



# St. Vincent and the Grenadines

## Intended Nationally Determined Contribution

Communicated to the UNFCCC on November 18, 2015

### 1. The National Context

St. Vincent and the Grenadines is a multi-island nation consisting of 32 islands each with its own characteristics. It is located in the Eastern Caribbean and has a population of approximately 110,000. St. Vincent is the largest of the 32 islands that comprise the nation, covering roughly 390 sq. km (150 sq. miles). The Grenadines extend 72 km (45 miles) to the southwest. The other inhabited islands, north to south, are Young Island, Bequia, Mustique, Canouan, Mayreau, Union Island, Palm Island, and Petit St. Vincent. The Government of St. Vincent and the Grenadines (GoSVG) ratified the United Nations Framework Convention on Climate Change (UNFCCC) in 1996 and the Kyoto Protocol in 2004. This INDC represents St. Vincent and the Grenadines' intention and has no legal status. Any form of commitment is yet to be decided, pending the outcomes of the 21<sup>st</sup> Conference of the Parties to the UNFCCC in Paris in December 2015.

The geography, geology and socio-economic circumstances of St. Vincent and the Grenadines make it extremely vulnerable to climate-related natural disasters. Due to its mountainous topography, most activities on the mainland are concentrated on the narrow, low-lying coast line, at risk to sea-level rise (SLR) and coastal erosion while the landscape also adds risks of landslides and flash flooding. An increase in severe weather events will result in significant expenditures, which will further constrain St. Vincent and the Grenadines' social and economic growth.

St. Vincent and the Grenadines have suffered significant impacts over the past five years (2010 to 2014<sup>1</sup>) as a result of severe weather events. In total, the loss to the country was in excess of US\$600 million<sup>2</sup> over that period, equating to approximately 35% of its Gross

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<sup>1</sup> Hurricane Tomas (October 2010); tropical storm (April 2011 and December 2013); two prolonged droughts (2010 and 2014)

<sup>2</sup> <http://gov.vc/pmoffice/images/stories/Speeches/2015%20budget%20address%20-%20final.pdf>

Domestic Product (GDP). With per capita GDP amongst the lowest in the Caribbean<sup>3</sup>, severe weather events caused by anthropogenic climate change will fundamentally restrict economic development. The increased coastal erosion, droughts, storms, floods and landslides of the last decade have severely impacted livelihoods and government have neither the financial or technical resources to address these challenges.

Climate projections for St. Vincent and the Grenadines suggest an increase in average atmospheric temperature; reduced average annual rainfall; increased Sea Surface Temperatures (SST); and the potential for an increase in the intensity of tropical storms<sup>4</sup>. There is currently no monitoring of sea level around St. Vincent and the Grenadines; however observations from tidal gauges surrounding the Caribbean basin indicate that SLR in the Caribbean is broadly consistent with the global trend.

The Intergovernmental Panel on Climate Change (IPCC), in their 5<sup>th</sup> Assessment Report, states the following projected changes over 2081–2100 (relative to 1986–2005) for the Caribbean for an intermediate low-emissions scenario:

- a decrease in average annual rainfall of about 5–6%;
- a 1.2°C to 2.3°C median annual increase in surface temperature; and
- sea level rise projections in the region of 0.5 m to 0.6 m<sup>5</sup>.

With climate-related events already causing damage and loss, these projections have dire implications for agriculture, water availability, and the protection of public and tourism infrastructure if no meaningful action is taken.

Despite the obvious focus on adaptation to climate change and the fact that greenhouse gas (GHG) emissions from St. Vincent and the Grenadines only account for approximately 0.001% of global emissions<sup>6</sup>, the GoSVG is striving to reduce its emissions. As well as developing a national Energy Action Plan, there is a comprehensive Mitigation Assessment in the forthcoming Second National Communication. The largest contributor to reducing emissions will be the installation of a geothermal electricity generation facility, which when operational will provide over 50% of the country's electricity needs. Further to this, initiatives are underway to improve energy efficiency in buildings and transport as well as reduce emissions from waste going to landfill.

St Vincent and the Grenadines would like to express its support for the Republic of China (Taiwan) which has completed its own INDC despite not being a Party to the UNFCCC. Taiwan has committed to reduce its GHG emissions by 50 percent compared to its business-as-usual scenario by 2030 (20% lower than 2005). We, therefore, urge the UNFCCC to consider the observership of Taiwan in this mechanism.

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<sup>3</sup> <http://caribjournal.com/2013/10/16/ranking-the-caribbean-by-gdp-per-capita/#>

<sup>4</sup> CARIBSAVE Climate Change Risk Atlas (CCCRA) - St. Vincent and the Grenadines. DFID, AusAID and The CARIBSAVE Partnership, Barbados, West Indies.

<sup>5</sup> IPCC, 2014: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change

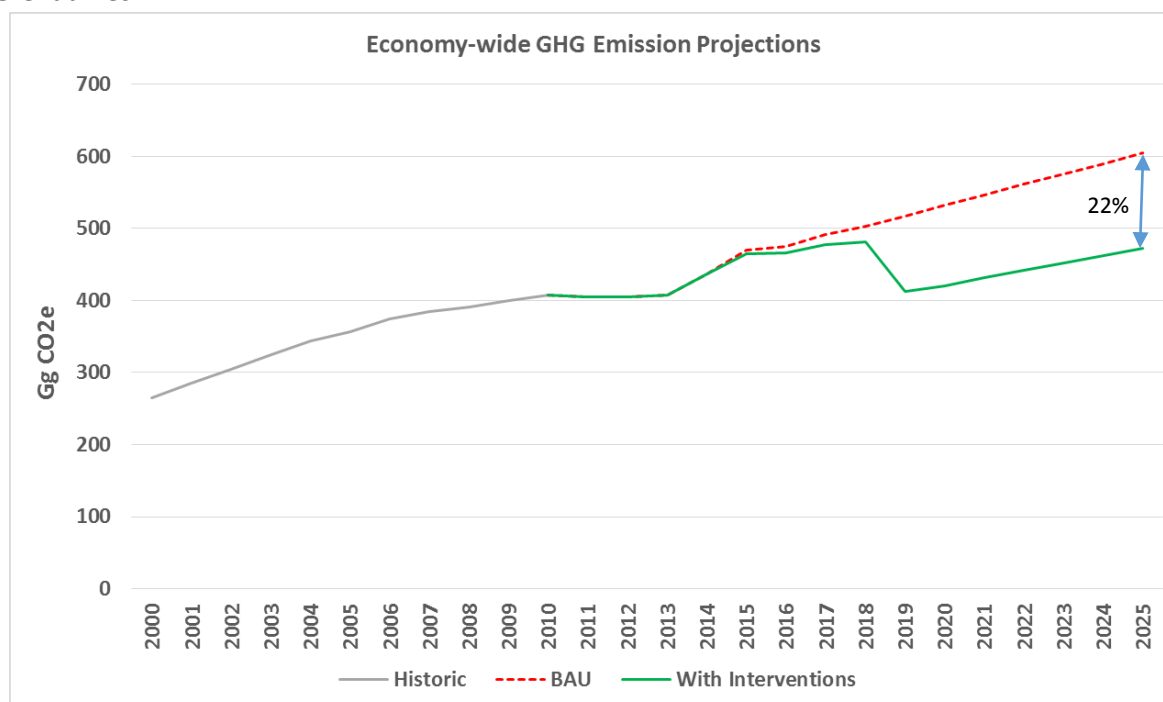
<sup>6</sup> Based on national GHG emissions taken from the forthcoming Second National Communication

## 2. Mitigation

### *Economy-wide Contribution*

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.**

**Figure 1: Projected BAU and 'With Interventions' GHG emission scenarios for St. Vincent and the Grenadines**



While the proposed contribution is economy-wide and is in comparison to all sectors and sources of emissions<sup>7</sup>, the contribution is based upon key measures in the energy (including energy generation, energy efficiency and transport) sector. The following sections explain the strategies and measures which will be undertaken to deliver the contribution.

The energy sector accounted for approximately 68% of St. Vincent and the Grenadines' GHG emissions in 2010<sup>8</sup> with projected further growth through to 2025, and is therefore the focus of its mitigation activity. Within the sector, approximately 50% of emissions can be attributed to energy generation and approximately 50% from transport. The following sub-sector mitigation contributions have been identified:

- i. Renewable energy: the plans for renewable energy generation are focused on the development of the country's proposed geothermal power plant (planned to be completed in 2018). The facility, when complete, will generate approximately 50% of the national annual electricity consumption needs. In addition to the geothermal

<sup>7</sup> Excluding international aviation and shipping

<sup>8</sup> St. Vincent and the Grenadines 2010 Mitigation Assessment (to be published shortly as part of the Second National Communication). This forms part of the Second National Communication Report, which will be submitted to the UNFCCC shortly.

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.

- ii. Energy efficiency: there is an objective to achieve a 15% reduction in national electricity consumption<sup>9</sup> compared to a BAU scenario by 2025. Planned measures in this sector include the retrofitting of street lighting nationally, a new building code and an energy labelling scheme for appliances.
- iii. 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<sup>10</sup>.

Significant potential for greater reductions (e.g. improved public transport) is achievable if international finance can be made available, however this needs further analysis to quantify the reduction potential and support required and consequently these measures have not been included in the economy-wide contribution at this stage. Currently, transport is the fastest growing source of emissions and reductions from this sector will be largely dependent on international financial support and technology transfer.

- iv. 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).

### 3. Information to Facilitate Clarity, Transparency and Understanding

| Parameter                                  | Information  |
|--|--|
| Timeframe and/or period for implementation | 2025   |
| Type of contribution                       | Economy-wide emission reduction against BAU              |
| Reference point or base year               | 2010 base year (407 Gg CO <sub>2</sub> e <sup>11</sup> ) |

<sup>9</sup> St. Vincent and the Grenadines Energy Action Plan (2010). The proposed date to achieve this target (2020) has been revised back to 2025 to allow more time for the implementation of policies.

<sup>10</sup> St. Vincent and the Grenadines 2010 Mitigation Assessment (to be published shortly as part of the Second National Communication).

<sup>11</sup> St. Vincent and the Grenadines 2010 Mitigation Assessment (to be published shortly as part of the Second National Communication).

| Parameter   |                         | Information   |
|---|-------------------------|---|
| Estimated quantified impact on GHG emissions                  |                         | Reduction in GHG emissions of 22% compared to its business as usual (BAU) scenario by 2025.   |
| Business as usual methodology                                 |                         | <p>The following assumptions have been made to generate the BAU scenario:</p> <ul style="list-style-type: none"> <li>• Electricity supply – extrapolation of projected energy demand 2015-2018<sup>12</sup></li> <li>• Non-electrical energy supply - assumed to grow consistent with population growth</li> <li>• Domestic transport – extrapolation of historical road vehicle numbers</li> <li>• Municipal Solid Waste generation per capita – assumed to grow consistent with population growth</li> <li>• All other sources (which are estimated together to contribute less than 10% of GHG emissions) have been assumed to increase in line with population growth other than the LULUCF sector, where no change is assumed from 2010.</li> <li>• A fixed BAU scenario is being used for the INDC<sup>13</sup>.</li> </ul> |
| Coverage  | % national emissions    | 100% <sup>14</sup>  |
|   | Sectors <sup>15</sup>   | <ul style="list-style-type: none"> <li>• Energy (including domestic transport)</li> <li>• Industrial processes and product use</li> <li>• Agriculture</li> <li>• Land use, land use change and forestry</li> <li>• Waste</li> </ul>   |
|   | Gases                   | <ul style="list-style-type: none"> <li>• Carbon dioxide (CO<sub>2</sub>)</li> <li>• Methane (CH<sub>4</sub>)</li> <li>• Nitrous oxide (N<sub>2</sub>O)</li> <li>• HFCs</li> </ul>   |
|   | Geographical boundaries | Whole country   |
| Intention to use market-based mechanisms to meet contribution |                         | International support for a Nationally Appropriate Mitigation Action (NAMA) will be sought for the transport sector.  |

<sup>12</sup> Provided by VINLEC (the national electricity utility provider)

<sup>13</sup> BAU scenarios for an INDC can be fixed or dynamic. In this case, a fixed BAU will be used.

<sup>14</sup> Excludes international shipping and aviation and is consistent with IPCC good practice.

<sup>15</sup> Potential emissions reductions from Industrial Processes and Product Use, Agriculture and Land Use, Land Use Change and Forestry were not considered, although these sectors are included in the baseline inventory and therefore the 'economy-wide' savings.

| Parameter               | Information   |
|-------------------------|---|
|                         | <p>St. Vincent and the Grenadines considers the use of instruments for achieving and financing flexibly part of its mitigation target. Therefore St. Vincent and the Grenadines supports the inclusion of the International Carbon Markets and mechanisms such as the CDM in a post-2020 agreement on climate change including the use of the mitigation outcome pre-2020. We propose that such an instrument, together with an appropriate accounting system (MRV), is used to help finance low carbon and climate resilient infrastructure investments. St. Vincent and the Grenadines considers that certain low emission development options mentioned in this INDC, or additional actions, could be entirely or partially funded by the transfer of international carbon assets mobilized through bilateral, regional and international carbon markets while taking into account environmental integrity and transparency.</p> |
| Metrics and methodology | <ul style="list-style-type: none"> <li>• Consistent with methodologies used in St. Vincent and the Grenadines' forthcoming Second National Communication (2006 IPCC Guidelines)</li> <li>• Global Warming Potential on a 100-year timescale in accordance with the IPCC's Fourth Assessment Report</li> </ul>   |

## 4. Vulnerability and Adaptation

### 4.1 National programmes that support climate change adaptation

The economy of St. Vincent and the Grenadines is strongly linked to its natural resources. The country has a long history of coping with natural disasters and, through traditional land cultivation methods and cultural association with the sea, Vincentians also have a long history of natural resource conservation.

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. 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.

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. To reduce the adverse impacts of climate change, the Plan proposes several adaptation measures to reduce future

restoration costs and to protect the natural environment. Public education and awareness of the potential negative effects of climate change are at the forefront of this Plan<sup>16</sup>. The proposed strategic interventions include:

- Increase public awareness with regard to climate change issues;
- Build resilience to minimise damage to settlement and infrastructure;
- Minimise damage to beach and shoreline integrity and marine ecosystems;
- Minimise the negative impact of climate change on agriculture and human health; and
- Develop appropriate legislative and regulatory framework, for proper environmental management, and institutional systems for responding and mitigating effects of climate change<sup>17</sup>.

#### ***4.2 Existing vulnerabilities in the agriculture, forestry and fisheries sectors***

Agriculture is one of the largest economic activities on St. Vincent and it contributes significantly to the economic and social development of rural livelihoods in particular. Offshore fisheries are also important and are predominately small scale and artisanal. Tourism activities are concentrated in the Grenadines islands and all other livelihood activities in these islands are inherently linked to tourism. Such livelihoods are vulnerable to climate change impacts, as they are heavily dependent on the stability of the climate conditions or natural resources.

The agriculture sector in St. Vincent is especially sensitive to extended periods of drought, unevenly distributed rainfall and natural disasters when coupled with existing practices such as mono-cropping and poor soil and water management. Three extreme climatic events over a span of three years (2009 – 2011 inclusive) highlighted the vulnerability in this sector.

- In 2009 there was a water shortage resulting from drought conditions. Many residents in Georgetown practise agriculture and farmers suffered losses from reduced crop production that year. As a consequence, food prices rose and produce had to be imported from other islands to supplement the limited supply in St. Vincent.
- In 2010 hurricane Tomas resulted in losses totalling EC \$35 million, mainly to banana and plantain production.
- During the second week of April 2011 heavy rainfall caused rivers to overflow and landslides in the north-eastern section of St. Vincent in a major agricultural area. This occurred while the sector was still recovering from damages caused by hurricane Tomas in the previous year.

#### ***4.3 Existing vulnerabilities in the tourism sector***

Expected increases in the frequency or magnitude of certain weather and climate extremes (e.g. heat waves, droughts, floods, tropical cyclones) as a result of climate change will affect

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<sup>16</sup> St. Vincent and the Grenadines National Economic and Social Development Plan 2013-2025

<sup>17</sup> St. Vincent and the Grenadines National Economic and Social Development Plan 2013-2025

the tourism industry through increased infrastructure damage, additional emergency preparedness requirements, higher operating expenses (e.g. insurance, backup water and power systems and evacuations) and business interruptions.

Results from the SLR modelling work conducted in 2011 indicate that 1 metre SLR places 10% of the major tourism properties at risk, along with 1% of road networks, 50% of airports and 67% of sea ports. Engineered structures and natural environments (e.g. mangroves) can protect against some of these impacts to coastal regions, but the dynamics of these erosion processes will demand some adaptation of coastal infrastructure and settlements<sup>18</sup>.

#### ***4.4 Existing vulnerabilities in the coastal zone***

More than 90% of the infrastructural development of St. Vincent and the Grenadines lies on a narrow coastal belt less than eight meters above sea-level. These include the island's main communication and emergency response structures - roads, airports, telecommunication, financial, and technical support centres<sup>19</sup>. Additionally, many of the coastal protection ecosystems such as dunes, mangroves and reefs have been removed or are degraded, which exacerbate vulnerability of coastal infrastructure to storm and hurricane activity (particularly wind and storm surges).

#### ***4.5 Existing vulnerabilities in the water resources sector***

Watersheds have also been affected by land degradation due to "squatting, mono-cropping with poor agricultural techniques, global weather patterns (changes in rainfall distribution, drought and elevated atmospheric temperatures), deforestation and excessive use of agrochemicals"<sup>20</sup>.

Climate models suggest that the country will experience drying throughout the year (even during the wet season). Further reduced rainfall would severely impact the water supply of rivers and streams in St. Vincent and is of particular concern for the Grenadine islands which have a very high dependence on rainwater for freshwater supply. An increase in the intensity of rainfall in fewer rain days is also expected, which means that not only is the country vulnerable to droughts, but also to the secondary effects of torrential rains such as landslides and the contamination of water supplies.

#### ***4.6 Existing vulnerabilities in the health sector***

Vector borne diseases may increase due to increased precipitation and temperatures in St. Vincent and the Grenadines. In the St. Vincent and the Grenadines Strategic Plan For Health 2007 – 2012 it was stated that "National household and Breteau indices continue to be above and beyond internationally accepted levels". Dengue is specifically mentioned<sup>21</sup> but malaria cases have also been reported. Data obtained from the Ministry of Health reported 1 imported case of malaria in 2008 and another in 2010. The Caribbean Environmental

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<sup>18</sup> The CARIBSAVE Climate Change Risk Atlas (CCCRA)-St. Vincent and the Grenadines

<sup>19</sup> Forthcoming 'Vulnerability and Adaptation Chapter for the Second National Communication to the UNFCCC'

<sup>20</sup> World Bank, 2006; The CARIBSAVE Climate Change Risk Atlas (CCCRA)-St. Vincent and the Grenadines

<sup>21</sup> St. Vincent and the Grenadines Strategic Plan for Health 2007-2012



Health Institute (2007) has also stated that “There are serious issues related to availability of water, health and sanitation in the context of vector control”<sup>22</sup>.

#### ***4.7 Efforts to adapt to climate change***

A number of steps to address climate change related issues have been taken over the years but now that such efforts are being integrated, it is timely that St. Vincent and the Grenadines is revisiting its draft National Climate Change Policy to further give weight and direction to its efforts in response to climate change.

St. Vincent and the Grenadines has recognised the need to take an integrated approach to adaptation by linking local activities with national policies and sector specific experiences. Climate change adaptation activities have been mainstreamed into national development planning (through the National Economic and Social Development Plan) and continues to be a major focus and several actions have been identified to support resilience building at all levels. The areas which have been incorporated within the plan include: culture, identity and national pride; economic; social capital; governance; national security; energy, disaster management and the environment; physical infrastructure and education, telecommunications, science and technology<sup>23</sup>. The National Economic and Social Development Plan possess nine over-arching goals including:

- High and sustained levels of economic growth;
- Reduced unemployment and poverty levels;
- Improved physical infrastructure and environmental sustainability;
- High levels of human and social development;
- Safe and secure nation;
- Technologically advanced work-force;
- Increase national pride and cultural renaissance;
- Regional integrity; and
- Enhanced global solidarity.

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.

#### ***4.8 National climate change adaptation programmes***

The main activities being implemented at the national level include the following:

- 1. The Pilot Programme for Climate Resilience (PPCR)** is the largest project in St. Vincent and Grenadines specifically designed to address climate risk and resilience. The PPCR proposes to enhance climate risk management through the following broad strategies:
  - a. Strengthen community resilience to cope with climate hazards;
  - b. Increase institutional capacity to undertake climate risk management;
  - c. Strengthen knowledge and awareness;

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<sup>22</sup> The CARIBSAVE Climate Change Risk Atlas (CCCRA)-St. Vincent and the Grenadines

<sup>23</sup> St. Vincent and the Grenadines National Economic and Social Development Plan 2013-2025

- d. Prepare comprehensive hazard maps for public institutions and communities;
- e. Design and implement gender sensitive disaster risk management initiatives; and
- f. Collaborate with communities at all levels of climate and disaster risk management.

The PPCR has four main components<sup>24</sup>:

**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.

**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.

**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.

**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.

#### ***4.9 Adaptation planning in the agriculture sector***

Agriculture which for decades underpinned the economy of St. Vincent and the Grenadines has declined significantly over the last decade due to restrictive trade regimes. This has resulted in significant land use change as demand for housing is often met by developing agricultural lands. However, 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.

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<sup>24</sup> Strategic Programme for Climate Resilience: St. Vincent and the Grenadines Phase 1

- An innovative project which abandoned land into a model for sustainable living and farming systems in St. Vincent, young persons in local primary and secondary schools are taught organic agriculture, environmental art and creative land use.
- The implementation of the National Forest Resources Conservation Plan (1994-2003) and Integrated Forest Management and Development Programme to 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.
- Enhancing 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.

#### **4.10      *Adaptation planning in the coastal zone***

Coastal areas already face pressure from natural forces (wind, waves, tides and currents) and human activities, (beach sand removal and inappropriate construction of shoreline structures). The impacts of climate change, in particular SLR, will magnify these pressures and accelerate coastal erosion. Areas at greatest risk in St. Vincent and the Grenadines are Belmont Walkway, Canash Beach, Indian Bay, Johnson Point and Villa Beach including notable resorts, ports and an airport that lies at less than 6 m above sea level and will therefore be affected<sup>25</sup>.

The country has started to promote itself 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:

- Participating 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.
- Formulating coastal zone related policies through the activities of the PPCR.
- Reducing climate change induced risks for the population through coastal protection through various specific initiatives including:
  - the Sans Souci Coastal Defence Project;
  - 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.

The Fisheries Division is proposing a Coastline Protection Project which would provide the synergy with the Sans Souci Coastal Defence Project in terms of halting beach and cliff

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<sup>25</sup> The CARIBSAVE Climate Change Risk Atlas (CCCRA)-St. Vincent and the Grenadines

erosion, stabilize the shoreline and restore the beach and near-shore reef. Additional benefits are to attract and provide habitat for fish, lobster and other marine life.

#### **4.11      *Adaptation planning in the water resources sector***

St. Vincent and the Grenadines has not devised a National Water Policy or Water Management Plan but there is a Draft Road Map toward Integrated Water Resources Management (IWRM) Planning for Union Island, St. Vincent and the Grenadines. Importantly, there are efforts that contribute to adaptation at the community and household level. These initiatives are:

- The construction of Reverse Osmosis plant in Bequia.
- Rooftop rainwater harvesting systems 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.
  - 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.

#### **4.12      *Adaptation planning in the health sector***

The policy of the Government of Saint Vincent and the Grenadines is to provide universal health care that reflects the principles of equity, affordability, quality, and cultural acceptance for its citizens. Whilst there is no explicit action towards adapting the health sector to climate change, The Millennium Development Goals, the Essential Public Health Functions, and the Caribbean Cooperation in Health, Phase III, and other initiatives provide a good basis for adaptation.

#### **4.13      *Disaster risk reduction and climate change adaptation***

St. Vincent is a member of the Caribbean Disaster Emergency Management Agency (CDEMA) an inter-regional supportive network of independent emergency units that responds to disasters wherever they occur in the region. The National Emergency Management Organisation (NEMO) falls under the ambit of the Prime Minister's Office.

In St. Vincent and the Grenadines, there is recognition of the importance of disaster management to environmental management. In the National Environmental Management Strategy and Action Plan, Principle 9 is to "Prevent and Manage the Causes and Impacts of Disaster"<sup>26</sup>. Two strategies, with specific activities, are therefore designed to help NEMO achieve this part of the environmental management plan. *Strategy 29 is to "Establish at the community and national levels, appropriate and relevant integrated frameworks to prevent,*

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<sup>26</sup>Homer & Shim, St. Vincent & the Grenadines Environmental Management Strategy and Action Plan, 2004

*prepare for, respond to, recover from and mitigate the causes and impacts of natural phenomena on the environment and to prevent manmade disasters*<sup>27</sup>.

- Regional Disaster Vulnerability Reduction (RDVRP) Project 2011-2018 estimated to cost US\$20.92 million is addressing policy, data management, infrastructure and capacity issues in the areas of Climate Change Adaptation and Disaster Risk Management. 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.
- The Pilot Project on Climate Resilience (PPCR) is addressing mainly infrastructural support in response to climate change and sea-level rise.

## **5. Fairness and Ambition**

Despite its negligible contribution to global GHG emissions (approximately 0.001%) and the fact that it is still a developing economy, St. Vincent and the Grenadines is taking significant and ambitious steps to reduce its national emissions. The proposed, unconditional contribution would result in a reduction in projected per capita emissions<sup>28</sup> to 4.3 tonnes CO<sub>2</sub>e in 2025, which is less than the global average of 5.3 tonnes CO<sub>2</sub>e emissions per capita in 2025, the level required to be consistent with returning warming to below 1.5°C above pre-industrial levels<sup>29</sup>. This demonstrates that St. Vincent and the Grenadines' ambition to reduce emissions is significant and reflects a fair contribution in the global context for 2025, while allowing the country's economy to continue to develop.

## **6. Planning Process**

The development of the INDC has involved detailed stakeholder consultation with public and private sector experts to determine the level and type of contribution, how the contribution will be achieved and identify the procedures that will see climate change integrated into central institutional processes. This will be summarised by St. Vincent and the Grenadines forthcoming Climate Change Policy. The Ministry of Health, Wellness and Environment will be responsible for facilitating multilateral dialogue on climate change issues as well as overseeing implementation of the INDC.

Elements of the INDC are already enshrined 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 its delicate environment while reducing GHG emissions. The 'National Physical Development Plan' also references the importance of energy efficiency in buildings and transport. The national electricity utility provider, VINLEC, has also established a feed-in-tariff to encourage the installation of distributed PV.

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<sup>27</sup> The CARIBSAVE Climate Change Risk Atlas (CCCRA)-St. Vincent and the Grenadines

<sup>28</sup> Estimated to be 5.4 tCO<sub>2</sub>e per capita in the BAU scenario

<sup>29</sup> The global target to avoid 1.5°C of warming is 5.3 tCO<sub>2</sub>e per capita in 2025, assuming a global population of 8.1 billion

(<http://databank.worldbank.org/data/reports.aspx?source=Health%20Nutrition%20and%20Population%20Statistics:%20Population%20estimates%20and%20projections>) and global emissions of 43 GtCO<sub>2</sub>e ([http://climateanalytics.org/files/ca\\_briefing\\_benchmark\\_emissions\\_1p5\\_and\\_2oc\\_2020\\_2025\\_2030\\_201502\\_10\\_final\\_bh\\_may.pdf](http://climateanalytics.org/files/ca_briefing_benchmark_emissions_1p5_and_2oc_2020_2025_2030_201502_10_final_bh_may.pdf))".

Whilst the report has been prepared as partial fulfillment of the country's obligations to the UNFCCC, there are many domestic benefits of developing and implementing an INDC. St. Vincent and the Grenadines' INDC clearly demonstrates its political commitment and help realize non-climate benefits that support developmental priorities, in particular, reduced spending on imported fossil fuels. Additionally, these actions are consistent with the strategies and programmes identified in the *Climate Change and the Caribbean: A Regional Framework for Achieving Development Resilient to Climate Change* endorsed by the CARICOM Heads of State.

## **7. Means of Implementation**

St. Vincent and the Grenadines has shown its commitment to mitigating climate change by independently taking concrete measures to reduce its emissions, particularly through renewable energy and waste initiatives<sup>30</sup>. It is hoped that this commitment and ambition will be recognised by the international community as progressive (in the context of the country's SIDS status) and that it will enable the country to leverage international finance (through the Green Climate Fund for example), technology transfer and capacity-building support to help further reduce emissions, especially in the areas of transport, renewable energy and energy efficiency.

In particular, St. Vincent and the Grenadines would welcome 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. Similar international support in capacity-building and finance for the LULUCF sector is also sought to help establish a related programme of mitigation actions.

Despite the injection of funds to the country through the PPCR, the need for financing climate change adaptation and mitigation in St. Vincent and the Grenadines remains significant. This is especially so considering the extent of vulnerabilities and the percentage of the population potentially exposed. Devastating losses already being experienced and projected climate change impacts suggest that mobilizing additional, adequate and timely financing is vital to the country's socio-economic development.

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<sup>30</sup> Facilities for waste segregation have been put in place, however to date little segregation has been achieved.