. Primary energy consumption includes coal consumption, petroleum products including natural gas and crude oil burned as fuel, consumption of wood and wood-derived fuels; biomass waste consumption; fuel ethanol and biodiesel consumption, and other forms of energy consumption (i.e., renewable energy). EIA, [Glossary](#), Viewed on December 31st, 2016.

⁷ UNFCCC. [Climate Change, Small Island Developing States](#), 2005.

⁸ EIA, 2016. Viewed on December 31st, 2016.

According to WRI CAIT, which does not include energy sector emissions, GHG emissions from the ESC region are primarily from activities in the LUCF sector, followed by emissions from waste, agriculture, and IP. WRI CAIT has no energy data for ESC countries except Trinidad and Tobago since its main data source, the International Energy Agency (IEA), does not provide energy data for these countries.⁹

After the energy sector, LUCF is the next highest emitting sector in the ESC region (8.56 MtCO₂e), followed by emissions from waste (5.40 MtCO₂e), agriculture (2.88 MtCO₂e), and IP (1.41 MtCO₂e).¹⁰

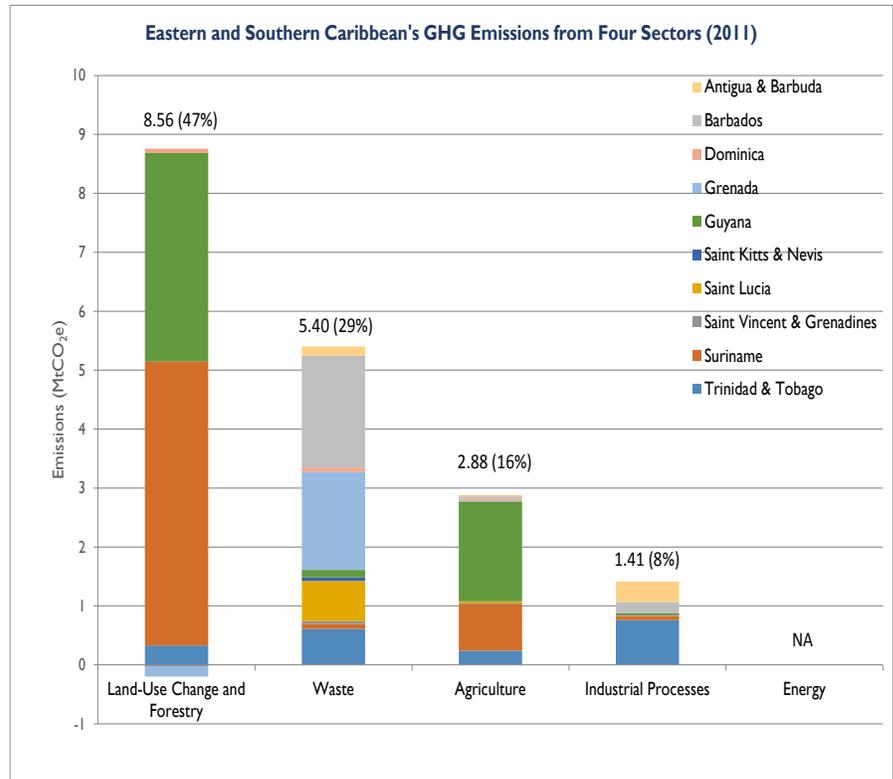
In the LUCF sector, Suriname and Guyana dominate the region's LUCF emissions (98%). LUCF is the highest emitting sector of both countries. Their emissions are discussed in the section below.

The LUCF sectors of two countries – Grenada and Saint Vincent and the Grenadines – absorb more than they emit. Combined, these two countries absorb the equivalent of 2% of the region's LUCF emissions.

In the waste sector, Barbados, Grenada, Saint Lucia, and Trinidad and Tobago are the highest emitting countries and together contribute 90% of the region's GHG emissions from waste. Waste is the highest GHG emitting sector of three countries, Barbados, Grenada, and Saint Lucia.

In the agriculture sector, Guyana is the ESC region's top emitter and is responsible for 59% of the ESC region's agriculture emissions. It is followed by emissions from Suriname (27%). At the national level, agriculture is not the main source of emissions for any ESC country.

In the IP sector, Trinidad and Tobago contributes 54% of the region's emissions, followed by Antigua and Barbuda (24%), and Barbados (13%). IP is not the main source of emissions for any ESC country.



Source: WRI CAIT 2.0, 2016. Energy sector emissions are not available from WRI CAIT.

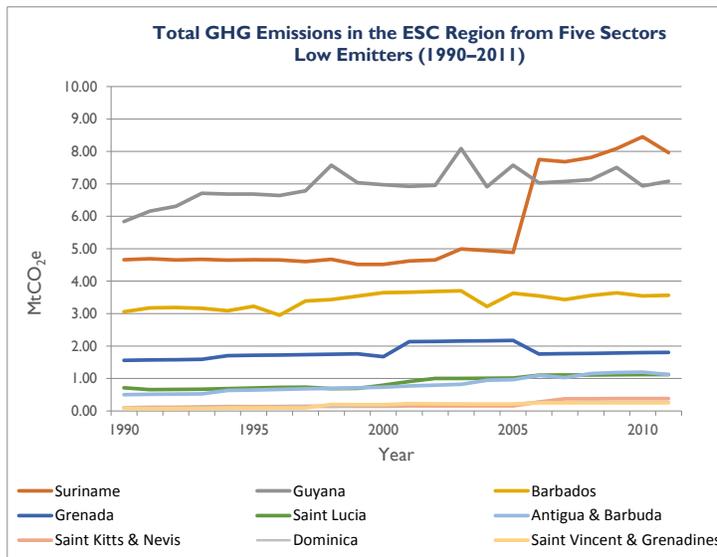
⁹ IEA provides no energy data for ESC countries except Trinidad and Tobago, which are neither [member countries](#) nor [non-member countries](#) of the IEA.

¹⁰ WRI CAIT 2.0, 2016. GWP(s) are from the IPCC SAR.

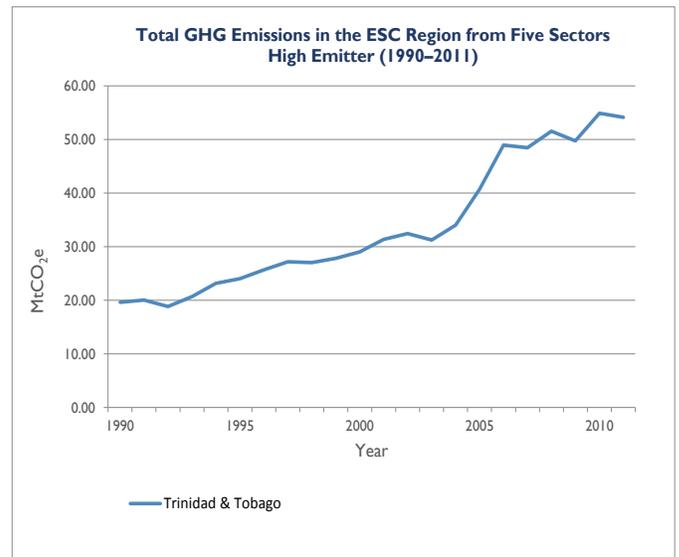
Change in GHG Emissions in the Eastern and Southern Caribbean Region (1990-2011)

Between 1990 and 2011, the ESC region's total GHG emissions more than doubled, from 36.3 MtCO_{2e} to 77.7 MtCO_{2e}.¹¹ The following graphs show the change in emissions in each country during this time. The change in emissions from low and high emitting countries are presented separately to enhance readability.

At the national level, the average annual change in emissions from 1990 to 2011 ranged from 1% growth in three countries (Guyana, Barbados, and Grenada), to 8% growth in emissions from Saint Kitts and Nevis. Emissions from Trinidad and Tobago, which contributed more than 50% of the total regional emissions between 1990 and 2011, saw an average annual increase in emissions of 5% during this time. The region's second highest emitter, Suriname, experienced a spike in GHG emissions in 2005, however its average annual change in emissions over the 1990-2011 period was 3%.



Source: WRI CAIT 2.0, 2016 and EIA, 2016.



Source: WRI CAIT 2.0, 2016 and EIA, 2016.

The drivers of the region's key emitting sectors are summarized below, focusing on the countries whose combined sector emissions represent a significant share (90%) of the region's sector emissions.

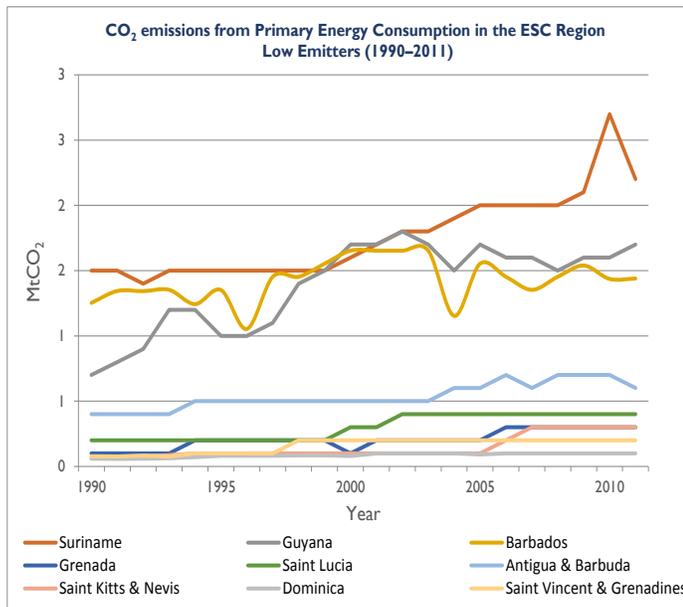
¹¹ WRI CAIT 2.0, 2016 and EIA, 2016. Total emissions include emissions from energy.

Energy: Changes in the region’s carbon dioxide emissions from primary energy consumption are driven by Trinidad and Tobago’s high emissions. Trinidad and Tobago’s [Second National Communication \(SNC\)](#) to the UNFCCC notes a 43.3% increase in carbon dioxide emissions between 1990 and 2006, which correlates to a doubling of electricity generation during this time. As of 2011, 99% of electricity in Trinidad and Tobago was generated from natural gas. The industry sector consumes more than 60% of total electricity generated.¹² In 2012, per capita electricity consumption in Trinidad and Tobago stood at 6,510 kWh, more than three times the Latin American and Caribbean average and more than twice the world average. This is attributed to the high energy intensity of the country’s industrial sector.¹³

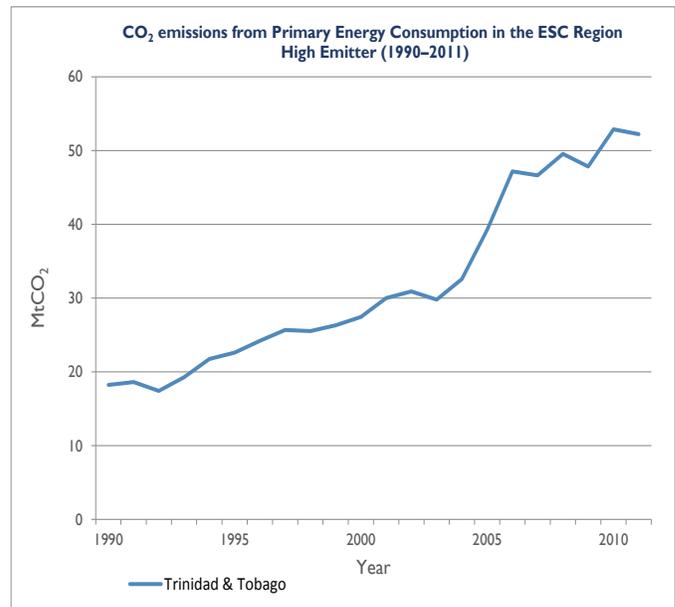
Trinidad and Tobago is the leading Caribbean producer of oil and gas.¹⁴ In 2011, it produced 139,000 barrels of oil per day and 43.1 billion cubic meters of natural gas.¹⁵ The country exports half of its natural gas production.¹⁶ Unlike other Caribbean countries, Trinidad and Tobago is largely self-sufficient in energy. The energy sector is the main contributor to the country’s economy, providing 58% of annual government revenue and 45% of gross domestic product (GDP) in 2011. The petrochemical sector alone contributed an estimated 13% to GDP in 2011.¹⁷ In transportation, the increase in carbon dioxide emissions between 1990 and 2006 is correlated with an increase in fuel sales, as a result of an increase in the total number of registered vehicles.¹⁸

Non-fossil fuel electricity generation in Trinidad and Tobago is limited to small-scale wind and solar photovoltaic installations by private households and small businesses, or pilot programs at government facilities.¹⁹ The government is currently developing a Sustainable Energy Program, which aims to manage the country’s natural resources in a more sustainable way and enhance the use of renewable energy and promote energy efficiency.²⁰

Suriname is the second highest ESC emitter of carbon dioxide from primary energy consumption. As of 2011, 61% of electricity generation was by hydropower and 39% was fueled by oil. The industry sector consumes more than 50% of total electricity generated.²¹



Source: EIA, 2016.



Source: EIA, 2016.

¹² International Energy Agency. Energy Balances: [Trinidad and Tobago](#), viewed on January 2nd, 2017.

¹³ Inter-American Development Bank (IDB). [Energy Dossier: Trinidad and Tobago](#), 2016.

¹⁴ Trinidad and Tobago. [Trinidad and Tobago’s Second National Communication \(SNC\)](#) to the UNFCCC, 2013.

¹⁵ BP. Statistical Review of World Energy, [June 2016](#).

¹⁶ IDB, 2016.

¹⁷ Ibid.

¹⁸ Trinidad and Tobago SNC, 2013.

¹⁹ IDB, 2016.

²⁰ Inter-American Development Bank (IDB). [A Unique Approach for Sustainable Energy in Trinidad and Tobago](#), 2015.

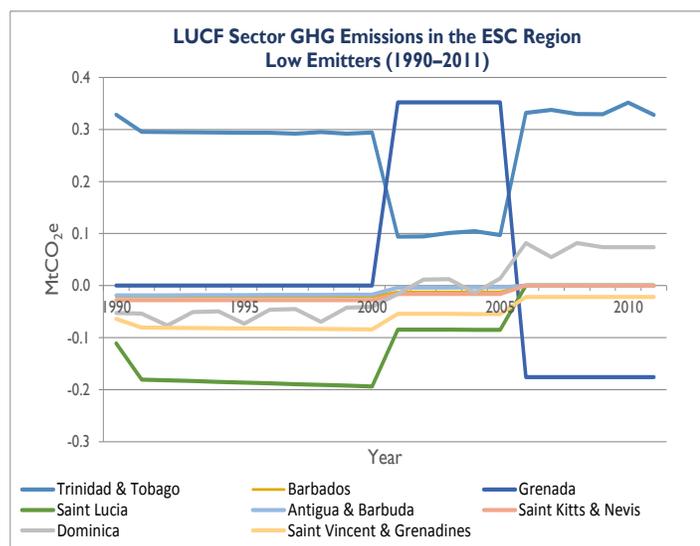
²¹ International Energy Agency. Energy Balances: [Suriname](#), viewed on January 2nd, 2017.

Land-Use Change and Forestry (LUCF): According to WRI CAIT, changes in the ESC region's LUCF emissions from 1990 to 2011 are driven by LUCF activities in Suriname and Guyana. Their emissions are shown below in the graph of the region's high LUCF sector GHG emitters. Emissions from the other countries are shown separately in the LUCF low emitters graph.

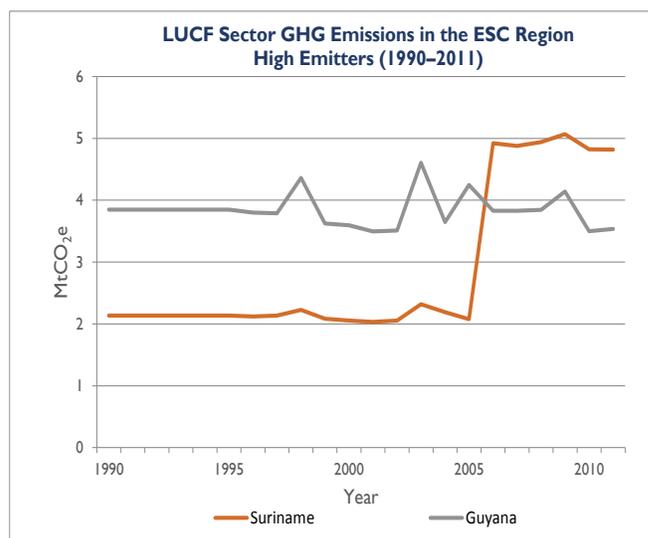
Although high for the ESC region, Guyana's historical deforestation rates have been relatively low, ranging between 0.1% and 0.3% annually. As of 2012, Guyana has a total forest area of 16.45 million hectares (ha) or 77% of the country's area.²² Suriname's 15 million ha of forests cover 94% of its total land area. Due to its low deforestation rate of 0.03% to 0.04% annually, Suriname is identified as a country with a High Forest Cover, and Low Deforestation rate (HFLD-country).²³ In Suriname, deforestation is mainly caused by timber harvesting, conversion of forest areas to agricultural lands, and development of infrastructure such as roads and reservoirs for hydroelectric dams.²⁴ Mining, mainly bauxite, gold, and granite drive deforestation in Suriname and Guyana and forest fires contribute to forest depletion in Guyana.²⁵

Guyana and Suriname participate in the UN-REDD Programme and the Forest Carbon Partnership Facility, both of which support national level planning and implementation for Reducing Emissions from Deforestation and Forest Degradation and the conservation and sustainable management of forests and enhancement of forest carbon stocks (REDD+).²⁶ [Suriname](#) and [Guyana](#) have both prepared their [Readiness Preparation Proposals \(R-PP\)](#).

Regionally, there are similarities in the causes of deforestation and forest degradation, including the harvesting or use of forest resources in the residential sector in the form of charcoal and firewood in Dominica, Grenada, Guyana, Saint Kitts and Nevis, Saint Lucia, and Saint Vincent and the Grenadines. Land clearing for agriculture and infrastructure development is a commonly identified driver of deforestation in most of the ESC countries.²⁷ In Dominica, where LUCF is the country's highest emitting sector, Dominica's [Second National Communication \(SNC\)](#) attributes increased emissions from changes in forest cover between 2000 and 2005 to new settlements.²⁸ In Antigua and Barbuda and Barbados, forest areas are limited since most of the original forests were cleared to establish sugar plantations, tobacco and cotton.²⁹



Source: WRI CAIT 2.0, 2016.



Source: WRI CAIT 2.0, 2016.

²² Guyana. [Guyana's Second National Communication \(SNC\)](#) to the UNFCCC, 2012.

²³ Suriname. [Suriname's Second National Communication \(SNC\)](#) to the UNFCCC, 2016.

²⁴ Ibid.

²⁵ Guyana SNC, 2012 and Suriname SNC, 2016.

²⁶ UN-REDD Programme. Regions and Countries, Latin America and the Caribbean, [Guyana](#) and [Suriname](#), viewed on January 2nd, 2017.

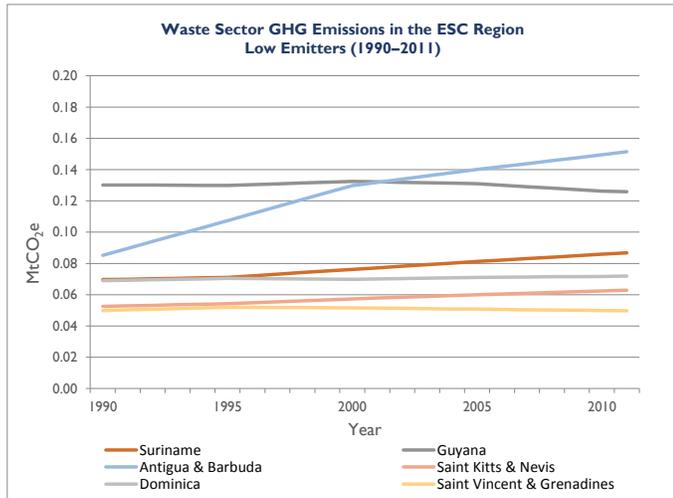
²⁷ [Dominica \(2012\)](#), [Grenada \(2000\)](#), [Guyana \(2012\)](#), [Saint Kitts & Nevis \(2016\)](#), [Saint Lucia \(2012\)](#), and [Saint Vincent & Grenadines \(2016\)](#), National Communications to the UNFCCC.

²⁸ Dominica. [Dominica's Second National Communication \(SNC\)](#) to the UNFCCC, 2012.

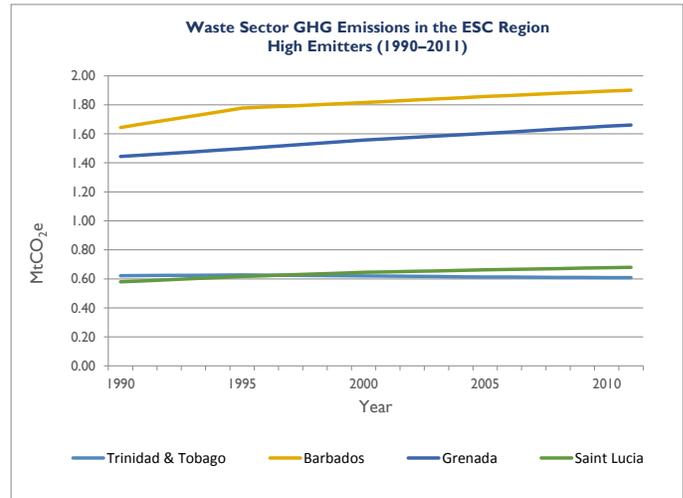
²⁹ Antigua and Barbuda, [Antigua and Barbuda's Second National Communication \(SNC\)](#) to the UNFCCC, 2009 and Barbados, [Barbados First National Communication \(INC\)](#) to the UNFCCC, 2001.

Waste: Changes in the ESC region’s waste sector GHG emissions are driven by Barbados, Grenada, Saint Lucia, and Trinidad and Tobago. Their emissions are shown below in the waste sector “high emitters” graph.

In Barbados, organic material accounts for about 47% of municipal solid waste and is the primary source of methane emissions in the waste sector.³⁰ Between 1994 and 2005, the volume of waste in Barbados increased fivefold, from 200 tons/day to over 1,000 tons/day.³¹ In Grenada, around 30,000 tons of waste per year was generated in 2002, which is expected to grow to 38,000 tons per year by 2021 as the economy develops and the population increases.³² Grenada plans to build a controlled landfill, collect the methane gas produced to generate electricity, and reduce methane emissions from landfills by 90%.³³

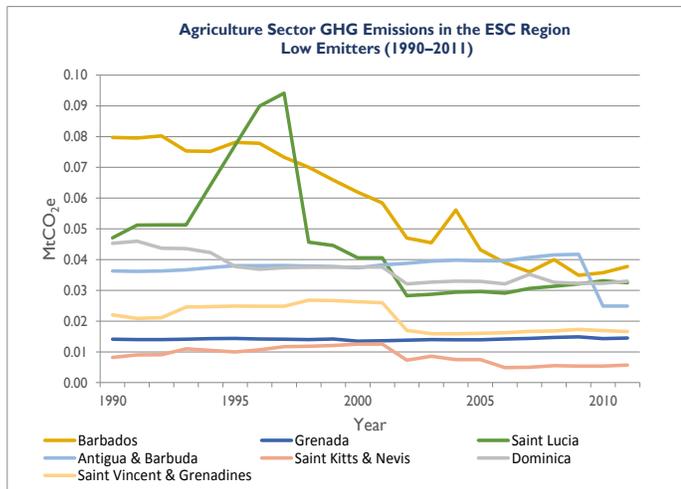


Source: WRI CAIT 2.0, 2016.

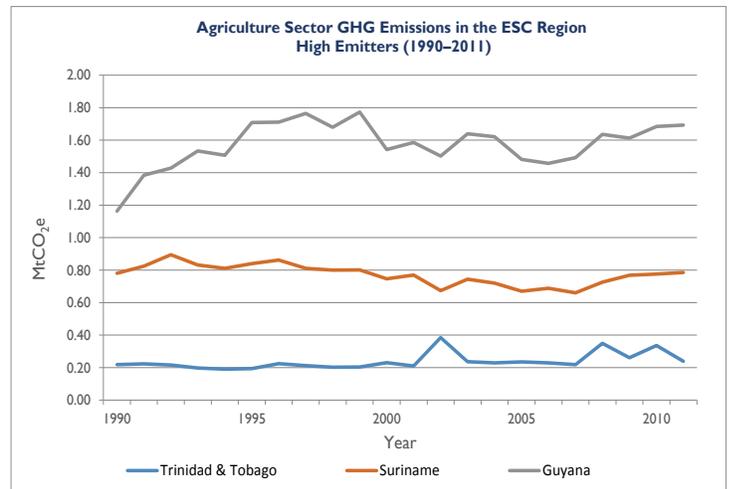


Source: WRI CAIT 2.0, 2016.

Agriculture: Changes in the ESC region’s agriculture emissions are driven by agricultural activities in Guyana, Suriname, and Trinidad and Tobago. In Guyana and Suriname, according to the FAO, emissions from rice cultivation drove agriculture emissions between 1990 and 2011. During the same period, enteric fermentation from livestock decreased in both countries.³⁴ The rice industry continues to be a leader in Guyana’s economy, recording annual increases of 22%. Rice contributes around 5% of total GDP and 13.8% of agricultural GDP. In 2013, Guyana prepared its [2013-2020 National Strategy for Agriculture in Guyana](#), which sets 25 priority areas that represent the opportunities, challenges and the strategic thrust for the agriculture sector to 2020.



Source: WRI CAIT 2.0, 2016.



Source: WRI CAIT 2.0, 2016.

³⁰ Barbados INC, 2001.

³¹ Inter-American Development Bank. [Solid Waste Management in the Caribbean - Proceedings from the Caribbean Solid Waste Conference](#), 2016.

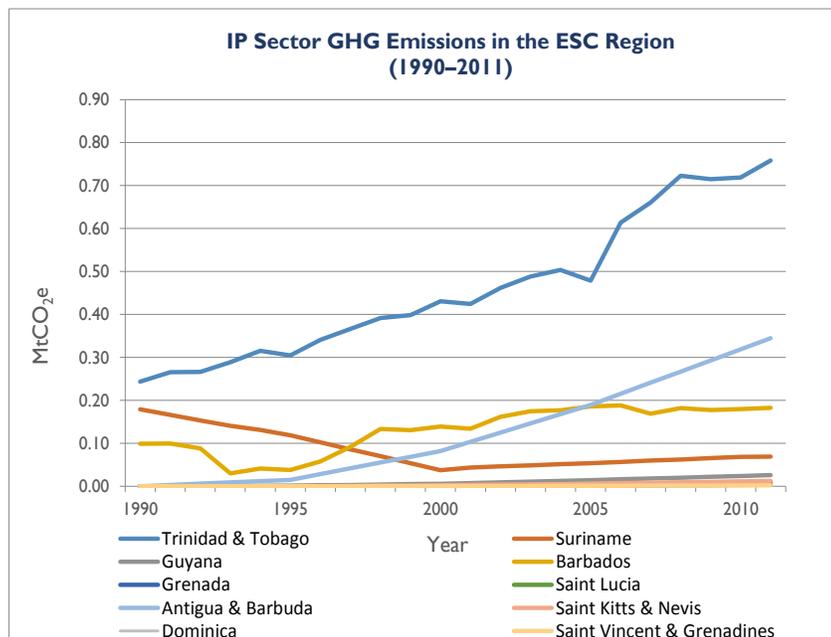
³² Government of Grenada. [National Waste Management Strategy for Grenada](#), 2003.

³³ Government of Grenada. Grenada’s Intended Nationally Determined Contribution (INDC) to the UNFCCC, 2015.

³⁴ Food and Agriculture Organization of the United Nations Statistics Division (FAOSTAT). [Emissions – Agriculture total](#), viewed on December 31st, 2016.

Industrial Processes: Between 1990 and 2011, IP sector emissions in the ESC region more than doubled, led by industrial activities in Trinidad and Tobago. IP emissions from Antigua and Barbuda and Barbados were relatively high as well, and grew 0.34 MtCO₂e and 0.08 MtCO₂e, respectively, in the same period.³⁵ The industrial sector in Antigua and Barbuda is minimal and made up primarily of the food and beverage industry and asphalt production.³⁶ In Barbados, there is little heavy industry. The most significant source of GHG emissions in the industrial sector is the island's only cement plant.³⁷

IP sector emissions for Dominica, Grenada, and Saint Kitts and Nevis are reported by WRI CAIT to be zero; there is little information on GHG emissions from IP sector activities in these countries. The national communication of Saint Kitts and Nevis notes that it lacks a strong manufacturing or industrial sector such that carbon dioxide and non-carbon dioxide emissions from light manufacturing or heavy industries are minimal or nonexistent. The change in the region's IP emissions are shown below.



Source: WRI CAIT 2.0, 2016.

³⁵ WRI CAIT 2.0, 2016.

³⁶ Antigua and Barbuda SNC, 2009.

³⁷ Barbados INC, 2001.

Key National Climate Change Commitments and Policies³⁸

All countries in the ESC region submitted an intended nationally determined contribution (INDC) prior to the UN climate change conference (COP 21) that culminated in the Paris Agreement.³⁹ The commitments are summarized in the table below, which indicates whether the commitments were put forth to be achieved unconditionally, or if they are conditioned upon the receipt of international support, if this distinction was communicated in the INDC. The sectors in which GHG mitigation actions are expected to be achieved are also identified.

Country	Commitment	Sectors for mitigation and enhanced removals
Antigua and Barbuda	<p><u>Unconditional</u></p> <ol style="list-style-type: none"> 1. Enhance the established enabling legal, policy and institutional environment for a low carbon emission development pathway to achieve poverty reduction and sustainable development. 2. By 2020, update the Building Code to meet projected impacts of climate change. <p><u>Conditional</u> – Capacity building, technology transfer and financial resources (cost of mitigation targets is estimated at approximately USD 220M).</p> <ol style="list-style-type: none"> 1. By 2020, establish efficiency standards for the import of all vehicles and appliances. 2. By 2020, finalize technical studies with the intention to construct and operationalize a waste-to-energy plant by 2025. 3. By 2030, achieve an energy matrix with 50 MW of electricity from renewable sources both on and off-grid in the public and private sectors. 4. By 2030, all remaining wetlands and watershed areas with carbon sequestration potential are protected as carbon sinks. 	<ul style="list-style-type: none"> • Enactment of the Renewable Energy Act of 2015, the Environmental Protection and Management Act of 2015, the National Energy Policy and the Sustainable Energy Action Plan • Energy • LUCF
Barbados	<p><u>Conditional</u> – As a SIDS, Barbados will require significant financial, technology transfer and capacity-building support to deliver the intended contribution and related infrastructure.</p> <ol style="list-style-type: none"> 1. Intention to reduce GHG emissions by 44% below BAU levels by 2030 (23% below 2008 levels). 2008 base year (1,820 Gg CO_{2e}). 2. Intention to reduce GHG emissions by 37% below BAU levels by 2025 (21% below 2008 levels) 	<ul style="list-style-type: none"> • Energy <ul style="list-style-type: none"> ○ Renewable energy: waste-to-energy and biomass generation plants, wind, distributed and centralized solar PV and capture and use of landfill gas for energy generation ○ Electrical energy efficiency: a 22% reduction in electricity consumption compared to a BAU10 scenario in 2029. ○ Non-electrical energy efficiency: a 29% reduction in non-electric energy consumption including transport, compared to a BAU scenario in 2029 • Waste <ul style="list-style-type: none"> ○ Divert waste from landfill and develop waste-to-energy plants

³⁸The source of information presented in the table is each country's INDC.

³⁹ INDCs are hyperlinked in the table below, please click on the country name to access the submission.

Dominica	<p><u>Conditional</u> – access to international climate change financing, technology development and transfer, and capacity building support for priority adaptation and mitigation measures (cost of mitigation targets is estimated at approximately USD 90 million).</p> <p>Reduce total GHG emissions below 2014 levels (estimated to be 164.5 Gigagrams) at the following reduction rates: 17.9% by 2020; 39.2% by 2025; and 44.7% by 2030.</p>	<p>By 2030, total emission reductions per sector will be as follows:</p> <ul style="list-style-type: none"> • Energy industries: 98.6% (principally from harnessing of geothermal resources); • Transport: 16.9%; • Manufacturing and construction: 8.8%; • Commercial/institutional, residential, agriculture, forestry, fishing: 8.1%; • Solid waste: 78.6%.
Grenada	<p><u>Conditional</u> – access to multilateral and bilateral support through the Green Climate Fund, multilateral agencies and bilateral arrangements with development partners (cost of mitigation targets is estimated at approximately USD 161,430,500).</p> <p>Reducing GHG emissions by 30% of 2010 by 2025, with an indicative reduction of 40% of 2010 by 2030.</p>	<ul style="list-style-type: none"> • Electricity: Grenada plans a 30% reduction in emissions through electricity production by 2025 with 10% from renewables and 20% from energy efficiency measures. • Transport: Grenada plans to reduce its emissions in the transport sector by 20% by 2025 through the implementation of several policies/actions including introduction of biofuel blends (specifically liquefied natural gas and diesel blend), implementation of gasoline and diesel taxes and implementation of fuel efficiency standards for vehicles through incentives. • Waste: Grenada has plans to construct a controlled landfill to collect the methane gas generated for electricity production. This process will reduce methane emissions from waste by 90%. • Forestry: As part of the Caribbean challenge initiative Grenada pledged to protect 20% of its terrestrial area to increase carbon sequestration.
Guyana	<p><u>Unconditional</u></p> <ul style="list-style-type: none"> • Forestry: Continue and improve ongoing work to realize sustainable forest management. • Energy: Reduce energy consumption. <p><u>Conditional</u></p> <ul style="list-style-type: none"> • Forestry: Avoided deforestation – Through its REDD+ Programme, Guyana can continue to avoid emissions in the amount of 48.7 MtCO₂e. • Energy: Develop a 100% renewable power supply by 2025. 	<ul style="list-style-type: none"> • Forestry • Energy

Saint Kitts and Nevis	<p><u>Conditional</u> – based on the availability of financing and technological support.</p> <p>Reduction of 22% and 35% of St. Kitts and Nevis' GHG emissions projected in the business as usual (BAU) scenario for 2025 and 2030, respectively.</p>	<ul style="list-style-type: none"> • All the economic sectors are covered and targeted into St. Kitts and Nevis' national contributions, but with special attention to the Energy (increase the use of renewable energy sources by 50%) and Transport sectors, since they are the highest contributors to the GHG national matrix.
Saint Lucia	<p><u>Conditional</u> – financial and technological assistance (Total cumulative investment costs to achieve the mitigation targets are expected to be on the order of USD 183 million and USD 218 million (at 2015 prices) by 2025 and 2030 respectively).</p> <p>Reduction of 16% and 23% of Saint Lucia GHG emissions projected in the business as usual (BAU) scenario for 2025 and 2030 respectively</p>	<ul style="list-style-type: none"> • Energy <ul style="list-style-type: none"> ○ Energy Efficient Buildings ○ Energy Efficient Appliances ○ Water Distribution and Network Efficiency • Electricity Generation <ul style="list-style-type: none"> ○ 35% Renewable Energy Target by 2025 and 50% by 2030 based on a mix of geothermal, wind and solar energy sources. ○ Improvements to Grid Distribution and Transmission Efficiency • Transport <ul style="list-style-type: none"> ○ Efficient Vehicles ○ Improved and Expanded Public Transit
Saint Vincent and the Grenadines	<p><u>Unconditional</u></p> <ul style="list-style-type: none"> • Economy-wide reduction in GHG emissions of 22% compared to its business as usual (BAU) scenario by 2025. <p><u>Conditional</u></p> <ul style="list-style-type: none"> • St. Vincent and the Grenadines considers the use of instruments for achieving and financing flexibly part of its mitigation target including the International Carbon Markets. St. Vincent and the Grenadines considers that certain low emission development options mentioned in its INDC, or additional actions, could be entirely or partially funded by the transfer of international carbon assets mobilized through bilateral, regional and international carbon markets while taking into account environmental integrity and transparency. 	<ul style="list-style-type: none"> • All sectors and sources of emissions with key measures in the energy sector including: <ul style="list-style-type: none"> ○ Renewable energy generation: focused on the development of the country's proposed geothermal power plant (planned to be completed in 2018) ○ Energy efficiency: 15% reduction in electricity consumption by 2025 achieved through retrofitting of street lighting nationally, a new building code and an energy labelling scheme for appliances. ○ Transport: new policies to reduce the import duty paid on low emission vehicles

Suriname	<u>Unconditional</u>	<ul style="list-style-type: none"> • Forestry • Energy
	<ul style="list-style-type: none"> ○ Suriname intends to increase efforts at sustainable forest and ecosystem management and stabilizing and minimizing deforestation and forest degradation unconditionally. ○ The National Energy Plan 2013-2033 	
	<u>Conditional</u> (estimated cost of USD 2.492 billion)	
	<ul style="list-style-type: none"> ○ With adequate financial incentives and support, Suriname intends to maintain its high forest cover and low deforestation rate. Moreover, it intends to strengthen forest governance institutions and collaboration with the private sector and other stakeholders and expand its program of awareness, monitoring and enforcement while also promoting research and a comprehensive forest inventory. ○ Further studies are required to explore the potentials of renewable energy (25% target by 2025) including a hydropower project with a potential output of 168MW; a biofuel project that could realize the introduction of ethanol in gasoline with 60% of vehicles utilizing the blend and at the same time produce 25MW of power; and 62MW from thermal energy. 	
Trinidad and Tobago	<u>Unconditional</u>	<ul style="list-style-type: none"> • Transportation • Power generation • Industry
	<ul style="list-style-type: none"> • 30% reduction in GHG emissions by 2030 in the public transportation sector compared to a BAU scenario (reference year 2013) 	
	<u>Conditional</u>	
	<ul style="list-style-type: none"> • Additional reduction achievable under certain conditions bringing the total GHG reductions to 15% below BAU emission levels by 2030 • The estimated cost of achieving the reduction objectives is USD 2 billion, which is expected to be met partly through domestic funding and conditional on international climate financing including through the Green Climate Fund 	

Several countries in the ESC region have developed a climate-related policy or strategy, or have a draft that is under development or pending approval. These are briefly listed below to provide additional context:

- **Antigua and Barbuda**
No information available
- **Barbados**
Barbados prepared a Draft National Climate Change Policy Framework (NCCPF), which is not formally approved. The NCCPF provides the country's overarching approach to adaptation and mitigation including reduction of GHG emissions and is in line with the Barbados Sustainable Development Policy (2004).⁴⁰
- **Dominica**
In 2012, Dominica developed its [2012-2020 Low Carbon Climate Resilient Strategy](#) which serves as the programmatic nexus for capturing conventional and innovative sources of sustainable development and climate financing, but also facilitate Dominica's transformation to a climate-resilient economy while implementing, monitoring and building upon existing low-emission climate-resilient development projects and programs.
- **Grenada**
In 2011, Grenada developed a draft National Climate Change Policy and Action Plan (NCCPAP) (2007-2011) which is currently under review.⁴¹ The strategic objective of the Plan is to lay the foundation for an organized long term response to Climate Change through eight interdependent strategies.⁴²
- **Guyana**
In 2009, Guyana launched its [Low Carbon Development Strategy \(LCDS\)](#), which aims to transform Guyana's economy on to a low carbon, sustainable development trajectory, while simultaneously combating climate change. The LCDS aims to protect and maintain the forests in an effort to reduce global carbon emissions and at the same time attract payments from developed countries for the climate services that the forests offer.
- **Saint Kitts and Nevis**
No information available
- **Saint Lucia**
In 2003, Saint Lucia developed its [National Climate Change Policy and Adaptation Plan](#). In 2015, the Plan was updated and endorsed by the Cabinet.⁴³
- **Saint Vincent and the Grenadines**
Saint Vincent and the Grenadines is currently revisiting its draft National Climate Change Policy to further give weight and direction to its efforts in response to climate change.⁴⁴
- **Suriname**
In 2014, Suriname developed its [National Climate Change Policy, Strategy and Action Plan 2014-2021](#) which is intended to be a key policy of the Environmental Policy Plan and provide the legal basis for integrating Climate Change into the national development planning and resource allocation mechanisms of the country, a first for Caribbean Community (CARICOM) countries.

⁴⁰ Barbados. [Barbados Intended Nationally Determined Contribution \(INDC\)](#) to the UNFCCC, 2015.

⁴¹ Grenada. [Grenada's Intended Nationally Determined Contribution \(INDC\)](#) to the UNFCCC, 2015.

⁴² London School of Economics. [Grenada's National Climate Change Policy and Action Plan \(draft plan 2007-2011\)](#), viewed on January 9, 2017.

⁴³ Saint Lucia. [Saint Lucia's Intended Nationally Determined Contribution \(INDC\)](#) to the UNFCCC, 2016.

⁴⁴ Saint Vincent and the Grenadines. [Saint Vincent and the Grenadines Intended Nationally Determined Contribution \(INDC\)](#) to the UNFCCC, 2015.

- **Trinidad and Tobago**

In 2011, Trinidad and Tobago developed its [National Climate Change Policy](#) guided by the following objectives:

- i. reducing or avoiding greenhouse gas emissions from all emitting sectors,
- ii. enhancing carbon sinks,
- iii. protection of the natural environment and human health,
- iv. conserving and building 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,
- v. enhanced agricultural production and food security,
- vi. educating the wider public on the potential impacts of climate change and the recommended adaptation strategies and
- vii. conserving and guaranteeing a sustainable supply of potable water

The [Caribbean Community Climate Change Centre](#), established in 2005, coordinates the Caribbean region's response to climate change, working on effective solutions and projects to combat the environmental impacts of climate change and global warming. It provides climate change-related policy advice and guidelines to the Caribbean Community ([CARICOM](#)) Member States including countries of the ESC region.

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