National Adaptation Plan for St. Vincent and the Grenadines

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Japan-Caribbean Climate Change Partnership

From the People of Japan

UNDP

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National Adaptation Plan for St. Vincent and the Grenadines

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FOREWORD

The Government of Saint Vincent and the Grenadines has invested significantly in specific goals, targets or commitments that contribute to climate risk management and resilient development to combat the urgent threat of climate change. Based on these previous actions there has been a recognition, that the development of a National Adaptation Plan (NAP) was a strategic opportunity for the formulation of initiatives that support policy innovation.

The formulation of the NAP was achieved through the support of the Japan-Caribbean Climate Change Partnership (J-CCCP), with the aim of guiding Saint Vincent and the Grenadines towards a green, low-emission and climate resilient development pathway. Its development was envisioned as an opportunity to promote the exigency for improved resilience; effective coordination and maintenance of synergies between sector specific goals; and the implementation of present priority actions that can be mainstreamed in the planning and budget cycles for the medium to long term.

The methodological framework which guided the NAP process was the Technical Guidelines detailed by the Least Developed Countries Expert Group (LEG) in 2012, which adopts a continuous planning process. The NAP's process receives its impetus and validation by the people of Saint Vincent and the Grenadines. This plan spans a period of 12 years (2018-2030) and is aligned with the National Determined Contribution, Sustainable Development Goals, Senai Framework and promotes the principle of inclusivity.

The NAP is designed to support the creation of conditions to ensure implementation of priority climate actions by key stakeholders. The adherence to the NAP's pillars ensures that it is centred on addressing the primary national adaptation needs of the country as well as the most vulnerable Vincentian to climate change. The expectation is that the priority actions articulated in the NAP will be integrated into the portfolio of the Climate Change Adaptation (CCA) actions for key sectors (agriculture, water, forestry, tourism, health and public infrastructure), aligned with the National Economic and Social Development Plan (NESDP) and sectoral strategies and plans.

This overarching NAP significantly contributes to achieving the nations' single unified goal of creating a resilient nation.

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ACRONYMS AND ABBREVIATIONS

API	Agency for Public Information
BRCCC	Programme for Building Regional Climate Capacity in the Caribbean
BSD	Black Sigatoka Disease
CAF	Cancun Adaptation Framework
CariCOF	Caribbean Climate Outlooks Forum
CARDI	Caribbean Agricultural Research and Development Institute
CARICOM	Caribbean Community
CCA	Climate change adaptation
CCCCC	Caribbean Community Climate Change Centre
CCCRA	CARIBSAVE Climate Change Risk Atlas
CCRIF	Caribbean Catastrophe Risk Insurance Facility
CDEMA	Caribbean Disaster Emergency Management Agency
CIF	Climate Investment Fund
CIMH	Caribbean Institute of Meteorology and Hydrology
CMO	Caribbean Meteorological Organisation
CO	Country Office
COP	Conference of the Parties
CVAT	Community Vulnerability Assessment Tool
CWSA	Central Water and Sewerage Authority
CYEN	Caribbean Youth Environmental Network
DRM	Disaster risk management
DRR	Disaster risk reduction
DRRP	Disaster Risk Reduction Project
ECMMAN	Eastern Caribbean Marine Managed Areas Network
FAD	Fish Aggregating Devices
FEWER	Fisheries Early Warning and Emergency Response
GAP	Good Agricultural Practices
GCF	Green Climate Fund
GEF	Global Environment Facility
GIS	Geographical Information Systems
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
GMO	Genetically modified organisms
GoSVG	Government of Saint Vincent and the Grenadines
HR	Human Resources

IICA	Inter-American Institute for Cooperation on Agriculture
IISD	International Institute for Sustainable Development
INDC	Intended Nationally Determined Contribution
IWRM	Integrated Water Resources Management
J-CCCP	Japan-Caribbean Climate Change Partnership
KPI	Key Progress Indicator
LDCs	Least Developed Countries
LEG	Least Developed Countries Expert Group
MARTFF	Ministry of Agriculture, Rural Transformation, Forestry, Fisheries, Industry and Labour
MDGs	Millennium Development Goals
M&E	Monitoring and Evaluation
MHWE	Ministry of Health, Wellness and the Environment
MORI	Mona Office for Research and Innovation
MPA	Marine protected area
MRV	Monitoring, reporting and verification
NAMA	Nationally Appropriate Mitigation Action
NAP	National Adaptation Plan
NAP GN	NAP Global Network
NAP GSP	National Adaption Plan Global Support Programme
NAPA	National Adaptation Programme of Action
NESDP	National Economic and Social Development Plan
NEMO	National Emergency Management Organisation
NCSA	National Capacity Self-Assessment
NFP	National Focal Point
NOAA	National Oceanographic and Atmospheric Administration
NPA	National Parks, Rivers and Beaches Authority
OECS	Organisation of Eastern Caribbean States
PACES	Promoting Access to Clean Energy Services in Saint Vincent and the Grenadines
PMU	Project Management Unit
PPCR	Pilot Programme for Climate Resilience
RCP	Representative Concentration Pathway
RVA	Richmond Vale Academy
SAP	Simplified Approval Process
SDGs	Sustainable Development Goals
SDU	Sustainable Development Unit

SF	NAP Success Factor (in the context of the SNAP tool)
SFDRR	Sendai Framework for Disaster Risk Reduction
SLR	Sea level rise
SNAP	Stocktaking for National Adaptation Planning Tool
SPCR	Special Programme for Climate Resilience
SST	Sea surface temperature
SVG	Saint Vincent and the Grenadines
SVMC	Saint Vincent Marketing Corporation
SWFDP	Severe Weather Forecasting Demonstration Project
SWOT	Strengths-Weaknesses-Opportunities-Threats Analysis
TNA	Technology Needs Assessment
ToR	Terms of Reference
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
VINLEC	Saint Vincent Electricity Services Limited (VINLEC)
WMO	World Meteorological Organisation
UWI	University of the West Indies

GLOSSARY OF TERMS

For the purpose of this document, the following definitions are applied.

Access: Individuals' ability to obtain adequate resources (entitlements) for acquiring appropriate foods for a nutritious diet. Entitlements are defined as the set of all commodity bundles over which a person can establish command given the legal, political, economic and social arrangements of the community in which they live (including traditional rights such as access to common resources).[1] Access is one of the four key dimensions of food security.

Adaptation actions: Physical or management agreements that respond to the opportunities or threats posed by climate change (CC), such as resettling of people or goods in safer locations, relocating facilities to avoid the risk of flood, or investing in climate resilient crop varieties. Enterprise associations and professional bodies, as well as central and local governmental departments, should assist in this task.

Adaptation: Process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to the expected climate and its effects.[2]

Adaptive capacity: Potential capacity or ability of a system, region or community to adapt successfully to the effects or impacts of climate variability or change.

Adverse effects of climate change: Changes in the physical environment or biota, resulting from CC, which have significant deleterious effects upon the composition, resistance or productivity of natural and managed ecosystems; the functioning of socioeconomic systems; or human health and welfare.

Agriculture: Activities related to crop cultivation, livestock management and fisheries.

Availability: Presence of and access to sufficient quantities of food of appropriate quality, supplied through domestic production or imports (including food aid).[3] Availability is one of the four key dimensions of food security.

Baseline: Situation before a policy or programme is implemented, against which progress can be assessed or comparisons made. Baseline data are collected before a programme or policy is implemented to assess the "before" state.

Carbon sequestration: Process of removing carbon dioxide from the atmosphere. This process occurs mainly in oceans, forests and other systems in which organisms capture the gas through photosynthesis.

Climate change (CC): Change in the state of the climate that can be identified (e.g. by using statistical tests) by changes in the mean or the variability of its properties, and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcing such as modulations of the solar cycles, volcanic eruptions, and persistent anthropogenic changes in the composition of the atmosphere or in land use. The UNFCCC, in its Article 1, defines climate change as "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods." The UNFCCC thus makes a distinction between

[1] FAO, 2017
[2] IPCC, 2014
[3] Based on the FAO definition, 2017

climate change attributable to human activities altering the atmospheric composition and climate variability attributable to natural causes.[4]

Climate-resilient pathways: Sustainable development trajectories that combine adaptation and mitigation to reduce climate change and its impacts. They include iterative processes to ensure that effective risk management can be implemented and sustained.[5]

Climate sensitivity: Degree to which a system is affected (adversely or positively) by climatic stimuli.

Climate-smart agriculture: Approach to agriculture that aims to tackle three main objectives: sustainably increasing agricultural productivity and incomes; adapting and building resilience to climate change; and reducing or removing greenhouse gas emissions, where possible.[6]

Climate vulnerability: Degree to which human and environmental systems react when experiencing a disturbance or stress. Usually climate vulnerability is described as a function of three main characteristics: degree of exposure to climate phenomena, climate sensitivity and adaptive capacity.

Cold day or **cold night**: Day or night that falls within the 10% of days or nights with the lowest temperatures recorded in the current climate of a given region or season.

Evaluation: Rigorous and independent assessment of either completed or ongoing activities to determine the extent to which they are achieving stated objectives or outcomes and contributing to decision-making.[7]

Exposure: Presence of people, livelihoods, species, ecosystems, environmental functions, services, resources, infrastructure, or economic, social or cultural assets in places and settings that could be adversely affected.[8]

Food security: State that exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.[9] Food security includes four dimensions: *availability, access, utilisation* and *stability* (see definitions).

Gender balance: Equal and active participation of women and men in all areas of decision-making, and in access to and control over resources and services.[10]

Gender equality: State of women and men enjoying equal rights, opportunities and entitlements in civil and political life. (Note that this term is sometimes confused with *gender equity*, which means fairness and impartiality in the treatment of women and men in terms of rights, benefits, obligations and opportunities.)[11]

Gender-sensitive indicator: Measurement, number, opinion or perception that points to gender-related changes over time.[12]

Global Warming Potential (GWP): Relative measure of how much heat is trapped in the atmosphere by specific greenhouse gases (GHG), compared to the same quantity of carbon dioxide (which has a

[4] IPCC, 2014
[5] IPCC, 2014
[6] FAO, 2017
[7] LEG, 2012
[8] IPCC, 2014
[9] World Food Summit, 1996
[10] FAO, 2018f
[11] FAO, 2018f
[12] FAO, 2018f

GWP of 1). GWP is calculated for a specific time interval, and the values to use are determined by IPCC. The GWP of emissions and reductions are expressed in units of carbon dioxide equivalent (CO_2e).

Green economy: Social system that improves people's living conditions, well-being and social equity while significantly reducing environmental risks and ecological scarcities. At its simplest, a green economy can be thought of as one which is low carbon, resource efficient and socially inclusive.[13] In a green economy, growth in incomes and employment result from public and private investments that reduce carbon and other GHG emissions and pollution, enhance the efficient use of energy and other resources, and prevent the loss of biodiversity and ecosystems. A green economy is a vehicle for achieving sustainable and low-carbon development.

Greenhouse effect: Warming that occurs because GHGs in the atmosphere absorb a portion of the infrared radiation emitted by the Earth's surface, trapping heat instead of releasing it into space. The greenhouse effect, within a certain range, is vital; it keeps the planet warm and ensures the maintenance of life. However, a stronger greenhouse effect could become catastrophic if it destabilises the balance on the planet and gives rise to a phenomenon known as global warming, an increase in the average temperature of the Earth's surface. The Intergovernmental Panel on Climate Change (IPCC), established by the United Nations and the World Meteorological Organisation in 1988, notes in its latest report that most of the warming observed over the last 50 years has likely originated from the increase in the concentration of GHGs in the atmosphere.

Greenhouse gases (GHG): Gaseous constituents of the atmosphere, both natural and synthetic, that absorb and re-emit infrared radiation. Examples include CO_2, CH_4, N_2O, HFCs, PFCs, SF_6 and NF_3.

Hazard: Potential occurrence of a natural or human-induced physical event, trend or physical impact that may cause loss of life, injury or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, ecosystems and environmental resources. In this report, the term "hazard" usually refers to climate-related physical events or trends or their physical impacts.[14]

Hot day or **hot night:** Day or night that falls within the 10% of days or nights with the highest temperatures recorded in the current climate of a given region or season.

Impact: Effect on natural and human systems. The term is used primarily to refer to the effects of extreme weather, climate events and climate change on lives, livelihoods, health, ecosystems, economies, societies, cultures, services and infrastructure. Such effects are due to the interaction of climate changes or hazardous climate events occurring within a specific time period and the vulnerability of an exposed society or system. Impacts are also referred to as consequences and outcomes. The impacts of climate change on geophysical systems, including floods, droughts and sea level rise, are a subset of impacts called physical impacts.[15]

Indicator: Variable that measures a phenomenon of interest. The phenomenon can be an input, an output, an outcome, a characteristic or an attribute.

Informal settlement: Peripheral area of a city in which inhabitants live in housing that is substandard in terms of both the construction materials used and the state of preservation. These areas are also characterised by an almost total absence of ventilation; a lack of streets; insufficient lighting poor water supply and sewerage systems;; and a lack of clean water, sanitation and drainage ditches, which result in the accumulation of water in rainy periods, leading to increased exposure to infectious and water-borne diseases.

Livelihood: Means of securing the necessities of life.

[13] http://www.unep.org/greeneconomy/AboutGEI/WhatisGEI/tabid/29784/Default.aspx
[14] IPCC, 2014
[15] IPCC, 2014

Low-carbon development: Intervention that promotes development and increases prosperity without compromising the environment. Low-carbon development involves decoupling increases in GHG emissions from economic development. This approach redefines the paradigm of development and enhances resilience through innovative solutions.

Mitigation: Anthropogenic intervention that can reduce, control or prevent GHG emissions as well as increase the sink capacity for removing GHG from the atmosphere.

Monitoring: Ongoing process by which stakeholders obtain regular feedback on the progress being made towards achieving their goals and objectives. Monitoring involves the collection of data on inputs, activities and outputs, and is used to inform day-to-day management and decisions.[16]

Outcome-based indicators: Indicators for measuring the effectiveness of adaptation actions, which are themselves determined by policies and measures. Outcome-based indicators are likely to increase in prominence in the longer term.[17]

Process-based indicators: Indicators for monitoring the development of adaptation policies and measures. Process-based indicators can be differentiated into adaptation policy indicators and adaptation measure indicators. They are likely to have prominence in the shorter term.[18]

Resilience: Capacity of social, economic and environmental systems to cope with a hazardous event, trend or disturbance, responding or reorganising in ways that maintain their essential function, identity and structure while also maintaining the capacity for adaptation, learning and transformation.[19]

Reasons for concern: Key points of interest that illustrate the implications of warming and of adaptation limits for people, economies and ecosystems. They provide one starting point for evaluating dangerous anthropogenic interference with the climate system. Five integrative reasons for concern (RFCs) provide a framework for summarising key risks across sectors and regions: (1) unique and threatened ecosystems, (2) extreme weather events, (3) distribution of impacts, (4) global aggregate impacts and (5) large-scale singular events.[20]

Risk: Potential for consequences where something of value is at stake and where the outcome is uncertain, recognising the diversity of values. Risk is often represented as probability of occurrence of hazardous events or trends multiplied by the impacts if these events or trends occur. Risk results from the interaction of vulnerability, exposure and hazard. In this document, the term "risk" is used primarily to refer to the risks of climate change impacts.[21]

Stability: Constancy of access to food. To be food secure, a population, household or individual must have access to adequate food at all times. They should not risk losing access to food as a consequence of sudden shocks (e.g. an economic or climatic crisis) or cyclical events (e.g. seasonal food insecurity).[22] Stability is one of the four key dimensions of food security.

Sink: Process, activity or mechanism that removes GHGs from the atmosphere.

Sustainable development: Development that satisfies current needs without compromising the welfare of future generations.

[16] FAO, 2018f
[17] FAO, 2018f
[18] FAO, 2018f
[19] IPCC, 2014
[20] Adapted from IPPC, 2014
[21] IPCC, 2014
[22] FAO, 2017

Transformation: Change in the fundamental attributes of natural and human systems. Within this summary, "transformation" could refer to strengthened, altered or aligned paradigms, goals or values towards promoting adaptation for sustainable development, including poverty reduction.[23]

Technology transfer: Movement of knowledge, experience and equipment for the purposes of climate change adaptation and mitigation among different parties, such as the government, the private sector, financial, educational and research institutions and NGOs. Technology transfer encompasses a wide range of processes.

Utilization: Act of taking in food through adequate diet, clean water, sanitation and healthcare to reach a state of nutritional well-being where all physiological needs are met.[24] Utilisation is one of the four key dimensions of food security.

Vulnerability: Propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt.[25]

[23] IPCC, 2014
[24] FAO, 2017
[25] IPCC, 2014a

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The team would like to thank our colleagues who were interviewed and who participated in our consultations. They are the people who know the country, and without their willingness to share, the NAP could not progress towards a successful result.

This is yours.

EXECUTIVE SUMMARY

Saint Vincent and the Grenadines has been severely impacted by effects of climate change. For instance, during December 24-25, 2013, the county was hit by severe flooding resulting in landslides. According to a 2014 report from the Caribbean Development Bank (CDB), estimates of damages and losses range between $108.4 million – equivalent to 15% of Gross Domestic Product (GDP), and $122.2 million – 17% of GDP. Damages and losses included crops, animals, personal property, housing, and destruction of physical and economic infrastructure (roads, bridges, hydropower facilities etc.). The humanitarian cost was also substantial with an estimated 11,000 persons directly affected by the disaster; 9 lives lost, approximately 12% of the population directly affected by the floods, and an estimated 55% of the population facing challenges in accessing water resources. Several national, regional and international organisations, members of the donor community, and regional governments provided assistance to address the crisis in the short term.

Global climate change projections predict an increase in the mean air and sea temperature, decreased rainfall in the rainy season, more intense hurricanes of the North Tropical Atlantic and sea level rise (SLR). According to those projections, we can expect a drier and hotter Saint Vincent and the Grenadines with less natural coastal defence structures (mangroves, coral reefs, sand dunes) to buffer more intense and more frequent storm systems. People considered particularly vulnerable are those who live near the poverty line, households managed by single adults, elderly people, people with disabilities, and people who do not own land.

To face the current and predicted climate risks, significant national effort has been already made. Many Vincentian stakeholders are familiar with adaptation language, and some are already implementing adaptation measures and climate-proofing their investments and actions.

The National Economic, Social and Development Plan (NESDP) integrated climate change adaptation (CCA) in its Goal 4, which is to improve physical infrastructure, preserve the environment and build resilience to climate change. However, due to greater needs created by a fast-changing climate, the NESDP may need additional realignment to further integrate and fully consider both CCA and climate change mitigation. Specifically, medium to longer term adaptation has to be mainstreamed into development planning and budgeting.

The National Adaptation Plan (NAP) process presents itself as a golden opportunity to catalyse the mainstreaming of CCA into planning and budgeting and make links to the future Climate Change (CC) Policy and Implementation Strategy. The NAP can serve as the adaptation arm of SVG's Nationally Determined Contribution (NDC) in the medium to long term, contributing to the fulfilment not only of the Paris Agreement, but also of the Development Agenda 2030 and its sustainable development goals (SDGs), the Sendai Framework on Disaster Risk Reduction (SFDRR) and other United Nations conventions.

Being aware of this opportunity, the Government of SVG (GoSVG) decided to initiate the process and elaborate the NAP. The Plan includes the following chapters: (1) Introduction; (2) Methodology and Stakeholders' Engagement; (3) National Context for Climate Change Adaptation and (4) The NAP of Saint Vincent and the Grenadines.

The NAP was produced through an exhaustive and comprehensive process of a literature review and stakeholders' consultations over the course of one year. During that time, multiple workshops were held targeting both technicians and decision makers, in which about two hundred representatives from the public and private sectors, civil society and media were consulted in order to identify the gaps and needs as a starting point for the development of the Plan. The NAP technical guidelines among other tools, were used as the basis of this national document. The main objectives of the NAP are therefore to reduce vulnerability to the impacts of climate change by building adaptive capacity and resilience,

and to facilitate the coherent integration of climate change adaptation into new and existing policies, programmes and activities.

The objectives of the NAP are as follows:

1. To promote an enabling environment to facilitate the mainstreaming of climate change adaptation in the planning, budgeting and implementation processes, by strengthening the governance structures to enhance synergies between adaptation and DRR[26], including the identification, implementation, monitoring and evaluation and communication of adaptation actions;
2. To improve the capacity for data and information collection, management and sharing, determination of climatic risk and access to technology and financing for adaptation; and
3. To implement adaptation actions toward an increased resilience of the most vulnerable Vincentians.

These three objectives are supported by the three pillars that will sustain SVG's NAP. These pillars include ten strategic adaptation actions defined during the consultation process and are outlined in Table 1 below.

Table 1 – Objectives, pillars and strategic adaptation action of the NAP SVG.

Objective	Pillar	Strategic Adaptation Actions
Promote enabling environment to facilitate CCA mainstreaming	Institutional framework	1. Establishment of the institutional frameworks for CCA 2. Integration of CCA into national and sectoral policy, planning and programming processes
Improve the capacity for data and information management and sharing, and access to technology and financing for adaptation	Knowledge, technology and financing	3. Development and implementation of research programmes on CC impacts and CCA actions 4. Elaboration and implementation of CC capacity-building plans 5. Elaboration and implementation of CC communication plans 6. Definition and operationalisation of an overarching M&E framework covering the NESDP, NDC, NAP, SDGs and the Sendai Framework 7. Elaboration and implementation of a resource mobilisation plan
Implement adaptation actions toward an increased resilience of the most vulnerable Vincentians	Resilience of the most vulnerable	8. Elaboration of NAPs for other priority sectors 9. Test Integrated CCA approaches and tools on the ground 10. Elaboration of a portfolio of CCA priority actions for the key sectors for the medium term with verification that each measure aligns with the NESDP and established sectoral strategies and plans

[26] DRR refers to the cases in which there is an overlap with CCA.

The guiding principles of the NAP process (agreed on under the UNFCCC in Decision 5/CP.17) reflect a continuous planning process at the national level with iterative updates and outputs. This process is country-owned, country-driven, non-prescriptive, flexible and based on country needs.

The time horizon of the Plan is 12 years, extending from 2018 to 2030. This period comprises two main phases, the readiness phase from 2018 to 2023 and the second phase from 2024 to 2030, consistent with the calendar associated with the National Determined Contribution (NDC), including the review and global stocktaking under the Paris Agreement, the Development Agenda 2030 and the Sendai Framework.

The NAP is also gender sensitive and environmentally sound. All the adaptation options to be implemented will go through a gender analysis and include agreed-upon social and environmental safeguards. It is also necessary to ensure the alignment of the follow up actions associated with the NAP process with national legislation and planning instruments. For the implementation, monitoring and evaluation of such actions and its contribution to the SDGs, Sendai and other conventions, a resource mobilisation plan, which is coherent with the financing strategy, is also proposed for the various phases of the NAP.

A successful NAP is one that creates the conditions for its own execution. It is expected that within a few years, the various sectors, public and private organisations and civil society entities will have fully mainstreamed CCA into their planning, operations and budgeting and that SVG will be a resilient nation.

1. INTRODUCTION

SVG is fully committed to low carbon and resilient development. The country ratified the UNFCCC on 2 December 1996 and the Paris Agreement on 29 June 2016, having submitted its Intentional Nationally Determined Contribution (INDC) in November 2015. Additionally, SVG has submitted two National Communications, the latest in 2015 and will be preparing its first Biennial Updated Report (BUR) in conjunction with the Third National Communication. The National Focal Point for the UNFCCC is the Sustainable Development Unit (SDU) from the Ministry of Finance, Economic Planning, Sustainable Development and Information Technology (MFEPSDIT).

SVG is being negatively impacted by climate change and some sectors have already undertaken vulnerability assessments (e.g. agriculture ad coastal zones), which have led to the implementation of some adaptation projects and measures. Civil society organisations are supporting actions to increase the resilience in some sectors as well. However, SVG needs to strengthen its overall capacity to further mainstream CC in medium to long term planning; improve the coordination of climate change issues; better collect, analyse and share data and information; increase absorption capacity; maintain trained personnel; enforce legislation; and monitor and evaluate (M&E) policies, plans, strategies, projects and actions. Further mainstreaming of gender considerations is also needed.

To further integrate adaptation into the national planning process, the SDU was moved from the Ministry of Health, Wellness and the Environment to the Ministry of Finance, Economic Planning, Sustainable Development and Information Technology, in recognition of the need to further mainstream Climate Change Adaptation (CCA) into development planning. The National Economic, Social and Development Plan (NESDP) already refers to CCA in its Goal 4, which is to improve physical infrastructure, preserve the environment and build resilience to climate change. However, due to greater needs created by a fast-changing climate, the NESDP might need additional realignment to further integrate and consider both CCA and climate change mitigation.

Adding to that, the NAP process presents itself as a golden opportunity to catalyse the mainstreaming of CCA into planning and budgeting and ensure alignment to the future CC Policy and Implementation Strategy. In light of this opportunity, the Government of SVG (GoSVG) decided to initiate the process of NAP development. The Plan includes the following chapters: (1) Introduction; (2) Methodology and Stakeholders' Engagement; (3) National Context for Climate Change Adaptation and (4) The NAP of Saint Vincent and the Grenadines.

The SVG NAP starts with a 12-year framework (2018-2030) for national and sectoral action. It consists of: a) an overarching plan covering all necessary activities to identify, plan, coordinate, finance and implement, monitor, review and evaluate adaptation as well as to successfully mainstream adaptation into development policy in the country and b) sectoral adaptation plans (sectoral NAPs), which detail concrete short-term strategic actions /measures for reducing climate risks and building sectoral resilience. The NAP also outlines the mechanisms to plan sectoral adaptation in the medium and long-term.

Through stakeholder consultations, it was agreed that the national sectors with the most urgent need of sectoral NAPs were agriculture, water, tourism, health and public infrastructure. With support from the Japan-Caribbean Climate Change Partnership (J-CCCP), the GoSVG has finalised the formulation of its overarching NAP and its sectoral NAP for agriculture. Additionally, the United States NAP Global Support Program (GSP), implemented by the International Institute for Sustainable Development (IISD), has initiated the development of the sectoral NAP for water. This document presents the overarching NAP.

2. METHODOLOGY AND STAKEHOLDERS' CONSULTATION

SVG has already begun the process of implementing CCA initiatives, but CCA still needed to be mainstreamed in the planning and budget cycles for the medium to long term. Therefore, the NAP process constituted an opportunity to advance a higher degree of resilience in the public, private, civil society and cooperation spheres on those time horizons.

The NAP process was initiated and lead by the SDU in 2017 with the support of the J-CCCP. The entire process is guided by the Technical Guidelines elaborated by the Least Developed Countries Expert Group (LEG) in 2012, focusing on all the elements shown in Figure 1 .

The elaboration of the NAP comprised various tasks, namely:

1. Stocktaking and gap analysis

Review the work conducted under the J-CCCP Baseline Assessment and any other previous studies and identify any relevant additional information needed for a complete in-country assessment of the NAP situation. Areas for review included the following:

- 1.1. Current climate and climate scenarios;
- 1.2. National capacities and resources (e.g. information management systems, programmes, human resources and policies, etc.) needed to engage in the NAP process;
- 1.3. Institutional framework for adaptation planning;
- 1.4. Barriers to planning, design and implementation of adaptation activities (e.g. systems, data, institutional and legislative frameworks, human capacity and expertise, etc.);
- 1.5. Sustainable development efforts most at risk from climate change including a review of relevant national policies and international commitments;
- 1.6. Expected impact of climate change on social development, as well as issues related to social inequality and poverty;
- 1.7. Linkages between existing adaptation strategies and disaster risk management activities;
- 1.8. Outline the gaps to be addressed based on analysis of the information collected.

2. Identification of NAP mandate

- 2.1. Through the process of stakeholder consultations, identify the needs and prioritise the gaps to be addressed.
- 2.2. Define the scope of the NAP process for the sector and the institutional framework for development and implementation based on the ranking of national and sector-specific priorities.
- 2.3. In collaboration with the national climate change focal point, Ministry of Sustainable Development and other government officials, identify stakeholders to be consulted.

3. Prioritisation of key sectors

- 3.1. Based on the list of key sectors identified by GoSVG, review relevant information and existing adaptation plans and policies to determine the level of integration and mainstreaming of climate adaptation considerations in the planning and execution of activities.
- 3.2. Based on the review of the sector-specific information, rank key sectors in order of priority for the development of sector-specific climate adaptation strategies.
- 3.3. Identify the sector ranked highest according to the national priority for strategy development.

NATIONAL ADAPTATION PLANS

TABLE OF STEPS, BUILDING BLOCKS AND SAMPLE OUTPUTS UNDER EACH OF THE FOUR ELEMENTS OF THE NAP PROCESS

Steps	Checklist of building blocks	Sample NAP outputs
Element A. Lay the groundwork and address Gaps		
1. **Initiating and launching of the NAP process**	☐ Briefing on NAP process - adaptation challenges & opportunities ☐ Coordinating mechanism ☐ National vision and mandate for NAPs ☐ Access to technical and financial support ☐ NAP framework/strategy and road map	» Mandate for the NAP process » Framework and strategy for climate change adaptation » Funded project to support operations of the NAP process » Road map for the NAP process
2. **Stocktaking: identifying available information** on climate change impacts, vulnerability and adaptation and assessing gaps and needs of the enabling environment for the NAP process	☐ Stocktaking of adaptation activities ☐ Synthesis of available knoweldge on impacts, vulnerability and adaptation ☐ Capacity gap analysis ☐ Barriers analysis	» Report on synthesis of available information » Geospatial database in support of the NAP process » Knowledge-base of observed climate impacts, vulnerabilities and potential interventions » Gap and needs analysis report » Barrier analysis report
3. **Addressing capacity gaps** and weaknesses in undertaking the NAP process	☐ Building institutional and technical capacity ☐ Opportunities for integrating adaptation into development ☐ Programmes on climate change communication, public awareness-raising and education	» Strategy document(s) for capacity-building, awareness-raising, communication and education » NAP website
4. Comprehensively and iteratively **assessing development needs and climate vulnerabilities**	☐ Compile development objectives, policies, plans and programmes ☐ Synergy between development and adaptation objectives, policies, plans and programmes	» Report on stocktaking of development/adaptation activities » Report on approaches for ensuring synergy between development and adaptation
Element B. Preparatory elements		
1. **Analysing current climate and future climate change scenarios**	☐ Analysis of current climate ☐ Future climate risks and uncertainty/Scenario analysis ☐ Communicating projected climate change information	» Report on climate analysis » Report on climate risks/Projected climate changes » Strategy for climate information services
2. **Assessing climate vulnerabilities and identifying adaptation options** at sector, subnational, national and other appropriate levels	☐ Climate vulnerability assessment at multiple levels ☐ Ranking climate change risks and vulnerabilities ☐ Scoping adaptation options	» Vulnerability and adaptation assessment report
3. **Reviewing and appraising adaptation options**	☐ Appraisal of adaptation options	» Report on appraisal of adaptation options » Sectoral and subnational plans or strategies
4. **Compiling and communicating national adaptation plans**	☐ Draft national adaptation plans ☐ Finalize NAPs and process endorsement ☐ Communicate NAPs at national level	» Draft NAPs for review » Endorsed NAPs
5. **Integrating climate change adaptation** into national and subnational development and sectoral **planning**	☐ Opportunities and constraints for integrating climate change into planning ☐ Building capacity for integration ☐ Integration of adaptation into existing planning processes	» Report on integration of adaptation into development
Element C. Implementation strategies		
1. **Prioritizing climate change adaptation in national planning**	☐ National criteria for prioritizing implementation ☐ Identify opportunities for building on existing adaptation activities	» Report on prioritization of adaptation in national development
2. Developing a (long-term) national adaptation **implementation strategy**	☐ Strategy for adaptation implementation ☐ Implementation of NAPs through policies, projects and programmes	» Implementation strategy for the NAPs
3. **Enhancing capacity** for planning and implementing adaptation	☐ Strengthening long-term institutional and regulatory frameworks ☐ Training at sectoral and subnational levels ☐ Outreach on outputs nationally & promotion of international cooperation	» National training and outreach programme(s)
4. Promoting **coordination and synergy at the regional level and with other multilateral environmental agreements**	☐ Coordination of adaptation planning across sectors ☐ Synergy at the regional level ☐ Synergy with multilateral environmental agreements (MEAs)	» Report on regional synergy » Report on synergy with MEAs
Element D. Reporting, monitoring and review		
1. **Monitoring the NAP process**	☐ Identify (few) areas of the NAP process to monitor progress, effectiveness and gaps (PEG) ☐ Define metrics for documenting PEG ☐ Collect information throughout the NAP process to apply the metrics developed	» Metrics report/Monitoring Plan » Database of metrics
2. **Reviewing the NAP process** to assess progress, effectiveness and gaps	☐ Synthesis of new assessments & emerging science and the results and outcomes from implemented adaptation activities ☐ Evaluate metrics collected to assess progress, effectiveness and gaps of the NAP process	» Evaluation report
3. Iteratively **updating the national adaptation plans**	☐ Repeat some steps and update NAPs and related documentation ☐ Production of updates to the NAP outputs aligned with relevant national development plans	» Updated NAPs
4. **Outreach on the NAP process and reporting on progress and effectiveness**	☐ Disseminate the NAPs and related outputs to the UNFCCC secretariat and others ☐ Provide information in national communications on progress in and effectiveness of the NAP process	» Progress report and information in national communications

Source: *Least Developed Countries Expert Group (2012). National Adaptation Plans. Technical guidelines for the national adaptation plan process. Bonn, Germany. December 2012. Available at <unfccc.int/NAP>.*

United Nations
Framework Convention on Climate Change

Figure 1 – Steps, building blocks and sample outputs under each of the four elements of the NAP process.

4. Formulation of NAP strategy and roadmap

    4.1. Develop a strategy document (roadmap) for the NAP process which outlines the key stakeholders and their responsibilities as well as the strategic action and sequential steps for development and implementation. This strategy should also outline potential donor agencies or sources of funds to support climate adaptation programmes.

    4.2. Create a M&E plan for the NAP process.

    4.3. Create a Capacity Development Plan to address the needs and gaps within the identified sectors.

5. Climate risk and vulnerability assessment

    5.1. Analyse current climate information to identify trends to support the planning processes.

    5.2. Using existing climate models, climate data and climate studies, define future climate risks and levels of uncertainty. Where necessary, local-level resolutions and data capture may be undertaken to address information gaps.

    5.3. Assess vulnerability to climate change at the sectoral and national levels.

    5.4. Assess the future vulnerability of national development objectives to climate change.

    5.5. Rank identified climate risks and vulnerabilities and align them with appropriate adaptation options.

    5.6. Prioritise sectors for the development of sector-specific strategies based on national needs, development priorities and climate risks and vulnerabilities.

6. Development of National Adaptation Plan

    6.1. Identify scenarios and pathways for national and sector adaptation actions.

    6.2. Appraise priorities and rank the identified adaptation options.

    6.3. Develop the NAP, including the M&E Plan, for submission to national government for review and national approval. Critical next steps necessary for realising the objective of the NAP should also be integrated.

    6.4. Develop a sector-specific adaptation strategy for the highest ranked sector identified to guide climate action. This strategy should include a five- to ten-year investment plan to address the financial requirement for implementing the actions outlined in the strategy.

These tasks relate to the NAP technical guidelines as illustrated in Figure 2 and were conducted using various approaches, such as a desktop review and associated technical analysis of the information as well as consultation and validation with stakeholders.

For the literature review, information was collected by research and through direct requests to stakeholders. Those stakeholders included UNDP, which provided an initial set of references, and representatives from the public and private sectors, civil society and community groups which were engaged in the process.

The stakeholders' consultation and validation were done using direct interviews in bilateral meetings, written requests by e-mail and participatory methodologies used in workshops. The relevant stakeholders were also invited to validate the project's deliverables by providing written comments.

The first direct interaction with stakeholders occurred in the first mission to SVG held from 29 May to 2 June 2017. The objective was to undertake one-on-one consultations with key stakeholders to provide an understanding of the proposed activities and to obtain the information necessary for completing the NAP Assessment Report. During this process the key stakeholders were identified, and an interview script prepared and with the PMU to ensure that all the relevant issues were covered.

During this visit, bilateral interviews were held with representatives from various entities from the public sector including economic planning and SDU (lead agency), finance, tourism, agriculture, health, transport, national parks and beaches authority, port authority, Saint Vincent Electricity Services Limited (VINLEC) and Central Water and Sewerage Authority (CWSA), civil society such as Inter-American Institute for Cooperation on Agriculture (IICA), Red Cross, Richmond Valley and Promoting Access to Clean Energy Services in Saint Vincent and the Grenadines (PACES) Project.

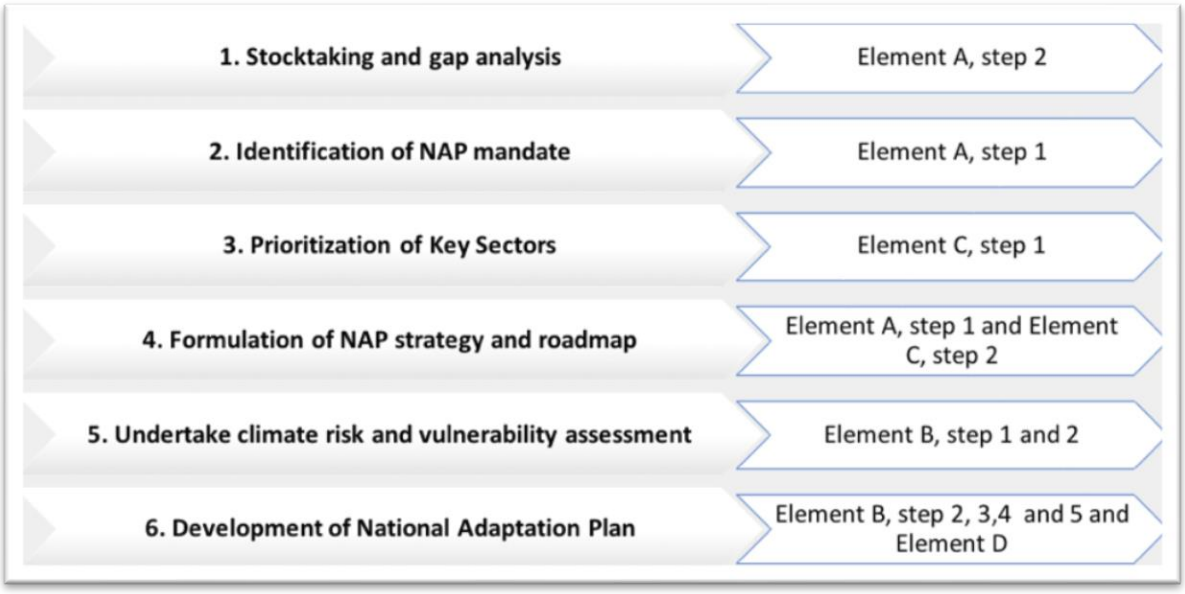

Figure 2 – Relationships between the tasks and the elements and steps of the NAP technical guidelines.

The assessment report was prepared, which reflected the result of the first task, stocktaking and gap analysis, as described earlier.

To inform the report, during the first mission to Kingstown, stakeholders were also requested to complete a questionnaire which formed part of the Stocktaking for the NAP (SNAP) tool. This informed the gaps and needs assessment. Table 2 shows the results of this information compilation. Eight (8) responses from a total of 14 (fourteen) requests were obtained. The answers were received from the Ministry of Agriculture, the IICA, PACES project, National Parks, Rivers and Beaches Authority (NPA), the Red Cross, Richmond Vale Academy and the Ministry of Tourism.

A second round of stakeholder consultations was then held from 27 July to 4 August 2017. The main objective was to conduct a two-day workshop for technicians and a one-day working session for decision-makers.

To preparation for the workshop and the work session, scripts and concepts notes about the NAP were prepared along with a training manual. The major goal of both events was to consult with various stakeholders, further inform and engage them in the process and collect some missing information to finalise the assessment report. In the sessions, participants agreed on the vision and mission of the NAP, collected further information on needs and gaps and identified the priority sectors based on the following criteria: vulnerability to climate change, number of beneficiaries, contribution to GDP, recovery time and roughly estimated cost. Finally, stakeholders mapped the institutions to be engaged, with the understanding that but further discussions would be necessary to define the scope of climate change policy development.

The workshop for technicians had 36 participants, from which 16 were women and the work session for decision-makers had 25 participants, from which 12 were women. Institutions represented in both consultations are listed in Appendix I.

The third in-person interaction with the various stakeholders took place from 31 October to 10 November 2017. Its main objective was to support the elaboration of the NAP Domestic Financing Strategy by participating in meetings with certain stakeholders, particularly representatives from the agriculture sector, to collect information and conduct a field visit to crop fields and livestock facilities. The aim was to inform the sectoral strategy and investment plan and to co-organise and participate in the consultation workshop to validate the NAP roadmap and capacity development plan.

After the prioritisation of the sectors and the agreement that agriculture (including crop and livestock production and fisheries) was selected for the elaboration of the dedicated sectoral strategy and investment plan, a specific work session was held in November 2017 to identify the main climate change impacts and associated vulnerability of the sector and potential adaptation options. A field visit was also done in SVG to assess current practices on the ground. For this session, 10 representatives from the sector attended, six from the ministry and three from the private sector (Caribbean Agricultural Research and Development Institute (CARDI), IICA and Richmond Vale). UNDP was also represented. Two participants were women.

The identification of constraints, gaps and needs relied on the consultations held on the scope of the NAP formulation and on a literature review based on IICA (2014), Mapp *et al.* (2016), MARTFF (2016), MARTFF (2017) and FAO (2018 b).

The fourth visit was then held from the 12 to 19 March 2018. At that time, stakeholders discussed the first version of the NAP, prioritised the adaptation actions and gathered information on the agriculture sector, including crop and livestock production and fisheries.

This mission included a consultation session held with the fisheries' representatives to inquire on the main climate change impacts and associated vulnerability of the sector and potential adaptation options for the subsector. A follow-up session was also conducted with the stakeholders related to fisheries to further determine the sector's adaptation priorities. The session had 21 participants, representing the ministry (seven) and fishers, cooperatives and associations (14). Four participants were women.

A consultation was also held with representatives from the agriculture sector, including farmers and livestock producers. This session had 10 participants. Of these, nine represented the ministry and UNPD was also represented. Three of the participants were women.

The last consultation session connected the agriculture sector with the overarching NAP, validating the approach and the proposed mission, vision, objectives, pillars, time horizon and action plan for the first phase of the NAP-Ag. This session had the participation of 26 representatives (14 women) from various entities, listed in Appendix I.

The NAP and NAP-Ag were then presented at the NAP Assembly in Kingstown in April 2018, with 15 participants, of which 9 were women. The comments received during the Assembly were included in a revised version which was again circulated for review. The inputs received were then included in this final version.

The strategic adaptation actions and activities they encompass were based on the strategic objectives defined for the NAP and were refined during the consultations. A set of criteria was used to prioritise the adaptation options in the short, medium and long terms, which included:

- Relevancy;
- Alignment with national policy and legislation;
- Feasibility;

- Social and political acceptance;
- Upfront cost;
- Long-term cost;
- Existing institutional capacity;
- Potential for maladaptation;
- Synergies and potential for building on early efforts;
- Potential for replication;
- Number of direct beneficiaries among the most vulnerable;
- Climate impact potential (potential to achieve the Green Climate Fund's (GCF) objectives and results);
- Paradigm shift potential (potential to catalyse impact beyond a one-off project or programme investment);
- Sustainable development potential (potential to provide wider development co-benefits);
- Needs of recipient (vulnerability to climate change and financing needs of projects);
- Country ownership (beneficiary country ownership of project or programme and capacity to implement the proposed activities); and
- Effectiveness and efficiency (economic and financial soundness of the proposed activities).

After the first identification process was undertaken before the NAP Assembly, the set of actions and activities was complemented with inputs gathered directly from the Meteorological Services and during the financial training session held in the scope of the NAP Global Network (NAP GN) support to SVG and from the PPCR outstanding works as per mid-April 2018.

3. National Context for Climate Change Adaptation

This chapter incorporates updated information previously reported in the Second National Communication of Saint Vincent and the Grenadines to the United Nations Framework Convention on Climate Change (UNFCCC) submitted by the Ministry of Health, Wellness and Environment (MOHWE) in 2015.

The information included, provides a brief description of the factors that influence the vulnerability of the country, namely the national circumstances related to the geographical location, the socio-economic and the environmental conditions, and the climate.

3.1. National Circumstances

Saint Vincent and the Grenadines is an archipelagic state located in the south-eastern Caribbean consisting of 32 islets and cays in the Lesser Antilles with a population of 109 577 in 2015.[27] The state occupies a total land area of 359 km^2. The main island, Saint Vincent, lies at latitude 13° 15' N and longitude 61° 15' whilst the other islands, called the Grenadines, are low-lying with no point higher than 304.8 m and stretch a distance of 72 km to the southwest. There are eight inhabited islands in the Grenadines: Young Island, Bequia, Mustique, Union Island, Canouan, Mayreau, Palm Island and Petit Saint Vincent (see Figure 3).

Figure 3 – Map of Saint Vincent and the Grenadines.

Saint Vincent is of volcanic origin and mountainous in nature; the central mountain range that stretches from north to south along the entire length of the island is considered to be the island's main

[27] Statistical Office, Central Planning Division, Ministry of Finance and Planning.

topological feature. The northernmost part of the range is home to the island's active volcano, La Soufrière, which is the highest point on the island at approximately 1233.8 m above mean sea level. The southernmost part of the range consists of several noteworthy elevations, namely Richmond Peak (1073.8 m), Mt. Brisbane (932.1m), Grand Bonhomme (969.6 m), Petit Bonhomme (756.2 m) and Mt. St. Andrew (735.5 m).

The range is characterised by lateral spurs which radiate outwardly to the east and west, giving rise to deep, narrow, stream-filled valleys that drain into predominantly black sand beaches. On the eastern (windward) side of the island, the relief is gently rolling with a somewhat straight coast line. In contrast, the western (leeward) side is characterised by steep ridges and deep, narrow valleys, extending down the sheltered coast.

Similar to the mainland, the Grenadines are volcanic in origin. However, they are low-lying with no point higher than 304.8 m. In addition, there are coral formations on these islands that give rise to white or beige sand beaches. The low-lying nature of the islands makes them vulnerable to the expected effects of sea level rise.

The soils of SVG are considered to be fertile, highly permeable and susceptible to erosion. They are grouped into five categories: shoal, alluvial, recent volcanic ash, yellow earth and central mountain. Additionally, forest covers approximately 29 to 35 % of the country. Most of it consists of natural forests concentrated in the central mountain region of Saint Vincent (Figure 4).

The combination of natural vegetation, mountainous terrain and climate has created a network of streams which provides the main source of potable water on the main island. There are several large rivers including the Colonaire, Richmond, Yambou, Buccament and Wallilabou rivers. Most of these rivers flow year-round. There are also some seasonal ones located mainly in the north of the island, including the famed Rabacca River, commonly called the dry river.

The rivers on the island are the main source of water supply. The Central Water and Sewerage Authority (CWSA), the lone provider of water, uses a gravity-fed system to supply potable water to domestic, industrial and business consumers. Hydroelectricity is generated from three large rivers (Cumberland, South Rivers and Richmond) by the island's lone electricity provider, the Saint Vincent Electricity Services Limited (VINLEC). This production contributes approximately 20 %of the national electricity supplied. On the north-eastern side of the country, five irrigation schemes were commissioned to supply water to about 445.2 hectares of agricultural land on the north-western side of the island.

Additionally, a few natural springs indicate the presence of groundwater; however, little is known about the quantity of this water source, as the main island's water demand is met by the rivers. The country rarely experiences severe supply constraints on the mainland, although there have been occasional periods of moderate water shortage during the dry season. Noteworthy is the drought of 2000 where severe drought conditions were experienced for five of the six months in the dry season. Notwithstanding this, anecdotal evidence points to deteriorating stream flow, which has implications for future water supply.

In the Grenadines, the land masses are too small and impermeable to support stream dynamics, so the water supply situation differs significantly from that of the mainland. The main sources of fresh water in these islands are rainwater harvesting systems, concrete communal rainwater catchment systems and desalination plants. To a lesser extent, groundwater is also sourced from wells and rainwater collected in ponds. Water from these two sources is used for construction and livestock. These islands are, therefore, highly stressed for water especially during the dry season.

The country has a small open economy which is highly susceptible to external shocks and natural disasters. Production is focused on a narrow range of goods and services, most of which are exported, while the country relies heavily on imports to satisfy local demand. During the period of 2000 to 2013, the economy grew by a real annual average of 2.48%. Furthermore, the real growth of the economy

ranged from weak to relatively strong, ranging from a low of –3.36 % in 2010 to a high of 7.69 % in 2003.

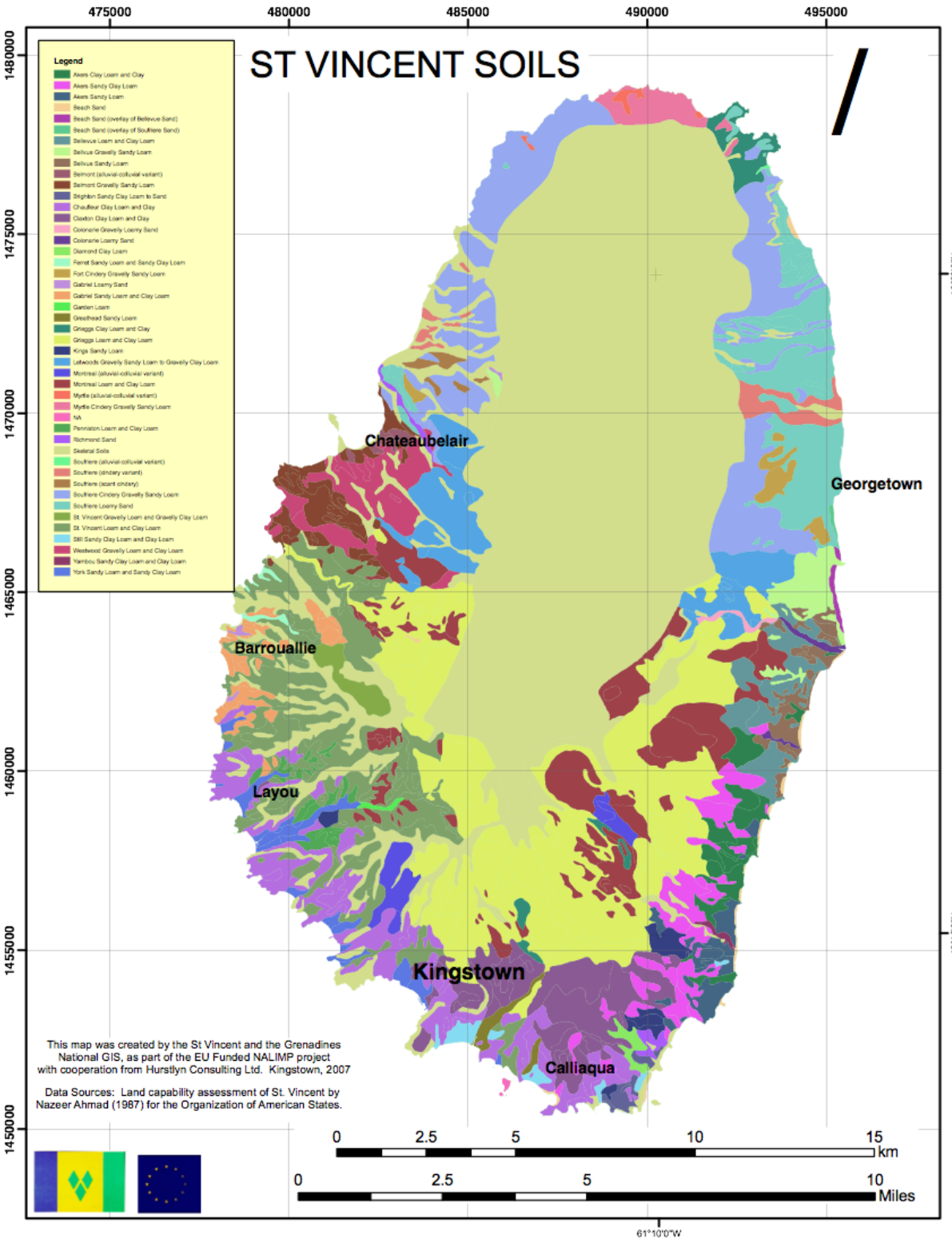

Figure 4 – Saint Vincent's soils.

Data related to the sectoral contribution to GDP obtained from the Statistical Office show that in 2013, the most relevant sector was real estate, renting and business services, followed by wholesale and retail trade, transport, storage and communications, public administration, defence and compulsory social security and construction. Real GDP for the period 2000–2013 experienced a continual shift away from traditional sectors such as agriculture and manufacturing, with agricultural contribution to GDP falling from 7.52 % in 2000 to 6.13 % in 2013 and manufacturing contribution to GDP falling from 6.48 % at the beginning of the period to 4.09 % at the end of the period.

Trade statistics continue to reveal a widening commodity trade deficit, where the trade balances (total exports minus total imports) were in general increasingly negative for the period 2005–2013.

Approximately 80 % of the electrical energy generated in SVG comes from fossil fuels. The other twenty % is renewable energy generated by three hydro-electricity plants at Cumberland, Richmond and South Rivers. However, the electricity company, VINLEC, has reported reductions in its hydro-electricity supply during the dry season due to reduced stream flow, which prompted the upgrade of diesel plants to meet demand.

Accessibility, especially by air, is seen as a major challenge to the development of SVG. The real challenge is the number of flights and airlines available to the country. There are approximately 680 miles of motorable roadway and over 12,000 motor vehicles. In addition, this sector uses a large amount of fossil fuels which contribute to greenhouse gas emissions.

There are five marine terminals in the country including the main deep-water port at Kingstown. The terminal in Kingstown is comprised of a 274.3-metre-long deep-water pier, a 264-metre-long cruise ship terminal, a 76.2-metre-long schooner facility and a 76.2-metre pier for the ferries that service the Grenadines. The container port at Campden Park has a storage capacity of 540 containers. Several smaller ports and jetties are scattered around the island.

Similar to most Small Island Developing States (SIDS), there are no major manufacturing industries in SVG. The word “industry” is generally used loosely to indicate activities relating to tourism, agriculture, housing, mining and manufacturing.

SVG is endowed with large quantities of volcanic deposits in the form of igneous rocks. A number of quarries are set up to mine these rocks for construction purposes. Another mining venture that supports local construction is the mining of the beaches for sand. This practice increases the vulnerability of coastal areas to storm surges, a growing problem attributed to climate change.

SVG’s tourism industry is seen as the economic earner because of the downfall of the agricultural industry. The tourism industry has proven to be a significant driver of economic activity, as well as a foreign exchange earner and employment creator. Currently, SVG is diversifying its tourism products into eco- and sport-tourism, as well as working to improve the accommodation sector. This is seen as a gateway to investment opportunities that would create a stronger infrastructure system to support this sector.

Agriculture in SVG is predominantly practised on the mainland, with some subsistence farming occurring on the larger islets of the Grenadines. In the past, the economy of SVG was based primarily on agriculture: first, sugar, which persisted into the twentieth century, and then a combination of crops including cotton, arrowroot and bananas. Previously these crops dominated agriculture to the point where they were mono-crops.

Bananas dominated the agricultural scene throughout the second half of the twentieth century until the loss of preferential trade agreements with Europe and the increase in competition from the mega-producers in Central and South America. This decline in the banana industry saw Saint Vincent and the Grenadines moving from being a net exporter of food crops to a net importer.

Agriculture is still practised in the traditional way by older, experienced farmers equipped with traditional knowledge and using manual labour and simple tools such as forks, cutlasses and hoes.

Additionally, large quantities of chemical fertilisers are used to increase production, but have only succeeded in maintaining the existing production levels. Moreover, pesticide use has become widespread to control the increase in pests associated with mono-cropping under tropical conditions. There is a concern among some of the stakeholders that were interviewed that agricultural lands are being converted for residential construction. The more suitable the land is for agriculture—flat or gentle slopes with deep soil and few stones—the higher the demand for it to be used for housing.

Most of the country's livestock—sheep, goats, cattle and pigs—is raised by farmers in small family holdings. With the growing number of fast food outlets, the demand for poultry and poultry products is increasing. Most of the products from the livestock industry are consumed locally. The country is self-sufficient in regard to table eggs and there is a significant level of self-sufficiency in pork and small ruminants.

The fisheries sector, which employs about 2,500 people, is predominantly small-scale and artisanal. Fishermen are primarily from rural communities, where there is a deficiency of viable income earning opportunities. Fish is also an important source of protein. The bulk of the landed catches are sold locally to retailers, vendors and middlemen or directly to consumers. Most of the landed catch is sold fresh, with a very small proportion being salted and dried. There are 36 landing sites, 20 on the mainland and 16 in the Grenadines, most of which lack modern storage facilities for fresh fish products, fishing vessels and equipment. There are currently no aquaculture activities in SVG, although they are envisaged as a viable activity in the medium to long term (MARTFF, 2016).

The government of SVG has sought to deliver proper health care based on the needs of its citizens. To achieve this goal, the Ministry of Health, Wellness and the Environment (MOHWE) is pursuing preventive medicine through public education. The country is divided into nine health districts served by one general hospital, one mental hospital, five district hospitals, two nursing homes, and forty health centres (outpatient clinics). Additionally, there is one private hospital that works in tandem with the state facilities to deliver what the Pan American Health Organisation (PAHO) considers adequate health coverage for the country.

Given the need to protect its fragile environment, SVG has signed or ratified several Multilateral Environmental Agreements (MEAs) including the United Nations Convention on Biological Diversity (UNCBD), the United Nations Convention to Combat Desertification (UNCCD) and the United Nations Framework Convention on Climate Change (UNFCCC). The island ratified the UNFCCC on 2 December 1996 and the Paris Agreement on 29 June 2016, having submitted its Intentional Nationally Determined Contribution (INDC) in November 2015. At this time, SVG has submitted two National Communications, the latest in 2015.

3.2. SVG's Climate and Vulnerability

The following summary is adapted from the INDC (MEPSDIIL, 2015).

> The geography, geology and socio-economic circumstances of Saint Vincent and the Grenadines make it extremely vulnerable to climate-related 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 Saint Vincent and the Grenadines' social and economic growth.

As part of the Caribbean, its geographical coordinates place it in the Caribbean Hurricane Belt.[28] This makes it susceptible to hurricanes during the Atlantic hurricane season which commences on the first of June and ends on the thirtieth of November, annually. In addition, climate change projections predict that the region will be affected negatively by sea level rise, increased intensity of hurricanes, decrease in precipitation and rise in temperature, with huge environmental, economic and social costs. If these projections hold true, SVG needs to make sure that measures are put in place to adequately adapt to the impact of climate change.

For instance, on 24 and 25 December 2013, Saint Vincent and the Grenadines was hit by severe flooding. Estimates of damages and losses by the World Bank (WB) and GoSVG, respectively, range between $108.4 million (15% of Gross Domestic Product [GDP]) and $122.2 million (17% of GDP). Damages and losses included crops, animals, personal property, housing and the destruction of physical and economic infrastructure (roads, bridges, hydropower facilities, etc.). The humanitarian cost has also been substantial with an estimated 11,000 persons directly affected by the disaster, 9 lives lost and 3 persons missing. Approximately 12% of the population are directly affected by the floods and an estimated 55% of the population are facing challenges in accessing water resources. Several national, regional and international organisations, members of the donor community and regional governments provided assistance to address the crisis in the short term. CDB and WB provided longer-term financing for rehabilitation and reconstruction. CDB provided $0.75 million as an immediate response loan and later provided a rehabilitation and reconstruction loan (RRL) of at least $10 million.

3.2.1. Current Climate and Observed Trends

SVG experiences two distinct rainfall periods: the wet season and the dry season. The former occurs from June to November, which coincides with the Atlantic hurricane season, while the latter occurs from December to May. On average, the main island, Saint Vincent, receives 219 cm of rainfall per year, making it one of the wetter islands of the Eastern Caribbean, while the Grenadines receive an estimated 100 cm.

SVG has a tropical climate with an average monthly temperature of 27 °C with little diurnal variation. Temperature peaks in the rainy season between May and October where it can reach a high of 31 °C, and it can get as low as 23 °C in February during the dry season. Noteworthy are recent claims by residents of some unusually hot (hotter than usual) days. Empirical data from the Meteorological Office seems to support this claim as they have shown a warming trend over the past 22 years for both the maximum and minimum temperatures. However, the trend is not statistically significant at the 95 per cent level (Figure 5).

Relative humidity is high throughout the year (above 70 %) and predictably highest during the rainy period. The evaporation rate is highest during the late dry season and into the early wet season. This is consistent with lowest relative humidity, which increases further into the rainy season. Several weather systems affect Saint Vincent and the Grenadines annually, including the tropical Atlantic high-pressure system which brings most of the rain, the Inter-Tropical Conversion Zone (ITCZ) and the El Nino Southern Oscillation (ENSO).

[28] The Caribbean Hurricane Belt is an area in the Atlantic, including the Caribbean Sea and Gulf of Mexico, that has a high-level tendency to get hit by a hurricane. (Source: Caribbean Hurricane Belt, 2014)

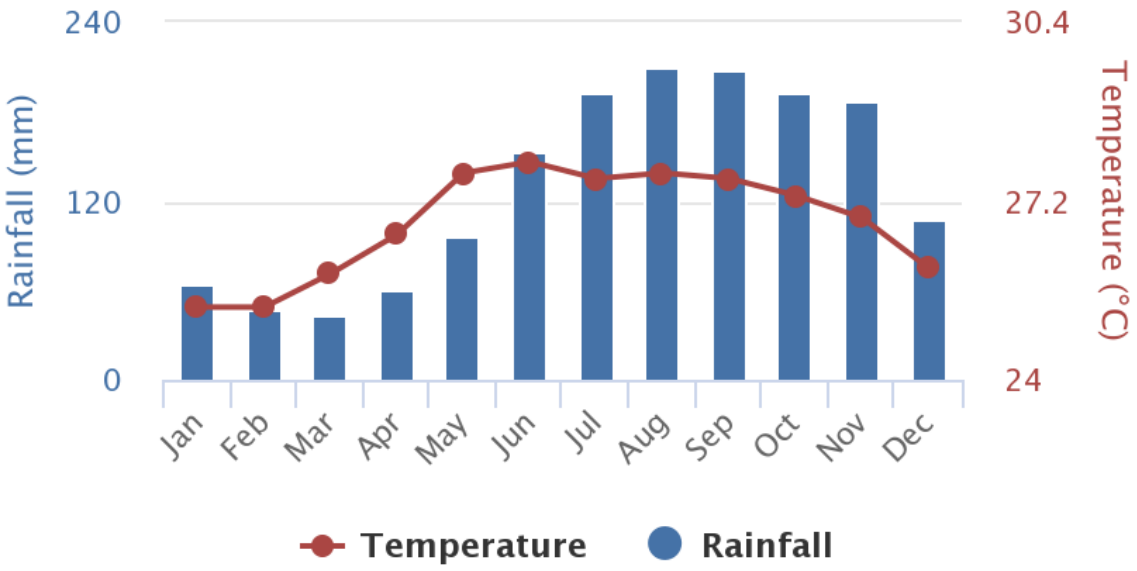

Figure 5 – Average monthly temperature and rainfall for Saint Vincent and the Grenadines from 1901 to 2015.[29]

3.2.2. CLIMATE PROJECTIONS

The Second National Communication (MWHE, 2015) projected rainfall and temperature for SVG through the end of the century. This was done using a consensus of a set of 15 general circulation models (GCMs) for the 2030s, 2060s, and 2090s. The data used are compiled in a United Nations Development Programme (UNDP) Climate Change Country Profile report and represent future change under three GHG emission scenarios: AIBI (medium emissions), A2 (high emissions) and B1 (lower emissions).

According to the models, mean temperature is expected to increase by 0.15 °C per decade over the next century. A similar warming trend was projected for seasonal changes. In addition, the frequency of hot days and nights is also expected to increase by the end of the century while cold days and nights will show significant decline, almost reaching nonexistence by the 2060s.

Furthermore, most models point to a reduction in rainfall, with negative median values ranging from 10 % to 22 % annually by the 2090s. They also suggest drying in the wet season from June to November, with the greatest seasonal change seen in the summer months (7.1 % per decade). A reduction in the rainy season will significantly affect water availability.

According to predictions from the IPCC, the future hurricanes of the north tropical Atlantic will likely become more intense, with higher peak wind speeds and heavier near-storm precipitation. Similar to projections for hurricanes, the IPCC's projections were relied on to estimate sea level rise. Changes in the Caribbean are expected to be near the global mean of 0.5 m to 0.6 m in the range of 2018 to 2100 when compared to 1986 to 2005.[30] All models show continued ENSO inter-annual variability.

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[29] http://sdwebx.worldbank.org/climateportal/index.cfm?page=country_historical_climate&ThisCCode=VCT. The dataset was produced by the Climatic Research Unit (CRU) of University of East Anglia (UEA).

[30] Using RCP 4.5.

3.2.3. EXPECTED CLIMATE CHANGE IMPACTS AND VULNERABILITY

According to the vulnerability assessment performed as part of the Second National Communication (MOWHE, 2015), the agricultural system in Saint Vincent and the Grenadines is based on the production of crops and animals. The former relies on the rainy season for planting, making the sector vulnerable to changes in climatic patterns; livestock production is also vulnerable to climate change as increased heat can affect the body temperature of animals and their functioning. In addition, grazing is affected during the dry season as pastures are void of grass.

Agriculture is one of the largest economic activities on Saint Vincent and it contributes significantly to the economic and social development of rural livelihoods in particular.[31] Offshore fisheries are also important and are predominately small-scale and artisanal. Tourism activities are concentrated in the Grenadines, 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 Saint 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 practice 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 Saint 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 river overflows and landslides in the north-eastern section of Saint Vincent in a major agricultural area. This occurred while the sector was still recovering from damages caused by Hurricane Tomas in the previous year.

The coastal zone is also threatened by climate change since more than 90 % of the critical infrastructural development lies on a narrow coastal belt less than eight metres above sea level. Any disruption in this zone, such as storm damage or shoreline inundation, would therefore be catastrophic to the economy and social dynamics. Moreover, most of the marine support structures—mangroves and reefs—have been severely affected by higher than normal sea surface temperatures and droughts followed by massive storm surges.

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

The infrastructures located on the narrow coastal belt include the island's main communication and emergency response structures—roads, airports, telecommunications, financial institutions and technical support centres. Additionally, many of the coastal protection ecosystems such as dunes, mangroves and reefs have been removed or are degraded, which exacerbate the vulnerability of coastal infrastructure to storm and hurricane activity (particularly wind and storm surges).

Like other sectors, the health sector is affected by a change in climate. It must handle the burden of climate-sensitive diseases or other related conditions resulting from climate change, such as

[31] As in the INDC (MEPSDIIL, 2015).

temperature-related morbidity and mortality, since some causes of death are exacerbated by heat. Moreover, too little or too much water can facilitate the spread of water- and vector-borne diseases such as malaria, dengue and leptospirosis. Leptospirosis has shown an upward trend in the past 12 years. Noteworthy is that during the years 2002, 2004, 2005 and 2007, when there were tropical storms or hurricanes which resulted in flooding, the rates of infection were high. Also, medicines can be harmed by higher temperatures, losing their chemical properties.

Vector-borne diseases may increase due to increased precipitation and temperatures in Saint Vincent and the Grenadines. The Saint Vincent and the Grenadines Strategic Plan for Health 2007–2012 states that national household and Breteaux indices[32] continue to be above internationally accepted levels.[33] Dengue is specifically mentioned but malaria cases have also been reported. Data obtained from the Ministry of Health reported one imported case of malaria in 2008 and another in 2010. In 2007, the Caribbean Environmental Health Institute also stated that there are serious issues related to availability of water, health and sanitation in the context of vector control.

The water sector is also subject to the negative effects of climate change since the country depends heavily on rainfall to supply its network of rivers and for water harvesting. 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."[34]

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 Saint Vincent and is of particular concern for the Grenadine Islands, which have a very high dependence on rainwater for freshwater supply. Climate models also predict an increase in the intensity of rainfall and a distribution of rainfall over fewer rain days, which means that the country is vulnerable not only to droughts, but also to the secondary effects of torrential rains such as landslides and the contamination of water supplies.

SVG is shifting its economy towards tourism. This industry interacts with, and is supported by, other sectors such as energy, health, agriculture, social development, housing and the environment. The cumulative impacts on these other sectors thus combine to impact tourism. With this in mind, the estimated impact of climate change on the tourism products of SIDS and by extension SVG is expected to be strongly negative.

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 the tourism industry through increased infrastructural damage, additional emergency preparedness requirements, higher operating expenses (e.g. insurance, backup water and power systems and evacuations) and business interruptions.[35]

[32] Breteaux index (BI): number of positive containers per 100 houses inspected referring to containers found with mosquitos.

[33] As in the INDC (MEPSDIIL, 2015).

[34] As in the INDC (MEPSDIIL, 2015).

[35] As in the INDC (MEPSDIIL, 2015).

3.3. Past and Present Action on CCA

The Second National Communication (SNC) (MHWE, 2015) provides the following summary of adaptation activities in SVG:

> Saint Vincent and the Grenadines is already adapting to climate change on a low level. However, the implementation of these measures did not take into consideration climate change issues. Most of these measures are funded by annual government budget allocations to the various line ministries with some responsibility for environmental protection. In cases where activities were geared towards adapting to the adverse impacts of climate change, they were mainly project-based and financed by grant funds.
>
> New areas of adaptation actions are expected as the need arises in the future. This can include a modified and improved agriculture system with technological support for new plant and possibly animal species capable of existing under the new and harsh climatic conditions; a more responsive, technically equipped medical system with appropriate human resources; communication infrastructure to battle new and emerging diseases (DHF, asthma, flu); water exploration technology; renewable energy development; and new housing structures.
>
> However, it will be imperative to mainstream climate change adaptation into the national development process as it ensures effective adaptation and gives climate change more prominence at the national level. These issues should also be mainstreamed into the national planning frameworks to engender national participation in their various phases of implementation.

3.3.1. Adaptation Policy Framework

The adaptation assessment provided in the SNC (MOHWE, 2015) shows that SVG is indeed already adapting to the adverse impacts of climate change, without consciously associating the relevant activities with the issues of climate change. Broadly categorised, some of these adaptive measures include: soil conservation measures to deal with run-off, especially on hillside farms; control and restriction of sand mining; a national solid waste management programme which prohibits open burning; renewable energy and energy-efficient programs in the various sectors; and groundwater and rainwater exploitation and protection of water catchment areas. New areas of adaptation are expected to emerge as the need arises. Therefore, it is imperative to mainstream climate change adaptation into the national development process to ensure that climate change adaptation is given more prominence at the national level.

Regionally, SVG became a signatory to the St George's Declaration of Principles for Environmental Sustainability, the overarching environmental policy of Eastern Caribbean states. Saint Vincent and the Grenadines has also participated in other regional initiatives and actions which address climate change, such as the Caribbean Planning for Adaptation to Climate Change (CPACC) Project and the Special Programme on Adaptation to Climate Change (SPACC) Project.

Public awareness and education components were built into these projects to increase awareness and understanding of climate change in the Vincentian population. There are also ongoing, though limited initiatives being undertaken by SDU, several non-governmental organisations (NGOs) and a small number of private sector entities (MOHWE, 2015).

Figure 6 illustrates the complex context of the NAP, showing the commitments that the country has already assumed relating to CCA, ranging from international conventions to sectoral strategies and projects.

International agreements followed by SVG include the UNFCCC, Sendai, Agenda 2030, the Convention on Biological Diversity and the Paris Agreement. Almost all the mentioned conventions fall under the mandate of the SDU, except Sendai, which is the responsibility of the National Emergency

Management Organisation (NEMO), and the UNCCD, which is coordinated by the Forestry Department. SDU also oversees national actions related to the Montreal Protocol.

The NESDP sets the stage for the NAP and its full integration with the national development objectives. The NAP is fully aligned with the NDC and sectoral planning instruments as strategies, plans and ultimately CC related projects. These elements will also be reported in the National Communications (NC) and in the Biennial Updated Report (BUR) and the link to the overall MRV is done.

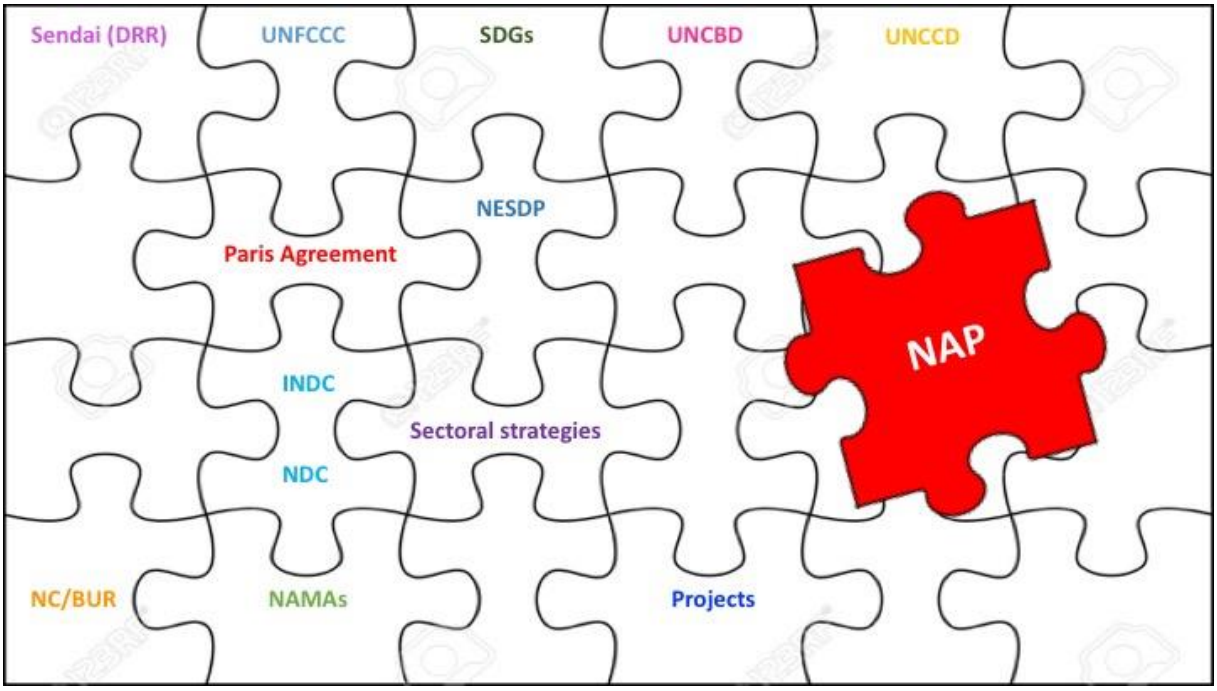

Figure 6 – NAP's context.

According to FAO (2018b), the NAP's process will govern prioritisation and planning for scaling up adaptation investment in the near and medium term. When it comes to establishing synergies and systematic links between NAPs and key processes such as NDCs, the 2030 Development Agenda and its SDGs are essential because:

- All countries have a stake in the implementation of the 2030 Agenda and the Paris Agreement and are rolling out actions simultaneously.
- Ministries of planning, economy, finance and the environment, as well as others, play a key role with respect to NAPs, SDGs and NDCs and need to manage these processes effectively for the benefit of both development and climate action.
- This is a strategic opportunity to improve adaptation planning and action on the ground as well as to enhance the scale and sustainability of impact from the three planning processes, by harnessing the linkages and leveraging each to the mutual benefit of all three.
- Coordination and linkages would also allow SVG to:
    - Reduce vulnerability by integrating adaptation considerations into all relevant plans, policies and strategies, making it easier to prioritise and plan for adaptation.
    - Implement the Paris Agreement: the NDCs are the primary vehicle for capturing, reporting and updating commitments and progress.
    - Align long-term national development priorities with the SDG framework.

FAO (2018b) suggests that this alignment of development priorities between NAPs and NDCs can be done along the following lines.

- Integral governance:
    - Collaborative coordination mechanisms and clear institutional mandates, as the responsibility for leading and coordinating CC and therefore both NDCs and NAPs are likely to fall under the same ministry.
    - A coherent policy framework on climate change from which mitigation and adaptation strategies would derive, or to which the latter would contribute.
    - Strengthened awareness and knowledge about the impacts of climate change on development among decision-makers in all sectors and at all levels of government.
- Capacity development:
    - Joint skill assessment: While some skills are more specific, many capacities and skills are common to both mitigation and adaptation. This includes planning and technical skills (e.g. climate information and climate science, economic appraisal tools), managerial skills (e.g. results-based management, policy development) and participatory skills (e.g. communications, stakeholders' consultation).
    - Comprehensive long-term capacity development interventions and a train-the-trainers approach: Mitigation and adaptation share many common stakeholders. The emphasis should be put on building the capacities of local training and academic institutions to foster this long-term approach and to integrate topics related to the impacts of climate change into primary, secondary and higher education curricula.
- Prioritisation of interventions:
    - Identification of activities with multi-sector co-benefits for development and climate resilience.
    - Appraisal of economic and non-economic benefits and trade-offs between interventions using tools such as cost-benefit, multi-criteria and cost effectiveness analysis.
- Integrated financing frameworks:
    - Close involvement between Ministry of Finance and Ministry of Planning and Economics. This will result in stronger outcomes and a more credible process that builds confidence and trust among private investors and external climate funders.
    - Use of financing scenarios and diagnostics such as public climate expenditures and institutional reviews, climate change coding and tracking reports.
    - Engagement of the private sector, public-private partnership options and blended financing, with an enhancement of the regulatory and fiscal frameworks to promote a better climate for investment.
- Monitoring, evaluation and reporting:
    - Developing complimentary indicators.
    - Strengthening the existing M&E systems and integrating them into an overall M&E system.
    - Coordinating reports to the UNFCCC.

Increased coordination and communication among the various stakeholders will then be needed to further align the NAP process with the planning and budgeting procedures in the public, private, academic, civil society and cooperation spheres.

A detailed assessment of the level of integration of CCA into SVG's policies and strategies, according to the results of the consultations held so far related to the public and private sectors, civil society, academia and the media is included in Appendix II.

3.3.2. National Climate Change Adaptation Initiatives

The Pilot Programme for Climate Resilience (PPCR) is the largest project in Saint Vincent and Grenadines specifically designed to address climate risk and resilience[36]. The PPCR proposes to enhance climate risk management through the following broad strategies:

- Strengthen community resilience to cope with climate hazards;
- Increase institutional capacity to undertake climate risk management;
- Strengthen knowledge and awareness;
- Prepare comprehensive hazard maps for public institutions and communities;
- Design and implement gender-sensitive disaster risk management initiatives; and
- Collaborate with communities at all levels of climate and disaster risk management.

The PPCR has four main components:

1. Climate vulnerability risk assessment and risk reduction. This component is being piloted in Union Island, the Arnos Vale Watershed and the Georgetown Watershed, and a range of data relative to other components has been collected.
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 impact modelling; and the development of a harmonised platform for data analysis and data management.
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 frameworks to improve SPRC implementation in Saint 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.
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 three-year national public education programme to build community-based climate risk reduction and resilience measures, provide a national curriculum for schools on climate change and disaster risk reduction, plan and develop an early warning system for Saint Vincent and the Grenadines, provide technical training, and extend the school risk assessment to cover all constituencies in the country.

The J-CCCP is also supporting SVG in advancing the process of low-emission, risk-resilient development by improving energy security and integrating medium- to long- term planning for adaptation to climate

[36] As in the INDC (MEPSDIIL, 2015).

change. In the pursuit of this objective, the initiative supports policy innovation through the development of a number of NAMAs and NAPs that will help guide Caribbean countries towards a green, low-emission and climate-resilient development pathway. The initiative also supports the implementation of current low-emission technology that advances climate risk management, including demonstrations in the target countries. The programme strengthens institutional and technical capacities in selected countries for the iterative development of comprehensive NAMAs and NAPs that are country-driven and based on existing national and sub-national development priorities, strategies and processes. In SVG, the NAP formulation has been supported, as well as the adaptation strategy and investment plan for the agriculture sector (crop cultivation, livestock and fisheries) and a NAMA in the transport sector.

Complementary to that, the U.S. Government is providing in-country support to NAP implementation in the Eastern Caribbean region through the NAP Global Network (NAP GN). The Programme of Support for the Eastern Caribbean is a three-year programme designed to address the needs and priorities of the region in terms of adaptation implementation, contributing to paving the way towards a more resilient future. As part of the US In-Country NAP Support Programme for SVG, the NAP GN also supported the elaboration of a financing strategy for SVG's NAP and the development of the sectoral adaptation strategy and associated five to ten-year investment plan for the water sector.

Agriculture, which for decades underpinned the economy of Saint Vincent and the Grenadines, has declined significantly over the last decade due to restrictive trade regimes.[37] This has resulted in significant land use change as demand for housing is encroaching on agricultural lands. However, the Government of Saint Vincent has demonstrated its commitment to agricultural diversification through its policies and programmes. These efforts include the following:

- Government support for small-scale farmers 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.
- An innovative project which transforms abandoned land into a model for sustainable living and farming systems in Saint Vincent. As part of the project, young people 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.

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).[38] The impacts of climate change, in particular SLR, will magnify these pressures and accelerate coastal erosion. The areas at greatest risk in Saint Vincent and the Grenadines are Belmont Walkway, Canash Beach, Indian Bay, Johnson Point and Villa Beach, which are home to notable resorts, ports and an airport that lies at less than 6 metres above sea level and will therefore be affected.

[37] As in the INDC (MEPSDIIL, 2015).
[38] As in the INDC (MEPSDIIL, 2015).

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 resource management and strengthen stakeholders' capacity through a common institutional framework for managing marine protected areas (MPA) in the Caribbean Region.
- Formulating coastal zone policies through the activities of the PPCR.
- Reducing the risks induced by climate change for the population through coastal protection by means of various specific initiatives, including:
    - the Sans Souci Coastal Defence Project;
    - the At the Water's Edge (AWE): Coastal Resilience in Grenada and Saint Vincent and the Grenadines Project (2011–2016); and
    - the Coastal Protection for Climate Change Adaptation in the Small Island States in the Caribbean Project 2014–2018.

The Fisheries Division is proposing a coastline protection project which would provide synergy with the Sans Souci Coastal Defence Project in terms of halting beach and cliff erosion, stabilising the shoreline and restoring the beach and near-shore reef. Additional benefits are to attract and provide habitat for fish, lobster and other marine life. This project will also benefit from the FEWER project related to EWS for the sector and receive Fish Aggregating Devices (FAD), which have been found to be very effective.

Saint Vincent and the Grenadines has not devised a national water policy or water management plan, but it does have a draft roadmap toward Integrated Water Resources Management (IWRM) planning for Union Island, Saint Vincent and the other Grenadines.[39] Importantly, the country is making efforts that contribute to adaptation at the community and household level. These initiatives are:

- The construction of a reverse osmosis plant in Bequia;
- Rooftop rainwater harvesting systems, which have been installed through several projects:
    - at six sites in Saint 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 Saint Vincent to secure and provide potable drinking water when there is water scarcity or shortage.

The policy of GoSVG is to provide universal health care that reflects the principles of equity, affordability, quality and cultural acceptance for its citizens.[40] 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.

Saint Vincent is a member of the Caribbean Disaster Emergency Management Agency (CDEMA), an inter-regional support network of independent emergency units that responds to disasters wherever

[39] As in the INDC (MEPSDIIL, 2015).
[40] As in the INDC (MEPSDIIL, 2015).

they occur in the region.[41] The National Emergency Management Organisation (NEMO) falls under the ambit of the Prime Minister's Office.

Saint Vincent and the Grenadines recognises that disaster management is important 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. 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, prepare for, respond to, recover from and mitigate the causes and impacts of natural phenomena on the environment and to prevent man-made disasters."

- The 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 Saint Vincent and the Grenadines to climate change and natural hazards.
- PPCR mainly addresses infrastructural support in response to climate change and sea level rise.

Meteorological services have been benefiting from various projects related to CCA:

- Under the WB-funded RDVRP**,** our services were the beneficiary of training for two meteorological forecasters and four mid-level meteorological technicians (two specialising in instruments and two in climatology). We also received instruments that are now installed at the new airport at Argyle. The instruments include a Stevenson Screen (a house for thermometers, a sunshine recorder, an anemometer, an evaporation pan and its components, and a manual rain gauge). Under this project another staff member is expected to commence training in meteorological forecasting early next year.
- The SWFDP is organised by the WMO and is being carried out in partnership with Météo-France and the CIMH. SWFDP would enable the service to issue alerts, advisories and severe weather warnings for non-tropical cycle events with guidance from the Regional Specialised Meteorological Center of Météo-France in Martinique. Hurricane-related forecasts and products will be provided, as usual, by the National Hurricane Centre in Miami. A web platform is expected to be completed by 31 March 2018, followed by a two-month testing phase. Subsequently, a training and implementation workshop will be held in May 2018 at CIMH. SWFDP implementation in the Eastern Caribbean is made possible by funding from the Government of Canada.
- PPCR is being executed by the UWI MORI. Meteorological services are involved in Components 2 and 4 of this project. Component 2 covers mainly the upgrading of automatic weather stations and the building of capacity in forecasting products. The FEWER Project falls under Component 4 of the project. FEWER aims to reduce the risks to fishermen associated with climate change and variability by developing early warning and emergency response.
- CariCOF falls under the Programme for the Building Regional Climate Capacity in the Caribbean (BRCCC) Project. Climate outlooks for the Caribbean are prepared by the CIMH located in Barbados with contributions from regional meteorological services. These forecasts include drought, temperature, wet days and wet spells, and coral bleaching. The forecasts are done for three and six months, are updated monthly and are delivered to a wide range of regional and national stakeholders for decision-making.

[41] As in the INDC (MEPSDIIL, 2015).

3.4. GAPS AND NEEDS

Part of the gaps and needs assessment is based on the results of the application of the SNAP tool (Figure 7) developed by GIZ. This tool was explained during the interviews held during the first mission and stakeholders were able to later answer a questionnaire via email. Eight responses were obtained from a total of 14 participants. The answers were received from the Ministry of Agriculture, the Inter-American Institute for Cooperation on Agriculture (IICA), the Promoting Access to Clean Energy Services in Saint Vincent and the Grenadines (PACES) project, the National Parks, Rivers and Beaches Authority (NPA), the Red Cross, Richmond Vale Academy and the Ministry of Tourism.

Further detailed results are presented below per success factor (SF), based on the justifications provided by the answers to the SNAP questionnaire. Monitoring and Evaluation (M&E) was identified as the most critical gap at this stage in the country's NAP process. A structured framework is still to be clearly defined or established, along with the requisite metrics for monitoring the NAP process. The sectoral plans themselves do not integrate climate change issues in a systematised way and hence M&E systems are not specifically looking towards climate change issues yet.

M&E is not yet totally automatic and systems are only developed if required. A unit has been established and given responsibility for M&E for all capital projects, but implementation is limited as this is not their only responsibility. Also, the inclusion of the dimension of gender in M&E was pointed out as the SF with the most significant gaps both currently and in future scenarios. Significant gaps were also noted with respect to the extent to which existing M&E systems were able to offer entry points to integrate climate change adaptation. These climate change considerations are not currently covered in the existing systems.

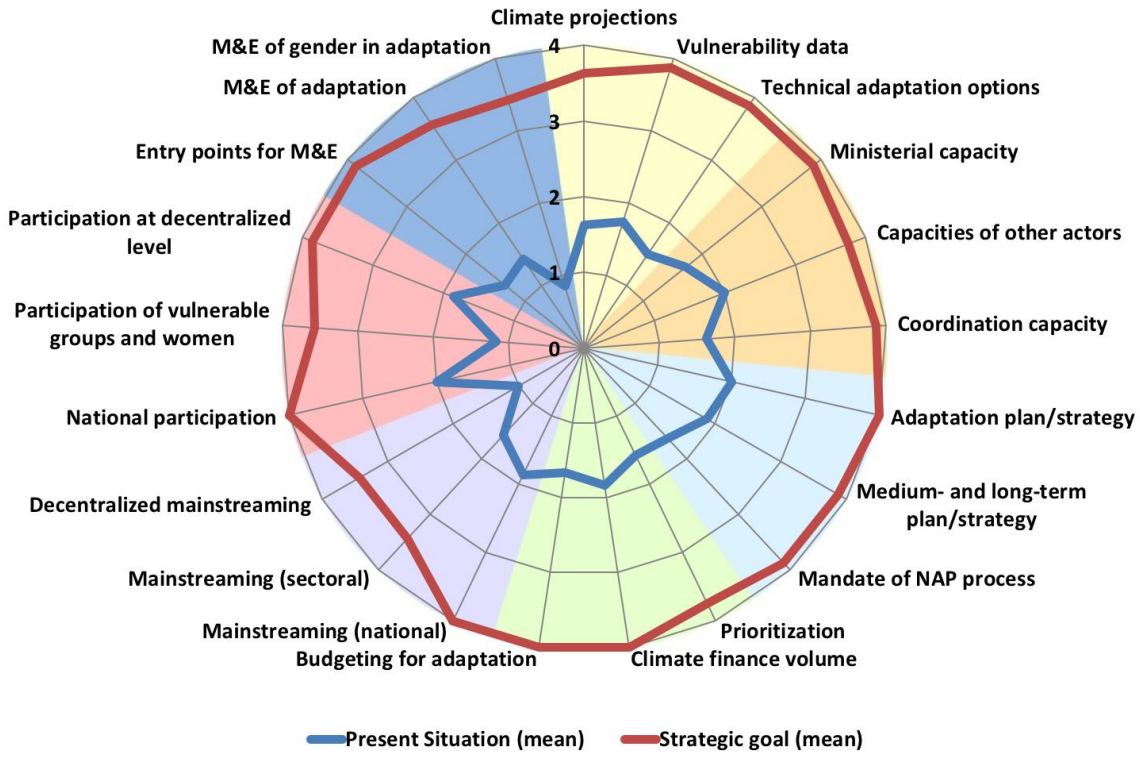

Figure 7 – Results application of the SNAP tool.

In terms of implementation, significant work is being done regarding emergency shelters and water collection systems. However, action also needs to be taken to address soil erosion (avoidance), drainage and the reduction of illegal garbage dumping which results in blocked drains. In addition,

there is no repository for past, ongoing and planned actions as information on project implementation is still scattered.

NESDP is used as the main policy document to align national priorities and projects. The NAP itself and the adaptation actions should then be aligned to goal 4 of the NESDP, improving physical infrastructure, preserving the environment and building resilience to climate change. Furthermore, the general quality of the adaptation projects ranges from medium to high.

The answers to the SNAP questionnaire provided no consensus on stakeholders' perception of the amount of existing climate information. Some of the participants stated that there is already a substantial amount of information but others outlined that this information is not easily accessible and does not reach the target audience, particularly the most vulnerable groups.

As for climate projections, stakeholders stated that some information was available from regional organisations such as the Caribbean Institute of Meteorology and Hydrology (CIMH) but outside of these forums, at the national level, there was little information on national climate projections. Also, stakeholders knew of some sectoral information related to climate change risk, including studies, policies and strategies, which were not easy to locate and often lengthy and difficult to analyse. Some information on this topic can be obtained from the National Emergency Management Organisation (NEMO) and other regional institutions such as the CIMH.

The stakeholders indicated that there is a substantial amount of existing climate information and data much of which is contained in various vulnerability assessments that have been undertaken for Saint Vincent and the Grenadines. Some examples included studies which were undertaken by IICA and USAID. These studies can be obtained upon request. Other useful documents include the CARIBSAVE Climate Change Risk Atlas (CCCRA) for SVG, which examines climate change risks, vulnerabilities and adaptive capacities; it seeks to develop pragmatic response strategies to reduce vulnerability and enhance resilience. Others mentioned include the Disaster Risk Reduction Country Document, Saint Vincent and the Grenadines (2014) and the Regional Disaster Vulnerability Reduction Project (RDVRP).

Finally, regarding adaptation options, stakeholders stated that little was retrieved from the local level. While information is available on the subject online, there is no local repository for where such information can be accessed; instead, pieces of such information must be collected from various stakeholder agencies. Additionally, the Caribbean Climate Online Risk and Adaptation tool (CCORAL) is also used by various departments in decision-making. With regards to mainstreaming at the level of the national development strategy, stakeholders indicated that NESDP includes climate change. At the sectoral level, they stated that the inclusion of climate considerations is being undertaken, but CCA needs to be incorporated into all aspects of planning and budgeting since adaptation issues are considered in new and existing policies, programmes and activities.

At the wider level, integration is very low and has not yet been institutionalised.

It was stated that the level of stakeholder participation was not as significant as it could be with respect to adaptation planning as such processes to include key counterparts have not yet been institutionalised or formalised. However, there are some examples of groups that have completed or are currently working on projects and activities aimed at addressing climate change issues. These groups include SusGren, Action Bequia, Northern Grenadines Community Development Inc, Tobago Cays Marine Park and Union Island Environmental Attackers.

The participation of women is sometimes promoted. Gender issues are not acknowledged as a significant challenge in SVG.

Decentralised planning is also not institutionalised, despite the fact that groups are invited to government meetings. Non-central actors could benefit from the institutionalisation of the consultation and participation processes in CCA, and in the NAP process in particular.

The impact of climate change is not addressed in a dedicated national plan, as a climate strategy or NAP, but rather is laid out across several documents, such as the national development plan and some sectoral plans. Medium- to long-term strategies have been identified to address the effects of climate change in a holistic and participatory manner.

However, there are no institutional arrangements in place to sustain the NAP process. This is recognised as a need to be addressed as CC policy is developed.

The technical capacity of staff in sectoral ministries for climate change adaptation was considered limited and was associated with the under-staffing of the institutions. CCA is not an area of strong concentration for staff; instead, guidance is sought from the relevant technical institutes and agencies. Few staff have training in climate change education. Capacity must be developed to further understand the impacts, vulnerabilities and adaptation options related to CC in order to further mainstream CC awareness in the various ministries' planning, budgeting and operations. These should also have more trained staff.

In terms of technical knowledge, some institutions may have high levels of available knowledge, such as the University of the West Indies (UWI), IICA and the Ministry of Economic Planning, amongst others. Technical knowledge is much stronger in agencies that deal directly with CCA and that have trained staff in the area.

Figure 8 – Presentation of the SWOT analysis performed by the group focusing on the SF related to climate information.

As such, the level of effectiveness of intersectoral coordination of adaptation needs to be strengthened. There is no formal mechanism for coordination on climate change action across sectors and interest groups, despite the fact that some sectors closely collaborate with the NEMO and SDU.

To further explore underlying causes for such gaps, a Strengths-Weaknesses-Opportunities-Threats (SWOT) analysis was performed during the technical training held in early August 2017 (Figure 8).

According to FAO (2018b), the following institutional barriers might affect climate change adaptation:

1. *Fragmented national mandates on climate change*

   While the coordination of climate change often lies with the Ministry of Environment, issues related to climate change are addressed within sectors such as energy, industry, agriculture and health, as well as planning ministries, which do not necessarily identify these actions as being related to climate change; and which do not sufficiently coordinate their interventions. Ministries of finance also play a key role in allocating budgets and assigning resources.

2. *Limited communication and dialogue across government*

   This does not only apply to climate change, but to many other policy issues. A whole-government approach is called for to ensure integration and policy coherence.

3. *Uneven availability of technical skills and knowledge*

   Ministries of the environment, institutions in charge of disaster risk reduction and meteorological offices are often the main repositories of climate change knowledge. Awareness and skills for climate change adaptation planning should be more widely disseminated across other stakeholders.

4. *Perceived conflict between climate change and development agendas*

   The risks and opportunities linked to climate change are often overlooked and the synergies between climate change and development are not utilised.

5. *Restricted political support from key decision-makers such as parliamentarians and thought leaders beyond the environmental arena*

   Climate change is still often perceived as solely an environmental issue. Political support from the wider decision-making community, arising from their awareness of the linkages between climate change and development, needs to be enhanced.

These barriers should be considered and actions to address them taken up in the design of the institutional framework and mandate relating to CCA in the elaboration of the CC policy.

In summary, the major gaps to be addressed by the NAP process include:

1. Lack of institutionalised coordination mechanisms, including for information sharing;
2. Lack of medium and long-term planning and budgeting of CCA actions;
3. Weak M&E policies and projects and enforcement of environmental legislation;
4. Lack of CC and socioeconomic scenarios and data at the required scale for small islands;
5. Poor investment and attention given to CC and environmental monitoring; and enforcement
6. Poor knowledge of the economic and social costs of CC impacts and adaptation options.

To further mainstream CCA into the planning and budgeting processes in the short to long term, the needs include:

1. *Cross-cutting*:

   - Integration of CCA into plans, policies and budgeting processes, with dedicated budget lines
   - Creation of specific climate change units with human resources
   - Technical assistance

- Development of human resources and technical knowledge
- Collection and storage of data relating to climate change and disaster impacts on the sector (as well as data in general)
- Development of a climate change portal
- Knowledge transfer to lower levels where needed and with international and regional agencies
- Outreach and communication programmes

2. *Implementation:*
    - Prioritisation of interventions and definition of a plan of action and resource mobilisation strategy for the short, medium and long terms
    - Small grants for demonstration and pilot projects on mitigation and adaptation
    - Programmes to address threats and stresses outside of climate change
    - Micro- and medium-credit facilities for innovation and adaptation measures

In summary, the major clustered gaps and needs regarding CCA in SVG are:

1. Poor coordination mechanisms, including for information-sharing and awareness-raising;
2. Lack of medium- and long-term planning culture integrating CCA;
3. Low investment and attention to climate and environmental M&E and enforcement;
4. Lack of climate change and socioeconomic scenarios and data at the required scale for the archipelago; and
5. Poor resilience mechanisms in place for the most vulnerable.

4. THE NATIONAL ADAPTATION PLAN OF SAINT VINCENT AND THE GRENADINES – NAP SVG

Although some progress has already been made to address immediate and urgent climate change impacts through the coordination of implementation of concrete projects and processes, climate change planning has yet to systematically address longer-term adaptation needs.

To address this, a process was initiated at COP-16 (Cancun) to initially enable the LDCs to formulate and implement National Adaptation Plans (NAPs). At COP-17 (Durban), parties established the NAP objectives, namely to reduce vulnerability to the impacts of climate change by building adaptive capacity and resilience and to facilitate the coherent integration of climate change adaptation into new and existing policies, programmes and activities.

The objectives pertain particularly to development planning, processes and strategies within all relevant sectors and at different levels, as appropriate. This process was to be aligned with the principles established in the Cancun Adaptation Framework (CAF), and based on the LDCs' experiences with National Adaptation Plans of Action (NAPAs). The Least Developed Country Experts Group (LEG) subsequently developed the Technical Guidelines for the NAP process, which were published in December 2012. Upon invitation of the COP, international organisations and other relevant partners started establishing support programmes, such as the UNDP-UN Environment NAP Global Support Programme, and the UNDP-FAO Integrating Agriculture into NAP programme. Others also took part, such as the J-CCCP and the NAP Global Network.

The NAP does not replace the need to address the urgent and immediate needs and concerns regarding adaptation to the adverse effects of climate change, as identified already by some sectors. However, the integrated sectoral impacts of climate change and adaptation were not systematically considered, and implementation at the project level is typically sector-specific.

The NAP process allows for additional support to countries to specifically bolster their medium- to long-term adaptation planning capacity within existing national planning processes at the national, cross-sectoral and local levels. A medium- to long-term adaptation planning process requires that countries build on the lessons learned from many past and current efforts in several respects, notably institutionally, technically, strategically and operationally (adapted from FAO, 2018a).

This section presents the NAP for St. Vincent and the Grenadines and includes the following topics: (1) vision, mission and objectives, (2) coordination, communication and stakeholders' engagement, (3) adaptation actions, (4) potential contribution to the SDGs and the Sendai framework, (5) resource mobilisation and (6) reporting, monitoring and review.

4.1. INSTITUTIONAL ARRANGEMENTS

According to FAO (2018 b), coordination is a key function of the NAP process. Effective coordination is largely determined and driven through policy, institutional arrangements and governance. These prongs help build the consensus required for a real integration of climate change adaptation and development. Through policy-making, institutional arrangements and governance mechanisms, decision-makers can engage with all stakeholders throughout the planning process. This is particularly important as a means to ensure the adequacy and alignment of priorities on climate change adaptation, sectoral priorities and national development goals, and to promote real ownership by all the main stakeholders at different levels.

Based on the discussions held with the various stakeholders and results of the consultations, the various functions related to the NAP are outlined below and must receive the endorsement and approval by the Parliament:

- **Coordination:**

  SDU will continue to lead on CC issues and hold responsibility for the strategic orientation; cross-sectoral coordination; information gathering, management and dissemination; mobilisation and management of CC support and MRV in accordance with its mandate. SDU is the National Focal Point (NPF) for the UNFCCC and the Operational Focal Point (OPF) of Global Environment Facility (GEF) and is responsible for the MRV of CC, namely the elaboration of the National Communications and BURs. SDU also leads actions related to Agenda 2030, the Convention on Biological Diversity and the Montreal Protocol;

- **Advisory:**

  This should be done at two levels, by decision-makers and technical officers. A National CC Committee (NCCC) shall be created and be constituted of representatives from the various public sectors at the Permanent Secretariat level. It should also include partners from civil society, private sector and academia, who meet at least every quarter, and will hold responsibility for the development of a CC annual plan and budget. A mirrored technical arm of the NCCC shall be created and meet at least quarterly. It should inform the decisions of the NCCCC and coordinate action with other actors such as media, academia, private sector and civil society. The NCCC should be chaired by the SDU;

- **Communication:**

  While SDU shall manage information related to CC, the meteorological office has a special role to play in gathering weather and climatic information and establishing climate projections. It also has a role in issuing alerts and collaborating with NEMO in the EWS. SDU should inform the media, using the Agency for Public Information (API), and promote the dissemination of CC information and the adoption of good CC practices among various segments of the public;

- **Mobilisation of support:**

  This shall be done by all the actors involved and coordinated through the NCCC. The multilateral mechanisms may be seen as the major source of climate financing, but domestic sources are also relevant. SDU will also be responsible for the management of CC finance. Implementation of climate actions can be performed by all relevant actors and communicated to SDU;

- **Monitoring, Review and Verification (MRV):**

  The MRV of processes and outputs related specifically to the NAP shall be done by SDU, which is also responsible for UNFCCC reporting. Monitoring of the NAP and, broadly, of the implementation of CC policies and strategies shall also supported by the media, private sector, civil society and academia.

and refers to CC more broadly.

Table 2 summarises the roles and responsibilities of the broad categories of NAP actors and refers to CC more broadly.

Table 2 – Roles and responsibilities of the various actors concerning CC.

Actor	Roles	Responsibilities
Cabinet	Climate champion	• Adopt and promote good CC practices
Parliament	Political orientation	• Creation of the mandate for CC • Approval of the institutional framework • Endorsement of the NAP • Definition of annual domestic CC budgets

Actor	Roles	Responsibilities
		• Appointment of the coordination entity and of the members of the NCCC • Facilitation of the participation of civil society, private sector and academia

SDU	• Strategic orientation
	• Coordination
	• Information
	• Support
	• Implementation
	• NFP UNFCCC
	• OPF GEF
	• MRV
		• Appointed by the Cabinet
		• Chairs the NCCC
		• Provides:
		  ○ Strategic orientation
		  ○ Cross-sectoral coordination
		  ○ Information gathering, management and dissemination
		  ○ Mobilisation and management of CC support
		  ○ MRV of CC action in accordance with its mandate

Dir. Plan. MFEPSDIT	Focal Point of the GCF	• Mobilisation of GCF resources • Issuance of no-objection letters for the GCF
NCCC – decision	Advisory	• Advisory on the definition of policies, regulations and technical standards considering CC • Promotion of the coordinated implementation of activities to reduce the impacts of CC by incorporating it
NCCC – technical	Technical Advisory	• Identification of gaps and needs and of technically sound adaptation actions • Promotion of the coordinated implementation of activities to reduce the impacts of CC by incorporating it • Definition of the guidelines to further mainstream CC into sectoral planning instruments • Collaborates with the private sector, civil society and academia advising on the technical aspects • Validate media contents related to CC
Meteorological Services	Climatic data, EWS	• Collection and management of weather data • Information of the EWS • Elaboration of climate projections with regional partners • Provision of climate services to farmers and fishers
NEMO	EWS	• Management of the EWS
Departments/Units	Implementation	• Design and implementation of CC actions • Mobilisation of support
Public, Civil Society and Private Sector	Implementation	• Implement CC adaptation and mitigation activities at the community level • Empowerment of local communities in relation to CC • Mobilisation of support • Monitor the implementation of the NAP as independent observers
Academia	Research	• Development and implementation of the CC research plan

Actor	Roles	Responsibilities
		• Mobilisation of support • Monitor the implementation of the NAP as independent observers
Cooperation partners	Support	• Provision of support (finance, technology and capacity building) • Sharing of experiences
Media	Communication	• Convey CC messages • Coordinate with other actors, promote good practices • Monitor the implementation of the NAP as independent observers

4.2. Vision, Mission and Objectives

The vision, mission and main objectives of the SVG's NAP were widely discussed among stakeholders and were agreed upon as follows:

NAP Vision:

> To be a leader by having a society, environment and economy that is resilient to climate change.

NAP Mission:

> To mainstream climate change adaptation into development planning and implementation.

NAP Objectives

1. Promote an enabling environment to facilitate the mainstreaming of climate change adaptation in the planning, budgeting and implementation processes of the public and private sectors, civil society and academia by strengthening the governance structures to enable adaptation and DRR (when they overlap), including for identification, implementation, monitoring and evaluation, and the communication of adaptation actions.[42]
2. Improve the capacity for data and information collection, management and sharing, determination of climatic risk and access to technology and financing for adaptation.
3. Implement adaptation actions towards increased resilience among the most vulnerable Vincentians.

These three objectives are supported by the three pillars that sustain the SVG's NAP:

NAP Pillars:

1. Institutional framework;
2. Knowledge, technology and financing; and
3. Resilience of the most vulnerable.

[42] DRR is mentioned for the cases in which there exists an overlap with CCA.

As the development of this framework builds on ongoing action in SVG, the following principles which are adapted from MATRFF (2016) are adopted for NAP:

- Policy coherence: Proposed actions should be coherent with GoSVG's relevant national, regional and international policy commitments.
- Sustainability: Recommended CCA actions should encourage and stimulate the efficient and sustainable use of natural resources in order to ensure continued future food production and the wellbeing of future generations.
- Gender sensitivity: The CCA actions shall integrate gender concerns and needs into programming, while simultaneously ensuring that the contributions and leadership of both men and women are adequately employed at all stages in CCA planning, budgeting and implementation. Fostering both gender equality and equity within the context of the cultural and socio-economic dynamics of SVG is paramount.
- Synergism: It is imperative that the NAP foster linkages with national priorities to enhance the impact of planned outcomes. Similarly, while the NAP by itself will not lead to full DRR, it will contribute immensely to this aspiration. Maximising opportunities for attaining the dual benefits of climate adaptation and DRR should therefore be a top priority of this instrument.
- Resilience-building: Creating ecosystems and communities that can resist, absorb, accommodate and recover from the effects of a hazard in a timely manner must be a fundamental outcome of the NAP.
- Empowerment: Enabling organisations and individuals through access to appropriate technologies, critical information and participation in decisions that affect their lives is central to the sustained reduction of vulnerability to CC.
- Strategic alliances and coordination: Partners are invaluable assets in pursuing the vision of resilience, reinforcing existing strategic relationships and establishing new ones toward the successful attainment of its short-, medium- and long-term objectives.
- Shared concern and inclusiveness: Reengineering the various sectors that effectively resist and adapt to hazard events can no longer be the exclusive responsibility of one group. All players, including government, citizens, farmers, fisher folk, forest resource users, technicians and members of civil society, irrespective of creed, political affiliation and socio-economic status, must be part of this clarion call for change—one defined by robust livelihoods and ecosystems and by people's active involvement in the search for solutions.

4.3. STRATEGIC ADAPTATION ACTIONS AND ACTIVITIES

Figure 9 shows examples of potential for adaptation in SIDS according to selected risks. In the near term (2030–2040), we can see that the potential for adaptation is very high. This means that with high adaptation, the risk level is considerably lower.

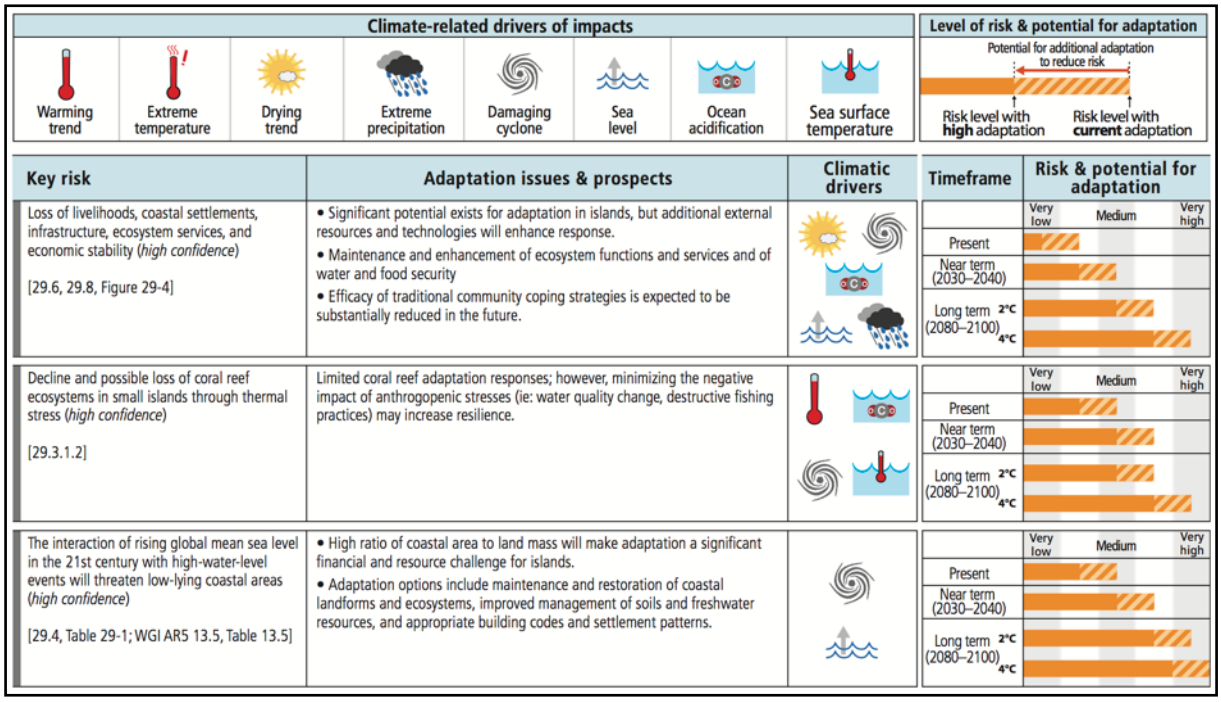

Figure 9 – Selected key risks and potential for adaptation for SIDS from the present day to the long term.

Source: Nurse *et al.*, 2014

The key risks mentioned are the loss of livelihoods, coastal settlements, infrastructure, ecosystem services and economic stability; the decline and possible loss of coral reef ecosystems; and threats to low-lying coastal areas due to the interaction of sea level rise and high-water-level events. Corresponding adaptation options include maintaining and enhancing ecosystem functions and services as well as water and food security, minimising the negative impact of anthropogenic stresses such as water quality change and destructive fishing practices, maintaining and restoring coastal landforms and ecosystems, improving the management of soil and freshwater resources, and adopting appropriate building codes and settlement patterns.

NAP STRATEGIC ACTIONS

For SVG, the main adaptation actions to be considered for the sectors identified as particularly vulnerable include those highlighted in Table 3. These options are the basis of the Strategic Adaptation Actions identified to be undertaken in the short to medium term within the first phase of the NAP. The recommendations were compiled based on the stakeholder consultation process and the resulting NAP roadmap and literature review, including documents from the INDC and SNC, the NESDP and the vulnerability studies performed by CARIBSAVE and IICA, among others.

The identification of appropriate adaptation actions for SVG required:

- Better understanding of the direct and indirect influences of the various systems in a given place;
- Integration of social, economic and biophysical data;
- Commitment across relevant sectors;
- Investments at different levels, including units, local associations and national institutions;
- Consideration of different approaches, including changes in practices, institutional strengthening, provision of needs-based climate information services, early warning systems, sectoral support services, mainstreaming and policy support; and
- Adaptation dialogues: engaging all the stakeholders to define a common vision, identify and prioritise adaptation options, and identify meaningful indicators and ways of collecting data to measure, report and communicate the progress.

This process also means engaging with new actors, such as private-sector organisations, and leveraging existing networks to reduce costs and provide resources to national hydro and meteorological services through the development of useful climate and weather services.

Table 4 further describes the strategic adaptation actions using information about the related NAP element; the name of the action, direct beneficiaries, lead and partners in coordinating, implementing and monitoring the actions; examples of Key Progress Indicators (KPIs)[43] that can be used for that; the timing of the actions (from-to); the indicative cost; and the source of financing.

A more detailed description of the adaptation actions is presented in Appendix IV.

[43] The KPIs indicated should be disaggregated by number of: men and women living below poverty line, single households, elderly, disabled and tenure type. These are illustrative and should be defined and complemented once the concrete action is further defined. The definition of the overarching M&E framework will also contribute to this enhanced definition.

Table 3 – Strategic adaptation actions for the first phase of the NAP (2018–2023).

NAP El.	Action	Direct Beneficiaries	Lead	Implem. Partners	Target	Outputs	KPIs[44]	Timing	Indicative Cost (USD)	Funding Source
A	Institutional framework for CCA	Public, private, civil society	SDU	NCCC[45]	1 Institutional framework of CC approved 6 strategies of the most vulnerable sectors aligned 2 additional HR in SDU dedicated to CC 1 additional technician in Meteorological Services	Mandate for CCA in official publication	No. of planning instruments revised and approved including CCA mainstreaming No. of additional CC HR in SDU	2018 to 2020	No additional cost	Climate Change Policy
A	Recommendations to further mainstream CCA	Public, private, civil society	Finance Ec. Planning	NCCC	1 guide focusing on the most vulnerable sectors and addressing gender issues and env. and social safeguards	Guide with the recommendations	No. of recommendations	2019 to 2020	50,000	TBD[46]
B	Research programmes on climate change impacts and CCA actions	Most Vulnerable, Public, private, civil society, academia	Research Education	NCCC	1 annual research programme per year focusing on fisheries, crops, livestock and water	Studies on the impacts of CC and CCA adequate responses	No. studies No. thesis No. scientific articles published	2019 to 2023	1,500,000	TBD
C	Capacity-building and education plans	Public, private, civil society	SDU	Education NCCC Consultant	20 decision-makers, 20 technicians, 20 representatives from civil society and private sector and 20 teachers annually (80h/y/p)	Capacity-Building Plan and Actions	No. actions/topic/year No. participants/year	2019 to 2023	1,500,000	TBD

[44] The KPIs indicated are indicative should be disaggregated by number of: men and women living below poverty line, single households, elderly, disabled and tenure type. These are illustrative and should be defined and complemented once the concrete action is further defined. The definition of the overarching M&E framework will also contribute to this enhanced definition.
[45] This Committee shall integrate representatives from the public and private sectors, academia, civil society and cooperation partners.
[46] To be defined

NAP El.	Action	Direct Beneficiaries	Lead	Implem. Partners	Target	Outputs	KPIs[44]	Timing	Indicative Cost (USD)	Funding Source
							No. hours/ person/year			
C	Communicatio n plans	Public, private, civil society	SDU	NCCC Consultant	5 annual campaigns	Communicatio n Plan and Actions	No. actions/topic No. participants/act ion/year	2019 to 2023	1,000,000	TBD
D	Overarching M&E framework	Public, private, civil society	SDU	NCCC Consultant	1 M&E framework covering UNFCCC, SDGs and Sendai	Annual M reports Final E report	No. annual M&E reports	2019 to 2023	100,000	TBD
C	Resource mobilisation plan for 2024–2030	Most vulnerable	Finance Ec. Planning	NCCC	5 annual resource mobilisation plans including financing, capacity and technology needs	Resource Mobilisation Plan	Resources mobilised (EC$, technology and capacity)	2019 to 2023	50,000	TBD
All	NAPs for other priority sectors	Most vulnerable, private, civil society	SDU	NCCC Consultant	4 sectorial NAPs	Sectoral NAPs	No. NAPs approved	2019 to 2022	200,000	TBD
C	Test integrated approaches to CCA on the ground	Most vulnerable fishers, farmers	SDU	NCCC Agriculture CWSA Consultant	1 sectoral planning and budgeting tool to mainstream CCA (bottom-up approach)	Adaptation community and ecosystem-based actions	No. farmers and fishers with increased resilience	2019 to 2023	2,500,000	TBD
C	Portfolio of CCA actions for 2024–2030	Most vulnerable	SDU	NCCC	12 concept notes, at least 2 for each sector identified	CCA Project Concept Notes	No. project concept notes developed	2022 to 2023	250,000	TBD

DETAILED NAP ACTIVITIES

Several detailed adaptation activities have been identified which are tied to each of the Strategic Adaptation Actions and are outlined in Table 4. The table also highlights correlation between these detailed activities, strategic objectives and NAP pillars. It should be noted that these detailed adaptation activities are fully coherent with the NDC and NESDP and seek to address each of the main national needs as summarised below:

1. Increasing public awareness with regards to climate change issues;
2. Building resilience to minimise damage to settlements and infrastructure;
3. Increasing beach and shoreline integrity and protecting marine ecosystems;
4. Mitigating the negative impacts of climate change on agriculture and human health; and
5. Developing appropriate legislative and regulatory frameworks for proper environmental management and institutional systems for responding to and mitigating the effects of climate change.

Table 4 – Detailed Adaptation Activities under each NAP Strategic Action, NAP Pillar and Objective

Objective	Pillar	Strategic Adaptation Actions	Activities
Promote enabling environment to facilitate CCA mainstreaming	Institutional framework	1. Establishment of the institutional frameworks for CCA	1.1 Revisiting and revising the proposals made and officially approving a national mandate for CC inclusive of the roles and responsibilities of the various stakeholders (public, private, civil society, academia, media and donors) in relation to the functions of coordination, advising, information collection, management and sharing, support, implementation and MRV of processes and outputs 1.2 Strengthening SDU's team with additional human resources dedicated to CC issues and creation of a CC unit to support national coordination, information collection, management and sharing, support, implementation and MRV of processes and outputs 1.3 Strengthening Meteorological Services' team to operate new stations and perform flood modelling and drought prediction 1.4 Increasing the capacity in relevant units to enforce environmental legislation
		2. Integration of CCA into national and sectoral policy, planning and programming processes	2.1 Development of a national guide with recommendations to mainstream CCA into planning and budgeting identifying entry points for the review of the main planning instruments, including gender screening and application of environmental and social safeguards, to integrate CCA into the next NESDP and sectoral planning instruments 2.2 Alignment of the legal framework with the NDC and the NAP including the review and update the existing draft acts and regulations under PPCR 3.6* 2.3 Finalisation of the National Physical Development Plan*[47]

[47] * Indicates activities identified as PPCR outstanding works on the 13th of April 2018

Objective	Pillar	Strategic Adaptation Actions	Activities
			2.4 Preparation of comprehensive integrated watershed management policy and action plan including Arnos Vale* 2.5 Application of relevant effluent regulations and standards at the coastal area at Villa Beach* 2.6 Guidelines and outreach for fisheries, crops and livestock; disposal of solid waste grey and black water 2.7 Undertaking of Climate Public Expenditure and Institutional Review (CPEIR) to measure and track public finance and look at gaps in the budgeting system, conduction of Private Climate Expenditure Review (PCER) to help monitor and track private adaptation flows and creation of markers and to integrate CC tagging as part of the tracking of the public accounts
Improve the capacity for data and information management and sharing, and access to technology and financing for adaptation	Knowledge, technology and financing	3. Development and implementation of research programmes on climate change impacts and CCA actions	3.1 Formulation of a research plan in collaboration with national and regional academic institutions for continued research and innovation to address identified needs, including the use and dissemination of adequate adaptation technologies focusing on the sectors for which there is limited information on impacts, vulnerability and adaptation responses, including the ocean and water column and marine biodiversity and ecosystem-based adaptation 3.2 Creation of tools and mechanisms for dissemination of findings and their application in policy, planning and selection/use of technology for resilience-building 3.3 Elaboration of a comprehensive Technology Needs Assessment (TNA) focusing on CC, particularly CCA 3.4 Modelling of coastal inundation impacts (storm surge, sea level rise, high energy wave action, winter swells) *

Objective	Pillar	Strategic Adaptation Actions	Activities
			3.5 Assessment of climate change impacts on coastal and marine ecosystems and commercial fisheries* 3.6 Designing the National Spatial Data Management* 3.7 Elaboration of the Georgetown watershed study* 3.8 Installation of an automatic weather station at the E.T Joshua Airport**48 3.9 Development of national vulnerability and resilience indexes for the most vulnerable sectors and the most vulnerable social groups
		4. Elaboration and implementation of CC capacity-building plans	4.1 Revalidation and prioritisation of the comprehensive national capacity building plan elaborated in the scope of the NAP preparation and implement priority actions 4.2 Undertake National Capacity Self-Assessment (NCSA)*to update information obtain in the last assessment of 2004 4.3 Provision of training opportunities for teachers on climate change concepts and support the ongoing integration of CCA and DRR on the national curricula ***[49] 4.4 National curriculum development in CCA and DRR* 4.5 Training to support improved application and enforcement of building codes* 4.6 Training in flood risk modelling and modelling of the coastal zones**

[48] ** Indicates activities suggested by the Meteorological Services

[49] *** Indicates activities identified during the financing training session held in the scope of the support of the NAP GN, in Kingstown in the 12th of April 2018

Objective	Pillar	Strategic Adaptation Actions	Activities
		5. Elaboration and implementation of CC communication plans	5.1 Development and implementation of a comprehensive national climate change public awareness plan, using targeted media and including the various vulnerable groups, focusing also in DRR, including the development and operationalisation of a CC portal and elaboration of press releases 5.2 Development of information packages for families and communities in 'Red Zone' expanded to a NEMO Public Education Campaign* 5.3 Preparation of a small booklet, "Climate Change Governance is SVG" (24-32 pp. max), for wide distribution amongst stakeholders*
		6. Definition and operationalisation of an overarching M&E framework covering the NESDP, NDC, NAP, SDGs and Sendai Framework	6.1 Development and implementation of an overarching M&E framework covering data collection and reporting for the various ministries to support the MRV of the multiple MEAs and other national commitments 6.2 Monitoring of climate support (including financing, capacity building and technology) either domestic and international or bilateral and multilateral
		7. Elaboration and implementation of a resource mobilisation plan	7.1 Definition of a resource mobilisation plan to address the portfolio of CCA priority actions for the key sectors (agriculture, water, forestry, tourism, health and public infrastructure) for the medium term including domestic (taxes, domestic adaptation fund, amongst others) and international sources of funding
Implement adaptation actions toward	Resilience of the most vulnerable	8. Elaboration of NAPs for other priority sectors	8.1 Development of sectoral adaptation strategies for other priority sectors (forestry, tourism, health and public infrastructure)

Objective	Pillar	Strategic Adaptation Actions	Activities
an increased resilience of the most vulnerable Vincentians		9. Test Integrated CCA approaches and tools on the ground	9.1 Implementing, monitoring and evaluating concrete actions in test locations on the ground derived from the sectoral strategies in order to inform the CCA planning and budgeting processes from bottom-up. Development of CCA planning tools tested in six particular vulnerable communities, three coastal and three interior, demonstrating an integrated CCA approach in various sectors, including agriculture, water, forestry, health, public infrastructure and tourism, on the mainland and in the Grenadines
		10. Elaboration of a portfolio of CCA priority actions for the key sectors (agriculture, water, forestry, tourism, health and public infrastructures) for the medium term with verification that each measure aligns with the NESDP and sectoral strategies and plans	10.1 Based on the evaluation of implementation of the actions included in the first phase of the NAP and sectorial strategies, perform the identification and prioritisation of pertinent needs and gaps 10.2 Development of a portfolio of additional adaptation actions to implement in Phase II, including the elaboration of feasibility studies and concept notes for planning and resource mobilisation 10.2.1 Replication of the REEF protection and marine rehabilitation, update building code to avoid discharges of wastewater in the coast and protect reefs*** 10.2.2 Replication of relocation of pipelines to less vulnerable areas, increasing of water storage capacity, implementation of solar desalinisation plants in the Grenadines, general improvement of watershed management plan including nurseries for tress and crops and provision of mobile water purifications systems *** 10.2.3 Improvement of early warning systems*** 10.2.4 Small resilient hospitals and national green hospital*** 10.2.5 Housing compensation scheme*** and 10.2.6 Increase the resilience of power lines***

4.4. TIME HORIZON

The time horizon for the Plan is 12 years, extending from 2018 to 2030. This period comprises two main implementation phases from 2018 to 2023 and from 2024 to 2030, as shown in Figure 10.

This time horizon is consistent with the NDC, including its review and the global stocktaking exercises agreed to in the Paris Agreement, the Agenda 2030 and the Sendai Framework. It is also coherent with the sectoral priorities defined during the stakeholder consultations.

The first phase, denominated readiness, is expected to occur from 2018 to 2023 and includes the implementation of 10 adaptation NAP Strategic Actions identified during the stakeholders' consultations and further described in Section 4.5 Adaptation Actions. Special emphasis is placed on the agriculture and water sectors, which were prioritised given their particular vulnerability to CC. This phase can be financed by accessing domestic sources of funding, the GCF Readiness for NAPs and any other source finance that may be available to fund the NAP proposal, bilateral or multilateral. If the intention is to access the GCF readiness, a proposal shall be prepared and submitted in the short-term.

The second phase of the NAP occurring from 2024 to 2030 should be based on the results of the research programme and the portfolio of actions defined during the first phase and included in the sectoral NAPs to be defined in the same period. This can be financed by domestic sources or funding backed up by any other sources of international finance, such as the GCF Simplified Access Procedure (SAP).

The M&E of these actions should be done at least annually and should contribute to the MRV provisions defined under the UNFCCC. A mid-term evaluation of the NAP shall occur in 2022 to inform the NDC revision and the global stocktake to occur in the scope to the Paris Agreement in 2023. The result of this review shall also inform the design of the second phase of the NAP, occurring from 2024 to 2030. The detailed timeline is presented below in Table 5.

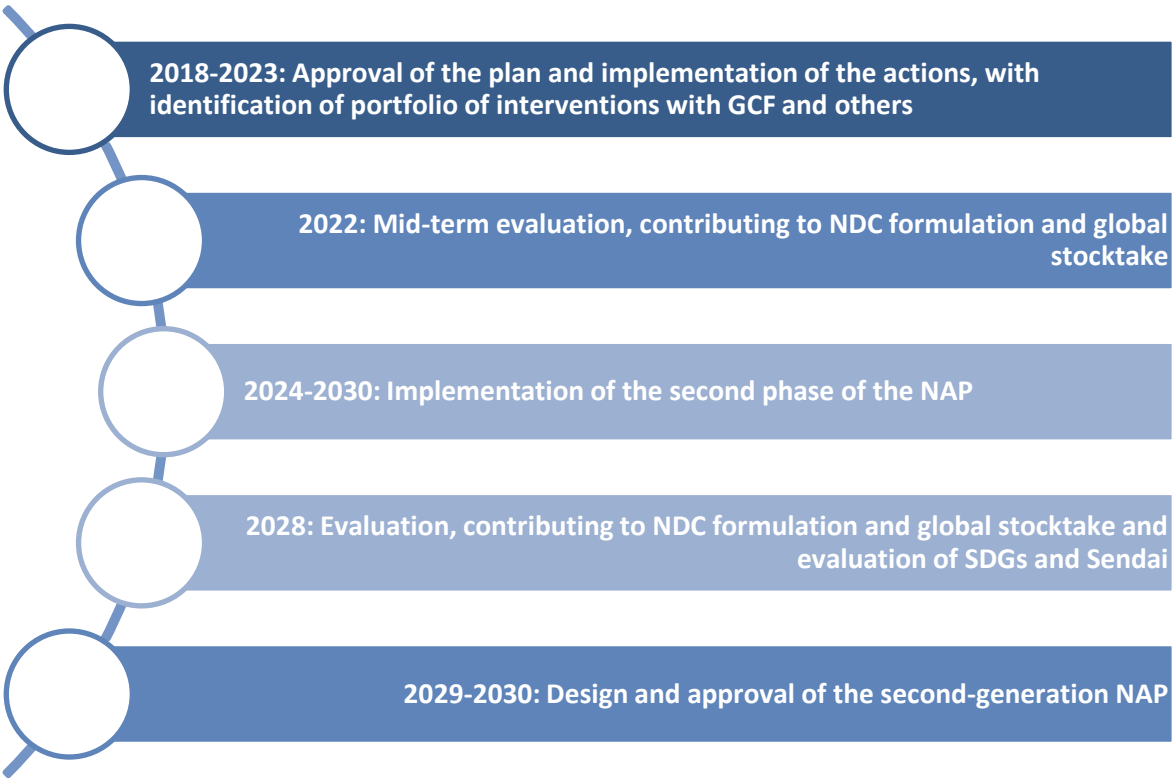

Figure 10 – Phases of the NAP-Ag during the relevant time horizon.

Table 5 – Timeline of the NAP SVG.

NAP El.	Action/Activity	2018	2019				2020				2021				2022				2023			
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21
A	**1. Institutional framework for CCA**																					
	1.1. Revisiting and revising the proposals made and officially approving a national mandate for CC																					
	1.2. Strengthening SDU's team with more HR dedicated to CC																					
	1.3. Strengthening Meteorological Services' team to operate new stations and perform flood modelling and drought prediction																					
	1.4. Increasing the capacity to enforce environmental legislation																					
A	**2. Recommendations to further mainstream CCA**																					
	2.1. Development of a national guide with recommendations to mainstream CCA into planning and budgeting																					
	2.2. Alignment of the legal framework with the NDC and the NAP including the review and update the existing draft acts and regulations under PPCR 3.6*[50]																					
	2.3. Finalisation of the National Physical Development Plan*																					
	2.4. Preparation of comprehensive integrated watershed management policy and action plan including Arnos Vale*																					
	2.5. Application of relevant effluent regulations and standards at the coastal area at Villa Beach*																					

[50] * Indicates activities identified as PPCR outstanding works on the 13th of April 2018

NAP El.	Action/Activity	2018	2019				2020				2021				2022				2023			
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21
	2.6. Guidelines and outreach for fisheries, crops and livestock; disposal of solid waste grey and black water																					
	2.7. Measure and track public finance and look at gaps in the budgeting system, monitor and track private adaptation flows and creation of markers and integrate CC tagging as part of the tracking of the public accounts																					
B	**3. Research programme on climate change impacts and CCA actions**																					
	3.1. Formulation of a research plan focusing on the sectors for which there is limited data and information on impacts, vulnerability and adaptation responses, including the ocean and water column and marine biodiversity and ecosystem-based adaptation																					
	3.2. Development of research programmes in collaboration with national and regional academic institutions for continued research and innovation to address identified needs, including the use and dissemination of adequate adaptation technologies																					
	3.3. Creation of tools and mechanisms for dissemination of findings and their application in policy, planning and selection/use of technology for resilience-building																					
	3.4. Elaboration of a comprehensive Technology Needs Assessment (TNA) focusing on CC, particularly CCA																					
	3.5. Modelling of coastal inundation impacts (storm surge, sea level rise, high energy wave action, winter swells)*																					
	3.6. Assessment of climate change impacts on coastal and marine ecosystems and commercial fisheries*																					

NAP El.	Action/Activity	2018	2019				2020				2021				2022				2023			
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21
	3.7. Designing the National Spatial Data Management*																					
	3.8. Elaboration of the Georgetown watershed study*																					
	3.9 Installation of an automatic weather station at the E.T Joshua Airport**[51]																					
C	**4. Capacity-building and education plan**																					
	4.1. Revalidation and prioritisation of the comprehensive national capacity building plan elaborated in the scope of the NAP preparation and implementation of priority actions																					
	4.2. Performance of a National Capacity Self-Assessment (NCSA)*																					
	4.3. Train teachers on climate change contents and further include CCA and DRR in the curriculum***[52]																					
	4.4. National curriculum development in CCA and DRR*																					
	4.5. Training to support improved application and enforcement of building codes*																					
	4.6. Training in flood risk modelling and modelling of the coastal zones**																					
C	**5. Communication plan**																					
	5.1. Development and implementation of a comprehensive national climate change public awareness plan																					

[51] ** Indicates activities suggested by the Meteorological Services

[52] *** Indicates activities identified during the financing training session held in the scope of the support of the NAP GN, in Kingstown in the 12th of April 2018

NAP El.	Action/Activity	2018	2019				2020				2021				2022				2023			
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21
	5.2. Development of information packages for families and communities in “Red Zone" expanded to a NEMO Public Education Campaign*																					
	5.3. Preparation of a small booklet, "Climate Change Governance is SVG" (24-32 pp. max), for wide distribution amongst stakeholders*																					
D	**6. Overarching M&E framework**																					
	6.1. Development and implementation of an overarching M&E framework																					
	6.2. Monitoring of climate support																					
C	**7. Resource mobilisation plan for 2024–2030**																					
	7.1. Definition of a resource mobilisation plan																					
All	**8. NAPs for other priority sectors**																					
	8.1. Development of sectoral adaptation strategies for other priority sectors																					
C	**9. Test on integrated approach to adaptation**																					
	9.1. Implementing, monitoring and evaluating concrete actions in test locations on the ground																					
C	**10. Portfolio of CCA actions for 2024–2030**																					
	10.1.1 Perform the identification and prioritisation of pertinent needs and gaps																					
	10.2. Development of concept notes for additional adaptation actions to implement in Phase II																					

NAP El.	Action/Activity	2018	2019				2020				2021				2022				2023			
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21
	10.2.1. Replication of the REEF protection and marine rehabilitation, update of building code to avoid discharges of wastewater in the coast and protect reefs***																					
	10.2.2. Replication of relocation of pipelines to less vulnerable areas, increasing of water storage capacity, implementation of solar desalinisation plants in the Grenadines, general improvement of watershed management plan including nurseries for tress and crops and provision of mobile water purifications systems***																					
	10.2.3. Improvement of EWS***																					
	10.3.4. Small resilient hospitals and national green hospital***																					
	10.2.5. Housing compensation scheme***																					
	10.2.6. Increase the resilience of power lines***																					

4.5. GENDER ISSUES AND SOCIAL AND ENVIRONMENTAL SAFEGUARDS

All the adaptation options to be implemented should go through a gender analysis and respect agreed-upon social and environmental safeguards.

It is then necessary to further develop the national ability to perform gender analysis and apply social and environmental safeguards to the adaption actions slated to be implemented both as part of the NAP process and more widely in the context of CC. It is also necessary to ensure alignment of the follow up actions associated with the NAP process with national legislation and planning instruments.

An activity is proposed in strategic action two of the NAP – Elaboration of recommendations to further mainstream CC consideration into the planning process, and specifically to elaborate national guidelines on how to apply gender screening and environmental and social safeguards. Training on these actions can also be considered in the scope of the annual capacity building plans that will be developed.

Some considerations about gender issues and environmental and social safeguards are now presented.

According to FAO (2018f), a gender analysis encompasses:

- Systematic identification of key gender and social issues that contribute to poor development outcomes;
- Exploration of social relations and institutions that lead to discrimination; and
- Consideration of other factors (e.g. class, ethnicity, age, caste, disability, sexuality, etc.).

Gender analysis is a useful tool in adaptation planning and can be used for the following:

- Assessing climate impacts and vulnerability:
    - Ways in which climate change impacts (and brings about changes in) gender relations and roles;
    - Influence of interconnected vulnerability factors;
    - Ways in which social and gender norms, relations and institutions can shape the adaptive capacity of women and men; and
    - Changing relations and transforming institutions to strengthen adaptation capacity.
- Identifying adaptation options, with attention to:
    - Shifts in labour or time use based on the practice or technology proposed in the adaptation option;
    - Shifts in access to resources (i.e. certain groups may lose access to land, water, etc.);
    - Constraints on access to and control over productive resources, inputs and services; and
    - Decisions impacted by social and gender norms and institutions (including local customary practices, legislation, etc.), by understanding who decides appropriate options.

Gender-responsive adaptation has multiple characteristics:

- Is based on comprehensive, participatory, gender-sensitive analysis of climate change vulnerability (i.e. social, economic, political determinants);

- Recognises differential vulnerabilities within countries, communities and households, and targets adaptation strategies accordingly;
- Builds on the existing knowledge and capacities of men, women, boys and girls;
- Aims to empower vulnerable women and girls to build their adaptive capacity and promotes gender equality as a long-term goal;
- Incorporates participation of both women and men in planning and implementation, including the people most vulnerable in the community;
- Promotes adaptation policies and programmes at the local, national, and international levels that meet the specific needs of poor women and men; and
- Supports men and women to access the resources, rights and opportunities they need in order to adapt to the changing environment.

Gender-responsive plans and projects have multiple benefits. They:

- Ensure the equal participation of men and women in decision-making processes and in the implementation of adaptation activities;
- Prevent adaptation planning, processes and actions from exacerbating gender inequalities; and
- Increase the likelihood of better adaptation and more resilient communities.

The key stakeholders in building gender-responsive approaches to adaptation include policy-makers; government planners at the central, sub-national and district levels; the private sector; non-governmental organisations; and researchers.

According to FAO (2018d), safeguards cover a variety of substantive areas in environmental and social management. While there is no agreement at an international level regarding what should be covered under a safeguard system, most safeguard systems employed by organisations involved in supporting climate change adaptation projects, such as the World Bank or the Green Climate Fund, cover the following areas:

- Environmental or social impact assessments;
- Biodiversity;
- Pollution prevention;
- Climate change mitigation;
- Rights of indigenous people;
- Involuntary resettlement;
- Labour, health, and safety;
- Cultural heritage;
- Transparency;
- Consultation requirements; and
- Grievance procedures.

More recently, climate change vulnerability and adaptation have also been identified as issues in some safeguard systems. However, in general, the design of specific measures to address climate vulnerability in a project context is not yet a requirement in the application of these systems.

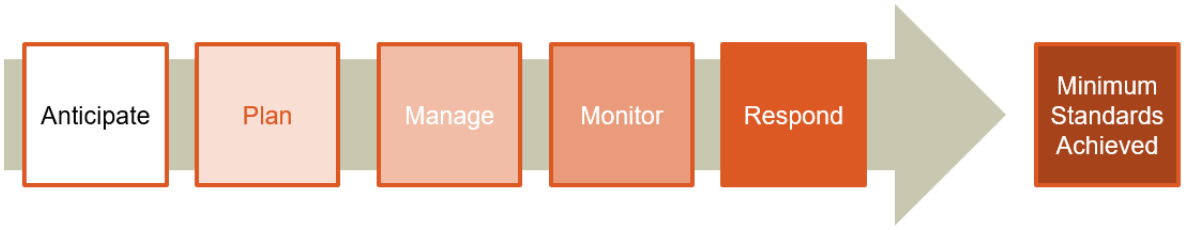

Figure 11 – Functions of a safeguard system.

Source: Larsen and Bellestros, 2014

Environmental and social safeguards are applied to perform the functions illustrated in Figure 11:

- Anticipate: Determining the potential positive and negative effects of the investment on the areas of concern. Most safeguard systems require the screening of proposed projects to anticipate risks. Projects are placed into risk categories depending on the type, location, sensitivity, scale and potential impact of the project. The risk category determines the safeguards required in project development and implementation.
- Plan: Once the appropriate risk category is determined, environmental and social management plans are developed to avoid, minimise or mitigate negative impacts. Plans could include changes to a project design or the inclusion of measures to address specific risks.
- Manage: The environmental and social management plans developed are later implemented in parallel with the project.
- Monitor: The implementation of the environmental and social management plans is monitored over the life of the project to assess the effectiveness of these plans in avoiding, minimising and mitigating environmental and social risks.
- Respond: The final function of safeguards is to respond to problems that may arise during project implementation, including the application of grievance mechanisms to respond to complaints from project stakeholders.

Key issues with safeguards and climate change adaptation projects include:

- Maladaptation: While adaptation projects aim to address negative climate change impacts, it does not mean that any other potential negative impacts are avoided. It is possible that adaptation projects could result in negative impacts or maladaptation, which need to be addressed in both the design and implementation phases of adaptation projects.
- Safeguard system failure: The presence of safeguard systems can fail to fully anticipate and address the environmental and social risks associated with adaptation projects. An increasing number of projects have resulted in negative impacts that were not adequately addressed by the applicable safeguard systems.
- Safeguard system adequacy: It is reasonable to question whether safeguard systems adequately address the full range of risks associated with project implementation. Safeguards generally represent a “do no harm” minimum standard for project implementation. Safeguard systems generally do not require positive action to enhance the sustainability aspects of the projects being implemented.
- Investor or project implementer vs. country safeguard systems: A country approach to safeguards has the potential to be a single, unified approach through which a country can accommodate the safeguard obligations of different initiatives, donors and investors. As

governance systems improve around the world, a key future challenge associated with safeguards will be to determine under what circumstances and to what extent country safeguard systems can adequately substitute for traditional safeguard systems developed by investors and project implementers. Recently, multilateral development banks have incorporated greater flexibility into their operations to allow the application of country safeguard systems during project implementation. Some groups have questioned whether country safeguards adequately address the full range of negative impacts that are usually addressed by investor and project implementer safeguard systems, considering power asymmetries that disadvantage marginal groups in society.

4.6. Potential Contribution to the SDGs and the Sendai Framework

The Sustainable Development Goals (SDGs) provide a new framework through which development efforts that are most urgent may be evaluated (Figure 12).

Figure 12 – SDGs.

The SDGs, officially entitled *Transforming Our World: The 2030 Agenda for Sustainable Development*, is a set of 17 global goals with a combined 169 targets. Spearheaded by the United Nations through a deliberative process involving its 193 Member States, as well as global civil society, the goals are set out in paragraph 54 of United Nations Resolution A/RES/70/1 of 25 September 2015. The Resolution is a broader intergovernmental agreement that acts as the post-2015 development agenda (successor to the Millennium Development Goals). The following summary is from FAO (2018a):

> The 2030 Agenda, the Paris Agreement on Climate Change and the Sendai Framework for Disaster Risk Reduction set the world on a new pathway toward sustainable development. The three agreements set the foundation for international development cooperation for the next 15 years. Adaptation and National Adaptation Plans (NAPs) can play a very important role in the implementation of all three of these agreements.
>
> One of the SDGs (13) has been dedicated to "taking urgent action to combat climate change," demonstrating its importance for achieving sustainable development. At the same time, several other goals are dependent on adapting to climate change, which threatens to push back SDG progress. This includes, for example, ending hunger, promoting sustained economic growth and employment, and restoring and sustaining natural resources and ecosystems. Specifically, adaptation plays a critical role in SDG 2, "zero hunger." This goal is only achievable if it takes into account climate change impacts, which threaten to reduce productivity and

> shock agricultural systems. NAPs can contribute to strengthening the resilience of the agriculture sector and ensure food security, dietary diversity, and adequate nutrition.

Virtually all the SDGs are at risk from climate change; it is cross-sectoral and its impacts have a cascade effect. In the case of SVG, the goals most at risk are 1) no poverty, 2) zero hunger, 3) good health and well-being, 5) gender equality, 6) water and sanitation, 7) affordable and clean energy, 8) decent work and economic growth, 9) industry innovation and infrastructures, 10) reduced inequalities, 11) sustainable cities and communities, 14) life below water and 15) life on land.

During the consultations, the sector presented as most vulnerable was agriculture (including fisheries and forests), which relates to rural poverty, food security, tourism and water resource management. Education, health and public infrastructures were also later listed. These sectors relate to almost all the goals mentioned above.

An assessment of the country's progress in achieving its SDGs will prove these assumptions in the future. As an example, the case of SDG 13, "take urgent action to combat climate change and its impacts and its indicators," is presented below in Figure 13 and the relation between SDGs, climate change and the NAP is shown in Appendix VIII.

Again, according to FAO (2018a):

> …[T]he ground-breaking Paris Agreement was adopted in December 2015 at the 21st session of the Conference of the Parties (COP21) to the UNFCCC. Under this agreement, all countries committed to reducing greenhouse gases and increasing their resilience to climate impacts. These commitments were defined by the countries themselves, presented in NDCs, which form the basis for the Paris Agreement. Countries' NDCs outline their actions to reduce emissions post-2020 so as to meet an agreed-upon long-term goal to limit warming to 1.5 to 2 degrees Celsius above pre-industrial levels and adapt to climate change.
>
> Specifically, Article 7 of the Paris Agreement establishes a global adaptation goal of "enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change, with a view to contributing to sustainable development and ensuring an adequate adaptation response in the context of the temperature goal." National Adaptation Plans contribute to outlining how each country would go about meeting this adaptation goal and are a critical component of implementing NDCs and the Paris Agreement overall.
>
> …[T]he Sendai Framework on Disaster Risk Reduction 2015–2030 was adopted by UN Member States in March 2015 at the Third UN World Conference on Disaster Risk Reduction. This framework (building on the Hyogo Framework for Action 2005–2015), presents seven global targets and four priorities for action towards "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." It is a voluntary, non-binding agreement among governments, who take the lead in reducing disaster risk while sharing this responsibility with other stakeholders (local governments, private sector, NGOs, etc.). The targets under the Sendai Framework relate to reducing the number of deaths, affected people and economic losses caused by disasters, while also enhancing cooperation, strategies and the availability of disaster-related information and assessments.

Therefore, all three of these agreements set specific goals, targets or commitments that contribute to inclusive and resilient development outcomes in the face of climate change. As countries consider the agreements' objectives, structures and timeframes, there is an unprecedented opportunity to take an integrated approach to achieving these important agendas. The National Adaptation Plans are a critical tool to making that happen.

SUSTAINABLE DEVELOPMENT GOAL 13

Take urgent action to combat climate change and its impacts*

PROGRESS & INFO (2017) | PROGRESS & INFO (2016) | TARGETS & INDICATORS

The global indicator framework was developed by the Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs) and agreed to, as a practical starting point at the 47th session of the UN Statistical Commission held in March 2016. The report of the Commission, which included the global indicator framework, was then taken note of by ECOSOC at its 70th session in June 2016. More information.

TARGETS		INDICATORS	
13.1	Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	13.1.1	Number of countries with national and local disaster risk reduction strategiesa
		13.1.2	Number of deaths, missing persons and persons affected by disaster per 100,000 peoplea
13.2	Integrate climate change measures into national policies, strategies and planning	13.2.1	Number of countries that have communicated the establishment or operationalization of an integrated policy/strategy/plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other)
13.3	Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	13.3.1	Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula
		13.3.2	Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions
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	13.A.1	Mobilized amount of United States dollars per year starting in 2020 accountable towards the $100 billion commitment
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.	13.B.1	Number of least developed countries and small island developing States that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities

Figure 13 – SDG13: take urgent action to combat climate change and its impacts.[53]

[53] https://sustainabledevelopment.un.org/sdg13

4.7. Budgeting and Resource Mobilisation

According to FAO (2018e), national (and sectoral and local) budgets are critical for implementing adaptation plans and objectives, including those identified in NAPs. In many countries, budgets are the most significant source of domestic finance for adaptation measures and the most important documents for translating climate policy priorities into action.

Climate budgeting refers to the mainstreaming of climate change actions into all aspects of the budget cycle, including budget formulation, allocation and performance monitoring. Climate budgeting and stronger systems for tracking domestic climate finance can help bridge the gap between adaptation planning and implementation.

Integrating adaptation actions into budgeting cycles and systems is a long-term iterative process. This involves a series of stages, each with distinct entry points. Over time, as policy opportunities and technical reforms advance, institutional capacities become progressively more refined.

As stated by Borde (2017), the annual budget and the midterm expenditure framework are the main entry points for integrating domestic CCA financing. In the Budget Address 2017, the budget for initiatives related to climate resilience was allocated through the RDVRP Program. The NAP financing should now be specifically included in future yearly budget planning to address shorter-term actions and included in medium-term expenditure frameworks for medium- to long-term adaptation actions. Similarly, to the Cabinet's decision on a tax-free policy for renewable energy (for solar PV, LEDs), it should now consider a special policy for adaptation.

According to FAO (2018e), the climate budgeting process includes:

- Step 1 – Measuring and tracking: The first stage primarily serves to reveal the extent of existing expenditures, gaps in the adequacy of funding and gaps in the budget's alignment with policy priorities. This is particularly relevant to national level and line ministries, especially ministries of planning and finance. Entry points involve undertaking assessments to measure and track where current domestic expenditure is directed that can support climate action and how finance flows (including budget resources at different levels and through various channels) are being allocated in a way that can build climate resiliency. Tools and approaches for Step 1:
    - Climate Public Expenditure and Institutional Review (CPEIR): This is a tool to help countries measure and track public finance and look at gaps in the budgeting system.
    - Private Climate Expenditure Review (PCER): Private-sector tracking is primarily used for mitigation but has also been used in some countries to help monitor and track private adaptation flows.
- Step 2 – Prioritising allocations: Countries can then move on to a second stage that involves reforming their budget formulation and allocation processes to more systematically integrate tools such as budget tagging, expenditure reporting, revising planning templates for public investments, and institutionalising other measures to reprioritise allocation, including dedicated climate programme budgets and virtual national climate funds. The main aim is to inform gaps and build an evidence base for scaling up effective adaptation responses, in terms of functional and geographical targets. Tools and approaches for Step 2:
    - Climate budget tagging: Adding a dedicated climate change marker in national budget systems or financial management information systems.
    - Climate change financing framework: This is a more comprehensive public finance management reform, including the reform of planning templates and budget call circulars, among others at the sector level.

- Step 3 – Vertical integration: The next stage would be to downstream processes and systems from the central level to the local level. This is pivotal, especially in decentralised governance systems where local development programmes and planning frameworks (e.g. Local Adaptation Plans of Action (LAPA) and Environment-Friendly Local Governance) provide an opportunity to integrate adaptation measures into local budget priorities. These tools for prioritisation, budget execution monitoring and expenditure tracking help to ensure that climate-related financial flows can reach most vulnerable beneficiaries. Tools and approaches for Step 3:
    - Localised diagnostics from Steps 1 and 2 designed for sub-national government realities as well as accountability mechanisms such as community score cards, citizen climate budgets and Participatory Monitoring, Evaluation, Reflection and Learning (PMERL).
- Step 4 – Integrating climate change adaptation within other budgeting: The final frontier could be a stage in which climate change budgeting (especially adaptation) considerations are fully integrated together with other thematic approaches to budget planning and national SDG achievement (e.g. gender, food security, DRR considerations, etc.). Tools and approaches for Step 4:
    - Fully integrated budget formulation guidelines and monitoring or accountability mechanisms that reflect synergies between climate and gender-sensitive budgeting can be used here. Such guidelines and mechanisms can reflect actual disparities in rights, access to resources, and levels of vulnerability that exist between men and women at the local level. This is an emerging area, but some countries are beginning to reflect integrated approaches to their climate policy, backed by national laws. Others are revising their regulatory and budget guidelines to fully integrate disaster risk reduction, green growth and climate adaptation into the design of public investments and sub-national budgeting as part of their NAP process and NDC implementation strategy.

Resource mobilisation for the NAP may then be guided by a mid-term investment plan, as suggested in the Domestic NAP Financing Strategy for Saint Vincent and the Grenadines (Borde, 2017). This document would be very important to avoid reinventing the wheel because it relates to work that would have been done already. Ultimately, the purpose of the mid-term investment plan is to ensure that CCA priorities are more closely connected to broader national development policies and adaptation activities and are therefore more explicitly considered in public and private budgeting processes and in negotiations with lending organisations and development agencies. As such, it would be an instrument to support GoSVG in mobilising the financial resources necessary for the NAP implementation.

This mid-term investment plan should be the basis for defining the proposed mobilisation resource plan for the second phase of the NAP (2025–2030). It should address all relevant concerns and present an instrument to guarantee that enough resources, including finance, capacity and technology, will be available to implement the Plan.

A draft budget has been estimated for the NAP and is presented in Appendix VI. Identified potential sources of financing include domestic, multilateral (PPCR and GCF readiness) and others to be determined.

4.8. Reporting, Monitoring and Review

The MRV of the NAP and, broadly of CC, should rely on the M&E systems that are already in place in the country and allow the evaluation of the progress in mainstreaming CCA into policies and plans (process) and the increase of the resilience of the Vincentians (outputs) during NAP implementation.

The country has implemented the overarching *MRV system developed to support the implementation of a NDC for St. Vincent and the Grenadines* which was implemented in 2017 and that can be used to monitor the progress of implementation of adaptation actions articulated under the NAP. This system will have to be revised and updated based on the result of the *Strategic Adaptation Action 6. Definition and operationalisation of an overarching M&E framework covering the NESDP, NDC, NAP, SDGs and Sendai Framework* to monitor, report and verify the proposed strategic adaptation actions and their activities. More than that, the system will also have to be able to track climate support and domestic expenditures. As such, it has been proposed that GoSVG undertake CPEIR to measure and track public finance, look at gaps in the budgeting system, and conduct PCER to help monitor and track private adaptation flows. This will be possible through the creation and application of markers and integration of CC tagging as part of the tracking of public accounts, as proposed in the *Strategic Action 2. Testing and institutionalisation of mechanisms to integrate CCA into the next NESDP and sectoral planning instruments, including the annual sectoral budgets and guidelines*.

The MRV of processes and outputs related specifically to the NAP shall be done by SDU, which is also responsible for UNFCCC reporting. The monitoring of the NAP and, broadly, of the implementation of CC policies and strategies shall also be done by the media, private sector, civil society and academia.

M&E takes into consideration the following aspects (adapted from LEG, 2012):

> Monitoring refers to an ongoing process of tracking and reviewing activities, their results and the surrounding context by collecting data on previously defined indicators. The purpose of monitoring is to be able to intervene in processes as it becomes obvious that they deviate from their original objective, target or standard, or that gaps remain which need to be addressed. Monitoring also includes the documentation of experiences and capturing of lessons learned, with a view to identifying best practices and to improving how activities are carried out.
>
> In the design of an M&E protocol, the goals and objectives of the monitoring and evaluation are defined and a few areas of the NAP process are selected for detailed monitoring. This facilitates the assessment of progress and effectiveness and helps in identifying gaps that must be addressed over time. Specific indicators are then developed and tracked to provide decision-makers and policy-makers with useful information regarding the type, timing and extent of potentially required adjustments to the process and applicable support measures.
>
> Especially since adaptation is still a new field in the development context and approaches to address it must be flexible, M&E systems are of primary importance to gradually improve strategies and interventions. Thus, considerations of how to design an appropriate M&E system must be part of the development of adaptation strategies and interventions from the very beginning.

The M&E system for the NAP will be flexible and will take into account the transparency modalities that arise from the Paris Agreement given the medium- to long-term nature of the Plan, which most likely will contribute to the implementation of the NDC (Figure 14). This is reflected in the timing and cycle proposed.

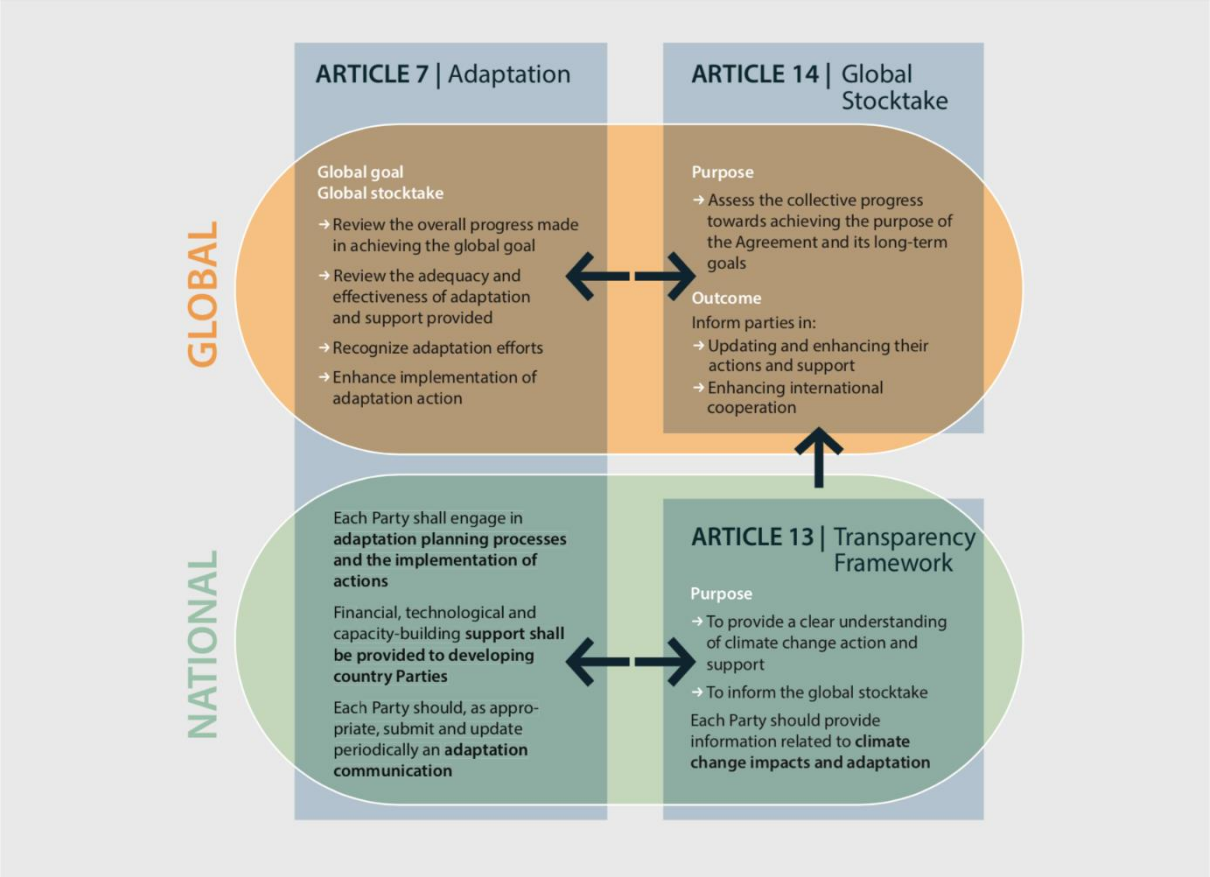

Figure 14 – Key adaptation provisions under the Paris Agreement and the interlinkages between them.

Source: UN Environment, 2017

According to FAO (2018f), overall, monitoring and evaluation (M&E) frameworks can contribute to:

- Better learning about adaptation;
- Flexible management of adaptation actions under climate uncertainty;
- Validation that adaptation processes and outcomes are on track in achieving stated objectives;
- Accountability to national decision-makers and donors;
- Compliance with national and international reporting requirements;
- Justification for funding for adaptation;
- Communication of adaptation priorities to policy-makers, decision-makers and stakeholders; and
- Comparisons of adaptation achievements across localities, sectors, regions and countries.

Within adaptation, M&E can be focused on different aspects, such as:

- Measuring impacts of climate change (e.g. drought and flooding);
- Measuring changes in the levels of vulnerability to climate change (e.g. hectares of arable land lost due to drought);
- Demonstrating enhanced adaptive capacity (e.g. new systems that make institutions more responsive, or percentage of farmers using drought-resistant crop varieties);

- Measuring adaptation processes and tracking changes in human and institutional capacity;
- Advancement in implementing policies and plans; and
- Measuring adaptation outcomes such as increase in water coverage during drought at municipal or national level.

An M&E framework is often a table that describes the goals, outcomes, outputs, activities, inputs and indicators that are used to measure whether a programme or policy is a success. It is an explicit articulation (graphic display, matrix or summary) of the different levels, or chains, of results expected from a particular intervention—an adaptation programme or policy.

As part of an adaptation M&E framework, a suite of adaptation indicators should be selected for relevant sectors. While the selection depends on the user's needs, data availability and relevance, as will be defined and operationalised through the overarching M&E framework covering the NESDP, NDC, NAP, SDGs and Sendai Framework, should be duly considered.

First, the indicators should be aligned with existing indicators and targets in country, whether reporting on national goals or major international mechanisms (e.g. Paris Agreement, SDGs, Sendai Framework for Disaster Risk Reduction). Indicators should consider what is already available on climate trends, vulnerabilities, economic and social dimensions, and the status of natural resources and land use from various sources (e.g. meteorological data, vulnerability assessments, FAO and others) to avoid creating an unnecessary burden of data collection and reporting.

Second, the adaptation indicators need to be gender-disaggregated to capture gender perspectives.

Third, the selection of indicators should be agreed upon by all stakeholders engaged in the process. The scope and number of indicators can be increased over time to meet the reporting needs.

Fourth, the indicators should include both process- and outcome-based indicators. This can help governments and policy-makers to make the connection between adaptation policies and observed outcomes.

Fifth, since adaptation is first and foremost a local issue, climate change adaptation programmes should include indicators that capture changes at local levels. This can be done by (1) measuring bottom-up indicators (from local up to national level), such as vulnerability of agricultural systems; (2) using climate impact assessment and climate change scenario data (e.g. rainfall variability and drought, flooding, hailstorms and frosts, etc.); and (3) capturing a range of existing local adaptation initiatives in order to collect sufficient local data to be measurable. For sectoral-level planning purposes, local-level data needs to be aggregated and scaled up for analysis.

The following categories of indicators are key for monitoring climate change adaptation processes and outcomes in agriculture sectors (FAO, 2017). They cut across all the major entry points for adaptation—vulnerability reduction, enhancing adaptive capacity and mainstreaming climate change concerns into policies, programs and plans and can be applied to the overarching NAP and to adaptation in other sectors.

- Natural resources:
    - These indicators are linked to the state of the environment and their relationship with agricultural sector activities. Indicators in this domain seek to facilitate the identification of issues related to natural resources and ecosystems that sustain agriculture, as well as to improve understanding of the positive impacts and potential unintended consequences of adaptation actions.
- Agricultural production:
    - Climate change adaptation in agricultural sectors involves the sustainable management of resources for agriculture to satisfy changing human needs. The

indicators related to agricultural production aim to monitor the relationship between natural resources, agricultural production and climate change impacts.

- Socio-economics:
    - These indicators seek to facilitate the understanding of the relationship between climate change adaptation and social and economic development. These indicators capture data about the access to basic services and support for livelihood opportunities, social protection and safety nets for the agricultural population. Smallholder farmers, pastoralists, fisher folks and forest- and tree-dependent people are amongst the most vulnerable.
- Institutions and policy
    - Institutional and policy indicators seek to evaluate the existence and effectiveness of institutional frameworks that guide the adaptation interventions as well as the effectiveness of climate change adaptation policies and strategies in agricultural sectors. Institutional capacity and coordination at all levels are fundamental conditions for the effective implementation of climate change adaptation and risk management. Effective policies should be developed following an informed policy-making approach, from the identification of issues related to climate change to the formulation, implementation, monitoring and evaluation of the most effective policy options (FAO, 2017).

M&E of the NAP is seen as central for the Plan's success. Equally important is the operationalisation of a comprehensive MRV framework for both adaptation and mitigation as well as support to allow for reporting related to both the UNFCCC and the Paris Agreement, the Development Agenda 2030, the Sendai Framework and other conventions.

The M&E of the NAP should therefore focus on the process and the outcomes. The first relates to the planning process, focusing on the development and implementation or mainstreaming of adaptation in the planning instruments at national and local levels. This evaluation will not indicate if the country or community is more resilient, however, which underlines the need for M&E of the outcomes.

Based on GIZ (2015):

> Process refers to advancement in implementing policies, plans or interventions that aim to promote adaptation or to build institutional and human capacity to do so.
>
> This can relate to the purposes of the M&E national systems (1) learning: producing knowledge about the evolving adaptation context, needs, and experiences; (2) accountability: reporting to stakeholders on progress or results; and (3) adaptive management: checking whether a policy, plan, or intervention is on track and adjusting the course of action accordingly.
>
> Adaptation outcome refers to the changes that result from the implementation of those policies, plans, or interventions, i.e. whether adaptation actually takes place" (Figure 18). This may include assessing changes in vulnerability, changes in overall well-being, and/or increased adaptive capacity. M&E for learning purposes seeks to understand how change takes place. M&E of adaptation outcomes may also serve accountability purposes if the policy or process being monitored can be explained to have contributed to the outcome, and if there is time for adaptation outcomes to materialise before an accountability report is due."

The NAP itself proposes annual monitoring, with the production of a report and three evaluations of the Plan based on its various phases as outlined below:

1. **Inception Phase**

The first will occur in 2020 and will be focused on the first phase of the Plan, using the actions proposed in this document. For that, a set of key progress indicators is already proposed. Using the proposed comprehensive M&E framework, these indicators will also relate to other relevant conventions and the Development Agenda 2030.

2. Mid Term Assessment

The mid-term review will follow in 2022. This will allow the elaboration of recommendations to inform the design of the NAP's third phase (2024–2030), with a view to promoting success stories and avoiding less effective and efficient practices. It will also inform the NDC process and the global stocktake, making full use of the comprehensive M&E framework.

3. Final Evaluation

The final evaluation will then occur in 2028, again informing the NDC and associated stocktaking and helping to shape the second-generation NAP to be implemented from 2030 onwards.

Before starting to further define the M&E framework, GIZ (2015) recommends determining who will lead or coordinate the development and implementation of the M&E system, which relevant stakeholders should be involved in the development and implementation of the system, and who is going to use its results. This will help to ensure:

- Relevance of the M&E system to the needs of decision-makers;
- Integration with existing M&E systems and/or data sources; and
- Buy-in and feasibility of the M&E system.

For the case of the NAP and overall CC actions in Saint Vincent and the Grenadines, it is proposed that SDU lead the process of MRV with inputs from the various stakeholders contributing to the process. Meanwhile, the monitoring of the NAP and, broadly, of the implementation of the CC policies and strategies shall be done by the media, private sector, civil society and academia. Evaluations should be performed by independent third parties.

GIZ (2015) offers a questionnaire that can be used in helping to further shape the M&E framework for the NAP, which is reproduced in Annex I. With regards to the specific MRV systems, the proposal consists of using the *MRV system developed to support the implementation of a NDC for St. Vincent and the Grenadines* created by Aether in 2017. According to the project's final report:

> The purpose of the project was to define a standardised baseline for St. Vincent and the Grenadines under the UNFCCC and national climate change MRV systems to enhance tracking of:
>
> - Greenhouse gas (GHG) emission levels;
> - The impact of mitigation and adaptation actions; and
> - International, regional and domestic climate finance flows. (…)
>
> For St. Vincent and the Grenadines, an online MRV System has been developed that is associated with its NDC as defined under the Paris Agreement. This system is being delivered to the Government of St Vincent and the Grenadines as an output of this project. The system is "live", meaning that it requires engagement from stakeholders for information to remain current and relevant. Key indicator datasets have been identified. By tracking these indicators, it is possible to develop an evidence base of progress and success towards SVG's climate and sustainable development goals. As outlined in the project's Terms of Reference (TOR), the MRV system will focus on developing and maintaining key data flows for the adaptation: this includes trends and projections of environmental factors such as weather, temperature, water, sea temperature, biodiversity, and environmental, social and economic vulnerabilities and

risks to these environmental changes. The MRV system must also inform decision makers (and the public) on the progress/success/failure of existing actions and on options, costs and benefits for future actions and commitments to minimise environmental, social and economic impacts of climate change.

Figure 15 shows examples of M&E of adaptation considering inputs, process and outcomes.

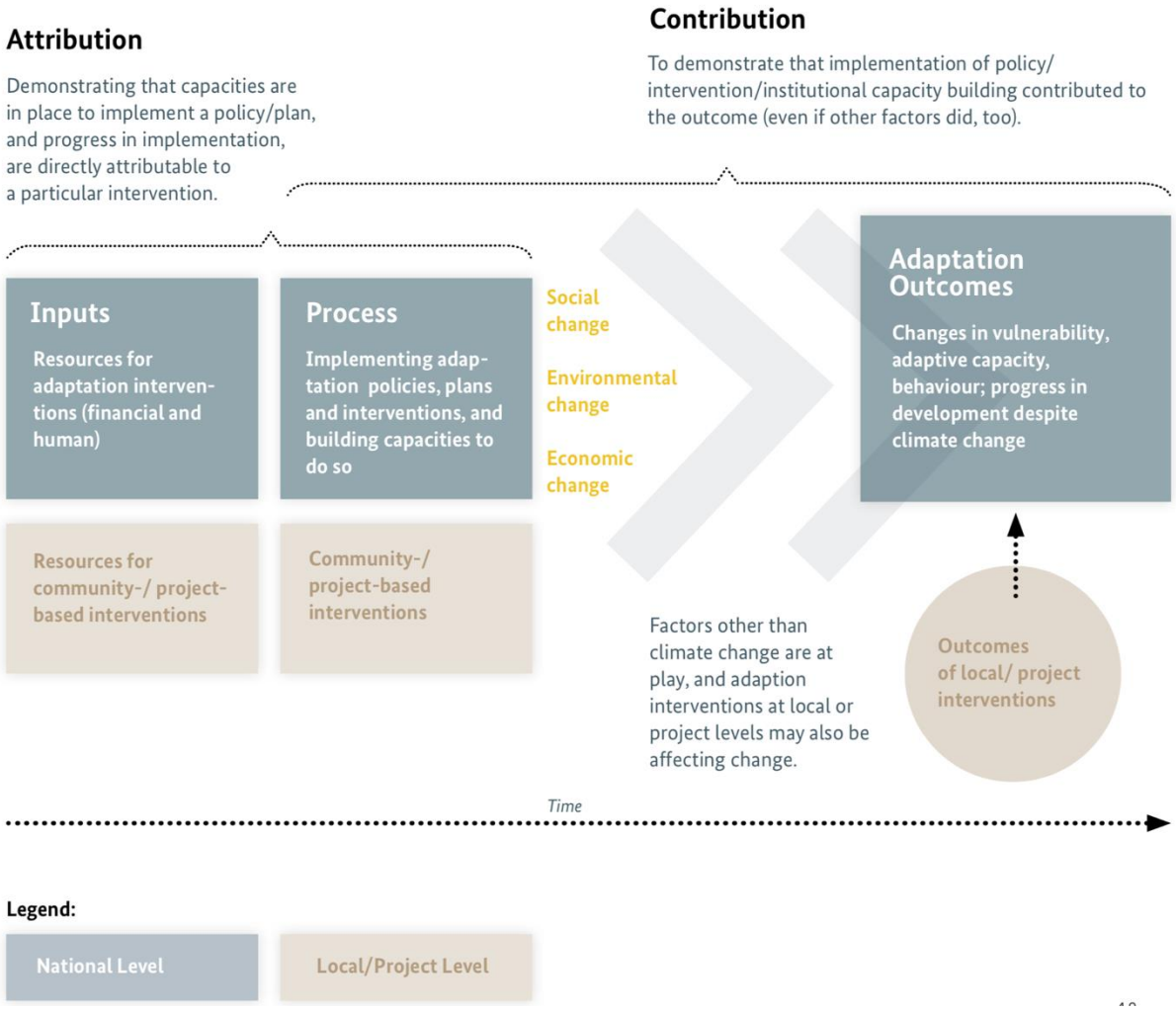

Figure 15 – M&E of adaptation considering inputs, process and outcomes.

Source: GIZ, 2015

The Adaptation Committee's fifth report sets out the main principles for the MRV framework for adaptation as follows:

- Results from monitoring and reporting should be reported and disseminated to ensure that they are fed back into the respective adaptation process, but also to allow for lessons learned and good practices identified to be shared with the wider community of adaptation planners and practitioners;
- The framework must link individual assessments with national level assessments to broaden the focus from the means of achieving outcomes (individual interventions) to the desired end result (countries' becoming less vulnerable and having more adaptive capacity);
- Definition of successful adaptation and the ways of measuring successful adaptation should align with funding agencies/ countries/communities shared objectives; and

- Vulnerability reduction and climate change adaptation efforts should be effectively measured and tracked in the country context.

The existing MRV system is currently linked to Aether's servers. However, SVG can use the site for no charge for the foreseeable future and should therefore update the system to include the NAP and its strategic actions.

Taking into account the set of proposed adaptation actions included in the first phase of the NAP, the MRV adaptation framework for the Plan can assume the format proposed by Aether. This framework can be further developed when implementing the strategic action *Definition and operationalisation of an overarching M&E framework covering the NESDP, NDC, NAP, SDGs and Sendai* to include the actions and activities implemented in the scope of the NAP, namely those already being implemented by the PPCR. This framework should also be able to track expenditures on CCA and, more broadly, on CC. A climate budget tagging mechanism is suggested by adding a dedicated climate change marker in national budget systems or financial management information systems.

An example of a simplified M&E framework is presented in Table 6 6 below.

Table 6 – Simplified MRV framework of the NAP SVG.

NAP El.	Action/Activity	Target	Outputs	KPIs	Timing
A	**1. Institutional framework for CCA**		**Mandate for CCA in official publication**		**2018 to 2023**
	1.1. Revisiting and revising the proposals made and officially approving a national mandate for CC	1 mandate approved		No. planning instruments revised and approved including CCA mainstreaming	2018
	1.2. Strengthening SDU's team with more HR dedicated to CC	2 additional CC technicians		No. additional HR	2019 to 2023
	1.3. Strengthening Meteorological Services' team to operate new stations and perform flood modelling and drought prediction	1 additional technician		No. additional HR	2019 to 2023
	1.4. Increasing the capacity to enforce environmental legislation	x inspectors		No. additional inspectors	2019 to 2023
A	**2. Recommendations to further mainstream CCA**		**Guide to mainstream CCA**		**2019 to 2023**
	2.1. Development of a national guide with recommendations to mainstream CCA into planning and budgeting, including gender screening and social and environmental safeguards	1 guide for the 6 sectors 6 sectorial strategies revised		No. recommendations No. planning instruments revised	2019 to 2020
	2.2. Alignment of the legal framework with the NDC and the NAP including the review and update the existing draft acts and regulations under PPCR 3.6*[54]				
	2.3. Finalisation of the National Physical Development Plan*				

[54] * Indicates activities identified as PPCR outstanding works on the 13th of April 2018

NAP El.	Action/Activity	Target	Outputs	KPIs	Timing
	2.4. Preparation of comprehensive integrated watershed management policy and action plan including Arnos Vale*				
	2.5. Application of relevant effluent regulations and standards at the coastal area at Villa Beach*				
	2.6. Guidelines and outreach for fisheries, crops and livestock; disposal of solid waste grey and black water				
	2.7. Measure and track public finance and look at gaps in the budgeting system, monitor and track private adaptation flows and creation of markers and integrate CC tagging as part of the tracking of the public accounts	1 system of markers to tag CC expenditure 1 report climate expenditure/y		No. systems in place to tag CC expenditure No. reports of CC expenditure/sector/y	2019 to 2023
B	**3. Research programme on climate change impacts and CCA actions**		**Studies, thesis, papers, tools**		**2019 to 2023**
	3.1. Formulation of a research plan focusing on the sectors for which there is limited data and information on impacts, vulnerability and adaptation responses, including the ocean and water column and marine biodiversity and ecosystem-based adaptation	1 Research plan/y At least 4 papers/y		No. research plans/y No. studies No. thesis No. scientific articles published	2019 to 2023
	3.2. Development of research programmes in collaboration with national and regional academic institutions for continued research and innovation to address identified needs, including the use and dissemination of adequate adaptation technologies	1 Research plan/y At least 4 papers/y		No. research plans/y No. studies No. thesis No. scientific articles published	2019 to 2023
	3.3. Creation of tools and mechanisms for dissemination of findings and their application in policy, planning and selection/use of technology for resilience-building	1 paper/y		No. Tools	2020 to 2021

NAP El.	Action/Activity	Target	Outputs	KPIs	Timing
	3.4. Elaboration of a comprehensive Technology Needs Assessment (TNA) focusing on CC, particularly CCA	1 TNA		No. TNA	2019 to 2020
	3.5. Modelling of coastal inundation impacts (storm surge, sea level rise, high energy wave action, winter swells)*			No. reports with results of modelling	
	3.6. Assessment of climate change impacts on coastal and marine ecosystems and commercial fisheries*				
	3.7. Designing the National Spatial Data Management*				
	3.8. Elaboration of the Georgetown watershed study*				
	3.9 Installation of an automatic weather station at the E.T Joshua Airport**[55]	1 weather station operational		No. weather stations at airport	2019 to 2020
C	**4. Capacity-building and education plan**		**Annual CB plans and actions, Curriculum with CCA**		**2019 to 2023**
	4.1. Revalidation and prioritisation of the comprehensive national capacity building plan elaborated in the scope of the NAP preparation and implementation of priority actions	1 CB plan/year 100 trainees/y 80h/trainee/y		No. CB actions/topic No. Participants/ CB action No. hours CB/person/year	2019 to 2023
	4.2. Performance of a National Capacity Self-Assessment (NCSA)*	1 NCSA report		No. NCSA	2019 to 2020
	4.3. Train teachers on climate change contents and further include CCA and DRR in the curriculum***[56]	50 trainees/y 80h/trainee/y		No. CB actions/topic No. Participants/ CB action No. hours CB/person/year	2019 to 2023

[55] ** Indicates activities suggested by the Meteorological Services

[56] *** Indicates activities identified during the financing training session held in the scope of the support of the NAP GN, in Kingstown in the 12th of April 2018

NAP El.	Action/Activity	Target	Outputs	KPIs	Timing
	4.4. National curriculum development in CCA and DRR*	1 National curriculum with CCA and DRR			
	4.5. Training to support improved application and enforcement of building codes*				
	4.6. Training in flood risk modelling and modelling of the coastal zones**	20 trainees 80 h training/y		No. CB actions/topic No. Participants/ CB action No. hours CB/person/year	2019 to 2023
C	**5. Communication plan**		**Communication plan and actions**		**2019 to 2023**
	5.1. Development and implementation of a comprehensive national climate change public awareness plan	1 plan/year at least 10 communication actions/y		No actions/topic No. Participants/action	2019 to 2023
	5.2. Development of information packages for families and communities in "Red Zone" expanded to a NEMO Public Education Campaign*				
	5.3. Preparation of a small booklet, "Climate Change Governance is SVG" (24-32 pp. max), for wide distribution amongst stakeholders*	1 booklet			
D	**6. Overarching M&E framework**		**Annual Monitoring reports and Final Evaluation report**		**2019 to 2023**

NAP El.	Action/Activity	Target	Outputs	KPIs	Timing
	6.1. Development and implementation of an overarching M&E framework	1 M&E framework 1 M&E plan/y 1 Evaluation report 2022		No. M&E frameworks updated with NAP No. annual Monitoring reports No. final Evaluation report	2019 to 2023
	6.2. Monitoring of climate support	1 report/y		No. annual reports	2019 to 2023
C	**7. Resource mobilisation plan for 2024–2030**		**Annual resource mobilization plans**		**2019 to 2023**
	7.1. Definition of a resource mobilisation plan	5 annual plans		No. RM plans/y Resources mobilised (EC$, technology and capacity)	2019 to 2023
All	**8. NAPs for other priority sectors**		**Sectoral NAPs**		**2019 to 2020**
	8.1. Development of sectoral adaptation strategies for other priority sectors	4 sectoral NAPs		No. Sectorial NAPs approved	2019 to 2020
C	**9. Test on integrated approach to adaptation**		**Adaptation community- and ecosystem-based actions** **Tool to inform planning**		**2019 to 2023**

NAP El.	Action/Activity	Target	Outputs	KPIs	Timing
	9.1. Implementing, monitoring and evaluating concrete actions in test locations on the ground	6 communities with greater resilience 1 tool to inform policy bottom-up		No. of farmers and fishers with increased resilience No. tools to inform local planning	2019 to 2023
C	**10. Portfolio of CCA actions for 2024–2030**		**Concept notes**		**2020 to 2023**
	10.1.1 Perform the identification and prioritisation of pertinent needs and gaps	1 report		No. gaps and needs report	2022 to 2023
	10.2. Development concept notes for additional adaptation actions to implement in Phase II	10 CN including issues below		No. CN approved by NCCC	2019 to 2023
	10.2.1. Replication of the REEF protection and marine rehabilitation, update building code to avoid discharges of wastewater in the coast and protect reefs***	CN reefs		No. CN on reefs	
	10.2.2. Replication of relocation of pipelines to less vulnerable areas, increasing of water storage capacity, implementation of solar desalinisation plants in the Grenadines, general improvement of watershed management plan including nurseries for tress and crops and provision of mobile water purifications systems***	CN water - NAP Water		No. CN water	
	10.2.3. Improvement of EWS***	CN EWS		No. CN EWS	
	10.3.4. Small resilient hospitals and national green hospital***	CN health		No. CN health	
	10.2.5. Housing compensation scheme***	CN compensation scheme in housing		No. CN compensation scheme	

NAP El.	Action/Activity	Target	Outputs	KPIs	Timing
	10.2.6. Increase the resilience of power lines***	CN electricity distribution		No. CN electricity and energy distribution	

4.9. COMMUNICATION

CC knowledge is recognised as a pillar of the NAP and as a component of adaptive capacity. Noting this, a strategic adaptation action of the NAP is dedicated to communicating climate change to the various vulnerable groups and decision-makers, in order to increase the effectiveness of the remaining adaptation actions. An informed Vincentian is a more resilient Vincentian.

Outreach is also an important component of a communication strategy, such that the Vincentian NAP is widely disseminated in international fora to guarantee that SVG will be recognized as a leader having a society, environment and economy that are all resilient to climate change.

The following are considerations that shall be taken into account when defining and implementing the NAP communication plan.

According to FAO (2018 f), while country-specific approaches are necessary for the creation of effective communication strategies, the UNFCCC guidelines provide some basic overarching principles that should be considered. The rest of this section is drawn from FAO.

First, effective and sustainable communications and awareness-raising programmes need to target the general public. This includes efforts to transform education curricula by incorporating climate change.

Second, creating a climate-aware citizenry requires sustained efforts. Information relayed to the public should relate to the needs of the people and distinguish carefully between short-term weather forecasting and medium- to long-term climate scenarios. The implementation of this activity should be aligned with broader communication and awareness-raising efforts.

Planning the development and dissemination of messages as well as public awareness and outreach campaigns can be an effective means of building confidence and creating feedback loops that can inform the NAP process. This looped process can lead to behaviour change, changes in policies and changes in governance structure. The main steps in designing a communications strategy are:

- Defining specific goals to achieve with communications;
- Identifying the target audience and key actors that can aid in connecting with that audience;
- Developing key messages to share and gathering facts related to the impacts of climate change on the agricultural sector;
- Selecting the most appropriate tools to communicate those messages and monitoring the success of chosen communications efforts to readjust approaches based on constructive feedback loops.

The first step is to determine the objective of the intended communications. The communication strategy should help achieve overall objectives of the NAP process and therefore should be carefully aligned with the NAP.

Understanding the needs and background of the target audiences is another key factor. Individual target audiences for effective NAP communications will include various ministries and political actors, but will also include the private sector, civil society, the general public, farmers and influencers, such as brand champions and the media, who will support deeper penetration and retention (sometimes called stickiness) of specific messaging.

Developing clear and concise messages is fundamental. It can be a complex task to convey information to government agencies and the general public about the considerable socio-economic benefits of climate change adaptation planning in the agriculture sector. For example, many factors can influence what the audience takes away from communication efforts, including distractions caused by other pressing needs (such as political instability, disease outbreaks or famine) and a lack of understanding of data, complex concepts or internal political dynamics. The particular framing of a story or event also

influences what information the audience takes away. Useful entry points to engage audiences can be messages that are tailored to the local context, using traditional knowledge, as well as those that highlight how climate change aspects are interconnected.

There is a need for a clear understanding of not only the stakeholders and audience, but also what type of information they need and demand, how they get and use information, their media habits and how they share information. Important questions to ask include the following:

- What assets are available? Is there a market study, broader analysis on media use, demographic information? How can this information be used to engage stakeholders?
- What is the most popular form of media? And what are the media habits of targeted stakeholders?
- What is the age and gender demographic preferences per dissemination technology? What about the influence of education and income? Rural vs. urban populations?

Understanding how climate change is perceived by targeted audiences and how they like to receive their information will help in designing communications that are useful, accessible and appropriate. Disseminating climate information, as well as knowledge generated on climate change adaptation practices and techniques, will be part of the NAP process. These types of communications raise questions such as:

- How to best communicate what technologies work for adaptation in the targeted sectors?
- How to better link local sectoral knowledge with scientific knowledge?
- How to bridge the gap between the limit of what communities can do on their own and what government and other services need to do?

After all the careful planning and tailoring of communication efforts, the success of activities carried out should be measured in order to readjust approaches based on constructive feedback loops being monitored. This can be done in a variety of ways, including surveys, website and link trackers and social media data. The information gathered can be used to inform further communications or to create a feedback loop. The interplay between monitoring and evaluation and effective communications can perpetuate a positive knowledge cycle, improve the sharing of NAP impacts and facilitate a more robust exchange of ideas (FAO, 2018f).

The communication plan is also included in the M&E framework and represents the final step in the adaptation planning process envisaged in the NAP.

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APPENDIX I – INSTITUTIONS REPRESENTED IN THE WORKSHOPS AND WORK SESSIONS

Workshop for technicians held on the 2nd and 3rd of August 2017:

- Central Water and Sewage Authority (CWSA);
- Meteorological Services;
- Ministry of Agriculture, Rural Transformation, Forestry, Fisheries, Industry and Labour;
- Ministry of Education;
- Ministry of Finance, Economic Planning, Sustainable Development and Information Technology, including SDU;
- Ministry of Housing, Ministry of Transport & Works;
- Ministry of National Mobilisation Youth, Gender, Family, Persons with Disability;
- National Parks, Rivers & Beaches Authority;
- National Emergency Management Organisation (NEMO);
- St. Vincent Electricity Service (VINLEC);
- SVG Red Cross; and
- UNDP.

Work session for decision-makers held on the 4th of August 2017:

- CWSA;
- Ministry of Agriculture, Rural Transformation, Forestry, Fisheries, Industry and Labour;
- Ministry of Finance, Economic Planning, Sustainable Development and Information Technology Ministry of Education, including SDU;
- Ministry of Housing, Ministry of Transport & Works;
- Ministry of National Mobilisation Youth, Gender, Family, Persons with Disability;
- NEMO;
- Richmond Vale Academy;
- SVG Red Cross;
- SVG Tourism Authority;
- UNDP; and
- VINLEC.

Workshop to present the draft NAP and NAP-Ag held on the 19th of March 2018:

- Caribbean Agricultural Research and Development Institute (CARDI);
- Caribbean Youth Environmental Network (CYEN);
- Inter-American Institute for Cooperation on Agriculture (IICA);
- Ministry of Agriculture, Rural Transformation, Forestry, Fisheries, Industry and Labour;

- Ministry of Finance, Economic Planning, Sustainable Development and Information Technology, including SDU;
- Ministry of Housing;
- Ministry of Housing, Ministry of Transport & Works;
- Ministry of National Mobilisation Youth, Gender, Family, Persons with Disability;
- National Parks, Rivers and Beaches;
- Richmond Vale;
- SDU;
- SVG Red Cross; and
- UNDP.

APPENDIX II – RESULTS OF THE SWOT ANALYSIS IN THE SCOPE OF THE SNAP TOOL

The results of the SWOT Analysis performed in the scope of the application of the SNAP Tool are presented below.

Table 7 – SWOT analysis of NAP SFs

NAP SFs	Strengths	Weaknesses	Opportunities	Threats
Climate Information	• Quick dissemination of information • Vulnerability data found on GeoNode • Modern climatological equipment at the meteorological office • Regional studies support local climate projections • Other agencies have trained staff and monitoring facilities • Trained personnel	• Limited public awareness • Vandalism to equipment • Limited financial resources • Studies not used for decision-making and not regularly updated • Lack of high-standard climatological network • Limited number of trained personnel at weather office • Location found only on the main island	• Improved social and mass media dissemination • Increased number of locally trained graduates • Additional equipment from external donors • Collaborative work with external and regional agencies • Inter-agency training and collaboration for staff	• Damage to equipment from storms • Better external opportunities for trained personnel • External politics and trade may affect funding opportunities
Human and Institutional Capacities	• Ministries and sectors have been exposed to climate change discussions • Establishment of a Ministry that has a focused unit for sustainable development and by extension CC • Steps currently being taken to develop a NAP that includes all sectors and their decision-makers and policy-makers	• Limited CCA information integrated into sectors • No set focal person to continue work, actions or discussions • Low political buy-in by sectors and policy-makers • Insufficient government financial allocations towards resilience • SDU has limited staff to deal with all areas of CC effectively	• The involvement of all sectors in the development process presents an opportunity for a focal person to be identified in each sector: improved relationships, capacity building, information sharing • More courses needed in environmental SC and CC • Establishment of a national committee for CC • Access to financial and other resources as a party to the UNFCCC	• Other professional opportunities; migration • Fall-out of developed contribution factors; impedes developing countries' ability to respond or participate at decision-making fora • Vulnerability of the state including mindset ("it won't happen to us") and reactive rather than proactive approach

NAP SFs	Strengths	Weaknesses	Opportunities	Threats
Long-Term Vision and Mandate	• Climate change focal point and unit • High local level of climate change awareness	• No NAP • Insufficient experts (brain drain) • Lack of political will • Government priorities lie elsewhere; poor financial situation • Lack of eligibility to access donor funds (data sharing)	• Development of NAP using donor funds • Donor funds for: training, capacity building, resource access (tech), public education and awareness, conducting vulnerability assessments, building resilience, M&E • Make climate change a national priority	• Less money in CC fund as a result of the USA withdrawal • Lack of confidence in government to use funds for intended purpose
Implementation	• Receptive local communities • Many trained professionals in various organisations • Experience and relationship with funding agencies (e.g. Ministry of Economic Planning) as focal point for SVG • Great buy-in by political directorate	• Poor internal collaboration • Lack of local initiative • Limited human capacity in some departments • Project-based funding for most projects • Low inputs from technical officers in national plans • Poor management and procurement for projects • Project financing is more available than ongoing funding through central government • Poor local construction management • Low capacity of local contractors	• External funding for implementing CC projects and training • Access to external technical expertise • Exposure to new technology	• Rise of nationalism in funding countries • Climate change science denial • Climate change impacts are skewing national development priorities • Exchange rates affect budgets for project implementation (SDR) • CC contribution is minimal but impacts are the greatest SIDS • Stringent requirements from donor agencies

NAP SFs	Strengths	Weaknesses	Opportunities	Threats
Mainstreaming	• NESDP Goal 4 • Several draft documents that incorporate adaptation measures	• Insufficient collaboration among key stakeholders • Insufficient implementation of plans and policies due to limited resources • Lack of visibility of these plans and policies	• Speedy finalisation of draft documents (cabinet approval) • Improved collaboration among key stakeholders to streamline implementation and better use limited resources • To raise the profile of CCA through public awareness and education • Build a case for increased allocation of resources towards CCA	• Extreme weather events • External economic shocks • Lack of regional and international political will
Participation	• Respond well to climate disasters • Various stakeholders have their own action plans • Gender bias is minimal	• Reactive vs proactive nation • Lack of collaboration and knowledge-sharing among stakeholders and within ministries • Inactive women's organisation • Limited responsive human resources	• Reactivation of national women's organisation • Creation of a men's organisation (if not existent) • Strengthening of national forum with stakeholders • Shift responsibilities (managers to staff)	• Wastage of resources due to poor coordination • Neglect to other areas due to inefficient coordination and planning
Monitoring & Evaluation	• Building codes, curriculum developed, compliance measures, plans developed • Community consultations • Project reports	• Legal enforcement • Manpower • Slow implementation • Resource allocation (money and people) • Lack of CZMP, follow-up reports	• Resilience strengthening • Funding opportunities (conducting surveys, etc.) • Community buy-in • Social media and records	• Compliance in other districts (e.g. Grenadines) • Laid-back attitude among relevant people

Appendix III – Mapping and Integration of CCA into Policies, Strategies and Initiatives

The table below summarises the level of integration of CCA into SVG's policies and strategies, according to the results of the consultations held so far related to the public and private sectors, civil society, academia and the media. It includes a justification based on the initiatives that are or were implemented by each stakeholder.

Table 8 – Stakeholders' mapping and integration of CCA into policies, strategies and initiatives.

	Reference and status of CCA mainstreaming	Justification
Public sector		
Overarching level	NESDP refers to CCA SNC (2015) and NDC (2015)	• Provides a strategic approach to building climate resilience and improving DRR across all sectors. Goal 4. • Presents an approach to align the building of climate change resilience with national developmental goals, in keeping with regional and international obligations. • The forthcoming CC Policy will also contribute to facilitating mainstreaming into development planning.
Agriculture, Forestry and Fisheries	There are some projects but CCA still needs to be mainstreamed into planning	• The vulnerability of the sector is associated with the landscape, production practices and the farmers' capacity. Farming communities are facing increased erosion and new pests and diseases. Publicity and action are required to minimise the impacts, including through education. Farmers understand the practices of the past and are prepared to use them once again, particularly with regard to land management. A disaster risk management (DRM) plan needs to be assessed internally. • For fisheries, CCA is very important. Some projects are already in the pipeline. Reef surveys are to be done and an assessment of how migratory species and sargassum are impacting the size of fish stocks needs to be undertaken. A vulnerability assessment was conducted in two different communities. • For forestry, initiatives to fight climate change include reforestation, watershed management and potentially REDD^{+}.
CWSA	CCA still needs to be mainstreamed into planning	Challenges include topography, aboveground pipelines, landslides and flooding. A water resource unit currently monitors river flows using remote systems. Water is currently collected aboveground and internal weather forecasts are issued. Plans include putting pipelines under riverbeds and increasing the number of tanks to boost storage capacity for drought periods.

	Reference and status of CCA mainstreaming	Justification
Electricity production and distribution	Needs awareness-raising on mainstreaming CCA	• The energy sector is highly vulnerable to climate change, particularly its distribution infrastructure. • This has been partially acknowledged with a geothermal project that is currently addressing environmental and social aspects relating to CC. • Other examples of CCA mainstreaming in the energy sector are PACES's ToR which included hurricane standards and a Swedish programme that was conducted on CC resilience to maintain the shoreline. • However, higher water storage capacity and planning for energy supply in case of disaster are needed. • Options to increase the resilience of the sector include reburied pipelines. An assessment of infrastructures design to resist higher hurricane intensity (120mph) should also be undertaken.
Finance	Needs awareness-raising on mainstreaming CCA	• Local stakeholders submit projects to the Ministry of Finance. A category of expenditure related to CC, including adaptation, mitigation and capacity building, should be created to mark the associated costs and track climate financing.
Health	Some initiatives in place, CCA needs to be further mainstreamed into planning	• CCCCC has already done some work in the health sector. Additionally, work has been done on the health plan for the next five years to include CC considerations. • The second phase of the SMART Health Care Facilities in the Eastern Caribbean Project is underway, wherein smart hospitals are being rendered resilient and energy-efficient with support from DFID. DFID is also supporting mosquito control. • In 2014, after the 2013 floods, the World Bank supported an assessment of the country's health care facilities and identified the site for a new hospital since the previous one was located in a multi-hazard area. • The National Strategy Plan includes ensuring environmental sustainability within the Ministry by reducing GHG emissions and addressing water safety, vector control and food safety (part of CC's impact on health in the CARICOM). Increased water capacity to face droughts and no-regret strategies, including source generators and solar in policlinics, are also being considered. • Some health facilities are still not covered by the Smart Hospitals Project that support the installation of solar panels for powering of cold storage facilities for vaccines and air conditioning for pharmacies. • To date, the health sector's response to climate change has been based on the occurrence of extreme events. • There are plans to create a disaster management unit within the sector.

	Reference and status of CCA mainstreaming	Justification
Housing	CCA still needs to be mainstreamed into decision-making, planning and operations	• Housing in SVG is perceived as vulnerable to periods of heavy rainfall because they are located on river valleys. • There has been significant erosion on the windward coast over the last two to four decades due to riverside flooding, coastal erosion and change in hurricane season and temperature, which usually set records in May. However, there is a lack of data specific to households and CC impacts. • The challenge is to relocate people away from dangerous areas and guarantee that they do not come back. • Parts of Kingstown are now below sea level, due to the expansion of the city, putting people and infrastructure at risk. Also, the soil is heavily sealed leading to a greater risk of flooding as rainfall and runoff are unable to drain. • Also, with higher temperatures and longer drought periods, there is a higher risk of forest fires that could destroy homes and other property. • Mapping of vulnerabilities using GIS created Community Exposure Risk Maps (CERMS), but work with the Cabinets to sensitise on the use of GIS for decision making is still needed. • NEMO also needs to have a formal idea of vulnerable areas. • Measures will have to be put in place recognising CC and the amount of risk that is affordable to define action. Legislation shall be revamped to include climate risk and adaptation.
National Parks and Protected Areas (NPPA)	Needs include training to build capacity and monitor resources. There is a lack of coastal engineers. There are enough resources but the capacity to access them needs to be strengthened. CCA can be further mainstreamed.	• NPPA has put adaptation measures in place to increase resilience in some of the managed areas. • Marine protected areas need climate finance and targeted efforts to increase resilience. GIZ and Australia are supporting two projects on CC adaptation and rehabilitation. Other projects focus on ecosystem health and resilience building. • Partnerships have been developed with the Physical Planning Division in data gathering and with the Forestry Department, Fisheries and Hotel and Tourism Associations. Water treatment facilities with grease traps have been implemented to protect marine areas. • Reef rehabilitation must be done due to high sedimentation, in order to reduce vulnerability to floods and to waves (e.g. using waves' breakers). • NPPA also promotes board walk rehabilitation and reconstruction of jetties to minimise erosion. • NPPA needs to include training to build capacity and to monitor resources. There is also a lack of coastal engineers. There are enough financial resources, but the capacity to access them needs to be strengthened. • CC initiatives should conserve at least 20% of SVG's shore by 2020.

	Reference and status of CCA mainstreaming	Justification
Biological Diversity	Fifth National Report to the United Nations Convention on Biological Diversity (2015)	• There is a need for recognition that CC impacts has major effects on the region's rich biodiversity as well as on human health and livelihoods. • The national target is: "By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks will be enhanced through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification." • The actions needed include to: "Conclude and legally adopt a national policy on climate change, including strategies for adaptation and mitigation. Conduct baseline studies on carbon sequestration by various ecosystems (forests, coastal and marine). Monitor ecosystem change and corresponding carbon sequestration changes in order to compile data to facilitate reporting on contributions to mitigation."
NEMO	Focus on DRR	• Focus on DRR. Discussion is needed on the coordination of CCA and DRR.
Planning Unit	Coordination of CC issues	• The SDU has the mandate to coordinate climate change measures, including CCA. It is the focal point for the UNFCCC and has been coordinating the work related to the development of the NAP and several projects and programmes, such as the PPCR. Also, it is responsible for all the reporting to the UNFCCC, including National Communications and Biennial Updated Reports.
Port Authority	Integrating CCA into new port design. Needs greater awareness on what can be done to further mainstream CCA.	• NEMO has conducted a study on coastal vulnerability. Ports are vulnerable to hurricanes, flooding and siltation due to aging infrastructure. The government has committed to building a new port in the northern end of town (expected completion 2021–22) and is integrating CC impacts into planning toward 2050. The frequency of weather extremes has been increasing. Investment in coastal and river protection is required. • Education is needed on what can be done at the local level (bottom-up) to inform wiser decisions. • Measures include water storage facility with tanks with three days' autonomy and budget provisions for any clean up needed. Safety procedures are integrated and implemented by fire services. Coordination is being done with NEMO.
Social Protection	CCA needs to be mainstreamed into planning.	• Spatial vulnerability exists on slopes and in coastal areas, particularly in informal settlements due to the quality of housing and of infrastructure. The most vulnerable people include elderly people (especially single men) and children. Though many retire at 55, their retirement benefits only begin at 60 years of age. • Education is needed to guide the public on how to access shelters. Government must also work with communities to increase infrastructure resilience. Communities need organisation, knowledge, skills and empowerment, as well as guidance on how to link to available resources. • The integration of CC concerns into social policy will increase opportunities to partner with agencies on the ground and work in cooperation to avoid duplication. The Ministry of National

	Reference and status of CCA mainstreaming	Justification
		Mobilisation Youth, Gender, Family, Persons with Disability acts as a mobiliser. It has already built a trusted relationship with the population.
Statistics	CCA needs to be mainstreamed into national statistics and poverty assessment. Statistics may have a role in CC M&E and particularly in the NAP.	• National statistics are not centralised. Some other ministries also collect data, such as the Ministry of Agriculture and Economic Planning. A new statistics act is being discussed to make the statistics unit the hub of national data. Currently it collects data on population, economy, the consumer price index and trade. • National statistics could be used to shape and inform the M&E plan of NAP and SDGs. • The Statistics Department should be engaged or provide guidance for all data collection and processing endeavours, not only when data is needed as a response to an event. A new poverty assessment will be undertaken and may present an opportunity to include a CC dimension. • The ToR used to follow the Millennium Development Goals (MDGs) might be a basis for SDGs and the NAP in regard to creating a mandate and developing an M&E plan, since it had a broad-based committee.
Tourism	There are some projects but CCA still needs to be mainstreamed in planning	• Hotel facilities and properties are compromised as the sea moves further inland due to erosion which reduces beach area. This also applies to the Grenadines, where seawalls need to be higher. • The facilities most affected by storms are those in the coastal areas. Climate variation is a risk, including droughts and hurricanes. People do not know how to react. • Natural sites are also very susceptible to landslides, flooding, and siltation which block access. • Since SVG has 32 islands, climate change impacts can often be geographically dispersed. • A new scenario for climate projections with the most up-to-date information on CC impacts is needed, in order to better prepare for eventualities. Resilient building codes need to be implemented. • Projects in the past included Eastern Caribbean Marine Managed Areas Network (ECMMAN), covering CC, pollution and sand watch (UNESCO). • NEMO has a disaster and crisis communication strategy for the tourism sector. The Ministry of Tourism needs to work with properties owners to help them develop their own plans.

	Reference and status of CCA mainstreaming	Justification
Transports and Works	CCA needs to be mainstreamed and disaster response needs to be improved	• The Ministry of Transports and Works is responsible for the maintenance of infrastructures. • The Caribbean Catastrophe Risk Insurance Facility (CCRIF) project focuses on testing different models of insurance to assess their feasibility. GIS are used to map roads (INEE Spain). CCORAL, a project by CCCCC, also included a CC dimension related to infrastructure. The project also has a geospatial database on soils. • Better info sharing among ministries is needed. Infrastructure development needs to prevent and to react to CC impacts moving forward. Disaster response in the sector needs to be improved. Coastal people communities and infrastructure need to be relocated.
Meteorological Office	Working on scenarios, forecast and Early Warning Systems (EWS)	• The Office has been receiving training in climatology and meteorological forecasting. The Severe Weather Forecasting Demonstration Project (SWFDP) is being carried out in partnership with Météo-France and the Caribbean Institute of Meteorology and Hydrology (CIMH). SWFDP would enable the service to issue alerts, advisories and severe weather warnings for non-tropical cycle events with guidance from the Regional Specialised Meteorological Center of Météo-France in Martinique. Hurricane-related forecasts and products will be provided by the National Hurricane Centre in Miami. • PPCR is being executed by the University of the West Indies' (UWI) Mona Office for Research and Innovation (MORI). It covers mainly the upgrading of automatic weather stations and building capacity in forecasting products. Fisheries Early Warning and Emergency Response (FEWER) aims to reduce the risks to fishermen associated with climate change and variability. • The Caribbean Climate Outlooks Forum (CariCOF) falls under Programme for Building Regional Climate Capacity in the Caribbean (BRCCC) Project. Climate outlooks for the Caribbean are prepared by the CIMH located in Barbados with contributions from regional meteorological services. These forecasts include drought, temperature, wet days and wet spells, and coral bleaching. The forecasts are done for three and six months. They are then updated monthly and delivered to a wide range of regional and national stakeholders for decision-making.
Ocean	Saint Vincent and the Grenadines Development of a National Ocean Policy Discussion Document (2013)	• The Policy recognises the impacts associated with climate change and sea level rise including sea temperature rise and ocean acidification as issues faced by the marine environment. Coastal ecosystems and the people depending on them for their livelihoods might also be subjected to the impacts of climate change and environmental variability. These factors may also lead to an increase in the impacts of traditional stressors (such as pollution or habitat destruction) on ecosystems.
Private Sector		

	Reference and status of CCA mainstreaming	Justification
IICA	Has experience in CCA in the agricultural sector that may be used	The IICA has had CCA mainstreaming training. Their services relate to agriculture, food safety and innovation. The demand from 2010 onward has shifted from technical support to training, including training of small holder farmers. IICA has conducted two vulnerability assessments, one for people and the other for agriculture (IFAD). The online Caribbean Smart Agriculture Forum discusses topics including CC. After recent disasters (2013, 2014), forest systems were rehabilitated by planting trees (FAO). The Pan American Foundation provided support to farmers, including CC training and green water harvesting systems. IICA has received financing from GEF Small Grants. The UNDP supports small farmers with measures to manage water and soil and with the use of sustainable plant species (open pollination). Training materials that were produced are used in pre-school levels, training of teachers, children to perform CC appreciation. IICA focuses also on women's organisations, water harvesting using gravity, and soil amelioration with organic fertilisation. According to IICA, the country's vulnerability is more topographical than social, due to the characteristics of the soils and the high slopes.
Chamber of Commerce	CCA needs to be mainstreamed	The private sector is key to CCA and must be further engaged.
Civil Society		
Red Cross	Has tested various approaches and projects at the community level that can be used as benchmarks	The Red Cross: • has been strengthening and building community resilience, covering 20 communities in 3 years through the use of a participatory approach including the: (1) identification of hazards, (2) capacity building, and (3) identification of adaptation measures. • has asked individuals from 40 to 60 years old about the changes that they have been observing and their perception on CC. These inquiries have revealed the change in the peak of the hurricane season to Nov-Dec as well as the change in the direction of storms. • has been developing community disaster reduction plans which feature CC and CCA. • has been addressing the difficulty in growing trees in the Grenadines with support from the forestry department, in order to increase forest cover and thus mitigate CC. • has conducted fun walks for children from 6 to 10 years old to sensitise them about the environment, including about CCA issues.
Richmond Vale Academy (RVA)	Has tested various approaches and projects that can be used as benchmarks	RVA has been organising the SVG Climate Compliance Conference, is part of the Stockholm Resilience Centre for mangroves and conducts reforestation activities.

APPENDIX IV – DESCRIPTION OF THE STRATEGIC ADAPTATION ACTIONS

Strategic Action 1.	Establishment of the institutional arrangements for the multi-sector coordination of climate change actions in St Vincent and the Grenadines, including definition of its composition and mandate
Pillar	1. Institutional framework
Strategic Objective	1. Promote an enabling environment to facilitate the mainstreaming of climate change adaptation in the planning, budgeting and implementation processes of the public and private sectors, civil society and academia by strengthening the governance structures to enable adaptation and DRR (when they overlap), including for identification, implementation, monitoring and evaluation, and the communication of adaptation actions.[57]
Lead	SDU
Implementation Partners	NCCC[58]
Direct Beneficiaries	Public, private, civil society
Activities	1.1 Revisiting and revising the proposals made and officially approving a national mandate for CC inclusive of the roles and responsibilities of the various stakeholders (public, private, civil society, academia, media and donors) in relation to the functions of coordination, advising, information collection, management and sharing, support, implementation and MRV of processes and outputs 1.2 Strengthening SDU's team with additional human resources dedicated to CC issues and creation of a CC unit to support national coordination, information collection, management and sharing, support, implementation and MRV of processes and outputs 1.3 Strengthening Meteorological Services' team to operate new stations and perform flood modelling and drought prediction 1.4 Increasing the capacity in relevant units to enforce environmental legislation
Target	1 Institutional framework of CC approved 6 strategies of the most vulnerable sectors aligned 2 additional HR in SDU dedicated to CC 1 additional technician in the Meteorological Services x inspectors
Timing	2018 to 2020

[57] DRR is mentioned for the cases in which there exists an overlap with CCA.

[58] This Committee shall integrate representatives from the public and private sectors, academia, civil society and cooperation partners.

Indicative cost (k USD)	No additional cost
Funding source	Climate Change Policy

Strategic Action 2.	**Testing and institutionalisation of mechanisms to integrate CCA into the next NESDP and sectoral planning instruments, including the annual sectoral budgets and guidelines**
Pillar 1.	Institutional framework
Strategic Objective 1.	Promote an enabling environment to facilitate the mainstreaming of climate change adaptation in the planning, budgeting and implementation processes of the public and private sectors, civil society and academia by strengthening the governance structures to enable adaptation and DRR (when they overlap), including for identification, implementation, monitoring and evaluation, and the communication of adaptation actions.
Lead	SDU
Implementation Partners	NCCC
Direct Beneficiaries	Public, private, civil society
Activities	2.1 Development of a national guide with recommendations to mainstream CCA into planning and budgeting identifying entry points for the review of the main planning instruments, including gender screening and application of environmental and social safeguards 2.2 Alignment of the legal framework with the NDC and the NAP including the review and update the existing draft acts and regulations under PPCR 3.6* 2.3 Finalisation of the National Physical Development Plan* 2.4 Preparation of comprehensive integrated watershed management policy and action plan including Arnos Vale* 2.5 Application of relevant effluent regulations and standards at the coastal area at Villa Beach* 2.6 Guidelines and outreach for fisheries, crops and livestock; disposal of solid waste grey and black water 2.7 Undertaking of Climate Public Expenditure and Institutional Review (CPEIR) to measure and track public finance and look at gaps in the budgeting system, conduction of Private Climate Expenditure Review (PCER) to help monitor and track private adaptation flows and creation of markers and integrate CC tagging as part of the tracking of the public accounts
Target	1 guide focusing on the most vulnerable sectors and addressing gender issues and environmental and social safeguards
Timing	2019 to 2020

Indicative cost (k USD)	50
Funding source	TBD[59]

Strategic Action 3.	**Development and implementation of a research programme on climate change impacts and CCA actions**
Pillar 2.	Knowledge, technology and financing
Strategic Objective 2.	Improve the capacity for data and information collection, management and sharing, determination of climatic risk and access to technology and financing for adaptation
Lead	Research and Education
Implementation Partners	NCCC, Academia
Direct Beneficiaries	Most vulnerable, public, private, civil society, academia
Activities	3.1 Formulation of a research plan in collaboration with national and regional academic institutions for continued research and innovation to address identified needs, including the use and dissemination of adequate adaptation technologies focusing on the sectors for which there is limited information on impacts, vulnerability and adaptation responses, including the ocean and water column and marine biodiversity and ecosystem-based adaptation 3.2 Creation of tools and mechanisms for dissemination of findings and their application in policy, planning and selection/use of technology for resilience-building 3.3 Elaboration of a comprehensive Technology Needs Assessment (TNA) focusing on CC, particularly CCA 3.4 Modelling of coastal inundation impacts (storm surge, sea level rise, high energy wave action, winter swells)* 3.5 Assessment of climate change impacts on coastal and marine ecosystems and commercial fisheries* 3.6 Designing the National Spatial Data Management* 3.7 Elaboration of the Georgetown watershed study* 3.8 Installation of an automatic weather station at the E.T Joshua Airport**[60] 3.9 Development of national vulnerability and resilience indexes for the most vulnerable sectors and the most vulnerable social groups
Target	1 annual research programme per year focusing on fisheries, crops, livestock and water
Timing	2019 to 2023

[59] To Be Defined
[60] ** Indicates activities suggested by the Meteorological Services

Indicative cost (k USD)	1,500
Funding source	TBD

Strategic Action 4.	**Elaboration and implementation of capacity-building and education plan**
Pillar 2.	Knowledge, technology and financing
Strategic Objective 2.	Improve the capacity for data and information collection, management and sharing, determination of climatic risk and access to technology and financing for adaptation
Lead	SDU
Implementation Partners	Education, NCCC, Consultant
Direct Beneficiaries	Public, private, civil society, teachers
Activities	4.1 Revalidation and prioritisation of the comprehensive national capacity building plan elaborated in the scope of the NAP preparation and implement priority actions 4.2 Undertake National Capacity Self-Assessment (NCSA)*to update information obtain in the last assessment of 2004 4.3 Provision of training opportunities for teachers on climate change concepts and support the ongoing integration of CCA and DRR on the national curricula ***[61] 4.4 National curriculum development in CCA and DRR* 4.5 Training to support improved application and enforcement of building codes* 4.6 Training in flood risk modelling and modelling of the coastal zones**
Target	20 decision-makers, 20 technicians, 20 representatives from civil society and private sector and 20 teachers annually (80h/y/p)
Timing	2019 to 2023
Indicative cost (k USD)	1,500
Funding source	TBD

[61] *** Indicates activities identified during the financing training session held in the scope of the support of the NAP GN, in Kingstown in the 12th of April 2018

Strategic Action 5.	Elaboration and implementation of communication plan
Pillar 2.	Knowledge, technology and financing
Strategic Objective 2.	Improve the capacity for data and information collection, management and sharing, determination of climatic risk and access to technology and financing for adaptation
Lead	SDU
Implementation Partners	NCCC, Consultant
Direct Beneficiaries	Public, private, civil society
Activities	5.1 Development and implementation of a comprehensive national climate change public awareness plan, using targeted media and including the various vulnerable groups, focusing also on DRR, including the development and operationalisation of a CC portal and elaboration of press releases 5.2 Development of information packages for families and communities in 'Red Zone" expanded to a NEMO Public Education Campaign* 5.3 Preparation of a small booklet, "Climate Change Governance is SVG" (24-32 pp. max), for wide distribution amongst stakeholders*
Target	5 annual campaigns
Timing	2019 to 2023
Indicative cost (k USD)	1,000
Funding source	TBD

Strategic Action 6.	Definition and operationalisation of an overarching M&E framework covering the NESDP, NDC, NAP, SDGs and Sendai Framework
Pillar 2.	Knowledge, technology and financing
Strategic Objective 2.	Improve the capacity for data and information collection, management and sharing, determination of climatic risk and access to technology and financing for adaptation
Lead	SDU
Implementation Partners	NCCC, Consultant
Direct Beneficiaries	Public, private, civil society
Activities	6.1 Development and implementation of an overarching M&E framework covering data collection and reporting for the various ministries to support the MRV of the multiple MEAs and other national commitments 6.2 Monitoring of climate support (including financing, capacity building and technology) either domestic and international, bilateral and multilateral
Target	1 M&E framework covering UNFCCC, SDGs and Sendai
Timing	2019 to 2023
Indicative cost (k USD)	100
Funding source	TBD

Strategic Action 7.	Elaboration and implementation of a resource mobilisation plan
Pillar 2.	Knowledge, technology and financing
Strategic Objective 2.	Improve the capacity for data and information collection, management and sharing, determination of climatic risk and access to technology and financing for adaptation
Lead	Finance Ec. Planning
Implementation Partners	NCCC, Consultant
Direct Beneficiaries	Most vulnerable
Activities	7.1 Definition of a resource mobilisation plan to address the portfolio of CCA priority actions for the key sectors (agriculture, water, forestry, tourism, health and public infrastructure) for the medium term including domestic (taxes, domestic adaptation fund, amongst others) and international sources of funding
Target	5 annual resource mobilisation plans including financing, capacity and technology needs
Timing	2019 to 2023
Indicative cost (k USD)	100
Funding source	TBD

Strategic Action 8.	Elaboration of NAPs for other priority sectors
Pillar 3.	Resilience of the most vulnerable
Strategic Objective 3.	Implement adaptation actions towards increased resilience among the most vulnerable Vincentians
Lead	SDU
Implementation Partners	NCCC, Consultant
Direct Beneficiaries	Most vulnerable, public, private, civil society
Activities	8.1 Development of sectoral adaptation strategies for other priority sectors (forestry, tourism, health and public infrastructure)
Target	4 sectorial NAPs
Timing	2019 to 2022
Indicative cost (k USD)	200
Funding source	TBD

Strategic Action 9.	**Development of CCA planning tools tested in six particular vulnerable communities, three coastal and three interior, demonstrating an integrated CCA approach in various sectors, including agriculture, water, forestry, health, public infrastructure and tourism, on the mainland and in the Grenadines**
Pillar 3.	Resilience of the most vulnerable
Strategic Objective 3.	Implement adaptation actions towards increased resilience among the most vulnerable Vincentians
Lead	SDU
Implementation Partners	NCCC, Agriculture, CWSA
Direct Beneficiaries	Most vulnerable, public, private, civil society
Activities	9.1 Implementing, monitoring and evaluating concrete actions in test locations on the ground derived from the sectoral strategies in order to inform the CCA planning and budgeting processes from bottom-up)
Target	1 sectoral planning and budgeting tool to mainstream CCA (bottom-up approach)
Timing	2019 to 2023
Indicative cost (k USD)	2,500
Funding source	TBD

Strategic Action 10.	**Elaboration of a portfolio of CCA priority actions for the key sectors (agriculture, water, forestry, tourism, health and public infrastructures) for the medium term with verification that each measure aligns with the NESDP and sectoral strategies and plans**
Pillar 3.	Resilience of the most vulnerable
Strategic Objective 3.	Implement adaptation actions towards increased resilience among the most vulnerable Vincentians
Lead	SDU
Implementation Partners	NCCC
Direct Beneficiaries	Most vulnerable
Activities	10.1 Based on the evaluation of implementation of the actions included in the first phase of the NAP and sectorial strategies, perform the identification and prioritisation of pertinent needs and gaps 10.2 Development of a portfolio of additional adaptation actions to implement in phase II, including the elaboration of feasibility studies and concept notes for planning and resource mobilisation 10.2.1 Replication of the REEF protection and marine rehabilitation, update building code to avoid discharges of wastewater in the coast and protect reefs*** 10.2.2 Replication of relocation of pipelines to less vulnerable areas, increasing of water storage capacity, implementation of solar desalinisation plants in the Grenadines, general improvement of watershed management plans including nurseries for tress and crops and provision of mobile water purifications systems[62]*** 10.2.3 Improvement of early warning systems*** 10.2.4 Small resilient hospitals and national green hospital*** 10.2.5 Housing compensation scheme*** 10.2.6 Increase the resilience of power lines***
Target	12 concept notes, at least 2 for each sector identified
Timing	2020 to 2023
Indicative cost (k USD)	250
Funding source	TBD

[62] These actions can also be considered in the NAP-Water

APPENDIX V – INDICATIVE BUDGET

Table 9 – Indicative budget of the NAP SVG.

NAP El.	Action/Activity	Cost (USD)	Source financing
A	**1. Institutional framework for CCA**	**0**	
	1.1. Revisiting and revising the proposals made and officially approving a national mandate for CC	0	CCP[63]
	1.2. Strengthening SDU's team with more HR dedicated to CC	TBD	Domestic
	1.3. Strengthening Meteorological Services' team to operate new stations and perform flood modelling and drought prediction	TBD	Domestic
	1.4. Increasing the capacity to enforce environmental legislation	TBD	Domestic
A	**2. Recommendations to further mainstream CCA**	**565**	
	2.1. Development of a national guide with recommendations to mainstream CCA into planning and budgeting	50	GCF Readiness
	2.2. Alignment of the legal framework with the NDC and the NAP including the review and update the existing draft acts and regulations under PPCR 3.6*[64]	250	PPCR
	2.3. Finalisation of the National Physical Development Plan*	50	PPCR
	2.4. Preparation of comprehensive integrated watershed management policy and action plan including Arnos Vale*	80	PPCR
	2.5. Application of relevant effluent regulations and standards at the coastal area at Villa Beach*	35	PPCR
	2.6. Guidelines and outreach for fisheries, crops and livestock; disposal of solid waste grey and black water	50	PPCR
	2.7. Measure and track public finance and look at gaps in the budgeting system, monitor and track private adaptation flows and creation of markers and integrate CC tagging as part of the tracking of the public account	50	GCF Readiness
B	**3. Research programme on climate change impacts and CCA actions**	**1 820**	
	3.1. Formulation of a research plan focusing on the sectors for which there is limited data and information on impacts, vulnerability and adaptation responses, including the ocean and water column and marine biodiversity and ecosystem-based adaptation	500	TBD

[63] This cost is included in the works related to the elaboration of the Climate Change Policy.
[64] * Indicates activities identified as PPCR outstanding works on the 13th of April 2018

NAP El.	Action/Activity	Cost (USD)	Source financing
	3.2. Development of research programmes in collaboration with national and regional academic institutions for continued research and innovation to address identified needs, including the use and dissemination of adequate adaptation technologies	500	TBD
	3.3. Creation of tools and mechanisms for dissemination of findings and their application in policy, planning and selection/use of technology for resilience-building	100	GCF Readiness
	3.4. Elaboration of a comprehensive Technology Needs Assessment (TNA) focusing on CC, particularly CCA	50	TBD
	3.5. Modelling of coastal inundation impacts (storm surge, sea level rise, high energy wave action, winter swells)*	100	PPCR
	3.6. Assessment of climate change impacts on coastal and marine ecosystems and commercial fisheries*	250	PPCR
	3.7. Designing the National Spatial Data Management*	120	PPCR
	3.8. Elaboration of the Georgetown watershed study*	200	PPCR
	3.9 Installation of an automatic weather station at the E.T Joshua Airport**[65]	TBD	TBD
C	**4. Capacity-building and education plan**	**600**	
	4.1. Revalidation and prioritisation of the comprehensive national capacity building plan elaborated in the scope of the NAP preparation and implementation of priority actions	250	GCF Readiness
	4.2. Performance of a National Capacity Self-Assessment (NCSA)*	50	GCF Readiness
	4.3. Train teachers on climate change contents and further include CCA and DRR in the curriculum***[66]	100	GCF Readiness
	4.4. National curriculum development in CCA and DRR*	150	PPCR
	4.5. Training to support improved application and enforcement of building codes*	50	PPCR
	4.6. Training in flood risk modelling and modelling of the coastal zones**	TBD	TBD
C	**5. Communication plan**	**635**	
	5.1. Development and implementation of a comprehensive national climate change public awareness plan	500	GCF Readiness

[65] ** Indicates activities suggested by the Meteorological Services

[66] *** Indicates activities identified during the financing training session held in the scope of the support of the NAP GN, in Kingstown in the 12th of April 2018

NAP El.	Action/Activity	Cost (USD)	Source financing
	5.2. Development of information packages for families and communities in "Red Zone" expanded to a NEMO Public Education Campaign*	100	PPCR
	5.3. Preparation of a small booklet, "Climate Change Governance is SVG" (24-32 pp. max), for wide distribution amongst stakeholders*	35	PPCR
D	**6. Overarching M&E framework**	**100**	
	6.1. Development and implementation of an overarching M&E framework	100	GCF Readiness
	6.2. Monitoring of climate support	TBD	Domestic
C	**7. Resource mobilisation plan for 2024–2030**	**25**	
	7.1. Definition of a resource mobilisation plan	25	GCF Readiness
All	**8. NAPs for other priority sectors**	**200**	
	8.1. Development of sectoral adaptation strategies for other priority sectors	200	GCF Readiness
C	**9. Test on integrated approach to adaptation**	**1 500**	
	9.1. Implementing, monitoring and evaluating concrete actions in test locations on the ground	1 500	GCF Readiness
C	**10. Portfolio of CCA actions for 2024–2030**	**11 575**	
	10.1.1 Perform the identification and prioritisation of pertinent needs and gaps	25	GCF Readiness
	10.2. Development concept notes for additional adaptation actions to implement in phase II	50	GCF Readiness
	10.2.1. Replication of the REEF protection and marine rehabilitation, update building code to avoid discharges of wastewater in the coast and protect reefs***	1 500	TBD
	10.2.2. Replication of relocation of pipelines to less vulnerable areas, increasing of water storage capacity, implementation of solar desalinisation plants in the Grenadines, general improvement of watershed management plan including nurseries for tress and crops and provision of mobile water purifications systems***	3 000	TBD
	10.2.3. Improvement of EWS***	1 000	TBD
	10.3.4. Small resilient hospitals and national green hospital***	6 000	GCF CCCCC
	10.2.5. Housing compensation scheme***	TBD	TBD
	10.2.6. Increase the resilience of power lines***	TBD	TBD

APPENDIX VI – MAPPING OF THE LINKS BETWEEN THE NAP AND THE SDGS

A detailed mapping of the links between SDGs, climate change and the NAP is presented in the table below.

Table 10 – Links between SDGs, climate change and the NAP.

SDG goal and target	Indicators	Action in NAP 1st phase
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.	1.5.1 Number of deaths, missing persons and people affected by disaster per 100,000 people 1.5.2 Direct disaster economic loss in relation to global gross domestic product (GDP) 1.5.3 Number of countries with national and local disaster risk reduction strategies	Implementation of the CB plan Implementation of the communication plan Test of an integrated approach to adaptation
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 that progressively improve land and soil quality	2.4.1 Proportion of agricultural area under productive and sustainable agriculture	Implementation of the CB plan Implementation of the communication plan Test of an integrated approach to adaptation
Goal 3: Ensure healthy lives and promote well-being for all at all ages		
3.D Strengthen the capacity of all countries, particularly developing countries, for early warning, risk reduction and management of national and global health risks	3.D.1 International Health Regulations (IHR) capacity and health emergency preparedness	Implementation of the CB plan Implementation of the communication plan Test of an integrated approach to adaptation

SDG goal and target	Indicators	Action in NAP 1st phase
Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all		
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	4.7.1 Extent to which (i) global citizenship education and (ii) education for sustainable development, including gender equality and human rights, are mainstreamed at all levels in: (a) national education policies, (b) curricula, (c) teacher education and (d) student assessment	Implementation of the CB plan Implementation of the communication plan Test of an integrated approach to adaptation
Goal 6: Ensure availability and sustainable management of water and sanitation for all		
6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes 6.A 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 and recycling and reuse technologies 6.B Support and strengthen the participation of local communities in improving water and sanitation management	6.6.1 Change in the extent of water-related ecosystems over time 6.A.1 Amount of water- and sanitation-related official development assistance that is part of a government-coordinated spending plan 6.B.1 Proportion of local administrative units with established and operational policies and procedures for participation of local communities in water and sanitation management	Implementation of the CB plan Implementation of the communication plan Test of an integrated approach to adaptation
Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all		
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	7.B.1 Investments in energy efficiency as a percentage of GDP and the amount of foreign direct investment in financial transfer for infrastructure and technology to sustainable development services	Implementation of the CB plan Implementation of the communication plan Test of an integrated approach to adaptation

SDG goal and target	Indicators	Action in NAP 1st phase
Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all		
8.9 By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products 8.10 Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all	8.9.1 Tourism direct GDP as a proportion of total GDP and in growth rate 8.9.2 Number of jobs in tourism industries as a proportion of total jobs and growth rate of jobs, by sex 8.10.1 Number of commercial bank branches and automated teller machines (ATMs) per 100,000 adults 8.10.2 Proportion of adults (15 years and older) with an account at a bank or other financial institution or with a mobile money service provider	Institutional framework (climate insurance and compensation schemes) Implementation of the CB plan Implementation of the communication plan Test of an integrated approach to adaptation
Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialisation 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 9.4 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 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	9.1.1 Proportion of the rural population that lives within 2 km of an all-season road 9.1.2 Passenger and freight volumes, by mode of transport 9.4.1 CO_2 emission per unit of value added 9.A.1 Total official international support (official development assistance plus other official flows) to infrastructure	Institutional framework (including resilient building codes) Implementation of the CB plan Implementation of the communication plan Test of an integrated approach to adaptation

SDG goal and target	Indicators	Action in NAP 1st phase
Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable		
11.3 By 2030, enhance inclusive and sustainable urbanisation and capacity for participatory, integrated and sustainable human settlement planning and management in all countries 11.5 By 2030, significantly reduce the number of deaths and the number of affected people and decrease by y% the economic losses relative to GDP caused by disasters, including water-related disasters, with the focus on protecting the poor and people in vulnerable situations 11.B By 2020, increase by x% 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, develop and implement in line with the forthcoming Hyogo Framework holistic disaster risk management at all levels	11.3.1 Ratio of land consumption rate to population growth rate 11.3.2 Proportion of cities with a direct participation structure of civil society in urban planning and management that operate regularly and democratically 11.5.1 Number of deaths, missing persons and people affected by disaster per 100,000 people 11.5.2 Direct disaster economic loss in relation to global GDP, including disaster damage to critical infrastructure and disruption of basic services 11.B.1 Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015–2030 11.B.2 Number of countries with national and local disaster risk reduction strategies	Institutional framework (including resilient building codes) Implementation of the CB plan Implementation of the communication plan Test of an integrated approach to adaptation
Goal 12: Ensure sustainable consumption and production patterns		
12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature 12.B Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products	12.8.1 Extent to which (i) global citizenship education and (ii) education for sustainable development (including climate change education) are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education; and (d) student assessment 12.b.1 Number of sustainable tourism strategies or policies and implemented action plans with agreed-upon monitoring and evaluation tools	Institutional framework (including formal education) Implementation of the CB plan Implementation of the communication plan Test of an integrated approach to adaptation

SDG goal and target	Indicators	Action in NAP 1st phase
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	13.1.1 Number of countries with national and local disaster risk reduction strategies 13.1.2 Number of deaths, missing persons and people affected by disaster per 100,000 people	All
13.2 Integrate climate change measures into national policies, strategies and planning	13.2.1 Number of countries that have communicated the establishment or operationalisation of an integrated policy, strategy or plan which increases their ability to adapt to the adverse impacts of climate change and foster the development of climate resilience and low greenhouse gas emissions in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other)	
13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	13.3.1 Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula 13.3.2 Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation, technology transfer and development actions	
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 marginalised communities	13.b.1 Number of least developed countries and small island developing states that are receiving specialised support, and amount of support, including finance, technology and capacity-building, for capacity-raising mechanisms for effective climate-change-related planning and management, including focusing on women, youth and local and marginalised communities	

SDG goal and target	Indicators	Action in NAP 1st phase
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	14.2.1 Proportion of national exclusive economic zones managed using ecosystem-based approaches	Institutional framework Implementation of the CB plan Implementation of the communication plan Test of an integrated approach to adaptation
14.3 Minimise and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels	14.3.1 Average marine acidity (pH) measured at agreed-upon suite of representative sampling stations	
Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss		
15.3 By 2020, combat desertification restore degraded land and soil including land affected by desertification, drought and floods, and strive to achieve a land-degradation-neutral world	15.3.1 Proportion of land that is degraded over total land area	Institutional framework Implementation of the CB plan Implementation of the communication plan
15.5 Take urgent and significant action to reduce degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	15.5.1 Red List Index	Test of an integrated approach to adaptation

ANNEX I – QUESTIONNAIRE TO FURTHER DEFINE THE M&E FRAMEWORK

According to GIZ (2015), use this questionnaire to see whether the key questions outlined in *Developing national adaptation monitoring and evaluation systems: A guidebook* have been considered. Before beginning to develop an M&E system, ask: (1) Has a lead/coordination institution for M&E of the NAP been identified; and (2) What other institutions need to be involved in the development and implementation of the M&E system?

Involve these stakeholders in developing responses to these questions. More stakeholders may be identified as the development of the M&E system progresses.

1. Context		
Question	**Related Considerations**	**Informed by**
1.1 Policy context: How does M&E of adaptation fit within the broader policy and M&E environment?	*What are related policies and priorities?*	
	What policy mandate prompted the development of the M&E system?	
	Are there broader M&E and/or data collection systems in place in your context?	
1.2 Purpose: What is the purpose of the M&E system and how do you intend results to be used?	*To what extent will you address learning, accountability, and/or adaptive management purposes?*	1.1
	Who are your target users and how are they expected to use M&E results?	
1.3 Scale(s): What are the levels of application and aggregation?	*At what level will the M&E system apply (national, sub-national)?*	1.1
	What are the key sectors and/or levels in which interventions are expected to take place or produce outcomes?	

2. Content

Question	Related Considerations	Informed by
2.1 Focus: What do you want to monitor?	*To what extent will you focus on monitoring process and/or adaptation outcomes?*	1.2
	What existing M&E frameworks, if any, will you draw upon?	
2.2 Data and information requirements: What type of data and information do you require to fulfill the purpose of the M&E system?	*What type of data and information do you require, and what is already available?*	1.2 2.1
	How will you establish a cause and effect relationship between policies or actions and results?	
	Will you use indicators, and if so, which ones?	
	Will you involve experts in the process of developing indicators and interpreting data, and if so, how?	

3. Operationalisation

Question	Related Considerations	Informed by
3.1 Institutional arrangements and resources: What institutions and resources will you work with?	*What institutions will you need to work with to operationalise the system?*	**Before beginning** 1.3 2.2
	What resources are available to support the M&E system, and is your approach realistic in light of this?	
3.2 Synthesis: How will you collect and synthesise the data and information you require?	*In what format will key actors involved in the M&E system provide information?*	3.1
	How will you synthesise the information?	

4. Products		
Question	Related Considerations	Informed by
4.1 Outputs and reporting: What will the products of the M&E system be?	*How will you present the results of the M&E system, and how will this support use?* *How frequently will you report on results?*	1.2 3.2

Source: GIZ, 2015