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White Paper

NDC Scoping Report for 9 Caribbean Countries: Policy Analysis

The Bahamas, Belize, Dominica, Haiti, St. Kitts and Nevis, Saint Lucia,
Saint Vincent and the Grenadines, Suriname, and Trinidad and Tobago

2022







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Acronyms and Abbreviations

AgREADY Project	Green Climate Fund-financed project titled, “Strengthening the foundation for a climate responsive agricultural sector in the Caribbean”
AFOLU	Agriculture Forestry and Other Land Use
AWD	Alternative Wetting and Drying
BAU	Business-as-usual
CARICOM	Caribbean Community
CC	Climate Change
CCAP	Climate Change Adaptation Policy
CH₄	Methane
CO₂	Carbon dioxide
COP	Conference of the Parties
CRA	Climate-resilient Agriculture
CSA	Climate Smart Agriculture
ETF	Enhanced Transparency Framework
FAO	Food and Agriculture Organization
GCF	Green Climate Fund
GHG	Greenhouse Gas
HFCs	Hydrofluorocarbons
IFPRI	International Food Policy Research Institute
IICA	Inter-American Institute for Cooperation on Agriculture
iNDC	Initial NDC
INDC	Intended NDC
IPCC	Intergovernmental Panel on Climate Change
KJWA	Koronivia Joint Work on Agriculture
MRV	Monitoring, Reporting and Verification
NCCPSAP	National Climate Change Policy, Strategy and Action Plan
NAP	National Adaptation Plan
NRDS	National Resilience Development Strategy of Dominica 2030
LULUCF	Land Use, Land-Use Change and Forestry
NCC	National Climate Change Office
N₂O	Nitrous Oxide
NDA	National Designated Authority
NDC	Nationally Determined Contributions
SASAPs	Sectoral Adaptation Strategies and Action Plans
SKN	Saint Kitts and Nevis
SLU	Saint Lucia
SVG	Saint Vincent and the Grenadines
SWP	Soil Water Potential
T&T	Trinidad and Tobago
uNDC	Updated NDC
UNFCCC	United Nations Framework Convention on Climate Change

Executive Summary

Climate change presents a serious and irreversible challenge to CARICOM countries. Although these countries contribute a relatively small amount of global greenhouse gas (GHG) emissions, their populations, biodiversity and natural resources are the most at risk from the threat of natural hazards, including the recurrent natural disasters and slow onset events. The Paris Agreement (2015), which was ratified and adopted by all CARICOM countries, sets the framework for Caribbean nations' commitment to NDCs. Countries have taken steps to determine their individual contributions to reducing GHG emissions while building resilience to the impacts of climate change. Important to this, and relating largely to their food security objectives, countries have begun to take steps to incorporate agriculture in their NDC mitigation contributions, with the objective of increasing productivity in the face of climate change.

The NDC scoping study is part of the Green Climate Fund-financed project titled, "Strengthening the foundation for a climate responsive agricultural sector in the Caribbean", AgREADY Project for short. The study comprised two main elements: (i) a regional scoping study, based on national profiles that take stock of how the agriculture sector is positioned in current NDCs in the Caribbean, in particular in the nine AgREADY countries, and (ii) identification of opportunities for inclusion of agriculture in future NDC updates, with existing agriculture activities that have mitigation potential and with new agricultural practices that could support guidelines for the creation of more ambitious and resilient agriculture-promoting NDCs. The study also produced general guidance for countries and their partners to incorporate agriculture in future NDC enhancements.

Key Findings

All nine AgREADY countries have ratified the Paris Agreement and submitted their initial NDCs (iNDCs) over the 2015-2017 period. As of May 2022, five countries had submitted their updated NDCs (uNDCs), and the other four countries' uNDC development is in progress. Across the NDCs, agriculture, whether by itself or included within Agriculture Forestry and other Land Use (AFOLU), has generally not been significantly featured in mitigation targets but with one exception, and given the climate-sensitivity of the sub-region, the AgREADY countries have prioritized the agriculture sector for adaptation and resilience building, albeit not detailed enough to support strategic implementation and attract investment. Many of the agriculture adaptation actions described in NDCs can also provide mitigation/GHG emissions reduction co-benefits but these have not been explored. It presents an opportunity to build awareness and conduct the necessary analyses to quantify these benefits. In the iNDCs, only two of the nine countries included agriculture as part of their mitigation efforts, but for the five uNDCs submitted to the United Nations Framework Convention on Climate Change (UNFCCC) to date, three have incorporated agriculture in mitigation targets. One barrier to incorporating agriculture in mitigation targets is the availability of data to support the analyses.

Both the initial and updated NDCs for AgREADY countries documented general alignment with the national development goals, plans, policies, and strategies. Most of the countries have developed overarching climate change policy frameworks to respond to the range of climate change issues and these are often linked to national development plans and to which NDCs are aligned. However, NDC agriculture actions were largely not mainstreamed into the sector strategies and plans and this had implications for financing for implementation.

As required, all AgREADY countries described NDC development and/or update processes in the documents. Although the level of activity of governance bodies varied considerably, all AgREADY countries have established

governance arrangements for addressing the impacts of climate change and in particular, implementation of their NDCs. These generally included a diversity of public and private sector stakeholders across multiple sectors. Participation of agriculture stakeholders in NDC development and updates varied significantly across countries.

Social inclusion and Just Transition are important elements of NDC development and implementation with the process being strengthened over time to include gender considerations, involvement of youth and other vulnerable groups, including community groups and indigenous peoples. Updated NDCs showed increasing recognition of the vulnerabilities and needs of women, especially with gender assessments conducted and strategies developed in parallel with the NDCs.

Following on the development and submission of the iNDCs and where completed, uNDCs, the AgREADY countries have taken steps to develop NDC Implementation Plans and Financing Strategies, which are intended to define actions towards implementation of the NDCs, linked to Monitoring, Reporting and Verification (MRV) and financing for the actions. AgREADY countries have, at different times, assessed the financing needs for implementation of mitigation and adaptation actions contained within their respective NDCs and have identified both unconditional and conditional financing requirements, where for most countries, the latter was dominant. There were, however, countries with clear public financial commitments for NDC implementation and those were a reflection of actions mainstreamed in sectoral strategies and plans.

Five of the nine countries (56%) have commenced work on their MRVs, establishing their domestic institutional arrangements, including the relevant legislation, systems, structures and processes. The status of MRV development has impacted the ability of the scoping study to assess progress with agriculture actions in the NDCs. Additionally, with majority of agriculture actions being included under adaptation, and with little specificity, it was difficult to comprehensively assess implementation progress. Similarly, the absence of the required data made it difficult to assess progress on mitigation actions. Notwithstanding, the climate smart activities being implemented through externally funded projects, capacity building underway for both public sector personnel and local level value chain actors, completion of gender, technology needs, financing assessments along with supporting strategies were identified as areas of progress. However, the analysis highlighted gaps and needs that included outdated and inefficient policy frameworks, inadequate human and technical capacity and financing, little focus on sustainability, including maintenance of equipment and tools, and gaps in required data and information. Lessons learned from implementation of agriculture adaptation actions linked to the NDCs included the importance of the enabling environment, including mainstreaming of NDC actions into sector plans; strengthened national capacities, availability of and access to resources; setting realistic targets within a robust MRV system; and direct and ongoing engagement of agriculture stakeholders.

Opportunities for emissions reduction from agriculture are from five GHG emission sources including: enteric fermentation, livestock manure management, fertilizer applied to agriculture fields, rice cultivation, and carbon sequestration activities. There is also a slate of mitigation actions, with adaptation co-benefits that can be applied to each country, but which will need additional economic and social feasibility assessments for their prioritization. Beyond the farm-gate, potential mitigation actions include reducing post-harvest losses and consumer wastage, improving resilience of infrastructure for storage and transport, changing consumer diets, more creative and efficient use of by-products, less energy intensity in fertilizer production, and greater attention to food quality and safety.

The identified opportunities for CARICOM AgREADY countries and their partners to incorporate agriculture into their NDC enhancements offer multiple benefits including greater support for building climate change resilience, especially for small-scale and vulnerable farmers; ensuring food and nutrition security in the face of climate change;

and advancing achievement of the sustainable development objectives. Key considerations relevant to achieving this run parallel to Paris Agreement Enhanced Transparency Framework requirements.

Conclusions and Way Forward

The NDC scoping study sought to better understand the current position of agriculture in NDCs for AgREADY countries and through data and information analysis provided direction on opportunities to raise ambition from the sector.

The NDC scoping study found that:

1. Agriculture and food security are included in NDCs but the potential for greater contribution for both mitigation and adaptation has largely been unexplored.
2. The focus of agriculture in the NDCs has primarily been on adaptation and resilience building. There is however evidence that mitigation targets of updated NDCs are increasingly incorporating agriculture. Current NDC agriculture adaptation actions have potential to provide mitigation co-benefits but these have not been sufficiently explored.
3. Low levels of involvement of agriculture stakeholders in and unavailability of sector-specific data for modelling exercises that determined GHG reduction potential for NDCs impacted the sector's contribution to NDCs.
4. Low levels of awareness and engagement of agriculture stakeholders in NDC development that also affected mainstreaming of NDC agriculture actions, whether adaptation or mitigation, into sector strategies and plans. Sector stakeholder involvement was constrained by human and technical resource deficits.
5. NDC agriculture adaptation actions were generally not detailed but with reference to national and sectoral documents, e.g., NAPs, NASAP. Implementation was largely opportunistic and depended on external donor support. M&E systems and processes were not well-developed.

To raise the ambition of agriculture in future NDC enhancements, key actions that can help countries are to:

1. Build awareness of agriculture stakeholders on climate change and activities that support both adaptation and mitigation in order to increase agriculture's contribution to future NDCs.
2. Strengthen agriculture sector capacity with the required human resources that support climate resilience building, including development of policies, monitoring and evaluation, data gathering, linkages and engagement with broader CC portfolios.
3. Build human resource and technical capacity for mitigation modelling and monitoring in the agriculture sector.
 - a. Undertake relevant exercises to quantify mitigation actions and adaptation co-benefits. Complement these with the appropriate socioeconomic feasibility and cost benefit analyses to determine priority.
 - b. Establish and utilise systems for monitoring of GHG emissions from the agriculture sector.
4. Encourage agriculture stakeholder participation in NDCs and NAP development processes and other country and regional level climate change initiatives, especially given the relevance to investment that support climate resilient agriculture practices.
5. Mainstream agriculture actions contained in NDCs, NAPs and other documents in agriculture sector plans and strategies in order to build ownership of and leadership on their implementation.

1. Introduction and Background

1.1 Caribbean Regional Context

The Caribbean region is comprised of highly diverse states that are vulnerable to the effects of climate variability and change. Increasing temperatures, more variable rainfall, extreme events such as floods, droughts and hurricanes, as well as rising sea levels have exacerbated existing vulnerabilities, while creating new ones, with detrimental impacts on human life, livelihoods, infrastructure and entire economies. Costs to cope with, and adapt to, climate impacts are projected to surpass US\$22 billion per year by 2050 or approximately 10% of the current size of the Caribbean economy, if adaptation measures are not successfully implemented (Atteridge, Canales, and Savvidou 2018). The agriculture sector has been identified as one of the most at-risk sectors to climate change in Caribbean countries, owing to its high dependency on natural resources and its multifunctional role in socioeconomic development. Considering projections of increasing frequency of extreme climatic events, coupled with non-climate factors, such as the COVID-19 pandemic, opportunities for climate-resilient agriculture (CRA) to enhance food security and rural livelihoods while reducing Greenhouse Gas (GHG) emissions, as part of the Agriculture Forestry and other Land Use (AFOLU) category, are increasing in importance. Despite this, the agriculture sector has not been meaningfully prioritized in climate finance programming and processes related to NDCs¹. Additionally, though useful, past regional multi-sectoral initiatives have not resulted in the development of a more programmatic and iterative approach to raise the profile of agriculture for accessing international sources of climate finance. The specific challenges and existing gaps relate to the limited capacity of the agricultural sector to identify, compile and manage data and information on needs, practices and technologies to catalyse low-emission and CRA investments.

1.2 About This Document

This document presents the key findings of a regional scoping study that takes stock of how the agriculture sector is positioned in current NDCs in the Caribbean and includes guidelines for the creation of more ambitious and resilient agriculture promoting NDCs. The remaining sections of this report are organized as follows:

- **Section 2 (Approach and Methodology)** presents an overview of the approach and methods used in conducting the NDC analysis, including identification of key constraints and limitations.
- **Section 3 (Findings)** summarizes the main findings from the analysis undertaken, including providing an overview of (i) the Caribbean context, (ii) the status of AgREADY Project country NDCs, (iii) planning processes for NDCs, and (iv) the status of NDC implementation, with a focus on the agriculture sector.
- **Section 4 (Opportunities for Enhancing NDCs)** provides suggested mitigation options that could be applied in seeking to enhance NDC ambition through contribution from the agriculture sector and suggested options to enhance agriculture mitigation activities in the countries.
- **Section 5 (Guidance on processes and steps to support agriculture contribution to future NDCs)** outlines several steps and processes that serve as a guide for the CARICOM AgREADY countries and their partners to incorporate agriculture in future NDC enhancements.

¹ All Parties signatory to the Paris Agreement (2015) are required to establish a Nationally Determined Contribution (NDC), which is a climate action plan that embodies efforts by each country to reduce national emissions and adapt to the impacts of climate change.

2. Approach and Methodology

2.1 Approach

To meet the requirements of the CARICOM AgREADY Project, a mixed-methods approach was utilized for effective delivery of the NDC scoping exercise. This involved (i) a comprehensive review of pertinent documents, including those relating to the AgREADY project, regional and national agriculture sector, national development, climate change, and (ii) in-depth individual interviews, online / remote focus group discussions with key government partners, including the UNFCCC Focal Points and/or their representatives, GCF NDAs, regional support organizations, farmers, and other stakeholders, with a total of 91 stakeholders consulted over a three-month duration. Information was also gleaned from the work of other AgREADY experts who also conducted NDC mitigation analysis and socio-economic assessments. For reference, the consultation instrument is presented in Annex 1.

The AgREADY Project being implemented in nine countries in the CARICOM sub-region (Figure 2.1) posits that the profile of the agricultural sector in GCF’s climate financing prioritization processes can be raised by increasing awareness of the sector’s potential contribution to climate solutions, identifying promising practices and technologies to enhance resilience, and quantifying its contribution to GHG reductions. This is viewed as a foundational part of an evidence-based and inter-sectoral strategy for developing and rebranding Caribbean agriculture as “low-emissions,” to enhance market opportunities and attract private sector investments.

Figure 2.1. GCF CARICOM sub-regional AgREADY Project countries²



(Adapted from www.caribfind.tel accessed May 14, 2022)

² AgREADY Countries are represented with a black dot.

2.2 Methodology

The NDC scoping study comprised two main elements: (i) a regional scoping study, based on national profiles that take stock of how the agriculture sector is positioned in current NDCs in the Caribbean, in particular in the nine AgREADY countries, and (ii) identification of opportunities for inclusion of agriculture in future NDC updates, with existing agriculture activities that have mitigation potential and with new agricultural practices that could support guidelines for the creation of more ambitious and resilient agriculture-promoting NDCs.

The study sought to better understand the processes used by the countries to determine the country NDC commitments and engage stakeholders, identify the support provided by external entities to complete the NDCs and to conduct the mitigation analyses, including modelling exercises. It also identified where there were agriculture mitigation actions and how these were determined. The assessment also analysed the NDC implementation trends generally and specifically in the agriculture sector, using key factors linked to the Enhanced Transparency Framework (ETF³) of the Paris Agreement, the legal framework, institutional arrangements, and specific contexts for each of the nine countries (Figure 2.2).

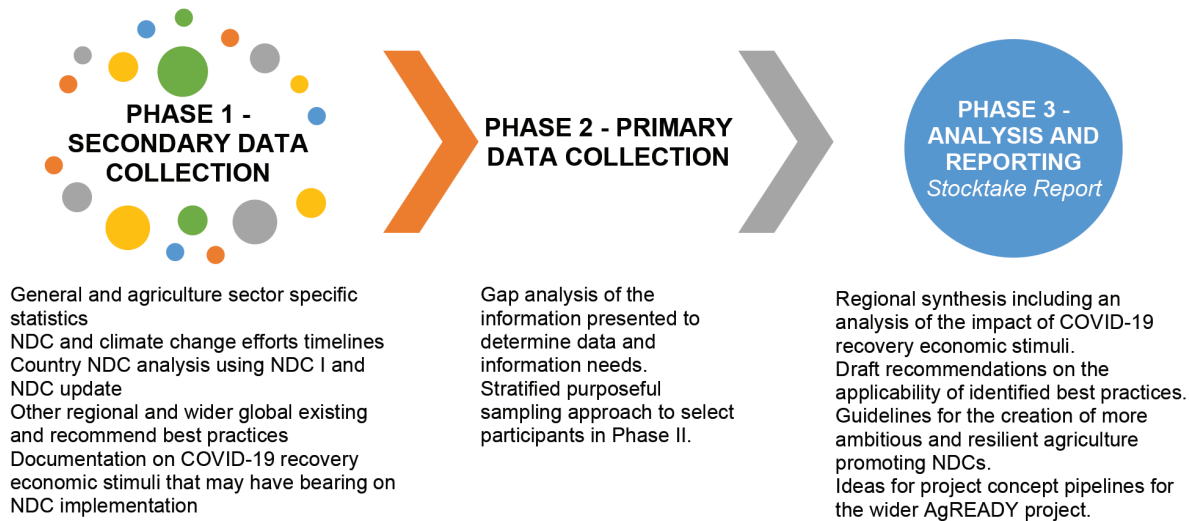
Figure 2.2. Thematic areas for agriculture implementation in AgREADY countries' NDCs



The NDC scoping study was conducted in three phases as described in Figure 2.3. The process included a combination of document review and consultations with key stakeholders in the project countries, followed by collation of data, information, and analysis. Document review included country and regional documents and the consultations were held with stakeholders across the nine countries (Annex 5). This report represents the culmination of the NDC scoping activity.

³ The ETF guides countries on reporting their GHG emissions, progress toward their NDCs, climate change impacts and adaptation, support provided and mobilized, and support needed and received.

Figure 2.3. Activity flow for the NDC scoping study



2.3 NDC Scoping Study Limitations and Constraints

The data collection phase was conducted between January and April 2022 but encountered country level limitations and constraints that must be acknowledged. These included:

1. Unavailability of key stakeholders at the time of consultation meetings.
2. Stakeholder fatigue, due in large part, to multiple similar activities ongoing simultaneously.
3. Slow pace with follow up to collect and collate documents, especially those noted during meetings.
4. Difficulty in locating pertinent documents.
5. Inability to access documents, especially those that had not yet received Cabinet approval.
6. Incompleteness of data and information.

Documents presented in French and with few available for review made it difficult to get a good picture of the situation in Haiti. Further to this, there was only one consultation, and this did not supplement the other sources. Though not as severe in its impact, a similar challenge was encountered for Suriname. In other countries, changes in government since 2015 made it difficult to conduct the assessment, especially where there was little to no buy-in for documents produced over 5 years ago. The assessment was however supplemented by regional studies completed in recent years that provided additional information, where appropriate.

3. Findings

3.1 Caribbean Sub-region Context

3.1.1 Biophysical Context

The Caribbean’s sensitivity to a changing climate, coupled with other development challenges, has severe negative repercussions on the endemic elements (i.e., the climate and natural resources such as forests, and unique biodiversity) upon which a way of life has been structured and built. Most Caribbean countries contain rich resources of arable lands, natural forests, marine resources and minerals. Table 3.1 presents an overview of the natural resources, land use, natural hazards and current environmental issues for the AgREADY countries. Over recent decades, factors such as the increased thrust for economic growth and development and the environmental degradation that sometimes accompanies such efforts as well as the heightened climate change-related impacts (e.g., more intense extreme events) have posed a threat to regional development.

Table 3.1: Overview of the natural resources, land use, natural hazards and environmental issues for the AgREADY Countries

AgREADY Country	Natural Resources	Land use (2018 estimate)	Priority Natural Hazards	Priority Environmental Issues
The Bahamas	Salt, Aragonite, timber, arable land	Agricultural land: 1.4% Forest: 51.4% Other: 47.2%	Hurricanes and other tropical storms	Coral reef decay, Solid waste disposal
Belize	Arable land potential, Timber, Fish, Hydropower	Agricultural land: 6.9% Other: 32.5%	Frequent hurricanes, Coastal flooding	Deforestation, Water pollution, Improper disposal of solid waste
Dominica	Timber, Hydropower, Arable land	Agricultural land: 34.7% Forest: 59.2% Other: 6.1%	Flash floods, Destructive hurricanes, Volcanism	Water shortages, Water pollution, Conversion of natural forests to farming, Soil erosion
Haiti	Bauxite, Copper, Calcium carbonate, Gold, Marble, Hydropower, Arable land	Agricultural land: 66.4% Forest: 3.6% Other: 30%	Severe storms, Occasional flooding, Earthquakes, Periodic droughts	Extensive deforestation, Soil erosion, Inadequate supplies of potable water, Lack of sanitation, Natural disasters
St. Kitts and Nevis	Arable land	Agricultural land: 23.1% Forest: 42.3% Other: 34.6%	Hurricanes, Volcanism	Deforestation, Soil erosion, Sedimentation on coral reefs, Water pollution
Saint Lucia	Forests, Sandy beaches, Minerals (pumice), Mineral springs, Geothermal potential	Agricultural land: 17.4% Forest: 77% Other: 5.6%	Hurricanes	Deforestation, Soil erosion
St. Vincent and the Grenadines	Hydropower, arable land	Agricultural land: 25.6% Forest: 68.7% Other: 5.7%	Hurricanes, Volcanism	Coastal pollution, Poor land use planning, Deforestation, Inadequate watershed management and squatter settlement control
Suriname	Timber, Hydropower, Fish, Kaolin, Shrimp, Bauxite, Gold, and small amounts of Nickel, Copper, Platinum, Iron ore	Agricultural land: 0.5% Forest: 94.6% Other: 4.9%	Flooding	Deforestation, Pollution of inland waterways
Trinidad and Tobago	Petroleum, Natural gas, Asphalt	Agricultural land: 10.6% Forest: 44% Other: 45.4%	Outside usual path of hurricanes and other tropical storms	Water pollution, Illegal dumping, Deforestation, Soil erosion, Fisheries and wildlife depletion

Source: Country Profiles - CIA World Factbook (2022a-i)

3.1.2 Socio-economic Context

Socio-economic Issues Related to Stocktaking of Agriculture in the Current NDCs in the Caribbean

3.1.2.1 The Global Context

2015 Historical Commitments

The recent synchronous adoption of landmark UN agreements of the Sendai Framework for Disaster Risk Reduction, Sustainable Development Goals (SDGs), COP21's Paris Climate Conference, World Humanitarian Summit and Habitat III has created a rare but significant opportunity to build coherence across different but overlapping policy areas. Taken together these frameworks make for a more complete resilience agenda as building resilience requires action spanning development, humanitarian, climate and disaster risk reduction areas. This coherence will serve to strengthen existing risk fragility and resilience frameworks for multi-hazard assessments and foster the development of a dynamic, local, preventive, and adaptive urban governance system at the global, national, and local levels.

Resilience features in all the major frameworks and agreements, in a variety of sectors and contexts, and at different scales (Lovell et al., 2016). Taken together, the different approaches and contributions of these frameworks make for a more complete 'resilience agenda' than will emerge if they are taken separately.⁴ In fact, because the strengthening of the foundation for a more responsive agricultural sector in the Caribbean will require action that spans the development, humanitarian, climate and disaster risk reduction arenas, it is essential that a better understanding of how these frameworks can make effective contributions towards this agenda be obtained.

There are significant benefits to be derived at the international, regional and national levels when policymakers and technical experts have a better understanding of how resilience features across the frameworks. In the first instance, there is significant potential for designing policies and programmes that can deliver on more than one set of targets or frameworks. If this can be accomplished well, it will increase the efficiency, effectiveness, sustainability and achievability of the frameworks. Secondly, joint monitoring mechanisms that track progress on resilience across the frameworks can also ensure that action in one area does not contradict plans or undermine progress in another. Finally, without an adequate awareness of how each framework presents and promotes action on resilience, development, humanitarian, climate and disaster risk reduction issues, communities run the risk of not achieving the full potential that the new international policy environment offers.⁵ Eliminating global poverty is too important to let that happen.

The INDC/NDC Process

As indicated earlier, the Paris Agreement is a legally binding international treaty on climate change that seeks to accelerate and intensify the actions and investment needed for a sustainable low carbon future. Its central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise in this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. The Agreement also aims to strengthen the ability of countries to deal with the impacts of climate change.

In anticipation of the agreement, countries publicly outlined climate actions they intended to take under the new international agreement, known as their **Intended Nationally Determined Contributions (INDCs)**. INDCs reflect each country's ambition for reducing emissions, taking into account its domestic circumstances and capabilities. The word "intended" was used because countries were communicating proposed climate actions ahead of the

⁴ Peters, Katie et al.; (2016). Overseas Development Institute (ODI) Working Paper. Resilience' across the post-2015 frameworks: towards coherence?

⁵ Ibid

Paris Agreement being finalized. However, as countries formally join the Paris Agreement and look forward to the implementation of these climate actions – the “intended” is dropped and an INDC is converted into a Nationally Determined Contribution (NDC). This conversion happens when a country submits its respective instrument of ratification, accession, or approval to join the Paris Agreement. Parties to the Paris Agreement commit to a five-year NDC enhancement cycle, with the expectation that they will ratchet up ambition over time. Ambition in mitigating GHG emissions can be measured through quantitative reductions in emissions.

The process by which Parties implement their NDCs will vary. Despite this heterogeneity, common steps involved in NDC implementation in developing countries are likely to include developing a national NDC implementation strategy or plan; identifying appropriate mitigation and adaptation policy measures in all relevant sectors; mobilizing national and international financial resources and support; implementing policy measures through legislation, regulations and expenditures; and facilitating/coordinating action with non-state actors.

To better frame the efforts towards the long-term goal, the Paris Agreement invites countries to formulate and submit by 2020, **long-term low greenhouse gas emission development strategies (LT-LEDS)**. LT-LEDS provide the **long-term horizon to the NDCs**. Unlike NDCs, they are not mandatory, nevertheless, they place the NDCs into the context of countries’ long-term planning and development priorities, providing a vision and direction for future development. The Paris Agreement provides a framework for **financial, technical capacity-building support** to those countries who need it.

Article 13 of the Paris Agreement establishes an ‘enhanced transparency framework for action and support’ to review progress made by Parties. On a biennial basis, Parties will submit: (i) national inventory reports of anthropogenic emissions; and (ii) information necessary to track progress made in implementing and achieving their NDCs.⁶ The Paris Agreement includes a process to review international progress in responding to climate change every five years starting in 2023. At these intervals, Parties will engage in a global stocktaking of the overall level of ambition and delivery in relation to the goals of the Paris Agreement that are stipulated in Article 2.

Therefore, under the Paris Agreement, countries established an enhanced transparency framework (ETF). Under ETF, starting in 2024, countries will report transparently on actions taken and progress in climate change mitigation, adaptation measures and support provided or received. The information gathered through the ETF will feed into the Global stock take which will assess the collective progress towards the long-term climate goals. This will lead to recommendations for countries to set more ambitious plans in the next round.

3.1.2.2 Analysis of Socio-economic Trends in the Selected Countries

This section of the Report presents the current trends in key socio-economic indicators of the nine (9) countries in comparison to the previous assumptions that informed the NDC targets. It focuses on the countries in the following areas: The dates and submissions of the various UNFCCC instruments; Historical emissions by sector for the period 1990 through to 2019; The conditioned and unconditioned emission targets, including the business-as-usual (BAU) scenario; Real Gross Domestic Product (GDP), 2010-2020; Real GDP growth rate, 2010-2020; Gross National Income (GNI per capita), 2010-2019; Income Inequality Index, 2010-2019; Poverty rates in the selected nine (9) countries, available years; Employment by economic sectors, 2010-2019; Vulnerability employment as a percent of total employment. The report also examines the trends in the indicators within the context of and implications for the agricultural sectors of the countries.

⁶ As stipulated in Decision 1/CP.21, specific guidelines for measuring, reporting and verification (MRV) of emissions and removals are still to be negotiated.

Timeline of UNFCCC Document Submissions

Table 3.2 presents a summary of the documents submitted to the UNFCCC by the nine (9) countries selected for this project within the framework of each country's commitments under the Paris Agreement of 2015.

Table 3.2: Submission by selected countries of UNFCCC Documents

Country	National Communication			Nationally Determined Contributions			National Adaptation Plan
	First	Second	Third	Intended	First	Second	
The Bahamas	✓	✓			✓		
Belize	✓	✓	✓	✓			✓
Dominica	✓	✓		✓	✓		
Haiti	✓	✓		✓	✓		
St. Kitts and Nevis	✓			✓	✓		✓
Saint Lucia	✓	✓	✓	✓	✓		✓
St. Vincent and the Grenadines	✓	✓		✓	✓		✓
Suriname	✓	✓		✓	✓	✓	
Trinidad & Tobago	✓	✓		✓	✓		

Source: CAIT Climate Data Explorer

The Table shows the following:

- All countries have submitted their first and second National Communications (NCs), while Belize and Saint Lucia submitted their third NCs.
- All countries, except for The Bahamas, have submitted their Intended Nationally Determined Contributions (INDCs).
- All countries, except for Belize, have submitted their NDCs, while Suriname has submitted a second NDC.
- Three countries, Belize, St. Kitts and Nevis, and Saint Lucia have submitted updated NDCs.
- St. Kitts and Nevis, and Saint Lucia have submitted their National Adaptation plans.

The details of the timeline of submissions and the nature of the documents submitted to the UNFCCC are presented in Tables A2.1a through A2.1 i of Annex 2.

Historical Emissions by Sector for the Period 1990 -2019

The historical GHG emissions of the nine (9) countries by sector for the period 1990 through 2019 are presented in Annex A2.2 Also presented in the Annex are the percentage distribution of emissions by sector, the per capita emissions (various units of measurements), and the emissions (CO₂ e) per million US\$ of GDP. The figures show that GHG emissions for the nine countries have fluctuated significantly for all countries. Nevertheless, emissions for the period 1990 through to 2019, showed upward tendencies for The Bahamas, Haiti, St. Kitts and Nevis, St. Vincent and the Grenadines, Suriname and Trinidad and Tobago, and downward tendencies for the other three countries (Belize, Dominica, and Saint Lucia). It is important to note that between 2015 and 2019, except for the Bahamas which recorded significant increases in GHG emissions, there were slight increases in emissions in Belize, Haiti, St. Kitts and Nevis and Saint Lucia, and decreases in Dominica, St. Vincent and the Grenadines, Suriname, and Trinidad and Tobago.

The percentage distributions of GHG emissions by sector for the countries during the period 1990 through to 2019 are summarized and presented in Table 3.3.

Table 3.3: Range of percentage distribution of GHG emissions by sector for the selected countries (1990-2019)

Country	Energy (%)		Waste (%)		Land Use Change and Forestry (LUCF) (%)		Agriculture (%)		Industrial Processes (%)	
	Low	High	Low	High	Low	High	Low	High	Low	High
The Bahamas	87.3	92.2	5.1	8.7	0.2	4.9	0.8	1.9	0.2	3.0
Belize	2.5	16.5	1.4	47.2	48.1	89.9	1.4	6.1	0.01	2.3
Dominica	25.2	80.8	8.6	32.2	-6.4	23.4	12.0	20.4	0.08	1.4
Haiti	13.3	37.2	12.9	17.4	0.8	6.7	40.9	67.9	0.1	3.4
St. Kitts and Nevis	60.0	78.3	17.0	30.8	n/a	n/a	2.4	9.0	0.2	3.9
Saint Lucia	24.6	82.6	26.9	86.9	-27.3	-14.4	3.0	10.7	0.1	6.5
St. Vincent and the Grenadines	74.3	85.8	14.1	49.1	-43.7	-20.7	3.9	19.1	0.2	1.4
Suriname	22.8	36.7	0.6	1.2	49.4	70.5	5.0	12.4	0.7	3.2
Trinidad and Tobago	80.0	93.8	3.3	5.9	0.3	0.8	0.9	1.8	1.1	14.0

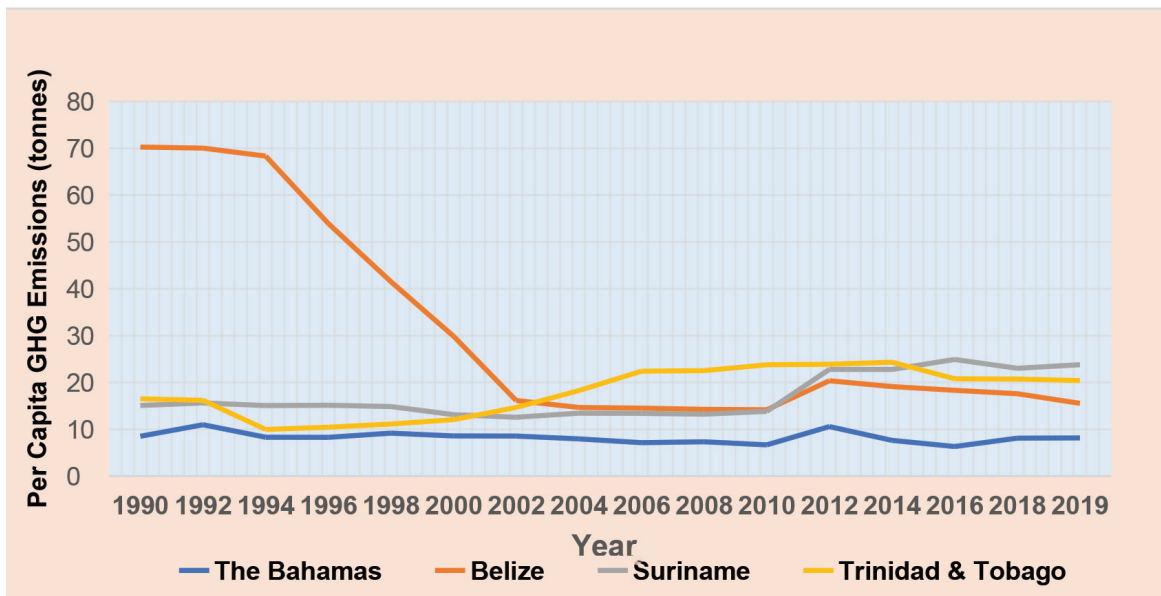
Source: CAIT Climate Data Explorer

The table shows the following over the period under review.

- Significant variability is observed within each sector in the percentage contribution to GHG emissions.
- Except for Belize and to a lesser extent Haiti and Suriname, the energy sector is the major contributor to GHG emissions in the countries.
- Waste sector is a major contributor to GHG emissions in Saint Lucia. The sector also contributes significantly to GHG emissions in St. Vincent and the Grenadines, Belize, Dominica, and St. Kitts and Nevis.
- Land Use Change and Forestry is a major contributor to GHG emissions in Belize and Suriname. In Saint Lucia and St. Vincent and the Grenadines, this sector contributes positively to the reduction of GHG emissions.
- The contribution of the agricultural sector to GHG emissions is low in the agricultural sector of all countries, except for Haiti, and to a lesser extent Dominica and St. Vincent and the Grenadines.
- Industrial processes sector is not a significant contributor to GHG emission, except in Trinidad and Tobago.

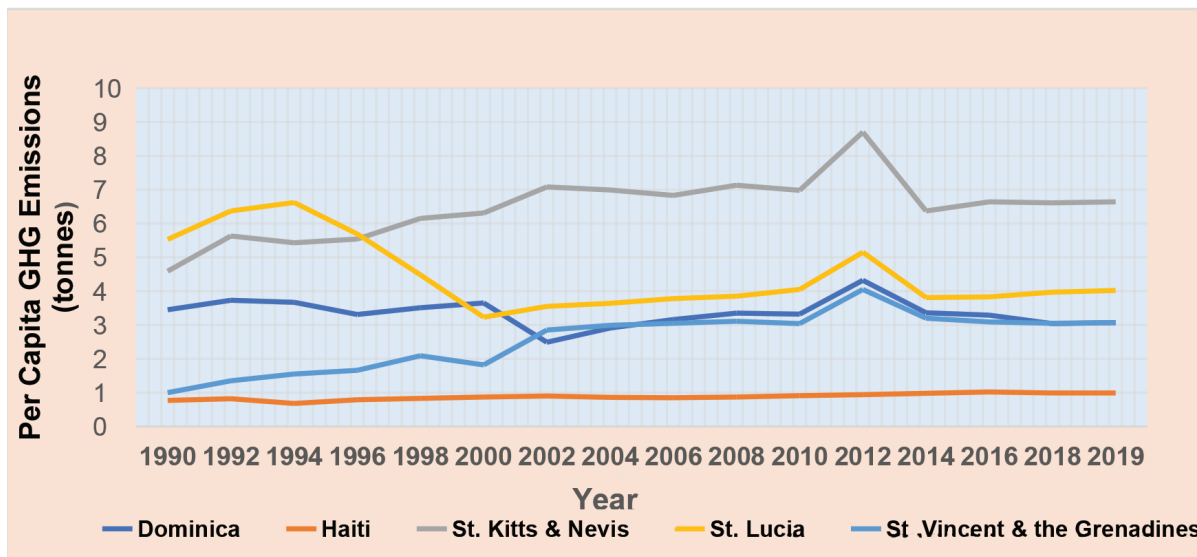
Figures 3.1 and 3.2 present the per capita GHG emissions of the nine countries for the period 1990-2019. As can be observed from both figures there have been significant moderations and/or, in some cases, declines in the per capita GHG emissions for the countries since 2012. These trends witnessed by the countries are to a large extent reflecting a decline or stability in GHG emissions during the 2012 – 2019 period.

Figure 3.1: Per Capita GHG Emissions by Country (Tonnes,) The Bahamas, Belize, Suriname, Trinidad and Tobago, 1990-2019



Source: CAIT Climate Data Explorer

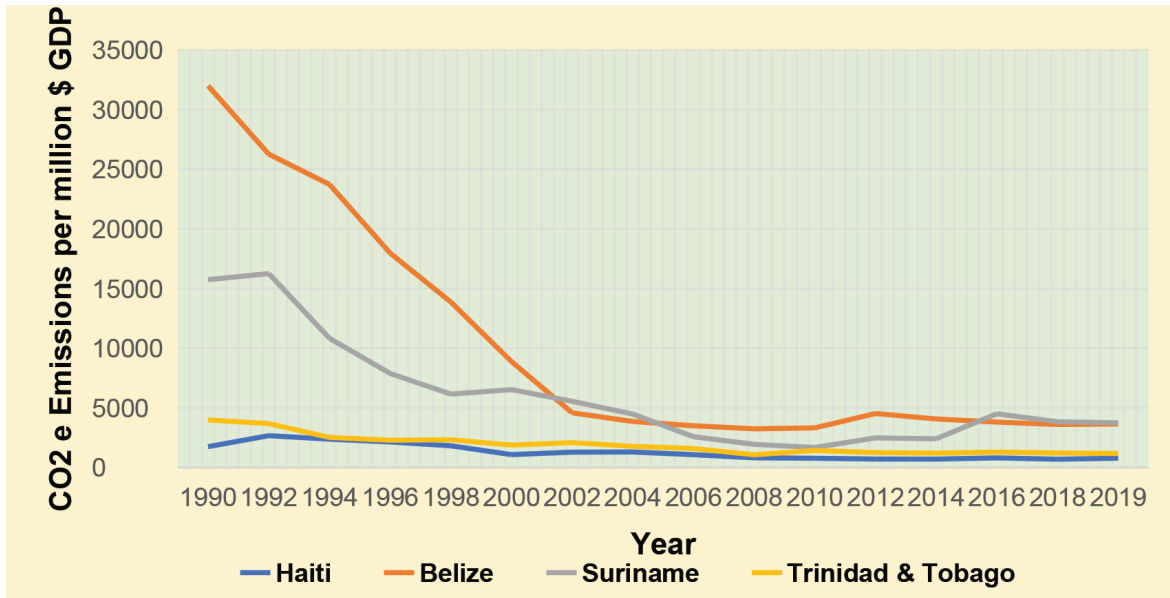
Figure 3.2: Per Capita GHG Emissions by Country (Tonnes,): Dominica, Haiti, St. Kitts and Nevis, St. Vincent & the Grenadines 1990-2019



Source: CAIT Climate Data Explorer

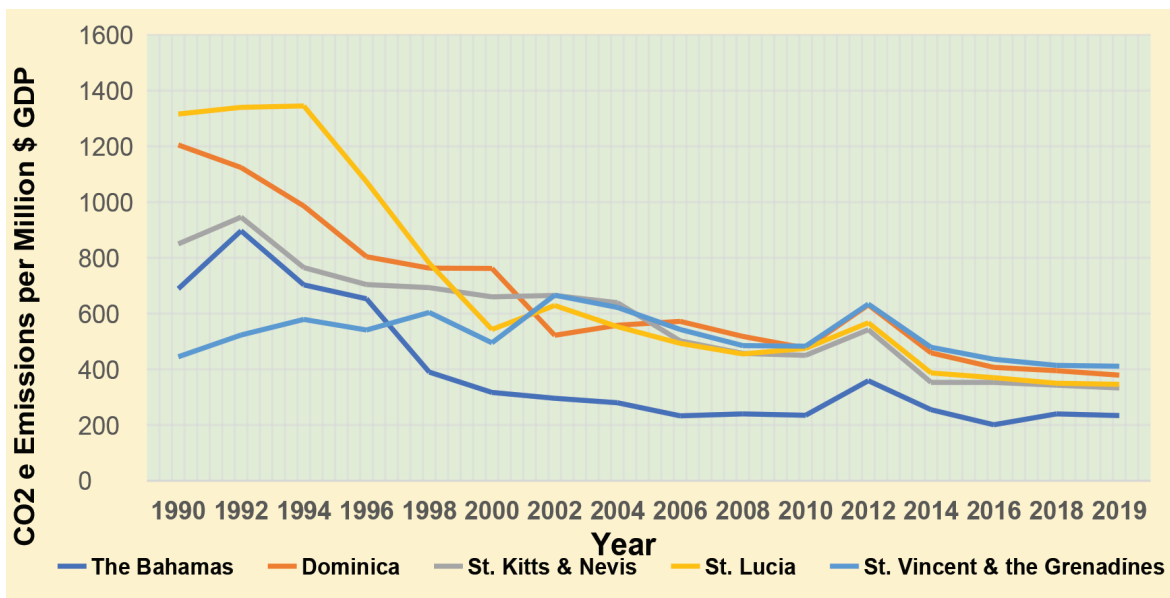
Figures 3.3 and 3.4 present the GHG emissions per million US\$ GDP for the countries for the period 1990 through 2019. As can be gleaned from the figures there have been significant declines in GHG emissions per million \$ GDP in the countries between 1990 and 2002, due mainly to declines in levels of emissions. Thereafter, the per GDP rate of declines in emissions moderated in all countries, again influenced mainly by the levels of GHG emissions. This situation will become very clear when the GDP related indicators are analyzed and presented.

Figure 3.3: CO₂ e Emissions by Country (Million US\$ GDP), 1990-2019 (Haiti, Belize, Suriname, T&T)



Source: CAIT Climate Data Explorer

Figure 3.4: CO₂ e Emissions by Country per (Million US\$ GDP), 1990-2019 (The Bahamas, Dominica, St. Kitts & Nevis, Saint Lucia, SVG)



Source: CAIT Climate Data Explorer

Greenhouse Gas (GHG) Emission Targets

The GHG emission targets established by the nine countries in their NDCs are presented in **Table 3.4**. A close examination of the table demonstrates a paucity of information on the key indicators of emission targets for business-as-usual, and unconditional and conditional scenarios for the milestone years 2020, 2025, and 2030.

Table 3.4: Greenhouse Gas (GHG) Emission Targets

Country	Business-As-Usual			Unconditional Scenario			Conditional Scenario		
	2020	2025	2030	2020	2025	2030	2020	2025	2030
The Bahamas	N/A	N/A	N/A						
Belize						None			None
Dominica (Kt)							140.00	100.00	90.00
Haiti (Mt)		20.80			19.76			14.35	
St. Kitts and Nevis (Kt)	545.00	676.00	836.00					528.00	540.00
Saint Lucia (Kt)									468.0
St. Vincent and the Grenadines (Kt)		673.70						525.00	
Suriname (Mt)									None
Trinidad and Tobago (Mt)						41.80			34.30

Source: CAIT Climate Data Explorer

Gross Domestic Product (GDP)

The total real GDP for the countries in this study in 2020 reflects the dominance of Haiti and Trinidad and Tobago, each with just US\$33 billion in GDP, in the group of nine selected countries. By contrast, Dominica has a small economy (US\$0.741 billion in GDP) relative to the other countries in the study. St. Kitts and Nevis has a GDP similar to that of St. Vincent and the Grenadines, though the per capita incomes are very different (**Annex A2.3**).

The relative prosperity of the countries' economies is also widely dispersed. Haiti (US\$1,709) and Belize (US\$6,382) have the lowest gross national income (GNI) per capita in 2019, whereas The Bahamas (US\$33,747), Trinidad and Tobago (US\$26,231), and St. Kitts and Nevis (US\$25,038) are among the countries with the highest per capita incomes in the study during 2019 (**Annex A2.3**). St. Vincent and the Grenadines (US\$12,378), Suriname (US\$14,324), and Saint. Lucia (US\$14,616) have modest per capita GNI levels in the same year. Income levels are a key determinant of economic policy and have a marked effect on the ability of countries to provide support for the agricultural sector. The richer countries have the financial ability to provide robust fiscal support the agricultural sector than poorer countries do.

Economic growth rates will also impact agricultural policies. **Annex A2.3** shows the wide range and volatility of real growth rates among the nine countries included in the study. What is quite evident from the trends in real growth rates of the countries is the significant impact of the COVID-19 pandemic on economic growth in 2020. All nine countries recorded negative real rates of growth in 2020, with Saint Lucia experiencing the highest decline in real growth rate of 20.4%.

Income Inequality Index

Presented in **Annex A2.3 (Figures 2.3.4a-b)** also are income index of inequality for the period 2010 - 2019, which is equal to the portion of community income that would be taken from the richer half of the population and given to the other poorer half of the population for a society to be perfectly equal. The Bahamas has the highest income index of inequality of 0.914 in 2019, followed by Trinidad and Tobago (0.841), St. Kitts and Nevis (0.834), Saint Lucia (0.753), and Suriname (0.75). Haiti has the lowest income index inequality of 0.429. What is quite clear is that despite the high GNI per capita of most of the countries included in this study, there is a serious problem of inequality in the distribution of income.

Poverty Rates

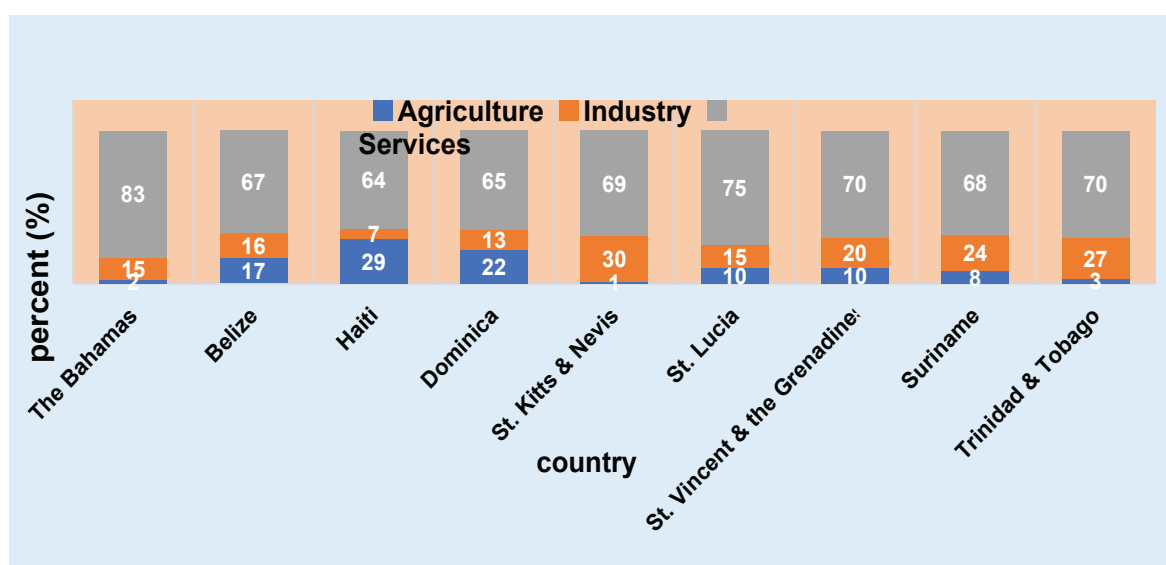
Quite surprising is that the inequality in the distribution of income in the countries is not reflected in their levels of poverty as would have been expected. Based on available data (**Annex A2.3, Table A2.4**), The Bahamas, Trinidad and Tobago, and St. Kitts and Nevis have the highest income inequality indices, but the lowest rates of poverty of 12.8%, 20.0% and 21.8%, respectively. Haiti on the other hand has the lowest income inequality index, but the highest level of poverty (58.5%) among the nine countries. This suggests that the level of income (GNI) and other factors may be key determinants of the level of poverty in the countries.

Employment by Economic Sectors

Annex A2.3 presents details on the countries' employment by economic sectors for the period 2010-2019. The information for 2019 is summarized and presented in **Figure 3.5** below. It can be observed from the figures that:

- Employment in agriculture as a percentage of total employment is lowest in St. Kitts and Nevis (1%), The Bahamas (2%), and Trinidad and Tobago (3%); and highest in Haiti (29%), Dominica (22%), Belize (17%), and Saint Lucia and St. Vincent and the Grenadines with 10% for each country.
- Employment in Industry as a percentage of total employment is highest in St. Kitts and Nevis (30%), Trinidad and Tobago (27%), Suriname (24%), and St. Vincent and the Grenadines (20%).
- Employment in the services sector as a percentage of total employment is highest in The Bahamas (83%) and Saint Lucia (75%) and lowest in Haiti (64%), Dominica (65%), and Belize (67%).

Figure 3.5 Employment by economic sectors for selected countries (%) - 2019



Source: World Bank Database

Vulnerability Employment as Percent of Total Employment

Vulnerable employment from a socio-economic perspective is defined as the sum of the employment status groups of own-account workers and contributing family workers. These groups are less likely to have formal work arrangements and are therefore more likely to lack decent working conditions, adequate social security and a 'voice' through effective representation by trade unions and similar organizations. Vulnerable employment is often characterized by inadequate earnings, low productivity and difficult conditions of work that undermine workers' fundamental rights. Their income streams are therefore highly vulnerable to extreme weather events.

Based on available data, the percentage of vulnerable employment is very high in Haiti (72.3%), high in Belize (29.6%) and Saint Lucia (29.6%), and moderate in The Bahamas (14.1%) and Suriname (12.2%).

3.1.2.3 Agricultural Sector Trends

This section of the report presents trends in key agriculture sector indicators, including real agricultural GDP and its contribution to national GDP, growth rates of the countries' agricultural sectors, and percentage employment by sex in agriculture. These indicators are presented in **Annex 3** of the report, for the 2010 – 2020 period.

Real Agriculture GDP

The nine countries under review are diverse, varying widely in terms of their landmass, population, levels of socio-economic development, and vulnerability to external shocks. However, the sector continues to play an important part in the economic life of the countries through its contribution to GDP, employment and foreign exchange earnings. This contribution has been enhanced through its linkages and impacts on the manufacturing, health, and tourism sectors and to the achievement of food and nutrition security for the populations.

In 2020, the value of total real agricultural GDP was highest in Haiti (US\$2540 million) and Suriname (US\$365.6 million), and lowest in St. Kitts and Nevis (US\$12.7 million).

In 2020, the contribution of agriculture to total GDP was highest in Haiti (20.4%), Dominica (15.1%), and Belize (10.7%), and lowest in Trinidad and Tobago (1.2%) and St. Kitts and Nevis (1.4%). The real growth rates of the agriculture sector of the countries over the period under review (2010 – 2020) have fluctuated with downward tendencies in most countries (**Annex 3**).

It is plausible to conclude that the variabilities observed in the real rates of growth of the agricultural sector in some of the countries were due mainly to the impacts of Hurricanes on the countries. There is no doubt that the agriculture sector growth rates in Dominica and Antigua and Barbuda were negatively impacted by Hurricanes Irma and Maria in 2017, which destroyed the agricultural infrastructure of both countries.

Disasters in the countries often cause millions of dollars in losses in infrastructure, economic and social sectors. For example, 2004 was one of the busiest and most destructive Atlantic hurricane seasons on record: direct losses and property damage in the Caribbean were estimated at \$2 billion (UNDP 2011). Hurricane Dean impacted Saint Lucia in August 2007 and caused major losses in the banana sector in Dominica, where over 90 percent of the production has been destroyed. Other important export crops such as citrus, avocado, mango, cocoa and hot peppers have also suffered significant damage. The livelihood systems of about 3,000 farming families and 3,000 fishing families were seriously affected and took several months to recover.

According to the U.S. National Oceanic and Atmospheric Administration Tropical Cyclone Report on Hurricane Tomas, which impacted two of the countries under review (among others), there were 44 casualties, and damage in Saint Lucia amounted to US\$336.15 million (NOAA Hurricane Tomas Report 2011). In December 2013, Saint Lucia was impacted by a Low-Level Trough System which caused extensive damage to the banana and other crops, livestock, fisheries and forestry sub-sectors, as well as to on-farm infrastructure (irrigation, drainage, farm buildings and office equipment), farm roads and land loss. Loss to the agriculture sector of Saint Lucia was estimated at US\$11.83 million.

The agricultural sector also contributes to food and nutrition security in countries, with deliberate and focused attention paid to all dimensions of food security: food availability, access, consumption/ utilization and stability. Most countries are self-sufficient in roots and tubers. Additionally, most countries have a viable agricultural sector

that produces a range of fresh vegetables, legumes and tree crops. Nevertheless, for several essential food groups, national production per capita has declined, most notably, including fruits and vegetables. At the national level, the food production index, agriculture's relative contribution to real GDP, and the food import bill are three areas that should be of concern to policymakers. They will be discussed later in Section 4 of this report.

Employment by Sex in Agriculture

In 2019, the level of total employment in the agricultural sectors as a percent of total employment varies significantly across the nine countries; from highs of 29.0% in Haiti and 19.0% in Belize to lows of 2.3% in The Bahamas and 3.0 in Trinidad and Tobago (**Annex 3**).

Female employment as a percentage of total females employed in the countries varies from a high of 13.0% in Haiti to lows of 0.37% in The Bahamas and 1.3% in Trinidad and Tobago. On the other hand, male employment as a percentage of total male employed in the countries varies from highs of 42.8% in Haiti, 24.0% in Belize and 15.8% in Saint Lucia to lows of 3.9% in The Bahamas and 4.2% in Trinidad and Tobago.

3.1.2.4 Status of Food and Nutrition Security in the Countries

Despite the huge resource endowments, the CARICOM cannot be termed as a food secured Region as it is yet to meet the facets of food and nutrition security definition. In fact, the regional food and nutrition security situation remains unstable and unpredictable. Poverty is the biggest impediment to achieving food security in the CARICOM Region. It is also a source of hunger. The situation is exacerbated by the frequent storms/hurricanes, droughts and floods, high food prices and global economic/financial crisis over the past decades that have also left many people in the Region severely food insecure and in need of humanitarian assistance.

The relevance of food and nutrition security (FNS) to NDCs stems from the dependence of the Region on agriculture characterized by crop, livestock, fishery and aquaculture productions for sustenance of the economy, employment and poverty reduction as well as food being the most basic of human needs for healthy living.

This section of the report presents an analysis of the food and nutrition security in the selected nine ((9) countries, with a focus on some key FNS indicators. It examines the state of FNS in the NDCs of the nine countries and provides some suggestions as to the opportunities that countries have to leverage FNS to meet some shares of their commitments under the Paris Agreement.

Hunger and Food Insecurity Indicators

Prevalence of Undernourishment

The prevalence of undernourishment (PoU), as a share of the population, is the main hunger indicator used by the UN's Food and Agriculture Organization. **Annex 4** presents information on the PoU based on a 3-year rolling average for six (6) CARICOM countries for which data is available. The Figures of the Annex showed steady declines in the PoU in four of the six countries (Belize, Haiti, St. Vincent and the Grenadines, and Trinidad and Tobago). Two countries, Dominica and Trinidad and Tobago, showed slight uptick in the PoU.

It should be noted that in 2020⁷ five of the six CARICOM countries for which information is available have PoU scores that are much lower than that of the world's average of 8.9%. In 2020, Haiti's PoU was 46.8%, which represents a decline from the 48.9% recorded in 2010. Additionally, only Dominica (8.7%) and Haiti (46.8%) had higher levels of

⁷ Based on the 2018-2020 3-year average.

PoU than the average of Latin America and the Caribbean which averaged 7.7% in 2020.

Prevalence of Child Malnutrition

There are three key physiological measures of undernourishment and undernutrition in children. These measures are:

- **Stunting** – being ‘too short for one’s age’.
- **Wasting** – being ‘dangerously thin for one’s height’; and
- **Underweight** – low weight-for-age in children.

The discussion below will focus on stunting as the available data sets ‘wasting’ and underweight for the CARICOM countries are quite limited to facilitate any meaningful discussions on the two issues. Data available on the prevalence of stunting in five CARICOM countries and presented in Annex 4 shows marginal increase in the rate of stunting in Trinidad and Tobago, stability in Saint Lucia, and declines in Belize, Haiti and Suriname for the period 2010 through 2020.

To try to capture and track progress on hunger within a single metric, researchers have defined a score system termed the [Global Hunger Index](#). (GHI). **Table A4.1** of **Annex 4** presents the GHI scores for Haiti, Suriname and Trinidad and Tobago.

The table shows that, while the GHI scores range from serious to alarming in Haiti, the three countries have all recorded declines in their GHI scores between 2000 and 2021. These declines must be viewed within the international context, where the 2021 Global Hunger Index (GHI) points to a dire hunger situation fuelled by a toxic cocktail of the climate crisis, the COVID-19 pandemic, and increasingly severe and protracted violent conflicts. In fact, progress toward Zero Hunger by 2030, already far too slow, is showing signs of stagnating or even being reversed.

Food and Nutrition Security Indicators

Food Availability

Food availability at the country level is evaluated by examining the following six (6) indicators of this dimension of FNS: Average dietary energy supply adequacy (%); Average protein supply (g per capita per day); Cereal Import dependency (%); Food imports as % of total merchandise exports; and Per capita food production variability (Constant 2004-06) - kcal per capita

The **average dietary energy supply adequacy** as an indicator expresses the Dietary Energy Supply (DES) as a percentage of the Average Dietary Energy Requirement (ADER). All countries in the study, except Haiti, have recorded average dietary energy supply adequacy above 100 (**Annex 4**).

Figures 4.4a and 4.4b of Annex 4 present the **average daily per capita protein supply** measured in grams for the nine (9) CARICOM countries under review. The four countries from the Organization of Eastern Caribbean States (OECS) as well as The Bahamas and Trinidad and Tobago have all maintained average daily per capita protein supply intake measured in grams well above the recommended level. The level of average daily per capita protein supply intake in Suriname may be characterized as marginal, while Haiti’s average daily per capita protein supply intake is below the recommended level.

Figures 4.5a and 4.5b of Annex 4 present the average supply of protein from animal sources as a percent of total protein supply. The figures showed that the average supply of protein from animal sources as a percent of total protein supply for the period under review (2000 through 2018):

- is above fifty percent (50%) in The Bahamas and the four OECS countries.
- is below twenty percent (20%) in Haiti.
- has increased over the period of review in four (4) countries – Haiti, St. Kitts and Nevis, St. Vincent and the Grenadines and Trinidad and Tobago.

The **cereal imports dependency ratio** tells how much of the available domestic food supply of cereals has been imported and how much comes from the country's own production. The cereal imports dependency ratios for the nine (9) countries selected for this study are presented in **Figures 4.6a and 4.6b of Annex 4**.

The information presented in both figures clearly demonstrates that, with the exceptions of Belize and Suriname and to a lesser extent Haiti, the countries under review are highly dependent on cereal imports for consumption. In fact, of the top twenty (20) ranked countries in the world for average cereal imports dependence for the 2015-2017 period, nine (9) are located in the CARICOM Region (**Table A4.2 of Annex 4**). To a large extent the high rankings of the CARICOM countries represent the limited land resource endowments and the high demands for cereals for the tourism sectors of those countries.

Figures 4.7a and 4.7b of Annex 4 present the value of **food imports over total merchandise exports** for the countries under review. This indicator provides a measure of vulnerability and captures the adequacy of foreign exchange reserves to pay for food imports, which has implications for national food security depending on production and trade patterns. The figures showed declines in the value of this indicator for Haiti, St. Kitts and Nevis and Suriname for the 2009-11 to 2017-19 period. There were increases in the value for The Bahamas, Belize, Saint Lucia, St. Vincent and the Grenadines and Trinidad and Tobago over the same period.

Food Access

In this study, two economic indicators are utilized to measure food access: Gross National Income per capita in constant US\$2015 and Domestic food price inflation level. **Figures 4.8a and 4.8b** of Annex 4 present trends in the Gross National Income per capita indicator for the nine (9) countries selected for this study. As can be gleaned from both Figures, all countries, with the exception of St. Vincent and the Grenadines, showed declines in the level of accessibility to food based on this indicator.

Another measure of economic access to food is the Consumer Price Inflation for food. Annual consumer price inflation rates for food for the countries selected for this study are presented in **Figures 4.9a and 4.9b** of Annex 4. From 2012 to 2019, annual food prices in the countries have been volatile to some extent. Between 2019 and 2020 food prices declined in the OECS countries, except for St. Vincent and the Grenadines due mainly to domestic policies implemented to moderate food price increases. Increased rates of food inflation were recorded in the five non-OECS countries, attributable to a large extent the impact of COVID-19 and the economic and financial difficulties faced by these larger countries during the period.

Food Utilization/Nutritional Status

The 'prevalence of anaemia among women of reproductive age (15-49 Years)' indicator measures the percentage of women aged 15–49 years with a haemoglobin concentration of less than 120 g/L for non-pregnant women and lactating women, and less than 110 g/L for pregnant women, adjusted for altitude and smoking. The measure recognizes that anaemia is highly prevalent regionally, disproportionately affecting children and women of reproductive age. It is associated with poor cognitive and motor development, and work capacity.

Figures 4.10a and 4.10b of Annex 4 present the levels of prevalence of anaemia among women of reproductive age (15-49 Years) for the 2010 through the 2019 period for the countries selected for this study. The figures showed the levels of prevalence in the countries are, with the exception of Haiti, well below the world's average over the same period which ranged from a low of 29.0% in 2012 to a high of 30.0. Haiti's level of prevalence was very high over the period of review and reached a peak of 48.2% in 2010, which is well above those of the other Caribbean countries and that of the world average.

While marginal declines can be observed in the countries for the measured indicator of the prevalence of anaemia among women of reproductive age of 15-49 years, a worrying upward trend was observed in all countries for the prevalence of obesity in the adult population 18 years and over (**Figures 4.11a and 4.11b of Annex 4**).

Obesity is a major risk factor for noncommunicable diseases (NCDs) such as cardiovascular diseases (mainly heart disease and stroke), diabetes, musculoskeletal disorders (especially osteoarthritis – a highly disabling degenerative disease of the joints), some cancers (including endometrial, breast, ovarian, prostate, liver, gallbladder, kidney, and colon). The risk for these noncommunicable diseases increases, with increases in Body Mass Index (BMI).⁸Some countries in the Caribbean are now facing a “double burden” of malnutrition. While these countries continue to deal with the problems of infectious diseases and undernutrition, they are also experiencing a rapid upsurge in noncommunicable disease risk factors such as obesity and overweight, particularly in urban settings. In fact, it is not uncommon to find undernutrition and obesity co-existing within the same country, the same community, and the same household.

Obesity and overweight are also serious problems for children in the Caribbean. **Figure 4.12 of Annex 4** presents the prevalence of overweight children under 5 Years for selected countries under the project, which clearly demonstrates upward trends for all countries, except for Belize. Children in some countries are exposed to high-fat, high-sugar, high-salt, energy-dense, and micronutrient-poor foods, which tend to be lower in cost but also lower in nutrient quality. These dietary patterns, in conjunction with lower levels of physical activity, result in sharp increases in childhood obesity while undernutrition issues remain unsolved.

Food Stability: Average Value of Food Production

Figures 4.13a and 4.13b of Annex 4 present the average value of food production in 2004-2006 International dollars (I\$) per capita based on a 3-year average. The figures show some stability in per capita output between the 2009/2011 and 2014/2016 periods for all countries. However, thereafter, significant declines in per capita output in all countries can be observed. The region's agricultural sector is also constrained by ever-growing pressure on natural resources and a high vulnerability to climate change. During the 2014 through 2018 period, the agricultural sector of Caribbean region was impacted by severe droughts, heavy floods, and the devastating effects of Hurricanes Irma and Maria in 2017.

3.1.2.5 Opportunities to Increase Ambitions in NDCs under the Paris Agreement

This section of the Report provides some guidance and recommendations for policymakers to increase ambition in NDCs under the Paris Agreement using the climate change mitigation and adaptation potential of a transition to Resilient Agricultural Systems. It draws on the analyses of the role and opportunities for the agricultural sector to contribute to climate change mitigation and adaptation and how the sector is currently featured in NDCs to provide concrete suggestions of policies and measures that could be included in NDCs for activities across the sector for policymakers. The guidance and recommendations provided in this paper are expected to provide the basis

⁸ Body mass index (BMI) is a simple index of weight-for-height that is commonly used to classify overweight and obesity in adults. It is defined as a person's weight in kilograms divided by the square of his height in meters (kg/m²).

for discussions, future development, and the strategic direction towards the elaboration of measurable, actionable outcomes within the NDCs.

Opportunities for Enhancing the Socio-economic and Food Security Dimensions in the Agricultural Sectors

The Framework

While most countries mention the agriculture sector in their NDCs, very few set targets in relation to other stages of the food system, such as food loss and waste reduction, sustainable diets or food consumption. Opportunities to reduce global emissions of the broader food systems sector remain largely untapped due to a lack of comprehensive coverage of the opportunities that exist in the food system, on the one hand, and vagueness and lack of specificity of NDC targets, on the other. Overall, only a handful of NDCs refer to the food system approach, but these mostly remain focused on the production systems within the agricultural sectors and not the later stages of broader food systems where large emissions from food loss, waste, diets and consumption occur.

In recognition of the broad spectrum of socio-economic and food security dimensions of climate change and food systems' approach to agriculture, Schulte, I et al; (2020) provided some guidance for identifying and exploiting the opportunities to leverage the food system to meet significant shares of their commitments under the Paris Agreement. Within this context, this conceptual framework recognized that:

- The success of NDCs requires the adoption of an integrated approach and coherence with existing national policies and medium and long-term national development plans.
- The legitimacy, quality and implementation capacity of NDCs can be enhanced by collaborating with stakeholders from different sectors in the process of adjusting NDCs.
- Smallholders should be given special attention when considering the needs and perspectives of different stakeholders.
- Effort should be made to ensure the representation of women in planning processes.
- The food consumption habits of consumers (e.g., eating habits/ food preference, household levels of food waste and local culture, context and values) should be taken into consideration in developing mitigations and / or adaptation activities.
- Finance is an important enabler for transitioning to new and efficient practices; high-income countries should support lower-income countries by engaging in international climate finance mechanisms. National budgets need to be allocated for sectoral NDC implementation, which requires the involvement of Ministries of Finance and Planning in the formulation and implementation phase of the NDCs.
- Agriculture ambitions in NDCs from sustainable production to sustainable consumption, including food loss and waste and healthy diets should become critical conditions for the countries' food systems recovery and resilience agendas.

The countries should therefore focus on building an evidence-base for decision making, strengthening the agriculture sector and related policies, protecting livelihoods, reducing food loss and waste (FLW), transforming agricultural trade, and building resilient agriculture production systems.

The agriculture and broader food sectors are essential to achieve global commitments, including the 2030 Agenda for Sustainable Development, the UN Decade of Action on Nutrition 2016-2025, and the Paris Agreement. At the same time, there still is a need to identify and increase adoption of best practices which result in low carbon and more resilient food systems while addressing economic, social, and environmental dimensions of sustainable development in a balanced and integrated manner. To support the achievements of these

commitments, CARICOM countries may wish to address some of the following thematic areas as they relate to the enhancement of socioeconomic and food security dimensions of climate change in the broader food sectors:⁹

Economic and production issues

- Putting in place the necessary financial, policy and technical means to mainstream climate change considerations into agricultural sectors while also addressing socioeconomic and food security dimensions.
- Creating decent on-and off-farm employment in agriculture and in the local non-farm economy using greener practices, while strengthening/developing local food systems, fostering entrepreneurship and public employment programmes, and increasing additional occupational skillsets of people.
- Improving climate-resilient infrastructure to strengthen food value chains, especially infrastructure for energy, transport, water and sanitation, and healthcare while using the most appropriate technologies.
- Reducing Food, Loss and Waste (FLW) along the entire food value chain, while improving efficiency of natural resource use.
- Enhancing private and public-sector support and investment to strengthen resilient and sustainable agriculture, enable access to technology development and transfer and provide access to economic, financial, and other assets.

Social issues

- Enhancing equality for women, youth, local communities and indigenous people and ensuring that underlying structural power relations and socioeconomic marginalization that lead to vulnerable groups around the Caribbean being more significantly affected by climate change are mitigated.
- Combating gender-based violence, child, early and forced marriages that occur as a harmful coping strategy resulting from economic stress due to disasters and the slow-onset adverse effects of climate change with targeted measures.
- Developing and scaling-up of risk-informed and shock-responsive social protection systems that would help to protect vulnerable groups, their livelihoods, income, and their food security; and
- Upscaling networks and connectedness of rural communities for knowledge exchange and strengthening social security, while enhancing participation in social, economic, environmental and climate policy formulation and implementation.

Climate and environment

- Reducing factors that are worsening socioeconomic and food security dimensions, such as inadequate attention to sustainable agricultural practices and unsustainable natural resources management,
- Improving weather forecasting and early warning systems, including those for disease outbreaks such as coronavirus, to help farmers in planning agricultural practices and protecting crops and livestock from adverse impacts of climate change.
- Improving capacities to manage disaster and climate risks while increasing adaptive capacities and resilience.
- Investing in nature-based solutions to protect, conserve and maintain ecosystem services for low carbon, local and resilient agriculture, and food systems.

The rest of this section of the Report will focus on the key challenges and opportunities for enhancing ambitions in broader food sectors. It will specifically focus on two main issues (i) metrics, methodologies and indicators; and (ii) food and nutrition security and the socio-economic dimensions. It relies heavily on the nine (9) countries' expressions of storylines in their NDCs, as well as on some key documents cited under the Literature Review.

⁹ Some of these are articulated in FAO Submission to the UNFCCC in relation to the Koronivia joint work on agriculture. (August 2020)

Metrics, Methodologies and Indicators

Credible measurement, reporting and verification (MRV) in the agriculture sector is foundational for designing an enhanced NDC. While the MRV is still developing in many sectors, the agriculture sector faces deeper challenges. These include (i) the consistently mentioned problems encountered with collecting activity data for agriculture, which limits their ability to conduct robust inventory work; and (ii) a lack of data to estimate emissions factors for agricultural mitigation activities. Although improving MRV systems will take time and significant capacity, The Caribbean countries should not allow this to hinder their will and effort toward undertaking strengthened agricultural climate action.

New agricultural mitigation and adaptation targets and actions should ideally be informed by robust modeling and analysis. Through these exercises, countries can identify cost-effective and cost-beneficial actions that have significant mitigation potential and/or reduce climate impacts and vulnerabilities.

Several tools can support these types of analyses. The FAO has provided significant support in assessing and monitoring progress on adaptation, adaptation co-benefits, and resilience. The efforts are aimed at accelerating and scaling up coherent actions to address the current and future climate threats and impacts on the agricultural sectors and to reduce the vulnerability of affected people while building adaptive capacity and resilience. Notwithstanding the efforts of the FAO, there is a need for coherent methodology and indicators in agricultural sectors.

Financial mechanisms, as well as national climate finance, must be aligned with the proposed indicators and measurement approaches to leverage action at the required scale. This would help to integrate related frameworks into the project planning and baseline indicators review as well as results assessment.

The monitoring process requires improved capacity to assess adaptation, adaptation co-benefits and resilience across and within the agriculture and food security sectors, as well as to assess concrete resilience measures being implemented. Certainly, there is the need to support a shift in the methods and approaches that reduce silos and reinforce synergies, while promoting an integrated approach to the design and implementation of NAPs and NDCs that “leaves no one behind.” In this context, an indicator framework for tracking adaptation should build on existing data and information that is being collected by countries as part of their international commitments. The goal is to avoid further increasing the burden of data collection, and to ensure alignment with existing tracking and monitoring frameworks.

FAO has proposed to develop a coherent indicator framework to monitor progress towards the targets that countries have set in adaptation, adaptation co-benefits and resilience, as part of the overarching 2030 Agenda for Sustainable Development and the Paris Agreement.¹⁰

Socio-economic and food security dimensions of climate change in the agricultural sector.

The previous sections provide a good analysis of the issues related to socio-economic and food security dimensions of climate change in the agricultural sector. What is obvious is that agriculture is one of the sectors most susceptible to climate change. The analysis has highlighted the following:

- On one side, the expansion of agriculture can ensure food availability for a growing population, but on the other side, increased cropland coupled with unsustainable practices can contribute to land degradation and desertification in many regions, impacting food security and terrestrial ecosystems.
- Climate change threatens the income and livelihoods of those most vulnerable.

¹⁰ Submission by the Food and Agriculture Organization of the United Nations (FAO) To the United Nations Framework Convention on Climate Change (UNFCCC) (2019).

- Climate-related extreme events, such as droughts, floods and hurricanes, can increase inequities and conflicts at the local level, contributing to the migration of millions of people.
- Regional and national food security should be addressed by applying sustainable land-use practices and strengthening the resilience and adaptive capacity of agricultural production systems.

There are several potential actions, practices and measures that can be implemented by countries to help farmers and food producers to fulfil their potential contribution to climate change mitigation and adaptation, while ensuring the four pillars of food security (food availability, access, utilization and stability) and allowing effective balance among environmental, social and economic sustainability. In this regard these priorities are:

- identify requirements to improve the infrastructure of agriculture value chains and increase agricultural productivity, sustainability and efficiency.
- reduce food loss and waste in order to make the food system more efficient and reduce the carbon footprint of food production.
- Promote supply chains of agricultural commodities as part of a sustainable food system, including through incentives for deforestation-free commodities.
- recognize and secure land tenure to foster sustainable land-use systems
- ensure good nutrition by enhancing diversification and quality of food products.
- promote healthy and sustainable diets to increase the overall health of the population while reducing GHG emissions from food systems.
- foster livelihoods of rural communities and empower women, youth, indigenous peoples and other vulnerable groups to reduce inequalities and strengthen global food security.
- ensure access to innovation, technologies, and services for small-scale food producers and family farmers.
- increase institutional dialogues between stakeholders at all levels in order to design and apply relevant policies and programmes promoting agricultural and food system adaptation to climate change.
- promote responsible marketing concepts, creating food value chains that indicate denomination of origin, sustainable production labels, and food safety certifications.
- implement an information system that can deliver information and knowledge for better decision-making on farming practices to rural producers.
- support countries' institutions to develop and enhance a coherent and consistent set of economically, environmentally, and socially sustainable policies that address climate change impacts in agricultural sectors and deliver improved socio-economic and food security outcomes.
- protect livelihoods and promote the inclusion of the most vulnerable people, especially smallholder farmers and their families, women, youth, local communities and indigenous people in order to improve their access to land, employment, financial resources, technologies, and education.
- address issues related to access to equitable tenure rights for social and environmental stability.
- increase the efficiency of food systems by establishing mechanisms to connect producers and consumers, promoting coordination and knowledge-exchange among value chain actors, reducing food loss and waste, and working towards advocacy and awareness of sustainable food systems.
- facilitate farmers' access to markets, encouraging and supporting associations among small producers for production and trade.
- promote transparency and traceability in food supply chains through the application of national measures and trade policies that ensure open, fair and transparent national and international trading systems, assuring that these policies help agriculture and trade to adapt and mitigate climate change
- strengthen the resilience to climate change of agricultural producers and rural communities, through the development of vulnerability and climate risk maps to climate risk monitoring and implementing early warning and early action plans.

- collect, analyse and monitor data on climate change impacts on people and agroecosystems to support national governments and farmers in planning appropriate adaptation strategies and protecting their livelihoods, income and food security.
- highlight the central role of farmers in knowledge exchange, agricultural research and innovation systems, at the national and regional levels.
- strengthen finance mechanisms for delivering technical and financial assistance to developing countries in the agricultural sector.
- provide incentives and access to climate-smart investments in agricultural sectors to farmers, with the aim of upscaling sustainable practices and strengthening farmers' contribution towards positive and healthy ecosystems.
- incentivize public and private sector investments in technology and innovation to achieve more resilient food systems and address in a balanced and integrated way the economic, social and environmental dimensions of sustainable development.
- provide access to knowledge exchange and technology transfer to the most vulnerable groups to support sustainable food production, distribution and speed up the transition to resilient food systems.
- provide a platform on finance for a wide range of stakeholders from governments, climate funds, financial institutions, civil society, think tanks, and the private sector to discuss and promote the mobilization of climate finance for agriculture.

3.1.2.6 Food Security and Nutrition

Despite the region having huge natural resource endowments, the CARICOM AgREADY countries are considered as food insecure. The situation is exacerbated by the frequent storms/hurricanes, droughts and floods, high food prices and global economic/financial crisis recently exacerbated by the impacts of the COVID-19 pandemic and the outbreak of war in Ukraine. Regional food and nutrition security remains unstable and unpredictable, with poverty being the biggest impediment to achieving food security. The COVID-19 pandemic increased global food insecurity in almost every country by reducing incomes and disrupting food supply chains—conditions worsened worldwide by Russia's unprovoked invasion of Ukraine. The pandemic continues to create devastating effects on hunger and poverty – especially on the poorest and most vulnerable populations within the CARICOM sub-region. Coupled with this, several hurricanes, have affected food and cash crop production in the AgREADY countries and there have been heavy losses of crops and livestock as a consequence of prolonged dry weather conditions.

There has been a slowing of agricultural productivity, decreased value of food imports over total merchandise exports and decline in food prices coupled with increased food inflation for some AgREADY countries.

A 2019 study by the Caribbean Development Bank (CDB) confirmed that growth in agricultural productivity has been slow and the sector suffers from high trade costs and a low capacity to comply with modern food safety and quality standards. The agriculture sector has been unable to adequately respond to rapidly growing demand for high-standard, agri-food products from the tourism, processing, and retailing sectors, in and outside the region. Instead, the growing demand in these sectors in the region is mainly fulfilled by imports (CDB 2019). Data from the World Bank (2022) revealed that the value of food, excluding fish imports,¹¹ over total merchandise exports declined for Haiti, Saint Kitts and Nevis (SKN), and Suriname for the 2009-11 to 2017-19 period. There were increases in the values for The Bahamas, Belize, Saint Lucia (SLU), Saint Vincent and the Grenadines (SVG) and Trinidad and Tobago (T&T) over the same period. Additionally, except for SVG, all other countries showed declines in the level of accessibility to food based on the Gross National Income per capita (constant US\$2015) data, also provided by the World Bank (2022). Between 2019 and 2020 food prices declined in the OECS

¹¹ This indicator provides a measure of vulnerability and captures the adequacy of foreign exchange reserves to pay for food imports, which has implications for national food security depending on production and trade patterns.

countries, except for SVG. However, in the SVG, there has been economic turbulence in the aftermath of the volcanic eruptions in that country in 2021.

A CARICOM/ World Food Programme survey, conducted over the two-year period (2020-2022) to gauge the impact of the COVID-19 pandemic on food security and livelihood across 22 countries and territories in the English and Dutch-speaking Caribbean found that food insecurity had increased by 72% and this has been further exacerbated by the ongoing geopolitical unrest in Ukraine. According to International Food Policy Research Institute (IFPRI) (2022), the ongoing war is not only driving up the cost of fertilizer but also limiting access and availability. This is further impacting the cost and availability of food across the globe and even more so for highly import dependent countries such as The Bahamas where 90% of its food is imported.

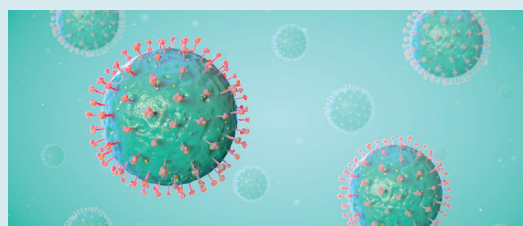
The COVID-19 pandemic had a significant impact on the AgREADY countries, and in some cases exacerbated already weakened economies.

Increased rates of food inflation were recorded for The Bahamas, Belize, Haiti, Suriname, and T&T, attributable to a large extent, to the impact of COVID-19 and the economic and financial difficulties faced by these larger countries during the period (FAO 2021). With the pandemic the economies saw general contraction of GDP in most countries with Haiti being the worst hit by the COVID-19 pandemic. Only now in 2022, a reverse is evident.

In 2020, like for most other countries, the COVID-19 pandemic resulted in T&T's economy being deeply impacted by the sharp decrease in major energy commodity prices and the precipitous fall in global demand, which significantly reduced export opportunities for manufactured goods and energy products.

Similarly, tourism was gravely impacted in most countries and The Bahamas and Saint Lucia, for example, closed their borders. Agriculture was also negatively impacted through availability and price of inputs and imported foods, and reduction in exports. The fallout in the tourism sector also impacted the agriculture sector, where the demand for some vegetables was significantly reduced. Countries applied various stimuli to support farmers and maintain production, at least for local consumption. For example, in Belize, the Government's Economic Recovery Strategy included BZ\$16 million in direct relief to farmers suffering multiple hardships from two years of prolonged drought conditions and COVID-19 imposed setbacks and BZ\$50 million in agriculture support to ensure that the productive sector remained strong. Box 3.1 highlights some of the impacts across the Caribbean due to COVID-19 whereas Box 3.2 provides examples of COVID-19 stimuli applied in St. Kitts and Nevis.

Box 3.1. COVID-19 Impacts across the Caribbean



- General contraction of GDP. Decrease in major energy commodity prices.
- Fall in global demand leading to reduced export opportunities for manufactured goods and energy products.
- Severe decline in tourism and entertainment revenue due to closed borders and other restrictions to public movement.
- Decreased availability and increased price of inputs and imported foods led to increased rates of food inflation.
- Limited demand for produce from the tourism sector
- Exacerbation of food insecurity.

Box 3.2. COVID-19 response measures for the agriculture sector in St. Kitts and Nevis

The Government of St. Kitts applied a stimulus of EC\$10M for agriculture, which has been ongoing since the start of the pandemic. Other initiatives included a Farmers Assistance Program whereby any farmer who was impacted with anything phenomenal losses could apply for the assistance. Once the criteria were met, assistance was granted. There was also a Women in Agriculture Assistance Program that provided inputs needed to enhance production.

Efforts were made to boost production for certain commodities, especially for food security. It is the farmer's financial responsibility to purchase inputs, while the Ministry of Agriculture provides the resource. The farmer takes the produce to the Marketing Unit and are paid in full. This initiative also addressed the marketing challenge. In May and June of 2022, the Ministry will be disseminating drought tolerant pineapple suckers.

St. Kitts and Nevis initiated island wide backyard gardening programmes and provided 6 months of free access to water. Other stimuli included free land preparation for both commercial and backyard farmers, free seeds and labour, and machinery to clear new lands. The government also provided fencing and feed for livestock and poultry and drip irrigation for commercial farmers who were on the commercial water line. Outcomes included increase in several crops, though not the kind of increases as expected, due in part to prevailing drought conditions. The Taiwanese Government provided support with drought tolerant varieties of tomatoes.

3.2 Status of NDCs in CARICOM AgREADY Countries

All nine AgREADY countries have ratified the Paris Agreement and submitted their iNDCs over the 2015-2017 period. As of May 2022, five countries had submitted their uNDCs, and the other four countries' uNDCs are in progress. Belize, Haiti, SKN, SLU and Suriname have submitted their uNDCs, which in general reflect a good representation of their respective national contexts, including vulnerability to climate change as well as the enabling policies and frameworks, which have alignment with or linkages to the NDCs, mitigation targets, and adaptation actions, planning processes and means of implementation. Figure 3.7 provides a snapshot of some of the key sections/sub-sections included within initial and updated NDCs whereas Box 3.3. shows some factors limiting the inclusion of agriculture in NDCs. Across the NDCs, there was weak focus on MRVs, notwithstanding, some countries have begun to establish these systems as follow-on to the submitted uNDCs. (Additionally, most of the uNDCs have increased focus on gender and social inclusion measures.

Figure 3.6. Key sub-sections included within initial and new/updated NDCs.

CARICOM AgREADY Country	Mitigation (Contribution, including methodology)	Adaptation (Contribution)	National Context/ Circumstances	Information to Facilitate Clarity, Transparency and Understanding	Fairness and Ambition	Planning Process	Means of Implementation	MRV	Institutional Arrangements	Gender and Social Inclusion
The Bahamas	✓	✓	✓	✓	✓	✓	✓	✓		
Belize	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓	✓
Dominica	✓	✓	✓	✓	✓	✓				
Haiti	✓ ✓	✓ ✓	✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓	✓ ✓	✓
St. Kitts and Nevis	✓ ✓	✓ ✓	✓	✓	✓	✓ ✓	✓ ✓			✓
Saint Lucia										
St. Vincent and the Grenadines	✓	✓	✓	✓	✓	✓	✓			
Suriname	✓ ✓	✓ ✓	✓ ✓	✓	✓ ✓	✓ ✓	✓ ✓			
Trinidad and Tobago	✓		✓		✓					

Black ticks (✓) designate where a section has been included in the initial NDCs, while green ticks (✓) were used for the updated NDCs.

Box 3.3. Some Factors that Limit or Constrain the inclusion of agriculture in the NDCs

- Limited /no availability of required data to support NDC-related analysis, target setting, and MRV.
- Human and financial resource constraints
- Inadequate commitment from key stakeholders
- Limited technical capacity to develop GHG inventories and run mitigation scenarios,
- Limited agricultural data availability and over-reliance on the FAOstat Database which leads to uncertainty in emissions and difficulties in developing targets,
- Lack of data and technical capacity to include soil carbon in inventories,
- Loss of data and lack of documentation and archiving of inventory data making emission tracking difficult,
- Low emission contribution from the agriculture sector, therefore limited emission reduction potentials,
- Limited financial resources to facilitate the transition to new technologies, new practices, or new types of crop production,
- Outreach barriers to reaching farmers and providing educational resources to implement practice changes in line with future national policy objectives, and
- Compounding social inequities (such as poverty, lack of healthcare, disease, disability, limited access to political structures) conflate other barriers and can make it more difficult to address the root causes that climate actions ideally seek to address.

- Adapted from GHGMI (2022)

3.2.1 Contribution of Agriculture to NDC Mitigation Targets

Across the NDCs, agriculture, whether by itself or included within AFOLU, has generally not been significantly featured in mitigation targets. In the iNDCs, only two of the nine countries included agriculture as part of their mitigation efforts, but for the five uNDCs submitted to the UNFCCC to date, three have incorporated agriculture in mitigation targets. The core component of each NDC is the mitigation contribution and associated targets specified therein and although agriculture was not a priority, there were efforts to include the sector in mitigation targets

for some AgREADY countries. Improvement in mitigation analyses (including those from GHG inventories¹²) and modelling assessments was reflected in the agriculture sector contributions within uNDCs. For most of the countries, the NDCs were tied to existing/planned longer term vision, strategies and plans for low emission development. Agriculture-related mitigation targets from the NDCs are outlined in Table 3.5 with Annexes 3 and 4 providing further details. Box 3.2 provides a record of factors that constrained the inclusion of agriculture in the NDCs.

Table 3.5. Agriculture-related mitigation targets for AgREADY countries

CARICOM AgREADY Country	NDC	Agriculture-related mitigation target
The Bahamas	Initial NDC (2015)	None
Belize	Updated NDC (2021)	<ul style="list-style-type: none"> Reduce methane emissions from livestock by 10% by 2030 (conditional). Avoid emissions of at least 4.5 Gg CO₂e related to agriculturally driven land-use change by 2025 (conditional)
Dominica	Initial NDC (2015)	<ul style="list-style-type: none"> Reduce (energy consumption) emissions for commercial/institutional, residential, agriculture, forestry and fishing by 8.1% by 2030.
Haiti	Updated NDC (2021)	<ul style="list-style-type: none"> Improve pasture quality with legumes (10 000ha by 2025; 20 000ha by 2030) - conditional. Fruit tree growing (7 500ha by 2025; 25 000ha by 2030) - conditional.# Manure management (3% DM fat added to diet by 2025 and 3% by 2030) - conditional. Increase crop cover (10 000ha by 2025; 30 000 by 2030) - conditional.# Reforestation with agro forestry: 10 000ha by 2025 and 15 000ha by 2030 are conditional, but there is also 3 000ha reforested with agroforestry by 2025 that is unconditional.#
St. Kitts and Nevis	Updated NDC (2021)	No agriculture mitigation targets.
Saint Lucia	Updated NDC (2021)	No agriculture mitigation targets.
St. Vincent and the Grenadines	Initial NDC (2015)	No agriculture mitigation targets.
Suriname	Updated NDC (2020)	Agriculture prioritised as one of four mitigation contributing sectors, but no target established.
Trinidad and Tobago	Initial NDC (2015)	No agriculture mitigation targets.

3.2.1.1 Agriculture GHG Emissions Profile by Countries

The dominant source of agriculture GHG emissions across the nine AgREADY countries was direct N₂O (which influences indirect N₂O) from managed soils, followed by enteric fermentation and manure management. Across the region, agriculture emission profiles varied as shown in Figure 3.8, and of the nine categories identified, enteric fermentation emissions were in the top three sub-categories¹³ for all nine countries, while direct N₂O emissions were found to be important in six of the nine countries and was the category that contributed the largest volume of gas emissions in agriculture (Figure 3.9). Biomass burning was not estimated for all countries (Figures 3.8 and 3.9) but was found to be important in four of the nine countries. Rice cultivation is a significant agricultural activity in Suriname, Haiti and Belize.

¹² The GHGs targeted in the NDCs are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O) and hydrofluorocarbons (HFCs), with primary emphasis on CO₂.

¹³ The top 3 sub-categories are: direct N₂O, enteric fermentation and manure management.

Figure 3.7. National emission profiles across the nine AgREADY countries

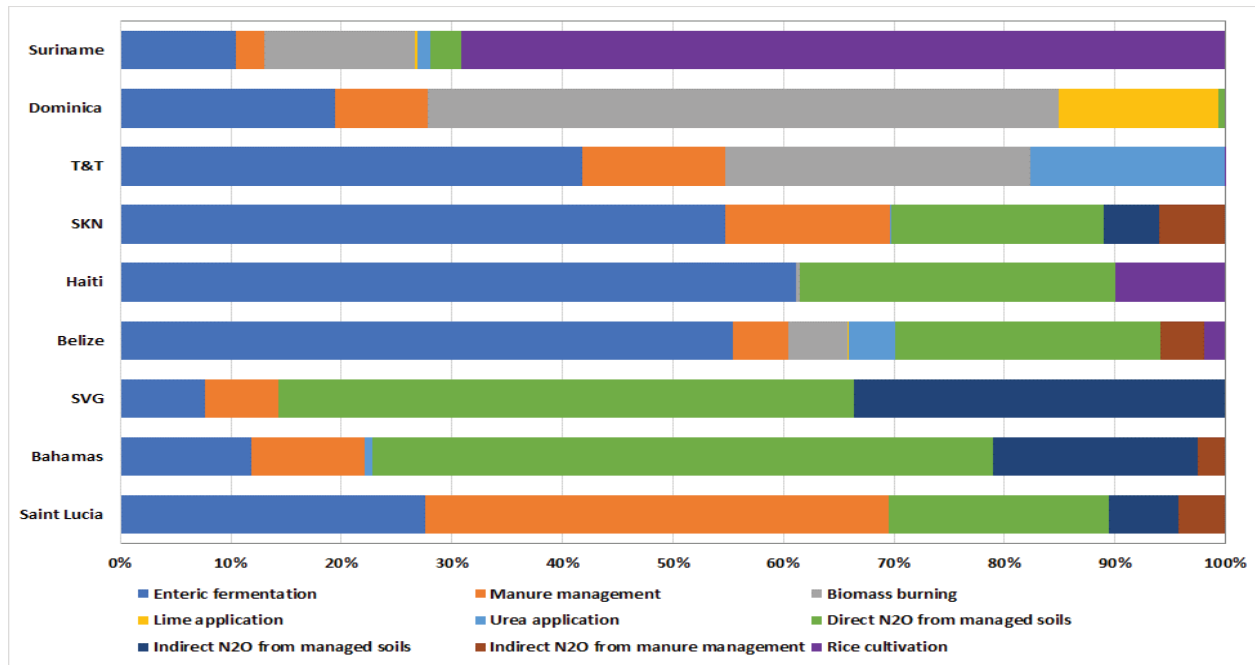
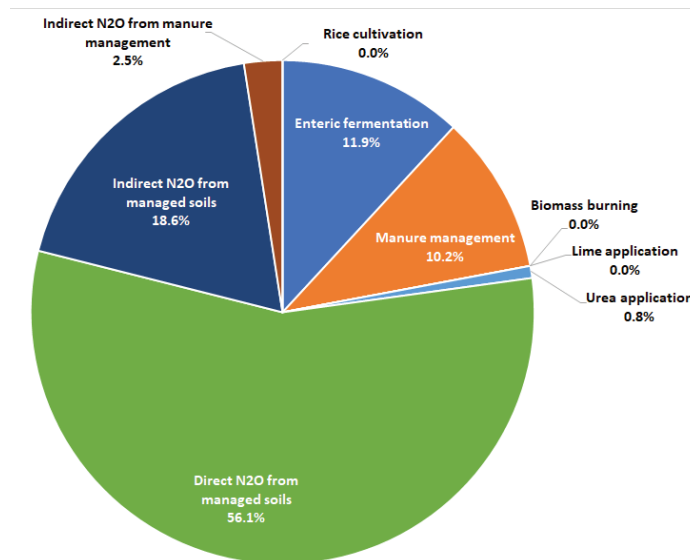


Figure 3.8. Contribution of the various agricultural categories to emissions across the nine AgREADY countries.

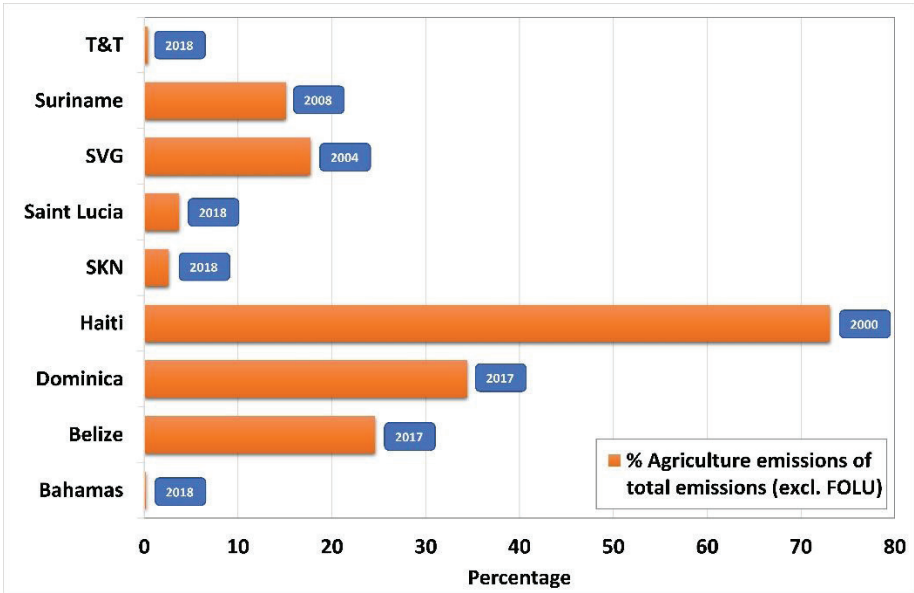


Five¹⁴ of the nine AgREADY countries have submitted uNDCs, all recognizing agriculture at a minimum as being important for adaptation and food and nutrition security. With respect to global emission reduction targets, the region's contribution could be considered insignificant, but countries like Belize and Haiti made bold moves to include clear targets for emission reduction from their agricultural sectors. In the sector, food production is responsible for the lion's share of GHG emissions. Regional efforts towards food and nutrition security must appreciate the likelihood of increasing the regions carbon footprint through its food production systems. Emissions reduction opportunities within the food production systems across the nine CARICOM AgREADY countries must therefore be explored and

14 Belize, Haiti (not yet available on the UNFCCC website), St. Lucia, Suriname and St. Kitts and the Nevis.

exploited. All three biogenic GHGs, that is carbon dioxide, nitrous oxide, and methane are produced in agriculture production systems in the nine countries. According to the IPCC Sixth Assessment Report (AR6) released in February 2022, the AFOLU sectors can provide large scale emission reduction and remove and store carbon at scale. The GHG emission profile from food production systems (excluding FOLU) for the nine CARICOM AgREADY countries are presented in Figure 3.9.

Figure 3.9. Agriculture emissions as defined in the GHG inventory (IPCC categories) for the nine CARICOM AgREADY Countries



Source: GHGMI 2022

Although some AgREADY countries have included the agriculture sector in their NDCs, the primary focus to date has been on adaptation given the importance of the sector for the region’s food security. Analysis of the adaptation actions included in the current NDCs suggest that these actions could also contribute to the mitigation potential (co-benefits); however, there are typically data gaps limiting the extent of agricultural emissions that may be included. As a result of this, many of the potential adaptation/mitigation synergies are not fully capitalized.

3.2.2 Contribution of Agriculture to NDC Adaptation Actions

With one exception, and given the climate-sensitivity of the sub-region, the AgREADY countries, have prioritized the agriculture sector for adaptation actions in keeping with the broader in-country policy and planning framework for building climate resilience. Under the Paris Agreement (2015), Parties may include an adaptation component in their NDCs and the scoping study found that generally the AgREADY countries did not provide significant detail on adaptation plans in their NDCs, excepting for naming contributing sectors and other small details. The NDCs typically referenced national and/or sectoral documents, such as National Adaptation Plans (NAPs), National Communications, and sectoral adaptation strategies and plans that provided further details on existing and future plans to respond to climate change. Trinidad and Tobago was an anomaly, having intentionally chosen not to focus on adaptation in its NDCs. From consultations, T&T’s Third National Communication (TNC) to the UNFCCC was referenced for the country’s adaptation profile and efforts. Table 3.6 provides further details on the agriculture-related adaptation status and goals.

Table 3.6. Status of agriculture adaptation in NDCs and the related adaptation goals

CARICOM AgREADY Country	NDC	Status of Agriculture Adaptation in the NDCs	Agriculture-related adaptation goals
The Bahamas	Initial NDC (2015)	<ul style="list-style-type: none"> • Agriculture priorities were livestock development and fisheries 	<ul style="list-style-type: none"> • Formulation and implementation of food security and sustainable food production strategies and measures.
Belize	Updated NDC (2021)	<ul style="list-style-type: none"> • Agriculture referenced in the National Climate Change Policy, Strategy and Action Plan (NCCPSAP), 2015-2020. • Agriculture Sector targets defined 	<ul style="list-style-type: none"> • Implementation of the National Adaptation Strategy to Address Climate Change in the Agricultural Sector to Reduce post-harvest losses. • Development and implementation of an enhanced early warning system for drought and extreme weather events by 2025.
Dominica	Initial NDC (2015)	<ul style="list-style-type: none"> • Agriculture, Fisheries and Food Security has been prioritised as a key sector. • Resilience goals are to be included in the uNDC which is not yet submitted. 	<ul style="list-style-type: none"> • Development of Climate Resilient Agricultural/ Fisheries to build capacity of communities to address variable rainfall patterns. • Establishment of early warning systems, multi-use disaster shelters and emergency preparedness training programs in vulnerable communities. • Design and implementation of climate change adaptation and disaster risk management education and awareness programs at all levels.
Haiti	Updated NDC (2021)	<ul style="list-style-type: none"> • Committed to develop its bioeconomy through climate smart and organic agriculture and Agriculture and food security was identified as a priority sector in iNDC. • Agriculture, livestock and fishing remained as a priority sector in submitted uNDC. 	<ul style="list-style-type: none"> • Improvement of watershed management and soil conservation. • Enhancement and conservation of natural resources. • Preservation and strengthening of food security. • Establishment of an information, education, and awareness program.
St. Kitts and Nevis	Updated NDC (2021)	<ul style="list-style-type: none"> • Adaption focus was placed on the three linked priority sectors of Water, Agriculture and Coastal Zone In the iNDC. • National Climate Change Adaptation Strategy and subsequent stakeholder consultations on adaptation have focussed on the Agricultural Sector as one of 6 prioritised sectors for adaptation. • uNDC has not yet been submitted to the UNFCCC. 	<ul style="list-style-type: none"> • Expansion of SMART aquaponics and aquaculture systems. • Development of alternative livelihoods and training and diversification away from at-risk crops. • Introduction of drought resistant technologies and species in animal husbandry.
Saint Lucia	Updated NDC (2021)	<ul style="list-style-type: none"> • Agriculture Sectoral Adaptation Strategy and Action Plan has been prepared as a part of the NAP process. 	<ul style="list-style-type: none"> • Development and implementation of better practices in agricultural production

CARICOM AgREADY Country	NDC	Status of Agriculture Adaptation in the NDCs	Agriculture-related adaptation goals
St. Vincent and the Grenadines	Initial NDC (2015)	<ul style="list-style-type: none"> • Agriculture has been identified as a priority sector for adaptation actions in the iNDC. • An adaptation action outlined in the St. Vincent and the Grenadines National Economic and Social Development Plan (2013-2025) stated that the negative impact of climate change on agriculture and human health should be minimised • uNDC has not yet been submitted to the UNFCCC 	<ul style="list-style-type: none"> • Improvement of agricultural practices, pest and disease management. • Improvement of agriculture policies/strategies.
Suriname	Updated NDC (2020)	<ul style="list-style-type: none"> • The iNDC for Suriname did not contain specific or quantified targets or any sector breakdown. • uNDC submitted and describes how NDC commitments will be achieved. • NAP sets strategic adaptation priorities at the national level included agriculture. Strategic objectives, adaptation measures and outcomes for each priority. 	<ul style="list-style-type: none"> • Rehabilitation and enhancement of infrastructure such as dikes and river defences. • Improvement in water resources management. • Promotion of sustainable land management. • Application of innovative technologies in the use of land. • Introduction of a national land use planning system, to make the embedding of climate change in (agricultural) development plans possible. • Strengthened capacity to implement a national research, development and innovation program, and strengthened agricultural research.
Trinidad and Tobago	Initial NDC (2015)	<ul style="list-style-type: none"> • No adaptation actions were outlined in the iNDC. • The uNDC has not yet been submitted to the UNFCCC. 	<ul style="list-style-type: none"> • No specific agriculture adaptation goals stated however the Third National Communication includes CSA as an adaptation goal.

Sources: AgREADY Country NDCs, consultations (2022) GHGMI (2022)

3.2.3 NDC Linkages and Alignment with National Development Policies and Plans and the Sustainable Development Goals

Both the initial and updated NDCs documented general alignment with the national context and enabling frameworks, inclusive of national development goals, plans, policies, and strategies. The NDCs typically specified linkages with national policy, planning and strategic documents as shown in Annex 8. Some NDCs, particularly the updated ones, also specified linkages with the Sustainable Development Goals (SDGs) and even where these were not stated, the content of specific sections was indicative of those linkages. As seen in Table 3.7, SDGs 5, 7, 13 and 16 were represented across all countries.

Table 3.7. AgREADY Country NDCs and the SDGs

	BAH	BEL	DOM	HAI	SKN	SLU	SVG	SUR	T&T
1: No Poverty		x		x		x	x		
2: Zero Hunger	x	x	x	x		x	x		
3: Good health and well-being	x					x	x		
4: Quality Education	x		x			x	x		
5: Gender Equality	x	x	x	x	x	x	x	x	x
6: Clean Water	x	x					x		
7: Affordable & Clean Energy	x	x	x	x	x	x	x	x	x
8: Decent work & economic growth	x	x	x	x		x			
9: Industry, Innovation & Infrastructure		x	x		x	x	x		x
10: Reduced inequalities				x					
11: Sustainable cities & communities		x	x		x	x	x		x
12: Responsible consumption & production	x		x	x	x	x	x		
13: Climate action	x	x	x	x	x	x	x	x	x
14: Life Below Water	x	x				x	x		
15: Life on Land		x	x	x		x	x		
16: Peace, justice & strong institutions	x	x	x	x	x	x	x	x	x
17: Partnerships for the goals			x		x		x		x

3.2.4 Incorporating DRR Considerations in the NDCs

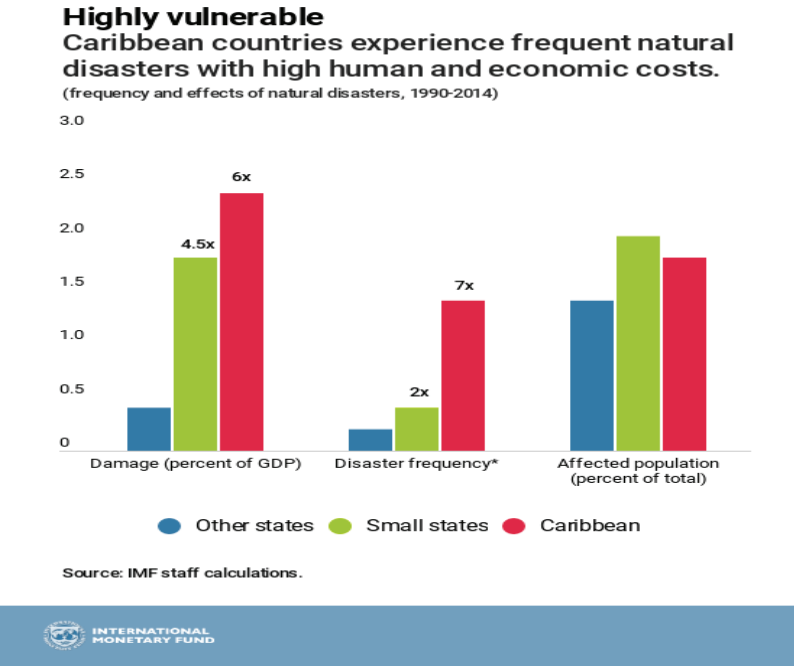
The Caribbean region is comprised of Small Island and Low-Lying Coastal developing states (SIDS) that are highly vulnerable to the effects of climate change and variability (Nurse et al. 2014). The region is often referred to as being the second most disaster-prone area in the world. This was demonstrated through the Caribbean’s history from the early 1900s where hurricanes, floods, volcanic eruptions and earthquake events caused significant deaths and economic losses. In fact, three of the top ten (10) countries in the world facing the highest level of climate risk globally are located in the Caribbean Region. A growing body of research suggests that for the region, climate changes are already evident and manifested in more intense rain events, longer dry spells, higher and more frequent extreme temperatures and rising sea levels (see for e.g., Nurse et al. 2014; Peterson et al. 2002; and Stephenson et al. 2014). Other studies suggest a general intensification of these changes in the future under increased global warming projections (see for e.g., Campbell et al. 2010; Taylor et al. 2012; McSweeney et al. 2010a; and McSweeney et al. 2010b). This can potentially fuel more storms, and result in rising sea levels, as well as coastal and coral reef erosion—disproportionately affecting the poor and vulnerable living in highly-exposed areas. In fact, there is very strong evidence that natural disasters in the Caribbean are becoming more ferocious and frequent.

The recent devastations of Category 5 Hurricanes Maria and Irma (both in September 2017) in the Caribbean demonstrate how powerful storms can lead to widespread destruction, loss of life, and weaker economic growth

prospects. Recent threats from human-induced hazards such as pandemics, oil spills, terrorist threats and exponential growth and movement of sargassum seaweed are also now a part of the landscape and future impacts are projected to increase. The increasing intensity and frequency with which disasters are occurring worldwide and in particular the toll they take on Caribbean Economies demonstrate the critical need to enhance disaster climate change adaptation (CCA) and disaster risk reduction (DRR) measures within the Caribbean Region. The Disaster Database (EMDAT) indicates that 238 disasters have occurred in the Caribbean as a result of tropical cyclonic events between 1950 and 2014. It is considered among the most vulnerable regions of the world.

Vulnerability is, however, not uniformly distributed among the countries of the Caribbean, (Rhiney et al. 2015) due to variations in different factors governing exposure and resilience e.g., geography, demographics, economic ability to withstand and cope with disasters, and exposure to extreme climatic events. In the context of their vulnerabilities, countries in the Caribbean region have incurred and will continue to incur considerable costs to cope with and adapt to climate impacts, which often exceed their financial capacity. Estimates of the economic impact of climate change for Caribbean SIDS are generally higher than the world average (>5% of GDP/year), with costs projected to surpass US\$ 22 billion per year by 2050. This will account for approximately 10% of the current size of the Caribbean economy if adaptation measures are not successfully implemented (Atteridge et al. 2017). On average, the economic impact of hurricanes (1950-2014, 200 hurricanes) accounts for an estimated 2.5% of GDP each year (Acevedo 2016). However, in some cases, damages and losses from a single climate-related extreme event can amount to greater than 100% of the GDP of the country, such as the following Hurricanes: Ivan Grenada (2004), Haiti Earthquake (2010), Irma British Virgin Islands (2017), and Maria Dominica (2017). International Monetary Fund (IMF) has estimated the damage caused by Hurricane Maria to the economy of Dominica at 226% of the Gross Domestic Product (GDP).¹⁵ This means that it would take Dominica’s output at least five (5) years to recover to the pre-hurricane level. The IMF has provided estimates of the human and economic costs that the Caribbean countries have experienced during the period, 1990 -2014 due to frequent natural disasters (Figure 3.10).¹⁶

Figure 3.10: The Human and Economic Costs to Caribbean Countries of Natural Disaster



15 IMF, 2018.

16 Ditto

Natural disasters have taken a toll on economic growth, reduced the spending room in the budget, and worsened the debt position, thus reinforcing the vicious cycle of high debt and low growth prevalent in the region. Reconstruction costs also take away scarce resources from development and social spending, hurting progress made on these fronts. For these reasons, many Caribbean SIDS depend on external financial support to supplement the expenditures of national governments, which often have weak or volatile finances due mainly to low or negative economic growth rates and high levels of public debt. This international support is likely to remain critical in efforts to build resilience to climate change and invest in low-carbon development in the Caribbean.

3.2.4.1 Vulnerabilities of Caribbean Agriculture to Natural Disasters

Climate change has been the focus of action for over two decades by governments, since the signing of the United Nations Framework Convention on Climate Change (UNFCCC) in 1992, and increasingly since the late 1990s by businesses (Kolk et al., 2008). Agriculture, including forestry, is and will continue to be profoundly affected by climate change. In fact, the sector has been identified as one of the most vulnerable sectors to climate change in Caribbean SIDS, due to its high dependency on natural system resources and multifunctional role in socioeconomic development. Climate change has been the focus of action for over two decades by governments, since the signing of the United Nations Framework Convention on Climate Change (UNFCCC) in 1992, and increasingly since the late 1990s by businesses (Kolk et al., 2008). Agriculture, including forestry, is and will continue to be profoundly affected by climate change. In fact, the sector has been identified as one of the most vulnerable sectors to climate change in Caribbean SIDS, due to its high dependency on natural system resources and multifunctional role in socioeconomic development.

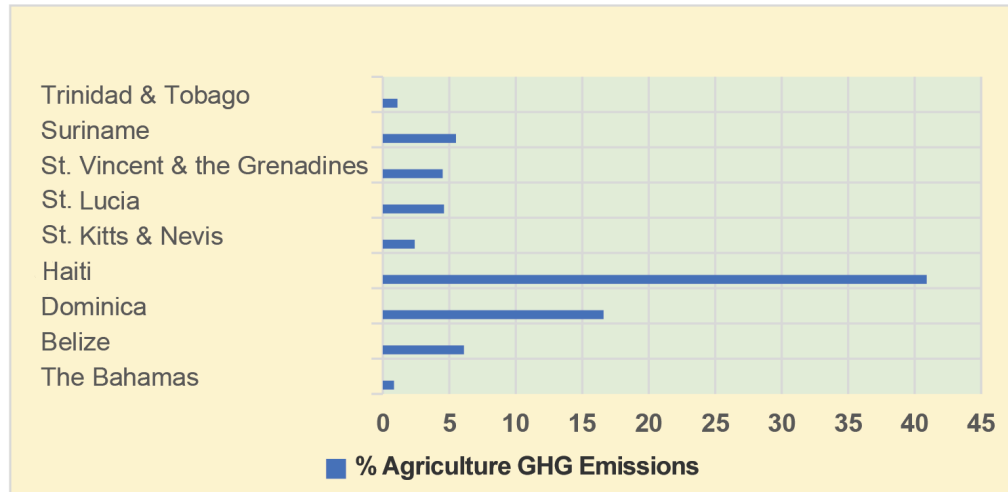
In the region, the impact of climate change on agriculture is expected to be manifested in the following ways:

- **Scarcity of water for irrigation.** Drought decreases the environmental carrying capacity and productivity of the soil. Sea level rise can cause the salinization of aquifers and loss of agricultural lands on the coast.
- **Increased incidence of pests.** Changes in temperature and humidity increase the vulnerability of agro-systems to pests and introduced species.
- **Food insecurity.** Changes in rainfall patterns and temperatures affect the timing of agricultural production and crop yields, affecting food prices and availability.
- **Low livestock productivity.** Drought, heat stress, and dry pastures reduce the availability of feed, which increases animal mortality and increases the cost of production by increasing the use of concentrate feed.
- **Social vulnerability.** Populations and prime agricultural lands are located in coastal areas, vulnerable to sea level rise. Insurance coverage of farms is low; only 16% of farms have crop insurance coverage and the average net household income is low, making the vulnerability to climate change among Caribbean farmers very high.

However, agriculture, particularly small-scale farming, is not only a victim of the effects of climate change but also a contributor to greenhouse gas (GHG) emissions. It is recognized that agriculture is a significant sector in terms of GHG emissions, and so will face pressure to mitigate climate change through GHG emission reductions. In 2019, the agriculture sector contributed 5.79 GtCO₂e GHG emissions worldwide, which represented 12.04% of its total emissions excluding land-use change and forestry (48.1 GtCO₂e), and 11.65% including LUCF (49.8 GtCO₂e).¹⁷ Data compiled on the contribution of the agricultural sector contribution to total GHG emissions for the nine (9) countries selected for this study is presented in **Figure 3.11** below.

¹⁷ CAIT Climate Explorer/ World Resource Institute

Figure 3.11: % Contribution of Agriculture to Total GHG



Source: CAIT Climate Explorer

Agricultural activities such as bush burning, and deforestation are part of the human activities contributing to GHG emissions (IPCC. Climate Change, 2014; and Lamboll et al., 2017). The potential for GHG emission reductions from agriculture up to 2030, through reductions in GHG emissions and increases in soil sequestration, is estimated to be between 4500 and 6000 Mt CO₂e/year (Branca et al., 2013; Smith et al., 2008). This mitigation will present multiple constraints for agriculture, as methane, N₂O and CO₂ are linked to fuel and electricity use, but are also produced through fertilizer production, ruminants and land-use changes.

Further, under current projections, in order to feed the global population in 2050, food production must increase by 70%. Previous yield increases have often been gained through the use of fossil fuels, creating further urgency with regard to GHG emission levels due to agriculture. This implies that future increases must find climate-smart methods and inputs (Bogdanski, 2012). Whilst facing these challenges, agriculture must also deal with increasing weather variability and unpredictability, affecting the resilience of our food production systems (Bogdanski, 2012; Nelson et al., 2009). Climate change is expected to lead to greater variability in weather patterns, with increases in the occurrence and severity of extreme weather such as floods, storms, droughts or heat waves, which can all negatively impact agriculture (Coumou et al., 2014; Trinka et al., 2014); whilst many impacts are expected to be negative, some areas will experience positive side-effects from climate change (European Commission, 2015). National, regional and international production patterns and methods are, therefore, likely to change due to such impacts.

3.2.4.2 Global Platforms for Building Resilience

“We have no time to lose ... The global thermostat continues to rise. Each month brings new temperature records and more floods, droughts and extreme weather events. Vulnerability to climate risk continues to increase. This translates to greater humanitarian need and more economic losses.”

By Ban Ki-Moon, United Nations Secretary-General (FAO, 2016).

The synchronous adoption of landmark UN agreements of the Sendai Framework for Disaster Risk Reduction, Sustainable Development Goals (SDGs), COP21’s Paris Agreement on Climate Change, and the World Humanitarian Summit and Habitat III created a rare but significant opportunity to build coherence across different but overlapping

policy areas on resilience. Taken together these frameworks make for a more complete resilience agenda as building resilience requires action spanning development, humanitarian, climate and disaster risk reduction areas. This coherence has served to strengthen existing risk fragility and resilience frameworks for multi-hazard assessments and has fostered the development of a dynamic, local, preventive, and adaptive governance system at the global, national, and local levels.

The agreements represent a major turning point in the global efforts to tackle existing and future challenges in all countries. Specific emphasis is apparent to support resilience-building measures, and a shift away from managing crises to proactively reducing their risks. However, for countries to respond efficiently to all of the agreements, it is imperative that:

- They make effective use of institutional capacities and frameworks of best available knowledge, innovative thinking, leadership, coordination mechanisms and partnerships
- Synergies between policies, programmes and institutions are highlighted and supported by the alignment of actions
- Stakeholders are engaged at all levels and traditional silos are broken down and replaced by more integrated partnerships that are reflective of a more holistic approach to risk management
- Scientific methods, networks and communication systems are utilized to support the development of well-informed policies and decisions across all countries.
- Linkages between evidence and decision-making in policy and planning are strengthened to ensure delivery of the 2030 agenda for sustainable development.

Given the changes in population growth demographics and urbanization patterns, the impact of climate change, and increasing exposure to disaster risks, there has never been a greater need to enhance coherence and coordination between UN Frameworks to reduce risks and exposure to all hazards.

Taken individually, none of the frameworks engages with the full range of risk drivers within the system. Yet, a systemic view of risk brings frameworks together due to the interconnected realities of modern world. “With power and influence increasingly distributed, however, there is a growing recognition that the response to environmental risks cannot be delivered by international agencies and governments alone. It requires new approaches that take a wider “systems view” of the interconnected challenges, and that involve a larger and more diverse set of actors.”¹⁸ The assessment of key interactions across policy domains to avoid perverse outcomes will be key to addressing vulnerability and strengthening resilience in the context of a transition to sustainable development.

For this report, the central issue is the need for the transformation of Caribbean agriculture to climate-resilient systems and the extent to which the commitments articulated in the historic international frameworks agreed by the World’s governments in 2015 and 2016 can support such a developmental path. To a large extent, these frameworks are in part a vision, articulating a set of goals and targets that, if achieved, will create a future where significant progress is made on the disaster, sustainable development, climate and humanitarian challenges of today. They reflect the social, political, economic, cultural and intellectual themes of the early twenty-first century, and they build on the successes and challenges of previous international frameworks.¹⁹

18 Ibid

19 Peters, Katie et al.; (2016). Overseas Development Institute (ODI) Working Paper. Resilience’ across the post-2015 frameworks: towards coherence?

Resilience has featured in all the major frameworks and agreements, in a variety of sectors and contexts, and at different scales (Lovell et al., 2016). Taken together, with the different approaches and contributions of these frameworks a much more complete ‘resilience agenda’ has emerged than if they were otherwise taken separately.²⁰ There is no doubt that the strengthening of the foundation for a more responsive agricultural sector in the Caribbean, will require action that spans the development, humanitarian, climate change adaptation and disaster risk reduction arenas. It is, therefore, essential that a better understanding of how these frameworks can make effective contributions towards the transformation of Caribbean agriculture to resilient production systems be obtained.

The UN Sustainable Development Goals (SDGs)

The Sustainable Development Goals form the basis for 2030 Agenda for Sustainable Development. The goals represent global targets in pursuit of poverty reduction, sustainable development and peace. Consisting of 17 goals and 169 targets, the SDGs outline global environmental, economic and social development priorities until 2030. They span a number of interrelated and cross-cutting sustainable development issues, including ending poverty, improving education and health, ensuring safe cities and combating climate change. These ambitions are guided by the recognition that ‘eradicating poverty in all its forms and dimensions, including extreme poverty, is the greatest global challenge and an indispensable requirement for sustainable development (UNGA, 2015). Although it is not legally binding, governments are responsible for implementation. However, for these goals to be achieved, they will require collective action from civil society, the private sector, scientists and others.

In an attempt to ensure that the efforts that began with the MDGs continue – and to address gaps identified within them, such as the lack of any mention of inequality or of the link between disasters and poverty (Wilkinson and Peters, 2015) – the SDGs aim to ‘go further to end all forms of poverty’ and unite ‘all countries, poor, rich and middle-income to promote prosperity while protecting the planet’ (UN, n.d.a.). In this endeavour, the SDGs aim to deliver a holistic, comprehensive, and cross-cutting set of goals and targets.

Resilience features in two goals and eight targets, linked to poverty, built infrastructure and human settlements, agricultural production and vulnerability to climate extremes and disasters. This represents a marked shift from the goals’ predecessor, the MDGs, in which resilience did not appear.

Resilience was absent from the MDGs but is explicitly included in the SDGs in two goals and eight targets (see Table 3.8). Section 3 provides the full transcripts of where resilience appears. As **Table 3.8** shows, the concept is linked to a range of sectors and objectives, including reducing the impact of disasters on the poor and those in vulnerable situations (Target 1.5), increasing food security (Target 2.4) and protecting marine ecosystems (Target 14.2).

Resilience features in the preamble, vision and agenda of the SDGs, for example, in aiming for a world in which ‘development and the application of technology are climate-sensitive, respect biodiversity and are resilient’, and in acknowledging the need to ‘strengthen the resilience of communities hosting refugees’ (UNGA, 2015: 4, 8). Resilience is regarded as a quality to be ‘strengthened’, ‘built’ and ‘developed’, a tool to reduce the exposure of people and systems to shocks and stresses and a foundation for economic growth and prosperity. It is also implicit in the concept of ‘leaving no one behind’, which features in the preamble. This refers to ensuring that the needs of the most vulnerable are met – and met first (paragraph 4) – and recognizing that people who live in areas affected by humanitarian emergencies have special needs (paragraph 23).

²⁰ Ibid

Table 3.8: Sustainable Development Goals and Targets explicitly including the concept of resilience

Goal	Target
Goal 1. End poverty in all its forms everywhere	1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters
Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture	2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and progressively improve land and soil quality
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all
	9.a Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States
Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable	11.b By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015–2030, holistic disaster risk management at all levels
	11.c Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials
Goal 13. Take urgent action to combat climate change and its impacts	13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development	14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans

Source: Peters, Katie et al.; (2016); UNGA (2015).

Resilience is also linked to infrastructure and cities, in Goals 9 and 11; its prominence within these goals reflects the emphasis placed on urban development in international policy. The term is also used in relation to inclusive and safe cities, high-quality and reliable infrastructure and the need for ‘regional and trans-border networks (Target 9.1); this is underpinned by, for example, initiatives such as the UNISDR’s Making Cities Resilient 2016–20 campaign (UNISDR, n.d-a.) and the Habitat III process. Resilience is considered integral to strengthening infrastructure and supporting wider, integrated systems at different scales and across borders (Hasan and Foliente, 2015).

The alignment between nine (9) selected CARICOM countries’ climate objectives and the SDGs objectives is presented in **Tables A13.1 through 13.9** of **Annex 13**. This alignment was identified based only on the information communicated in the NDC, not the domestic policy context. It is therefore only an entry point for considering the degree of potential alignment between the country’s climate and sustainable development objectives.

The UNFCCC Paris Agreement on Climate Change

The Paris Agreement on Climate Change was made at the 21st annual Conference of the Parties (COP 21) of the United Nations Framework Convention on Climate Change (UNFCCC). At this conference, 195 countries adopted the first-ever universal global climate deal aimed at avoiding dangerous climate change and limiting global warming to below 2 degrees (Climate Action, 2015). As well as facilitating greater transparency in implementation, the Agreement sets out how developed countries can support developing countries and those most vulnerable to climate change to mitigate and cope with the effects of climate-related hazards (UNFCCC, 2015a). The Agreement, which contains both legally binding and non-binding provisions, also formalizes the process of developing national plans supported by ongoing assessments and reviews of progress (UNFCCC, 2015b). **Table 3.9** depicts its key points.

Table 3.9: Key Points of the Paris Agreement on Climate Change

Temperature	Keep warming 'well below 2 degrees Celsius'.	Differentiation	Developed countries must continue to 'take the lead' in the reduction of greenhouse gases.
	2100 Continue all efforts to limit the rise in temperatures 'to 1.5 degrees Celsius'.		Developing nations are encouraged to 'enhance their efforts' and move over time to cuts
Emissions objectives	Aim for greenhouse gas emissions to reduce 'as soon as possible'.	Finance	Rich countries must provide 100 billion dollars from 2020 as a minimum 'floor'.
	2050 From 2050: rapid reductions to achieve a balance between emissions from human activity and the amount that can be captured by greenhouse gas 'sinks'		2020-2025 Amount to be updated by 2025. Make all finance flows low carbon and climate resilient.
Burden-sharing	Developed countries must provide financial resources to help developing countries.	Review mechanism	Facilitative dialogue in 2018, revised NDCs in 2020
	Other countries are invited to provide support on a voluntary basis.		2018, 2020, 2023 Enhanced transparency framework.
	Capacity building mechanism to support developing countries established.		A review every 5 years. First world review: 2023 Each review will inform countries in 'updating and enhancing' their pledges.
Climate damage	Support adaptation, resilience and low emission development, to ensure food security		
	Vulnerable countries have won recognition of the need for 'averting, minimizing and addressing' losses suffered due to climate change.		

Source: Adopted from UNISDR (2015c)

The term 'resilience' was first used in COP 13 (2007), (UNFCCC, 2008: 28) where it was featured once. It was used again in COP 15 (2009) (UNFCCC, 2010: 6) in relation to reducing exposure to the adverse impacts of climate change (UNFCCC, 2008: 28, 2010: 6). By COP 16 (2010) resilience had been embedded within the adaptation discourse, reflecting the rising popularity of the term globally, including as a way of linking climate change adaptation and disaster risk reduction. Resilience was understood as strengthening the capacities of both systems (socioeconomic and ecological) and developing countries, alongside those 'negatively affected by response measures' (UNFCCC, 2011).

Resilience features prominently in the Paris Agreement of 2015 (see Section 3 for the full transcripts). This was in particular with regard to building adaptive capacity and reducing vulnerabilities to the adverse effects of climate change. Like adaptive capacity, it is a characteristic to be 'strengthened', 'built' or 'fostered' (UNFCCC, 2015a), with resilient communities and societies described as desired outcomes. The Paris Agreement also highlights the relationship between adaptation and mitigation, linking the success of emissions reduction with the level of effort required to strengthen resilience: although mitigation of greenhouse gases was necessarily the main focus of the agreement, adaptation was defined for the first time as a formal global goal under the UNFCCC. Building resilience is emphasized in relation to communities, livelihoods, ecosystems and socioeconomic and ecological systems (UNFCCC, 2015a: 24, 25), and is considered a global process in response to the common concern of climate change. The Paris Agreement also ensures the continuation of the Warsaw Mechanism for Loss and Damage associated with Climate Change Impacts (UNFCCC, 2015a: 26).

The UNISDR Sendai Framework for Disaster Risk Reduction

The Sendai Framework (see Figure 5) is a 15-year, voluntary, non-binding agreement that seeks a ‘substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries’ (UNISDR, 2015a: 12). The Framework was negotiated by governments, with technical support from UNISDR, other UN agencies, scientists and non-governmental organizations (NGOs). It comprises four priorities for action and seven global targets. The strategy emphasizes the need to ‘prevent new and reduce existing disaster risk through the implementation of integrated and inclusive ... measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience’ (UNISDR, 2015a: 12). The emphasis is on the primacy of the role of the state, with responsibility shared by stakeholders including local governments, the private sector and others (UNISDR, 2015a).

Endorsed by the UNGA, the Sendai Framework is the successor to the Hyogo Framework for Action (HFA) 2005–2015 (‘Building the Resilience of Nations and Communities to Disasters’) (UNISDR, n.d.-b). Although significant progress on disaster risk reduction was made under the HFA, disaster-related economic losses and damage continue to increase, exacerbated by poorly managed urban development, environmental degradation, poverty, inequality and weak governance (UNISDR, 2013a). The Sendai Framework, therefore, focuses on addressing underlying risk drivers (ibid.). It also aims to reinforce and support other complementary post-2015 agreements. See **Table 3.10** for details.

Table 3.10: The Sendai Framework for Disaster Risk Reduction

Scope And Purpose						
The present framework will apply to the risk of small-scale and large-scale, frequent and infrequent, sudden and slow-onset disasters, caused by natural or manmade hazards as well as related environmental, technological and biological hazards and risks. It aims to guide the multi-hazard management of disaster risk in development at all levels as well as within and across all sectors.						
Expected outcome						
The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries.						
Goal						
Prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience.						
Targets						
Substantially reduce global disaster mortality by 2030, aiming to lower the average per 100,000 global mortalities between 2020–2030 compared to 2005–2015	Substantially reduce the number of affected people globally by 2030, aiming to lower the average global figure per 100,000 between 2020–2030 compared to 2005–2015	Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030	Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030	Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020	Substantially enhance international cooperation with developing countries through adequate and sustainable support to complement their national actions for implementation of this framework by 2030	Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to people by 2030
Priorities for Action						
Priority 1	Priority 2	Priority 3	Priority 4			
Understanding disaster risk	Strengthening disaster risk governance to manage disaster risk	Investing in disaster risk reduction for resilience	Enhancing disaster preparedness for effective response, and to ‘Build Back Better’ in recovery, rehabilitation and reconstruction			

Source: UNISDR (2015c); Peter, et al. (2016).

The UNGA has tasked UNISDR with supporting the implementation, follow-up and review of the Sendai Framework, and with monitoring progress on disaster risk reduction over the next 15 years (UNISDR, 2015a: 5). Intergovernmental processes through initiatives such as the Open-ended Intergovernmental Expert Working Group (OIEWG) on Indicators and Terminology related to Disaster Risk Reduction are charged with refining the terms and definitions of the Framework. This intergovernmental process will result in an outcome adopted by the General Assembly. In parallel, implementation strategies and roadmaps to translate the Framework into contextually specific action plans will be designed through national and regional processes. Technical support also exists to help with the generation of evidence-based and practical guidance for implementation, set up and coordinated by UNISDR in partnership with a wide range of UN agencies, NGOs and experts.

The concept of resilience featured heavily in the HFA and remains a central theme in the Sendai Framework. Section 3 provides the full transcripts of where resilience features in the framework. The UNISDR (2009) defines resilience as ‘the ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions’, and this is the definition used in the Sendai Framework. The preamble of the Sendai Framework also states:

The Sendai Framework identifies resilience as an outcome within its overarching goal, as well as an aspect of its targets and priorities (Lovell et al., 2016) (see **Table 3.11**). The term ‘resilience’ is explicitly included in one of the seven global targets and one of the four priorities of action and is firmly incorporated within the actions required at local, national, regional and global levels.

Table 3.11: ‘Resilience’ within the targets and priorities of the Sendai Framework

Goal	Seven Global Targets	Priority 3: Investing in Disaster Risk Reduction for Resilience
Prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience.	(d) Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030.	Public and private investment in disaster risk prevention and reduction through structural and non-structural measures are essential to enhance the economic, social, health and cultural resilience of persons, communities, countries and their assets, as well as the environment.

Source: UNISDR, (2015d).

During the World Conference, States also reiterated their commitment to address disaster risk reduction and the building of resilience to disasters with a renewed sense of urgency within the context of sustainable development and poverty eradication, and to integrate, as appropriate, both disaster risk reduction and the building of resilience into policies, plans, programmes and budgets at all levels. (UNISDR, 2015a: 9).

The World Humanitarian Summit (WHS)

The goals of the WHS, held in Istanbul on 23–24 May 2016, were threefold (WHS, 2016d):

- to re-inspire and reinvigorate a commitment to humanity and to the universality of humanitarian principles
- to initiate a set of concrete actions and commitments aimed at enabling countries and communities to better prepare for and respond to crises, and be resilient to shocks
- to share best practices that can help save lives around the world, put affected people at the centre of humanitarian action and alleviate suffering.

In part a visioning exercise and in part an effort to seek commitments to addressing humanitarian challenges, the WHS was a unique opportunity for the global community to take responsibility to place people first: to secure their safety, uphold their dignity and provide opportunities for a better future (WHS Chair's Summary, 2016: 2). The Summit and the resulting Commitments to Action were oriented around five core themes: prevent and end the conflict; respect the rules of war; leave no one behind; work differently to end need; and invest in humanity (UNGA, 2016a). The penultimate theme included a work stream dedicated to risk and vulnerability reduction, with a focus on natural hazards and climate change; this was where much of the focus on resilience featured.

Resilience is referred to frequently throughout the summit's preparatory material, and during the summit as something that needs to be 'built'. The phrase 'building resilience' was used repeatedly to refer to individuals and communities managing disasters related to natural hazards at the local level. It is also used in reference to physical infrastructure, crisis response in urban areas, and humanitarian finance, as well as to addressing the underlying drivers of conflict and displacement, and is applied to all scales, from the individual to the international. It is, however, the adoption of what can be described as resilience thinking, or a resilience approach, that features most heavily in the commitments and core responsibilities of the WHS framework. Core responsibility 4, 'Working differently to end need', and aspects of Core responsibility 5, 'Invest in humanity' (namely the shift to 'invest according to risk'), are imbued with the systems thinking often promoted as part of a resilience agenda.

The concept of resilience features heavily in the agenda for humanity (UNGA, 2016b) and accompanying documents put forward by the UN Secretary-General. The Commitment to Action (2016c: 3) also includes reference to the term in three of the five core responsibilities in the WHS framework, each time in a slightly different way:

- Core responsibility 3: Leave no one behind. This refers to resilience and its links to self-reliance.
- Core responsibility 4: Change people's lives: from delivering aid to ending need. This puts emphasis on 'building' resilience at the community level, linking resilience to community capacity to act as first responders to natural disasters and the impacts of climate change.
- Core responsibility 5: Invest in humanity. This focuses again on the community scale, with emphasis on preparedness, and with separate references to 'economic resilience', including in fragile states.

Of the 32 core commitments, two explicitly employ the term resilience: 'adapt global instruments to meet urgent needs and increase resilience' and 'build community resilience as a critical first line of response' (under the roundtable theme of natural disasters and climate change). Under the theme of managing risks and crisis differently, referring to natural disasters and climate change, 76 of 216 stakeholders aligned with the ambition to 'build community resilience'.

Core responsibility 4, 'Change people's lives: from delivering aid to ending need', was organized around two roundtables, one with the same name and the second on 'Natural disasters and climate change: managing risks and crises differently. Combining both, it sought to 'establish a new way of working that meets people's immediate needs, while at the same time reducing risk and vulnerability (WHS, 2016c: 21). Many core characteristics of resilience (Bahadur et al., 2010, 2015a) feature throughout, including a focus on local and national capacities; people-centred aid and delivery; and using data and risk analysis to inform early warning, early action and disaster preparedness. Practical commitments include increased efforts around national preparedness for climate change and disasters, including through the One Billion Coalition for Resilience and the V20 Global Preparedness Partnership (WHS, 2016c: 34).

Themes employed in resilience approaches also appear in the new ways of working, particularly to bridge the divide between the humanitarian and development sectors, promote the reduction of risk and vulnerability across longer timeframes and work more collaboratively. For example, crisis modifiers are identified as a means to switch between

development and humanitarian funding (WHS, 2016c: 25; Peters et al., 2016: 22). This is extended in Core responsibility 5, 'Invest in humanity', where financing local capacities, including through the Grand Bargain commitment to direct 25% of humanitarian financing to local and national responders by 2020 (WHS, 2016b: 5), is part of a broader focus on risk management.

3.2.4.3 Regional Platform for Building Resilience

ROAM

In 2016, the First Ministerial and High-level Authorities Meeting on the Implementation of the Sendai Framework in the Americas was held in Asunción, Paraguay. The 35 participating countries adopted the Asunción Declaration and the guidelines for the formulation of an action plan for the implementation of the Sendai Framework in the Americas. Building on the political backing achieved in Asunción, UNISDR's Regional Office for the Americas (ROAM) supported the alignment of the main three sub-regional disaster risk reduction strategies (the Caribbean Comprehensive Disaster Management Strategy, the Central American Policy on Comprehensive Disaster Risk Management, and the Union of South American Nations Strategy) with the Sendai Framework. Particularly in the Caribbean, the alignment involved the harmonization of the monitoring framework of the regional strategy with the Sendai Framework's targets and the Sustainable Development Goals.

The UNISDR's Regional Office for the Americas (ROAM) is based in Panama City, Panama and works in close coordination with a wide variety of stakeholders across the 50 countries it supports. In 2017, ROAM, co-organized the Fifth Regional Platform for Disaster Risk Reduction in the Americas hosted by Canada in Montreal. At the Platform, Member States agreed on a Regional Action Plan for the Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030 in the Americas and the Montreal Declaration. Grounded in an all-of-society approach, the multi-stakeholder plan of action offers a suite of practical and action-oriented regional initiatives based on the four Sendai Framework priorities for action.

ROAM worked in close collaboration with International and Regional Financial Institutions to incentivize risk-informed investments. In particular, as a result of ROAM developing a partnership with the Development Bank of Latin America (CAF), CAF chaired the Resilient Investment sessions in the context of the 2018 Regional Platform. Partnerships were also strengthened with academic organizations and networks over the course of the biennium, notably, a Regional Science and Technology Advisory Group was established.

A partnership was established with ParlAmericas to support a parliamentarian dialogue and elaborate a parliamentarian protocol for disaster risk reduction. ROAM also supported the creation of a regional network for Inclusive Disaster Risk Management and Disabilities in Latin America and continues to support and strengthen its development as an observing member of the network.

ROAM engaged 12 countries in the region, all of which expressed interest in becoming members of the Worldwide Initiative on Safe Schools (WISS) to enhance awareness and understanding disaster of risk and efforts that can be undertaken to improve the safety of schools.

UNISDR supported the Caribbean Safe School Initiative and its declaration and action plan, organized a plenary session on school safety during the 2017 Caribbean Disaster Management conference in the Bahamas and supported a training organized on WISS and CDEMA's Model Safe School Programme (MSSP) in six countries.³⁵ Ministers of Education confirmed their political commitment by signing the Antigua and Barbuda Declaration on school safety and agree on priorities for the Caribbean Road Map.

CDEMA

The Caribbean Disaster Emergency Management Agency (CDEMA) is a regional inter-governmental agency for disaster management that falls directly under the Caribbean Community (CARICOM). CDEMA's main function is to make an immediate and coordinated response to any disastrous event affecting any member-state of CARICOM, once the state requires such assistance. CARICOM member states and associate members benefit directly, by means of assistance services, monetary donations, financial grants and essential food and medical supplies.

CDEMA was established in 1991 as CEDERA and transitioned to CDEMA IN 2009. There are eighteen (18) Members: Anguilla, Antigua and Barbuda, Commonwealth of the Bahamas, Barbados, Belize, Commonwealth of Dominica, Grenada, Republic of Guyana, Haiti, Jamaica, Montserrat, St. Kitts & Nevis, Saint Lucia, St. Vincent & the Grenadines, Suriname, Republic of Trinidad & Tobago, Turks & Caicos Islands and the Virgin Islands. The programme and Project areas of CDEMA are:

- Comprehensive Disaster Management, Community Disaster Preparedness.
- Flood Preparedness, Hazard Mitigation, Safer Building, Search and Rescue.
- Vulnerability Assessments.
- Canada Caribbean Disaster Risk Management Fund.
- EDF, DRM Sub-regional Programme, CDM-HIP.
- Climate Change Disaster Risk Reduction.

CDEMA has adopted several methodologies to support the Participating States in planning for and delivering Comprehensive Disaster Management (CDM) at the national level. CDM, which is the Caribbean brand of disaster management, is the management of all hazards through all phases of the disaster management cycle – prevention, mitigation, preparedness, response, recovery, and rehabilitation– by all peoples– public and private sectors, all segments of civil society and the general population in hazard-prone areas. It involves risk reduction and management and integration of vulnerability assessment (including gender considerations) into the development planning process (CDEMA, 2014). The Results-Based Management (RBM) Framework has been adopted as a planning tool to document the results required to achieve CDM.

The Country Work Programme (CWP) is a nationally approved results-focused strategic plan for CDM, which is delivered over a programming period that spans three to five (3-5) years. The process of generating a CWP is derived through a highly consultative and evidence-based six-step model approach- utilized by CDEMA since 2012. The process for the development of the CWP includes alignment with the Regional CDM Strategy (2014-2024), the Sustainable Development Goals (SDGs) and the Sendai Framework for DRR (2015-2030). A coherent approach is also applied that seeks to ensure the harmonization of DRR Strategies and the National Adaptation Plans (NAP) that help countries to conduct comprehensive medium- and long-term climate change adaptation planning. Completion of the CWP fulfils Target E of the Sendai Framework for Disaster Risk Reduction (DRR) which is to substantially increase the number of countries with national and local DRR strategies by 2020. Gender has been fully recognized by the CDEMA Coordinating Unit as one of the cross-cutting themes for the Comprehensive Disaster Management (CDM) Strategy. Therefore, gender issues are expected to be considered across all sectors in Disaster Risk Reduction (DRR) and Disaster Risk Management (DRM) initiatives, intervention work and expected to advance resilience within the Participating States which is already embodied in the CDM Strategy 2014-2024.

CDEMA has developed and is currently implementing a Caribbean Pathway for Resilience, which is built around five (5) pillars. These pillars are:

- Social Protection for the Marginal and Most Vulnerable.
- Safeguarding Infrastructure.
- Enhancing Economic Opportunity.
- Environmental Protection.
- Operational Readiness and Recovery

These pillars are underpinned by a set of key foundational and reinforcing elements which facilitate their delivery. These are:

- An enabling environment guided by Policy, Legislation and Regulations.
- Capacity Development.
- Research and Data Management.
- Information and Communication Technologies.
- Disaster Risk Financing.
- Political Economy.
- Governance.
- Real Public Participation.
- Youth Involvement

CDEMA officially launched its Caribbean Resilient Recovery Facility (CRRF) on December 7, 2021, to build capacity through holistic approaches for climate resilient Caribbean. The facility is aligned with the Regional Response Mechanism and will be a turning point for recovery planning in the region. The CRRF is aligned to the five pillars of the 2018 Caribbean Pathway for Disaster Resilience. CRRF is envisioned to be implemented over a three-year period, supported by the UNDP-administered EnGenDER project funded by Global Affairs Canada and the UK Foreign Commonwealth and Development Office (UK FCDO). Assistance is also provided under the 11th EDF Building Disaster Resilience in the Caribbean (BRIC) and the USAID Caribbean Resilience Initiative (CCRI) projects to support ex-ante recovery.

3.2.4.4 Opportunities for Enhancing CCA and DRM in the NDCs

The building of resilience to natural disasters in the Caribbean region requires very robust preparedness. However, no matter how much the country tries to reduce people's exposure to natural hazards, or make their assets more resistant to hazards, natural risk cannot be reduced to zero. Disasters will continue to inflict damage, and so it is critical to supplement the actions on exposure and vulnerability with improvements in the ability of the people to cope with shocks that cannot be avoided.

Such actions require a holistic, flexible and scalable risk management strategy with a range of policy instruments appropriate for different disasters and affected populations. These instruments include international aid, government insurance and contingent finance, government reserve funds, adaptive social protection, market insurance, financial inclusion (savings, credit and revenue diversification, enterprise diversification, social protection, remittances). Revenue diversification and basic social protection can help households at all income levels to cope with small shocks. Remittances make people less vulnerable to income shocks. Financial inclusion helps poor people save in forms less vulnerable to natural hazards, than in-kind savings like livestock and housing, and diversify risk.

However, when the shock is large, these instruments will not be sufficient, and additional tools will be required. For those relatively wealthier households, savings will help, and market insurance can provide them with an efficient protection for larger losses. However, for the poorest households, savings are often not an option, and high transaction costs and affordability issues make access to private insurance challenging.

Therefore, to cover large shocks for the poorest households, well targeted and easily scalable safety nets are needed. However, these systems must be designed to maintain the incentive to invest in long-term adaptation to economic and environmental changes. Such adaptive social protection system does, however, create a liability for the government, which may be forced to rely on financial instruments such as reserve funds (for small scale events), contingent finance, or re-insurance products,

Social Protection

Natural disasters' impact can affect all persons within a population, but they affect the marginal and most vulnerable disproportionately since their coping mechanisms and capacities to withstand shocks are usually less than other groups. It is therefore important to establish a Social Protection regime comprising policies and programmes, which assist individuals and families, especially the poor, differently abled, indigent, low-income single-parent families and the elderly to cope with crises and shocks.

Recovery can often also widen the gap between the rich and the poor, as the rich have the ability to bounce forward more quickly, whilst the poor have limited coping capacity which diminishes further over time. Whatever social ills or inequalities exist or are not well managed, prior to disaster impact, are often magnified after a disaster and hence urgent attention is required during the time of normalcy. Well-designed social protection systems cognizant of these realities will provide the much-needed cushion for the poor and the vulnerable.²¹

Within the Caribbean, a number of social protection schemes already exist such as social assistance services, disability benefits and pensions. Social protection mechanisms need to be broadened to support the most vulnerable. A broadened Social Protection regime should include:

- Small livelihood protection schemes.
- Subsidized home insurance for low-income families.
- Low-interest loans for retrofitting of homes and construction of safe rooms.
- Retrofitting of homes for the differently abled and elderly and Psycho-social support systems and empowerment programmes for those who live with mental illness.²²

As such the following is recommended:

- Develop a more coherent articulated vision of the social protection national programme, with a well-defined national social protection strategy.
- Strengthen the levels of coordination and collaboration between and within different ministries and stakeholders to mitigate issues related to fragmentation of the various schemes, duplication of efforts, programme gaps and occasional policy incoherence.
- Strengthen the coordination between the government and donors involved, to enhance the capacity for the efficient triggering of relevant schemes into an effective entry point for DRR/CCA activities.
- Develop an adaptive social protection system to cover large shocks for the poorest households, with well-targeted and easily scalable safety nets.
- Design adaptive social protection systems to ensure the maintenance of the incentive to invest in long-term adaptation measures to economic and environmental changes.
- Leverage National Social Protection programmes and policy frameworks for all levels of human vulnerability recognizing the reality of shocks (natural and human-induced) ensuring no discrimination.

²¹ CDEMA, 2018. Building a Caribbean Pathway to Disaster Resilience in the Caribbean Community (CARICOM).

²² Ibid

- Strengthen poverty alleviation programmes to ensure that the vulnerable are resistant to external shocks from hazard impacts iv. Improve equitable access to financing to support livelihood restoration and promote “life chances” at all levels including for youth. Options can include Microinsurance initiatives and Livelihood Protection Policies
- Strengthen the cash transfer mechanisms to ensure better targeting and implementation focus on stimulation of local economies.
- Establish social protection support schemes for those who wish to build safely but don’t have the means especially low and marginal-income persons. Existing technologies for safe building at low costs should also be harnessed.

Building Resilient Agricultural Assets and Infrastructure

This section of the report will focus on structural protection to reduce risks through enhancing the resilience of critical infrastructure, promoting adequate land use and zoning, and improving, promoting and enforcing the application of building codes. There is no doubt that the limited, weak or absent standards and codes to inform infrastructure, facility and building design and construction and associated services are key challenges in the building of resilience to climate-related natural disasters in the Caribbean region. The CDM Audit (2016)²³ conducted by CDEMA indicated that national Building Standards (RBS) exist and incorporate hazard impact considerations. However, governments are often not legally bound by their national building codes requirements. Where legislated building codes exist, they are not adequately enforced. This reality is amplified by weak monitoring where standards do exist. This has been repeatedly demonstrated by infrastructure losses by successive hazard events. In many countries, there are often limited or no agreed design criteria for protecting the Critical Infrastructure (CI)²⁴.

There is also a need for safety standards with clearly defined roles and responsibilities for key sectors particularly agriculture, education and tourism and there is a lack of national incentives to promote mitigation. Strengthening the infrastructure, particularly at the sectoral level is a key component of the CDM Strategy. Building resilient infrastructure will move the region towards a vision of safe communities and facilities which are adaptive²⁵.

Unfortunately, Caribbean countries current levels of investment in pre-disaster resilience building may be characterized as low and therefore rely on post-disaster rehabilitation and reconstruction efforts.²⁶ Only about 14% of disaster-related overseas development support is devoted to pre-disaster resilience building.²⁷ From the countries perspectives there are several challenges faced to investing in pre-disaster resilience building. These include:²⁸

- Limited fiscal space faced by the countries in the allocation of adequate budgetary resources.
- Limited global financing available which is well short of adaptation needs.
- Complex access requirements to climate funds for not only investing in pre-disaster resilience building, but for setting aside dedicated funds.
- Weak investment incentives, as donors and recipients may find it difficult to pre-commit to a resilient strategy that involves high upfront costs, with benefits visible only in the long term.

²³ The CDM Audit Tool identifies relevant Caribbean standards and seeks to capture and assess all aspects of institutional capacity for CDM in the region including a focus on all hazards, all phases, all sectors and all institutions, at all levels.

²⁴ Critical infrastructure refers to any facility, asset, system, network, technology or service whether physical or virtual, that is so essential to any country that its incapacitation or destruction would have a debilitating effect on the health, safety, security, economic well-being (or any combination thereof), on its residents.

²⁵ CDEMA, 2018. Building a Caribbean Pathway for Disaster Resilience in the Caribbean Community (CARICOM).

²⁶ IMF, 2016. Small States’ Resilience to Natural Disasters and Climate Change—Role for the IMF.

²⁷ IMF, 2018. Building Resilience to Natural Disasters in the Caribbean Requires Greater Preparedness.

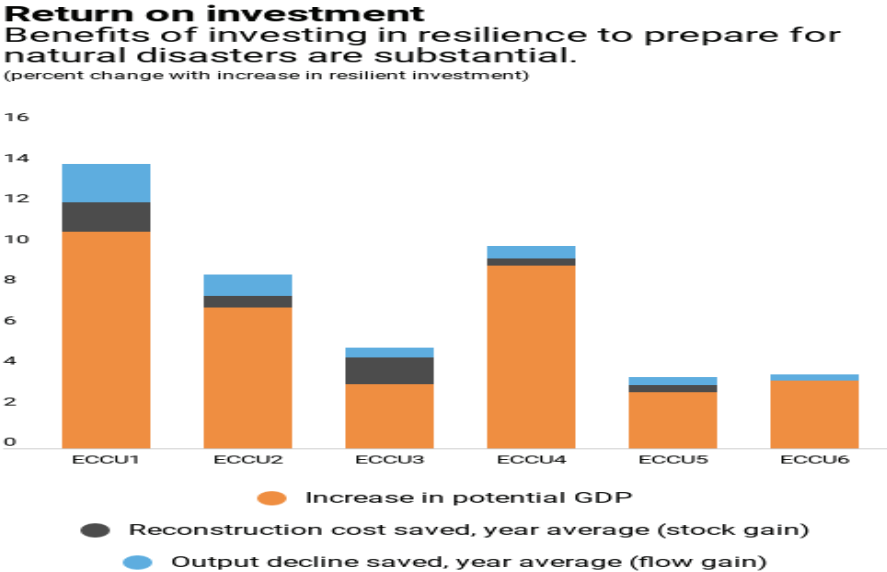
²⁸ Ibid

Although pre-disaster resilience building implies short-term costs, there are substantial long-term benefits to be derived. Research conducted in 2018 by the IMF in six countries of the Economic Currency Union (ECCU) - (Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, Saint Lucia and St. Vincent and the Grenadines) of the Organization of Eastern Caribbean States (OECS), provides a good example of how a disaster-resilience strategy could have significant payoffs.²⁹ The findings from the study show that in the ECCU of the OECS, where low disaster preparation and high public debt levels represent critical vulnerabilities, resilient public infrastructure investment (such as durable roads, bridges, and sea walls) can raise potential output by 3–11%, with an annual growth-dividend of 0.1–0.4%. As can be observed in the results presented in **Figure 5.1**, the benefits of investing in resilience to prepare for natural disasters are substantial.

The analysis also suggests that the short-term costs of resilient infrastructure—estimated to be 25% higher than regular infrastructure—and financial protection through disaster funds, insurance, and other risk-sharing instruments, would create a financing gap for the countries. This would make it difficult to attain the currency union’s debt target of 60% of GDP by 2030.³⁰

On top of necessary fiscal adjustment, bringing the debt to target would require additional concessional financing from the international community, including climate funds. As physical structures become more resilient in the long term, insurance needs would decline to about one-fourth of the current level.³¹

Figure 3.12: Benefits of Investing in Pre-Disaster Resilience Building: Evidence from the OECS



Source: IMF staff estimates.
 Note: ECCU denotes Eastern Caribbean Currency Union. Members of the union include Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines.



29 <https://www.imf.org/en/Countries/ResRep/ECC-Region>

30 IMF, 2018. Building Resilience to Natural Disasters in the Caribbean Requires Greater Preparedness

31 Ibid

It is suggested that a two-step logical systematic approach to pre-disaster resilience building in infrastructure be undertaken to include:

- Benchmarking the Level of Integration of CCA and DRM in Public Financial Management Systems
- Climate mainstreaming and climate proofing of assets and infrastructure through relevant policies, plans and programmes at different levels of governance to reduce the potential impacts of climate change.

Benchmarking the Level of Integration of CCA and DRM in Policy Framework

It must be acknowledged that significant efforts have been made by the Caribbean region to build resilience to natural hazards and climate change and climate variability. However, while these efforts have been useful, timely and relevant, the absence of an objective assessment for measuring the integration of DRM/CCA into the Policy and Planning Frameworks poses challenges for the policymakers and analysts. The fragmented evaluation of progress on separate initiatives has limited use and also does not allow cross-functional and or/ cross-country comparisons of the level of integration of DRM/CCA into Policy and Planning processes. In most cases, the assessment of progress is done using a dummy indicator of the existence of an isolated tool or process or report on DRM/CCA finances related to specific projects, but this may not suffice for a comprehensive assessment of a country's progress in that direction.

The objective is, therefore, to utilize an innovative tool, such as the Climate Change Budget Integration Index (CCBII),³² to assess the level of integration of disaster risk management and climate change into the policy frameworks, plans and programmes of a country. Such a framework was initially introduced by the UNDP for measuring the level of integration of climate change finances in the Public Financial Management systems of countries in the Asia-Pacific region. This Assessment tool is very relevant to the context of the Caribbean region. In fact, a modified CBI, the DRM –CCA Budget Integration Index (DRM-CCBII), was used by the author in the Turks and Caicos Islands for benchmarking in the aftermath of Hurricanes Irma and Maria that impacted that country in 2017.

The application of this standard and comprehensive methodology for assessing the level of integration of DRM/CCA in the Policy and Planning processes in the countries of the Caribbean is expected to bring the following benefits:

- Systemic approach and more objective validation of the progress towards DRM/CCA integration in Policy and Planning in a country.
- Setting a baseline, prioritization and helping with the formulation of a reform agenda for DRM/CCA integration (guidance for formulating the country's reforms directions and agenda).
- Cross-country comparison, especially relevant in the sectoral context.
- Platform for establishing cooperation frameworks with development partners.

The general idea is to have a multi-component assessment mechanism where several aspects of DRM/CCA integration into Policy and Planning systems can be independently assessed.

There are basically four main dimensions of understanding how well the climate change finances are integrated into the national budget/PFM systems. These are:

- Policy dimension – the level of awareness on climate change policies, recognition and commitment to integrate CC, as well as the availability of enablers to link CC policies with budgets.
- System dimension – the capacity and current practices of PFM systems to absorb CC dimension.
- Accountability dimension – how much is the CC dimension? Is part of the overall PFM accountability system?
- Development Partners (DPs) dimension – how much is DPs' CC finance integrated into national PFM systems?

An indicative index of the level of CC integration (CCBII) into PFM systems or all four dimensions equals 100 points.

³² UNDP: Measuring the Integration of Climate Change in PFM Systems.

The overall index may be useful in measuring the in-country progress; however, it is less telling when countries are compared by solely on the total result. Comparison by a sub-index of dimensions may add some more value but technical evaluation of progress will be done at the level of individual categories. For that reason, the in-country and cross-country measurement of progress is inevitable by all categories that lay under the four dimensions.³³

Under the four dimensions, there are ten categories of assessment with 10 points for each. This is not a country context- or research-driven distribution of the actual importance of the categories, however, is a simpler and more practical approach to use in the region. Other solutions may require country-tailored weighting and so endanger the region-wide application of the methodology. **Table 3.12** below presents the four dimensions, the dimension weight, the categories and each category’s weight.

Table 3.12: CCBII dimensions and categories and their weights

Dimension	Dimension Weight	Category	Category Weight
P. Policy	30	P1. Policy	10
		P2. Requirements	10
		P3. Priorities	10
S. System	30	S1. Reporting	10
		S2. Coding	10
		S3. Calculation	10
A. Accountability	30	A1. Performance ³⁴	10
		A2. Parliament	10
		A3. CSO ³⁵	10
D. DPs	10	D1. Donors	10

Source: UNDP: Measuring the Integration of Climate Change in PFM Systems

Further details on the Categories and Subcategories and the Assessment Methods are presented in **Annex 14**.

Climate Mainstreaming and Climate Proofing to Reduce Impact of Climate Change on Assets and Infrastructure

The concept of ‘climate-proofing’ has often been used interchangeably with the that of ‘climate mainstreaming’, or also climate integration, in spite of some recent attempts to bring more clarity to these concepts. They refer, however, to different, though inter-linked, activities, as can be gleaned from the following definitions:

- **Climate mainstreaming:** Refers to the integration of climate change adaptation into other policy areas, focusing on the integration of climate concerns and responses into relevant policies, plans and programmes at different levels of governance.
- **Climate proofing:** Refers to the process of crosschecking that all elements of a programme and its implementation, including specific measures and projects, address climate change issues.

Climate mainstreaming and climate proofing thus represent approaches to reduce the potential impacts of climate change through the anticipation and allocation of respective programme expenditure and project design for planned adaptation and risk management. It should be recognized that the upfront costs of such approaches are higher

33 UNDP: Measuring the Integration of Climate Change in PFM Systems

34 Using performance indicators for climate change or enabling Value for Money analysis

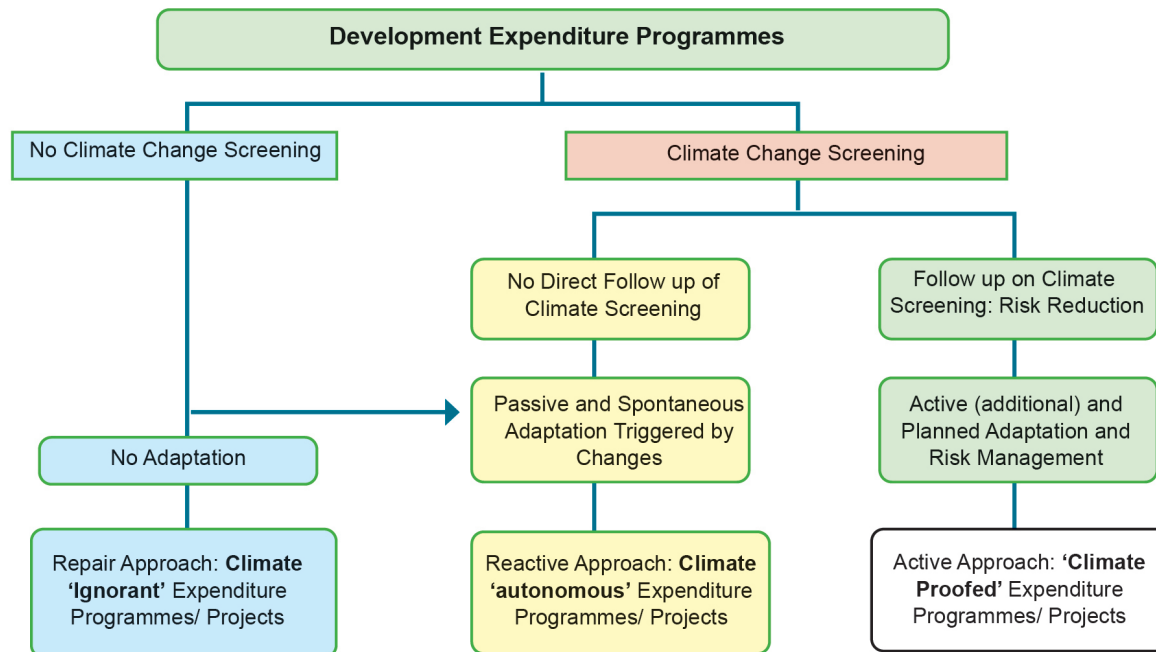
35 Civil Service Organizations

than for other approaches for dealing with climate change adaptation under expenditure programmes, such as not screening for climate risks at all or rely on autonomous, or passive adaptation. However, the overall socio-economic benefits are much larger due to the avoided damage and repair costs as well as avoided inappropriate investments (see Figure 3.13).

The need to embrace a methodological framework to enhance the **mainstreaming of disaster risk reduction (DRR) and climate change adaptation (CCA) measures** in public investments in the Caribbean region is very compelling. In this context, the Disaster Risk Reduction/Climate Change Financing Framework (DRR/CCFF) is being proposed as a robust methodology for the mainstreaming of DRR and CCA into public investments. The DRR/CCFF focused primarily on Public Finance Management (PFM) systems³⁶ and covers the entire PFM cycle. The approach taken allowed for the embedding of the DRR/CCFF within existing institutional arrangements.

The DRR/CCFF represents an integrated, structured set of policy and institutional instruments, primarily focused on budget systems and processes, that are expected to serve as the platform to increase the government’s capacity to mobilize, manage, and target DRR and CCA finance at different levels. The methodology blends top-down guidelines under a whole-of-government approach, attached to a high-level strategic resource envelope, with bottom-up approaches for prioritizing allocations through the budget cycles at various levels of government, starting with the national to the sectoral/ departments of government. It links policy decisions to budget allocations and expenditure tracking in a very structured way. It outlines specific steps to be undertaken to integrate DRR and CCA measures in public investments through the Public Financial Management (PFM) systems to ensure and enhance effective financing.

Figure 3.13: Climate Risk Screening and Response in Expenditure Programmes



Source: UNDP (2009) Guidelines for Climate Change Proofing in UNDP Projects and Programmes in Armenia.

36 Aspects of the PFM system include budget management cycle: financial planning, project preparation, project selection, budget and expenditure tracking, reporting and financial accountability.

The six entry points for DRR/CCA mainstreaming in public investments are:

- The DRM and National Climate Change Coordination Mechanisms
- Sector Policies and Planning
- Medium Term Expenditure Framework.
- DRR/CCA Screening and Investment Appraisal
- Monitoring and Reporting System
- Accountability and Oversight.

Some of the major benefits that can be derived from a DRR/CCFF are as follows:

- The mainstreaming of DRR and CCA finance into existing processes through a national DRR/CCFF enables top-down policy and strategic guidance to more effectively inform bottom-up planning and budget formulation, and integrate DRR and CCA policy and strategies therein, rather than being separate, parallel processes.
- The process facilitates the allocation of public funds based on priorities in a more coordinated and systematic manner by creating entry points via the budget cycle and key planning documents such as the MTEF, and the DRR/CCFF.
- The DRR/CCFF supports the financing of DRR and CCA activities in the context of broader economic development and the government fiscal planning process.
- It provides information to budget decision makers about DRR and CCA strategies, consolidated DRR and CCA status, funding requirements and major outputs in a timely manner.
- It allows DRR and CCA finance to be tracked and monitored in a more structured way, seamlessly integrated into the General Financial Management Information System (GFMIS).
- The monitoring of the process through key performance indicators (KPIs) and performance audits would help increase public accountability.
- A DRR/CCFF will help to identify institutional entry points for mobilizing public sources of DRR and CCA finance through the budgeting system and promote the allocation of available resources more effectively and equitably, in particular, targeting the poor and vulnerable areas. Better public expenditure allocations and resource management and investment decision-making will lead to better DRR and CCA policy outcomes.

Some broad elements of the DRR/CCFF implementation roadmap for consideration include:

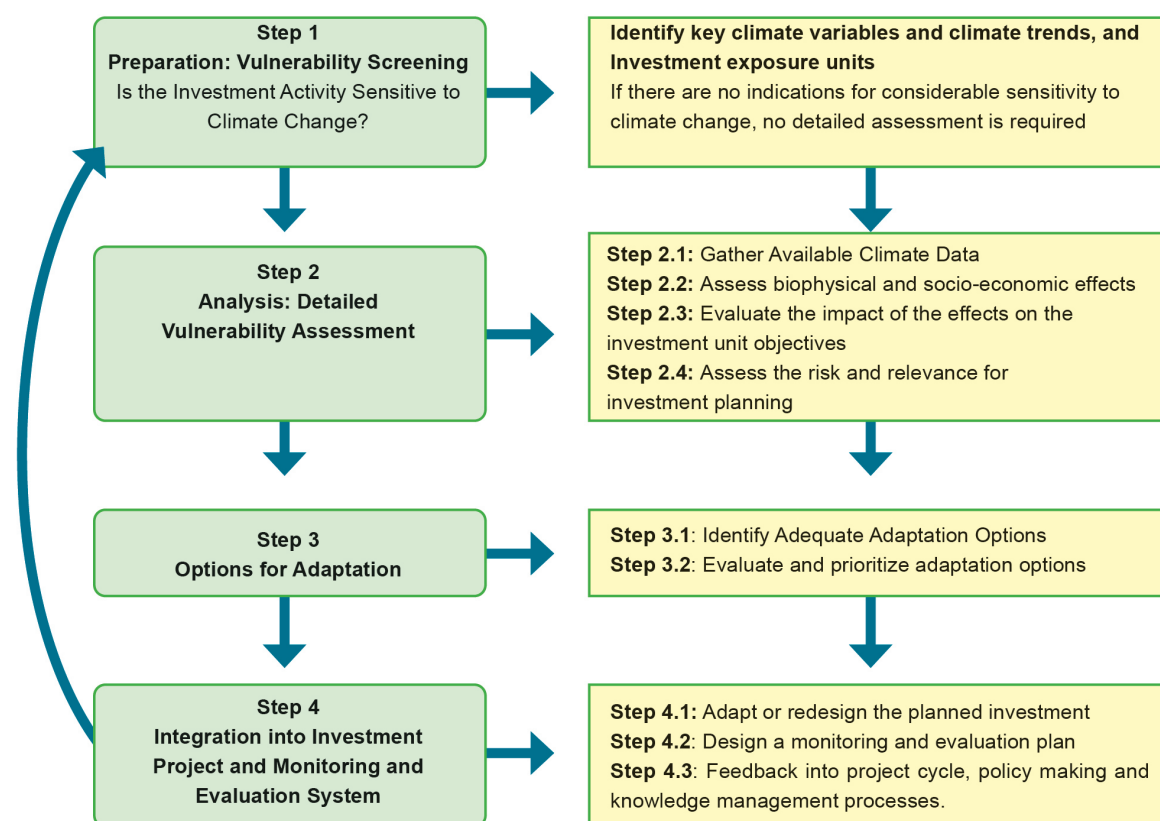
- A national integrated institutional mechanism for disaster risk management and climate change should be in place, with Terms of Reference befitting that of a high-level council.
- Disaster Risk management (DRM) and Climate Change policies should not be developed but enacted to provide the legislative framework for the implementation of DRR and CCA actions.
- The institutional re-engineering envisages a better integration of the functions of the DRM and Climate Change Authorities.
- A system for financial quantification of the damage and losses and fiscal impact of hazards and climate change to be established.
- The Ministries and Departments related to Finance and Planning and Economic Development, with support from the DRM and Climate Change Authorities, to undertake a review of all existing strategic plans and policies of relevant sectors to evaluate their appropriateness with respect to disaster risk reduction and climate change adaptation requirements.
- A classification system to be developed and related coding and tracking system put in place for DRR and CCA expenditures.
- Recommendations made on the structure of DRR/CCFF agreed upon and finalized.
- Focal persons in each relevant sector ministry/department designated to steer the DRR and CCA integration process, preferably representing the budget sections.

- Promote capacity development of planning officers and DRR and CCA designated focal points at line ministries. This is to facilitate compliance with the new guidelines contained in the Budget Call Circular and also to make the project development and project appraisal process more DRM and climate change sensitive.
- Project Development Manual guidelines reviewed and/or revised to incorporate climate change risk and response measures and climate finance to align to the DRR/CCFF parameters
- KPIs developed to reflect DRR and CCA responses applicable to sector ministries/ departments at the national level and subsequently measure performance on these KPIs. This should be facilitated by the Ministries and Departments related to Finance and Planning and Economic Development.
- Sector policies, strategies and action plans revised to mainstream and align with national and sub-national DRM and climate change policies targets and action plans as well as budget proposals.
- Rules of Business amended to ensure that the implementation of national disaster risk management and climate change policy objectives becomes a function of line ministries.
- New platforms developed for engaging with CSOs during the process of formulation and selection of projects that are likely to have climate change implications.
- Audit functions and capacity enhanced to reflect DRR and CCA expenditure in official reports.

As mentioned earlier, **Climate Proofing** is a methodological approach aimed at incorporating issues of climate change into development planning. It enables development measures to be analyzed with regard to the current and future challenges and opportunities presented by climate change. It can be applied at national, sectoral, local and project levels, and can make development measures on these levels more efficient and resilient. Properly implemented, it makes a given plan or investment more “climate-proof”.

The methodology for Climate Proofing was developed in the context of climate risk assessments. It complements other risk analysis instruments, such as Strategic Environmental Assessment, and can prepare the ground for the development of comprehensive adaptation strategies. It contains four main steps as illustrated in **Figure 3.15**. The steps can be extended or adapted individually according to the “form follows function” principle. The principles described above are taken into account in all the steps.

Figure 3.14: The Four (4) Steps for Climate Proofing for Policies and Plans



Promotion of an Enhanced Financial Protection Strategy

It is recommended each country in the Caribbean develop and implement a comprehensive **Financial Protection Strategy (FPS)**, which is intended to provide the mechanism for improving the country's financial resilience against natural disasters. Such a financial protection strategy should be aimed at ensuring that the public and private sectors, including homeowners, micro, small and medium-sized enterprises, large enterprises, agricultural producers, fisherfolks, and the most vulnerable population can meet post-disaster financial requirements resulting from the impacts of climate change and variability induced natural hazards.

The FPS should be viewed as an integral part of the disaster and climate risk management agenda. In this context, the FPS provides the strategic direction for the development and implementation of sustainable and cost-effective financial policies and operational plans. To a large extent, it provides a clear roadmap of what is to be accomplished in supporting the government, businesses, households, farmers and fisherfolks, and the poor and most vulnerable in the society to manage the financial impacts of disaster and climate risks without compromising sustainable development, fiscal stability and wellbeing.

It is in this context that the proposed FPS is aimed at strengthening disaster risk financial management over the long term, including:

- Developing a cost-effective FPS that builds on an optimal combination of financial instruments, including contingency budgets, national and local disaster (multi-year) reserves, contingent credit, and risk transfer instruments (including insurance). This is to ensure that cheaper sources of money are used first, with the most expensive instruments used only in exceptional circumstances. The intention of this approach is to channel funding in an efficient and timely manner to disaster-affected groups.

- Making disaster risk finance an integral part of a broader disaster risk management and climate change plan, complementing investments in prevention and risk mitigation.
- Reviewing the policy, legal, institutional and operational frameworks of available funds for natural disaster prevention and management aimed at strengthening the financial resilience of the country.
- Recognizing that the private sector is an essential partner as they can bring capital, technical expertise, and innovative financial solutions to better protect the government and society against natural disasters.

The development of a Financial Protection Strategy for the countries of the Caribbean is expected to provide benefits in the following ways:

- It helps to improve the country's financial resilience against natural disasters by providing a portfolio of implementable sustainable and cost-effective financial protection policies and operations.
- It helps minimize the cost and optimize the timing of meeting post-disaster funding needs without compromising development goals, fiscal stability, or the well-being of the population.
- It promotes comprehensive financial protection strategies to ensure that governments, homeowners, small and medium-sized enterprises, agricultural producers, and the most vulnerable populations can meet post-disaster financial needs resulting from the impacts of natural hazards and climate change and variability.
- It is an integral part of disaster and climate risk management.
- It supports governments, businesses, and households in managing the financial impacts of disaster and climate risks without compromising sustainable development, fiscal stability, or wellbeing.

It is important to note that a financial protection strategy complements investments in risk reduction, prevention, and building resilience. It addresses residual risk, which is either not feasible or not cost-effective to reduce or prevent. Therefore, only by looking at the financial impact of disasters in a comprehensive manner can the government build the financial resilience of society as a whole.

Notwithstanding, the obvious benefits that can be derived from a comprehensive FPS, critics of disaster risk finance often argue that investing to avoid or reduce risk is more cost-effective than investing in post-disaster expenditures. They also argue that insurance and other risk transfer instruments can be opaque and expensive, providing poor value to governments.

As alluded to earlier, the FPS should be presented as an important component of the disaster risk management framework that helps government mobilize resources in the immediate aftermath of a disaster, while buffering the long-term fiscal impact of disasters. Such a comprehensive disaster risk management strategic framework covers several dimensions, including programmes to better identify risks, reduce the impact of adverse events, strengthen preparedness and emergency services, provide financial protection, and enhance reconstruction efforts.

The financial protection strategy should be located at the nexus of four major policy practices:

- Disaster risk management - how it contributes to building resilience.
- Public financial management- how it addresses the impact of shocks on public finances.
- Financial sector development- how it builds a strong financial sector for risk transfer.
- Social protection- how it supports contingent financing to reach the poorest.

Such an approach suggests that the FPS is best advanced when integrated into broader strategies in one or more of these fields. Indeed, strong public financial management of disaster risk is particularly important to support the execution of broader disaster risk management strategies. Specifically, financial protection programmes are expected to:

- Bring about awareness among financial authorities of the need to include disaster risk considerations in public investments.

- Put a price tag on risk; clarify the costs and benefits of investing in risk reduction, risk retention, and risk transfer initiatives.
- Ensure that the government is financially prepared to enact a swift post-disaster response.

It was recognized that the government has access to various sources of financing for post-disaster response and reconstruction. Some of these funding options can be exercised by the government following a disaster, such as budget reallocations or credit, while others need to be established before a disaster occurs, such as contingent credit lines or insurance. For some options, the government mobilizes funds at the national level—including contingency funds—while other options include the transfer of risk to international markets – such as the use of reinsurance or catastrophe bonds. These financing options all differ in terms of their cost of use, the amount of funds available when a disaster occurs, and speed of access. It is important to emphasize that alternative instruments are not inherently better or worse, they simply address different needs. A good example would be the case where, in the aftermath of a disaster, a government could issue bonds or raise taxes in order to pay for reconstruction. Such measures provide access to very large sums of funds, but it takes a long time for the funds to become available. Insurance, on the other hand, can be much more expensive, but it can help governments manage the volatility of unplanned demands on budgets by spreading the cost of disaster across time. This presents governments with a trade-off in managing costs and risk. Therefore, in order to efficiently address the funding needs arising from disasters, a number of considerations are important. These core principles are:

- Timeliness of funding
- Risk layering
- How funds reach the beneficiaries
- Adequate and good qualitative information

The Financial Protection Strategy should present three main components as follows:

- The core technical steps in developing and implementing financial protection solutions.
- A decision process to provide guidance for the government in the disaster risk financing and insurance process, which brings together the technical steps with the guiding policy questions.
- Actions the government should take for each of the steps to increase the financial resilience of the four main groups of beneficiaries.

Four (4) core technical steps or strategic lines of focus have been identified as relevant to the development of a Financial Protection Strategy (FPS) for the Caribbean region. The core technical steps are:

- Assess Risks
- Arrange Financial Solutions
- Deliver Funds to Beneficiaries
- Reduce underlying Risks

It is expected that the proposed FPS will utilize financial instruments for both risk retention and risk transfer, which should be supplemented with additional instruments. With the support of the financial cost-benefit analysis tool developed by the World Bank,³⁷ the governments should be in a position to evaluate additional financial protection instruments to strengthen the existing strategy for managing disaster financial risk. There is a need for the countries to look into the possibility of resorting to the market of non-traditional instruments, for example, catastrophe bonds (Cat bonds), which have become a much larger market in recent years.

³⁷ World Bank, 2010: Cost-benefit analysis in World Bank projects

It is recommended that the financial instruments be selected by taking into account the need for resources over time. With a view to selecting the optimum combination of these instruments, the countries should assess the need for resources over time relative to the moment when the resources will be required. When a disaster strikes, the government will have to act promptly both during the response to the emergency and during the rehabilitation of indispensable basic infrastructure and services. Reconstruction in turn will call for a planning process that includes considerations to avoid the original risk conditions. During reconstruction, priority should be given to certain projects that can be initiated in parallel with the response and rehabilitation phases.

During the response phase, there is the need to utilize instruments that will provide immediate liquidity, such as the government's own funds. However, because these funds compete with other national needs and are not unlimited, additional resources should be made available for other phases following the event, for example, reconstruction, when expenses are much greater, but insurance is more cost-efficient. It is recommended that considerations be given to non-traditional forms of coverage in order to have access to immediate liquidity for the response and rehabilitation phases together with indemnity insurance for the reconstruction of property that has been damaged or destroyed.

In addition, a critical aspect of the FPS is the need to promote the development of a domestic catastrophe insurance market for responding to disasters associated with natural hazards. There is a general consensus that penetration of the insurance market in the Caribbean region is low for homes, micro, small, and medium enterprises (MSMEs) and the agricultural and related sectors. Such development of the domestic catastrophic insurance market could possibly reduce the potential demand for public resources (implicit contingent liability) in the event of a disaster and increase access to insurance by private businesses and the population in general. This approach would enable the Government to concentrate its resources on rebuilding affected infrastructure and supporting the most vulnerable population. It would also help reduce the credit risk for the financial sector in the case of a major disaster and in general improve the recovery capacity of individuals and businesses, and hence the real economy, after the disaster. Specifically, it offers the Government the means to reduce potential residual risk.

In the context of the above, the Caribbean countries should increase their efforts along the following lines:

- Strengthen the catastrophic insurance market coverage.
- Evaluate the existing household insurance instruments, including those for low-income populations, with a view to creating financial instruments to help provide affordable hurricane insurance for low-income households. These instruments might be developed using an insurance pool with public-private participation similar to the Turkish Catastrophe Insurance Pool (TCIP). A scheme of this kind could be used to develop the market for household insurance in general, as the penetration of household insurance is currently very low. Even when home insurance is tied to mortgage loans, it usually does not cover the entire value of the home.
- Develop the microinsurance market, with a focus on the low-income population. The countries should therefore review options for expanding the list of microinsurance products and adapting current legislation with a view to promoting a responsible microinsurance market.
- Develop the catastrophic insurance market for MSMEs, by fostering the development of new products and expanding penetration in MSMEs, especially in areas where some insurers have already initiated steps in this direction.
- Strengthen agricultural insurance, including for the fisheries sub-sector.

Resources should reach beneficiaries in a timely, transparent, and accountable fashion. This requires effective administrative and legal systems for the appropriation and execution of funds from the government budget, insurance claims settlement and distribution (often through private channels), as well as social protection programmes.

A sustainable financial protection strategy requires reducing underlying drivers of risk. It should be able to complement risk reduction by managing residual risk which is not feasible or cost-effective to mitigate. It also should be able to create incentives to invest in risk reduction and prevention by putting a price on risk and clarifying risk ownership.

The second component of the FPS should provide a framework for the decision-making process for a government on both the policy and the technical side. The process should seek to first identify and prioritize the key policy objectives of the government and subsequently develop the required actions to achieve them. This decision process should guide policymakers through a set of fundamental questions that determine the shape and direction of the country's disaster risk financing and insurance engagement, embedded within an overall disaster risk management strategy.

As the first step in implementing disaster risk financing and insurance solutions, policymakers should clarify the overall development goals and identify the intended beneficiary of their risk financing policy. Most often this is one of or a multiple of four main groups of beneficiaries of financial protection policies: the government, homeowners and MSMEs, farmers, and the poorest and most vulnerable in society. Second, historical information and risk assessments will help to identify the financial impact of disasters on these groups and the underlying causes driving the effects. Following this, the countries will have to consider possible solutions. These include mechanisms to manage financial risk and mobilize the required resources, such as risk transfer to international markets or deciding to rely on post-disaster budget reallocations. Decision makers should also determine how these funds will reach the intended beneficiaries. Finally, they should establish the required resources and partnerships to implement these policies. Once these policy decisions are made and the government is addressing its immediate concerns, it can consolidate them into a comprehensive financial protection strategy and action plan.

In terms of the **overarching goal of the FPS**: The Governments of Caribbean countries should seek to (i) sustain economic growth and protect development gains from disaster shocks, within the context of achieving the goals established under their **Vision Platform**; and (ii) reduce the impact on the poorest and most vulnerable and prevent them from falling into a cycle of poverty.

Finally, the **Policy Objectives of the FPS** should be to:

- Improve identification and understanding of fiscal risk due to natural disasters.
- Improve the financing of post-disaster emergency response, recovery, and reconstruction needs, including the implementation of innovative financial instruments.
- Empower poor and vulnerable households, owners of small and medium-sized enterprises, and farmers to quickly restore their livelihoods after a disaster.
- Enhance the generation and use of disaster risk data to support decision-making on financial protection.

The progress made by the Caribbean region in designing and implementing a strategy for the management of fiscal risk in the event of disasters associated with the effect of natural hazards and climate change may be characterized as moderate. Notwithstanding, this bears out the importance of ensuring that disaster risk financial management dovetails with the policy framework for the comprehensive management of disaster risks. However, the moderate progress demonstrates the region's commitment to the management of disaster risk. Much has been learned, and these lessons have informed this proposed financial protection strategic framework presented in this report to help the governments to structure their work on financial resilience. Some of the important lessons include:

- Disaster risk financing and insurance help to minimize the cost and optimize the timing of meeting post-disaster funding needs without compromising development goals, fiscal stability, or wellbeing. A comprehensive financial protection strategy helps to ensure that the government, homeowners, small and medium-sized

enterprises, agricultural producers and fisherfolks, and the most vulnerable populations can access post-disaster funding as the needs arise.

- Disaster risk financing and insurance should be an integral part of disaster and climate risk management. The financial impact of disasters is best managed when integrated into holistic risk management practices. It complements disaster risk management activities by securing adequate financial resources to cover residual risks that cannot be mitigated and by creating the right financial incentives to invest in risk reduction and prevention. By quantifying the financial and fiscal impact of risk, it elevates risk management within the ministries/departments that control and are involved in public investment.
- Financial protection requires strong leadership by a country's relevant Ministries. Disaster risk financing and insurance bring together disaster risk management, fiscal risk and budget management, public finance, private sector development, and social protection. Strong stewardship of the Ministry of Finance and Economic Development in coordination with other public agencies is crucial to successfully advance this agenda.
- The private sector should be an essential partner. The private sector can bring capital, technical expertise, and innovative financial solutions to better help in protecting the government and society against natural disasters.
- Disaster risk financing and insurance should be viewed as a long-term agenda that requires political will, technical expertise, and time. While simple measures can quickly support improved financial protection, more complex financial solutions and institutional change require technical expertise and political will. Partnerships can support governments on this path.

But disaster risk financing and insurance is a sophisticated agenda with complex institutional and technical aspects. Many challenges that have emerged over the years remain unsolved while at the same time there has been real growth in innovation and new opportunities. Therefore, in looking ahead, several areas are identified for special attention in order to strengthen the public financial management of disasters. These areas are identified below:

Institutional

- Legal environment.
- Cooperation within the public sector.
- Disaster risk financing funds.

Technical

- Risk information and risk analytics for evidence-based decision making.
- Ability to comprehensively manage fiscal risk.
- Increasing the evidence.

Operational

Post-disaster budget execution of sovereign disaster risk financing: The dedicated mechanisms, experience, and expertise to effectively allocate, disburse, and monitor recovery and reconstruction funds following disasters need to be strengthened.

3.3 NDC Planning and Integration

3.3.1 Policy, Legal and Regulatory Framework and Institutional Arrangements

3.3.1.1 Policy, Legal and Regulatory Framework

Most of the nine AgREADY countries have developed overarching climate change policy frameworks to respond to the range of climate change issues and these are often aligned with national development plans. However, NDC actions are largely not mainstreamed into the relevant sector strategies and plans. **Table 3.14** summarizes climate change policy directives for AgREADY countries. There is evidence of efforts to mainstream climate change in agriculture sector policies and plans, and four of the nine AgREADY countries have an agriculture sector policy or plan that includes climate considerations as reflected in **Figure 3.15**. However overarching climate change legislation and supporting regulations were mostly absent in the participating AgREADY countries. The countries mostly have national adaptation strategies and plans, generally with a focus on agriculture, including food and nutrition security and resilient livelihoods, especially since agriculture is one of the priority sectors identified in NCs to the UNFCCC. For example, Belize’s National Agriculture and Food Policy (2015-2030) targets climate change adaptation and mitigation under Pillar 4: Sustainable Agriculture and Risk Management and this policy is supported by a National Adaptation Strategy to Address Climate Change in the Agriculture sector in Belize (2015). Similarly, St. Kitts and Nevis’ Water Policy is supported by a Water Sector Adaptation Plan (2021).

Table 3.13. Country Climate Change Policy Directives for the AgREADY Countries

Policy Strategy	Belize	Dominica	Haiti	Saint Kitts and Nevis	Saint Lucia	Saint Vincent and the Grenadines	Suriname	The Bahamas	Trinidad and Tobago
Mitigation	√	√		√		√	√	√	√
Adaptation	√	√		√	√	√	√	√	√
Education, Awareness, Capacity Building and Institutional Strengthening	√	√		√	√	√		√	√
Information and Data Sharing		√		√	√	√		√	√
Financing Implementation	√	√		√	√	√	√	√	√
Inter-sectoral Coordination	√	√		√	√	√	√	√	
Loss and Damage		√				√			
Gender Considerations		√				√			
International Negotiations	√	√							
Technology Transfer		√					√	√	
MERV	√	√		√	√	√	√		√

Figure 3.15. Summary of adaptation and mitigation plans and strategies for the AgREADY countries

	National Adaptation Plans	Low Emissions Development Strategy	Sector-based CC strategies and plans
Belize	Development In progress	LEDS Strategy and Action Plan, 2021 (Draft), REDD+ Strategy in progress	National Agriculture and Food Policy, National Adaptation Strategy to Address Climate Change in the Agriculture Sector in Belize (2015), NAP for Water sector
Dominica	Dominica Low carbon climate resilient strategy (2012-2020)	Dominica Low carbon climate resilient strategy (2012-2020)	Dominica Climate Resilience and Recovery Plan (2020-2030), Disaster Resilience Strategy
Haiti	The National Adaptation Action Program (NAPA); The Strategy Document for Climate Resilience (DSRC)		
St. Kitts and Nevis	National Climate Change Adaptation Strategy (2018)	GHG Emissions Profile completed	Water Policy, Water Sector Adaptation Plan (2021), Strategy & Action Plan for Ag.
Saint Lucia	National Adaptation Plan (2018-2028)		Agriculture, Fisheries, Water, Communications and M&E
St. Vincent & the Grenadines	National Adaptation Plan (2018-2030)		Tourism Agriculture and Energy all have sector adaptation plans
Bahamas	National Policy for Adaptation to Climate Change		
Suriname	Suriname National Adaptation Plan (2019-2029)		National Forest Policy (2005) and the Suriname National REDD+ Strategy (2018)
Trinidad and Tobago	Development in progress	Strategy for reduction of carbon emissions in T&T, 2040	Action plan for the mitigation of GHG emissions in Action plan for the mitigation of GHG emissions in the electrical power generation, transport and industry sectors

3.3.1.2 Institutional Arrangements for NDC Development

Although the level of activity of National Climate Change Committees vary considerably, all AgREADY countries have established institutional arrangements for addressing the impacts of climate change and in particular implementation of their NDCs. **Figure 3.16** captures the governance arrangements for NDC development include high level participation (e.g., Prime Ministerial and The Cabinet), parent ministries and other multi-stakeholder, multi-sectoral participation through advisory and technical level NCCCs, and with input from Climate Change Focal Points. Over the years many of these technical and advisory structures have evolved to be more targeted and the designated Ministry and Agency with responsibility for NDCs (i.e., the UNFCCC Focal Point) leads on the operational elements of the NDCs, including development, implementation, and monitoring and evaluation.

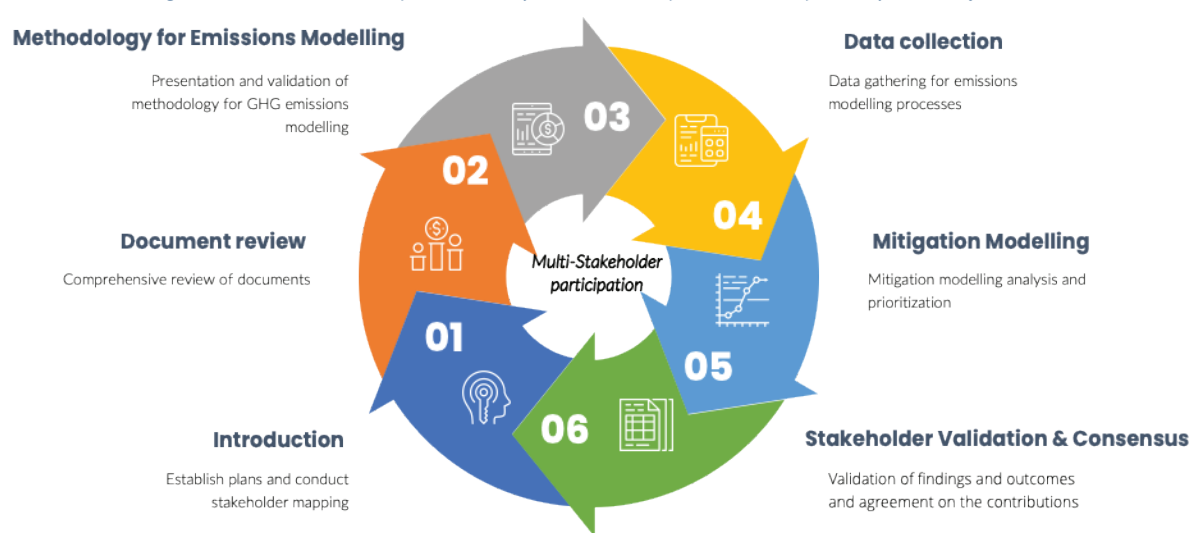
Figure 3.16. NDC Institutional Arrangements in AgREADY Countries

NDC Institutional Arrangements	
Bahamas	Department of Environmental Planning and Protection, Bahamas National Climate Change Committee
Belize	Belize National Climate Change Committee (incl. Climate Finance Working Group), National Climate Change Office (coord.)
Dominica	Council on Environment, Climate Change and Development, National Climate Change Committee, Climate Resilience Execution Agency for Dominica, Environmental Coordinating Unit, UNFCCC Focal Point
Haiti	Directorate of Climate Change (in Ministry of Environment)
Saint Kitts and Nevis	National Climate Change Committee, Dept. of Environment St. Kitts and Nevis
Saint Lucia	Department of Sustainable Development
Saint Vincent & the Grenadines	Ministry of Health, Wellness and Environment
Suriname	Ministry of Spatial Planning and Environment
Trinidad & Tobago	Cabinet Commission for Climate Change, Ministry of Planning and Development (Multi-lateral Environment Agreements Unit), Climate Change Focal Point Network

3.3.2 NDC Planning Processes

All nine AgREADY countries have included information on their NDC planning processes as required³⁸, in the NDC document. AgREADY countries with uNDCs reflect an even greater level of stakeholder participation in the NDC planning process. Common among the countries is a multi-stakeholder, multi-sectoral approach to NDC preparation, involving public and private sectors, CSOs and NGOs, academia, and support organizations. Some countries, like Dominica for example, had to use multiple mixed methods, including surveys, interviews and workshops, to achieve an acceptable level of consultation and capture the range of stakeholders. The NDC development process has generally been conducted in phases as described in **Figure 3.17** and for countries, detailed in Annex 9. Supporting studies and assessments completed³⁹ to supported NDC development and revision include gender assessments and strategies, capacity needs assessment and development strategy, financing investment strategy and piloting of MRV systems.

Figure 3.17. General steps outlined for the development and update of country NDCs



3.3.2.1 Inclusiveness and Participation: The Role of Agriculture Stakeholders in NDC Development

Participation of agriculture stakeholders in NDC development and updates varied significantly across AgREADY countries. There was strong participation of agriculture stakeholders in Belize, SLU and Suriname and in others, minimal to no participation. For Belize and SLU agriculture stakeholder participated in mitigation analysis that assessed the sector's contribution to GHG emissions and emissions reduction and to determine the priority sectors for both the iNDC and uNDC. In Suriname, an agriculture focal point was appointed and this individual participated in NDC activities. Constraints to consideration of agriculture as a key contributor to the NDCs included the poor quality of agriculture data⁴⁰ that made it difficult to conduct mitigation analysis for the sector, and generally low levels of awareness of the mitigation benefits and potential of a range of actions in the agriculture sector. As a consequence, for example, in T&T there is an ongoing project with the FAO to strengthen the data collection protocols and build capacity through training in the agriculture sector. Staff deficit in the agriculture ministry impacted the extent of

38 Article 13 of the Paris Agreement defines the type of information to be included in an NDC. The Paris Agreement established the Enhanced Transparency Framework (ETF), which clearly defines the elements of the NDC to include an account of the NDC planning process. NDC institutional arrangements include established inter-institutional committees to support their development and implementation.

39 Following submission of their NDCs (initial and update), countries have sought assistance from various support entities including the UNDP NDC Support Programme, NDC Partnership, Partnership for Transparency in the Paris Agreement, among others, to develop their NDC Implementation Plan and Engagement Plans.

40 For example, Trinidad & Tobago.

participation. Important too is that where an NDC or its update includes agriculture as a contributing mitigation sector, the activities defined in the NDC are often not mainstreamed into sector plans and programmes. This impacts the prioritisation of the activities for implementation, especially for government budgetary support and alignment with national development plans.

Updated NDCs show increasing recognition of the vulnerabilities and needs of women, especially with gender assessments conducted and strategies developed in parallel with the NDCs. Although few NDCs described gender proofing of the NDC actions, gender equality was a strong feature across countries with NDC gender assessments and a gender mainstreaming strategy completed. In July 2021, representatives from Belize, Dominica, SLU, SVG and Suriname participated in workshops that linked gender, NDCs and climate change through Work Clinics on Inclusive Governance and Responsive Gender Consultation Processes; Sectoral Gender Analysis and Gender Action Plans; Gender and Climate Change Goals and Indicators, and Gender Responsive Capacity Building Processes. **Figure 3.18** highlights gender considerations already in place for the NDCs in the AgREADY countries. Haiti has committed to bridging the vulnerability gaps for women and girls and key areas of focus are highlighted in Box 3.3. SKN's uNDC includes a section on gender that states that it is committed to aligning the NDC implementation actions with the national development goals on gender equality and Decision 3/CP.25 on the enhanced Lima Work Programme on gender and its gender action plan. SKN is committed to also mainstreaming gender equality in its NDC Implementation

Plan and Financial Strategy. It also defined actions to ensure a cross-sectoral approach to include *strengthening coordination with national gender stakeholders; increasing institutional capacities on gender mainstreaming; conducting sectoral gender analysis* to inform the design and implementation of climate actions; and *collecting and assessing sex-disaggregated data* in its MRV systems.

Dominica has developed a Gender Mainstreaming Roadmap (GMR) for NDCs (2021) to comprehensively guide its Climate Resilience Strategy and gender equality goals of society. The GMR has a sectoral framework with agriculture being one sector of focus. Five priority areas have been identified for implementation, monitoring and reporting on gender mainstreaming and climate under the GMR and these are highlighted in Box 3.4.

Box 3.4. Haiti's Gender Focus in the iNDC

- Promoting initiatives that meet the specific needs of girls and women, especially those in situations of great vulnerability.
- Establishment of specific working group on gender and climate change.
- Have at least one gender focal point sitting within the CNCC.
- Strengthening girls' and women's access to relevant climate change information, including climate technologies.
- Involving gender experts in the development and implementation of monitoring and evaluation frameworks for actions to combat climate change.
- Generating and disclosing gender-specific data.
- Supporting gender mainstreaming in the national development planning process, including in the allocation of financial resources.

Box 3.5. Dominica's NDC Gender priorities

- Capacity-building, knowledge management and communication.
- Gender balance, participation and women's leadership.
- Coherence.
- Gender-responsive implementation and means of implementation.
- Monitoring and reporting.

Figure 3.18. Gender mainstreaming for NDCs in AgREADY Countries

NDC Gender Analysis and Mainstreaming	
Bahamas	No clear gender focus in the iNDC, but a condition of the funding for the ongoing uNDC is to include clear gender strategies
Belize	Recommendations for increasing gender sensitivity made for the NDC Implementation Plan (Section 4) and for the long-term Low Emissions Development Strategy (under development)
Dominica	Gender Mainstreaming Roadmap for NDCs (2021) incorporated in NDC update
Haiti	Defined gender-responsive considerations for incorporation into NDC Implementation Plan and Financing Strategy
Saint Kitts and Nevis	Gender Equality Policy and Action Plan (2021); Included in NDC update (2021)
Saint Lucia	ENGENDER: Gender-based climate resilience analysis for Saint Lucia; NDC update; Inter-linked multi-stakeholder gender responsive consultations
Saint Vincent & the Grenadines	?No mention of gender defined in the iNDC but the NAP has clearly defined actions for gender inclusiveness
Suriname	Incorporated in NDC update
Trinidad & Tobago	Gender mainstreaming included in initial NDC (2019) and Gender Action Plan listed as an activity in CBIT Project

Social Inclusion and Just Transition

Social inclusion is an important part of NDC development and implementation with the process being strengthened over time to include gender considerations, involvement of youth and other vulnerable groups, including community groups and indigenous peoples. Participation of these groups in NDC development is one critical element of the NDC. To this end, most countries have conducted multi-sectoral capacity gaps assessments and included broad stakeholder engagement processes. Others have established specific working groups to ensure that the considerations of gender, youth and other special interest groups are addressed in plans and strategies and reflected in their NDC updates. Dominica has been explicit in addressing social inclusion in the NDC and in its Implementation Plan, especially in its recognition of the Kalinago Territory. SKN recognized vulnerable groups in its uNDC and Suriname has identified an action for development of a Just Transition Plan based on tasks to assess the impacts and compensation requirements for people as a result of the various related energy reforms. Other countries have not been explicit in addressing social inclusion and defining actions for Just Transition. Annex 10 highlights the Social Inclusion and Just Transitioning efforts contained in AgREADY country NDCs.

3.3.2.2 Capacity Enhancement for NDC Implementation

Following on the development and submission of the iNDCs and where completed, uNDCs, the AgREADY countries have taken steps to develop NDC Implementation Plans and Financing Strategies, which are intended to define actions towards implementation of the NDCs, linked to MRVs and financing for implementation of the actions. Countries, like Dominica and T&T, have taken steps to align the NDC Implementation Plans with national development plans, and this is especially important where financing mechanisms have been identified and there are pledges for unconditional financing through government budgetary allocation. These are discussed in more detail in Section 3.3.3. In response to the ETF of the Paris Agreement, all AgREADY countries have developed collaborative partnerships with various international organizations, including the UNFCCC, the NDC Partnership, the GEF, and various implementing agencies and technical organizations. Annex 11 provides a summary of collaborating external partners and the efforts towards NDC development, update and implementation.

3.3.3 Financing for Mitigation and Adaptation Actions in NDCs

CARICOM AgREADY countries have, at different times, assessed the financing needs for implementation of mitigation and adaptation actions contained within their respective NDCs. Countries have, with the support of various external partners, developed financing strategies, with estimates of the cost of projects and programmes across the different sectors contained within their NDCs. Five of the nine (56%) AgREADY countries have a financing strategy linked to their NDCs and with planned implementation up to 2030 (Table 3.5). Financing strategies completed at the time of development of the iNDCs have been updated based on the enhanced emissions reduction contributions contained in the uNDCs. SLU has indicative financing needs identified for up to 2025, the time in which the next NDC update is required. Both Belize and T&T NDC financing needs are around USD\$2 billion each, while SKN's is just under USD\$1 million. Although Haiti does not have a NDC financing strategy, estimates have been completed for mitigation, adaptation, and loss and damage actions. In its NDC, SVG has pledged unconditional financing for its mitigation target even though this has not been quantified nor a strategy defined. Financing needs and ensuing strategies have not yet been identified for The Bahamas, and Dominica. As indicated in **Table 3.14**, six of the nine countries (67%) have stated unconditional financing, i.e., where some actions are being, and will be, implemented through government budgetary allocation. These included Belize, Haiti, SLU, SVG, Suriname and T&T. Details regarding financing for AgREADY country NDCs can be found in Annex 12.

Table 3.14. Summary of financing for AgREADY countries' NDCs

AgREADY Country	Financial Strategy (Y/N)	Financing	
		Unconditional	Conditional
The Bahamas	N		✓
Belize	Y	✓	✓
Dominica	N		✓
Haiti	N	✓	✓
Saint Kitts and Nevis	Y		✓
Saint Lucia	Y	✓	✓
Saint Vincent and the Grenadines	N	✓	✓
Suriname	Y	✓	✓
Trinidad and Tobago	Y	✓	✓

3.3.4 Monitoring, Reporting and Verification for NDCs

Five of the nine AgREADY countries (56%) have commenced work on their MRVs, establishing their domestic institutional arrangements, including the relevant legislation, systems, structures and processes. An important element of the Paris Agreement's ETF is the monitoring, reporting and verification (MRV) systems in countries to track the progress towards implementation of the NDCs. T&T has been leading the efforts with implementation of the system underway. A critical element of this is the development of relevant legislation to mandate stakeholders to measure and report emissions reduction, which is underway in the country. The following represents key efforts to date by the AgREADY countries in this regard:

- **Belize:** Aligned with the uNDC and in coordination with the NDC Implementation Plan, a series of evaluation systems will be put in place to monitor annual progress against targets and actions for both mitigation and adaptation. These are being spearheaded by the National Climate Change Office (NCCO) and include a NDC Monitoring system and an Energy sector MRV tool.
- **Dominica:** Currently has a sector based MRV framework and is in the process of developing a Monitoring and Evaluation (ME) framework for all climate change adaptation and resilience actions under the Government's Public Sector Investment Program.

- o A ME framework of the National Agriculture Policy has been developed for the agriculture sector, which will facilitate effective management and oversight of its implementation. This framework includes a combination of macro-level, value chain, farm management and natural resource management indicators, which will assist in tracking the contribution to economy, identify trends which need to be enhanced or reversed, identify investment options to improve performance of the overall sector and its sub-sectors and enable evidence-based decision-making.
- o The MRV system for the Forestry sector was developed at the end of 2021 and employs annual assessment of land-use and land-use changes; the GHG inventory (which will be updated annually) and verification through the UNFCCC REDD+ Technical Assessment.
- o A MRV system for HFCs has also been developed to establish a usage baseline, update emissions estimates and formulate a phase-down plan.
- o There are plans for the development of a MRV system for the Transport sector under the Low-Carbon Transport Dominica Project. These will establish emissions baseline estimates, and include modelling and projections, among others.
- **Saint Lucia:** An MRV Portal is under development, which incorporates information from all sectors. An MRV climate finance tracking system is also being designed under the auspices of a GCF Readiness Project for SLU in 2022.
- **Suriname:** Efforts are underway to carry out tracking activities.
- **Trinidad and Tobago:** In 2021 the MRV system became operational, as the first to be created in the Caribbean region and is expected to record all sources of GHG emissions in the country, that is, mitigation efforts and resources required to support their reduction. The MRV system is managed by the Environmental Management Authority and is comprised of a Knowledge Management System (KMS), which is a central repository that includes methodologies, procedures and institutional frameworks for the monitoring data to be collected. It is currently a voluntary system that provides for the submission of data through a secure web-based portal that allows for collaboration among public and private sectors. Efforts are underway to formally include the MRV / KMS system into the legislative framework to allow for mandatory reporting of GHG emissions by emitting entities in T&T.

Indications of future efforts to develop MRVs are that SVG has signed off on to the MRV hub and efforts are underway to establish their MRV framework; The Bahamas' uNDC will support institutional capacity building for the MRV system, and Haiti has a prototype in place, however, the country experienced challenges operationalizing the system during the implementation of the iNDC. Haiti is committed to test the prototype framework throughout the implementation of the uNDC.

3.4 Implementation of Agriculture Actions in the NDCs

Across the nine AgREADY countries there is some evidence of implementation progress against actions and targets within the initial and updated NDCs. Implementation progress is largely supported by ongoing or planned initiatives within the countries that can contribute towards the NDC targets and actions coupled with the availability of climate financing. Due to gaps in MRV efforts, evidence of the extent of implementation was not easily assessed. Implementation

progress is also impeded by the failure of some countries to mainstream NDC targets and actions into national and sectoral policies and action plans. A contributory factor to this is the identification of NDC priorities from ongoing financed projects, programmes and policies that match and align well with the NDC actions and especially where their details were not explicitly

Successful NDC implementation depends on the institutional arrangements and collaborative framework for design and implementation, inclusiveness of design and implementation processes, technical capacity, political will and national and local level ownership, MRV systems and the financing or investment plan that supports the NDCs.

defined in the NDC. Notwithstanding, the conditional nature of the NDCs can, and has been shown to slow implementation. Additionally, the extent of implementation, and evidence of same, was not easily assessed because holistic MRV efforts are in its infancy or have not yet started in some countries.

As previously stated in Section 3.2.5, agriculture is more commonly represented in NDC adaptation actions, rather than mitigation targets, and across the countries, climate smart and climate resilient agriculture-focused projects are in progress and/or planned and these align well with the NDCs. A scoping constraint to the assessment was that projects and programs that could contribute to implementation progress were not identified and documented by the countries. As a consequence, the scoping study utilized projects that were shared by stakeholders. **Table 3.15** summarizes the key advances, gaps, needs and lessons learned as it relates to agriculture implementation in the NDCs across the nine countries that were garnered through NDC scoping consultations. Key factors such as limitations in data, financing and human resource capacity constrain the sector’s ability to effectively contribute to NDC implementation. Lessons from implementation include the importance of the required enabling environment to support implementation, enhanced national and sector capacity and establishment of realistic targets.

Table 3.15. Summary of key advances, gaps, needs and lessons learned as it relates to agriculture implementation in the NDCs across the nine countries

Thematic area for agriculture implementation in NDCs	Advances	Gaps	Needs	Lessons Learned
Institutional arrangements and coordination for design and implementation	<ul style="list-style-type: none"> • Collaborative processes led by a coordinating ministry or entity through an inclusive approach to engaging government and non-government stakeholders at various in-country levels and sectors. The collaboration has extended to budget development as well. • These processes have led to increased public awareness, behavioural change by some stakeholders; and increased recognition of climate change and risks. 	<ul style="list-style-type: none"> • In some instances, there is weak environment for change; inefficient policy instruments, and ineffective organizational arrangements. • Limited funding and inadequate technical and human resources are consistently identified as significant barriers to implementing mitigation and adaptation measures. 	<ul style="list-style-type: none"> • Completion of implementation plans and ownership of these plans via inclusion in MDAs strategic plans. • Establishment of the MRV systems, with roles and responsibilities well defined. 	<ul style="list-style-type: none"> • The required enabling environment must be in place to support implementation. • National capacity must be built across government agencies to better understand the concepts required to mainstream climate change and the NDC in other national policy-driven activities. Building national capacity to conduct future GHG modelling activities to ascertain the mitigation impacts of sector-based projects and programs is also necessary.
Preparation, prioritization and planning for implementation	<ul style="list-style-type: none"> • Competent, well-trained and educated staff 	<ul style="list-style-type: none"> • Cost and maintenance of green technologies • Available technical and human resources have been completely inadequate for any level of implementation of adaptation actions 	<ul style="list-style-type: none"> • Human resource constraints (need additional personnel). • Also need: <ul style="list-style-type: none"> – technological based tools – financing • Raw and analytical data demonstrating climate change scenarios, research capabilities, technical capacity 	<ul style="list-style-type: none"> • Realistic targets and commitments are important to ensure they can reasonably be met. • Dialogue is important
Integration in the sector		<ul style="list-style-type: none"> • Weak alignment with national plans and strategies regarding climate change • NDC actions not always integrated/ mainstreamed in sector plans 		

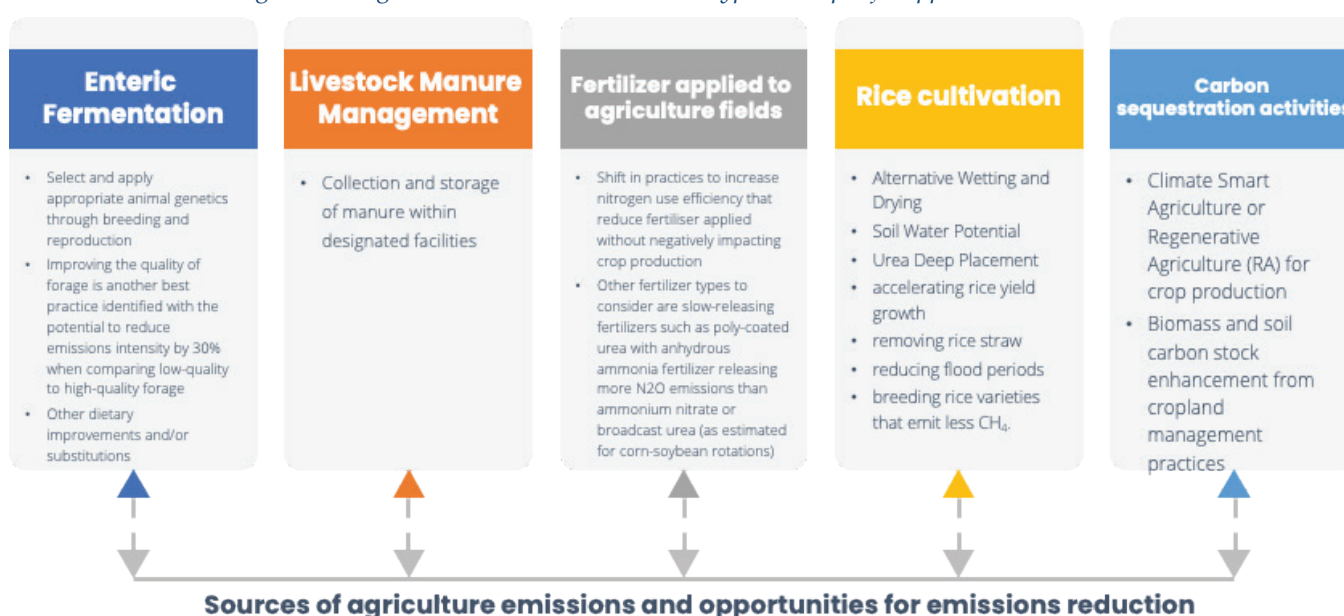
Thematic area for agriculture implementation in NDCs	Advances	Gaps	Needs	Lessons Learned
Application of mitigation and adaptation measures in the sector	<ul style="list-style-type: none"> Several programmes and projects underway that align with mitigation and adaptation actions, e.g. on land, soil and water management, CSA etc. 	<ul style="list-style-type: none"> Weak organization of farmers, even with attempts made. 	<ul style="list-style-type: none"> Technically trained and competent personnel 	
Financing to support implementation in the sector	<ul style="list-style-type: none"> Financing/investment plans for the NDCs developed or in the progress. Other government and non-government initiatives are underway that support financing for implementation 	<ul style="list-style-type: none"> Limited unconditional support for implementation Sometimes challenging to meet requirements of donors earmarked for providing financing to help countries meet conditional commitments. 	<ul style="list-style-type: none"> Financing to support implementation and follow-on activities such as MRV development and implementation. 	
Monitoring, evaluation, and report of progress in the implementation	<ul style="list-style-type: none"> MRV systems already developed or in progress Legislation being developed to accommodate mandatory reporting against MRVs in one country 	<ul style="list-style-type: none"> Inadequate human resource capacity Lack of coordination and follow-up MRV development incomplete 	<ul style="list-style-type: none"> Support and capacity building for monitoring and evaluation of adaptation measures 	
Transparency (including participation and communication issues, among others)	<ul style="list-style-type: none"> Efforts made for inclusive implementation. 	<ul style="list-style-type: none"> Low levels of participation affecting the diversity of engagement. 		
Gender considerations	<ul style="list-style-type: none"> Most NDCs were prepared using inclusive processes that allowed for the participation of women Gender analyses completed and strategies developed for a number of the countries Gender included in updated NDCs 	<ul style="list-style-type: none"> Various issues affected participation of men in some projects, with women being dominant. 		<ul style="list-style-type: none"> Gender considerations are dependent on thorough analysis and a systematic approach to gender mainstreaming is important.
Youth participation/ Youth perspectives incorporated	<ul style="list-style-type: none"> Most NDCs were prepared using inclusive processes that allowed for youth participation. Youth participation in implementation of agriculture activities is evident. Youth entrepreneurs have taken on to agriculture, using newer technologies, and often receive the support from family and/or financial institutions. 	<ul style="list-style-type: none"> Youth (below 35) often do not meet the criteria for access to financing (even low interest) resulting in low levels of participation. 	<ul style="list-style-type: none"> Opportunities for youth participation in a range of activities at different levels. 	<ul style="list-style-type: none"> Innovative financing mechanisms are important to bolster youth participation in NDC implementation.

4. Opportunities for Enhancing NDC Ambition for AgREADY Countries Through Contribution from the Agriculture Sector

4.1 Opportunities for Agricultural GHG Emission Reduction

This section of the NDC scoping report provides suggested mitigation options selected from existing practices that could be applied to reduce agricultural GHG emissions. These potential options would need to be evaluated for their economic and social feasibility. Disaggregated country-level data for emission sources within the agriculture sector would be useful to support the evaluation prior to selecting an appropriate priority set of mitigation actions that match individual country circumstances. The opportunities in Figure 4.1 are presented against the top five GHGs emissions reduction areas identified in the countries and considered as best practice.

Figure 4.1. Agriculture emissions reduction types and specific opportunities



There are a range of options to incorporate new and additional agricultural contributions in an enhanced NDC. Depending on national circumstances and priorities, countries may choose to:⁴¹

- Strengthen the implementation of existing agricultural climate policies and targets.
- Add specific policies and actions to build resilience and enhance adaptation.
- Add specific policies and actions to reduce emissions.
- Incorporate additional agriculture-sector actions into an emissions reduction target.
- Include additional information to improve understanding of agricultural emissions.
- Build into GHG inventories priority emission reduction types

Multiple benefits can arise from including the agriculture sector in NDCs, and these include:

- Ensuring food and nutrition security in the face of climate change.
- Increased awareness of the needs and priorities for climate action in the sector.
- Greater support for building resilience, especially for small-scale and vulnerable farmers.

41 Ross, K. et al., 2019, NDC Enhancement: Opportunities in Agriculture. Working paper, Washington, DC: WRI. Available online at: <https://oxfamlibrary.openrepository.com/bitstream/handle/10546/620922/dp-ndc-enhancement-opportunities-agriculture-011219-en.pdf?sequence=1&isAllowed=y>

- Mitigation through reduced emissions or enhanced sequestration from the agriculture sector.
- Progress to achieve sustainable development objectives.
- Attracting technical and financial resources for the agriculture sector.

4.2 Recommended Approaches for Enhancing Mitigation Ambition and Adaptation Co-benefits for AgREADY Countries in Updated NDCs

Ecosystems-based/nature-based management systems (EMS) and climate resilient agricultural (CRA) practices are two approaches that could assist AgREADY countries to increase their mitigation ambition and levels of adaptation co-benefits. Table 4.1 provides a summary of country-specific recommendations, on the approaches that allow for emissions reduction from the five emissions sources presented in Figure 4.1. Actions that have been repeatedly applied in countries, through projects, and are opportunities for upscaling and provide mitigation/adaptation benefits include expanded agro-forestry, diversification of production systems to include protected agriculture and drip systems, protected agriculture structures for crop production, ecosystems upgrades and soil conservation. However, the prioritization process would need to include the other assessments based on country-specific needs and criteria.

Table 4.1. Specific recommendations for agriculture mitigation actions and potential adaptation co-benefits by emission source for AgREADY countries

Potential Mitigation	BAH	BELIZE	DOM	HAI	SKN	SLU	SVG	SUR	T&T
Nutrition management practices such as integrating forages and balancing high protein forages with high energy supplements					√	√			√
Enhanced efficiency nitrogen fertilizer sources, in particular nitrification and urease inhibitors							√		√
Inclusion of cover crops such as legumes in crop rotational regime							√		√
Use of alternative fertilizer sources such as organic alfalfa-based fertilizer products							√		
Use of non-chemical approaches to managing nitrous oxide emissions							√		
Diversification of production systems to include protected agriculture systems and drip systems							√		
Protected agriculture structures for crop production	√								
Protected structures can be built to withstand specific wind speed	√								
Manure management technologies e.g. anaerobic digesters and biodigesters and adding urease inhibitors to manure stockpiles.	√		√		√	√			
Animal Genetics and Breeding Programs	√	√		√					
Improved Feed and Nutrition Programs	√	√	√	√					
Animal Health and Husbandry Programs		√		√					
Incentivizing ecosystem upgrades e.g., Reforestation, Afforestation		√		√					
Improved grassland management, pasture species, forage mix and use of supplements			√	√					
Expanded agroforestry systems			√						
Nutrient management regime								√	
Water management such as alternate wet dry days								√	
Addition of biochar								√	
Reduced application of urea								√	
Use of urease and nitrification inhibitors								√	

4.3 Opportunities for Agriculture GHG Emission Reduction Beyond the Farm Gate

Globally, and within the Caribbean region, agriculture sector mitigation actions in the NDCs are generally limited to “on the farm” activities, and do not extend to the complete value-chains of farm products. Up to 37% of global emissions are attributed to the world’s food systems, and of this, 5-10% comes from beyond the farm gate and 10-14% from on- farm agriculture. Emission reductions in the processing, packaging, transportation and marketing areas of the value chain have a greater impact on emissions in other sectors (e.g., the energy sector), however altering the supply and demand can impact agriculture emissions through changes in agriculture land area or crop types. There is also little focus in NDCs on reducing emissions across the food supply chain (such as shifting consumers to lower emission diets, reducing food loss and waste, etc.,). Figure 4.2 provides a number of options for emissions reduction beyond the farm gate.

Figure 4.2. Options for agriculture emissions reduction beyond the farm-gate



5. Guidance on Processes and Steps to Support Agriculture Contribution to Future NDCs

The NDC scoping study identified small contributions from the agriculture sector to NDCs, and these were largely found in the submitted uNDCs. Considering the analysis and the barriers to including agricultural actions in enhanced NDCs, there are actions⁴² that could be implemented to further address some of the regional issues and enhance agriculture's contribution to NDCs. The following actions and processes are presented as a guide for the CARICOM AgREADY countries and their partners for future NDC enhancement.

1. Alignment of agricultural climate targets, policies, and actions with NAPs and/or SDGs

The NDC scoping found that often the NDC actions and targets were not mainstreamed into domestic policies, plans and programmes, and this had implications for ownership at the national, sectoral and local levels; financing at the national level through government budgetary allocation with little priority attached to such actions; financing at the international level as often there is a requirement for strong alignment at the national level; and priority for implementation.

Ownership of NDC actions and targets, reflected in incorporation into sectoral plans and programmes can result in prioritization and increased access to resources, sharing of climate data and information, and efficient consultation processes where stakeholder engagements can be integrated, and collaborations and partnerships forged. It can also strengthen harmonized reporting and efficiency in meeting multiple reporting requirements at various levels and for a range of interests.

NAPs, NAPAs, SDGs and LEDS (and supporting NAMAs) are important for linkages with international support and their credibility can result in strong vertical integration. Ensuring that the NDC actions are well-aligned to these will also provide greater opportunity for their implementation.

2. Strengthening Monitoring, Reporting and Verification (MRV) systems for better inventories, assessments of mitigation potentials or assessment of access to finance

The NDC scoping also reviewed establishment of MRV systems in the nine AgREADY countries and found that these were at varying stages of development, some focused on sectoral, others on national MRVs, and others not yet developed. MRV systems are fundamental to country responses to climate change as they enable countries to meet international reporting requirements and also allow countries to demonstrate their progress towards achieving the mitigation and/or adaptation goals set out in the NDC. The use of the MRVs is a means of transparency as required under the Paris Agreement and allows for integration and coordination of MRVs under one system. Improving MRV systems across the region will assist countries in producing better inventory estimates on a more frequent basis, which would enable improved mitigation potential assessments to focus mitigation planning. It would also improve emissions reduction tracking.

3. Identification of indicators to track change

Critical to any MRV system and contained within them are indicators of change that must be used to monitoring changes. For countries, it is important to select indicators that can be readily measured and realistic. Consequently, guidance is needed on the specific data sets to be collected, the timelines and duration for collection and the specific roles and responsibilities for monitoring, analysis and reporting.

⁴² Ibid, Ross, K. et al. (2019)

4. Mainstreaming gender considerations in NDC actions

Gender equality is an important consideration for NDCs and mainstreaming gender equality and supporting more inclusive approaches in climate action offer a pathway to more effective, resilient climate action. Women and disadvantaged groups are disproportionately affected by negative climate change impacts. Both the literature and consultations highlighted that women are faced with unequal access to financial resources, and climate-related information and decision-making. Harnessing the knowledge, strengths and contributions of all people, understanding the gender-differentiated impacts of climate change, and empowering all people, regardless of gender, to manage and respond to climate risks will not only facilitate fair and just solutions, but can also galvanize impactful climate results. An approach to mainstreaming gender considerations in NDC development and implementation is imperative and the use of such standards will enable a more robust country response to gender inequalities within NDC interventions. Key steps should include:

- Engagement of key gender-relevant stakeholders during climate change consultations at national, sectoral and local levels.
- Use of gender analyses or social impact assessments and building on existing national gender policies and framework in NDC planning processes.
- Incorporation of sex-disaggregated and gender-responsive indicators in NDC investment plans and MRVs, and tracking their progress.
- Strengthening of country capacity for gender mainstreaming in climate action, at both the policy and local level.

5. Improvement of agricultural innovation and extension services

Climate change is a key threat to smallholder food production and extension services can support smallholder farmers in navigating and addressing the effects of climate change. Capacity building for extension services is an important element of service delivery to farmers. Building the capacity of extension officers as trainer of trainers, where they can be trained to teach farmers about data collection processes and data collection requirements, which could lead to improved data collection for GHG inventories and projections is one important first step. The NDC scoping revealed that all countries apply a Tier 1 methodology in their inventories (except biomass burning in Belize, which is Tier 2), which means IPCC default factors are applied. In addition, many countries make use of international data sets for activity data. This suggests that the inventories are not granular enough to detect the changes due to mitigation efforts. Improved data could lead to application of a Tier 2 method in the inventory, which may allow for mitigation tracking through the inventory. In addition, innovative service delivery alternatives, such as field schools, provide another approach to support farmers. This may not only provide them with information on climate change but also introduce new, innovative technologies that can be implemented to reduce emissions or even collect data.

6. Identification of policies and measures to equitably clarify land tenure and protect small-scale farmers

Land tenure is a constraint for food production systems in the Caribbean region. Farmers are not particularly keen to invest in mitigation or adaptation actions on a parcel of land for which there is long term insecurity of tenure. Secure land tenure is essential for safeguarding against this and will ultimately encourage landowners to look after their land and apply sustainable farming or CSA methods. In the latest IPCC Climate Change and Land report⁴³ (2020), the IPCC indicates that land tenure is a key dimension in land-climate interaction discussions. Efforts by land agencies to (i) regularize tenure especially for small holder farmers, (ii) support lease of agriculture lands to farmers as a means of promoting agriculture and (iii) programmes to utilize government lands for use by multiple small farmers should be explored to promote climate resilient agriculture.

⁴³ IPCC, 2020. Climate Change and Land, Available at: <https://www.ipcc.ch/srccl/>

7. Identification and/or prioritization of actions that support both mitigation and adaptation

Across the Caribbean region, adaptation and resilience in agriculture is the prime area of focus due to the small contribution to country emissions resulting in low levels of priority given to mitigation action in the sector. By identifying and prioritizing adaptation actions that have mitigation co-benefits and mitigation actions with adaptation co-benefits, the countries can take advantage of the adaptation actions that are already included in the NDCs. Additionally, mitigation actions that also have adaptation co-benefits can help to build resilience in the sector. Adaptation actions can be assessed to determine their mitigation potential so efforts can be focused on these activities. Ultimately these actions can be enhanced and incorporated into the mitigation actions in the NDCs. This process would require the identification and quantification of mitigation co-benefits of the adaptation actions. Similarly, potential mitigation actions, including those with adaptation co-benefits, can be quantified and prioritized for inclusion in the NDC.

8. Identification of support needs

Agriculture sector stakeholders have not been integrally involved in NDC development or updates in a number of the AgREADY countries. As a reflection of the political will to include agriculture in the NDCs capacity needs assessment is needed to determine the needs within the sector. This assessment should focus on areas of finance, human resource capacity and technology needs.

9. Link to niche markets that could incentivize sustainable, lower emission products

The small size of the countries in the Caribbean results in high production costs and limits the exploitation of economies of scale; therefore, high value niche products are more likely to be competitive than traditional commodity crops under such conditions.⁴⁴ There is a growing demand for organic or sustainably produced products and this niche market should be explored. This would incentivize farmers to manage their land sustainably and keep emission low. Niche markets and opportunities would need to be identified and prioritized. This would also link to improved innovation and agricultural extension as this could be a way to encourage and support farmers to respond to the needs of these niche markets.

10. Target larger-scale mitigation activities as a region to cost-effectively reduce emissions

A regional approach that targets large-scale mitigation activities provides an opportunity to address the need for the upfront capital required for some of the mitigation options listed in Sections 5 and 6, giving due consideration to Article 6.2 or 6.4 of the Paris Agreement to trade Internationally Transferred Mitigation Outcomes (ITMOs) that could be generated by a collaboratively implemented large-scale mitigation activity. The countries could share the emission reductions with regional partners based proportionally upon their contribution to the collaborative project's implementation. This could effectively help nations with limited agriculture sector mitigation actions to build experience and compensate for their GHG emissions through agricultural activities that, if addressed only within their national boundaries, may not be cost-effective. The countries evaluated are likely to continue to rely upon external funding to provide financial resources to facilitate the transition to new technologies and farming practices that result in emission reductions. Large-scale mitigation activities accomplished through regional collaboration may also be an effective strategy to secure project funding and to support building national expertise.

11. Financing agriculture actions in NDCs

Implementation of country NDCs is dependent on the availability of financial resources, inclusive of both conditional and unconditional, among other things. As a consequence, with the support of external entities, the AgREADY countries have developed NDC financing or investment plans. These plans define the programme of investment required to

⁴⁴ Tandon, 2014, Strengthening sustainable agriculture in the Caribbean: A guide for project support and guidelines for a policy framework. Available at: https://www.competecaribbean.org/wp-content/uploads/2015/02/Strengthening_Sustainable_Agriculture_in-the-Caribbean_web.pdf

implement the NDC and often includes a strategy to meet the identified financing needs. At the country level, access to financing from government budgetary allocation is via Ministry budgets (for government actions) presented to the Ministries of Finance annually and through project concepts submitted through the Public Sector Investment Programme for public financing. Others are via public-private partnerships (PPP). Externally international support generally requires a project concept. Furthermore, specific institutional capacities may need to be demonstrated, and the enabling environment for policy implementation and private sector engagement may need to be enhanced. Readiness for financing is important and there are some common underlying principles and requirements that should be in place to support this. Often international financiers require consideration of environmental and social safeguard, gender and fiduciary elements and alignment and synergies between climate actions and projects and national development priorities. Key NDC elements with financing considerations include adaptation and mitigation actions, governance and institutional arrangements, financing, and MRVs. The following related 10 steps towards planning for NDC implementation, from the NDC Partnership, one of the external support consortia that has been providing implementation and finance planning assistance to the countries include:

1. Review current climate finance landscape.
2. Establish institutional arrangements for the oversight and coordination of climate finance activities.
3. Compile an overall costing for the NDC.
4. Identify funding gaps and needs.
5. Assess public and private financing options.
6. Develop a country climate investment plan.
7. Secure direct access to international climate funds for national and subnational institutions.
8. Increase private sector engagement and overcome barriers to investment.
9. Design and implement a climate finance MRV system.

6. Conclusions and Way Forward

The NDC scoping study sought to better understand the current position of agriculture in NDCs for AgREADY countries and through data and information analysis provided direction on opportunities to raise ambition from the sector.

The NDC scoping study found that:

1. Agriculture and food security are included in NDCs but the potential for greater contribution for both mitigation and adaptation has largely been unexplored.
2. The focus of agriculture in the NDCs has primarily been on adaptation and resilience building. There is however evidence that mitigation targets of updated NDCs are increasingly incorporating agriculture. Current NDC agriculture adaptation actions have potential to provide mitigation co-benefits but these have not been sufficiently explored.
3. Low levels of involvement of agriculture stakeholders in and unavailability of sector-specific data for modelling exercises that determined GHG reduction potential for NDCs impacted the sector's contribution to NDCs.
4. Low levels of awareness and engagement of agriculture stakeholders in NDC development that also affected mainstreaming of NDC agriculture actions, whether adaptation or mitigation, into sector strategies and plans. Sector stakeholder involvement was constrained by human and technical resource deficits.
5. NDC agriculture adaptation actions were generally not detailed but with reference to national and sectoral documents, e.g., NAPs, NASAP. Implementation was largely opportunistic and depended on external donor support. M&E systems and processes were not well-developed.

To raise the ambition of agriculture in future NDC enhancements, key actions that can help countries are to:

1. Build awareness of agriculture stakeholders on climate change and activities that support both adaptation and mitigation in order to increase agriculture's contribution to future NDCs.
2. Strengthen agriculture sector capacity with the required human resources that support climate resilience building, including development of policies, monitoring and evaluation, data gathering, linkages and engagement with broader CC portfolios.
3. Build human resource and technical capacity for mitigation modelling and monitoring in the agriculture sector.
 - a. Undertake relevant exercises to quantify mitigation actions and adaptation co-benefits. Complement these with the appropriate socioeconomic feasibility and cost benefit analyses to determine priority.
 - b. Establish and utilise systems for monitoring of GHG emissions from the agriculture sector.
4. Encourage agriculture stakeholder participation in NDCs and NAP development processes and other country and regional level climate change initiatives, especially given the relevance to investment that support climate resilient agriculture practices.
5. Mainstream agriculture actions contained in NDCs, NAPs and other documents in agriculture sector plans and strategies in order to build ownership of and leadership on their implementation.

7. References

- Arthurton, D. 2020. *FAQ Initiative to Promote Investment Interventions to Advance Food and Agriculture Sector Transformation in St. Kitts and Nevis*, Arthurton, D., St. Kitts and Nevis.
- Atteridge, Aaron, Nella Canales, and Georgia Savvidou. 2018. *Climate Finance in the Caribbean Region's Small Island Developing States*. <https://doi.org/10.13140/RG.2.2.14777.88167>
- Bahamas Project Inventory. Unknown. *Project Working Documents*, The Government of Bahamas, The Bahamas.
- Barnette, B. Unknown. *Policy Board Paper - Effective Risk Management*, Government of Dominica, Dominica.
- Britannica (The Editors of Encyclopaedia Britannica). 2022. *Timeline of Climate Change*. <https://www.britannica.com/story/timeline-of-climate-change>.
- CANARI. Unknown. *Strengthening Institutional Arrangements in Trinidad and Tobago to Facilitate Climate Change Adaptation Policy Formulation and Execution*, CANARI, Trinidad and Tobago.
- Caribbean Agricultural Research and Development Institute. Unknown. *Building a Productive and Resilient Regional Agriculture Sector*, Caribbean Agricultural Research and Development Institute, Trinidad and Tobago.
- Caribbean Climate Smart Agriculture. Unknown. *Climate Change and Agriculture Policies, Strategies and Actions*, Caribbean Climate Smart Agriculture, St. Kitts and Nevis.
- Caribbean Community Climate Change Centre. 2015. *Final National Climate Change Policy, Strategy and Action Plan for Suriname*, Ministry of Labor, Technological Development and Environment, Republic of Suriname.
- Caribbean Community Secretariat. Unknown. *Annual Report of the Secretary General*, Caribbean Community Secretariat, Guyana.
- Caribbean Development Bank. Unknown. *Country Economic Review*, Caribbean Development Bank, St. Kitts and Nevis.
- Caribbean Environmental Health Institute. 2021. *Water Sector Model Policy and Model Water Act for Countries within the Organization of Eastern Caribbean States*, Organization of Eastern Caribbean States, Saint Lucia.
- Caribbean Natural Resources Institute. 2019. *National Climate Change Policy of Saint Vincent and the Grenadines*, Caribbean Natural Resources Institute, Trinidad and Tobago.
- CARICOM Secretariat. 2014. *Strategic Plan for the Community*, CARICOM Secretariat, Guyana.
- CIA. 2022a. "Suriname." In *The World Factbook*. Central Intelligence Agency. <https://www.cia.gov/the-world-factbook/countries/suriname/>.
- . 2022b. "Trinidad and Tobago." In *The World Factbook*. Central Intelligence Agency. <https://www.cia.gov/the-world-factbook/countries/trinidad-and-tobago/>.
- . 2022c. "Saint Vincent and the Grenadines." In *The World Factbook*. Central Intelligence Agency. <https://www.cia.gov/the-world-factbook/countries/saint-vincent-and-the-grenadines/>.
- . 2022d. "Bahamas, The." In *The World Factbook*. Central Intelligence Agency. <https://www.cia.gov/the-world-factbook/countries/bahamas-the/>.
- . 2022e. "Belize." In *The World Factbook*. Central Intelligence Agency. <https://www.cia.gov/the-world-factbook/countries/belize/>.
- . 2022f. "Dominica." In *The World Factbook*. Central Intelligence Agency. <https://www.cia.gov/the-world-factbook/countries/dominica/>.
- . 2022g. "Saint Kitts and Nevis." In *The World Factbook*. Central Intelligence Agency. <https://www.cia.gov/the-world-factbook/countries/saint-kitts-and-nevis/>.

———. 2022h. “Saint Lucia.” In *The World Factbook*. Central Intelligence Agency. <https://www.cia.gov/the-world-factbook/countries/saint-lucia/>.

———. 2022i. “Haiti.” In *The World Factbook*. Central Intelligence Agency. <https://www.cia.gov/the-world-factbook/countries/haiti/>.

Climate Analytics. 2021. *NDC Partnership Climate Action Enhancement Package Support to Saint Kitts and Nevis*, Climate Analytics, St. Kitts and Nevis.

Cole Engineering. 2013. *Letter Re: Final Report for the Assessment of the Water Sector in the Caribbean*, Cole Engineering, Barbados.

Commonwealth of Dominica. Unknown. *Second National Communication on Commonwealth*, Commonwealth of Dominica, Dominica.

Crumpler, K., Gagliardi, G., Meybeck, A., Federici, S., Lieuw, T., Bloise, M., Slivinska, V., Buto, O., Salvatore, M., Holmes, I., Wolf, J. and Bernoux, M. 2020. *Regional analysis of the nationally determined contributions in the Caribbean – Gaps and opportunities in the agriculture sectors – Synthesis*. Rome, FAO. <https://doi.org/10.4060/ca7337en>

Davies, E. 2021. *Institutional Capacity Assessment for NDC Implementation*, UNDP, Dominica .

Department of Economic Development, Transport and Civil Aviation. 2020. *Request Letter*, Government of Saint Lucia, Saint Lucia.

Department of Environment. 2021. *St. Kitts and Nevis Nation Climate Change Policy*, Ministry of Agriculture, Marine Resources, Cooperatives, Environment and Health Settlement, St. Kitts and Nevis.

Dillon Consulting. 2016. *National Physical Development Plan*, Dillon Consulting, Dominica.

Droiterre Inc. and Associates, Legal and Environmental Consultants. 2015. *The 2nd National Communications Report of the St. Christopher and Nevis under the United Nations Framework Convention on Climate Change*, Droiterre Inc. and Associates, Legal and Environmental Consultants, Barbados.

EnGenDER. Unknown. *Climate Resilience Analysis - Saint Lucia*, Government of Saint Lucia, Saint Lucia.

———. Unknown. *The Gender Nationally Determined Contributions and Climate Change Training Clinic Series*, Government of Saint Lucia, Saint Lucia.

European Council. 2021. *Cotonou Agreement*. <https://www.consilium.europa.eu/en/policies/cotonou-agreement/>.

FAO (Food and Agriculture Organization of the United Nations). 2015. *Country Programming Framework for the Commonwealth of Dominica*, Food and Agriculture Organization of the United Nations, Dominica.

———. 2015. *State of Food Insecurity In The CARICOM Caribbean Executive Summary*, Food and Agriculture Organization of the United Nations, Bridgetown.

———. 2020. *Strengthening Institutional and Technical Capacity for Providing Agricultural Services in Dominica*, Food and Agriculture Organization of the United Nations, Dominica.

———. 2021. *Understanding the Future of Koronivia Joint Work on Agriculture*. FAO. <https://doi.org/10.4060/cb6810en>.

———. Unknown. *Dominica and FAQ - Partnering to Build Food, Security and Resilience*, Food and Agriculture Organization of the United Nations, Dominica.

———. Unknown. *Dominica Country Profile*, Food and Agriculture Organization of the United Nations, Dominica.

GCCA Intra-ACP Programme. 2014. *Impact Assessment Report and National Adaptations Strategy and Action Plan - St. Kitts and Nevis*, GCCA Intra-ACP Programme, St. Kitts and Nevis.

Government of Belize. 2002. *First National Communication to the Conference of the Parties of the United Nations Framework Convention on Climate Change*, Government of Belize, Belize.

Government of Belize. 2021. *Updated Nationally Determined Contribution*, Government of Belize, Belize.

Government of Belize. Unknown. *Nationally Determined Contribution Under the United Nations Framework Convention on Climate Change*, Government of Belize, Belize.

Government of Belize. Unknown. *Second National Communication - United Nations Framework Convention on Climate Change*, Government of Belize, Belize.

Government of Belize. n.d. *Economic Recovery Strategy for Belize*. <https://www.pressoffice.gov.bz/wp-content/uploads/2019/12/Economic-Recovery-Strategy.pdf>

Government of Dominica. 2021. *Annex - Climate Resilience and Recovery Plan: Disaster Resilience Strategy*, Government of Dominica, Dominica.

Government of St. Kitts and Nevis. 2014. *St. Kitts and Nevis Biodiversity Strategy and Action Plan*, Government of St. Kitts and Nevis, St. Kitts and Nevis.

———. 2018. *The National Climate Change Adaptation Strategy for Saint Christopher and Nevis*, Government of St. Kitts and Nevis, St. Kitts and Nevis.

———. 2021. *St. Kitts Strategy and Action Plan for Agriculture*, Government of St. Kitts and Nevis, St. Kitts and Nevis.

Government of St. Kitts and Nevis. 2021. *Updated Nationally Determined Contribution*, Government of St. Kitts and Nevis, St. Kitts and Nevis.

Government of St. Kitts and Nevis. 2021. *St. Kitts Strategy and Action Plan for Agriculture*, Government of St. Kitts and Nevis, St. Kitts and Nevis.

Government of Saint Lucia. 2004. *Disaster Management Policy Framework - Saint Lucia*, Government of Saint Lucia, Saint Lucia.

———. 2011. *Second National Communication on Climate Change*, Government of Saint Lucia, Saint Lucia.

———. 2015. *Intended Nationally Determined Contribution Under the United Nations Framework Convention on Climate Change*, Government of Saint Lucia, Saint Lucia.

———. 2017. *Third National Communication on Climate Change for Saint Lucia*, Government of Saint Lucia, Saint Lucia.

———. 2018. *Call to Discuss NDC Implementation Priorities for Saint Lucia*, Government of Saint Lucia, Saint Lucia.

———. 2019. *Voluntary National Review Report on the Implementation of the 2030 Agenda for Sustainable Development*, Government of Saint Lucia, Saint Lucia.

Government of Saint Lucia. 2021. *Updated Nationally Determined Contribution Under the United Nations Framework Convention on Climate Change*, Government of Saint Lucia, Saint Lucia.

Government of Saint Lucia. Unknown. *Climate Change Research Strategy*, Government of Saint Lucia, Saint Lucia.

———. Unknown. *First Biennial Update Report*, Government of Saint Lucia, Saint Lucia.

———. Unknown. *Initial National Communication on Climate Change*, Government of Saint Lucia, Saint Lucia.

———. Unknown. *Report of the Gender Based Climate Resilience Analysis for Saint Lucia*, Government of Saint Lucia, Saint Lucia.

———. Unknown. *Sectoral Adaptation Strategy and Action Plan for the Agriculture Sector*, Government of Saint Lucia, Saint Lucia.

Government of St. Vincent and the Grenadines. 2015. *Intended Nationally Determined Contribution*, Government of St. Vincent and the Grenadines, St. Vincent and the Grenadines.

———. Unknown. *National Adaptation Plan*, Government of St. Vincent and the Grenadines, St. Vincent and the Grenadines.

Government of the Commonwealth of Dominica . 2016. *Agriculture Policy Programme Action Plan*, Government of Dominica, Dominica.

———. 2021. *The Dominica National Agriculture Policy Context and Situation*, Government of Dominica, Dominica.

Government of the Commonwealth of Dominica . 2021. *Medium Term National Agriculture Policy*, Government of Dominica, Dominica.

———. 2021. *Nationally Determined Contributions*, Government of Dominica, Dominica.

- . Unknown. *Dominica Climate Resilience and Recovery Plan*, Government of Dominica, Dominica.
- Government of the Republic of Trinidad and Tobago. 2011. *National Climate Change Policy*, Government of the Republic of Trinidad and Tobago, Trinidad and Tobago.
- . 2013. *Second National Communications of the Republic of Trinidad and Tobago under the United Nations Framework Convention on Climate Change*, Government of the Republic of Trinidad and Tobago, Trinidad and Tobago.
- . 2015. *Implementation of the National Adaptation Strategy for Sugar in Trinidad and Tobago*, Government of the Republic of Trinidad and Tobago, Trinidad and Tobago.
- . 2015. *Action Plan for the Mitigation of GHG Emissions in the Electoral Power Generation, Transport and Industry Sectors*, Government of the Republic of Trinidad and Tobago, Trinidad and Tobago.
- . 2017. *Implementation Plan for the Nationally Determined Contribution of Trinidad and Tobago*, Government of the Republic of Trinidad and Tobago, Trinidad and Tobago.
- . 2017. *Trinidad and Tobago's NDC Implementation Plan*, Government of the Republic of Trinidad and Tobago, Trinidad and Tobago.
- . 2017. *Evaluation of Livestock Sector in Trinidad*, Government of the Republic of Trinidad and Tobago, Trinidad and Tobago.
- . 2019. *Vulnerability and Capacity Assessment Report*, Government of the Republic of Trinidad and Tobago, Trinidad and Tobago.
- . 2019. *Mainstreaming Gender in Trinidad and Tobago's Nationally Determined Contribution*, Government of the Republic of Trinidad and Tobago, Trinidad and Tobago.
- . 2019. *Media Sensitization Sessions on Climate Change Report*, Government of the Republic of Trinidad and Tobago, Trinidad and Tobago.
- . 2021. *First Biennial Update Report*, Government of the Republic of Trinidad and Tobago, Trinidad and Tobago.
- . 2021. *Third National Communication*, Government of the Republic of Trinidad and Tobago, Trinidad and Tobago.
- . Unknown. *National Environment Policy of Trinidad and Tobago*, Government of the Republic of Trinidad and Tobago, Trinidad and Tobago.
- . Unknown. *National Performance Framework*, Government of the Republic of Trinidad and Tobago, Trinidad and Tobago.
- . Unknown. *Review of Economy*, Government of the Republic of Trinidad and Tobago, Trinidad and Tobago.
- Green Climate Fund. 2018. *Readiness Proposal*, Green Climate Fund, Dominica.
- . 2020. *Comments to Concept Note*, Green Climate Fund, St. Kitts and Nevis.
- . 2020. *GCF Secretariat Review of the Concept Note for "Building Resiliency in the Water Supply Sector in St. Kitts and Nevis"*, Green Climate Fund, St. Kitts and Nevis.
- . 2020. *Concept Note- Building Resiliency in the Water Supply Sector in St. Kitts and Nevis*, Green Climate Fund, St. Kitts and Nevis.
- . 2020. *Concept Note- Forest and Land Use in Adapting to Climate Change and Increasing the Resilience of the Livelihoods of Peoples and Communities and the Ecosystems They Depend Upon in Saint Kitts and Nevis*, Green Climate Fund, St. Kitts and Nevis.
- . 2020. *Concept Note- Safeguarding Water Security in the Caribbean in a Changing Climate*, Green Climate Fund, St. Kitts and Nevis.
- . Unknown. *Concept Note- Enhancing the Water Security of Smallholder Farmers Against Climate Risk in St. Kitts and Nevis*, Green Climate Fund, St. Kitts and Nevis.
- . Unknown. *Enhancing Caribbean Civil Society's Access and Readiness for Climate Finance*, Green Climate Fund, St. Kitts and Nevis.

HR Wallingford. 2021. *Vulnerability Assessment and Water Utility Adaption Plans*, HR Wallingford, St. Kitts and Nevis.

<https://www.climatechange-foodsecurity.org>. n.d. *Multiple Impacts of Global Warming and Climate Disruption on Agriculture*. <https://www.climatechange-foodsecurity.org/science>.

ICDF. 2019. *Case of Adaptation to Climate Change*, ICDF, St. Kitts.

International Institute for Sustainable Development and Climate Analytics. 2021. *Enhancing Caribbean Civil Society's Access and Readiness to Climate Finance - Scoping Report*, International Institute for Sustainable Development and Climate Analytics, St. Kitts and Nevis.

IPCC. 2022. *The Intergovernmental Panel on Climate Change*. <https://www.ipcc.ch/>.

John, N. Unknown. *Second National Communication on Climate Change*, Government of St. Vincent and the Grenadines, St. Vincent and the Grenadines.

KAIRI Consultants LTD. Unknown. *Medium Term Development Strategic Plan*, KAIRI Consultants LTD., St. Kitts and Nevis.

Lenox H. Sealy & Associates Ltd. Management Consultants. 2015. *Assessment of the Adequacy of Agricultural Market Infrastructure within Five Selected CARICOM Countries - St. Kitts and Nevis Country Report*, Lenox H. Sealy & Associates Ltd. Management Consultants, Trinidad.

Ministry of Agriculture. 2015. *National Agriculture and Food Policy of Belize*, Government of Belize, Belize.

Ministry of Agriculture and Fisheries. 2011. *Plan of Action for Disaster Risk Reduction*, Government of Belize, Belize.

Ministry of Agriculture, Fisheries Forestry the Environment Sustainable Development and Immigration. 2018. *Request Letter - Support for Enhanced NDC Implementation*, Government of Belize, Belize.

Ministry of Education, Innovation Gender Relations and Sustainable Development. 2018. *Advancing Preparations for the Implementation of Saint Lucia's Nationally Determined Contributions - Progress Report*, Government of Saint Lucia, Saint Lucia.

———. 2021. *Saint Lucia National Inventory Report*, Government of Saint Lucia, Saint Lucia.

Ministry of Environment and Cooperatives. 2020. *Request for Support Letter*, Government of St. Kitts and Nevis, St. Kitts and Nevis.

———. 2021. *Request for Support Letter for In-Country Facilitator*, Government of St. Kitts and Nevis, St. Kitts and Nevis.

———. 2022. *NDC Implementation Plan Narrative*, Government of St. Kitts and Nevis, St. Kitts and Nevis.

———. 2022. *Letter of Endorsement of the NDC Implementation Plan*, Government of St. Kitts and Nevis, St. Kitts and Nevis.

Ministry of Food Production, Land and Marine Affairs. 2011. *Strategic Plan*, Government of the Republic of Trinidad and Tobago, Trinidad and Tobago.

———. Unknown. *Investment Opportunities in Agriculture*, Government of the Republic of Trinidad and Tobago, Trinidad and Tobago.

———. Unknown. *The National Food Production Action Plan*, Government of the Republic of Trinidad and Tobago, Trinidad and Tobago.

Ministry of Labor, Technological Development and Environment. 2015. *Intended Nationally Determined Contribution*, Ministry of Labor, Technological Development and Environment, Republic of Suriname.

———. 2016. *Second National Communication to the United Nations Framework Convention on Climate Change*, Ministry of Labor, Technological Development and Environment, Republic of Suriname.

———. 2019. *Second Nationally Determined Contribution*, Ministry of Labor, Technological Development and Environment, Republic of Suriname.

———. Unknown. *First National Communication Under the United Nations Framework Convention on Climate Change*, Ministry of Labor, Technological Development and Environment, Republic of Suriname.

———. Unknown. *Suriname National Adaptation Plan*, Ministry of Labor, Technological Development and Environment, Republic of Suriname.

Ministry of Sustainable Development, Energy Science and Technology. Unknown. *Climate Change Adaptation Policy - Saint Lucia*, Government of Saint Lucia, Saint Lucia.

Mohammed, P. 2021. *NDC - Gender Mainstreaming Road Map*, EnGenDER, Dominica.

Nation Climate Change Office. 2021. *In-Country NDC Facilitator - Support Request Letter*, Government of Belize, Belize.

———. 2022. *Implementation Plan Letter*, Government of Belize, Belize.

———. Unknown. *Third National Communication to the United Nations Framework Convention on Climate Change*, Government of Belize, Belize.

National Environmental Advisory Board and Ministry of Health and the Environment. 2000. *Initial National Communication on Climate Change*, National Environmental Advisory Board and Ministry of Health and the Environment, St. Vincent and the Grenadines.

NDC Partnership. 2019. *Mission Report - Meetings with the Department of Sustainable Development and OECS*, Government of Saint Lucia, Saint Lucia.

———. 2019. *Response Letter - Partnership Plan*, Government of Saint Lucia, Saint Lucia.

———. 2019. *Mission Report - Scoping Mission*, Government of Belize, Belize.

———. 2020. *Response Letter - Request for Support from St. Kitts and Nevis to NDC Partnership*, Government of St. Vincent and the Grenadines, St. Vincent and the Grenadines.

———. 2021. *Terms of References for NDC Partnership In-Country Facilitator - Saint Kitts and Nevis*, Government of St. Vincent and the Grenadines, St. Vincent and the Grenadines.

———. 2021. *Partner Response to Saint Lucia Request for Support Letter*, Government of Saint Lucia, Saint Lucia.

———. 2021. *Nationally Determined Contribution Implementation in Saint Lucia*, Government of Saint Lucia, Saint Lucia.

———. 2021. *Terms of Reference for NDC Partnership In-Country Facilitator*, Government of Dominica, Dominica.

———. 2021. *Country Engagement Update Report*, Government of St. Kitts and Nevis, St. Kitts and Nevis.

———. 2021. *Country Engagement Update Report*, Government of St. Kitts and Nevis, St. Kitts and Nevis.

———. 2022. *NDC Implementation Plan*, Government of Belize, Belize.

———. 2022. *NDC Implementation Plan Launch and Partner Roundtable*, Government of St. Kitts and Nevis, St. Kitts and Nevis.

———. 2022. *NDC Implementation Plan Launch Event*, Government of St. Kitts and Nevis, St. Kitts and Nevis.

———. 2022. *NDC Response to Belize Implementation Plan*, Government of Belize, Belize.

———. Unknown. *NDC Partnership Climate Action Enhancement Package*, Government of Saint Lucia, Saint Lucia.

Partnership Initiative on Sustainable Land Management. 2018. *Sustainable Land Management in the Commonwealth of Dominica*, Government of Dominica, Dominica.

Partnership on Transparency. 2019. *Trinidad and Tobago's NDC Implementation Plan - Policy Blueprint to Guide Effective Mitigation Action*, Government of the Republic of Trinidad and Tobago, Trinidad and Tobago.

Prospere, K. 2021. *Climate Change and the Agricultural Sector in Saint Lucia Policies, Strategies, Actions*, Prospere, K. , Saint Lucia .

Regional Collaboration Centre - St. Georges. 2021. *NDC Survey Report*, Regional Collaboration Centre - St. Georges , St. Georges.

Republic of Trinidad and Tobago. 2001. *Initial National Communication of the Republic of Trinidad and Tobago under the United Nations Framework Convention on Climate Change*, Republic of Trinidad and Tobago, Trinidad and Tobago.

Saint Kitts and Nevis National Commission. 2021. *National Gender Equality Policy and Action Plan*, Saint Kitts and Nevis National Commission, St. Kitts and Nevis .

Sankovski, A. 2021. *Assessment of Dominica's NDC Target Development Progress and Stakeholder Capacity Development*, UNDP, Dominica.

The Bahamas Environment, Science and Technology Commission. 2001. *First National Communication on Climate Change*, The Bahamas Environment, Science and Technology Commission, Nassau, The Bahamas.

The Caribbean Food and Nutrition Institute. 2012. *Food and Nutrition Security Policy and Plan of Action for the Federation of St. Kitts and Nevis*, The Caribbean Food and Nutrition Institute, St. Kitts and Nevis.

The Caribbean Natural Resources Institute. 2020. *Organisation of Eastern Caribbean States Biodiversity and Ecosystems Management Framework*, The Caribbean Natural Resources Institute, Trinidad and Tobago.

The GEF Small Grants Programme. 2021. *SGP Country Programme Strategy*, UNDP, St. Kitts and Nevis.

The Government of Bahamas. 2014. *The Second National Communication Report of The Commonwealth of the Bahamas Under the United Nations Framework Convention on Climate Change*, The Government of Bahamas, The Bahamas.

The Government of Bahamas. 2015. *Intended Nationally Determined Contribution Under the United Nations Framework Convention on Climate Change*, The Government of Bahamas, The Bahamas.

The Government of Bahamas. Unknown. *Intended Nationally Determined Contribution World Bank Analysis*, The Government of Bahamas, The Bahamas.

———. Unknown. *Preliminary Overview of the Economies of Latin America and the Caribbean*, The Government of Bahamas, The Bahamas.

The Republic of Haiti. 2015. *Planned Contribution Determined at National Level*, Ministry of Environment, Haiti, Haiti.

———. 2021. *Stakeholders Management Matrix of GCF CARICOM AgREADY*, The Republic of Haiti, Haiti.

The University of the West Indies. 2020. *The State of the Caribbean Climate*, The University of the West Indies, Jamaica.

UNDP. 2018. *Saint Lucia's National Adaptation Plan*, Government of Saint Lucia, Saint Lucia.

———. Unknown. *Saint Lucia's Climate Change Baseline Assessment Report*, Government of Saint Lucia, Saint Lucia.

United Nations Food System Summit. Unknown. *Action Track: Build Resilience to Vulnerabilities and Climate Change*, Government of the Republic of Trinidad and Tobago, Trinidad and Tobago.

UNFCCC. 2022a. *Key Aspects of the Paris Agreement*. <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement/key-aspects-of-the-paris-agreement>.

———. 2022b. *Nationally Determined Contributions (NDCs)*. <https://unfccc.int/process-and-meetings/the-paris-agreement/nationally-determined-contributions-ndcs/nationally-determined-contributions-ndcs>.

———. 2022c. *What Is the Kyoto Protocol?* https://unfccc.int/kyoto_protocol.

———. 2022d. *What Is the United Nations Framework Convention on Climate Change?* <https://unfccc.int/process-and-meetings/the-convention/what-is-the-united-nations-framework-convention-on-climate-change>.

United Nations Treaty Collection. 2022. *Chapter XXVII. Environment*. https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-7-d&chapter=27&clang=en

Witkowski, K., Medina, D. and Garcia, M. *Intended Nationally Determined Contributions in the Caribbean: Where does agriculture fit?* IICA, 2016

Woods, V. 2018. *Progress On NDC Implementation and Development of the National Climate Change Adaptation Strategy in St. Kitts and Nevis*, Woods, V, St. Kitts and Nevis.

World Bank Group. Unknown. *Trinidad and Tobago's Intended NDC*, Government of the Republic of Trinidad and Tobago, Trinidad and Tobago.

<https://www.caribank.org/.../thematic-papers/study-state-agriculture-caribbean>: Study on the State of Agriculture in the Caribbean.

8. Annexes

- Annex 1. Consultation Instrument (Condensed)
- Annex 2. Timeline of UNFCCC Document Submissions and Historical GHG Emissions by Country, 1990-2019
- Annex 3. Agricultural Sector Indicators
- Annex 4. Status of Food and Nutrition Security in the Countries
- Annex 5. List of Stakeholders Consulted
- Annex 6. Country Targets for Mitigation - First NDCs
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- Annex 8. Alignment of NDC Actions with National Development Goals
- Annex 9. NDC Planning Process and Support
- Annex 10. Social Inclusion and Just Transition in Response to NDC Development and Implementation
- Annex 11. AgREADY Country Collaboration with External Entities for NDC Development and Implementation
- Annex 12. Financing for AgREADY Countries' NDCs
- Annex 13. NDC SDG Linkages
- Annex 14. Categories and Subcategories of the CCBII Assessment Methods

Annex 1. Consultation Instrument (Condensed)

AGREADY NDC Stocktake semi-structured questions for stakeholder consultations

Key focused questions

NDC inclusiveness and participation

- 1) How have the key ministries (including agriculture), departments and agencies of government played an active role in revising the NDC?
- 2) How have different government institutions from relevant sectors (including agriculture), at both the national and sub-national levels, been engaged and consulted on the NDC revision?
- 3) In what ways have private sector, civil society organizations, academia, vulnerable and marginalized groups, and other relevant stakeholders, been meaningfully engaged and consulted on the NDC revision?

Climate Change Governance

- 1) Please describe the oversight body for climate change (for example, a Climate Change committee or board). Include information on date established and stakeholders involved. Please describe the management and implementation entity. Is there a stakeholder engagement plan or strategy? How are the range of other stakeholders engaged?
- 2) Is there a 3rd National Communication?
- 3) The NDC 1 timeline is 2015-2025, has there been any midterm evaluation or updates?

NDC development, implementation, and tracking

- 1) What support has the country received to undertake critical mitigation and adaptation analysis to determine the priorities that were included in the NDC and first update? What is the role of the NDC partnership and is there an agreement with the government? How were priorities finalized? What are these?
 - a. Which stakeholders were involved in this entire process?
 - i. Climate Change Focus
 - ii. Agriculture Focus
- 2) Are there any other potential agriculture mitigation activities that are not included in the NDC? If yes, what are these? Are these incorporated in any agriculture plans or programmes? Is there anyone in particular we could speak to about agriculture mitigation?
- 3) To which specific National Development strategies are the NDC actions aligned and to what extent are they being monitored?
- 4) Please provide specific linkages between NDC actions and the Sustainable Development Goals (SDG) implementation plan/roadmap?
- 5) How does the NDC align the measures and priorities with long-term mitigation strategies at the national and agriculture sector levels?
- 6) What are the key linkages between the prioritized agriculture sector targets and other structural sectors (e.g., tourism, health)?
 - a. What cross-sectoral approaches have been defined and/or being utilized?
- 7) How have the socio-economic impacts of NDC targets and measures been considered?
- 8) What is the status of preparation and use of a Monitoring Reporting Verification system for the NDC?

Financial feasibility

- 1) Are you conducting the costs and benefits of achieving agriculture sector GHG targets, non-GHG targets (such as cross cutting actions, gender, awareness raising, etc.), and adaptation policies or actions?
- 2) What information exist on the financing strategy for achieving national and agriculture sector targets or implementing specific policies or actions (e.g., mainstreaming climate into national, sectoral, and/or subnational budgets)?
- 3) What are the risk transfer mechanisms in agriculture to include agricultural insurance and crop/livestock diversification at the farm level?
- 4) What are the costs of climate inaction at the national and agriculture sector levels?
- 5) What is the extent of financial planning for implementation of the NDC (have unconditional (government budgetary support) financing been identified? If yes, what are these (action and amount budgeted)? For conditional financing identified, please share information on financing underway and in the pipeline. Have specific NDC-related financial mechanisms been identified and/or established (e.g., national climate funds, green bonds, Climate Change Trust Fund)?

Institutional arrangements and capacities for implementation (Feasibility)

- 1) How are the targets/measures within the NDC supported by legislation and/or relevant legal frameworks at the national and agriculture sector levels?
 - 2) What are the recurring constraints to implementation of NDC actions? (Please elaborate on these areas)
 - o Human capacity
 - o Financial capacity
 - o Techniques and technologies
 - o Political will and commitment at the highest level
 - o National and sectoral priorities
 - o Other
 - 3) What are some of the key lessons learned from the NDC development, implementation, and update processes?
 - 4) What critical partnerships have been forged to accelerate NDC implementation and achievement of the targets?
 - 5) How is the Government making the link between the NDC, its implementation and other national plans and programmes?
- To what extent have agriculture stakeholders participated in NDC development and implementation?
 - What constraints exist, if any, that prevents or disallows contribution of the agriculture sector to increased ambition? (Stimulate thought a bit: capacity (human), lack of awareness and understanding, inability to calculate the potential contribution to GHG emissions, weak coordination and collaboration (and by whom).
 - To what extent has the country prioritized the agriculture sector as important in the NDC?
 - o For mitigation (emissions reduction)
 - o For adaptation?

Annex 2. Timeline of UNFCCC Document Submissions and Historical GHG Emissions by Country, 1990-2019

A2.1: TIMELINE OF UNFCCC DOCUMENT SUBMISSIONS

Table A2.1a: The Bahamas Timeline of UNFCCC Document Submissions

Date/Year	UNFCCC Document Submitted
2001	First National Communication Executive Summary
2015	Second National Communication
2015	First Nationally Determined Contribution (NDC)

Source: CAIT Climate Data Explorer

Table A2.1b: Belize Timeline of UNFCCC Document Submissions

Date/Year	UNFCCC Document Submitted
2002	First National Communication
2011	Second National Communication
2015	Intended Nationally Determined Contribution (INDC)
2016	Third National Communication
2020	Updated Nationally Determined Contribution (NDC)

Source: CAIT Climate Data Explorer

Table A2.1c: Dominica Timeline of UNFCCC Document Submissions

Date/Year	UNFCCC Document Submitted
2001	First National Communication
2012	Second National Communication
2015	Intended Nationally Determined Contribution (INDC)
2016	First Nationally Determined Contribution (NDC)

Source: CAIT Climate Data Explorer

Table A2.1d: Haiti Timeline of UNFCCC Document Submissions

Date/Year	UNFCCC Document Submitted
2002	First National Communication
2013	Second National Communication
2015	Intended Nationally Determined Contribution (INDC)
2017	First Nationally Determined Contribution (NDC)

Source: CAIT Climate Data Explorer

Table A2.1e: St. Kitts and Nevis Timeline of UNFCCC Document Submissions

Date/Year	UNFCCC Document Submitted
2001	First National Communication
2015	Intended Nationally Determined Contribution (INDC)
2016	First Nationally Determined Contribution (NDC)
2020	Updated Nationally Determined Contribution (NDC)

Source: CAIT Climate Data Explorer

Table A2.1f: Saint Lucia Timeline of UNFCCC Document Submissions

Date/Year	UNFCCC Document Submitted
2001	First National Communication
2012	Second National Communication
2015	Intended Nationally Determined Contribution (INDC)
2016	First Nationally Determined Contribution (NDC)
2017	Third National Communication – GHG Inventory
2018	National Adaptation Plan
2020	Updated Nationally Determined Contribution (NDC)

Source: CAIT Climate Data Explorer

Table A2.1g: St. Vincent and the Grenadines Timeline of UNFCCC Document Submissions

Date/Year	UNFCCC Document Submitted
2000	First National Communication
2015	Intended Nationally Determined Contribution (INDC)
2016	Second National Communication
2016	First Nationally Determined Contribution (NDC)
2020	National Adaptation Plan

Source: CAIT Climate Data Explorer

Table A2.1h: Suriname Timeline of UNFCCC Document Submissions

Date/Year	UNFCCC Document Submitted
2006	First National Communication
2015	Intended Nationally Determined Contribution (INDC)
2016	Second National Communication
2018	First Nationally Determined Contribution (NDC)
2018	Second Nationally Determined Contribution (NDC)

Source: CAIT Climate Data Explorer

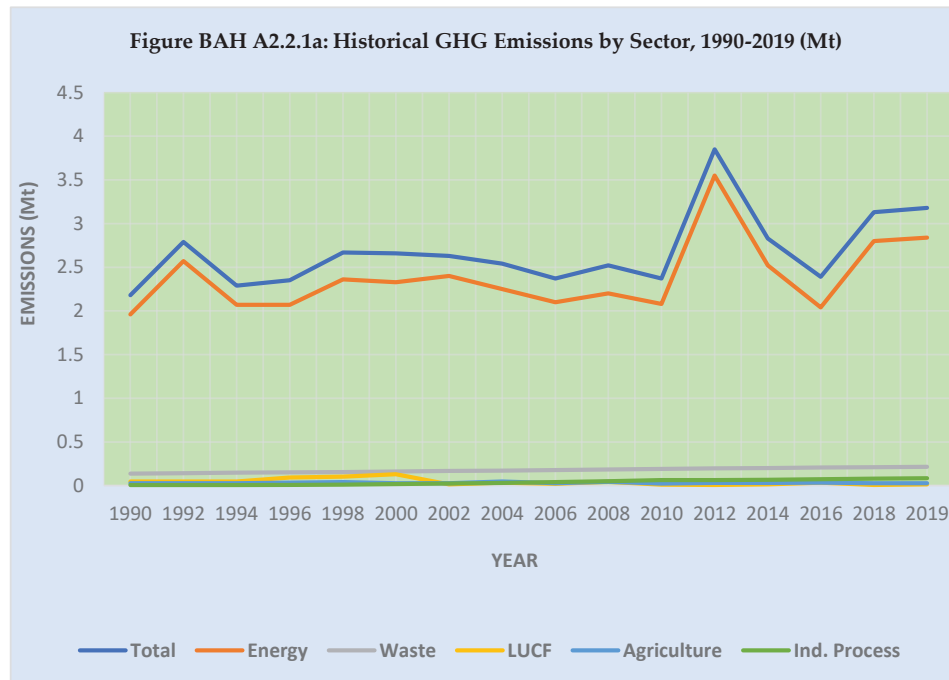
Table A2.1i: Trinidad and Tobago Timeline of UNFCCC Document Submissions

Date/Year	UNFCCC Document Submitted
2001	First National Communication
2013	Second National Communication
2015	Intended Nationally Determined Contribution (INDC)
2018	First Nationally Determined Contribution (NDC)

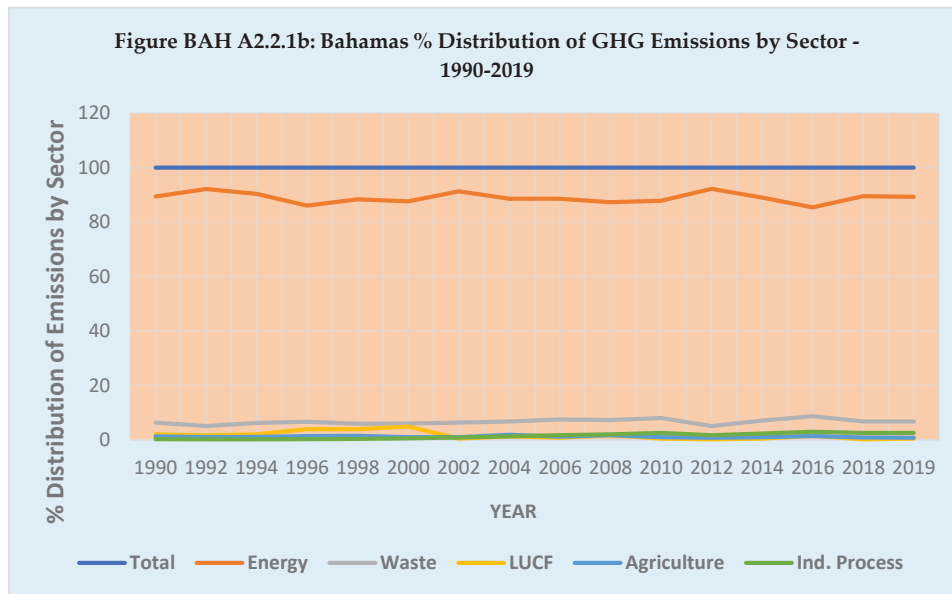
Source: CAIT Climate Data Explorer

A2.2 HISTORICAL GHG EMISSIONS BY COUNTRY, 1990-2019

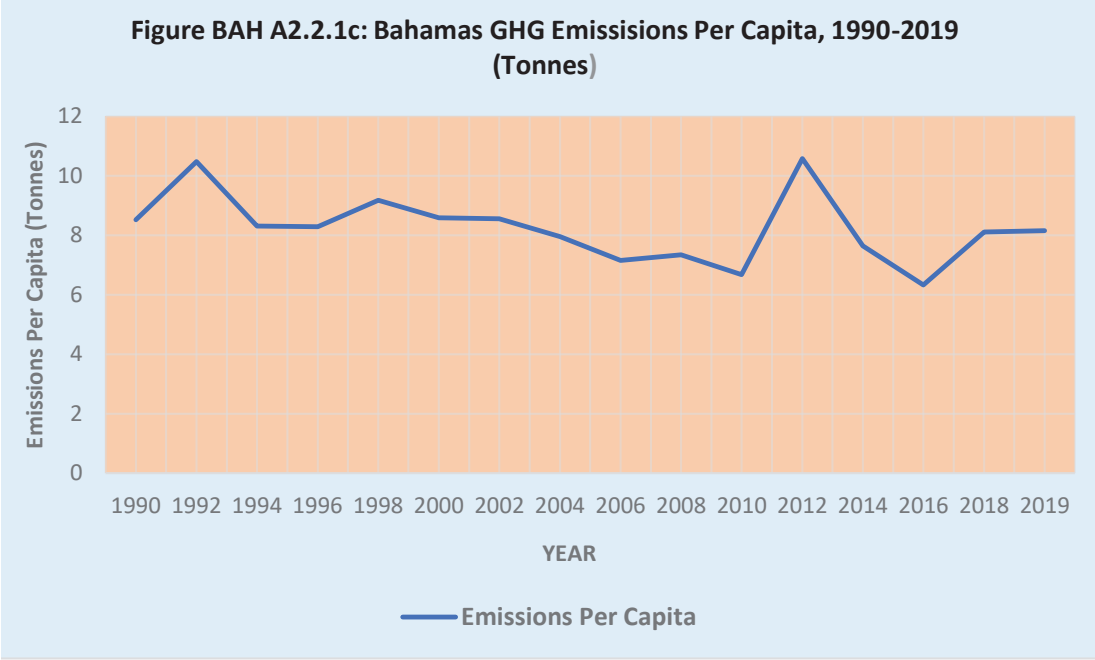
Figures A2.2.1a-d: BAHAMAS HISTORICAL GHG EMISSIONS, 1990-2019 (TONNES)



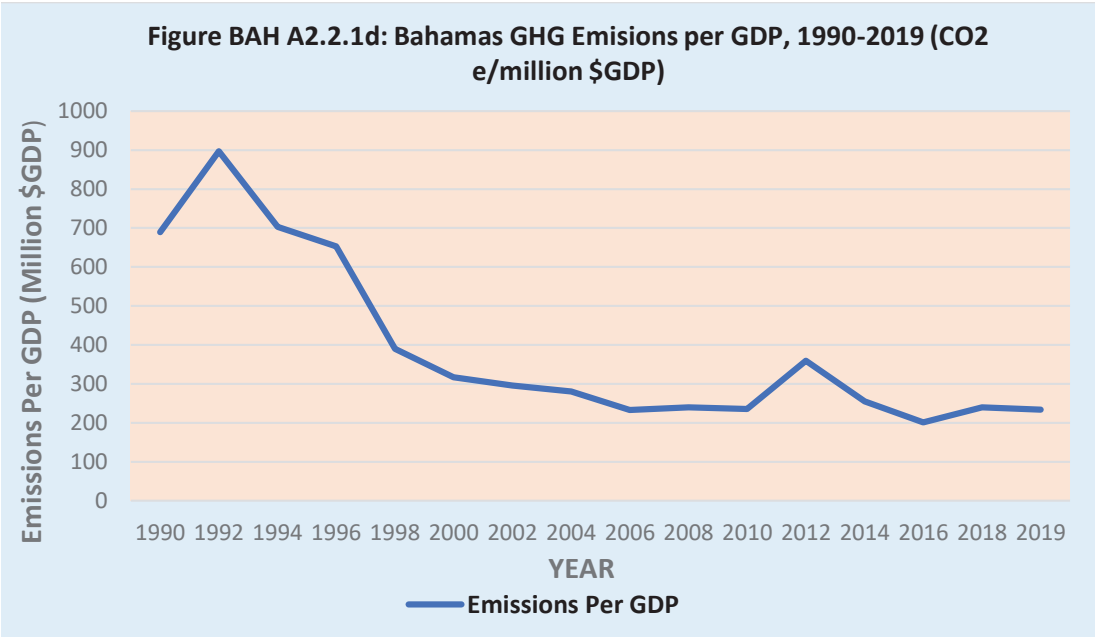
Source: CAIT Climate Data Explorer



Source: CAIT Climate Data Explorer

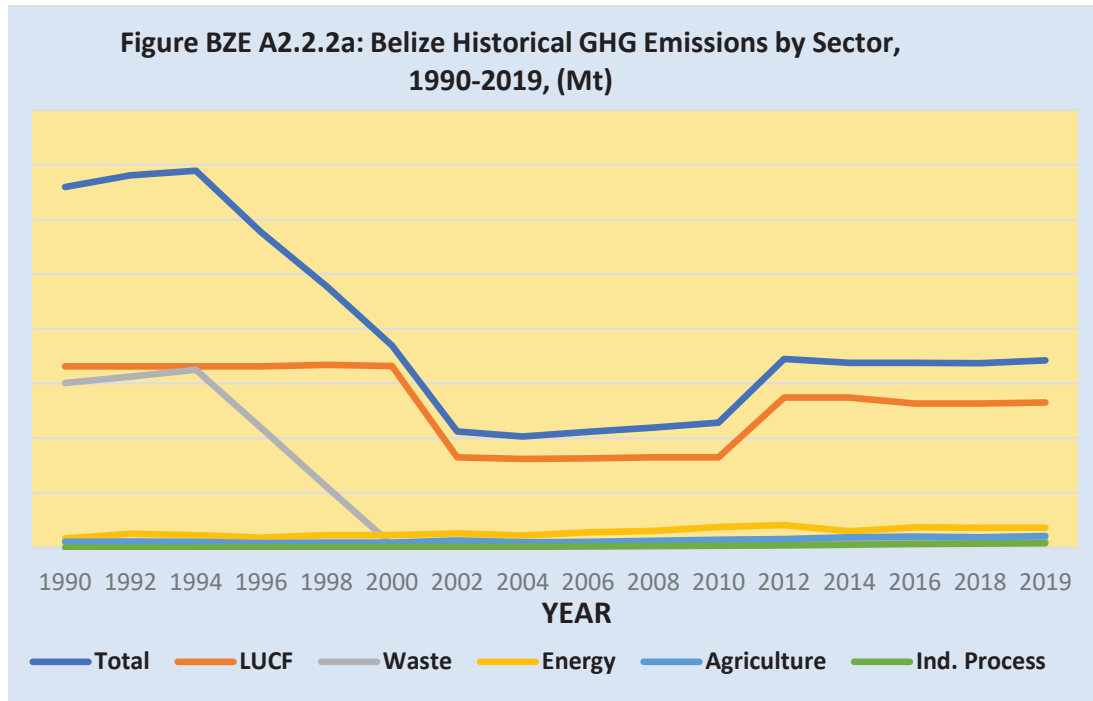


Source: CAIT Climate Data Explorer

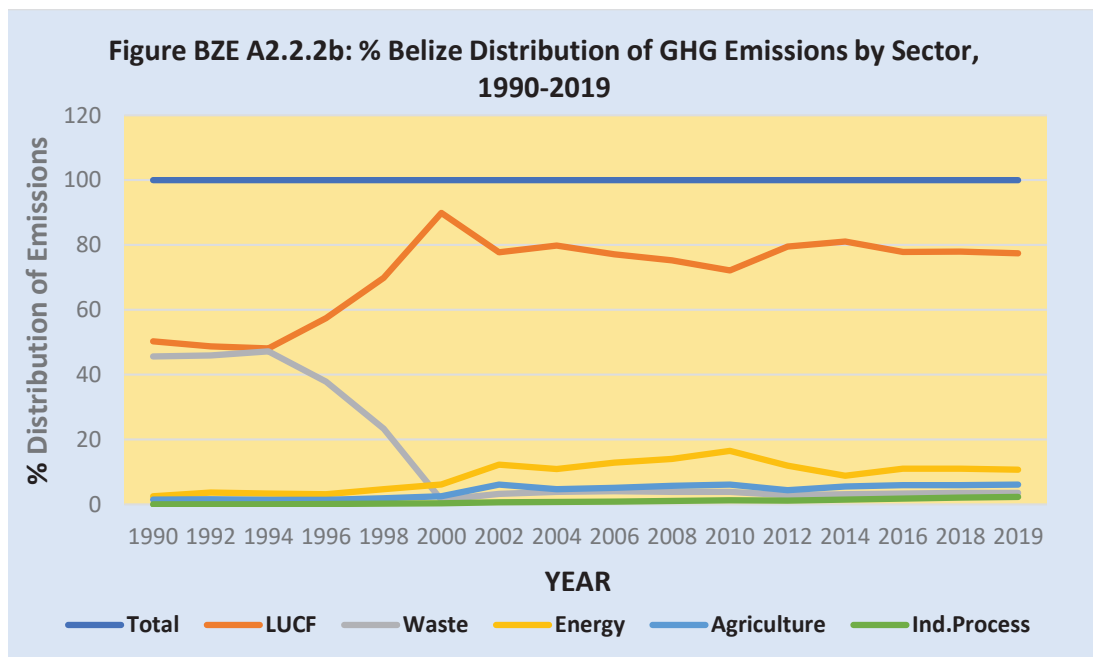


Source: CAIT Climate Data Explorer

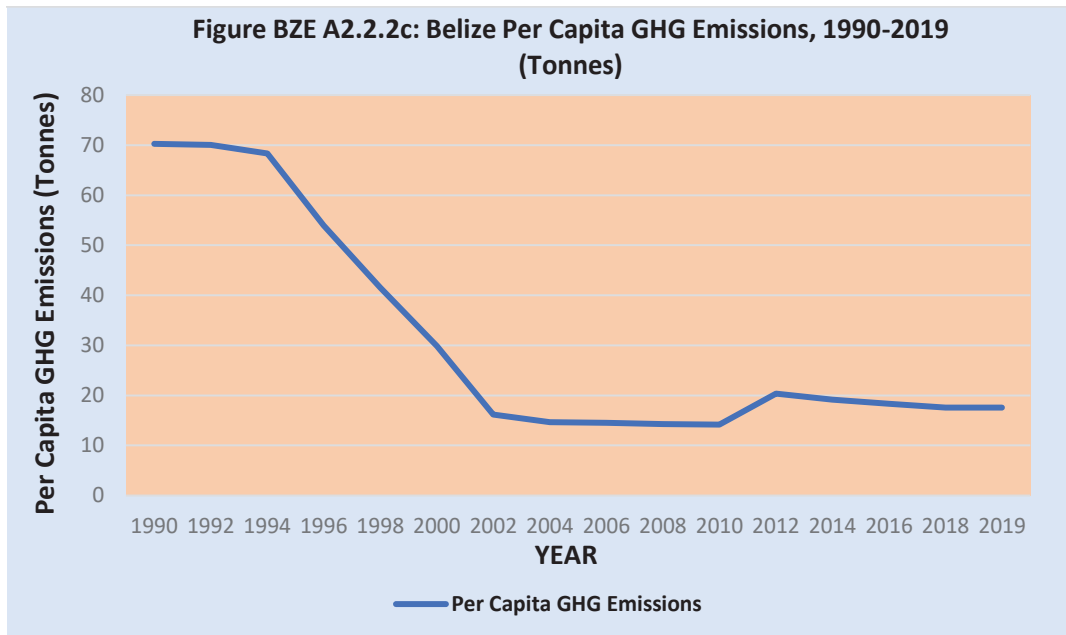
Figures A2.2.2a-d: BELIZE HISTORICAL GHG EMISSIONS, 1990-2019 (TONNES)



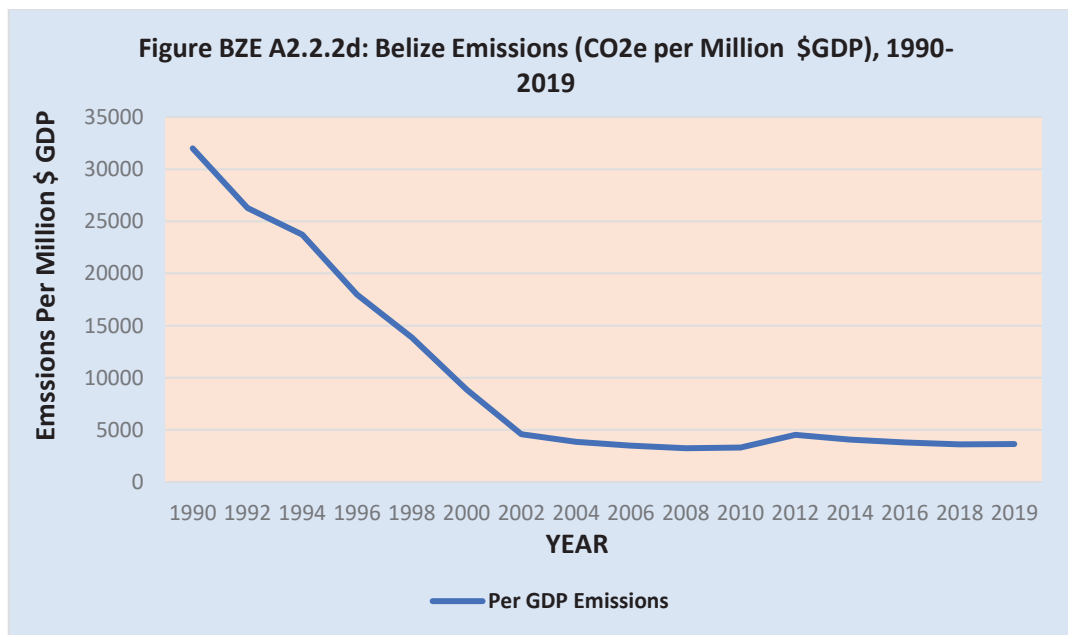
Source: CAIT Climate Data Explorer



Source: CAIT Climate Data Explorer

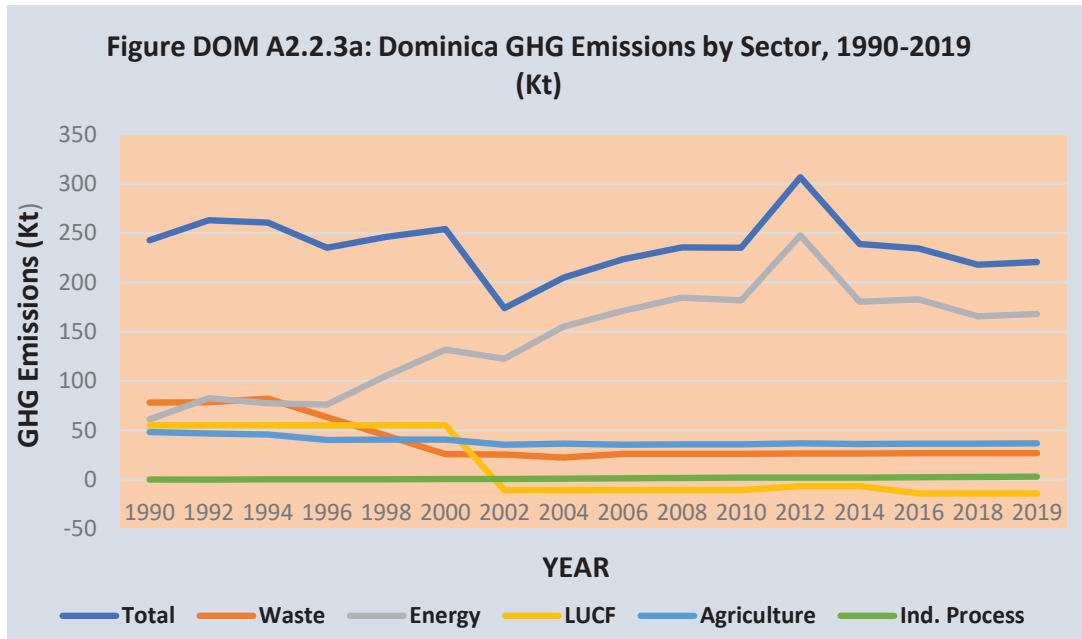


Source: CAIT Climate Data Explorer

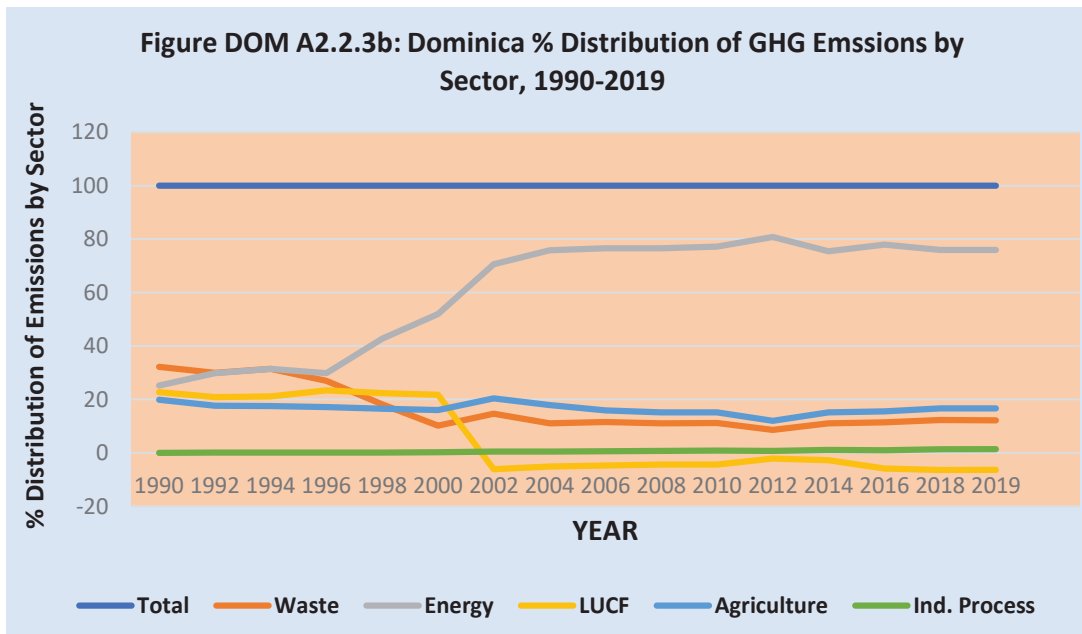


Source: CAIT Climate Data Explorer

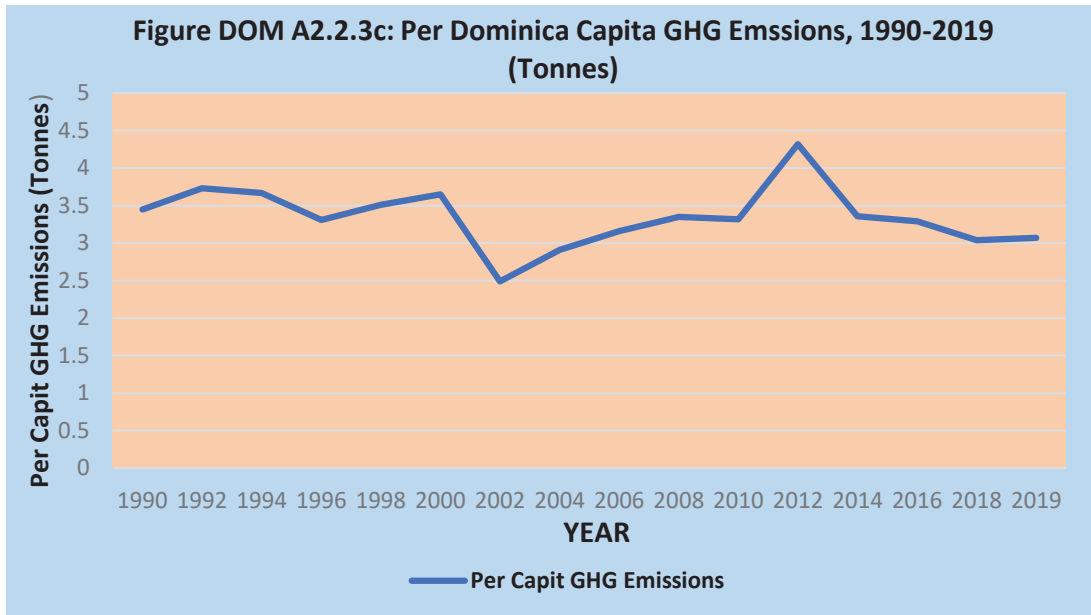
Figures A2.2.3a-d: DOMINICA HISTORICAL GHG EMISSIONS, 1990-2018 (TONNES)



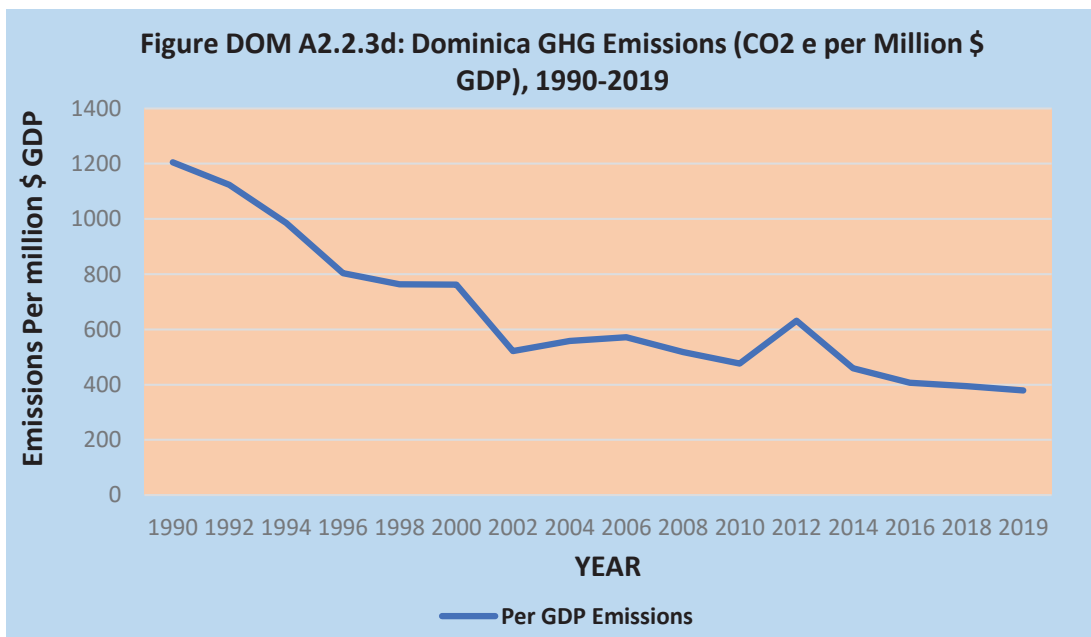
Source: CAIT Climate Data Explorer



Source: CAIT Climate Data Explorer

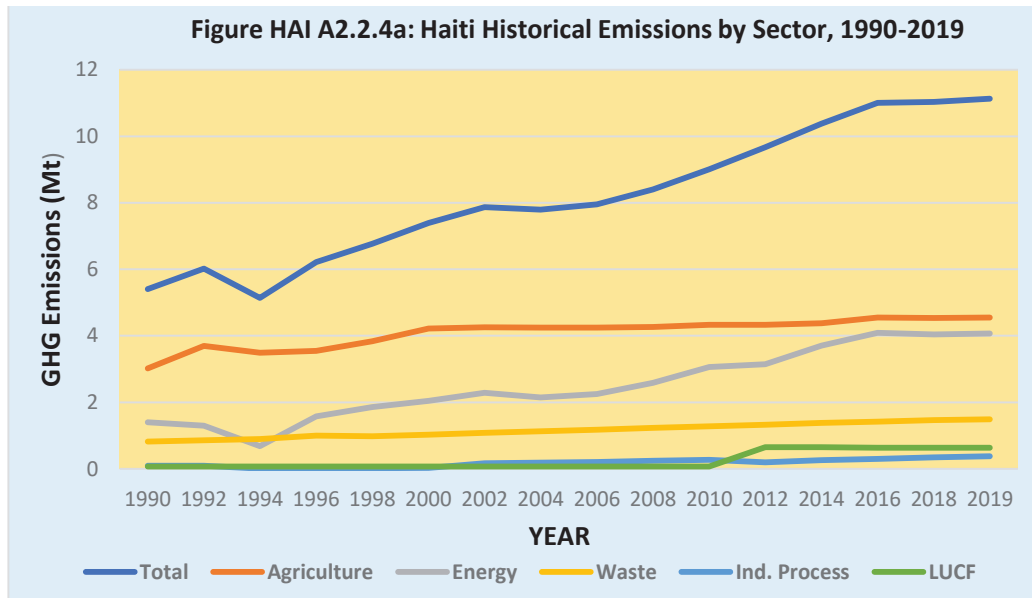


Source: CAIT Climate Data Explorer

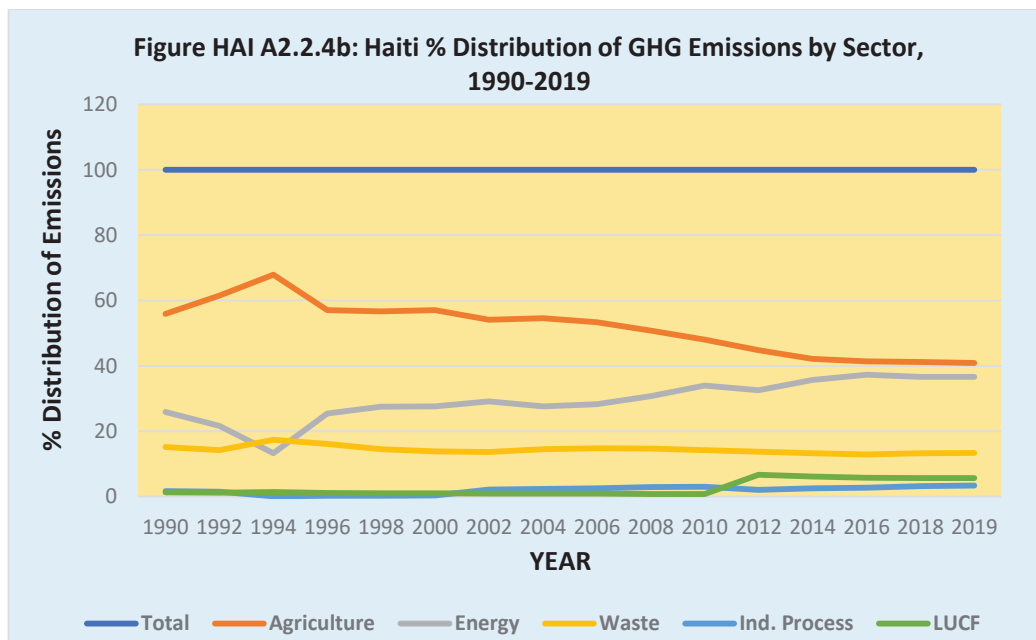


Source: CAIT Climate Data Explorer

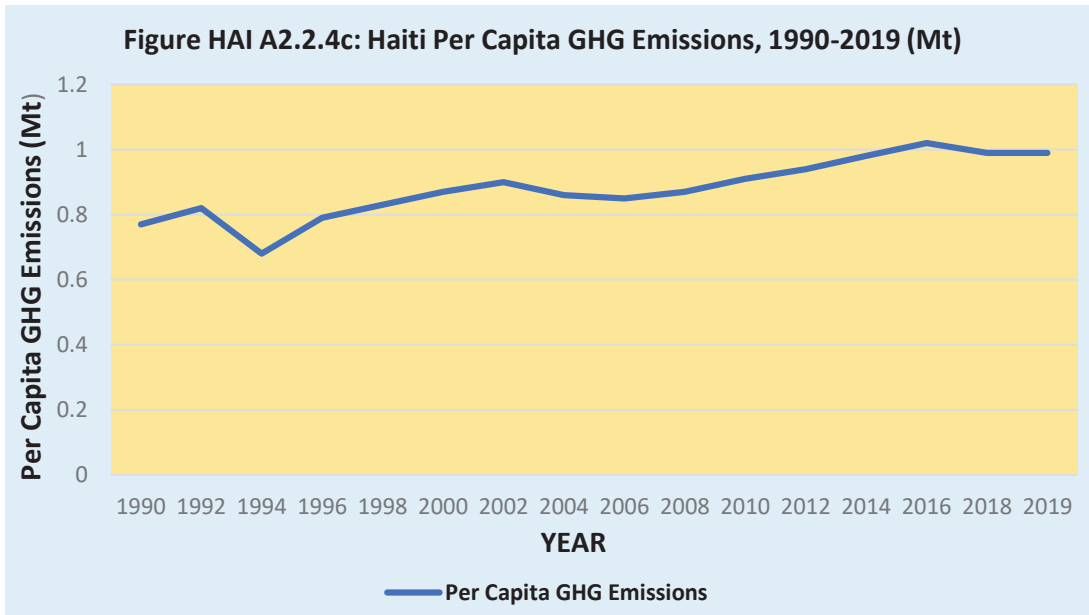
Figures A2.2.4a-d: HAITI HISTORICAL GHG EMISSIONS, 1990-2018 (TONNES)



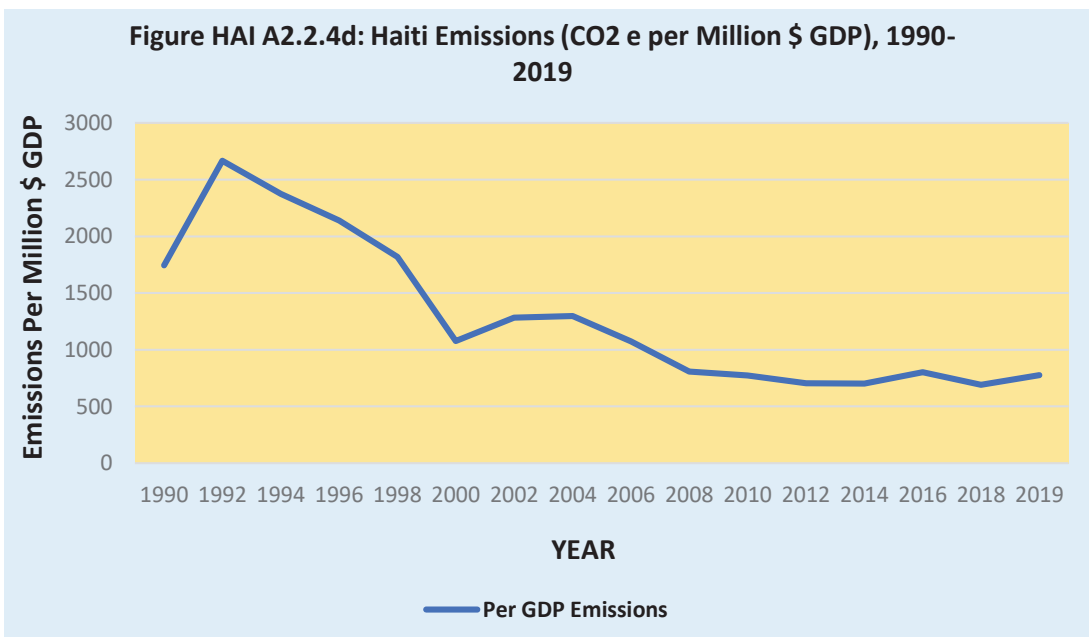
Source: CAIT Climate Data Explorer



Source: CAIT Climate Data Explorer

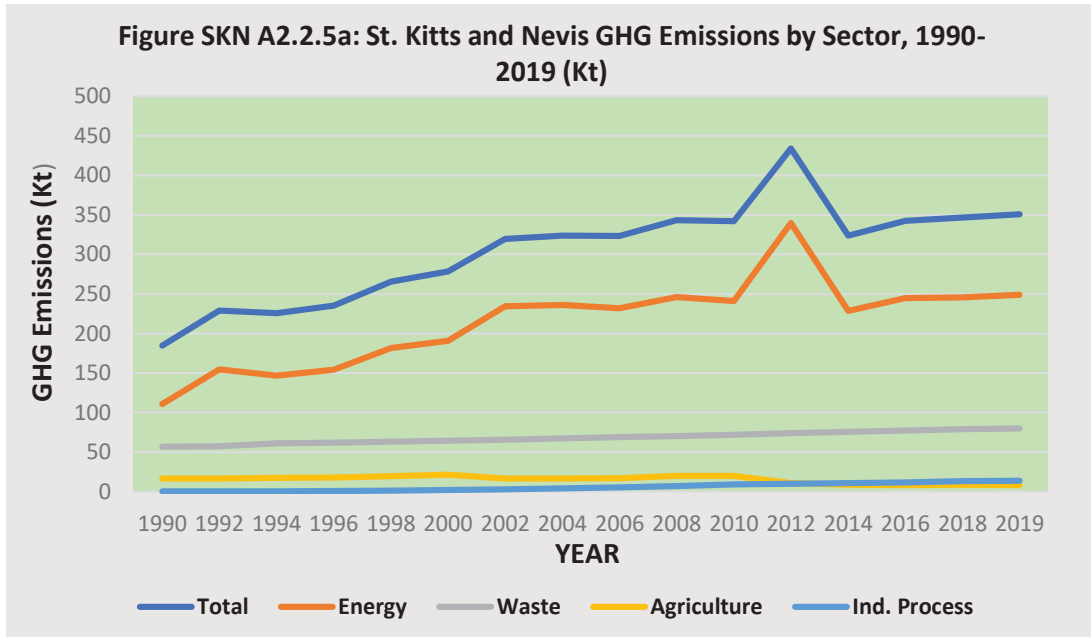


Source: CAIT Climate Data Explorer

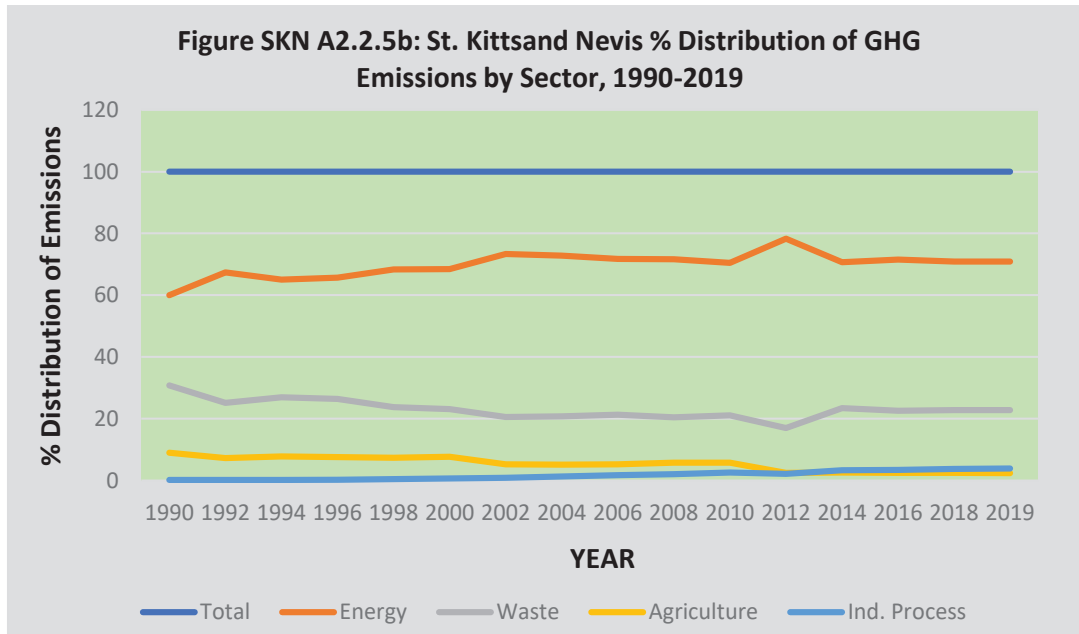


Source: CAIT Climate Data Explorer

Figures A2.2.5a-d: ST. KITTS AND NEVIS HISTORICAL GHG EMISSIONS, 1990-2018 (TONNES)

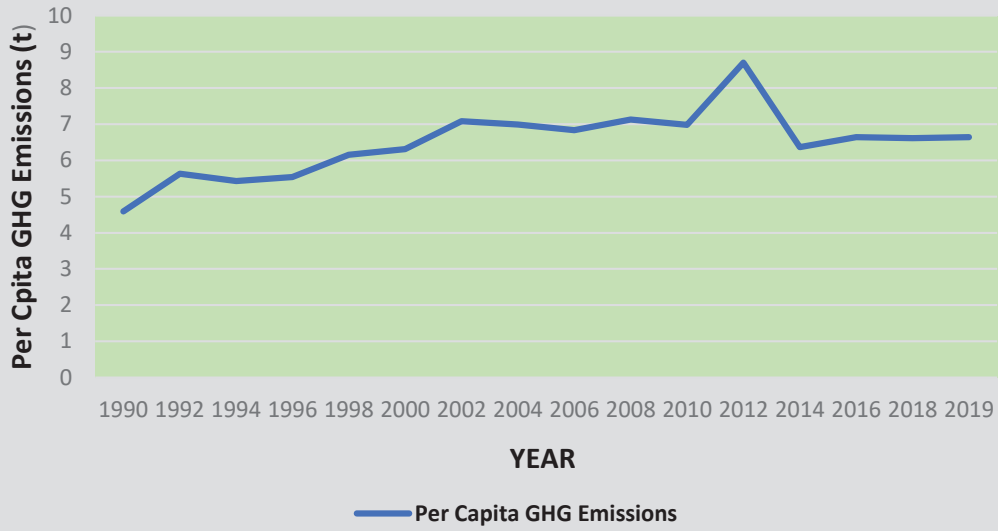


Source: CAIT Climate Data Explorer



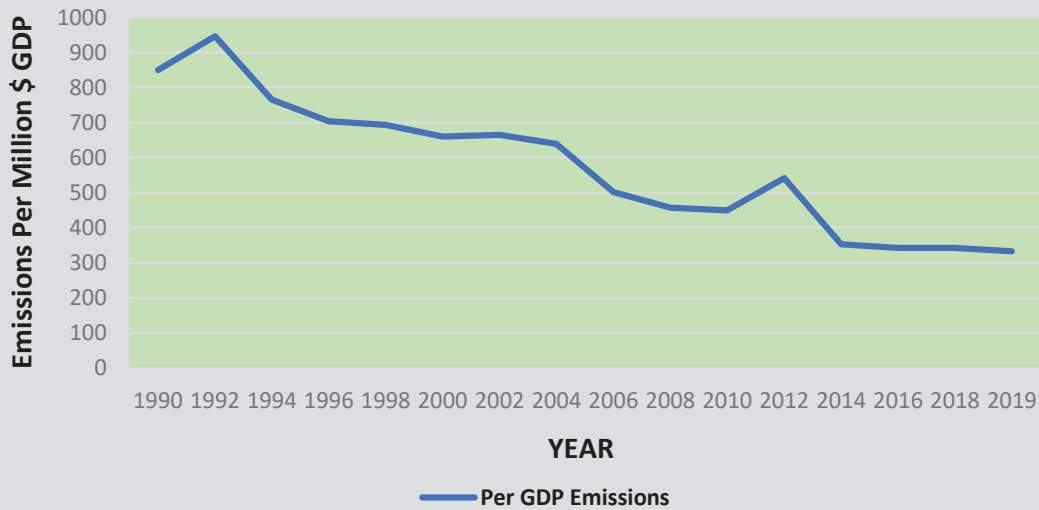
Source: CAIT Climate Data Explorer

Figure SKN A2.2.5c: St. Kitts and Nevis Per Capita GHG Emissions, 1990-2019 (t)



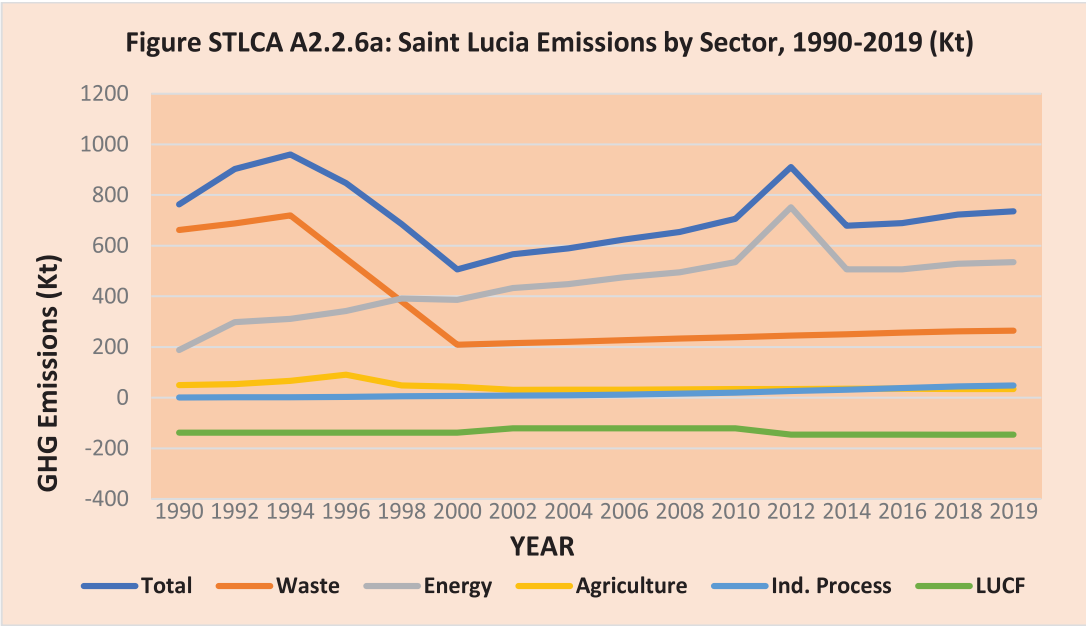
Source: CAIT Climate Data Explorer

Figure SKN A2.2.5d: St. Kitts and Nevis GHG Emissions (CO₂ e per Million \$ GDP), 1990-2018

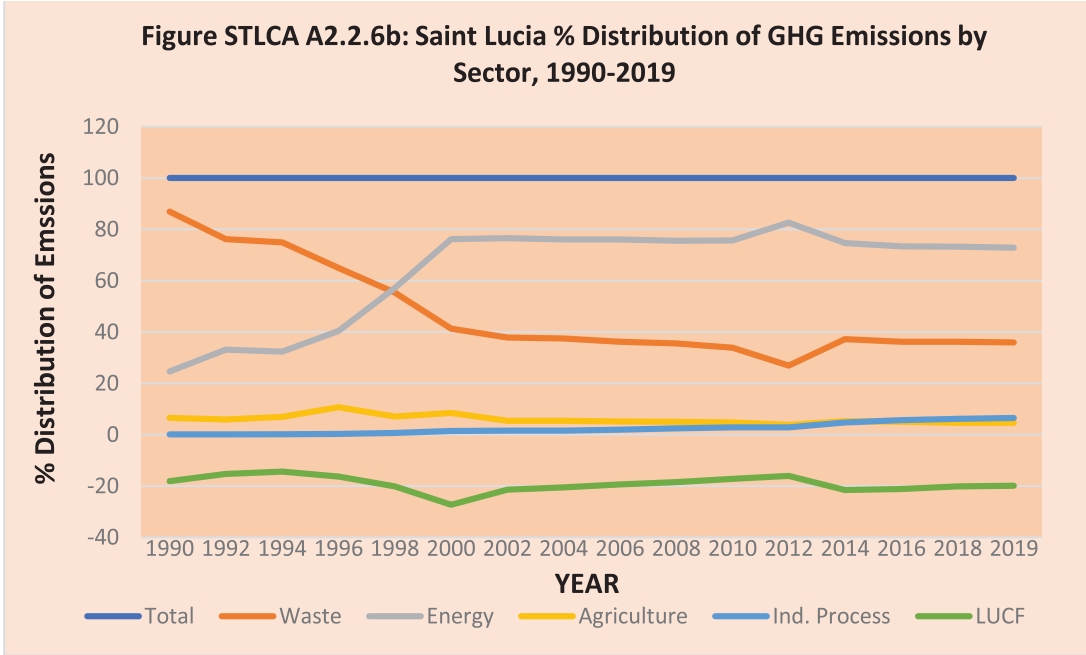


Source: CAIT Climate Data Explorer

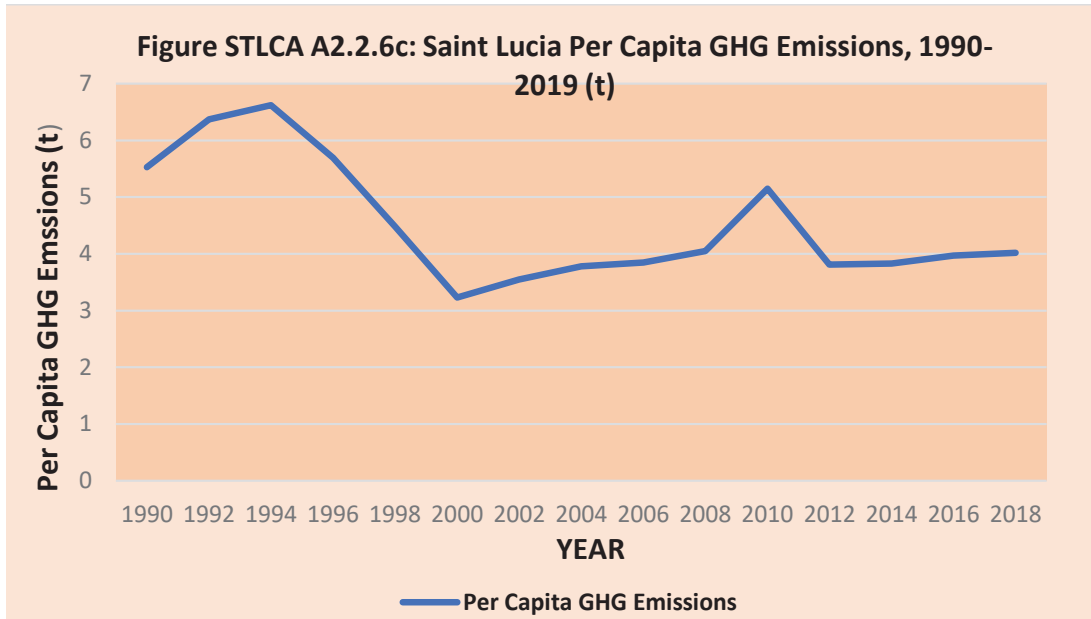
Figures A2.2.6a-d: SAINT LUCIA HISTORICAL GHG EMISSIONS, 1990-2018 (TONNES)



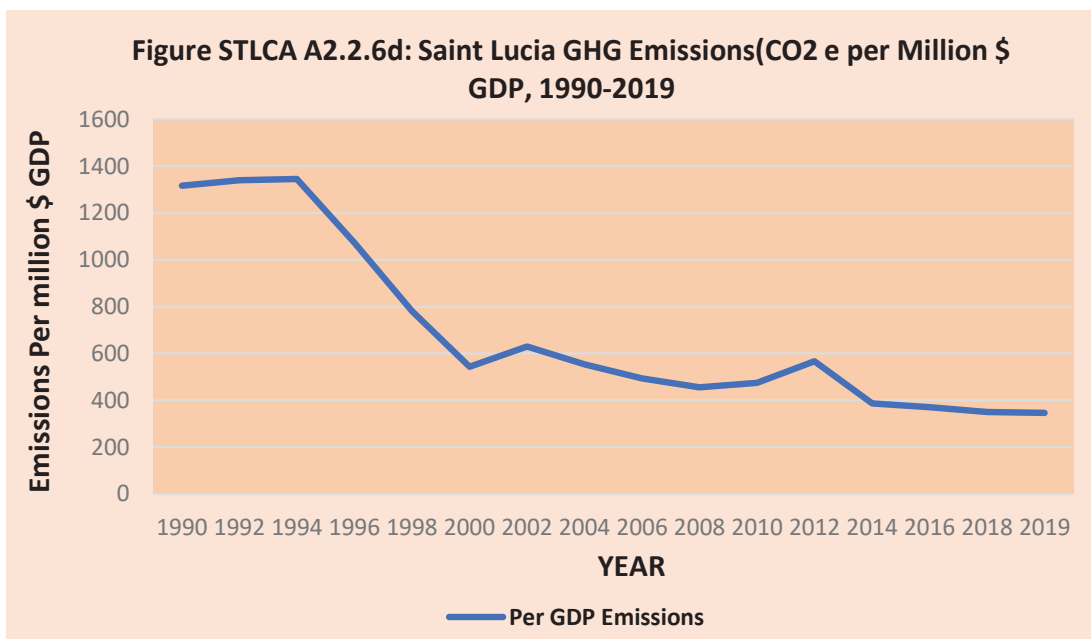
Source: CAIT Climate Data Explorer



Source: CAIT Climate Data Explorer

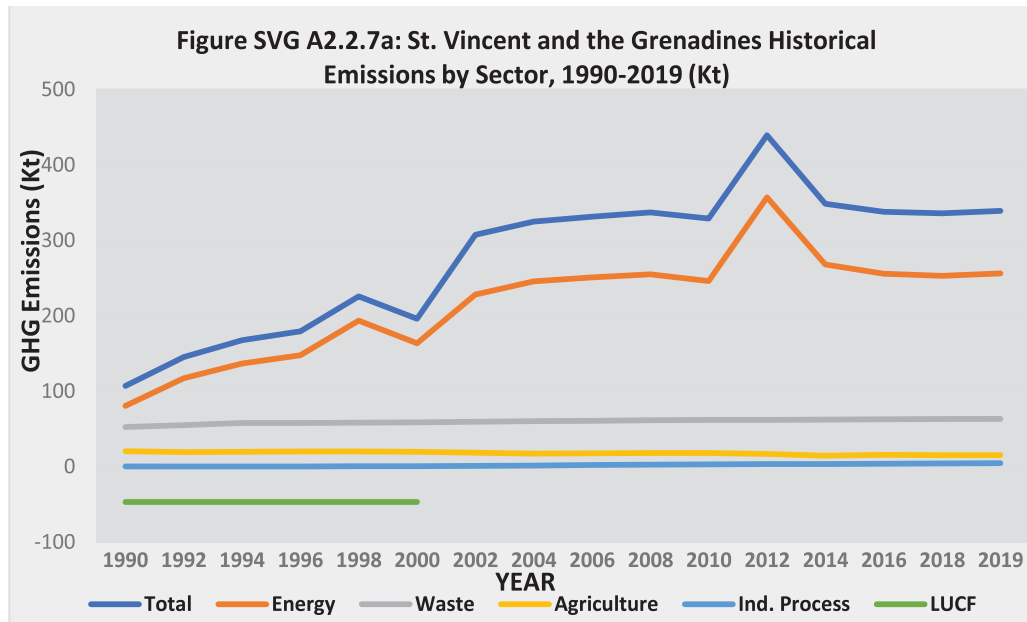


Source: CAIT Climate Data Explorer

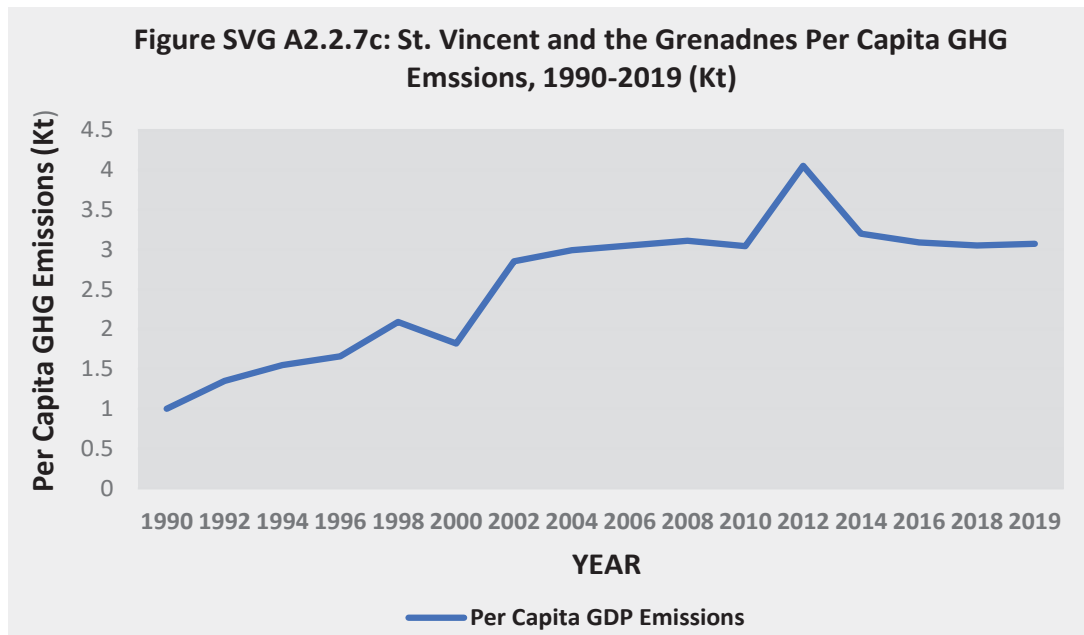


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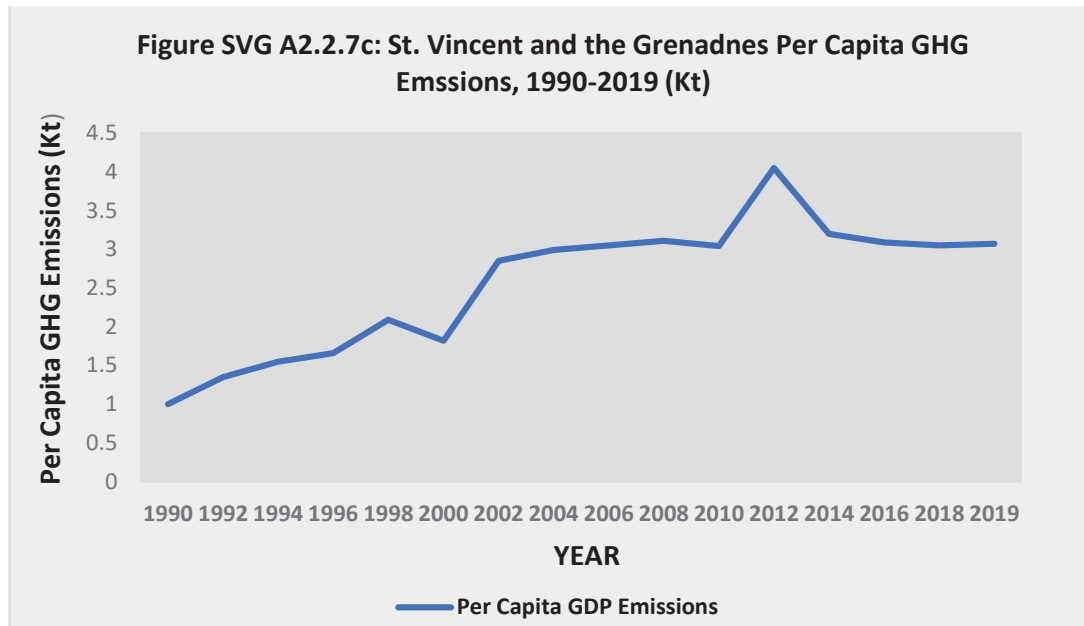
Figures A2.2.7a-d: ST. VINCENT AND THE GRENADINES HISTORICAL GHG EMISSIONS, 1990-2018
(TONNES)



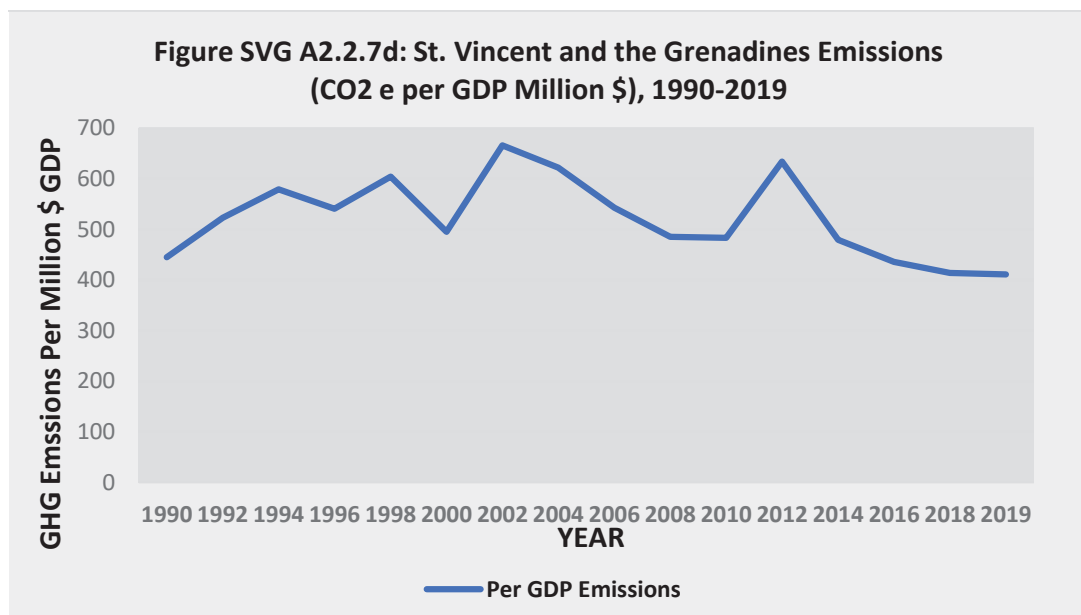
Source: CAIT Climate Data Explorer



Source: CAIT Climate Data Explorer

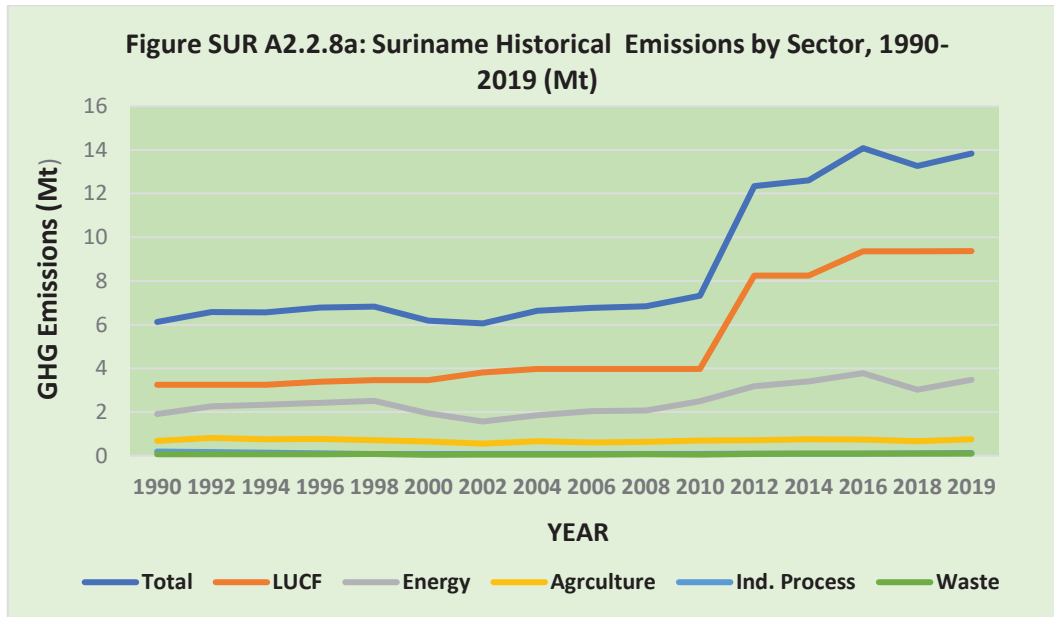


Source: CAIT Climate Data Explorer

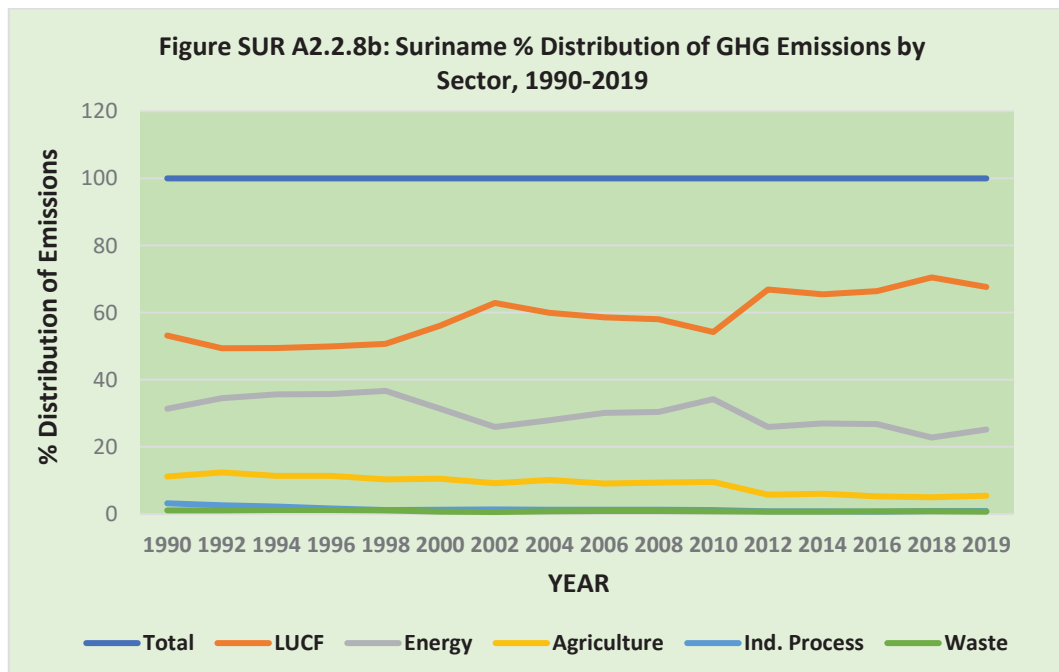


Source: CAIT Climate Data Explorer

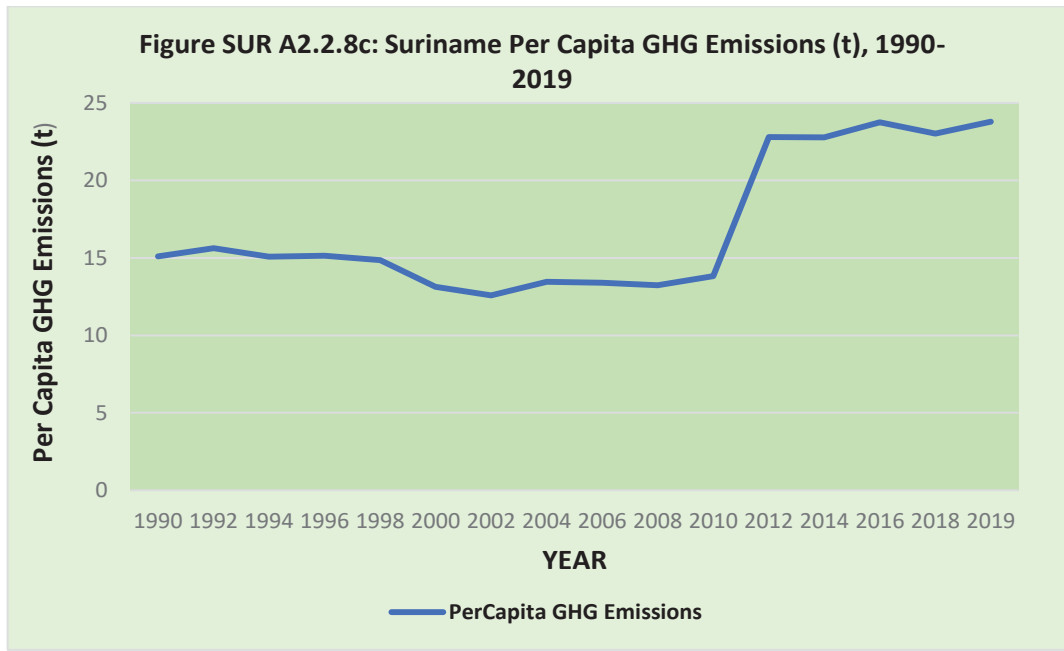
Figures A2.2.8a-d: SURINAME HISTORICAL GHG EMISSIONS, 1990-2018 (TONNES)



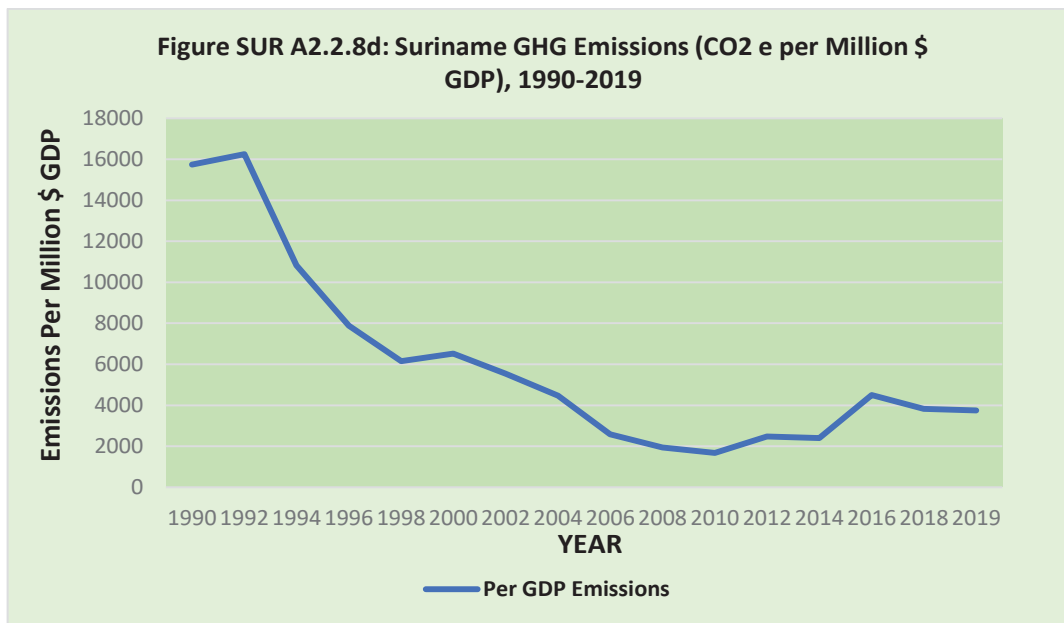
Source: CAIT Climate Data Explorer



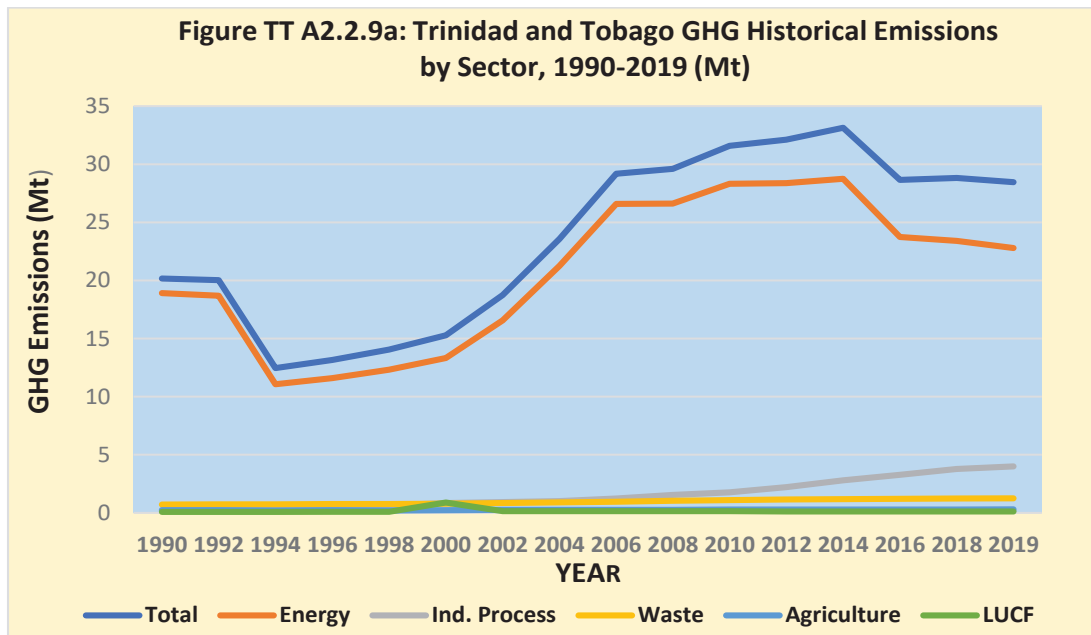
Source: CAIT Climate Data Explorer



Source: CAIT Climate Data Explorer

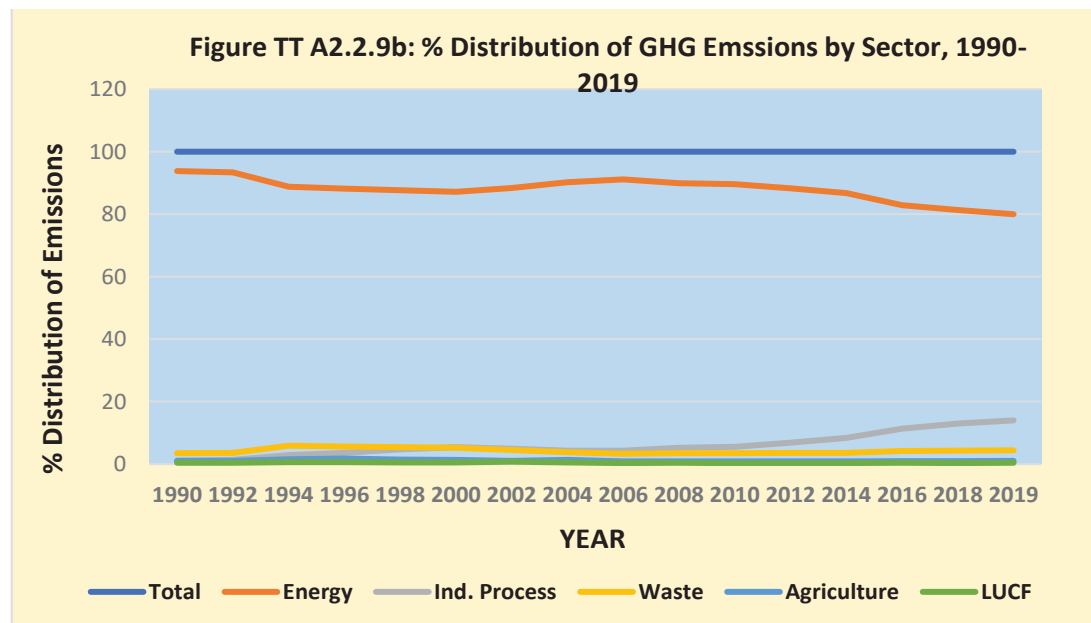


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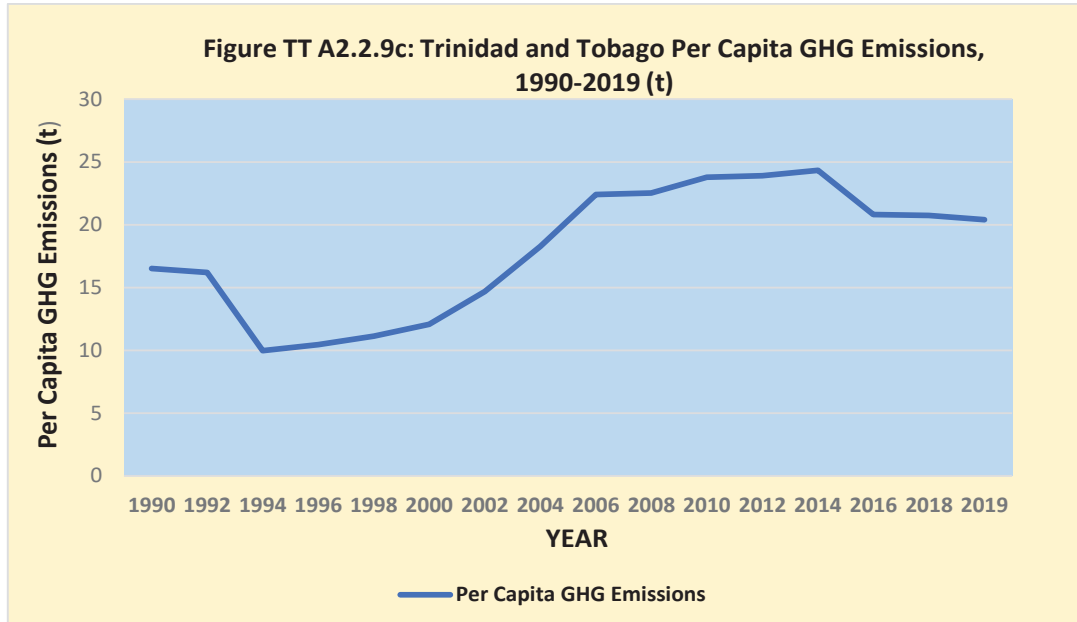


Source: CAIT Climate Data Explorer

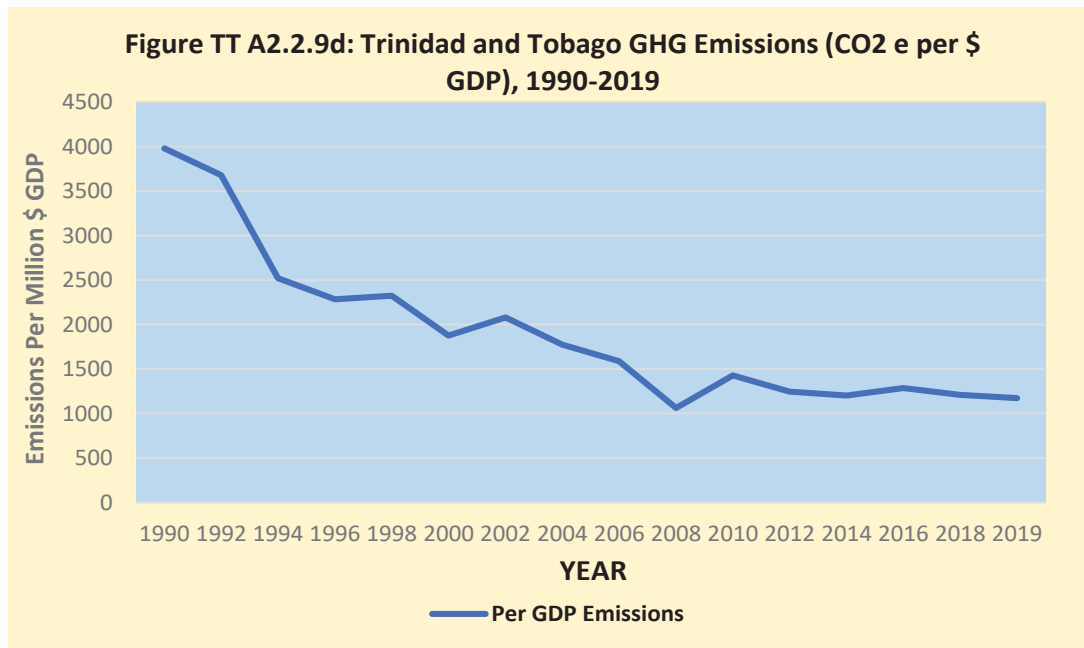
Figures A2.2.9a-d: TRINIDAD AND TOBAGO HISTORICAL GHG EMISSIONS, 1990-2018 (TONNES)



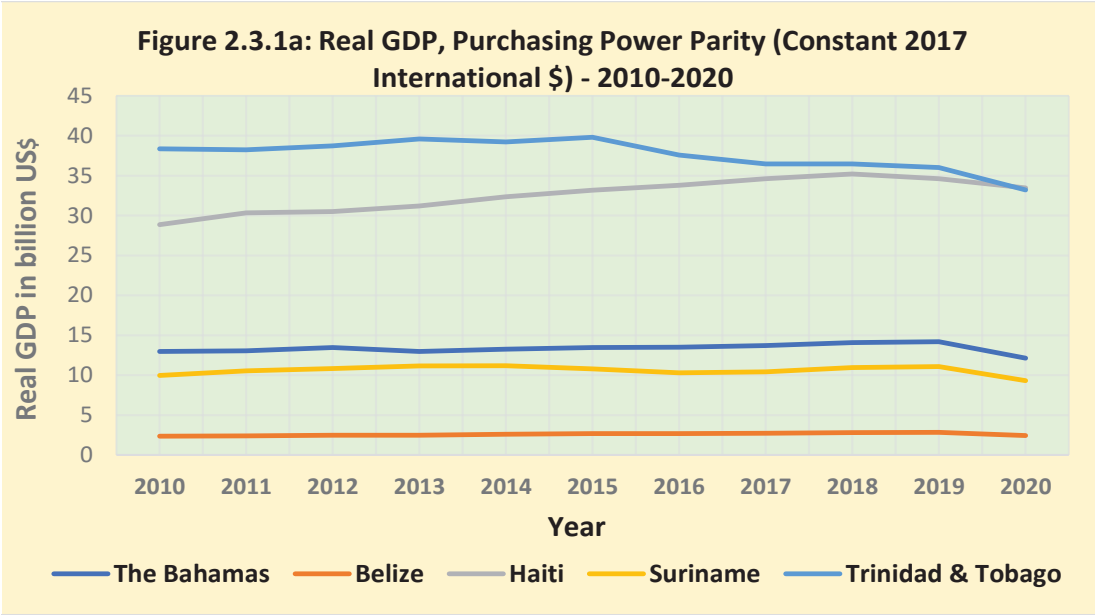
Source: CAIT Climate Data Explorer



Source: CAIT Climate Data Explorer

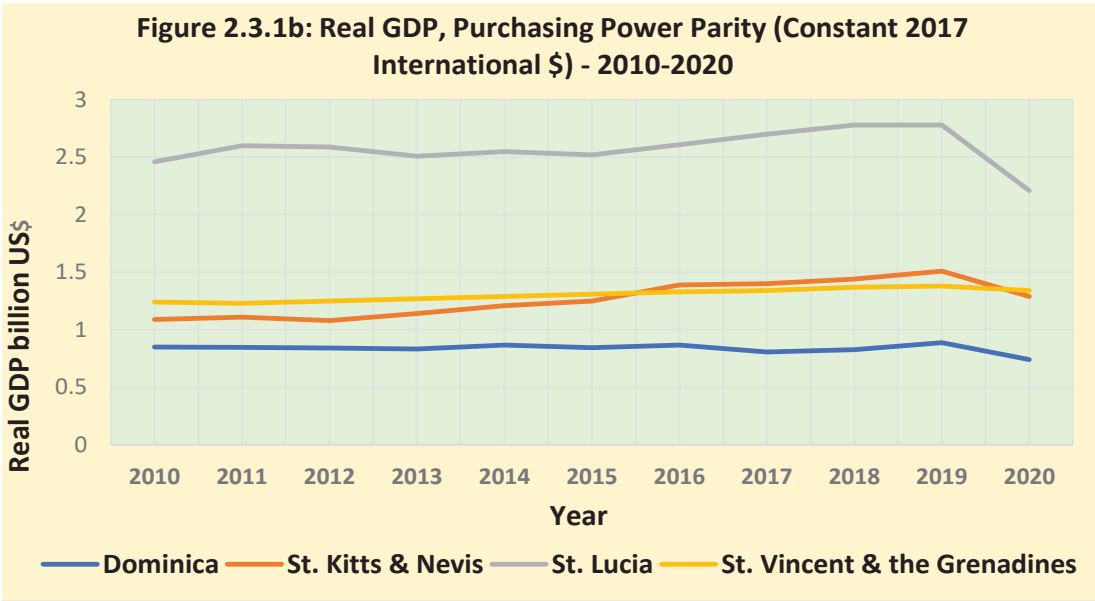


Source: CAIT Climate Data Explorer

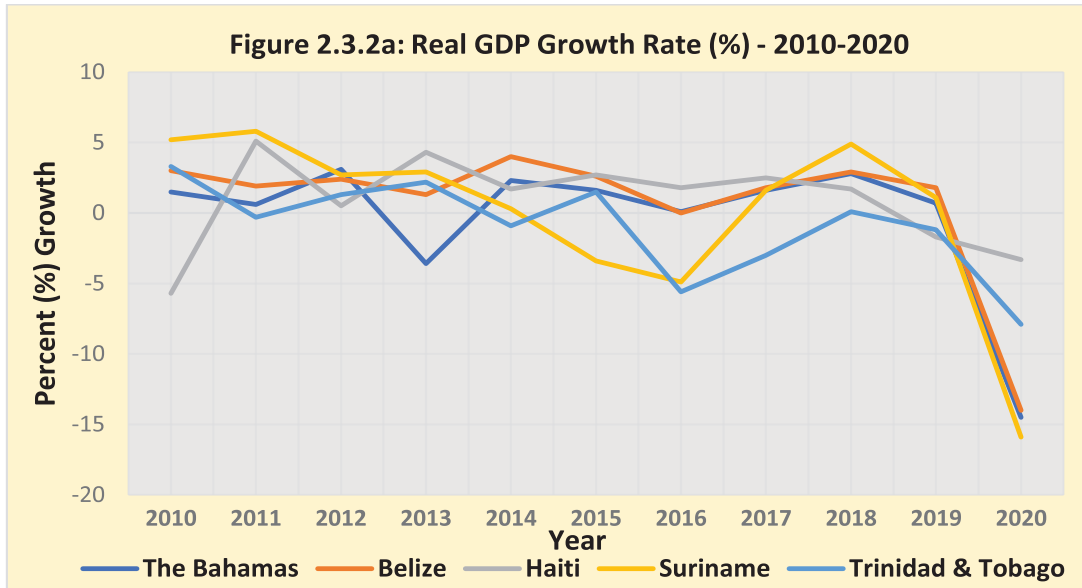


Source: CAIT Climate Data Explorer

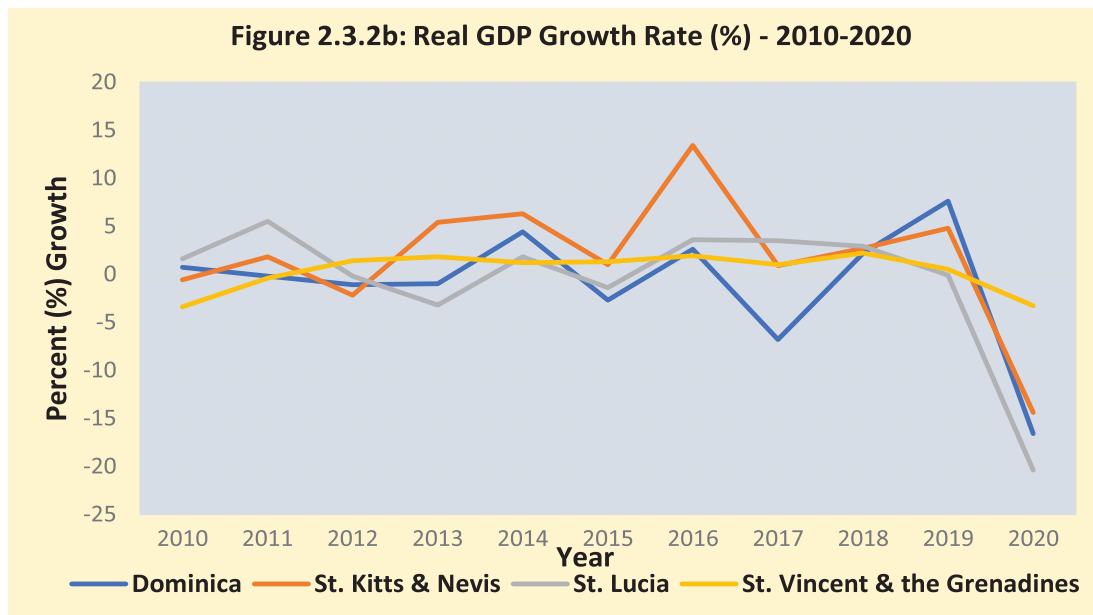
A2.3: NATIONAL ECONOMIC INDICATORS



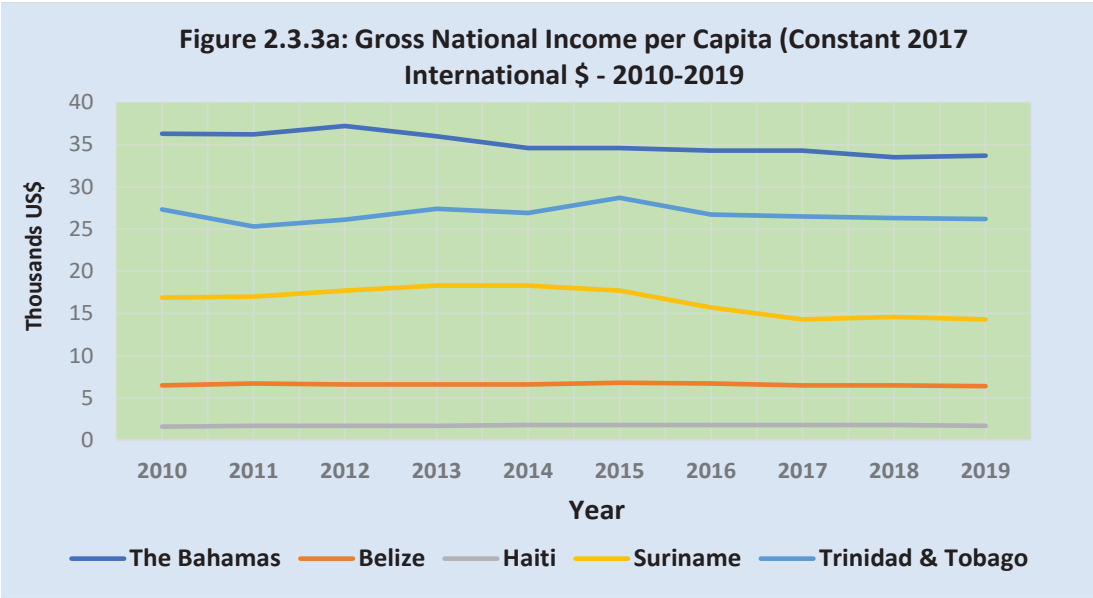
Source: World Bank Database



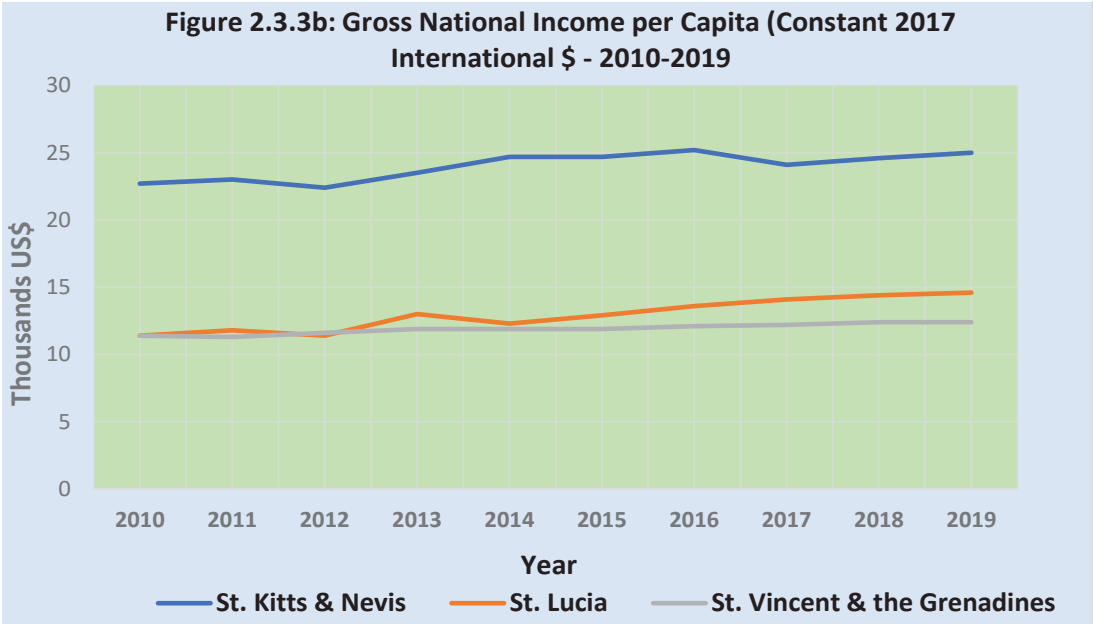
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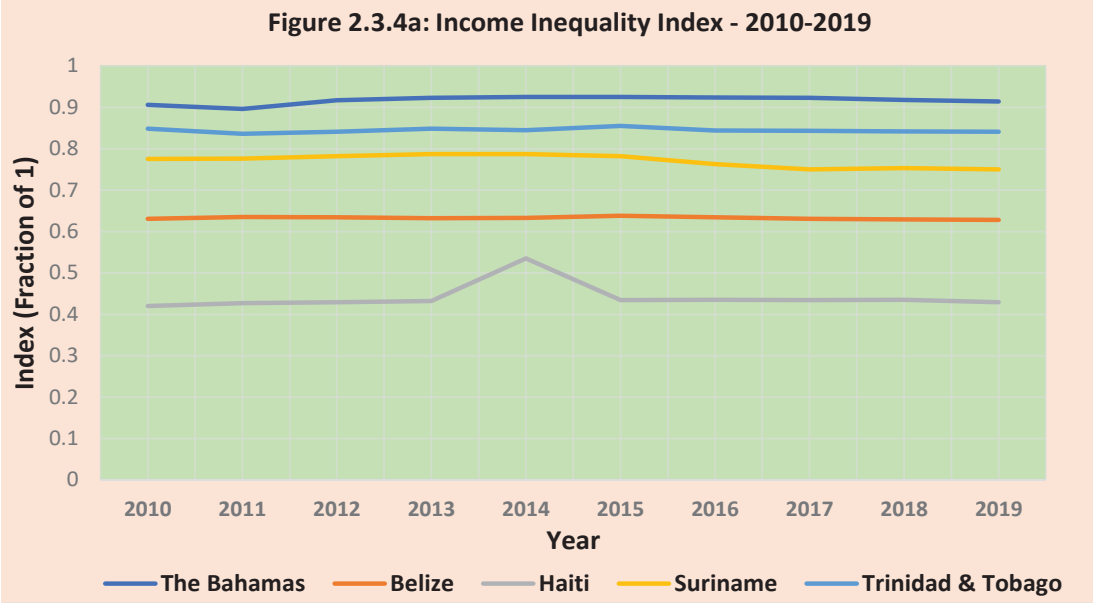
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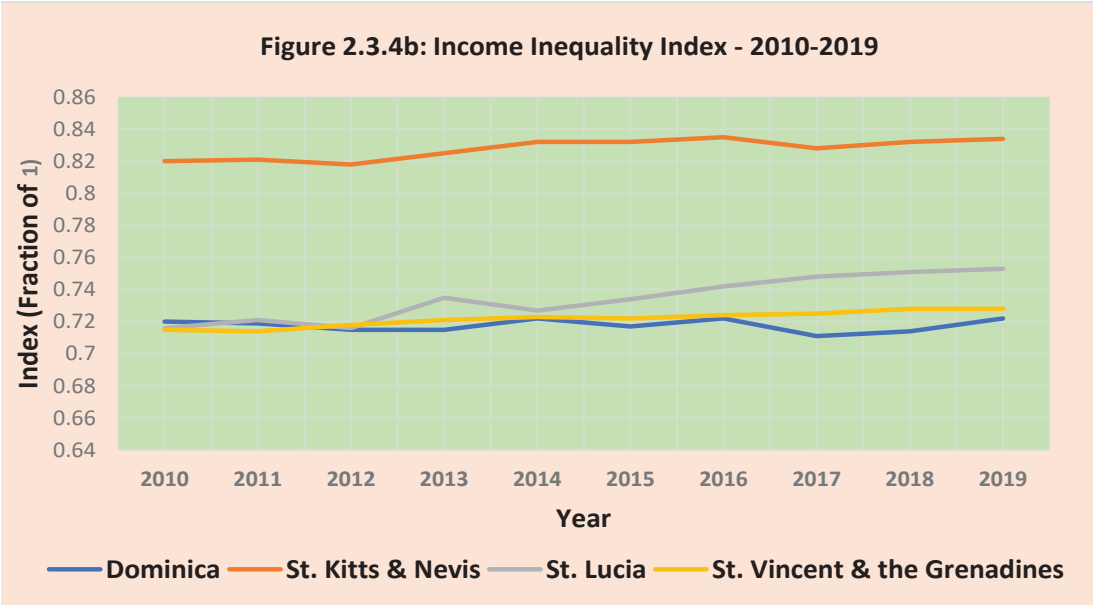
Source: World Bank Database



Source: UNDP Human Development Report 2021



Source: UNDP Human Development Report 2021



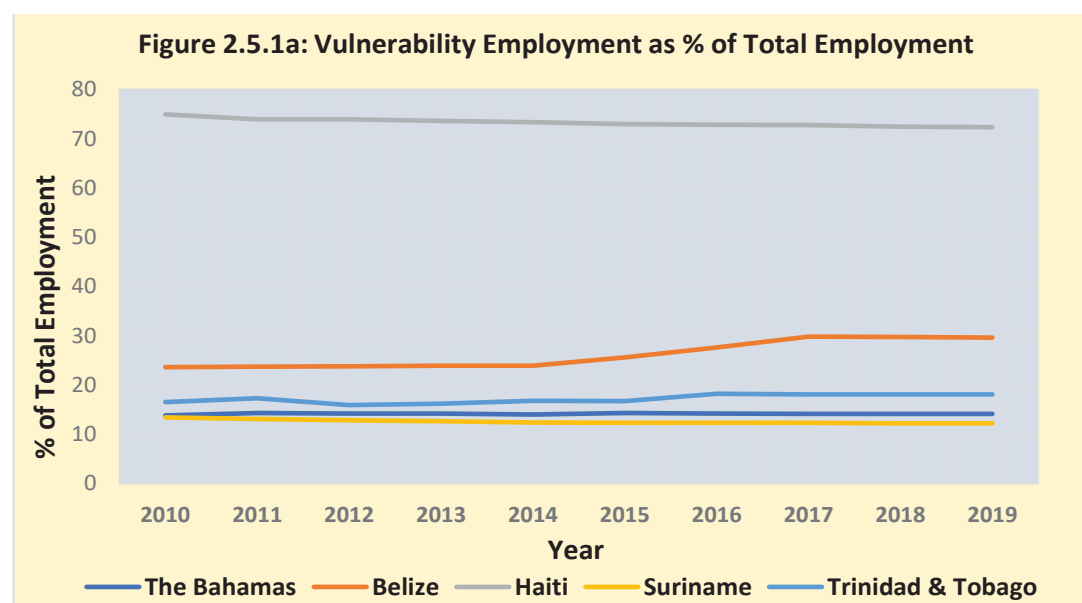
Source: UNDP Human Development Report 2021

Table A2.4: Poverty Rates in Selected Countries

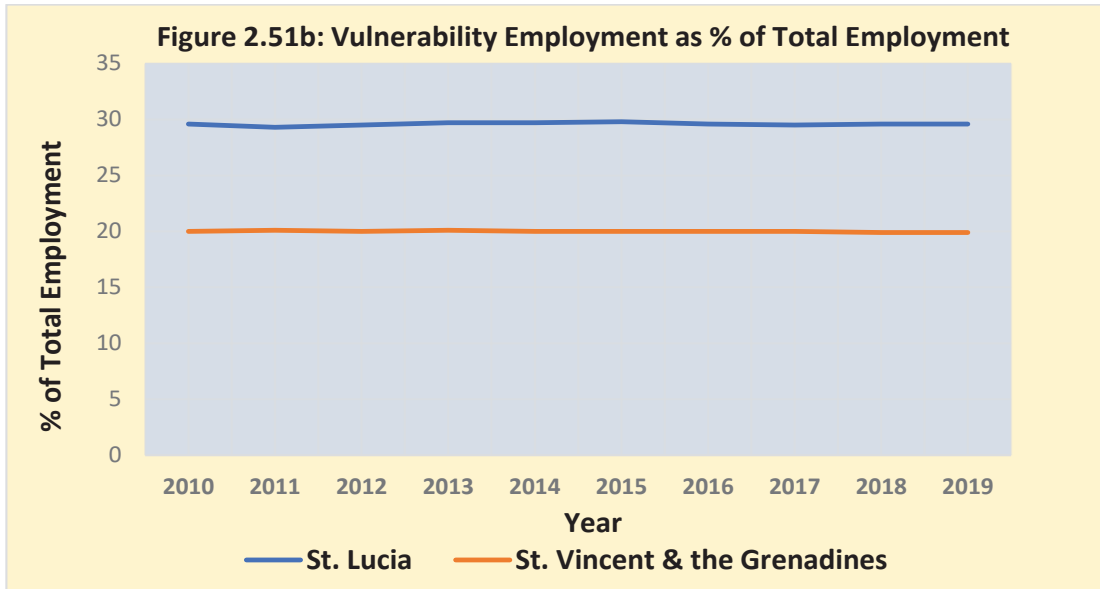
Country	National Poverty Rate	As of: Year	Source
The Bahamas	12.8	2014	https://borgenproject.org/poverty - in - The Bahamas
Belize	52.0	2018	Statistical Institute of Belize (SIB)
Dominica	29.0	2008/09	Country Poverty Assessment (CPA) Report
Haiti	58.5	2012	World Bank; UNDP
St. Kitts and Nevis	21.8	2007/08	Country Poverty Assessment (CPA) Report
Saint Lucia	25.0	2016	World Bank
St. Vincent and the Grenadines	30.2	2007/08	Country Poverty Assessment (CPA) Report
Suriname	48.2	1999	Country Poverty Assessment (CPA) Report
Trinidad and Tobago	20.0	2016	https://borgenproject.org/poverty - in - Trinidad and Tobago

Sources: Various (See Table above)

2.5 VULNERABILITY EMPLOYMENT AS A % OF TOTAL EMPLOYMENT

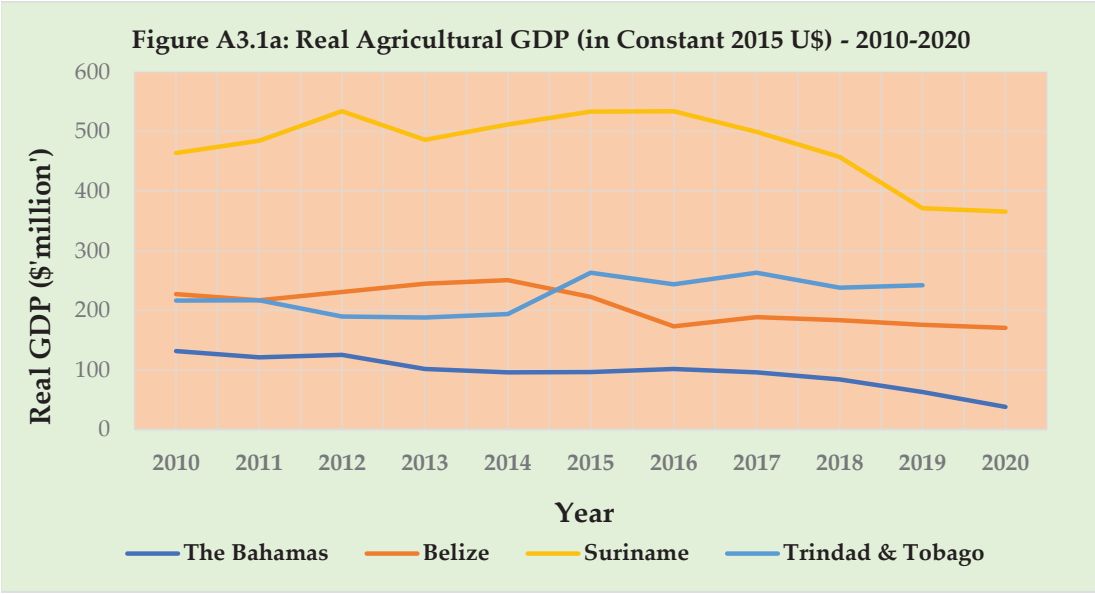


Source: UNDP Human Development Report 2021

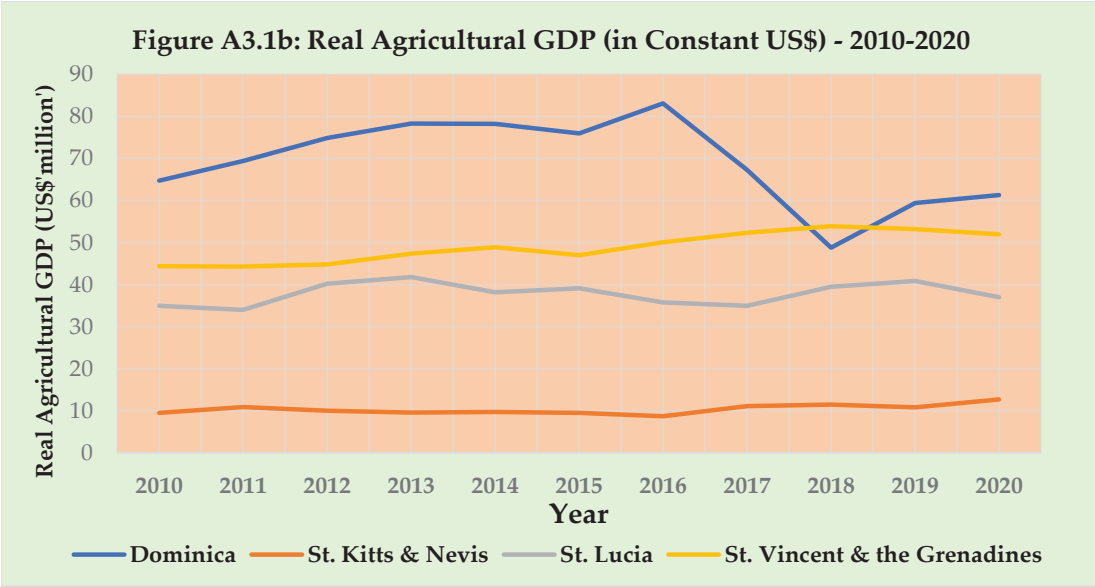


Source: UNDP Human Development Report 2021

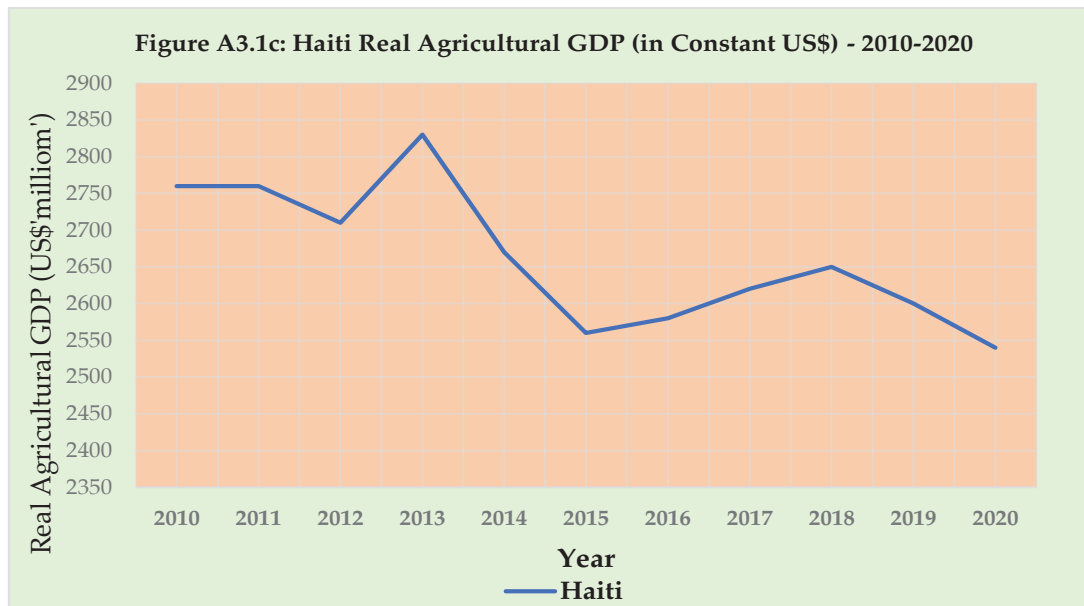
Annex 3. Agricultural Sector Indicators



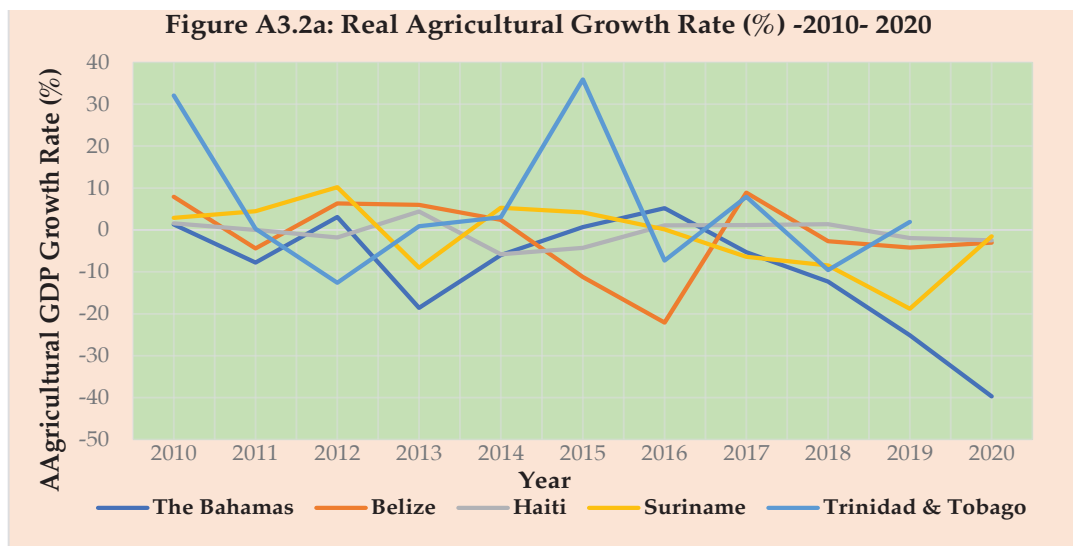
Source: World Bank Database



Source: World Bank Database

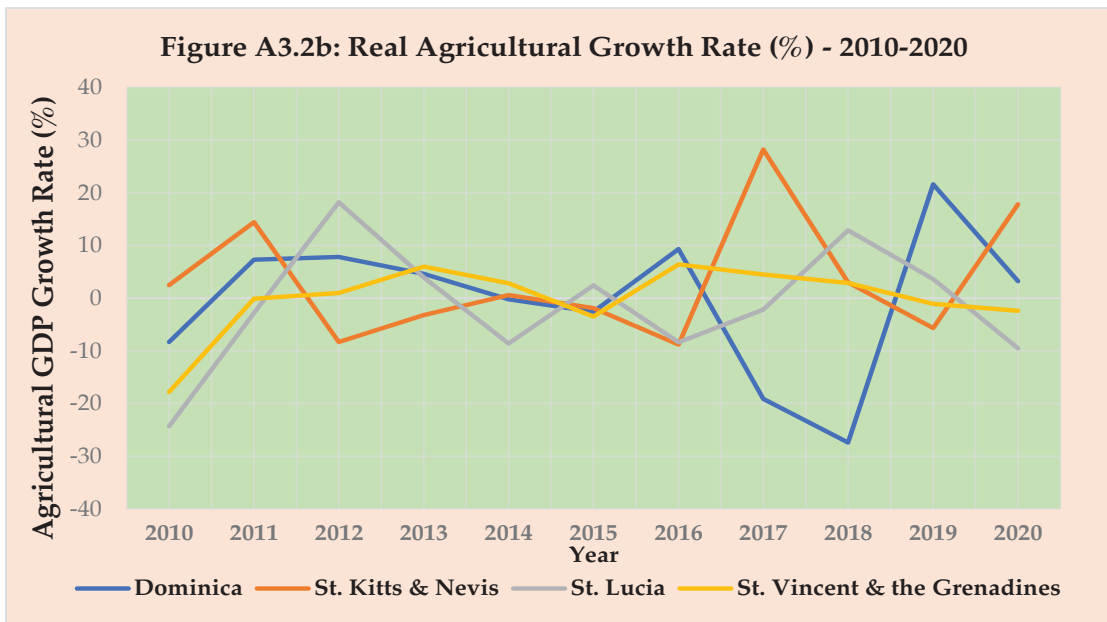


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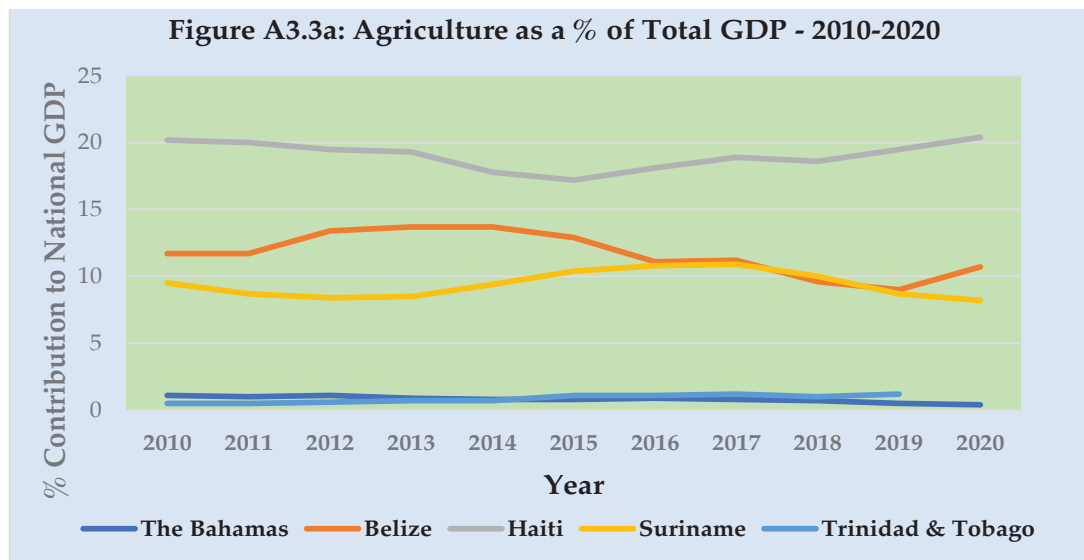


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Source: World Bank Database

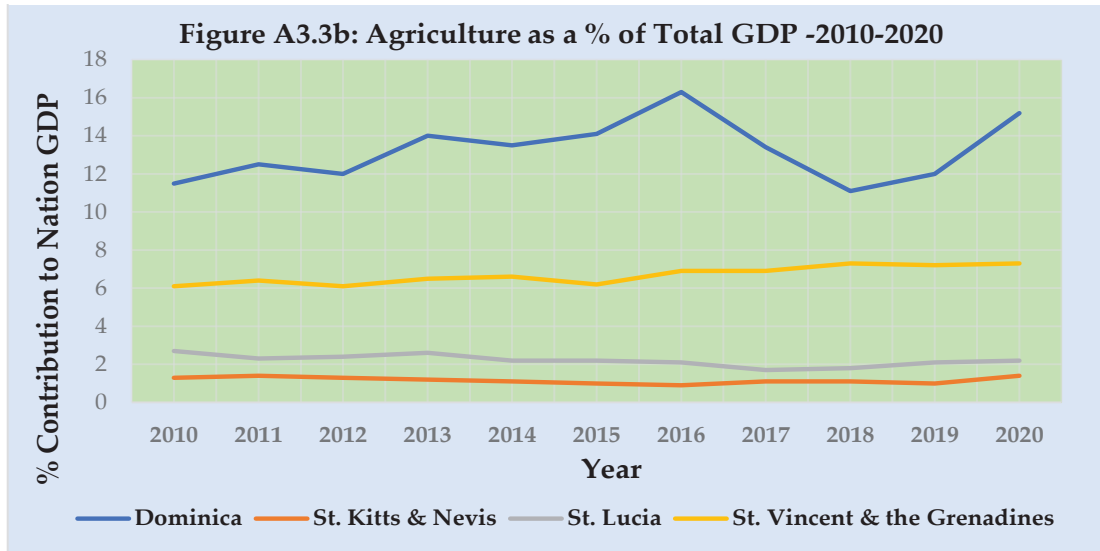


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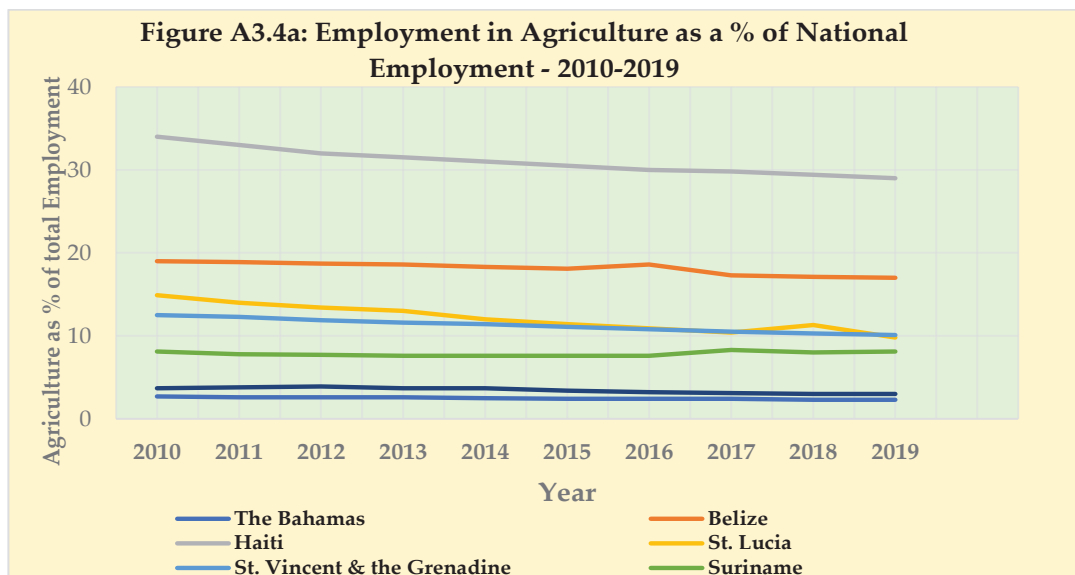


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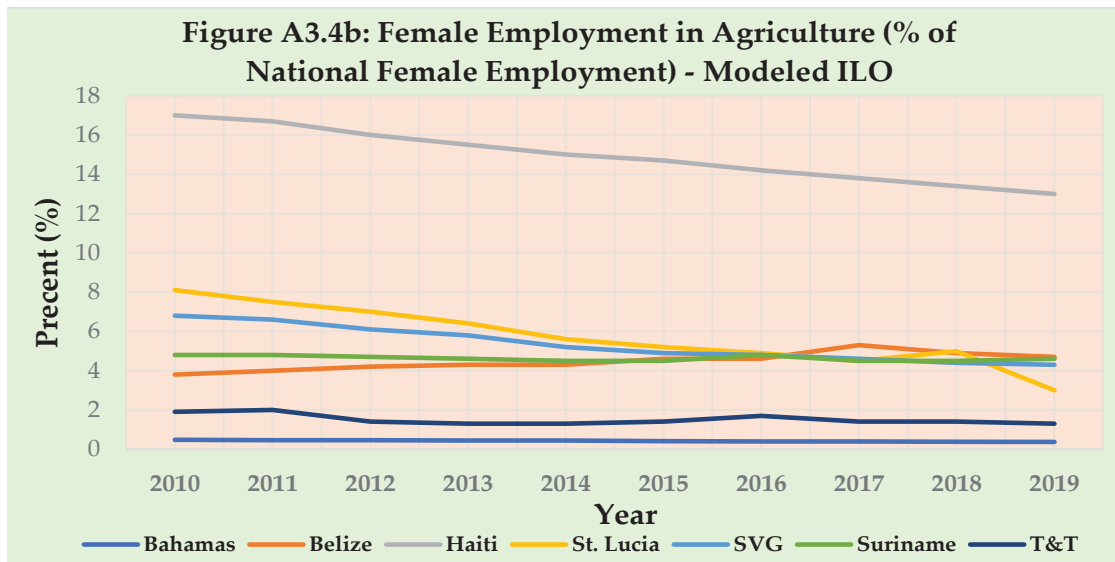
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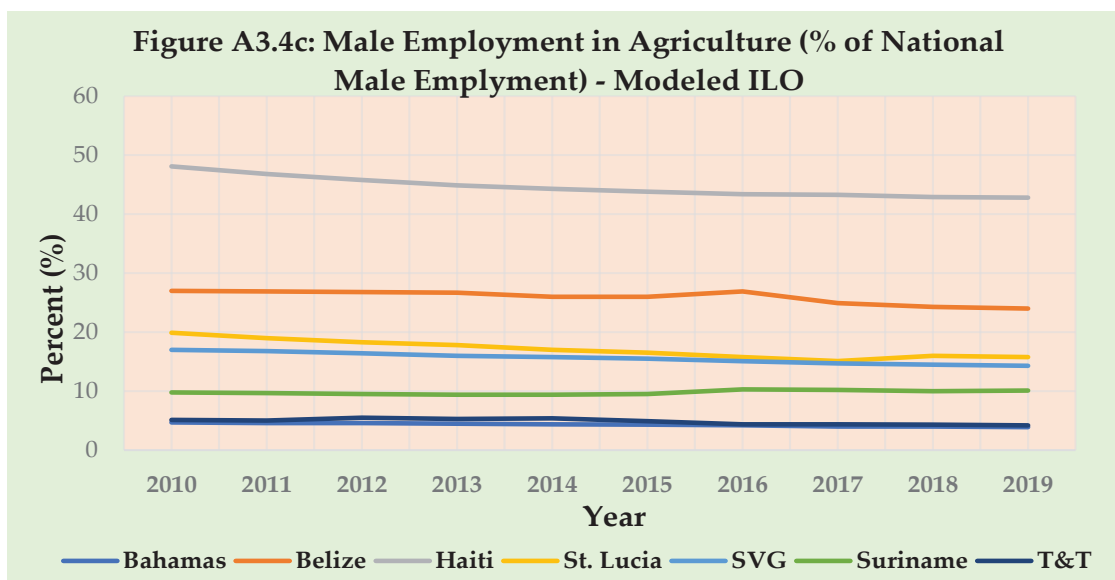
Source: World Bank Database



Source: World Bank Database

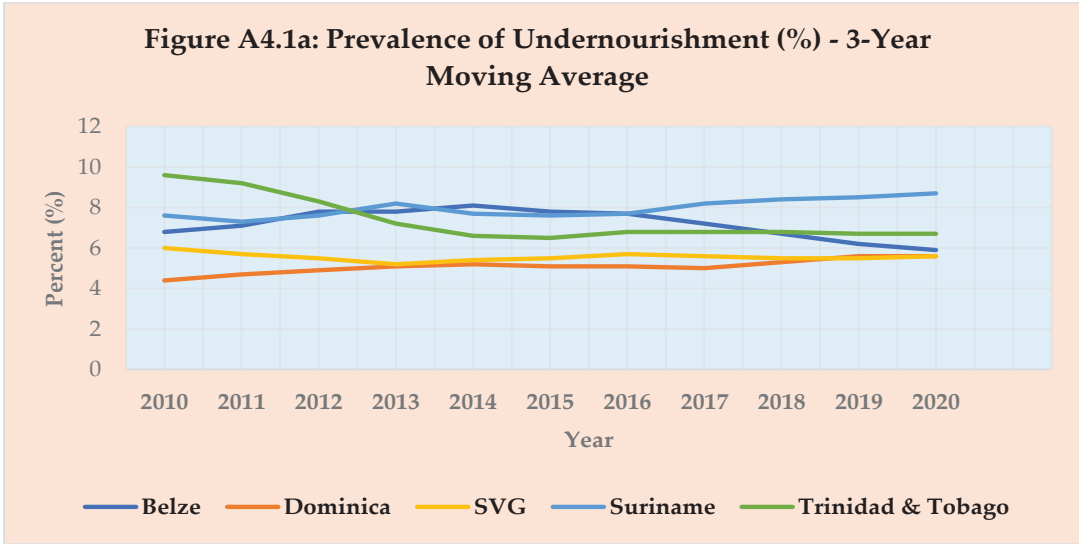


Source: World Bank Database

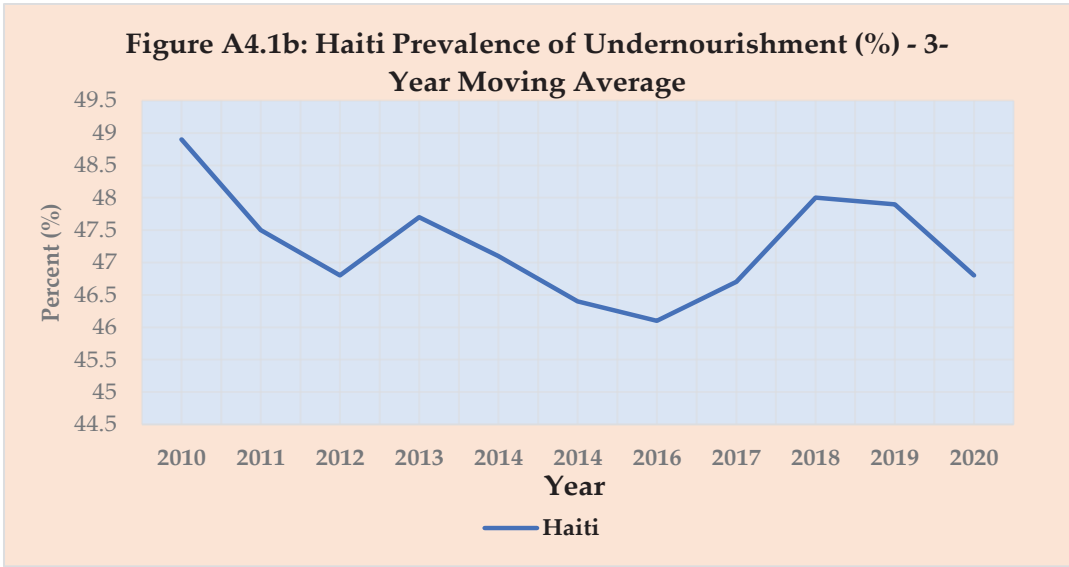


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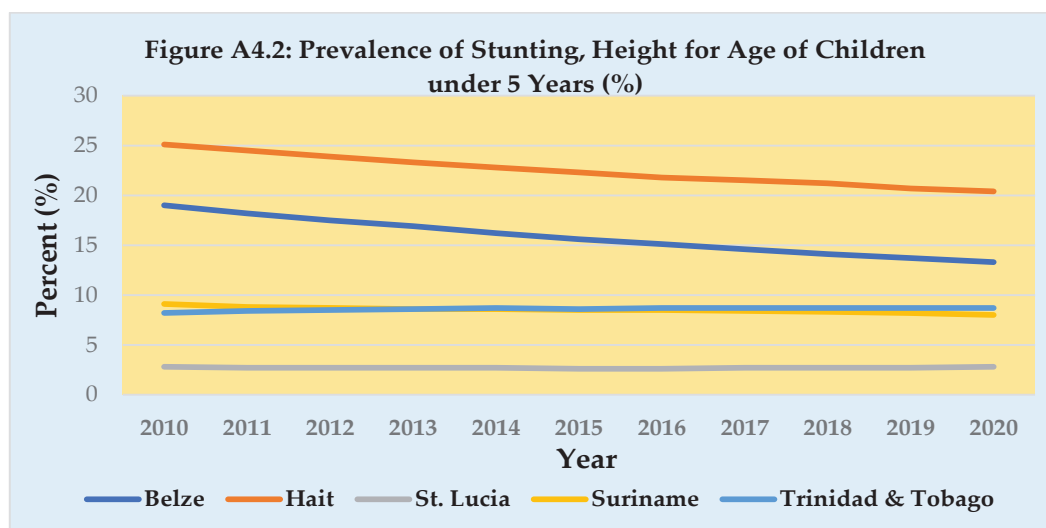
Annex 4. Status of Food and Nutrition Security in the Countries



Source: World Bank Database



Source: World Bank Database

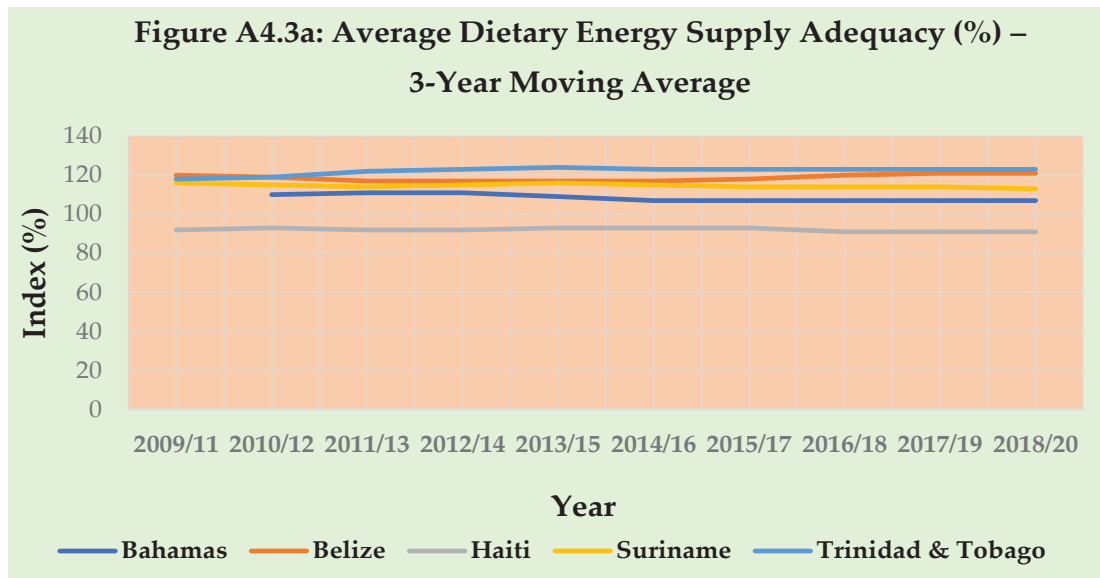


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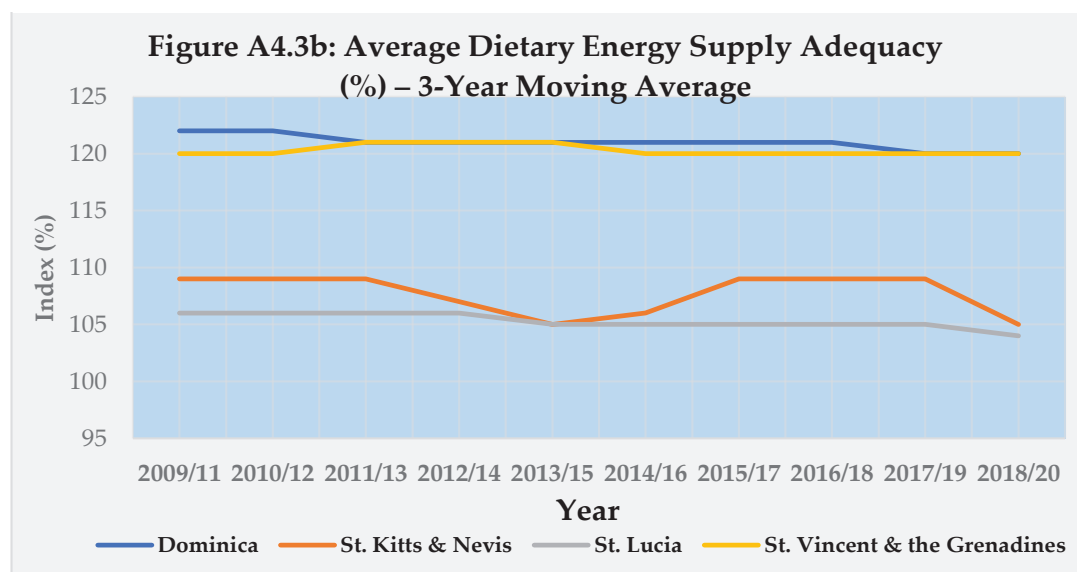
Table A4.1: Global Hunger Index Scores for Selected CARICOM Countries for Selected Years

Country	Year	GHI Scores	Category
Haiti	2000	42.0	Alarming
	2006	43.6	Alarming
	2012	35.2	Alarming
	2021	32.8	Serious
Suriname	2000	15.1	Moderate
	2006	11.4	Moderate
	2012	10.4	Moderate
	2021	10.4	Moderate
Trinidad and Tobago	2000	11.0	Moderate
	2006	11.3	Moderate
	2012	10.8	Moderate
	2021	8.9	Low

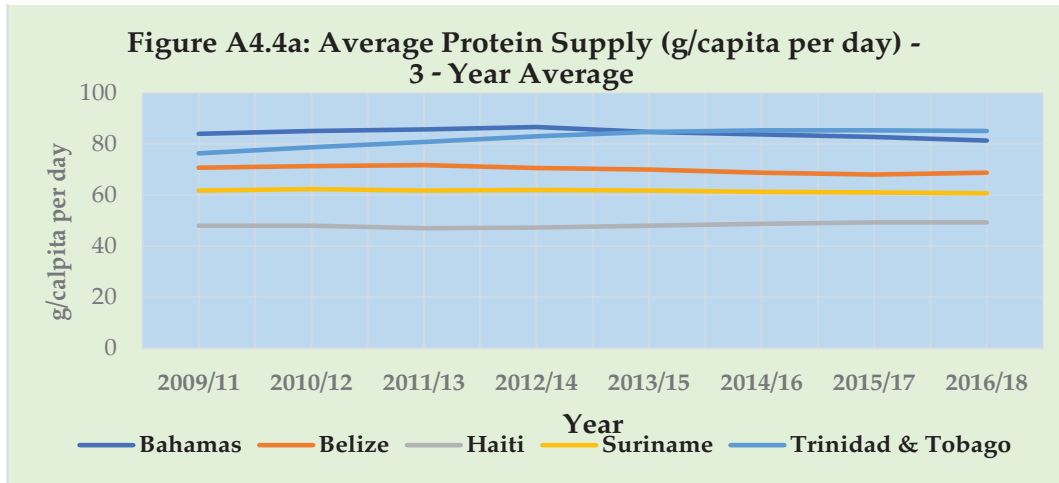
Source: <https://www.globalhungerindex.org>.



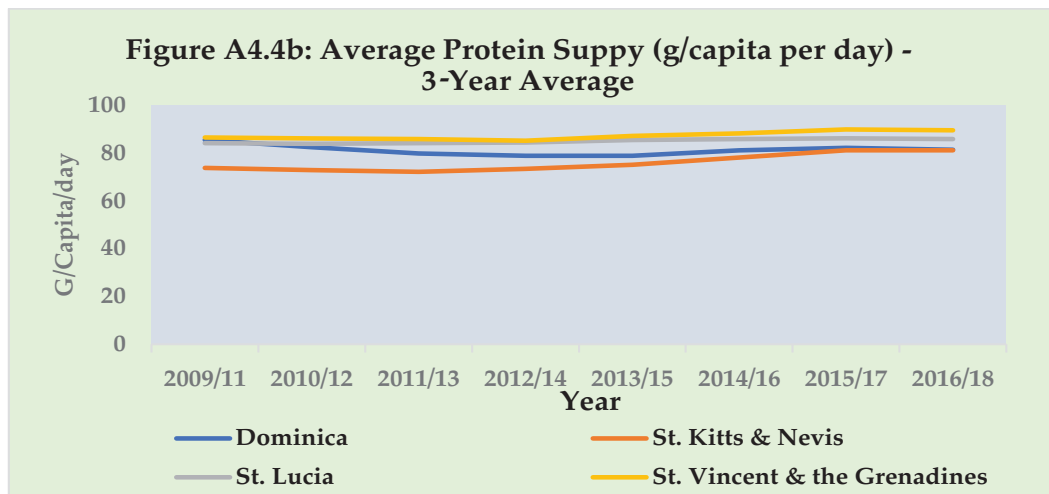
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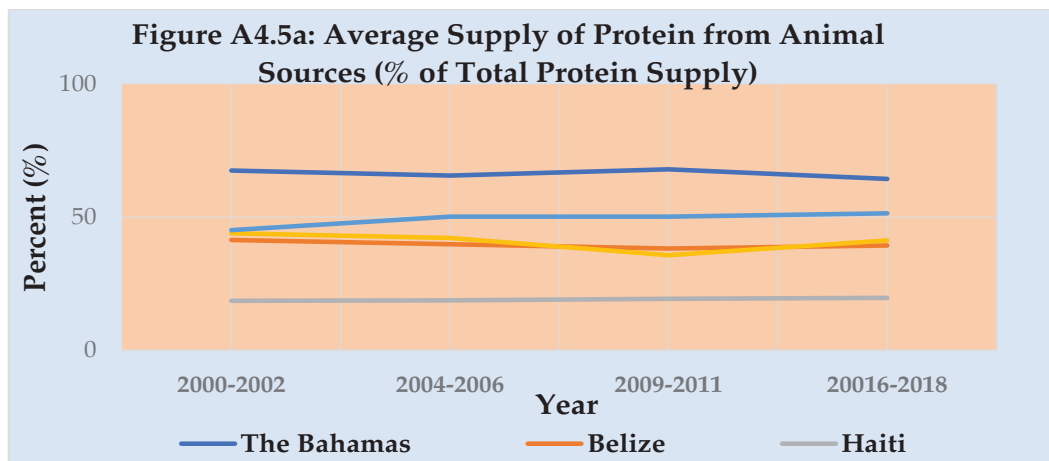
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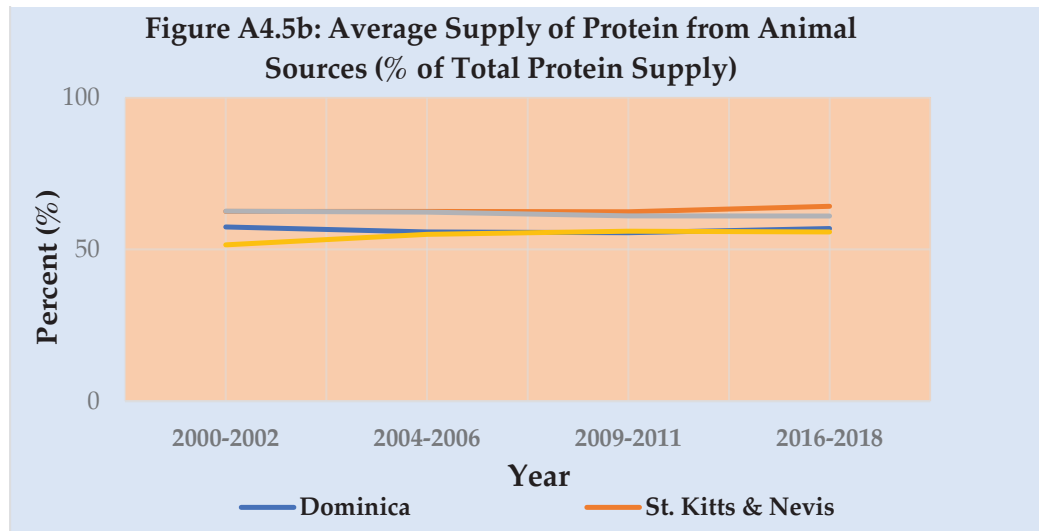
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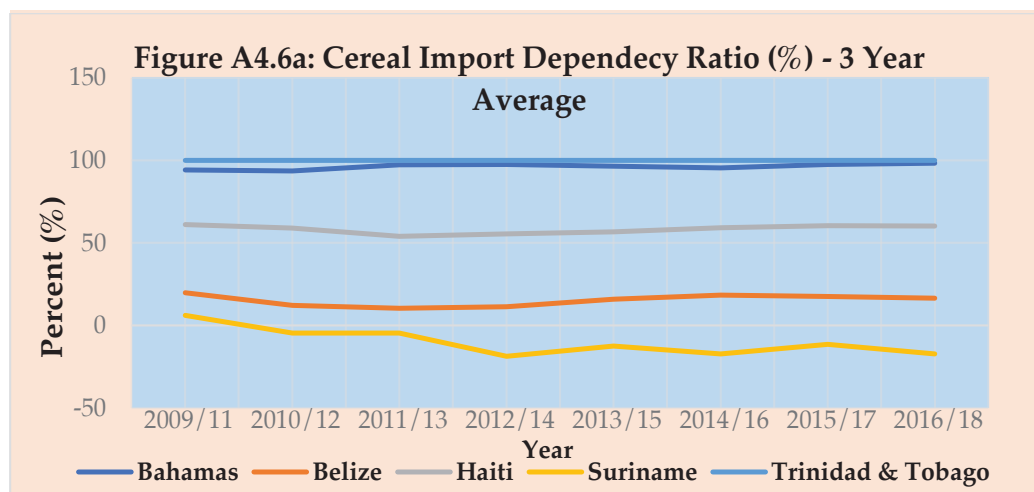
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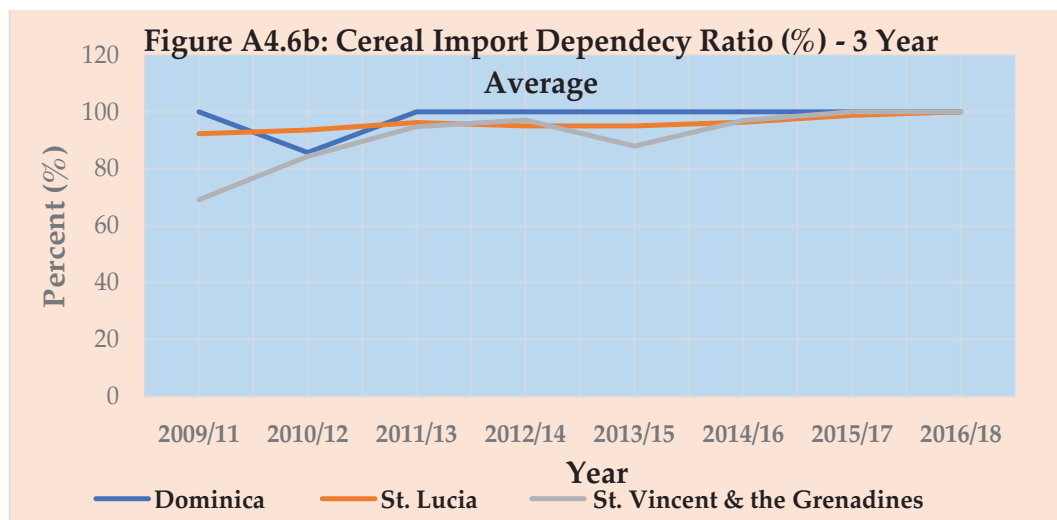
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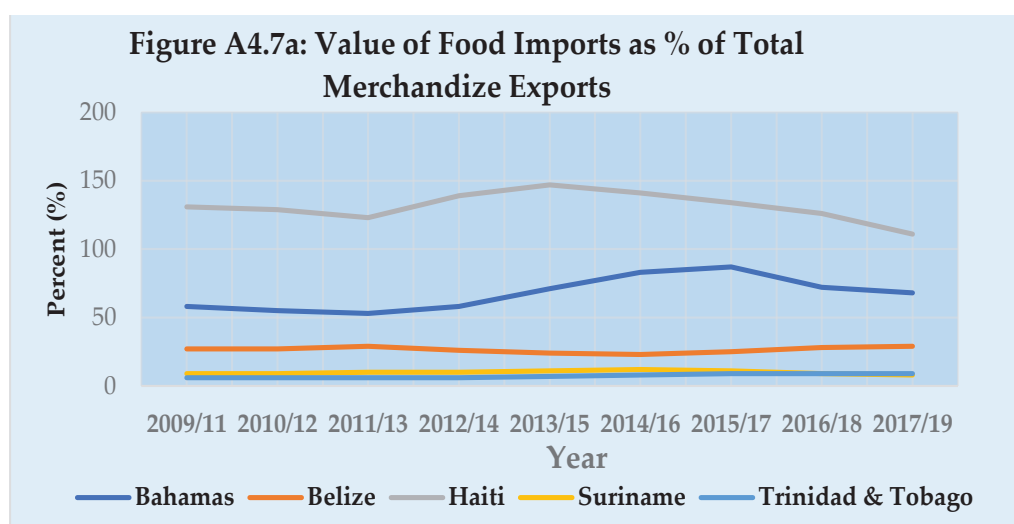


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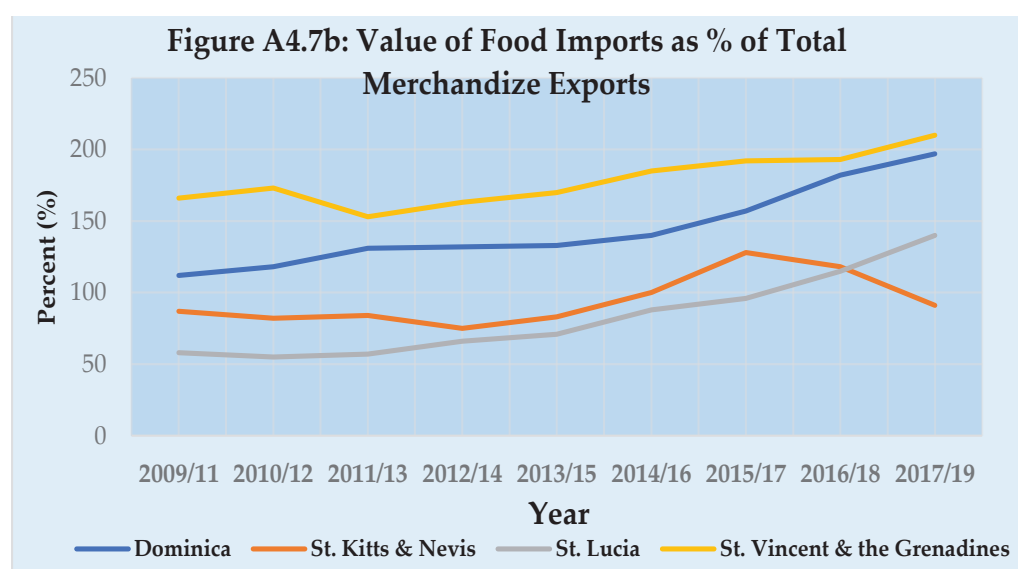
Table A4.2: Cereal Imports Dependence Ratio Rankings of CARICOM Countries in the Top 20 in the World - (2015-2017)

Country	Rank	Country	Rank	Country	Rank
Barbados	1	St. Kitts and Nevis	8	Jamaica	14
Dominica	3	St. Vincent and the Grenadines	9	Saint Lucia	19
Grenada	5	Trinidad and Tobago	11	Antigua and Barbuda	20

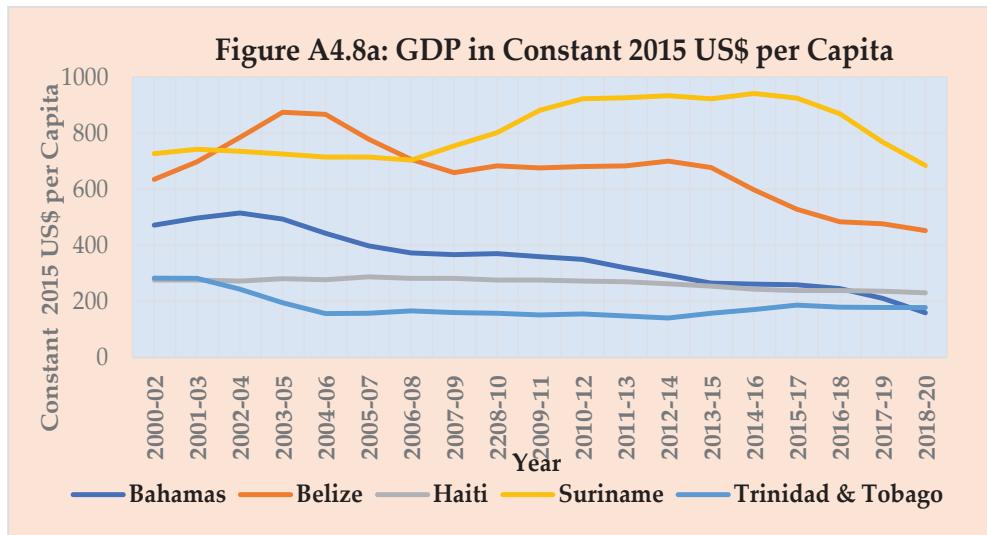
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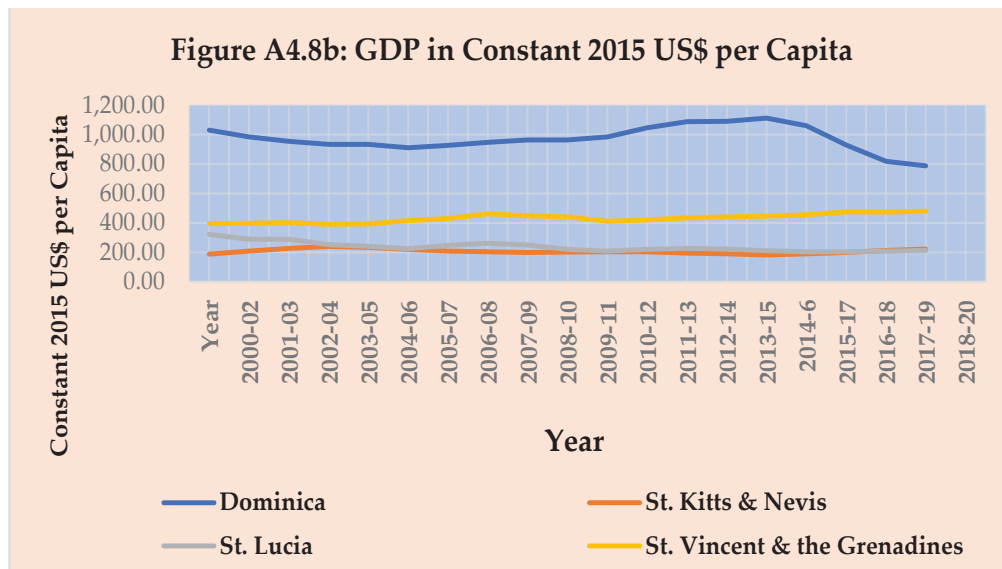
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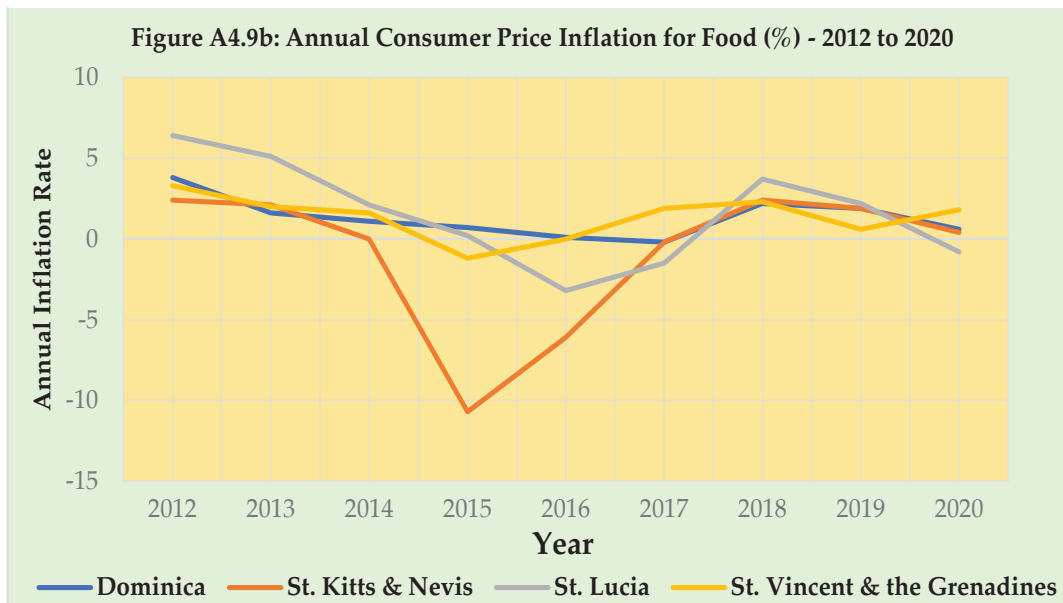
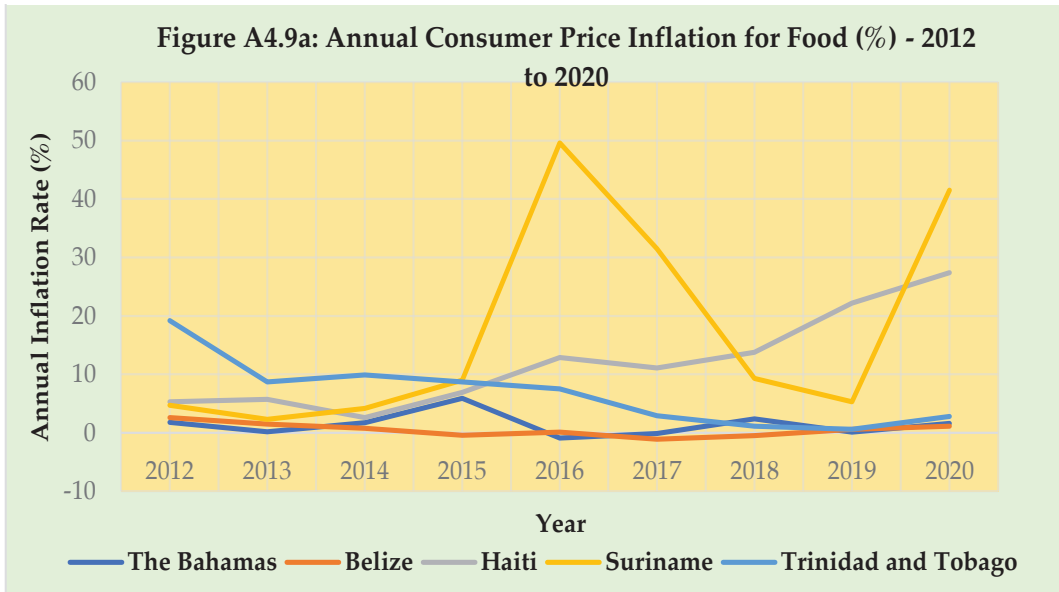
Source: FAO Statistical Yearbook 202

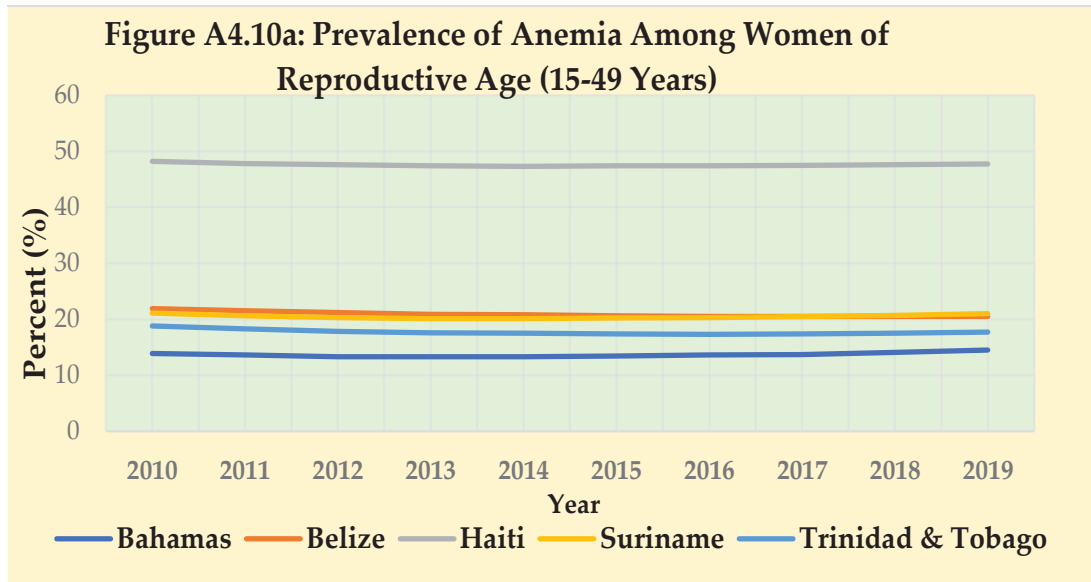


Source: World Bank Database

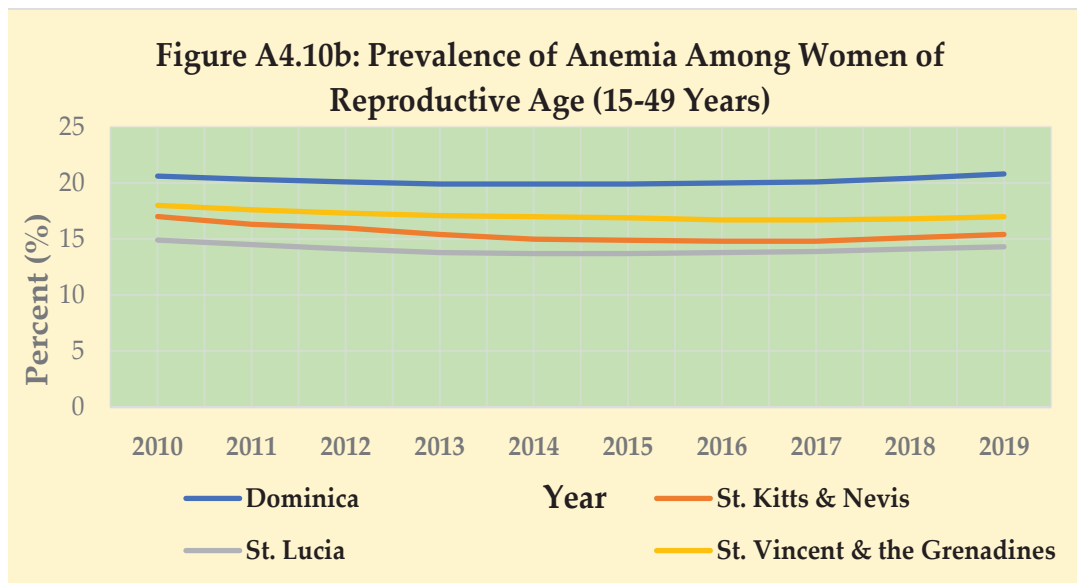


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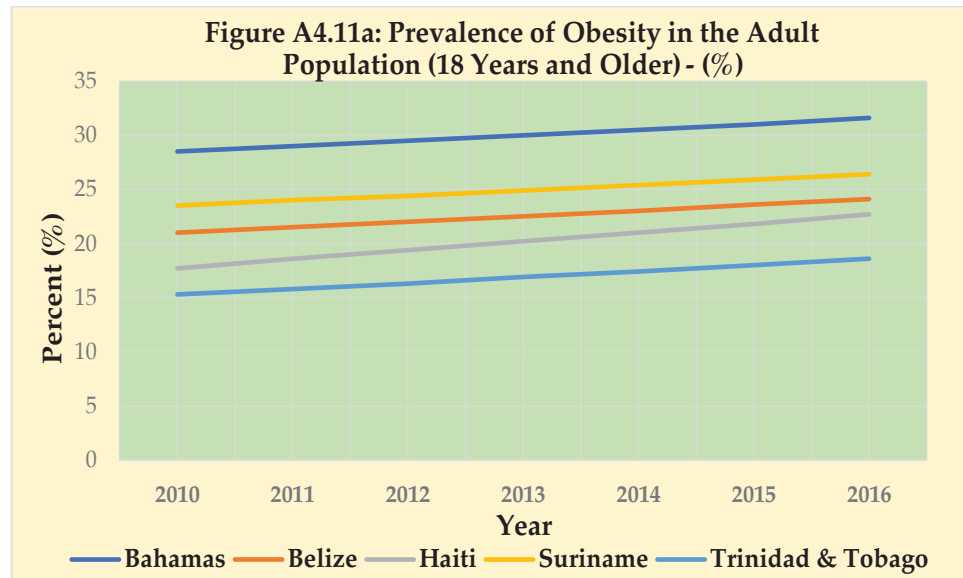




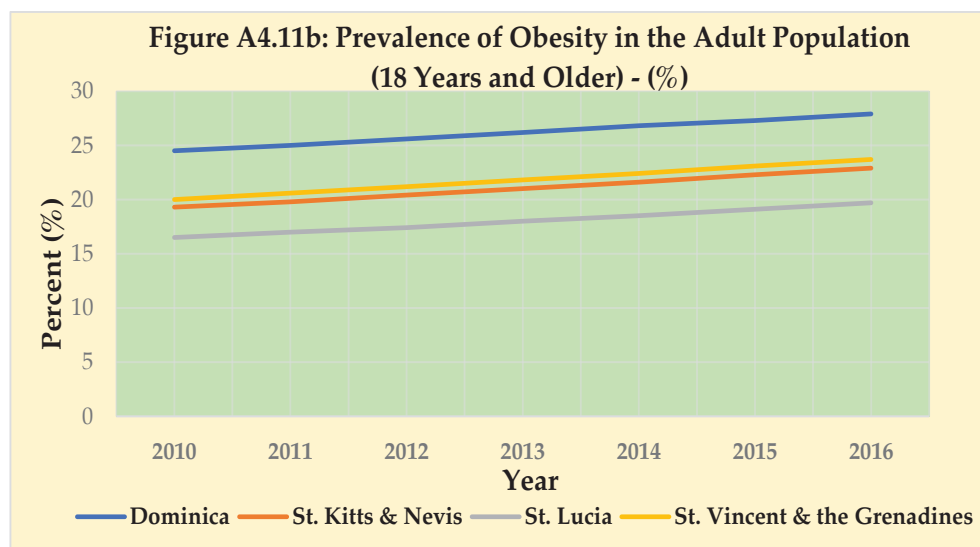
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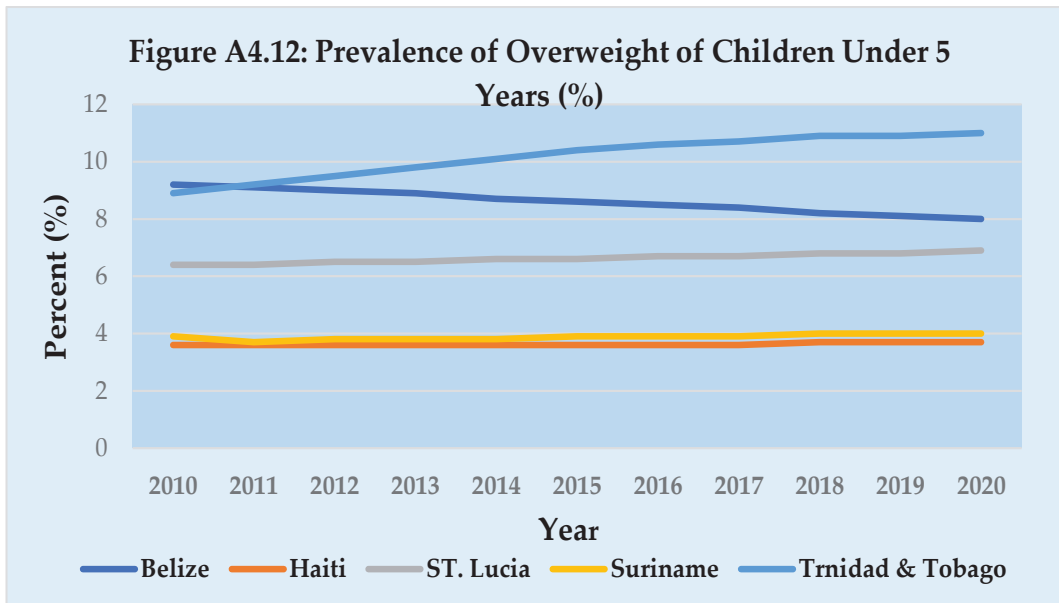
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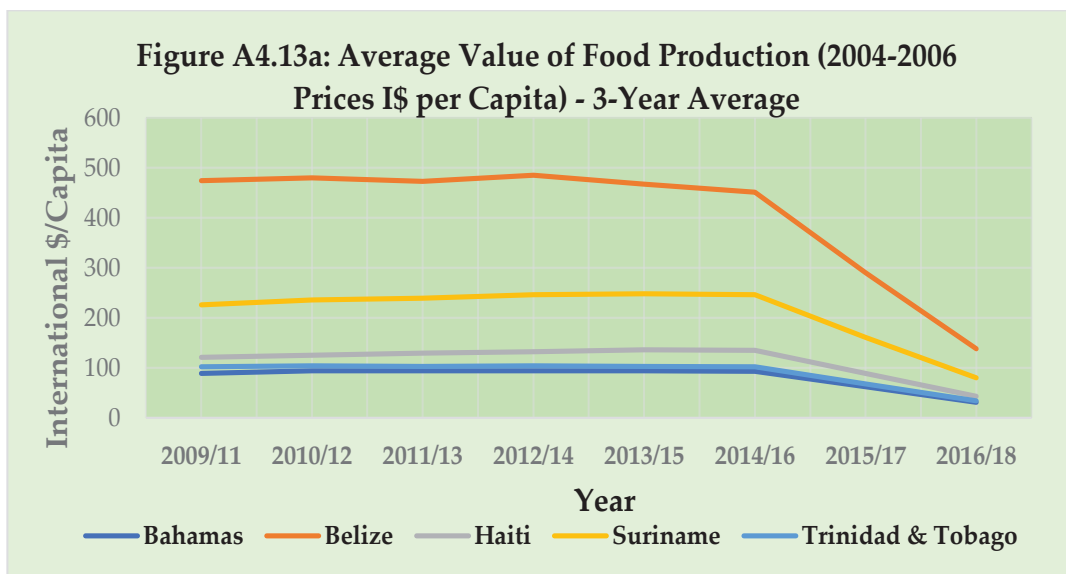
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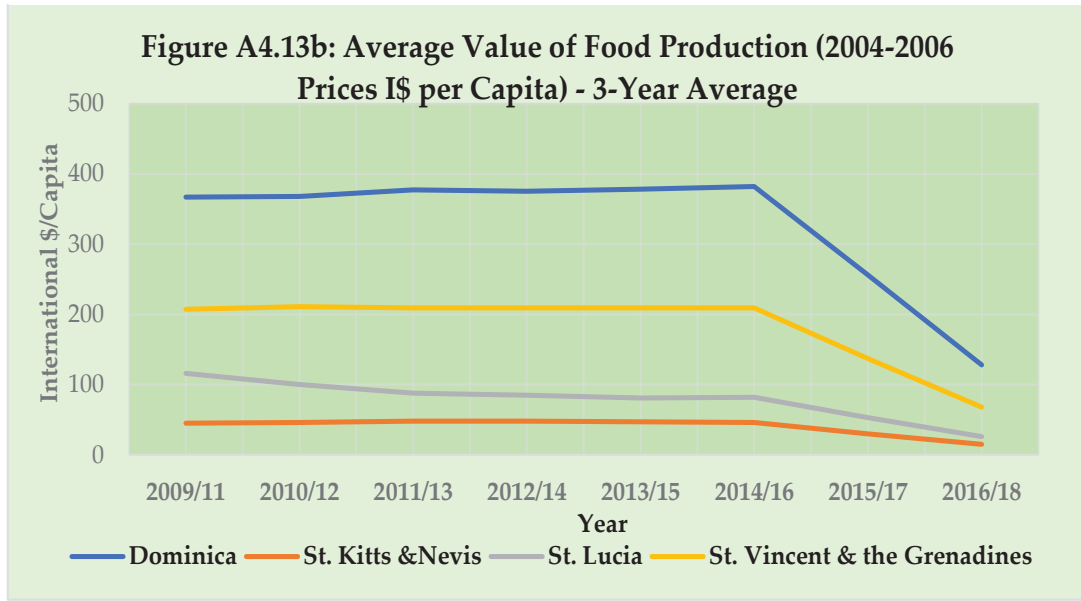
Source: World Bank Database



Source: <https://www.who.int>



Source: <https://www.who.int>



Source: <https://www.who.int>

Annex 5. List of Stakeholders Consulted

COUNTRY	NAME	POSITION/ORGANIZATION
The Bahamas	1. Mrs. Rochelle W. Newbold	Office of the Prime Minister- Special Advisor on Environmental & Climate Change Matters
	2. Head of the Cooperative	Grand Bahama Beekeepers Cooperative
	3. Farm Manager	One Eleuthera Foundation/ Gibby Da Farma
	4. Head	Bahamas Network of Rural Women Producers
	5. Owner	Blue Fields Farms
	6. Mr. Anthony Johnson (Agricultural Economist)	Bahamas Agricultural and Marine Science Institute (Farm)
	7. Mrs. Marina Newton (Head)	Bahamas Agricultural and Marine Science Institute- Associated Farmers Program
Belize	8. Dr. Victoriano Pascual	Acting Chief Agriculture Officer Ministry of Agriculture, Food Security & Enterprise
	9. Mr. Colin Mattis	Deputy Chief Climate Change Officer National Climate Change Office Ministry of Sustainable Development, Climate Change and Disaster Risk Management
Dominica	10. Dr. Kyra Paul	NDA/GCF Focal Point
	11. Mr. Edgar Hunter	NDC Focal Point UNFCCC Focal Point Ministry of Environment, Rural Modernization and Kalinago Upliftment
	12. Kent Coipel	IICA Specialist
	13. Dr. Kerian Ferreira	Climate Specialist/NDC Consultant
	14. Dr. Al-Mario Casimir	Agriculture NDC Focal Point
	15. Soufriere farmer	
	16. Morne Prosper Farmer	
	17. Greenridge Farming Enterprise Representative	
	18. Morne Prosper Women Farmers in Action Group	Focus Group-10 persons
	28. Morne Prosper Farmers Group Representative	
	29. Soufriere farmer	
30. Soufriere farmer		
Haiti	31. Gerty PIERRE	Health Environmental specialist Climate Change Director (DCC) Ministry of Environment Haiti (MDE)

COUNTRY	NAME	POSITION/ORGANIZATION
Saint Kitts and Nevis	32. Cheryl Jeffers	Conservation Officer II, Dept. of Environment, Department of Environment and Cooperatives
	33. Meshach Alford	NDC In-Country Facilitator
	34. Aisha Howell	Senior Project Officer Policy and Planning Ministry of Agriculture
	35. Tonisha Weekes	Liaison Officer Allied Agencies Department of Agriculture
	36. Mr. Auren Manners	NDA Focal Point Senior Project Analyst / SKN NDA Economic Affairs and Public Sector Investment Programme Ministry of Sustainable Development
	37. Daniel Arthurton	Farmer
	38. Nerissa Williams	Project Analyst / (NDC Partnerships Co-Focal Point) Department of Economic Affairs and Public Sector Investment Planning Ministry of Sustainable Development
	39. Randy Elliott	Director Department of Agriculture, Nevis
	40. Ian Chapman	Crop Management and Production Unit Agricultural Officer Department of Agriculture
	41. Farmer	Fahies Women's Famers Group
	42. Farmer	Fahies Women's Famers Group
	Saint Lucia	43. Thomas Scheutzlich
44. Annette Leo		Chief Sustainable Development Officer
45. Ruth Itty		Sustainable Development Officer
46. Donette Charlery		Economist
47. Crispin D'Auvergne		OECS Commission
48. Farmer		President, Farmers with Disabilities Association
49. Farmer		Member, Farmers with Disabilities Association
50. Farmer		Farmers with Disabilities Association
51. Farmer		Farmers with Disabilities Association
52. Farmer		Farmers with Disabilities Association
53. Farmer		Farmers with Disabilities Association
54. Farmer		Farmer
55. Farmer		Beekeeper/ farmer
Saint Vincent and the Grenadines	To be completed	
Suriname	56. Ms. Ivette Patterzon	Directorate for Environment Ministry of Spatial Planning and Environment
	57. Mr. Iwan Samoender	Manager Climate Change Unit Ministry of Agriculture, Livestock and Fisheries
	58. Farmer	Paragreens
	59. Farmer	Surafi
	60. Farmer	Wroko waswasi
	61. Farmer	Collective small ruminants
	62. Farmer	Farmers collective Commewijne
63. Farmer	Agro Cooperation Redidoti and Pierrekondre	

COUNTRY	NAME	POSITION/ORGANIZATION
Trinidad and Tobago	64. Ansari Hosein	Executive Director, CARDI
	65. Fayaz Shah	Manager (Ag) Science Technology and Innovation and Country representative for CARDI Trinidad and Tobago;
	66. Lisa James	Agricultural Economist, CARDI
	67. Kistian Flemming	Climate Change Development Specialist and Country Representative, CARDI St. Kitts and Nevis;
	68. Nisha Ramsahai	Coordinator, Strategy and Research Unit, Environmental Management Authority (EMA)
	69. Jiselle Joseph	Assistant Manager Technical Services, EMA
	70. Xiomara Chin	Coordinator, Strategy and Research Unit, EMA
	71. Diana Roopnarine-Lal	Chief Technical Advisor, CBIT Programme, EMA
	72. Lester Doodnath	Biologist, Institute of Marine Affairs, IMA
	73. Ruqayyah Thompson	Marine Governance Researcher, IMA
	74. Rosemary Kishore	Senior Research officer, IMA
	75. Dr Farahnaz Solomon	Fisheries Biologist
	76. Rosemary Lall	Programme Officer, Energy, Environment, UNDP
	77. Sarah Prince	Programme Assistant, UNDP
	78. Artie Dubrie	Coordinator, Sustainable Development & Disaster Unit, United Nations Economic Commission for Latin America and the Caribbean (UNECLAC)
	79. Elizabeth Thorne	Research Officer, UNECLAC
	80. Jonatas de Paulo	Environmental Officer, UNECLAC
	81. Willard Phillips	Economic Affairs Officer, UNECLAC
	82. Esther Chon Ling	Team Assistant, UNECLAC
	83. Kishan Kumarsingh	Head, Multilateral Environmental Agreements, Ministry of Planning and Development (MPD)
	84. Sindy Singh	Climate Change Specialist, MPD
85. Danielle Sookram	Research Analyst, MPD	
86. Curmira Gulston	Hazard Mitigation Specialist, The Office of Disaster Preparedness and Management (ODPM)	
87. Beena Ramkissoon	Agricultural Planning Officer II, Ministry of Agriculture, Land and Fisheries (MALF)	
88. Ricardo Mieux	Fisheries Officer, Fisheries Division, MALF	
89. Pamela Ramroop-Kamal	Director (Ag) of the Horticultural Services Division, MALF	
90. Lutchman Ragoonanan	Assistant Conservator of Forests, Forestry Division, MALF	
91. Hansley Durbal	Director (Ag), Regional Administration South (RAS), MALF	

Annex 6. Country Targets for Mitigation - First NDCs

AgREADY Country	Geographic Coverage	Mitigation Target, NDC 1	Type of Emissions Reduction Commitment	Sectoral quantification/ breakdown of target?	Gases	Sectors/Sub-Sectors (as listed in the NDCs)	Implementation Period
The Bahamas	National	Economy-wide reduction in GHG emissions of 30% when compared to BAU by 2030	GHG Goal target (economy-wide or sectoral contribution) – against BAU	No	Carbon Dioxide Methane Nitrous Oxide	<ul style="list-style-type: none"> • Energy • Forestry 	2020-2030
Belize	National	No overall anticipated emissions reductions specified; however anticipated emissions reductions were indicated for prioritized activities ⁴⁵ .	Relative to projected baseline emissions on the sectorial level, taking into account current emissions, expected population growth and economic development.	Yes	Carbon dioxide Methane	<ul style="list-style-type: none"> • Forestry • Electricity • Waste • Transport 	2015-2030
Dominica	National	Progressively reduce total gross GHG emissions below 2014 levels (164.5 Ggs est.) at the following reduction rates: 17.9% by 2020; 39.2% by 2025; and 44.7% by 2030	Absolute reduction from base year emissions	Yes	Carbon Dioxide Methane Nitrous Oxide Hydrofluorocarbon (HFCs)	<ul style="list-style-type: none"> • Energy • Transport • Manufacturing and Construction • Commercial/ institutional, residential, agriculture, forestry, fishing • Solid Waste 	2016-2030
Haiti	National	Emissions reductions of 31% relative to a baseline scenario, representing an absolute reduction of 45.24 MtCO ₂ e.	Absolute reduction from base year emissions	No	Carbon Dioxide Methane Nitrous Oxide	<ul style="list-style-type: none"> • Energy • Agriculture, Forestry and land-use change (AFOLU) • Waste 	2016-2030
St. Kitts and Nevis	National	Emissions reduction target of 22% (to 529 GgCO ₂ e) and 540 GgCO ₂ e (35%) of St. Kitts and Nevis GHG emissions projected in the BAU scenario for 2025 and 2030 respectively.	Absolute GHG reduction from the BAU	No	Carbon Dioxide	<ul style="list-style-type: none"> • Predominantly: Energy • Transport 	2020-2030
Saint Lucia	A sector-based approach across the entire economy is used to determine reduction targets for the energy sector.	16% reduction (121 GgCO ₂ -eq) against BAU by 2025 and 23% (188 GgCO ₂ -eq) by 2030.	Absolute economy-wide emissions reductions using a 2010 baseline and based on specific sector interventions against the BAU scenario	No	Carbon Dioxide Methane Nitrous Oxide	<ul style="list-style-type: none"> • Energy • Electricity Generation • Transport 	Up to 2030
Saint Vincent and the Grenadines	National	Unconditional, economy-wide reduction in GHG emissions of 22% compared to BAU by 2025	Economy-wide emission reduction against BAU	Yes	Carbon Dioxide Methane Nitrous Oxide HFCs	<ul style="list-style-type: none"> • Energy (including domestic transport) • Industrial processes and product use • Agriculture • Land use, land use change and forestry • Waste 	Up to 2025
Suriname	National	No emissions reduction target specified	No emissions reduction target specified	No	Carbon Dioxide Methane Nitrous Oxide	<ul style="list-style-type: none"> • Forests • Renewable Energy 	Up to 2025
Trinidad and Tobago	Sectoral	Overall cumulative emissions from the three main emitting sectors by 15% by 2030 from Business as Usual (BAU) equivalent to 103 MtCO ₂ e	Emissions reductions based on a business as usual scenario to the year 2030	Yes (for public transportation)	Carbon Dioxide Methane Nitrous Oxide	<ul style="list-style-type: none"> • Power generation • Transport • Industry 	Up to 2030

Source: AgREADY Country NDCs

45 Reserves and sustainable forest management: The cumulative reduction would be up to 2,477Gg CO₂ over the period from 2020 to 2030; **Fuel wood consumption:** Expected cumulative reduction would be up to 118Gg CO₂ between 2020 and 2030; **Mangroves:** cumulative emissions reduction would be up to 379Gg CO₂ between 2015 and 2030; **Transport sector:** no emissions reductions specified, but the aim is to achieve at least a 20% reduction in conventional transportation fuel use by 2030 and promote energy efficiency in the transport sector through appropriate policies and investments; **Sustainable Energy Strategy and Action Plan:** Expected cumulative reduction in emissions through hydropower projects by 2,514Gg CO₂ until 2030, enhancement of the grid infrastructure would be in the range of 160-273Gg CO₂e until 2030, from solar PV projects would be around 518Gg CO₂ until 2030, from bagasse would be 947Gg CO₂ by 2030; **National Solid Waste Management Strategy and Plan:** no emissions reductions specified, however the plan aims to reduce methane emissions by capping and closing open dumps, capturing and utilizing landfill gas, and ensuring proper waste handling and organics management.

Annex 7. Country Targets for Mitigation - Updated NDCs

AgREADY Country	Geographic Coverage	Mitigation Target, Updated NDCs	Type of Emissions Reduction Commitment	Sectoral quantification/ breakdown of target?	Gases	Sectors	Implementation Period
The Bahamas		The updated NDC has not yet been submitted to the UNFCCC				<i>From consultations:</i> • Energy • Forestry	
Belize		Cumulative emissions total across all sectors of 5,647 KtCO ₂ e between 2021 and 2030 (5% increase in overall commitments in this updated NDC)	Targets reference reductions against a baseline (business as usual) projected to 2030	Yes	The targets are expressed in CO ₂ -equivalent values. Where other gases are relevant for targets these have been included in CO ₂ e targets (e.g. methane emissions avoided in waste and agriculture sectors).	• AFOLU • Energy • Transport • Waste	2021-2030
Dominica		The updated NDC has not yet been submitted to the UNFCCC					
Haiti	National	Reduction of 6,032 ktCO ₂ e by 2030 conditional, representing a net reduction of 32% compared to the baseline scenario. Reduction of 1,196 ktCO ₂ e unconditionally, representing a reduction of 6.32% compared to baseline	Targets reference reductions against the base year of 2000 projected to 2030	Yes	Carbon Dioxide Methane Nitrous Oxide	• Energy • Agriculture • Forestry and Land Use • Waste • Charcoal production	Up to 2030
St. Kitts and Nevis	National	Reducing economy-wide CO ₂ emissions by 61% by 2030	Absolute reduction from base year emissions	Yes	Carbon dioxide	• Predominantly energy sector (power generation and transportation)	2021-2030
Saint Lucia	Sector-wide	7% GHG emissions reduction in the energy sector relative to 2010, by 2030, equivalent to 37 GgCO ₂	Absolute reduction from base year emissions	Yes	Carbon Dioxide Methane Nitrous Oxide	• Energy (electricity generation and transportation) ⁴⁶	Up to 2030
St. Vincent and the Grenadines		The updated NDC has not yet been submitted to the UNFCCC					
Suriname	This NDC describes sectoral policies and measures covering an estimated 70% of emissions from the following sectors: forests, energy, agriculture, and transport.	No emissions reduction target specified	Sectoral policies and measures Renewable electricity non-GHG target	Yes	Carbon Dioxide Nitrous Oxide and Methane for select sources only	• Forests • Energy • Agriculture • Transport and urban infrastructure	2020 to 2030
Trinidad and Tobago		The updated NDC has not yet been submitted to the UNFCCC					

⁴⁶ A co-benefit of reducing CO₂ emission from the electricity generation and transportation sectors is that there will also be concomitant reductions in emissions in other gases like NMVOCs.

Annex 8. Alignment of NDC Actions with National Development Goals

CARICOM AgREADY Country	Linkages with National Development Goals
The Bahamas	iNDC is aligned with The Bahamas National Energy Policy and Forestry Act.
Belize	iNDC aligns with several policy frameworks including: (1) Horizon 2010-2030 (long-term development plan), (2) National Energy Policy Framework, (3) Sustainable Energy Action Plan 2014-2033, (4) National Climate Resilience Investment Plan 2013, (5) Growth and Sustainable Development Strategy 2016-2019 (medium-term development plan) and (6) the National Climate Change Policy, Strategy and Action Plan 2015-2020 uNDC: Same as for iNDC, with the following added: Roadmap for the Development of a Low Carbon Development Strategy (2016), and The National Solid Waste Management Policy.
Dominica	iNDC aligns with several legislative and policy frameworks including: (1) Dominica's Climate Resilience Act (2018), Dominica Low Carbon Climate Resilient Development Strategy (2012-2020), Dominica Climate Resilience and Recovery Plan (2020-2030), National Resilience Development Strategy Dominica 2030; Medium Term National Agriculture Policy (2021-2030); National Physical Development Plan (2016)
Haiti	uNDC is aligned with following policies and plans: <ul style="list-style-type: none"> • National Climate Change Policy. (PNCC), • the National Action Program for Adaptation (NAPA), • the Strategy Document for Climate Resilience (DSRC), • the National Adaptation Plan (NAP), and • the national development objectives formulated in the Strategic Development Plan (PSDH)
Saint Kitts and Nevis	SKN National Climate Change Policy (2017), Water Policy (2021), Vulnerability Assessment and Water Utility Adaptation Plans (2021)- St. Kitts and Nevis Water Sector Adaptation Plan, St. Kitts Strategy and Action Plan for Agriculture (2017-2021), National Climate Change Adaptation Strategy for Saint Christopher and Nevis (2018)
Saint Lucia	iNDC: NDC targets reflect general alignment with the Sustainable Energy Plan (2001) and the Energy Policy (2010) uNDC: NDC built upon the Saint Lucia National Energy Transition Strategy and Integrated Resource Plan (2017), National Adaptation Plan (2018-2028), SASAPs, the Climate Change Research Policy and Strategy (2020 -2030)
Saint Vincent and the Grenadines	iNDC did not mention any clear national initiative or policy except to say they are signatory on a number of international agreements and reference to an updated National Energy Policy.
Suriname	iNDC builds on existing policy and planning framework including the National Forest Policy (2003), the Interim Strategic Action Plan for the Forest Sector (2008, National Energy Plan (2013-2033), National Development Plan (2012-2016), the National Climate Change Policy, Strategy and Action Plan for Suriname (2014-2021) uNDC: In addition to those for NDC 1, there is alignment with the Policy Development Plan (2017-2021), National Adaptation Plan (2019), and the National Master Plan for Agricultural Development (2016).
Trinidad and Tobago	National Climate Change Policy (2011), Renewable Energy Policy Framework (2011), Sustainable Energy Action Plan (2013), Energy Policy, LEDS, National Industrial Plan, Action plan for the mitigation of GHG emissions in the electrical power generation (2015)

Annex 9. NDC Planning Process and Support

CARICOM AgREADY Country	Key steps in the planning process	Stakeholders involved	External support Entities	Support Provided
The Bahamas	<p>INDC:</p> <ol style="list-style-type: none"> 1. Assessment of the level of progress towards national and sectoral NDC targets: Mitigation assessment used the Long-Range Energy Alternatives Planning (LEAP) model. 2. Engagement Phase - Participatory, multi-stakeholder, cross-sectoral consultative processes utilized. 3. Development of National level ownership (LEDS Policy is in place). 4. Identification and development of Synergies – strategies/policies/activities (with other UNFCCC related processes, highlighted Second National Communications to the UNFCCC, National Energy Policy, National Forest Policy etc.) 	Multi-sector Commission	UNDP - <i>Climate Promise</i> project.	Technology transfer, Financing Capacity building.
Belize	<p>Updated NDC:</p> <ol style="list-style-type: none"> 1. Engagement Phase - including participation of vulnerable populations in an inception workshop for the NDC update process. 2. Gender and vulnerable group scoring analysis 3. Identification and development of Synergies – strategies/policies/activities - Long-term low emissions development strategy under development, GHG inventory database for the FOLU sector 4. Development of National Level ownership - Forest and Other Land Use (FOLU) Roundtable under the Ministry of Sustainable Development, Climate Change and Disaster Risk management 	Government Sector leads Civil society International organisations Cross -sectoral technical committee Representation of indigenous peoples	IRENA, FAO, UNFCCC RCCMRVH, Vivid Economics, Lucid Solutions, Coalition for Rainforest Nations, WWF, The Pew Charitable Trusts, The Initiative for Climate Action Transparency, The Commonwealth Secretariat, Rocky Mountain Institute, The Climate Technology Collaboration Network (through Fundacion Bariloche), UNDP Country Office, CfRN	Technical Assistance Setting Policy targets Mapping Activities due to CC Stakeholder engagement Modelling of GHG impacts for various land use scenarios Analysis of technological options to achieve NDC targets Development of Financing and implementation strategies Database and Policy / Strategy alignment
Dominica	<ol style="list-style-type: none"> 1. Assessment of the level of progress towards national and sectoral NDC targets. 2. Identification of areas for enhanced climate ambition and action, priority capacity needs to support just transition of the workforce, and barriers to target achievement and NDC implementation 3. Development of national stakeholder capacity. 4. National institutional capacity assessment that identified critical skills and knowledge gaps for NDC implementation 5. Gender assessment and development of a gender strategy 	Public sector - Ministry of Environment, Rural Modernization and Kalinago Upliftment, Climate Resilience Execution Agency for Dominica (CREAD), private sector, government officials, non-governmental organisations (NGOs), community-based organisations (CBOs) and civil society	UNDP (Climate Promise), GEF, CBIT, NDC Partnership, OECS, UNFCCC RCC	NDC Implementation Plan, MRVs

CARICOM AgREADY Country	Key steps in the planning process	Stakeholders involved	External support Entities	Support Provided
Haiti	<ol style="list-style-type: none"> 1. Assessment of the level of progress towards national and sectoral NDC targets (Analysis of the lessons learned from the first version of the iNDC), Documentary review of key documents looking at constraints associated with technical, managerial, financial, and institutional, etc. 2. Engagement Phase: Preliminary discussions between the experts in charge of drafting the document and the decision-making team of the Ministry of Environment, Multistakeholder stakeholder consultations. 3. Formulation and validation of the updated NDC - means for its implementation and evaluation. 	Government, civil society (private sector, NGOs, CBOs, etc.) and partners of cooperation and international agencies. Actual consultation materialized by mixed Visio / face-to-face meetings and regional workshops	UNDP - Green Climate Fund, the Adaptation Fund, the Global Environment Facility, Norwegian Cooperation, JICA, USAID, Canadian Cooperation, AFD	The Government received both technical and financial support from the UNPD
Saint Kitts and Nevis	<ol style="list-style-type: none"> 1. Engagement Phase - Participatory, multi-stakeholder, cross-sectoral consultative processes utilized. Several validation workshops held. 2. Validate the methodology for the mitigation analysis 3. Assessment and modelling of mitigation actions. 4. Identification and development of Synergies to ensure alignment with national plans e.g. Climate Change Enhancement Package (CAEP) that developed the NDC Implementation and finance plan and priorities. 5. Review of Gender responsive considerations. 	Government - Department of Environment / Ministry of Environment and Cooperatives, Ministry of Public Infrastructure -- Energy Unit, Nevis Electricity Company Limited (NEVLEC), St. Kitts Electricity Company (SKELEC), Traffic Department, Inland Revenue Department. Public Stakeholders and Technical Experts.	NDC Partnership, Climate Analytics, IRENA (in collaboration with the European Commission (EUTAF), and The Government of Norway.	NDC Implementation Plan and Finance Strategy (March 2022)

CARICOM AgREADY Country	Key steps in the planning process	Stakeholders involved	External support Entities	Support Provided
Saint Lucia	<p>iNDC:</p> <ol style="list-style-type: none"> 1. Engagement Phase - Participatory, multi-stakeholder, cross-sectoral consultative processes utilized. Stakeholders were engaged initially under the Third National Communication process 2. Development of the Greenhouse Gas Inventory and Mitigation Assessment chapters and then through 3. A validation exercise, to seek national support for the proposed measures and targets. <p>uNDC:</p> <ol style="list-style-type: none"> 1. Building on the lessons learnt from the 2015 multi-stakeholder engagement process (Revision process in 2019, Assessment Report on Mitigation Potential). 2. Development, updating and validation of the uNDC - Stakeholder driven, participatory. 3. Identification and development of synergies to ensure alignment with national plans e.g. National Energy Transition Strategy (NETS) GHG inventory (2020), NAP prioritized areas/ sectors were used to factor in adaptation measures as co-benefits of the NDC process. 4. Submission of requests for technical and financial support. 5. Multi-stakeholder gender-responsive interactive consultations 6. Energy system modelling and the identification of mitigation options 7. Development of National Level ownership - uNDC endorsed by the Cabinet of Ministers in January 2021. 	Government (Department of Sustainable Development - Energy Division, Department for Economic Development), Private Sector, Civil Society, and Youth.	NDC Partnership's Climate Action Enhancement Package (CAEP), Stiebert Consulting, Enviro Economics, Climate Analytics (CA), the Organization of Eastern Caribbean States (OECS) Commission, the Global Green Growth Institute (GGGI) and the World Resources Institute (WRI), the National Renewable Energy Laboratory (NREL)	Partnership Climate Action, Enhancement Mitigation Analysis Package, GHG inventory report, Assessment Report on Mitigation Potential
Saint Vincent and the Grenadines	<ol style="list-style-type: none"> 1. Engagement Phase: 18-month virtual consultation led by the consultant due to pandemic safety concerns. 2. Assessment of the level of progress towards national and sectoral NDC targets: Document review (NAMA, NAP and sector adaptation plans). 3. Development of National Level ownership: (Request to set up ENTAC is before cabinet. Line ministries will be represented by a focal point who will track NDC actions). 	Government (Tourism, Trade, Finance, Agriculture, Legal affairs, Investment, Urban Development), Non-government - Caribbean Youth Environment Network (CYEN), farmer groups and academia.	FAO, St. Vincent Community College, GEF, GCF, World Bank, IMF. The NDC financial strategy will target: GCF – proposals in the pipeline, CDB, WB.	Financial and technical support. National agricultural census, Coastal and Marine Ecosystems Management Strengthening Project, National Adaptation Plan (NAP), Forest and Watershed Restoration for Climate Resilience, Covid 19 and Soufrière volcano eruption response and recovery, National Contingency Funds.

CARICOM AgREADY Country	Key steps in the planning process	Stakeholders involved	External support Entities	Support Provided
Suriname	<ol style="list-style-type: none"> 1. Assessment of the level of progress towards national and sectoral NDC targets: Analysis of the lessons learned from the iNDC) - Desktop research. 2. Engagement Phase: In 2019, three rounds of sectoral expert and stakeholder dialogues were conducted, involving articulation of sectoral problem statements 3. Alignment of NDC with other policies and strategies –analysis of policy frameworks and identification of relevant projects, policies and measures. The government has announced its intention to align the NDC with the 2017-2021 Policy Development Plan. Issues identified in stakeholder dialogues and being addressed in uNDC include Integration of climate measures to cover both mitigation and adaptation, REDD+ Strategy and Investment Plan, Impact of mining on forests and biodiversity, Agriculture, transport and infrastructure, sea level rise, research needs especially regarding climate impacts on the interior. 4. Development of National Level ownership: Validation of final document by all stakeholders at third and final consultation. 	Cabinet, Office of the President, Agricultural stakeholders, Vulnerable Groups including Indigenous and tribal peoples	REDD+ , IDB, Local experts - (ILACO) and international experts (EQO-NIXUS (OCA Global).	Financial and technical support, Engagement strategy for consulting indigenous groups and tribal peoples.
Trinidad and Tobago	<p>iNDC:</p> <ol style="list-style-type: none"> 1. Engagement Phase - Participatory, multi-stakeholder, cross-sectoral consultative processes utilized. 2. Mitigation options were identified. 3. Cost benefit analysis and socio-economic impact assessment conducted (The methodology was limited by quality data and used the BIOS model). 4. Work almost complete on development of the second NDC 	Government, CSOs/ NGOs. High level	Partnership on Transparency in the Paris Agreement for first and NDC Support Programme of UNDP for second NDC.	<p>NDC Implementation Plan developed in 2019, It includes recommendations for (i) strengthening institutional capacity, (ii) mainstreaming climate change issues, (iii) defining institutional arrangements, as well as (iv) a capacity building action plan, (v) individual sectoral plans for the three sectors included in the NDC and (vi) a climate finance investment plan.</p> <p>Voluntary MRV system</p>

Annex 10. Social Inclusion and Just Transition in Response to NDC Development and Implementation

CARICOM AgREADY Country	Social Inclusion and Just Transition
The Bahamas	The NDC enhancement process for The Bahamas is ongoing and a condition of the UNDP funded “Climate Promise” project is the inclusion of gender in the uNDC.
Belize	The development of the updated NDC has included broad stakeholder engagement including government agencies, civil society, research institutions, vulnerable populations and the private sector, starting with an Inception Workshop for the NDC update process. Throughout the development of the updated NDC, progress has been validated through engagement with a technical committee of sector leads, including representation of indigenous peoples. Broader engagement of civil society and project owners was facilitated during an engagement phase. The actions and targets included in the updated NDC have undergone a gender and vulnerable group scoring analysis, which produced recommendations for increasing the gender sensitivity of both the medium-term implementation of the NDC and the long-term low emissions development strategy under development.
Dominica	Dominica acknowledged its responsibilities to the Kalinago peoples and is committed to working and supporting them in the realization of self-determination and other human rights as outlined in the UN Declaration on the Rights of Indigenous Peoples. Specific strategies have been proposed in the NRDS, in areas of capacity building, promotion of social justice and preservation of culture. Priority climate change adaptation measures have been identified in collaboration with the Kalinago Group to reduce threats to the people, culture, livelihoods and existence of the Kalinago Territory. The NDC update includes a section on Just Transition, and states that Dominica strives for the transition towards an inclusive and low-carbon economy to be just and fair, while at the same time maximising opportunities for economic prosperity, social justice, rights and social protection for all, leaving no one behind. It is also recognised that just transition will help in the achievement of the sustainable development goals, specifically goals 1, 3 and 8. In this regard, Dominica has undertaken a multi-sectoral capacity gaps assessment for the whole of the economy in support of the just transition, as well as an assessment of the financial requirements to achieve this.
Haiti	Haiti’s updated NDC (2021) has included a section and gender. It recognizes the disparity among some segments of society inclusive of women and girls and has indicated that it will commit to undertake the following to bridge the vulnerability gaps: <ol style="list-style-type: none"> 1. Promote initiatives that meet the specific needs of girls and women, especially those in situations of great vulnerability. 2. Set up a specific working group on gender and climate change. 3. Have at least one gender focal point sitting within the CNCC. 4. Strengthen girls’ and women’s access to relevant climate change information, including climate technologies. 5. Involve gender experts in the development and implementation of monitoring and evaluation frameworks for actions to combat climate change. 6. Generate and disclose gender-specific data. 7. Support gender mainstreaming in the national development planning process, including in the allocation of financial resources.
St. Kitts and Nevis	Several validation workshops with a multisectoral approach that included engagements with key ministries, public stakeholders, and technical experts, including CSOs and NGOs. The NDC update includes social inclusion as a section. It states that the Government of St. Kitts and Nevis is committed to the development of children, youth, differently abled and elderly persons by encouraging their involvement in the decision-making process on climate change matters. The Government recognizes the value in including these groups in future planning processes by providing opportunities for participation in feedback and consultations. Such efforts will increase access to adequate resilient infrastructure and planning, including sustainable energy.
Saint Lucia	The revision process for Saint Lucia’s updated NDC began in 2019, led by the Department of Sustainable Development (DSD) in consultation with the Energy Division and the Department for Economic Development, and building on the lessons learnt from the multi-stakeholder engagement process used in 2015 to develop the first NDC. Building on the National Energy Transition Strategy (NETS) developed in 2017 and the 2018 GHG inventory completed in 2020 under the BUR process, the DSD led a series of interlinked multi-stakeholder gender-responsive interactive consultations, including government ministries, private sector, academia, civil society and youth. The feedback received from the different stakeholders was taken into consideration in the energy system modeling and the mitigation options being considered. Saint Lucia’s Updated NDC was submitted to, and endorsed by the Cabinet of Ministers in January 2021.

CARICOM AgREADY Country	Social Inclusion and Just Transition
Saint Vincent and the Grenadines	<p>While there was no mention of gender in the INDC, the NAP has included a section on gender issues and social and environmental safeguards. In it the country has committed to conduct gender analysis of all the adaptation options to be implemented. The NAP indicated that the SVG will mainstream CC consideration into the planning process, and specifically to elaborate national guidelines on how to apply gender screening.</p>
Suriname	<p>In reviewing the 2015 Nationally Determined Contribution, the government organized a first dialogue on NDC enhancement in August 2018. Detailed written recommendations were provided by stakeholders, underlining the need for a more representative suite of economic sectors to be included in the 2020 NDC, building on available data. The dialogue and written submission raised issues relating to the following: Alignment of NDC with other policies and strategies, forest cover, mining, closer integration of mitigation and adaptation, sea level rise, among other issues. The updated (2020) NDC reflects the feedback from stakeholders and is fully aligned with the development vision of the government. Policy coherence has been significantly increased through a careful process of stakeholder engagement. In 2019, three rounds of sectoral expert and stakeholder dialogues were conducted, involving articulation of sectoral problem statements, analysis of policy frameworks and identification of relevant projects, policies and measures. The final selection of policies and measures included in the 2020 NDC was prepared by stakeholders during NDC Dialogue 2 and prioritized using the following multi-criteria ranking: Environment including resilience building; Mitigation potential and resource efficiency; Job creation; Social and economic inclusion of marginal communities; Diversification of the economy; Gender impact and Fiscal sustainability.</p> <p>The NDC update makes reference to the need to develop a Just Transition Plan as a result of assessments of impacts and compensation based on various energy reforms to be implemented.</p>
Trinidad and Tobago	<p>Implementing “just transition” is important as it is entrenched in the Paris Agreement and is consistent with SDG#8 of “decent work and quality jobs for everyone”. For T&T, it focuses on safeguarding workers’ rights as economies transition from carbon intensive industries and high carbon activities to low carbon development. In line with T&T’s NDCs, the transition from an oil and gas- based economy with a significant number of high carbon intensive jobs to a low carbon environment will invariably impact workers. The transitioning of the workforce will give consideration to what needs to be done for a smooth shift towards more sustainable and green growth. A Just Transition Policy Framework is being developed and intends to:</p> <ul style="list-style-type: none"> • Minimise impact on the workforce. • Encompass renewable energy into technology and other areas. • Ease the transition for existing workers. • Create opportunities for the upcoming workforce. <p>The transition will require establishment of the enabling framework (administrative, institutional, legal and policy) that will allow for the least amount of disruption. Those in the workforce will be given opportunities to reschool, retool and reskill themselves to become employable in the new economy. The policy will also focus on active creation of these green jobs in the green economy including renewable energy, electric vehicle technologies and other clean technologies may be employed in the industrial sector to reduce emissions.</p>

Annex 11. AgREADY Country Collaboration with External Entities for NDC Development and Implementation

AgREADY Country	External Partner(s)	Support (received and to be provided)
The Bahamas	UNDP “Climate Promise” – procured the services of a consultant to assist the Ministry of Environment and Housing, to update The Bahamas National Determined Contributions.	Support sought for technology transfer, financing, and capacity building.
Belize	The updated NDC was supported by the NDC Partnership with IRENA, FAO and UNFCCC RCCMRVH. Drafting was led by a team from Vivid Economics, with support from Lucid Solutions. Additional analysis and drafting for the Forest and Other Land Use sector was carried out by the FOLU Roundtable under the Ministry of Sustainable Development, Climate Change and Disaster Risk management, with support from the Coalition for Rainforest Nations. Additional inputs provided by WWF, the Pew Charitable Trusts, the Initiative for Climate Action Transparency, the Commonwealth Secretariat, Rocky Mountain Institute, the Climate Technology Collaboration Network (through Fundacion Bariloche) and the UNDP Country Office in Belize.	Technical assistance under the CAEP has included an assessment of policy targets, mapping of activities related to climate change, stakeholder engagement, modelling of GHG impacts in different sectors, an analysis of technology options to achieve NDC targets and the development of financing and implementation strategies. Technical assistance provided by CfrN to the FOLU roundtable, included the projections of without and with project emission scenarios for the committed activities in the land-use, land-use change and forestry subsector using data and emission factors from the country’s GHG inventory database for the FOLU sector. CfrN also assisted by providing expert advice on ensuring harmonization among the NDC, GHG Inventory, and REDD+ Strategy.
Dominica	UNDP (Climate Promise); GEF CBIT, NDC Partnership, OECS, UNFCCC RCC	NDC Capacity Assessment, NDC Capacity Development Strategy, Gender Mainstreaming Roadmap, NDC update. Dominica’s NDC Institutional Capacity Assessment has identified the lead and supporting entities for implementation of the updated NDC, focused on energy, waste, agriculture and forestry. NDC implementation should be integrated with national planning processes, mapped to the country’s principal planning documents including the National Resilience Development Strategy; its compendium the Climate Resilience & Recovery Plan, and supported with appropriate guidelines and resources. To be completed: NDC Implementation Plan, MRVs
Haiti	The UNDP is a major development partner supporting Haiti in its efforts to meet its Paris Agreement objectives.	The Government received support from the UNPD to update its NDC. Haiti will target the Green Climate Fund, the Adaptation Fund, the Global Environment Facility, Haiti’s traditional donors such as bilateral cooperation agencies (Norwegian Cooperation, JICA, USAID, Canadian Cooperation, AFD, etc.) and other multilateral cooperation. Haiti indicated it has a funding gap of USD 22 billion to implement its NDC commitments.
Saint Kitts and Nevis	NDC Partnership, Climate Analytics, IRENA (in collaboration with the European Commission (EUTAF) for assessment and modelling of mitigation actions. The Government of Norway, through the NDC Partnership, is providing support for the Climate Change Enhancement Package (CAEP). UNESCO supported development of the Gender Equality Policy and Action Plan, against which gender mainstreaming was conducted.	Background documents: Gender Equality Policy and Action Plan Completed: NDC Update, NDC Implementation Plan and Finance Strategy (March 2022) To be developed: MRVs(Data gap analysis, MRV design and implementation plan), Climate action capacity building in Innovation and technology for renewables

AgREADY Country	External Partner(s)	Support (received and to be provided)
Saint Lucia	<p>iNDC: Technical support and guidance from Stiebert Consulting, Enviro Economics, Climate Analytics and the National Renewable Energy Laboratory (NREL) of the USA.</p> <p>NDC Update: Support received through NDC Partnership Climate Action Enhancement Package assigned implementing partners/experts (OECS Commission, Climate Analytics, WRI, GGGI).</p> <p>In addition, Saint Lucia received support from the World Bank through the Partnership's <i>Economic Advisory Initiative</i> to drive green economic recovery in response to COVID-19.</p>	<p>Mitigation analysis undertaken through use of the various scenarios proposed in the NETS, Assessment Report on Mitigation Potential, GHG inventory report and ongoing efforts in transport, energy and electricity generation sectors.</p> <p>NAP prioritized areas/sectors were used to factor in adaptation measures as co-benefits of the NDC process. A stakeholder driven process was also undertaken for development and updating the NDC including validation.</p> <p>Completed: NDC Update, 12 months support of an Economic Advisor (COVID-19 impact and recovery linked to NDC implementation), NDC Rapid Situational Analysis, NDC Partnership Plan (implementation plan and financing strategy)</p> <p>The Economic Advisor, embedded in the Department of Economic Development, has identified several costed measures to support NDC implementation, including shorter-term resilience measures to recover from economic and job loss, and longer-term actions for ensuring sustainable development, including economic diversification.</p>
Saint Vincent and the Grenadines	SVG has not yet completed the revision of the NDC.	<p>SVG has signed on to the MRV hub and work is ongoing to develop the country's MRV framework. The FAO will also be assisting with an agricultural census.</p> <p>Some sources of funding that are defined in ongoing projects or in the pipeline that will be leveraged to support the implementation of the new NDC targets are:</p> <ul style="list-style-type: none"> • Coastal and Marine Ecosystems Management Strengthening Project (GEF 7); 11 million USD; GEF • National Adaptation Plan (NAP); 3 million USD; GCF • Forest and Watershed Restoration for Climate Resilience (GCF SAP); 10 million USD; GCF • National contingency fund • COVID-19 and Soufrière volcano eruption response
Suriname	The NDC enhancement process was conducted with financial and technical support from the Inter-American Development Bank (IDB) and involved a team of mainly local (ILACO) and some international experts (EQO-NIXUS (OCA Global).	Completed: NDC Update, with implementation plan and assessment of financial needs.
Trinidad & Tobago	<p>Partnership on Transparency in the Paris Agreement for iNDC</p> <p>NDC Update: United Nations Development Programme (UNDP). Other collaborating organisations under the NDC Support Programme include Initiative for Climate Action Transparency (ICAT); UWI; GHG Management Institute (GHGMI); Food and Agriculture Organisation (FAO); EU GCCA+; CCCCC, GEF; Global Environment Facility (GEF) -Capacity Building Initiative for Transparency (CBIT) through UNEP as Implementing Agency</p>	<p>NDC Implementation Plan (2017) includes recommendations for (i) strengthening institutional capacity, (ii) mainstreaming climate change issues, (iii) defining institutional arrangements, as well as (iv) a capacity building action plan, (v) individual sectoral plans for the three sectors included in the NDC and (vi) a climate finance investment plan.</p> <p>NDC Support programme: US \$ 481,500, January 2018 to December 2020. The NDC Support Programme: (a) provided support to the update of Trinidad and Tobago's 2nd NDC; (b) Identified financing options for implementing the NDC; (c) Enhanced Trinidad and Tobago's National Climate Mitigation monitoring, reporting and verification (MRV) system to track implementation of the NDC; (d) Strengthened institutional frameworks with climate change legislation as a governance tool; and facilitated gender responsive NDC implementation.</p> <ul style="list-style-type: none"> -MRV system pilot project. - new online curriculum on the mobilization of private investment. -to implement the GHG inventorying certification programme. -FAO GCF Readiness Project 'Improving the monitoring system for climate change impacts on the agricultural sector in Trinidad and Tobago'. -MPD is actively engaged in building solar capacity at Piarco International airport and demonstration projects

Annex 12. Financing for AgREADY Countries' NDCs

AgREADY Country	Unconditional	Conditional	Climate Finance Strategy	Notes
⁴⁷ The Bahamas		The Bahamas intends to achieve these mitigation actions through an economy-wide reduction in GHG emission of 30% when compared to its Business as Usual (BAU) scenario by 2030.	No available financial strategy at the time of the research. Based responses, a strategy will be developed to support the actions of the updated NDC.	All information provided are based on the INDC and the response in writing to questions from the consultation instrument. No climate change official participated in direct consultation with the team, hindering any form of validations.
Belize	Between 2015-2019, the Government contributed 9.32% (US\$ 19.7 million) of climate investments in Belize Enabling the existing policies, laws and projects, staff time and integration of development and climate change activities	Between 2015 -2019, conditional financing, i.e., loans and grants, amounted to US\$195.5 million	uNDC: USD\$1,906 million for implementation 2021-2030; unfinanced: USD\$1, 663 million (87.25%) The mitigation targets and actions are estimated to cost close to USD\$ 1,394 million between 2021 and 2030. Recognizing funding that is already committed (US\$154 million), the funding gap to deliver these actions is estimated at USD\$ 1,240 million. Considering recoverable costs in the renewable energy and waste sector, this gap could fall to USD\$ 607 million. uNDC (Adaptation): The targets and actions are estimated to cost a total of USD\$ 318 million between 2021 and 2030. Recognizing funding that is already committed, the funding gap to deliver these actions is estimated at USD\$ 146 million	Climate Finance Strategy 2021-2026
Dominica		Undefined	No Financing Strategy as yet. NDC Update includes a section on <i>Green Financial Framework</i> . National Financing Vehicle (NFV) being developed through a GCF Readiness Project. The mission of the NFV is to increase private sector investments in renewable energy (RE) and energy efficiency (EE) technology by adjusting the risk/ return profile of investment opportunities and by offering concessional finance to priority climate change adaptation and mitigation projects.	
Haiti	Adaptation: USD 3.25 billion (20%) to be financed by the public treasury Loss and damage USD\$ 0.55 billion (10%) to be financed by the public treasury	Mitigation: USD 4.056 billion Adaptation: USD 13 billion Losses and damages USD\$4.98 billion (90%)	No financial strategy is in place	

⁴⁷ Incomplete data set. The updated NDC was not available for public distribution at the time of this report

AgREADY Country	Unconditional	Conditional	Climate Finance Strategy	Notes
Saint Kitts and Nevis	TBD	Contingent on the availability of financing and technological support.	Climate Finance Strategy 2022-2030 The total cost for implementation to 2030 is USD\$878 million (with US\$ 127 million for adaptation actions).	Under its proposed mitigation actions it is intended that the policies and measures would increase the use of renewable energy sources by 50%, taking into consideration that this ambitious target could be considered risky within the short time frame.
Saint Lucia	Government programme costs are estimated to be US\$ 23 million (2021), US\$19 million of which is for mitigation.	Total US\$195 million (at 2015 prices). Mitigation: US\$164 million by 2025 (at 2015 prices)	An NDC Financing Strategy, NAP Climate Financing Strategy and Private Sector Engagement Strategy have been developed, which includes agriculture. iNDC: Total cumulative investment costs to achieve the mitigation targets by 2030 are US\$ 218 million (at 2015 prices) and Total cumulative investment costs to achieve the mitigation targets by 2025 are expected to be in the order of US\$ 183 million (at 2015 prices) and government programme costs are estimated to be US\$ 19 million ⁴⁸ uNDC: The total indicative cumulative investment costs to achieve the mitigation targets by 2030 are expected to be in the order of USD \$368 million (at 2020 prices).	Financing will be a critical constraint to Saint Lucia's ability to adapt to the impacts of climate change, with international funding through the UNFCCC architecture being critical. The Government of Saint Lucia will further pursue a mix of adaptation financing options and sources including, but not limited to, economic and fiscal incentives; private sector financing; support from regional agencies and programmes and bilateral processes; and in limited cases, highly concessional financing for the private sector, civil society and the general public
⁴⁹ St. Vincent and the Grenadines	St. Vincent and the Grenadines intends to achieve an unconditional, economy-wide reduction in greenhouse gas (GHG) emissions of 22% compared to its business as usual (BAU) scenario by 2025.	Undefined	No financial strategy.	The eighteen months delay in the preparation of the updated NDC which was still available at the time of reporting has delayed other deliverables associated with the NDC implementation.

48 Investment costs refer to the total capital finance required to implement the mitigation actions that is incremental to baseline expenditures. This does not include the energy savings associated with implementing measures or changes in operating costs. Programme costs refer to expenditures by the government for supporting the programme and include costs for planning, conducting studies, developing strategies, implementing regulations, enforcement, capacity building and public awareness campaigns. The Government of Saint Lucia, recognising its current national effort toward emission reduction and being fully cognisant of its vulnerability to extreme events and the likelihood of being caught in a cycle of repair and recovery, commits to meeting the mitigation targets contained in this iNDC on condition that it receives financial and technological assistance to do so.

49 Based on data from the first NDC. The updated NFC was not ready at the time of reporting.

AgREADY Country	Unconditional	Conditional	Climate Finance Strategy	Notes
Suriname	<p>The Government of Suriname identified unconditional financing for its iNDC, in particular for its intent to increase efforts at sustainable forest and ecosystem management and stabilizing and minimizing deforestation and forest degradation unconditionally. Additionally, Suriname has established 14% of its total land area under a national protection system and will continue to pursue the expansion of this system by increasing the percentage of forests and wetlands under protection to at least 17% of the terrestrial area by 2030. Suriname’s commitment to reduce emissions through transition to renewable energy was reflected in the 2015 conditional contribution to ensure the share of renewable energy stays above 25% by 2025. The updated NDC extends and deepens the target with an unconditional contribution to maintain the share of electricity from renewable sources above 35% by 2030. Adaptation to impacts and building resilience were central to the 2015 NDC and included the following unconditional contributions, which has been maintained in the updated NDC:</p> <ul style="list-style-type: none"> • Rehabilitation and enhancement of infrastructure such as dikes and river defences (precondition). • Improvements in water resources management. • Promotion of sustainable land management. • Applying innovative technologies in the use of land. <p>Additional measures, identified in the National Adaptation Plan as priorities for the first phase and in the REDD+ strategy, are included as unconditional contributions and include introduction of a national land use planning system, to make the embedding of climate change in (agricultural) development plans possible.</p>		<p>A portfolio of selected projects from the Energy, Transport, Forest and Agriculture sectors have been identified to be part of Suriname’s NDC with a total project value of around USD \$696 million. The timeline for the projects is typically 5 or 10 years.</p>	<p>This portfolio does not encompass the full scope of the Suriname contribution. It is, however, an important tool for investors and development partners wishing to support Suriname implementing its ambitious Nationally Determined Contribution</p>

AgREADY Country	Unconditional	Conditional	Climate Finance Strategy	Notes
Trinidad and Tobago	For Compressed Natural Gas relating to 30% reduction in emissions. This is currently underway, with annual financing from the GoT&T budget.		T&T's iNDC's target for 2030 was estimated to cost USD\$2 billion for 2017-2030, with USD\$945 million, with a breakdown of mitigation costs including: USD\$945 million for power generation, USD\$735 million for transport, and USD\$320 million for power generation.	Main components include: establishment of institutional arrangements, access to public and private financing options, development of project pipeline and finding proposals, development of sector climate finance plans, identification of funding gaps and needs, assessment of direct access requirements to international climate funds, and increase in private sector engagement and investment.

Annex 13. NDC SDG Linkages

Table A13.1: NDC-SDG Linkages: Alignment between Bahamas Climate and Sustainable Development Objectives

Sustainable Development Objectives Targets	Bahamas Climate Objectives	
	NDC Objectives	Priority Sector (s)
1. No poverty		
2. Zero hunger		
2.1: By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round.	Formulate and implement strategies and measures that will help to enhance food security and sustainable food production.	Agriculture
2.4: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality	Formulate and implement strategies and measures that will help to enhance food security and sustainable food production.	Agriculture
3. Good health and well-being		
3.d: Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks	Inform, sensitize and educate health personnel and the public-at-large about Climate Change related health matters, including but not limited to heat stress, vector borne diseases and impacts on the vulnerable sub-sector of society. Ensure that national emergency management plan includes heat stress, the impacts of vectors on human settlements and wellbeing.	Health
4. Quality education		
5. Gender equality		
6. Clean water and sanitation		
6.2: By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.	Provide for water reserves, the safe disposal of wastewater effluent and minimization of outflows into the marine environment by conserving wetlands and near and far shore marine ecosystems including mangroves.	Sanitation Water
6.4: By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	Incorporate Climate Change concerns including “worse case” scenarios of sea level rise, saltwater intrusion, flooding and storm surges leading to inundation of well fields, and the need to regulate water supplies to the different sectors (domestic, tourism, agriculture and industry).	Agriculture Industry Water
6.5: By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate	Incorporate Climate Change concerns including “worse case” scenarios of sea level rise, saltwater intrusion, flooding and storm surges leading to inundation of well fields, and the need to regulate water supplies to the different sectors (domestic, tourism, agriculture and industry).	Agriculture Industry Water
6.6: By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	Provide for water reserves, the safe disposal of wastewater effluent and minimization of outflows into the marine environment by conserving wetlands and near and far shore marine ecosystems including mangroves.	Sanitation Water

7. Affordable and clean energy		
7.2: By 2030, increase substantially the share of renewable energy in the global energy mix by 2030	Energy diversification will involve moving from a high dependence on petroleum to increased contributions of other sources like renewable energy from solar, ocean and wind as appropriate based on local site-specific conditions. Indeed, The Bahamas is well positioned to tap local renewable energy resources such as wind and sun but lacks the required access to resources and means to provide for the security of services and replacement of assets from losses and damages from extreme events.	Renewable Energy
7.3: By 2030, double the global rate of improvement in energy efficiency	This comprehensive programme to improve efficiency and energy diversification will allow The Bahamas to provide reliable, high-quality, affordable, environmentally friendly energy, while at the same time reducing the volumes and amounts of imported fuels. In the transport and energy sectors, energy efficiency improvements, energy conservation fuel switching, and the deployment of as yet unavailable fuel cell technologies are envisaged as they mature and are made commercially available to further assist in the attainment of this conditional sector wide objective.	Energy Efficiency Transport
8. Decent work and economic growth		
8.9: By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products	Work with stakeholders in the tourism sector to develop a strategic plan, which incorporates Climate Change considerations and appropriate measures such as water conservation programmes, as well as general sustainability concerns.	Industry
9. Industry, innovation and infrastructure		
10. Reduced inequalities		
11. Sustainable cities and communities		
11.2: By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	In the transport and energy sectors, energy efficiency improvements, energy conservation fuel switching, and the deployment of as yet unavailable fuel cell technologies are envisaged as they mature and are made commercially available to further assist in the attainment of this conditional sector wide objective.	Energy Efficiency Transport
11.3: By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.	Develop a comprehensive National Land Use and Management Plan, which inter alia, incorporates Climate Change concerns and regulates the location of future settlements and urban developments without compromising water supply and other such requisites for sustainability. It is expected to include establishing environmental guidelines for heights of infrastructure relative to mean sea level, incorporating climate change considerations in public building, and improving the building code to provide for stronger wind loads.	Cities and Urban Development
12. Responsible consumption and production		
12.b: Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products.	Work with stakeholders in the tourism sector to develop a strategic plan, which incorporates Climate Change considerations and appropriate measures such as water conservation programmes, as well as general sustainability concerns.	Industry
13. Climate action		
13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	The Bahamas has undertaken measures in the short, medium, and long-term to increase the resilience of terrestrial ecosystems, including soil conservation, agro-forestry and the establishment of special conservation, protected and management areas.	Agriculture Forest and land Use

14. Life below water		
14.2: By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans	The Forestry Act has for the first time in The Bahamas protects designated Mangrove and mangrove ecosystem and important Biological and ecosystem services impacted by sea level rise.	Oceans and Fisheries
15. Life on land		
15.1: By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	It is envisaged that the establishment of the National Forest Estate will deliver global environmental benefits along with domestic livelihood support and development and seek to safeguard future land degradation on the Pine Forest Islands. Enhanced management is expected to improve the forest ecosystems, the ridge to reef linkages to protect corals, and sea grasses that important to sustainable livelihood and the functionality of the mangrove ecosystems increasing their carbon sink ability.	Forestry and Land Use
15.2: By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally	It is envisaged that the establishment of the National Forest Estate will deliver global environmental benefits along with domestic livelihood support and development and seek to safeguard future land degradation on the Pine Forest Islands. Enhanced management will improve our forest ecosystems, the ridge to reef linkages to protect corals, and sea grasses that are important to sustainable livelihood and the functionality of our mangrove ecosystems increasing their carbon sink ability. Improved harvesting practices will reduce the vulnerabilities of our forest ecosystems to climate change and human-induced impacts.	Forestry and Land Use
15.3: By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world	It is envisaged that the establishment of the National Forest Estate will deliver global environmental benefits along with domestic livelihood support and development and seek to safeguard future land degradation on the Pine Forest Islands.	Forestry and Land Use
16. Peace, justice and strong institutions		
17. Partnerships for the goals		
17.16: Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries	This overall target is contingent on several factors including, but not limited to, access to the required technologies, energy efficiency and energy conservation measures appropriate across an archipelagic nation with utility, small utility and residential applications appropriate in a tropical country frequented by tropical processes.	Education Renewable Energy Energy Efficiency

Table A13.2: NDC-SDG Linkages: Alignment between Belize Climate and Sustainable Development Objectives

Sustainable Development Objectives	Belize Climate Objectives	
Targets	NDC Objectives	Priority Sector (s)
1. No poverty		
1.5: By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters	The proposed interventions to mainstream adaptation and mitigation to climate change will be achieved by providing guidance for actions that concerns the direct and indirect threats posed by global climate change on forests and forest dependent people in order to reduce their vulnerability, increase their resilience and adaptation to climate change.	Cities and Urban Development Forest and Land Use
2. Zero hunger		
2.1: By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round.	Reduce post-harvest losses and provide early warning / meteorological forecasts and related information to be competitive in the region.	Agriculture Forest and Land Use
2.4: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality	Increase access to drought tolerant crops and livestock breeds. Adopt better soil and water management practices. These recommendations include both short and long-term measures to address critical gaps in technological developments relevant to crop production, better soil management practices, diversification into drought resistant crops and livestock, and farm production adaptations which include, but is not limited to, land use, land topography and water management including use of low-water irrigation systems and water harvesting/ storage.	Agriculture Forest and Land Use
2a: Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries	Improve both crop and livestock husbandry practices. These recommendations include both short and long-term measures to address critical gaps in technological developments relevant to crop production, better soil management practices, diversification into drought resistant crops and livestock, and farm production adaptations which include, but is not limited to, land use, land topography and water management including use of low-water irrigation systems and water harvesting/ storage.	Agriculture
2c: Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility	Reduce post-harvest losses and provide early warning / meteorological forecasts and related information to be competitive in the region.	Agriculture
3. Good health and well-being		
3.3: By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases	Improve the capture, management and monitoring of diseases and vectors affected; improve disease control and prevention;	Health
3.9: By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	Emissions savings potential of efficient cook stoves comes from a reduction of wood used for the same result. The aim is to achieve a reduction of fuel wood consumption by 27%-66%, depending on the technology, the duration of cooking and the replacement technology.	Health
3.d: Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks	Undertake a climate change vulnerability and capacity assessment for the health sector. Promote investment in health infrastructure. It is important that the Ministry of Health undertake a Vulnerability and Capacity Assessment for the health sector. This is important for the country to be well informed of the impacts of climate change on the health sector and the adoption of practices and technologies that will reduce exposure and health impacts from extreme heat and improve physical infrastructure of health institutions and their functional capacity.	Health Infrastructure

4. Quality education		
4.4: By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship	The Growth and Sustainable Development Strategy (GSDS) proposes the alignment of education and training to current labour market needs.	Education
4.7: By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development	To support economic growth, sustainable development and resiliency, the GSDS recognizes the need to develop adequate skills and capacities via the implementation of the Education Sector Strategy 2011-2016, at all educational levels and institutions.	Education
5. Gender equality		
6. Clean water and sanitation		
6.5: By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate	The action plan calls for integrated water resource management to include: Design and implement an IWRM programme in watersheds. Conduct water resource assessment (especially groundwater). Improve trans-boundary cooperation regarding water resources	Water
6.6: By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	Implement watershed protection measures for water and food security. Enhance protection of water catchment (including groundwater resources); develop water conservancy management systems; enhance the protection and restoration of forest ecosystems and build the resiliency of water catchment areas.	Water
6a: By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies	Strengthen the human resource capacity in the water sector Strengthen the compliance monitoring capacity of staff.	Water
7. Affordable and clean energy		
7.1: By 2030, ensure universal access to affordable, reliable and modern energy services	Promote sustainable energy for all.	Energy Efficiency Renewable Energy
7.2: By 2030, increase substantially the share of renewable energy in the global energy mix by 2030	The Sustainable Energy Action Plan is a tool to achieve Belize's renewable energy and energy efficiency potential while meeting the Government's economic social and environmental goals. The plan envisions a reduction in energy intensity per capita at least by 30% by 2033 and to reduce fuels imports dependency by 50% by 2020 using renewable energy. Sustainable Energy Strategy and Action Plan - 85% renewable energy by 2030 by implementing hydropower, solar, wind and biomass, and reduction of transmission and distribution losses.	Renewable Energy
7.3: By 2030, double the global rate of improvement in energy efficiency	The Sustainable Energy Action Plan is a tool to achieve Belize's renewable energy and energy efficiency potential while meeting the Government's economic social and environmental goals. Emissions savings potential of efficient cook stoves comes from a reduction of wood used for the same result. Aim is to achieve a reduction of fuel wood consumption by 27%-66%, depending on the technology, the duration of cooking and the replacement technology. Also to improve energy efficiency and conservation in order to transform to a low carbon economy by 2033. The plan envisions a reduction in energy intensity per capita at least by 30% by 2033 and to reduce fuels imports dependency by 50% by 2020 using renewable energy. The plan also aims to reduce methane emissions by capping and closing open dumps, capturing and utilizing landfill gas, and ensuring proper waste handling and organics management.	Energy Efficiency

8. Decent work and economic growth		
8.9: By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products	The National Solid Waste Management Strategy and Plan will contribute to improving the environment; enhance the image of Belize in eco-tourism market and protecting the public health. Mainstream Climate Change in the Tourism Master Plan for Belize, which aims to support Adaptation Measures, especially on the Coastline, but also to further promote Environmental and Responsible Tourism Best Practices. The goal is to assess the vulnerability of Belize's tourism system to climate change and ensuring the mainstreaming of climate change considerations throughout the sector to enhance ecosystem resilience, equitable distribution of tourism activities and fostering of sustainable tourism development, at a local and national scale.	Industry Oceans and Fisheries
9. Industry, innovation and infrastructure		
9.2: Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries	Belize has also developed a roadmap for the development of a low carbon development strategy which will create a platform for low carbon growth in new areas while still attaining the national development targets.	All sectors
10. Reduced inequalities		
11. Sustainable cities and communities		
11.2: By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	Development of a domestic transportation policy and implement the National Transportation Master Plan. Aim is to achieve at least a 20% reduction in conventional transportation fuel use by 2030 and promote energy efficiency in the transport sector through appropriate policies and investments.	Transport
11.3: By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.	Actions are geared towards supporting integrated development planning, and the undertaking of comprehensive assessments on human settlements and infrastructure. Manage and regulate further development of the coastline, especially in vulnerable areas such as the Belize and Corozal Districts Review and strengthen planning legislation and building codes, especially as it relates to coastal development; revise and streamline the current legislation and policies that relate to the management and regulation of development in the coastal zone to eliminate overlaps and close existing gaps. Promote the adoption of an integrated land tenure and land classification policy and developing and implementing programmes which discourage the establishment of human settlements in areas prone to natural hazards (flooding, land slippages, high winds and storm surges), and develop housing and settlement patterns/practices that enhance climate change adaptation and are resilient to climate change.	Cities and Urban Development Forest and Land Use
11.5: By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations	The action plan calls for undertaking of comprehensive assessments on human settlements and infrastructure.	Infrastructure Transport
12. Responsible consumption and production		
12.2: By 2030, achieve the sustainable management and efficient use of natural resources	Emissions savings potential of efficient cook stoves comes from a reduction of wood used for the same result. Aim is to achieve a reduction of fuel wood consumption by 27%-66%, depending on the technology, the duration of cooking and the replacement technology. Encourage sustainable exploitation of resources.	Energy Efficiency Forest and Land Use

12.3: By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses	Reduce post-harvest losses and provide early warning / meteorological forecasts and related information to be competitive in the region.	Agriculture Forest and Land Use
12.4: By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	Implementation of the Solid Waste Management strategy and plan. Its overall goal is to assist the Government of Belize (GoB) in promoting sustainable development by ensuring that “The system for managing solid wastes in Belize is financially and environmentally sustainable and contributes to improved quality of life”. Strengthen the Solid Waste Management Authority as the entity responsible for improving solid waste management in the country. Improve waste management processes in line with waste management strategy implemented nationwide.	Waste
12.5: By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	To ensure that “The system for managing solid wastes in Belize is financially and environmentally sustainable, and contributes to improved quality of life”, while also contributing to the promotion of sustainable development by preventing, re-using, recycling or recovering waste wherever feasible and beneficial. National Solid Waste Management Strategy and Plan will focus on preventing, re-using, recycling or recovering waste wherever feasible and beneficial and disposing of waste safely only as a last resort. The plan also aims to reduce methane emissions by capping and closing open dumps, capturing and utilizing landfill gas, and ensuring proper waste handling and organics management. To mitigate the effect of methane on climate change, prevent water and air pollution. To implement a National Integrated Waste Management Programme including programmes to reduce, reuse, recover and recycle solid waste and reduce greenhouse gas emissions into the atmosphere.	Energy Efficiency Waste
12.8: By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature	Develop education awareness program to educate population on adaptation measures	Education
13. Climate action		
13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	To provide the framework for an efficient, productive and strategic approach to building economic and social resilience and development. Special importance is given to building climate resilience and improving disaster risk management capacities across all sectors. To increase the resilience of human communities. To protect and restore mangrove forests. This activity can be an effective mitigation action while also helping the protection of low-lying coastal areas against impact of storms and soil erosion. To increase the resilience and reduce the vulnerability of livelihoods with respect to critical infrastructure, tourism, food security, sustainable forest management, protected areas management, coastal and marine resources, water scarcity, energy security and health. To increase and strengthen the capacity of the Coastal Zone Management Authority and Institute (CZMAI) and municipal authorities to ensure developments within the coastal and urban areas of Belize include an adaptation strategy; implement mangrove restoration or sea and river defense structure to prevent coastal and riverine erosion and ecosystem disruption. To provide guidance for actions that concerns the direct and indirect threats posed by global climate change on forests and forest dependent people in order to reduce their vulnerability, increase their resilience and adaptation to climate change.	All Sectors

<p>13.2: Integrate climate change measures into national policies, strategies and planning</p>	<p>Integrate environmental sustainability into development planning. The National Climate Change Policy, Strategy and Action Plan (NCCPSAP), 2015-2020, provides policy guidance for the development of an appropriate administrative and legislative framework, in harmony with other sectoral policies, for the pursuance of a low-carbon development path for Belize.</p> <p>To Build on the vulnerability and adaptation assessments, several key national and sectoral policies, strategies and action plans were developed and/or updated to incorporate climate change in an effort to enhance Belize's resilience.</p> <p>To include of adaptation strategies in management and development planning in all coastal and marine sectors.</p> <p>The mitigation and adaptation strategies and actions are cross sectoral and multidisciplinary in nature and will therefore require a coherent approach to implementation. This is currently a barrier as the responsibility for implementation falls within various ministries and government departments.</p>	<p>All Sectors</p>
<p>13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning</p>	<p>Build climate resilience and improving disaster risk management capacities across all sectors.</p> <p>To guide the adaptation process, six sectoral vulnerability and adaptation assessments were completed under the Third National Communication to determine the country's vulnerability profile and to identify possible adaptation options.</p> <p>To assess and address vulnerabilities and the development of tools to drive efficiency and promote resilience.</p> <p>To develop flood controls and drought monitoring.</p> <p>Many government sectoral plans and strategies have expressed the need for research and monitoring related to climate change adaptation and mitigation but they lack the human and financial resources to fully undertake this task.</p> <p>It is imperative that a vulnerability assessment is undertaken with greater focus being placed on assessing the vulnerability of the transport infrastructure, particularly in urban areas and other areas which are critical in sustaining the country's productive sectors (tourism, agriculture and ports).</p>	<p>All Sectors</p>
<p>14. Life below water</p>		
<p>14.2: By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans</p>	<p>To protect and restore mangrove forests. This activity can be an effective mitigation action while also helping the protection of low-lying coastal areas against impact of storms and soil erosion.</p> <p>To protect existing mangroves from deforestation and restore lost mangroves.</p> <p>To implement mangrove restoration or sea and river defense structure to prevent coastal and riverine erosion and ecosystem disruption; manage and regulate further development of the coastline, especially in vulnerable areas such as the Belize and Corozal Districts.</p> <p>To identify and assess coastal tourism areas in Belize that are vulnerable to Climate Change and provide support to coastal planners and policy makers in selecting appropriate policies and adaptation strategies that meet climate adaptation, developmental and environmental goals.</p> <p>To ensure that the coastal zone is managed and utilized in a manner that will continue to support important ecological functions, as well as social, cultural and economic prosperity for current and future generations. The overall objective is to promote the adoption and implementation of the Belize Integrated Coastal Zone Management Plan which will ensure responsible and sustainable use of Belize's coastal and marine resources in the face of climate change.</p>	<p>Forest and Land Use Oceans and Fisheries</p>
<p>14.4: By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics</p>	<p>Mangrove forests also fulfil critical role as nursery ground for regional fish stocks and maritime ecosystems.</p> <p>To achieve the sustainable management of the fisheries resources, and the conservation and preservation of fisheries resources and marine habitats in promoting reef ecosystem resilience.</p>	<p>Forest and Land Use Oceans and Fisheries</p>
<p>14.5: By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information</p>	<p>To support mangrove and fisheries conservation and management plans to protect wetlands and sea grass beds.</p>	<p>Forest and Land Use Oceans and Fisheries Water</p>

14.6: By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation	To adopt the new Fisheries Resources Bill and subsidiary regulations.	Forest and Land Use Oceans and Fisheries
14.7: By 2030, increase the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism	To Mainstream Climate Change in the Tourism Master Plan for Belize.	Forest and Land Use Oceans and Fisheries
15. Life on land		
15.1: By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	Watershed protection for water and food security. Protection of existing mangroves from deforestation and restore lost mangroves. Revise and adopt mangrove regulations and EIA regulations;	Forestry and Land Use
15.2: By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally	Reserves and sustainable forest management. This activity is expected to reduce emissions from land use and forestry from the 2015 estimate of 3,300Gg CO2 down to zero emissions sometime in the future and could turn the sector into a sink. To reduce deforestation. To protect existing mangroves from deforestation and restore lost mangroves. To protect forest reserves and sustainable forest management	Forestry and Land Use
15.3: By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world	Protect and restore mangrove forests. This activity can be an effective mitigation action while also helping the protection of low-lying coastal areas against impact of storms and soil erosion.	Forestry and Land Use
15.5: Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	Maintain healthy ecosystems. Improve mangrove and habitat conservation and management	Forestry and Land Use
16. Peace, justice and strong institutions		
16.6: Develop effective, accountable and transparent institutions at all levels	The Action Plan calls for institutional strengthening.	Agriculture, Health, Sanitation and Water
17. Partnerships for the goals		
17.3: Mobilize additional financial resources for developing countries from multiple sources	Financial resources, for example, international climate finance, private sector and public sector finance will be required to implement the Climate Action Plan (mitigation and adaptation)	All Sectors
17.7: Fully operationalize the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology	The Growth and Sustainable Development Strategy (GSDS) encourages technology development and transfer, the building of institutional capacities and developing intelligence frameworks to support technology adoption and innovation, including green technologies.	All Sectors
17.14: Enhance policy coherence for sustainable development	Undertake water policy reform.	All Sectors

<p>17.16: Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries</p>	<p>The way forward will include innovative approaches in partnerships between the University, local agencies and overseas research institutions.</p>	<p>Education Energy Efficiency Renewable Energy</p>
<p>17.19: By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries</p>	<p>Many of the government sectoral plans and strategies have express the need for research and monitoring related to climate change adaptation and mitigation but they lack the human and financial resources to fully undertake this task.</p>	<p>All Sectors</p>

Table A13.3: NDC-SDG Linkages: Alignment between Dominica Climate and Sustainable Development Objectives

Sustainable Development Objectives	Dominica Climate Objectives	
Targets	NDC Objectives	Priority Sector (s)
1. No poverty		
2.4: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality	To implement measures to reduce GHG emissions from the Agriculture Sector including through the harnessing of biomass.	Agriculture
3. Good health and well-being		
4. Quality education		
4.7: By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development	To implement education and awareness program at school level, as well as an awareness building program for the general public. To design and implement climate change adaptation and disaster risk management education and awareness program at all levels to be coordinated by the Department of Climate Change, Environment and Development.	Education
5. Gender equality		
6. Clean water and sanitation		
7. Affordable and clean energy		
7.1: By 2030, ensure universal access to affordable, reliable and modern energy services	To establish Off-Grid Hybrid Micro-Hydro, Wind, Solar PV, DG Back-up for Ross University. To establish Off-Grid Hybrid Wind, Solar, Biodiesel Generator Back-up in Off-grid Mini-Grid Configuration for South-East and East Coast of Dominica (three separate projects) - to increase power system reliability and reduce energy costs for the residents in these locations, off-grid mini-grids, powered with hybrid wind and solar PV power plants (and hydro if available), with bio-diesel generator back-up, are proposed as a possible viable alternative. The three separate mini-grids, estimated at 500kW each, comprising 500kW of wind energy and 200kW of PV, with bio-diesel generator back-up for each.	Infrastructure Renewable Energy Rural Development
7.2: By 2030, increase substantially the share of renewable energy in the global energy mix by 2030	The Government of Dominica in seeking to reduce the increasing costs of electricity generation and ensure a cleaner, more environmentally friendly energy source is aggressively exploring the possibilities of alternative energy. The commercial development and continued harnessing of Dominica's geothermal resources will, from 2025 onwards, enable the country to export significant amounts of renewable energy (estimated to exceed 200 Ggs annually) to the nearby French Territories of Martinique and Guadeloupe, thereby contributing to global efforts to reduce GHG emissions. It is hoped that hydro, solar, wind, wave and biomass as alternative energy sources, will eventually be considered on a commercial scale. It is the intention of the Government of Dominica to: Develop, with concessionary climate change financing provided under the Green Climate Fund or Clean Technology Fund, a geothermal generation plant to provide electricity to the domestic market. The first phase of this plant will comprise 2 X 3.5MW electricity generation units, with the physical plant designed to accommodate another 3.5MW generator in the future. The first, 2 X 3.5MW plant is planned for operation before 2020, with the third 3.5MW 2025. The Government of Dominica seeks to harness geothermal resources in manner and at a cost that will ensure that electricity charges to consumers do not increase.	Renewable Energy

	<p>Establish Solar Photovoltaic (PV) conversion program for Hotel Sector. This sector includes hotels and guesthouses, of which there are approximately 29 such facilities in Dominica. However, there is insufficient detail provided to determine size and individual energy usage. Estimates have been made to derive the quantity of systems that may be involved and anticipated GHG reductions based on lessons learned from similar conversions undertaken in the region. The solar PV programme will comprise the installation of solar PV panels and related equipment on the roofs (and in some cases, the grounds) of buildings in this sector.</p> <p>Establish Solar Photovoltaic (PV) conversion program for Commercial, Institutional and Manufacturing Facilities.</p> <p>Replace Streetlights in Portsmouth with Off-grid Light Emitting Diode (LED) Fixtures; and</p> <p>Implement Sustainable Energy programmes for private residences, including solar PV and solar thermal, using innovative financing mechanisms to offset capital costs for homeowners.</p>	
7.3: By 2030, double the global rate of improvement in energy efficiency	<p>It is the intention of the Government of Dominica to address climate change mitigation measures on the basis that savings in energy costs will allow Dominica to invest more in priority and much needed adaptation measures.</p> <p>Dominica intends to introduce market-based mechanisms to promote energy conservation/efficiency and reduce greenhouse gas emissions from the transport sector principally through incentives to promote the import of hybrid vehicles.</p> <p>This Energy Efficiency (EE) program will be country wide, and will include the Manufacturing, Commercial and Institutional sectors. Such programmes carried out in other jurisdictions in the Latin America and Caribbean Region have resulted in energy savings in the order of 15 to 20% of total energy usage and should achieve similar results in Dominica.</p> <p>The EE programme for Dominica will be designed and implemented to address the specific issues of this country and shall focus on retrofitting of energy efficient lighting, air-conditioning, appliances, and a vigorous education and awareness drive.</p>	Energy Efficiency Industry Transport
8. Decent work and economic growth		
8.4: Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead	<p>The EE programme for Dominica will be designed and implemented to address the specific issues of this country and shall focus on retrofitting of energy efficient lighting, air-conditioning, appliances, and a vigorous education and awareness drive.</p> <p>Make energy efficient appliances more readily available, and to include a focus on their importance in the programmes above.</p>	Education Energy Efficiency Infrastructure
9. Industry, innovation and infrastructure		
9.3: Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets	<p>Legal establishment of Climate Change Trust Fund in addition to US\$5 million seed funding to the Climate Change Trust Fund to provide support to priority community climate change risks management measures identified through community vulnerability mapping and adaptation planning and the establishment of micro-finance and micro-insurance for private sector and vulnerable segments of society (farmers, fisher-folk, women and vulnerable communities in particular the Kalinago people).</p>	Industry
10. Reduced inequalities		
11. Sustainable cities and communities		
11.2: By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	<p>Introduce a policy that, all government vehicles, at their time of replacement, will be replaced by hybrids vehicles.</p> <p>Introduce market-based mechanisms to motivate the private sector to buy hybrid vehicles when replacing current vehicles.</p>	Transport

11.3: By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.	Develop and implement a climate resilient energy efficient building code (Green Building Code) including a training and capacity building programme.	Transport
11.c: Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings and utilizing local materials	Implement Solar Photovoltaic (PV) conversion program for Hotel Sector This sector includes hotels and guesthouses. There are approximately 29 such facilities in Dominica, but there is insufficient detail provided to determine size and individual energy usage. Estimates have been made to derive the quantity of systems that may be involved and anticipated GHG reductions based on lessons learned from similar conversions undertaken in the region. The solar PV programme will comprise the installation of solar PV panels and related equipment on the roofs (and in some cases, the grounds) of buildings in this sector.	Cities and Urban Development Energy Efficiency
12. Responsible consumption and production		
12.4: By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	The present landfill needs to be expanded if it is expected to receive more waste within the next 5 years. The previous dumpsites that were closed off also need to be considered for methane collection and flaring system. In addition, the Government will focus on the following: Curb side pickup of organic waste (separation from source with revised collection system). Curb side pickup of individual types of non-organic waste (separation from source with revised collection system). Material recovery facilities and composting facilities in selected regions on the island.	Waste
12.5: By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	Reduce Methane Emissions from Landfill: This project will abate most of this methane by: (a) diverting organics from the waste stream that is currently deposited in the landfill; and (b) suitably preparing the landfill and installing a flaring system. The previous dumpsites that were closed off also need to be considered for methane collection and flaring system. In order to further reduce methane emissions and reach our target, the present volume of organic waste brought into the landfill (40% of all waste) has to be reduced.	Waste
12.8: By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature	Implement public awareness and extension programme throughout the island. Implement education and awareness programme, at school level, as well as an awareness building program for the general public	Education
13. Climate action		
13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	To enhance community, ecosystem and national resilience to climate change and natural disasters, including through the implementation of viable sustainable energy and other mitigation measures, which reduce reliance on imported fossil fuels, while building local resilience, capacity and self-sufficiency. In the Dominica's Low Carbon Climate Resilient Development Strategy, the household and community surveys highlighted (a) concerns over food security, (b) the urgent need to provide vulnerable communities with micro-insurance and micro-finance to address risks from climate change extreme events (floods, drought, landslides, crop damage, loss of fishery) affecting subsistence agriculture/fishery production, and (c) the urgent need for community based early warning systems, community-based vulnerability/hazard mapping, community multi-use emergency shelters, and community risk management frameworks. It is the intention of the Government of Dominica to establish early warning systems, multi-use disaster shelters (powered by renewable energy and back up bio-diesel generators) and emergency preparedness training programmes in vulnerable communities.	All Sectors

13.2: Integrate climate change measures into national policies, strategies and planning	For Dominica, there is little distinction between adaptation and mitigation measures – an integrated response is being implemented to build climate resilience in vulnerable communities, while enabling Green Growth through the transition to sustainable energy technologies. The National Adaptive Capacity Assessment confirmed the need for improved levels of earmarked financial resources for climate change risk management and resiliency building as articulated in the NCSA, and the need for improved coordination amongst key state and non-state actors involved in climate change risk management. It is the intention of the Government of Dominica to establish a sustainable financing mechanism to ensure timely and direct access to international climate change financing to implement priority climate change risks management measures by the private sector and vulnerable communities.	All Sectors
13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	The National Adaptive Capacity Assessment confirmed the need for improved levels of earmarked financial resources for climate change risk management and resiliency building as articulated in the “National Capacity Needs Self-Assessment for Global Environmental Management” (NCSA), and the need for improved coordination amongst key state and non-state actors involved in climate change risk management. It is the intention of the Government of Dominica to establish early warning systems, multi-use disaster shelters (powered by renewable energy and back up bio-diesel generators) and emergency preparedness training programs in vulnerable communities.	All Sectors
14. Life below water		
15. Life on land		
15.2: By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally	Benefiting from sound management practices, Dominica forests will continue to sequester 100 Ggs of national GHG emissions on an annual basis during the period 2020 to 2030.	Forest and Land Use
16. Peace, justice and strong institutions		
16.6: Develop effective, accountable and transparent institutions at all levels	Focus will be on institutional strengthening at the government level, and capacity building for the private sector (e.g., contractors, maintenance personnel, and other personnel). The Government aims to establish the enabling legal/ institutional framework to facilitate coordination/ implementation of priority climate change measures and the mainstreaming of climate change activities into national, sectoral and community planning/ development. The Government aims to establish a sustainable financing mechanism to ensure timely and direct access to international climate change financing to implement priority climate change risks management measures by the private sector and vulnerable communities.	Agriculture Health Sanitation Water
16.b: Promote and enforce non-discriminatory laws and policies for sustainable development	The focus here is on the establishment of the enabling legal/ institutional framework to facilitate coordination/ implementation of priority climate change measures and the mainstreaming of climate change activities into national, sectoral and community planning/ development.	Agriculture Education Forest and Land Use
17. Partnerships for the goals		
17.1: Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection	The Government aims to establish a sustainable financing mechanism to ensure timely and direct access to international climate change financing to implement priority climate change risks management measures by the private sector and vulnerable communities;	All Sectors
17.7: Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed	The PPCR National Adaptive Capacity Assessment also identified considerable limitations in climate change risk management capacity at the systematic, institutional and individual levels, at the national, sectoral, district and local level, and within the public sector and civil society, highlighting the need for considerable capacity building. The Government aims to facilitate capacity building through education, awareness and training programs on climate change risks and resiliency measures in order to strengthen capacity at the community and sectoral level, within municipalities and local authorities, and the private sector	All Sectors

Table A13.4: NDC-SDG Linkages: Alignment between Haiti Climate and Sustainable Development Objectives

Sustainable Development Objectives	Haiti Climate Objectives	
Targets	NDC Objectives	Priority Sector (s)
1. No poverty		
1.5: By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters	Reduce disaster risk in areas most vulnerable to flooding, and integration of migrations (internal and international) and planned relocation of communities as an adaptation strategy. Develop and implement local risk and disaster management plans in the most important / vulnerable cities.	Cities and Urban Development Forest and Land Use
2. Zero Hunger		
2.4: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality	Develop bio-economics, climate-friendly and biological agriculture. Restore, upgrade and extend existing agroforestry systems (at least 60,000 additional hectares between 2020 and 2030). Improve the quality of grazing, particularly of bovine herds, with legumes. Develop crop and use appropriate agricultural techniques to address climate change. Conserve agricultural genetic resources. Improve soil conservation and regeneration. Adapt drought-resistant crops to the Haitian context. Develop crops adapted to salinized water. Develop technologies for the conservation, processing and valorization of agricultural products. Strengthen meteorological monitoring systems and systems for the prediction of agricultural yields.	Agriculture Forest and Land Use
3. Good health and well-being		
3.d: Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks.	Improve access to health care. Establish a monitoring system in the peripheries of the drilling areas. Take climate change into account in the planning and implementation of health projects at national and local level.	Health
4. Quality education		
4.7: By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development	Improve the production, communication and dissemination of knowledge related to climate change, including migrations (primary, secondary and universities).	Education
5. Gender equality		
5.c: Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels	Take gender into account throughout the CPDN implementation process.	All Sectors
6. Clean water and sanitation		
6.1: By 2030, achieve universal and equitable access to safe and affordable drinking water for all	Improve the access to drinking water to prevent waterborne diseases.	Water
6.3: By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	Develop and implement more efficient techniques for the use of water resources.	Water

6.4: By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	Develop the thermal energy of the seas for the production of fresh water. Supply water to communities through the construction of dams, family tanks, hilly lakes. Improve the filling of groundwater by reforestation activities, physical barriers (dry walls) and biodynamic (hedges) in the catchment areas.	Water
6.6: By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	Develop the 15 strategic watersheds most vulnerable to extreme climate events according to land use patterns. Provide physical and administrative protection (communal decrees) of water sources.	Water
7.2: By 2030, increase substantially the share of renewable energy in the global energy mix by 2030	Increase the proportion of renewable energies in the Haitian electricity system to 47% by 2030 (hydro 24.5%, wind 9.4%, solar 7.5%, biomass 5.6%). Install by 2030 (4 wind farms: 50 MW, hydroelectricity: 60MW additional, solar parks: 30 MW, biomass: 20 MW) Install by 2020, an additional 37.5 MW of hydroelectricity Adopt tax incentive measures favoring renewable energies, local production including bioeconomy.	Renewable Energy
7.3: By 2030, double the global rate of improvement in energy efficiency	Promote the use of energy-efficient stoves to replace traditional fireplaces (energy savings of 25-30% per stove). Improve the energy efficiency of wood-burning furnaces (increase yields from 10-15% to 30-45%). Disseminate 1,000,000 low-consumption lamps for the replacement of incandescent bulbs.	Energy Efficiency
8. Decent work and economic growth		
9. Industry, innovation and infrastructure		
9.1: Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Strengthen construction standards.	Infrastructure
10. Reduced inequalities		
11. Sustainable cities and communities		
11.2: By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	Develop and implement transport NAMAs. Control and regulate the import of used vehicles	Transport
11.b: By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels	Develop and implement Urban and Sustainable Development Plans for cities at risk of flooding, including the movement and internal displacement of the population and the reduction of disaster risks in the most vulnerable areas.	Cities and Urban Development
12. Responsible consumption and production		
12.2: By 2030, achieve the sustainable management and efficient use of natural resources	Reduce fuelwood consumption by 32% by 2030.	Forest and Land Use
12.5: By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	Define and implement a National Solid Waste Management Policy (Management Plans following Model 5RVE: Source Reduction, Recovery, Reuse, Recycling, Reuse, Recovery and Landfilling).	Waste

13. Climate action		
13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	<p>Establish infrastructures resilient to adverse climatic events. Provide support to the insurance sector for the management of losses resulting from natural and climatic disasters. Support public finances activities by developing and implementing a financial risk management strategy for disaster / climate risks.</p> <p>Develop and strengthen financial instruments that increase capacity to mobilize resources following natural disasters and reduce fiscal volatility.</p> <p>Increase the resilience of public investment by improving the understanding and assessment of the risks posed by climate threats.</p>	Infrastructure
13.2: Integrate climate change measures into national policies, strategies and planning	<p>Integrate the effects of climate change into sectoral development strategies.</p> <p>Update of the National Risk and Disaster Management Plan (PNGRD) incorporating the risks associated with Climate Change.</p> <p>Taking climate change into account in the planning and implementation of health projects at national and local level.</p>	Health
13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	<p>Enhance direct access to the Green Climate Fund (GCF) and other funds for conditional mitigation and adaptation activities, including the development and implementation of the National Adaptation Plan.</p>	Education Forest and Land Use Water
13.a: Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly \$100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible Indicators	<p>Enhance direct access to the Green Climate Fund (GCF) and other funds for conditional mitigation and adaptation activities, including the development and implementation of the National Adaptation Plan</p>	Energy Efficiency Oceans and Fisheries
14. Life below water		
14.2: By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans	<p>Protect coastal areas from the impacts of climate change. Preserve the country's marine protected areas (MPAs). Protect the Marine Protected Areas (MPAs) in the South Coast of Haiti.</p> <p>Develop a national strategy to adapt coastal zones to the impacts of climate change.</p> <p>Develop and implement a plan to protect and relocate infrastructure at risk from the impacts of climate change.</p> <p>Improve the conservation and protection of marine biodiversity and coral reefs.</p> <p>Provide support to the community management of marine protected areas.</p>	Oceans and Fisheries
14.3: Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels	<p>Improve coastal monitoring and sustainable fisheries management.</p>	Oceans and Fisheries
15. Life on Land		
15.1: By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	<p>Protect and conserve existing national forest parks (10,500 ha) by 2030.</p> <p>Protect, conserve and expand existing mangrove forests (19,500ha) by 2030.</p> <p>Protect and conserve existing national forest parks (10,500ha) by 2030.</p> <p>Protect and conserve existing mangrove forests (10 000 ha) by 2030.</p> <p>Develop and implement forestry / reforestation: planting of 2500ha of forest per year from 2016 – 2030</p> <p>Adopt measures for the protection, conservation and sustainable management of mangrove ecosystems.</p>	Forest and Land Use

15.2: By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally	Set up well-managed energy forests (10 000 ha by 2030). Plant 137,500 ha of forest by 2030, favoring local species, including 100,000 ha conditionally between 2020 and 2030. Protect, conserve and expand existing mangrove forests (19,500ha) by 2030. Protect and conserve existing national forest parks (10,500ha) by 2030. Protect and conserve existing mangrove forests (10 000 ha) by 2030. Forestry / reforestation: planting of 2500ha of forest per year from 2016 – 2030 Adopt measures for the protection, conservation and sustainable management of mangrove ecosystems. Implement programme for the reforestation of upstream areas.	Forest and Land Use
15.3: By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world	Improve soil conservation and regeneration. Regulate water flow, protect and restore soils.	Agriculture Forest and Land Use
16. Peace, justice and strong institutions		
17. Partnerships for the goals		
17.3: Mobilize additional financial resources for developing countries from multiple sources	Enhance direct access to the Green Climate Fund (GCF) and other funds for conditional mitigation and adaptation activities, including the development and implementation of the National Adaptation Plan	All Sectors
17.7: Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed	Facilitate technology transfers based on Technology Needs Assessments (TNAs).	All Sectors
17.9: Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the sustainable development goals, including through North-South, South-South and triangular cooperation	Implement institutional capacity building programmes.	All Sectors
17.16: Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries	Strengthen the technical and institutional capacity and technological and financial support to overcome these barriers to the achievement of SDGs.	Education Energy Efficiency Renewable Energy

Table A13.5: NDC-SDG Linkages: Alignment between St. Kitts and Nevis Climate and Sustainable Development Objectives

Sustainable Development Objectives	St. Kitts and Nevis Climate Objectives	
Targets	NDC Objectives	Priority Sector (s)
1. No poverty		
2. Zero Hunger		
3. Good health and well-being		
4. Quality education		
5. Gender equality		
6. Clean water and sanitation		
7. Affordable and clean energy		
7.2: By 2030, increase substantially the share of renewable energy in the global energy mix by 2030	Reduce GHG emissions by focusing on electricity generation and the transport sector. Under its proposed mitigation actions, it is intended that the policies and measures would increase the use of renewable energy sources by 50%, taking into consideration that this ambitious target could be considered risky within the short time frame.	Renewable Energy
7.3: By 2030, double the global rate of improvement in energy efficiency	Improve EE through the through the following measures: Water sources: smart meters; net metering. Replacement / retrofitting of inefficient equipment. Automation of high consumption equipment. Provision of incentive for more efficient vehicles. Imposition of a tax on vehicle with high fuel consumption. Retrofitting inefficient vehicles. Provision of a more efficient public transportation system.	Energy Efficiency Transport
7.b: By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support	Implement smart meters; net metering.	Energy Efficiency
8. Decent work and economic growth		
9. Industry, innovation and infrastructure		
9.1: Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Provide new alternate infrastructure. Repair roads and establish new roads.	Energy Efficiency Infrastructure Transport
10. Reduced inequalities		
11. Sustainable cities and communities		
11.2: By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	Provide incentive for more efficient vehicles. Impose a tax on vehicle with high fuel consumption. Retrofit inefficient vehicles. Implement more efficient public transportation. Establish new alternate infrastructure. Repair roads and establish new roads.	Energy Efficiency Infrastructure Transport
12. Responsible consumption and production		
12.2: By 2030, achieve the sustainable management and efficient use of natural resources	Automate high consumption equipment. Provide incentive for more efficient vehicles. Impose a tax on vehicle with high fuel consumption. Retrofit inefficient vehicles. Implement more efficient public transportation Establish new alternate infrastructure Implement parking and transit regulation.	Energy Efficiency Infrastructure Transport

13. Climate action		
13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	Conduct technical and economically feasibility studies for all levels of implementation (actions, projects, programs, policies), as well as a comprehensive analysis for policy implication	Education
14. Life below water		
15. Life on land		
16. Peace, justice and strong institutions		
17. Partnerships for the goals		
17.14: Enhance policy coherence for sustainable development	Reduce climate by ensuring that the relevant policies, plans and actions are developed, within the confines of the country's natural, financial, technological and human resources, to implement the measures necessary to achieve the intended emissions reduction	All Sectors

Table A13.6: NDC-SDG Linkages: Alignment between Saint Lucia Climate and Sustainable Development Objectives

Sustainable Development Objectives	Saint Lucia Climate Objectives	
Targets	NDC Objectives	Priority Sector (s)
1. No poverty		
1.5: By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters	Social Transformation, build social resilience and social capital	All Sectors
1.b: Create sound policy frameworks at the national, regional and international levels, based on pro-poor and gender-sensitive development strategies, to support accelerated investment in poverty eradication actions	Build strong institutions that are a platform for growth and development	Cities and Urban Development Rural Development
2. Zero Hunger		
2.1: By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round	Build strong institutions that are a platform for growth and development	All Sectors
2.2: By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons	Improve health and wellness. Social Transformation, build social resilience and social capital	Health
2.3: By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment	Establish Climate Resilient Agriculture Demonstration Centre (CRADE): To enable the transformation of vulnerable groups in 3 subsistence farming communities into competitive national agribusiness leaders under a changing climate.	Agriculture Forest and Land Use Health Industry Rural Development Waste
2.4: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality	Establish Climate Resilient Agriculture Demonstration Centre (CRADE): To enable the transformation of vulnerable groups in 3 subsistence farming communities into competitive national agribusiness leaders under a changing climate. Build Resilience for Adaptation to Climate Change vulnerabilities in Agriculture.	Agriculture
3. Good health and well-being		
3.9: By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	Improve health and wellness	Health
4. Quality education		
4.7: By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development	Facilitate adaptation through Public Education and Outreach	Education
5. Gender equality		
5.c: Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels	Social Transformation, build social resilience and social capital	All Sectors

6.3: By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	Implement pig farms' wastewater and manure management systems: Pilot solutions to reduce water pollution under a changing climate.	Agriculture Waste Water
6.4: By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	Improve water distribution and network efficiency	Water
7. Affordable and clean energy		
7.2: By 2030, increase substantially the share of renewable energy in the global energy mix by 2030	Achieve 35% Renewable Energy Target by 2025 and 50% by 2030 based on a mix of geothermal, wind and solar energy sources.	Education Infrastructure Renewable Energy Water
7.3: By 2030, double the global rate of improvement in energy efficiency	Promote: (a) Energy Efficient Buildings (b) Energy Efficient Appliances © Efficient Vehicles	Education Energy Efficiency Infrastructure Renewable Energy Transport
7.b: By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support	Improve the Grid Distribution and Transmission Efficiency	Infrastructure
8. Decent work and economic growth		
8.2: Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high value added and labor-intensive sectors	Build productive capacity and expand growth opportunities Improve infrastructure, connectivity and energy – as key for growth and competitiveness	Infrastructure
8.5: By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	Enhance the labor force through education training and workforce development	All Sectors
9. Industry, innovation and infrastructure		
9.1: Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Promote: Energy Efficient Buildings. Energy Efficient Appliances. Adaptation Implementation of Climate Resilience Measures in Critical Buildings. Drainage Infrastructure.	Energy Efficiency Infrastructure
9.2: Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries	Build productive capacity and expanding growth opportunities	All Sectors

10. Reduced inequalities

<p>10.2: By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status</p>	<p>Continue the process of mainstreaming gender in national strategic planning and programming across government and specifically within climate change considerations, including Nationally Appropriate Mitigation Actions and National Adaptation Plan initiatives. Through this commitment, gender considerations have assumed more prominence in recent times from non-inclusion in Saint Lucia's First National Communication of 2001 to the United Nations Framework Convention on Climate Change (UNFCCC) through:</p> <p>Specific reference to women as a vulnerable group in Saint Lucia's Climate Change Adaptation Policy (CCAP) of 2015; Inclusion of gender considerations in Saint Lucia's National Adaptation Plan (NAP) and supplements of 2018 and beyond, including the Sectoral Adaptation Strategies and Actions Plans (SASAPs) in Water, Agriculture, Fisheries (2018), as well as the more recent Resilient Ecosystems Adaptation Strategy and Action Plan (REASAP, 2020).</p> <p>Develop the national gender equality policy and strategic plan (Saint Lucia's Gender Relations Department), which includes environmental sustainability with focus on climate change as a thematic priority. The thematic priorities are geared toward capacity development, institutional strengthening institutional architecture and greater accountability.</p> <p>The Climate Change Adaptation Policy (CCAP) has identified that its success will in part depend on the extent of stakeholder (including women and vulnerable groups) ownership and participation in the implementation of the CCAP priorities.</p> <p>Continue to address gender considerations systematically and adequately in the project design, consultation, implementation and monitoring stages when project concepts are being developed, amalgamated or expanded for funding consideration.</p> <p>In 2019, a regional project benefitting nine Caribbean countries, including Saint Lucia, was launched - Enabling Gender-Responsive Disaster Recovery, Climate and Environmental Resilience in the Caribbean (EnGenDER). The EnGenDER project will be the starting point for a more substantive gender integration in climate change and should act as a catalyst for the acceleration of gender equality initiatives in Saint Lucia.</p> <p>Focus on vulnerable groups in the Saint Lucia's NAP and associated SASAPs to foster equality in adaptation benefits. While they include activities focusing on women and men generally based on several vulnerability factors, they do not identify activities that are specific to either women or men, owing to the lack of data on differential needs. Work to collect and assess gender-disaggregated information allowing planners and decision-makers to consider who will be impacted even before implementation. To support this effort, Saint Lucia through the EnGenDER Project will be undertaking sectoral gender assessments for selected sectors and developing guidelines for the development of gender responsive Sectoral Adaptation Strategies and Action Plans.</p> <p>As a signatory to the UN Convention on the Rights of the Child (CRC), Saint Lucia supports actions that seek to reaffirm its commitment to the development of its children and youth, by encouraging their involvement in the decision-making process on climate change matters at the national and global levels.</p>	<p>Education</p>
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	<p>Further, Saint Lucia sees the importance of preparing all children and youth, including those with disabilities, to participate in future planning/decision making processes by providing equal access to education. This is reflected in Saint Lucia acceding to the Marrakesh Treaty as it relates to Persons Who Are Blind, Visually Impaired, or Otherwise Print Disabled. Efforts are underway to pilot a project which will be expanded to provide reading support for students with print disabilities. Through the print sharing medium, climate change-relevant curriculum material will be provided to students with print disabilities, thus allowing for access to formal and informal education on climate change for all.</p> <p>The Government, through the National Coordinating Committee for Human Rights, works very closely with the National Council of and for Persons with Disabilities in protecting the rights of its Constituents.</p> <p>Saint Lucia's youth and children have also been integrated into building resilience to climate change through enhancing food security through school gardening programmes and community groups. One such example in Saint Lucia is the outfitting of several primary schools with greenhouses through support programmes of the Ministry of Agriculture. The children are involved in gardening with the support of caretakers, farmers from the community and extension officers, as appropriate, noting that Agricultural Science is taught at Secondary and not Primary level. Prior to the COVID-19 global pandemic, 70-80 percent of primary schools had functional gardens. These programmes also support the national school feeding programme. There are unique arrangements for the share of produce between volunteering farmers and the schools.</p>	
10.4: Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality	Enhance the labour force through education training and workforce development	Agriculture Forest and Land Use Infrastructure Oceans and Fisheries
11. Sustainable cities and communities		
11.2: By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	Promote Efficient Vehicles. Improve and Expand Public Transit.	Energy Efficiency Transport
11.3: By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.	Build strong institutions that are a platform for growth and development	Education Infrastructure Renewable Energy
12. Responsible consumption and production		
12.2: By 2030, achieve the sustainable management and efficient use of natural resources	Adapt for environmental sustainability, climate change and disaster vulnerability reduction	All Sectors
12.5: By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	Improve infrastructure, connectivity and energy – as key for growth and competitiveness	Infrastructure

13. Climate action		
13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	<p>Ensure that Saint Lucia and its people, their livelihoods, social systems and environment are resilient to the risks and impacts of climate change, within the framework of the CCAP.</p> <p>Provide a framework (CCAP) for addressing the impacts of climate change in an integrated manner across all key sectors, based on three interconnected processes, namely:</p> <ul style="list-style-type: none"> Adaptation Facilitation, which entails creating the appropriate policy, legislative and institutional environment. Adaptation Financing, which involves putting in place measures to ensure adequate and predictable financial flows Adaptation Implementation, which entails taking concrete actions to prepare for, or respond to, the impacts of climate change. <p>Coastal Zone Management for Climate Resilience. Natural Defences (mangroves, wetlands etc.). Early Warning Systems.</p>	All Sectors
13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	<p>Build Human Resource Capacity</p> <p>Establish Early Warning Systems</p>	Oceans and Fisheries
13.b: Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities * Acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change.	Pursue national level market-based instruments, such as cap-and-trade emission trading schemes and offsetting, which are crucial to price carbon emissions and keep the costs of mitigation in Saint Lucia to encourage implementation of the proposed mitigation measures drawing on any applicable international arrangements.	<p>Education</p> <p>Rural Development</p>
14. Life below water		
14.2: By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans	<p>Promote Coastal Zone Management for Climate Resilience</p> <p>Promote Natural Defences (mangroves, wetlands etc.)</p>	<p>Forest and Land Use</p> <p>Oceans and Fisheries</p>
15. Life on Land		
15.1: By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	Promote Natural Defences (mangroves, wetlands etc.) as one of the critical adaptation interventions identified in the Second National Communication:	<p>Forest and Land Use</p> <p>Oceans and Fisheries</p> <p>Water</p>
15.2: By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally	<p>Promote Adaptation for environmental sustainability, climate change and disaster vulnerability reduction.</p> <p>Address the die-back of the largest mangrove in Saint Lucia to strengthen the country's climate resilience.</p>	Forest and Land Use
15.b: Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation	Implement a national REDD+ programme and promote efforts to maintain current forest cover of the country, as well as undertake efforts to protect watersheds through forest protection measures.	Forest and Land Use
16. Peace, justice and strong institutions		
16.7: Ensure responsive, inclusive, participatory and representative decision-making at all levels	Support actions that seek to reaffirm the commitment of the country to the development of its children and youth, by encouraging their involvement in the decision-making process on climate change matters at the national and global levels, as a signatory to the UN Convention on the Rights of the Child (CRC).	Education

	<p>Prepare all children and youth, including those with disabilities, to participate in future planning/decision making processes by providing equal access to education. This is reflected in Saint Lucia acceding to the Marrakesh Treaty as it relates to Persons Who Are Blind, Visually Impaired, or Otherwise Print Disabled.</p> <p>Promote ongoing efforts to pilot a project which will be expanded to provide reading support for students with print disabilities. Through the print sharing medium, climate change-relevant curriculum material will be provided to students with print disabilities, thus allowing for access to formal and informal education on climate change for all.</p> <p>The Government, through the National Coordinating Committee for Human Rights, continue to work very closely with the National Council of and for Persons with Disabilities in protecting the rights of its Constituents.</p> <p>Continue to integrate youth and children into building resilience to climate change by enhancing food security through school gardening programmes and community groups. One such example in Saint Lucia is the outfitting of several primary schools with greenhouses through support programmes of the Ministry of Agriculture. The children are involved in gardening with the support of caretakers, farmers from the community and extension officers, as appropriate, noting that Agricultural Science is taught at Secondary and not Primary level. Prior to the COVID-19 global pandemic, 70-80 percent of primary schools had functional gardens. These programmes also support the national school feeding programme. There are unique arrangements for the share of produce between volunteering farmers and the schools.</p>	
16.8: Broaden and strengthen the participation of developing countries in the institutions of global governance	Build strong institutions that are a platform for growth and development	Nationally
17. Partnerships for the goals		
17.1: Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection	Strengthen the existing Climate Financing Strategy under the NAP, which considers different sources of financing such as Domestic Public Resources, International Public Finance, and Domestic and International Private Finance.	All Sectors
17.3: Mobilize additional financial resources for developing countries from multiple sources	Strengthen the existing Climate Financing Strategy under the NAP, which considers different sources of financing such as Domestic Public Resources, International Public Finance, and Domestic and International Private Finance.	All Sectors
17.18: By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to significantly increase the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts	Strengthen the Monitoring and Evaluation Plan as part of the NAP process, to track progress on the actions and projects mentioned in the NAP and SASAPs.	All Sectors

Table A13.7: NDC-SDG Linkages: Alignment between St. Vincent and the Grenadines Climate and Sustainable Development Objectives

Sustainable Development Objectives	St. Vincent and the Grenadines Climate Objectives	
Targets	NDC Objectives	Priority Sector(s)
1. No poverty		
1.1: By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.25 a day	Reduced unemployment and poverty levels.	Cities and Urban Development Oceans and Fisheries Rural Development
1.5: By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters	Strengthen community resilience to cope with climate hazards. Increase institutional capacity to undertake climate risk management. Design and implement gender sensitive disaster risk management initiatives. Enhance the adaptive capacity of rural economies and natural resources to climate change through the management and protection of land based natural resources and agricultural production systems.	Agriculture Rural Development
2. Zero Hunger		
2.1: By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round	Support for small scale farmers from the government, in production technologies, agri-business management, good agricultural practices and pest and disease control; policy initiatives to address climate change issues, environmental protection, risk mitigation and fisheries development; and a national plan for dealing with food security.	Agriculture
2.4: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality	Minimize the negative impact of climate change on agriculture and human health. Future priorities will include the development of a public education framework, targeted at providing a curriculum for climate resilient agriculture, based on traditional techniques and expertise. The Government of St. Vincent has demonstrated its commitment to agricultural diversification and through its policies and programmes. These efforts include the following: Support for small scale farmers from the government, in production technologies, agri-business management, good agricultural practices and pest and disease control; policy initiatives to address climate change issues, environmental protection, risk mitigation and fisheries development; and a national plan for dealing with food security. Continue to implement an innovative project which converts abandoned land into a model for sustainable living and farming systems in St. Vincent, where young persons in local primary and secondary schools are taught organic agriculture, environmental art and creative land use. Enhance the adaptive capacity of rural economies and natural resources to climate change through the management and protection of land based natural resources and agricultural production systems.	Agriculture Education Forest and Land Use Health Rural Development
3. Good health and well-being		
3.8: Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all	Continue to implement the policy of the Government of Saint Vincent and the Grenadines to provide universal health care that reflects the principles of equity, affordability, quality, and cultural acceptance for its citizens.	Health
3.9: By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	Minimize the negative impact of climate change on agriculture and human health.	Agriculture Health
4. Quality education		

4.7: By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development	<p>Promote public education and awareness of the potential negative effects of climate change. Future priorities will include the development of a public education framework, targeted at providing a curriculum for climate resilient agriculture, based on traditional techniques and expertise.</p> <p>Design and implement a public education and capacity building programme to provide for a range of initiatives in support of public and private sector capacity building. These include a national 3-year public education programme to build community-based climate risk and resilience, provide a national curriculum for schools in climate change and disaster risk reduction, plan and develop an early warning system for St. Vincent and the Grenadines, provide technical training and extend the school risk assessment to cover all constituencies in the country.</p> <p>Continue to implement the innovative project where abandoned land is converted into a model for sustainable living and farming systems in St. Vincent, in which young persons in local primary and secondary schools are taught organic agriculture, environmental art and creative land use.</p>	Agriculture Education Forest and Land Use
5. Gender equality		
5.c: Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels	Design and implement gender sensitive disaster risk management initiatives	All Sectors
6. Clean water and sanitation		
6.1: By 2030, achieve universal and equitable access to safe and affordable drinking water for all	<p>Implement water related initiatives that contribute to adaptation at the community and household level, including:</p> <p>The construction of Reverse Osmosis plant in Bequia.</p> <p>The installation of rooftop rainwater harvesting systems through several projects for households in selected communities in St. Vincent to secure and provide potable drinking water when there is water scarcity or shortage of water available.</p>	Water
6.4: By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	<p>Install rooftop rainwater harvesting systems through several projects: At 6 sites in St. Vincent and the Grenadines (Sandy Bay Government School, Georgetown Community Centre, Park Hill Primary School, Langley Park Government School, Richland Park Government School and Liberty Lodge Boys Training Centre). The beneficiary schools are also used as hurricane shelters; and</p> <p>For households in selected communities in St. Vincent to secure and provide potable drinking water when there is water scarcity or shortage of water available.</p>	Infrastructure Water
7.2: By 2030, increase substantially the share of renewable energy in the global energy mix by 2030	<p>Promote renewable energy: the plans for renewable energy generation are focused on the development of the country's proposed geothermal power plant. The facility, when complete, will generate approximately 50% of the national annual electricity consumption needs.</p> <p>In addition to the geothermal plant, the national energy utility is renovating existing hydro power facilities to improve efficiency and generation capacity as well as enabling and encouraging the installation of small-scale photovoltaics (PV) in the private and public sectors.</p>	Energy Efficiency Renewable Energy

7.3: By 2030, double the global rate of improvement in energy efficiency	<p>Promote renewable energy: the plans for renewable energy generation are focused on the development of the country's proposed geothermal power plant. The facility, when complete, will generate approximately 50% of the national annual electricity consumption needs.</p> <p>In addition to the geothermal plant, the national energy utility is renovating existing hydro power facilities to improve efficiency and generation capacity as well as enabling and encouraging the installation of small-scale photovoltaics (PV) in the private and public sectors.</p> <p>Promote Energy efficiency: there is an objective to achieve a 15% reduction in national electricity consumption compared to a BAU scenario by 2025.</p>	Energy Efficiency Renewable Energy
8. Decent work and economic growth		
9. Industry, innovation and infrastructure		
9.1: Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	<p>Promote energy efficiency: there is an objective to achieve a 15% reduction in national electricity consumption compared to a BAU scenario by 2025.</p> <p>The St. Vincent and the Grenadines National Economic and Social Development Plan 2013 - 2025 has been elaborated around a specific set of strategic goals, objectives and targets so as to facilitate and guide the optimal improvement of the quality of life for all Vincentians. In particular, Goal 4 of the Plan; 'Improving Physical Infrastructure, Preserving the Environment and Building Resilience to Climate Change' seeks to ensure that St. Vincent and the Grenadines develops its physical infrastructure, while preserving the country's delicate environment, as well as mitigating the effects of climate change. The proposed strategic interventions include: The proposed strategic interventions include the building of resilience to minimize damage to settlement and infrastructure.</p> <p>The National Economic and Social Development Plan possess nine over-arching goals, including Improved physical infrastructure and environmental sustainability.</p> <p>Promote efforts that contribute to adaptation at the community and household level. These initiatives, include rooftop rainwater harvesting systems which have been installed through several projects at 6 sites in St. Vincent and the Grenadines (Sandy Bay Government School, Georgetown Community Centre, Park Hill Primary School, Langley Park Government School, Richland Park Government School and Liberty Lodge Boys Training Centre). The beneficiary schools are also used as hurricane shelters.</p> <p>Utilize the Pilot Project on Climate Resilience (PPCR) to address mainly infrastructural support in response to climate change and sea-level rise.</p>	Energy Efficiency Infrastructure Water
10. Reduced inequalities		
11. Sustainable cities and communities		
11.1: By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums	Build resilience to minimize damage to settlement and infrastructure	Infrastructure
11.2: By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	Provide access to safe, affordable, accessible and sustainable transport: new policies to reduce the import duty paid on low emission vehicles are in the process of being introduced to encourage their use. It is estimated that this will result in avoided emissions of approximately 10% over the next 10 years	Transport
12. Responsible consumption and production		
13. Climate action		
12.2: By 2030, achieve the sustainable management and efficient use of natural resources	Enhance the adaptive capacity of rural economies and natural resources to climate change through the management and protection of land based natural resources and agricultural production systems.	Agriculture Forest and Land Use Rural Development

<p>13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries</p>	<p>Facilitate and guide the optimal improvement of the quality of life for all Vincentians around a specific set of strategic goals, objectives and targets of the elaborated St. Vincent and the Grenadines National Economic and Social Development Plan 2013 – 2025. The Plan, which encapsulates the issues of Rio and the post 2015 UN Development Agenda, has been adopted by all Ministries and is used to guide programmes and activities.</p> <p>In particular, Goal 4 of the Plan; ‘Improving Physical Infrastructure, Preserving the Environment and Building Resilience to Climate Change’ seeks to ensure that St. Vincent and the Grenadines develops its physical infrastructure, while preserving the country’s delicate environment, as well as mitigating the effects of climate change.</p> <p>The proposed strategic interventions include:</p> <ul style="list-style-type: none"> Build resilience to minimize damage to settlement and infrastructure. Develop appropriate legislative and regulatory framework, for proper environmental management, and institutional systems for responding and mitigating effects of climate change. <p>Future priorities will include the development of a public education framework, targeted at providing a curriculum for climate resilient agriculture, based on traditional techniques and expertise.</p>	<p>Agriculture Infrastructure</p>
	<p>Address climate risk and resilience through the Pilot Programme for Climate Resilience (PPCR) is the largest project in St. Vincent and Grenadines, which was specifically designed to do exactly that. The PPCR proposes to enhance climate risk management through the following broad strategies:</p> <ul style="list-style-type: none"> Strengthen community resilience to cope with climate hazards. Design and implement gender sensitive disaster risk management initiatives. Collaborate with communities at all levels of climate and disaster risk management. <p>The PPCR has four main components. Component 3: Comprehensive framework for strengthening of the existing policy, legal and institutional framework to address Climate Change. This component seeks to strengthen the existing policy, legal and institutional framework. It will commence with comprehensive review of current policies, plans and legislative framework to improve SPRC implementation in St. Vincent and the Grenadines. It will also involve finalizing various policies, drafting a disaster management plan and preparing and finalizing an Environmental Management Act and Environmental Impact Assessment Regulations.</p> <p>Prevent and manage the causes and impacts of disaster through Principle 9 of the National Environmental Management Strategy and Action Plan. There are strategies, with specific activities, that are designed to help NEMO achieve this part of the environmental management plan. Strategy 29 in particular, is to “Establish at the community and national levels, appropriate and relevant integrated frameworks to prevent, prepare for, respond to, recover from and mitigate the causes and impacts of natural phenomena on the environment and to prevent manmade disasters”:</p> <ul style="list-style-type: none"> Address policy, data management, infrastructure and capacity issues in the areas of Climate Change Adaptation and Disaster Risk Management through the Regional Disaster Vulnerability Reduction (RDVRP) Project 2011-2018 estimated to cost US\$20.92 million. It seeks to measurably decrease the vulnerability of people and the national economy of St. Vincent and the Grenadines to climate change and natural hazards. Address infrastructural support in response to climate change and sea-level rise. Through the Pilot Project on Climate Resilience (PPCR) 	

<p>13.2: Integrate climate change measures into national policies, strategies and planning</p>	<p>Continue to mainstream climate change adaptation activities into national development planning (through the National Economic and Social Development Plan) as a major focus with several actions identified to support resilience building at all levels.</p> <p>Continue to enshrine elements of the INDC in the national agenda through the existing 'National Social and Economic Development Plan 2013-2025' (Strategic Goal 4), which addresses the strategic necessity to adapt to the changing climate to protect the country's delicate environment while reducing GHG emissions.</p> <p>Continue to promote the importance of energy efficiency in buildings and transport in the 'National Physical Development Plan.</p> <p>Establish, through the national electricity utility provider, VINLEC, a feed-in-tariff to encourage the installation of distributed PV.</p>	<p>All Sectors</p>
<p>13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning</p>	<p>Promote through public education and awareness programme, the potential negative effects of climate change. The proposed strategic interventions include:</p> <p>Increase public awareness with regard to climate change issues.</p> <p>Build resilience to minimize damage to settlement and infrastructure.</p> <p>Develop appropriate legislative and regulatory framework, for proper environmental management, and institutional systems for responding and mitigating effects of climate change.</p> <p>Enhance climate risk management through the following broad strategies of the PPCR:</p> <p>Increase institutional capacity to undertake climate risk management.</p> <p>Strengthen knowledge and awareness.</p> <p>Prepare comprehensive hazard maps for public institutions and communities.</p>	<p>Education</p> <p>Forest and land Use</p> <p>Infrastructure</p> <p>Oceans and Fisheries</p> <p>Rural Development</p>
	<p>The PPCR has four main components:</p> <p>Component 1: Climate vulnerability risk assessment and risk reduction. This component is being piloted in Union Island, Arnos Vale Watershed and the Georgetown Watershed and a range of data relative to other components has been collected.</p> <p>Component 2: Data collection, analysis and information management. There are three key aspects to this Component: the acquisition and installation of telemetric weather stations and software; coastal zone impacts modelling and the development of a harmonized platform for data analysis and data management.</p> <p>Component 3: Comprehensive framework for strengthening of the existing policy, legal and institutional framework to address Climate Change. This component seeks to strengthen the existing policy, legal and institutional framework. It will commence with comprehensive review of current policies, plans and legislative framework to improve SPRC implementation in St. Vincent and the Grenadines. It will also involve finalising various policies, drafting a disaster management plan and preparing and finalising an Environmental Management Act and Environmental Impact Assessment Regulations.</p> <p>Component 4: Design and implementation of a public education and capacity building programme. This component will provide for a range of initiatives in support of public and private sector capacity building. These include a national 3-year public education programme to build community-based climate risk and resilience, provide a national curriculum for schools in climate change and disaster risk reduction, plan and develop an early warning system for St. Vincent and the Grenadines, provide technical training and extend the school risk assessment to cover all constituencies in the country.</p> <p>Address issues of rapid deforestation, limited involvement of communities in forest resource management, weak institutional capacity, lack of an approved forestry policy framework, fragmented environmental management and limited awareness of the importance of forests to national development through the implementation of the National Forest Resources Conservation Plan (1994-2003) and Integrated Forest Management and Development Programme.</p>	

<p>13.b: Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities * Acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change.</p>	<p>Pursue national level market-based instruments, such as cap-and-trade emission trading schemes and offsetting, are crucial to price carbon emissions and keep the costs of mitigation in Saint Lucia low. These will be pursued to encourage implementation of the proposed mitigation measures drawing on any applicable international arrangements.</p>	<p>Education Rural Development</p>
<p>14. Life below water</p>		
<p>14.2: By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans</p>	<p>Minimize damage to beach and shoreline integrity and marine ecosystems. Continue to promote the country as a dive destination and has signed on to the Caribbean Challenge Initiative (CCI) with the pledge to protect 20% of its near shore marine and coastal resources by 2020. Other initiatives include: Participate in the 'Improving the Management of Coastal Resources and the Conservation of the Marine Biodiversity in the Caribbean Region' project which is seeking to address marine resources management and strengthen capacity of stakeholders through a common institutional framework for management of marine protected areas (MPA) in the Caribbean Region. Formulate coastal zone related policies through the activities of the PPCR. Reduce climate change induced risks for the population through coastal protection through various specific initiatives including, (i)The Sans Souci Coastal Defence Project; (ii)At the Water's Edge (AWE): Coastal Resilience in Grenada and St. Vincent and the Grenadines (2011-2016) project; and Coastal Protection for Climate Change Adaptation in the Small Island States in the Caribbean 2014-2018 project.</p>	<p>Oceans and Fisheries</p>
<p>14.5: By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information</p>	<p>Continue to promote the country as a dive destination and has signed on to the Caribbean Challenge Initiative (CCI) with the pledge to protect 20% of its near shore marine and coastal resources by 2020.</p>	<p>Oceans and Fisheries</p>
<p>15. Life on Land</p>		
<p>15.1: By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements</p>	<p>Land Use, Land Use Change and Forestry (LULUCF): St. Vincent and the Grenadines intends to develop its GHG sinks through reforestation, afforestation reduced deforestation and reduced forest degradation. At this stage, good quality data does not exist for the forestry inventory, however this is in the process of being addressed. Once the forestry inventory is compiled, policies and actions will be developed for the sector, however the related contribution is not quantifiable at this stage. Policies and actions may be delivered through mechanisms such as the 'Clean Development Mechanism' (CDM) and 'Reducing Emissions from Deforestation and Forest Degradation' (REDD).</p>	<p>Forest and Land Use</p>
<p>15.2: By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally</p>	<p>Land Use, Land Use Change and Forestry (LULUCF): St. Vincent and the Grenadines intends to develop its GHG sinks through reforestation, afforestation reduced deforestation and reduced forest degradation. At this stage, good quality data does not exist for the forestry inventory, however this is in the process of being addressed. Once the forestry inventory is compiled, policies and actions will be developed for the sector, however the related contribution is not quantifiable at this stage. Policies and actions may be delivered through mechanisms such as the 'Clean Development Mechanism' (CDM) and 'Reducing Emissions from Deforestation and Forest Degradation' (REDD). Address issues of rapid deforestation, limited involvement of communities in forest resource management, weak institutional capacity, lack of an approved forestry policy framework, fragmented environmental management and limited awareness of the importance of forests to national development through the implementation of the National Forest Resources Conservation Plan (1994-2003) and Integrated Forest Management and Development Programme.</p>	<p>Forest and Land Use</p>

16. Peace, justice and strong institutions		
17. Partnerships for the goals		
17.3: Mobilize additional financial resources for developing countries from multiple sources	Sought international support in capacity building and finance for the LULUCF sector. Sought to help establish a related programme of mitigation actions.	All Sectors
17.16: Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries	Obtain financial and capacity-building support to help produce a Nationally Appropriate Mitigation Action (NAMA) for the country's transport sector. This is a key priority if national GHG emissions are to be stabilised and reduced over the coming years.	Education Energy Efficiency Renewable Energy

Table A13.8: NDC-SDG Linkages: Alignment between Suriname Climate and Sustainable Development Objectives

Sustainable Development Objectives	Suriname Climate Objectives	
Targets	NDC Objectives	Priority Sector (s)
1. No poverty		
2. Zero hunger		
2.4: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality	<p>Rehabilitate and enhance the infrastructure such as dikes and river defences (precondition). Improve the water resources management. Promote the sustainable land management. The following additional measures, identified in the National Adaptation Plan as priorities for the first phase and in the REDD+ strategy, are included as unconditional contributions: Strengthen the national capacity to develop and implement climate change mitigation and adaptation. The Government of Suriname will first scope and then implement a national research, development and innovation program, and strengthen agricultural research. A primary objective of the program will be to develop and provide effective diffusion of new agricultural practices and technologies, including climate-smart agricultural systems. Promote shifting cultivation, the most common agricultural production system in the interior of Suriname; it is mainly practiced by vulnerable communities at a small-scale for subsistence or local consumption. Food security in the interior is important, yet the impacts of climate change on this farming system are not well understood. One priority area of research is to identify, trial and introduce more permanent agricultural systems to replace traditional shifting cultivation methods, thus strengthening resilience.</p>	<p>Agriculture Forest and Land Use Water</p>
2a: Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries	Adapt to impacts and building resilience were central to the 2015 NDC. This included the following unconditional contribution of applying innovative technologies in the use of land.	Agriculture
3. Good health and well-being		
3.d: Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks	Continue the work in integrating climate resilience in infrastructure programs as well as in the social and productive sectors such as in agriculture, coastal zone, education, health, and tourism, within the limitations of its own domestic financial resources.	<p>Agriculture Education Health Industry Infrastructure Oceans and Fisheries</p>
4. Quality education		
5. Gender equality		

6. Clean water and sanitation		
6.6: By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	<p>Deploy the forests, as part of a global mitigation contribution as well as continue promoting and introducing the use of renewable energy, specifically in remote areas, provided adequate financing is made available to support these transitions.</p> <p>Increase efforts at sustainable forest and ecosystem management and stabilizing and minimizing deforestation and forest degradation unconditionally.</p> <p>Continue to pursue the establishment 13% of its total land area under a national protection system by increasing the percentage of forests and wetlands under preservation.</p> <p>Strengthen forest governance institutions and collaboration with the private sector and other stakeholders and to expand its program of awareness, monitoring and enforcement while also promoting research and a comprehensive forest inventory to provide detailed information on forests.</p> <p>Continue the process of REDD+ Readiness at the national level, with initial steps to be taken to assess the drivers of deforestation and to develop strategy, approaches, and options among the key sectors including agriculture, logging, and mining.</p> <p>At the strategic level, Suriname has Implement several critical mitigation measures outlined in the 2012-2016 National Development Plan, to include the protection of freshwater resources in ground aquifers and rivers.</p>	<p>Education</p> <p>Forest and Land Use</p> <p>Water</p>
7. Affordable and clean energy		
7.1: By 2030, ensure universal access to affordable, reliable and modern energy services	<p>Suriname is prepared to deploy its forests, as part of a global mitigation contribution as well as continue promoting and introducing the use of renewable energy, specifically in remote areas, provided adequate financing is made available to support these transitions.</p>	<p>Renewable Energy</p> <p>Rural Development</p>
7.2: By 2030, increase substantially the share of renewable energy in the global energy mix by 2030	<p>Deploy the forests, as part of a global mitigation contribution as well as continue promoting and introducing the use of renewable energy, specifically in remote areas, provided adequate financing is made available to support these transitions.</p> <p>Continue the initiatives to advance solar energy for communities in the hinterland, including a study on waste-to-energy at the national landfill, and micro-hydro power projects in the Interior.</p> <p>In consideration are 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.</p> <p>Continue to transition the energy sector to ensure it stays above 25% renewable by 2025, through existing efforts and with funding for implementation.</p> <p>Introduce and implement various types of renewable energy requires, for instance, the installation of solar panel parks as well as micro-hydro power unit river systems; application of biomass-to-energy technology; installation of windmills; and implementation of waste-to-energy technology.</p>	<p>Renewable Energy</p> <p>Rural Development</p> <p>Waste</p>
7.3: By 2030, double the global rate of improvement in energy efficiency	<p>Suriname has drafted a National Energy Plan 2013-2033 outlining a long-term vision and strategy to establish a modern, efficient, affordable energy sector that offers long-term energy security and at the same time advances international competitiveness.</p> <p>Continue the nation-wide energy efficiency programme aimed at consumer awareness and usage of energy-saving light bulbs as well as promoting energy efficient designs for buildings.</p>	<p>Energy Efficiency</p> <p>Infrastructure</p>

8. Decent work and economic growth		
<p>8.3: Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services</p>	<p>The 2017 – 2021 Policy Development Plan aim for the forest sector is to increase its contribution to the economy and the welfare of this and future generations, including through biodiversity preservation. This will be achieved by increasing the income from timber production, but also by stimulating the markets for non-timber forest products and ecosystem services. The strategic goal for the forestry sector has been formulated as follows: “The compensation for the conservation of Suriname’s pristine tropical forest which is necessary for a better world environment, contributes to the national growth and development as well as the income of village communities, competitive small, medium-sized and large companies that increase and diversify the national production and export through forestry and wood processing.” Suriname is implementing a major REDD+ strategy. The Strategy covers five main programs aiming at attracting and guiding the allocation of international and national funding, including: The preservation of forests must provide payment for ecosystem services and opportunities for development, especially for indigenous and tribal peoples (ITPs) living in and depending on these forests. In line with the PDP 2017-2021, Suriname wants to increase the contribution of forests to the economy. Alternative livelihoods for forest-dependent communities adds to the diversification of the economy, by using the opportunities provided by nature while protecting the environment. This includes promotion of non-timber forest products (NTFP), nature tourism, medicinal plants and agroforestry. The PDP 2017-2021 anticipates the phased elimination of round wood exports and the increase of national value added to forest products. This would promote economic diversification and benefit local and national employment. Support is needed to promote sustainable forest management practices (in process and size) and increasing value and efficiency in the forestry sector.</p>	<p>Forest and Land Use</p>
9. Industry, innovation and infrastructure		
<p>9.1: Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all</p>	<p>Suriname has outlined in the 2012-2016 National Development Plan, several critical mitigation measures to be implemented which include the rehabilitation and enhancement of infrastructure such as dikes to protect the coastal zone. Further research and vulnerability assessments, infrastructure programs, and mainstreaming climate change in the social and productive sectors are critical actions to be taken in increasing resilience to climate change in the coastal zone as well as in the Interior.</p>	<p>Industry Infrastructure Oceans and Fisheries Transport</p>
<p>9.4: By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities</p>	<p>Continue the work in integrating climate resilience in infrastructure programmes as well as in the social and productive sectors such as in agriculture, coastal zone, education, health, and tourism, within the limitations of its own domestic financial resources.</p>	<p>Agriculture Education Health Industry Infrastructure Oceans and Fisheries</p>
10. Reduced inequalities		

11. Sustainable cities and communities

<p>11.2: By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons</p>	<p>The National Development Policy Plan (2017-2022) considers transport and infrastructure key for the development of other sectors.</p> <p>The Final National Climate Change Policy, Strategy and Action Plan (2014-2021), however, includes the following measures:</p> <p>Adapt urban planning and incorporating measures to reduce GHGs (such as reduce traffic congestion and reuse road material); and</p> <p>Reduce emissions by amending the current legislation to regulate levels from exhaust gases.</p> <p>The National Adaptation Plan (2019) recommends to updated design criteria for resilient infrastructure, protection and flood mitigation and adaption measures. A contribution will, therefore, be made through a number of investment projects for improving the road and drainage infrastructure, this includes sea defences infrastructure (grey and green) for Paramaribo, upgrading of roads and canals. In the north it can be protected by a green sea defences system consisting of sufficient clay dams or retaining walls, combined with wetlands. In the south, the Saramacca Canal is in serious need for upgrading, and actions for the first step of upgrading are being taken. However, the total investment in upgrading the drainage system and flood protection is estimated to reach up to more than USD 500 million. The investments can be made jointly by the Government of Suriname and development partners.</p> <p>With respect to transport the objective is to rehabilitate main roads, protect roads from flooding and decrease travel time and increase safety, with the activities aimed to:</p> <p>Improve the public transport system, including adding separate bus lanes, public bus hubs outside the city center and shuttle bus inside the city center.</p> <p>Improve traffic management, planning together with urban planning.</p> <p>Increase public roads and walkways of Suriname by enhancing the “green component” as well as green terraces and parks (Green City).</p>	<p>Cities and Urban Development Transport</p>
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12. Responsible consumption and production

<p>12.5: By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse</p>	<p>Implement waste-to-energy technology.</p>	<p>Renewable Energy</p>
<p>12.8: By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature</p>	<p>Continue the nation-wide energy efficiency programme aimed at consumer awareness and usage of energy-saving light bulbs as well as promoting energy efficient designs for buildings.</p>	<p>Energy Efficient Rural Development</p>
<p>12.b: Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products</p>	<p>Continue the work in integrating climate resilience in infrastructure programs as well as in the social and productive sectors such as in agriculture, coastal zone, education, health, and tourism, within the limitations of its own domestic financial resources.</p>	<p>Agriculture Education Health Industry Infrastructure Oceans and Fisheries</p>

13. Climate action		
13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	<p>Implement several critical mitigation measures to include drainage for urban and non-urban areas and instituting measures towards increasing ecosystem resilience to ensure these naturally adapt to the changing climate as outlined in the 2012-2016 National Development Plan.</p> <p>Continue the work in integrating climate resilience in infrastructure programs as well as in the social and productive sectors such as in agriculture, coastal zone, education, health, and tourism, within the limitations of its own domestic financial resources.</p> <p>Continue further research and vulnerability assessments, infrastructure programmes, and mainstreaming climate change in the social and productive sectors are critical actions to be taken in increasing resilience to climate change in the coastal zone as well as in the Interior.</p>	<p>Agriculture Cities and Urban Development Education Forest and Land Use Health Industry Infrastructure Oceans and Fisheries Rural Development Transport</p>
13.2: Integrate climate change measures into national policies, strategies and planning	<p>Continue the work in integrating climate resilience in infrastructure programs as well as in the social and productive sectors such as in agriculture, coastal zone, education, health, and tourism, within the limitations of its own domestic financial resources.</p> <p>Continue further research and vulnerability assessments, infrastructure programmes, and mainstreaming climate change in the social and productive sectors are critical actions to be taken in increasing resilience to climate change in the coastal zone as well as in the Interior.</p>	<p>Agriculture Education Health Industry Infrastructure Oceans and Fisheries</p>
13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	<p>Suriname has drafted a National Energy Plan 2013-2033 outlining a long-term vision and strategy to establish a modern, efficient, affordable energy sector that offers long-term energy security and at the same time advances international competitiveness.</p> <p>Continue the nation-wide energy efficiency programme aimed at consumer awareness and usage of energy-saving light bulbs as well as promoting energy efficient designs for buildings.</p>	<p>Education Energy Efficiency Forest and Land Use Renewable Energy Waste</p>
14. Life below water		
14.2: By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans	<p>A draft law for the protection of the mangrove forest along the North Atlantic coast of Suriname was prepared by the government. In addition, coastline stabilization by means of 'wave breakers' to reduce wave force, promote sedimentation and subsequent mangrove regeneration, will increase mangrove forest stock and carbon sequestration.</p> <p>At the strategic level, Suriname has outlined in the 2012-2016 National Development Plan, several critical mitigation measures to be implemented which include the rehabilitation and enhancement of infrastructure such as dikes to protect the coastal zone.</p> <p>Continue the work in integrating climate resilience in infrastructure programs as well as in the social and productive sectors such as in agriculture, coastal zone, education, health, and tourism, within the limitations of its own domestic financial resources.</p> <p>Implement adaptation measures to build climate resilience to include improving natural and mechanical infrastructure such as dikes and river defenses, mangrove protection, restoration and expansion, and water management.</p> <p>Critical adaptation measures include the drafted law for protecting the unprotected parts of the mangrove forests along the coast.</p> <p>Continue further research and vulnerability assessments, infrastructure programs, and mainstreaming climate change in the social and productive sectors are critical actions to be taken in increasing resilience to climate change in the coastal zone as well as in the Interior.</p>	<p>Infrastructure Oceans and Fisheries</p>

<p>15.1: By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements</p>	<p>Suriname maintains its contribution as a high forest cover and low deforestation (HFLD) country committed to maintaining 93% forest cover. Significant international support is needed for the conservation of this valuable resource in perpetuity.</p> <p>In accordance with the GoS 2015 NDC unconditional contribution, Suriname intends to increase efforts at sustainable forest and ecosystem management and stabilizing and minimizing deforestation and forest degradation unconditionally. Opportunities for emission reductions through Sustainable Forest Management practices of up to 40% exist if forest operators chose controlled over conventional forest management practices.</p> <p>Suriname is currently drafting a new Nature Conservation Law in a participatory process, to enable improved management of its protected areas. This law will replace the Nature Conservation Act of 1954.</p> <p>Since the submission of the 2015 NDC, the REDD+ National Strategy (2018) has been prepared.</p> <p>Continue the implementation of a major REDD+ strategy. The Strategy covers five main programs aiming at attracting and guiding the allocation of international and national funding, including: Improved legislation and capacity for enforcement can improve sustainability; and the protection and management of protected areas is the highest priority for biodiversity preservation in the PDP 2017-2021. It states mangrove forests that protect the Atlantic coastline will be protected within a scheme coupled with improved land zoning and enforcement capacities.</p> <p>The country aims to maintain forest resources, while increasing the contribution of those resources to economic development in a sustainable manner and to increase the coverage of protected areas and provide for their protection</p>	<p>Forestry and Land Use</p>
<p>15.2: By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally</p>	<p>Deploy the forests, as part of a global mitigation contribution as well as continue promoting and introducing the use of renewable energy, specifically in remote areas, provided adequate financing is made available to support these transitions.</p> <p>Suriname is currently piloting a national forest inventory. Suriname intends to increase efforts at sustainable forest and ecosystem management and stabilizing and minimizing deforestation and forest degradation unconditionally.</p> <p>Suriname has established 13% of its total land area under a national protection system and will continue to pursue the expansion of this system by increasing the percentage of forests and wetlands under preservation.</p> <p>Continue to undertake the process of REDD+ Readiness at the national level, with initial steps being taken to assess the drivers of deforestation and to develop strategy, approaches, and options among the key sectors including agriculture, logging, and mining.</p>	<p>Forestry and Land Use</p>
<p>15.3: By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world</p>	<p>Suriname intends to increase efforts at sustainable forest and ecosystem management and stabilizing and minimizing deforestation and forest degradation unconditionally.</p> <p>Suriname has established 13% of its total land area under a national protection system and will continue to pursue the expansion of this system by increasing the percentage of forests and wetlands under preservation.</p>	<p>Agriculture Forestry and Land Use</p>

<p>15.5: Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species</p>	<p>The 2017 – 2021 Policy Development Plan aim for the forest sector is to increase its contribution to the economy and the welfare of this and future generations, including through biodiversity preservation.</p> <p>Suriname is implementing a major REDD+ strategy. The Strategy covers five main programs aiming at attracting and guiding the allocation of international and national funding, including the protection and management of protected areas is the highest priority for biodiversity preservation in the PDP 2017-2021. It states mangrove forests that protect the Atlantic coastline will be protected within a scheme coupled with improved land zoning and enforcement capacities.</p> <p>Increase the contribution of forests to the economy and welfare by providing alternative livelihoods that contribute to diversification, using the opportunities provided by nature, while at the same time protecting the environment, and increasing the well-being of Suriname citizens.</p>	<p>Forestry and Land Use</p>
<p>16.7: Ensure responsive, inclusive, participatory and representative decision-making at all levels</p>	<p>Promote and facilitate public participation and encourage actions they can take to address climate change and its effects. The government will create a framework through which early stakeholder involvement and participation can be guided. Through this framework, the legitimacy of policy will consider the interests of stakeholders and affected parties.</p> <p>Suriname is currently drafting a new Nature Conservation Law in a participatory process, to enable improved management of its protected areas. This law will replace the Nature Conservation Act of 1954.</p>	<p>Forest and Land Use</p>
<p>17.3: Mobilize additional financial resources for developing countries from multiple sources</p>	<p>For Suriname, there are four critical elements necessary for international collaboration, including:</p> <p>Direct access to climate finance; Compensation for loss and damage; and</p> <p>Compensation for the forest climate services that forest countries have been and continue to provide.</p> <p>In addition, the introduction and implementation of various types of renewable energy requirements, for instance, the installation of solar panel parks as well as micro-hydro power unit's river systems; application of biomass-to-energy technology; installation of windmills; and implementation of waste-to-energy technology. These, in turn, require human and institutional capacity building and financing.</p>	<p>Agriculture Education Energy Efficiency Forest and Land Use Renewable Energy Transport</p>
<p>17.7: Fully operationalize the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology</p>	<p>Promote the area of Technology transfer to large-scale adaptation and mitigation targets targeted for international collaboration.</p>	<p>Agriculture Water</p>
<p>17.9: Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the sustainable development goals, including through North-South, South-South and triangular cooperation</p>	<p>Introduce and implement various types of renewable energy requires, for instance, the installation of solar panel parks as well as micro-hydro power unit's river systems; application of biomass-to-energy technology; installation of windmills; and implementation of waste-to-energy technology. These, in turn, require human and institutional capacity building and financing.</p>	<p>Renewable Energy</p>

Table A13.9: NDC-SDG Linkages: Alignment between Trinidad and Tobago Climate and Sustainable Development Objectives

Sustainable Development Objectives	Trinidad and Tobago Climate Objectives	
Targets	NDC Objectives	Priority Sector (s)
1. No poverty		
2. Zero hunger		
3. Good health and well-being		
4. Quality education		
5. Gender equality		
6. Clean water and sanitation		
7. Affordable and clean energy		
7.2: By 2030, increase substantially the share of renewable energy in the global energy mix by 2030	Trinidad and Tobago already produces all of its electricity from natural gas and is working towards achieving greater efficiency through combined cycle generation at all its power plants. This sector would therefore be at the edge of low carbon emissions with renewable energy being the next stage for reducing emissions even further. The objective therefore is to achieve the optimal energy mix with the lowest greenhouse gas emissions in order to achieve sustainable development, including the decoupling of emissions and economic growth.	Energy Efficiency Renewable Energy
7.3: By 2030, double the global rate of improvement in energy efficiency	Trinidad and Tobago already produces all of its electricity from natural gas and is working towards achieving greater efficiency through combined cycle generation at all its power plants. The objective therefore is to achieve the optimal energy mix with the lowest greenhouse gas emissions in order to achieve sustainable development, including the decoupling of emissions and economic growth.	Energy Efficiency Renewable Energy
8. Decent work and economic growth		
9. Industry, innovation and infrastructure		
9.4: By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	The Energy Chamber of Trinidad and Tobago is developing a feasible carbon trading scheme that will also result in reduced emissions in the industrial sector.	Industry
10. Reduced inequalities		
11. Sustainable cities and communities		
11.2: By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	The Mitigation Objectives: 30% reduction in GHG emissions by December 31, 2030, in the public transportation sector compared to a business as usual (BAU) scenario (reference year 2013).	Transport
12. Responsible consumption and production		
13. Climate action		
13.a: Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly \$100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible	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.	Energy Efficiency Oceans and Fisheries

14. Life below water		
15. Life on land		
16. Peace, justice and strong institutions		
17. Partnerships for the goals		
17.3: Mobilize additional financial resources for developing countries from multiple sources	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.	All Sectors

Annex 14: Categories and Subcategories of the CCBII Assessment Methods

Table A14.1: Categories and Subcategories of the CCBII Assessment Methods

Category/Subcategory	Assessment Mode
P1. Policy and Strategic Planning Context for CC	
• P1.a. Existence of a specific high-level policy on CC	Desk review
• P1.b. Level of endorsement of the CC policy /ies	Desk review
• P1.c. Existence of specific policy targets and costs that can be linked with budgets	Desk review
• P1.d. Reflection of CC policies in strategic budget documents	Desk review
P2. Requirements: Legislative and other procedural requirements on CC dimension for PFM	
• P2.a. Legislative or procedural requirements on CC finance presentation in budgets	Desk review
• P2.b. Budget guidelines /instructions	Desk review
• P2.c. Institutional scope of the requirements on CC finance	Desk review
• P2.d. Nature of the information required	Desk review
P3. Priorities: Climate Change as a Priority in the budget system	
• P3.a. Programme/Project appraisal systems	Desk review
• P3.b. Prioritization factors on CC	Desk review
• P3.c. Institutional prioritization of the climate	Desk review
• P3.d. Adherence to ceilings	Own calculations
S1. Reporting: Climate Change Expenditure Reporting	
• S1.a. Status of reports on CC expenditures	Desk review
• S1.b. Nature of the CC budget expenditure reporting system	Desk review
• S1.c. Validation of the reports on CC expenditures by the SAI	Desk review
S2. Coding: CC budget coding (FMIS)	
• S2.a. Application of CC coding on budget allocations	Desk review
• S2.b. Application of CC coding on budget actual expenditures	Desk review
• S2.c. Availability and timeliness of the CC information	Desk review
Calculation: Methodology on calculating CC finance	
• S3.a. Status of the CC finance calculation methodology	Desk review
• S3.b. Accuracy of accounting CC finances	Desk review
• S3.c. Criteria	Desk review
• S3.d. Scope	Desk review
• S3.e. Comparability	Desk review
A1. Performance: CC performance information	
• A1.a. Availability of CC performance information	Desk review
• A1.b. SMART-ness of indicators	Desk review / evaluation
• A1.c. Performance information used during budget planning /costing	Desk review / interview
A2. National Parliament: Parliament's engagement in the CC budget discussions	
• A2.a. Parliament committee on climate change	Desk review
• A2.b. The role of the parliament on the CC dimension during budget scrutiny	Desk review / interview
• A2.c. CC finance effectiveness/ efficiency analysis	Desk review
• A2.d. CC finance accountability	Desk review / interview
A3. CSO: CSO participation in CC finances	
• A3.a. Institutional partnership of CSOs with the government on CC finances	
• A3.b. CSOs and the Budget preparation	Desk review / interview
• A3.c. CSOs and the Budget monitoring and reporting	Desk review / interview
D1. Donors: Integration of CC activities of Development Partners in the national PFM systems	
• D1.a. Procedural requirements on CC planning, budget execution and monitoring/reporting in the country's domestic PFM system for donor-related programmes/projects	Desk review
• D1.b. DP's CC finance information systems	Desk review / interview
• D1.c. Presentation of DP's CC programmes (budgets) in budget documentation	Desk review
• D1.d. % of CC funds channelled through national PFM systems	Desk review / interviews and own calculations





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