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**Technical Assistance for the Development of Frameworks aimed at
Enhancing Environmental Management**

*Regional and Country Issues-
Grenada, Saint Lucia, St. Kitts and Nevis and Montserrat*

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Contents

- 1. Introduction 5**
- 2. Purpose and methodology 6**
 - 2.1 Purpose 6*
 - 2.2 Methodology 6*
- 3. Regional and international context 8**
- 4. St. Kitts and Nevis14**
 - 4.1 Introduction 14*
 - 4.2 Deliverable: A National Climate Change Adaptation Strategy 15*
 - 4.2.1 Policy context 15*
 - 4.2.2. Key issues and challenges17*
 - 4.2.3 Recommendations for the development of the National Climate Change Adaptation Strategy 27*
- 5. References31**

Acronyms

CANARI	Caribbean Natural Resources Institute
CARICOM	Caribbean Community
Cartagena Convention	Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region
CBD	United Nations Convention on Biodiversity
CCCCC	Caribbean Community Climate Change Centre
CCORAL	Caribbean Climate Online Risk and Adaptation Tool
CDEMA	Caribbean Disaster Emergency Management Agency
CEC	Certificate of Environmental Clearance
CEMA	Conservation and Environmental Management Act
CEP	Caribbean Environment Programme under the United Nations Environment Programme
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
ECLAC	UN Economic Commission for Latin America and the Caribbean
EIA	Environmental Impact Assessment
EMB	Environmental Management Bill
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
GCCA	European Union-funded Global Climate Change Alliance Programme
GDP	Global Domestic Product
GHG	Greenhouse Gas
GOSL	Government of Saint Lucia
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for Conservation of Nature
NDCs	Nationally Determined Contributions to the reduction of greenhouse gas emissions under the UNFCCC Paris Agreement

OECS	Organisation of Eastern Caribbean States
PA	Protected Area
Ramsar Convention	International Convention on Wetlands
SAMOA Pathway	Small Island Developing States Accelerated Modalities of Action Pathway
SDGs	Sustainable Development Goals
SIDS	Small Island Developing State
SPAW	Protocol Concerning Specially Protected Areas and Wildlife under the Cartagena Convention
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNISDR	United Nations International Strategy for Disaster Reduction

1. INTRODUCTION

This Issues Paper is the 2nd deliverable under the Organisation of Eastern Caribbean States (OECS) Global Climate Change Alliance (GCCA) Project on *Technical Assistance for the Development of Frameworks aimed at Enhancing Environmental Management*. It is one component of the overall European Union (EU) funded OECS GCCA programme which has been branded as *iLAND Resilience - Promoting a Climate of Change*. The overall *iLAND Resilience* programme objective is to contribute to the implementation of the OECS St. George’s Declaration of Principles for Environmental Sustainability, namely the protection and sustained productivity of the OECS countries’ natural resources.

The Caribbean Natural Resources Institute (CANARI) was contracted under this project to provide technical assistance for the development of policy and legislative frameworks towards improved environmental management in four OECS Member States. The specific Member States are Grenada, Montserrat, Saint Lucia and St. Kitts and Nevis. The targeted policies and legislation speak to climate change, forest management and sustainable land management.

The general approach to the project is a parallel four country process including desktop research, interviews with focal government agencies, in country consultations and policy and legislative development. A key emphasis will be on civil society engagement in the policy development process as emphasised by CANARI co-financing to this initiative through the CANARI European Union (EU) grant funded project on “*Civil society and small and micro enterprise innovation for marine and coastal conservation in the Caribbean*”.

The inception meeting for the project was held on the 17th of February 2017 and the project is expected to last eighteen months.

After discussions with the country focal points during the inception phase, CANARI was requested to produce the following deliverables:

Table 1: Summary of key project deliverables

Country	Deliverable
Grenada	National Forest Policy and Strategic Plan
	Revised Environmental Management Act 2014
	Revised Protected Area, Forest and Wildlife Act and supporting Regulations
	Climate Change Bill
Montserrat	Regulations in support of the Conservation and Environmental Management Act 2014
	Action Plan and implementation budget in support of the Conservation and Environmental Management Act 2014 in Montserrat
Saint Lucia	Revised Environmental Management Bill 2014 and supporting Draft Pollution Regulations
	Climate Change Bill
St. Kitts and Nevis	National Climate Change Adaptation Strategy

2. PURPOSE AND METHODOLOGY

2.1 Purpose

This Issues Paper is a synthesis of major concerns relevant to the existing national laws, policies, plans and multilateral environmental agreements in the four project countries to inform development of the deliverables. It outlines key priorities, needs, opportunities and challenges and is meant to serve as the basis for further discussion and analysis during in-country consultations. These consultations will then inform the final design of the relevant legislative and policy frameworks.

Given inter-country geographic, socio-economic and political similarities, plus the fact that this initiative is nested within the regional OECS iLAND Resilience Programme, this Issues Paper presents both regional and national perspectives. It starts with an overview of common regional and international issues then focuses on country and deliverable specific issues in later chapters.

The Issues Paper is written in laypersons language with a view to facilitate the engagement of a broad range of stakeholders, given that stakeholder input is the most critical element of this policy development process. Too often, stakeholders, especially civil society stakeholders, are not provided with enough opportunity to contribute and participate effectively in policy decision making. This then results in weak policies, strategies and laws which are not supported, implemented or enforced. It is hoped that through the wide and deep consultation and participation in this policy development initiative there will be greater buy-in, support and uptake of the policies, strategies and legislation produced.

2.2 Methodology

CANARI initially did a comprehensive desk review of relevant national policy frameworks provided by the countries and the OECS Commission. International and regional frameworks were also reviewed as national commitments are shaped by these. Reference legislation from other countries and international environmental framework trends were also reviewed. In this Issues Paper, frameworks are considered to include:

- formal agreements that countries sign on to and thereby commit to implementation (for example international conventions and associated protocols);
- formal policies and agreements adopted by groups of which countries are part and thereby countries commit to implementation (e.g. regional and sub-regional declarations and policies);
- strategies or plans that identify priorities for implementation (e.g. outcomes of international or regional processes); and
- national policies, laws and associated regulations.

CANARI also conducted targeted preliminary interviews with key stakeholders to understand the context and key issues for development of the required deliverables (policies, laws, regulations, plans, etc.). These stakeholders included the relevant government departments and civil society stakeholders. Discussions were held via telephone and online (email exchanges and skype calls). In-person consultations were also utilised (e.g. meetings in Grenada during attendance at the OECS Fourth Council of Environmental Ministers in April 2017). Key regional and international organisations were also targeted for interviews to get a better sense of regional trends and synergistic initiatives which may inform or enhance the development of the national level policies. This, of course, included the OECS Commission as well as organisations like the Food and Agricultural Organisation of the United Nations (FAO).

Given that the iLAND Resilience Programme has both a climate and a land management focus, these aspects were explored in the analysis used. For example, regional climate screening tools such as the Caribbean

Community Climate Change Centre's Caribbean Climate Online Risk and Adaptation tool (CCORAL) were utilised to inform preliminary recommendations. Further, given CANARI's participatory approach and focus on civil society participation in policy formulation, this civil society lens was also used in the analysis. This is especially important given that CANARI is bringing co-financing to this initiative to facilitate civil society participation through the EU grant funded project on "Civil society and small and micro enterprise innovation for marine and coastal conservation in the Caribbean".

3. REGIONAL AND INTERNATIONAL CONTEXT

This GCCA project seeks to improve the environmental framework of four countries: Grenada, Montserrat, Saint Lucia and St. Christopher (St. Kitts) and Nevis. It is noted that all the countries are independent states, except Montserrat which is an overseas British Territory, and full members of the OECS. All the countries are also Small Island Developing States (SIDS), with comparable geography, history and resulting socio-economic conditions. For instance, all the islands are volcanic in nature with a central mountain range and steep topography. There are similar terrestrial and coastal ecosystems across the islands with some similarity in species composition yet a substantial degree of endemism. Settlement and infrastructure are largely concentrated in the coastal areas. The islands have all had a history of European colonization, including a legacy of mono-cultural agricultural cultivation. Currently all are English speaking states and follow the British Westminster system of Government.

Given the focus on tourism and general low economic diversity, the OECS target countries have faced limited economic growth since the global economic recession of 2008 which has led to a deep regional recession. Against this backdrop the countries have also had to cope with several natural disasters leading to further economic stress. The regional dependence on external food markets and fuel imports further increases the region's economic vulnerability. Montserrat presents has a more unique economic situation associated with volcanic eruptions in the recent past and its status as a British Territory. In particular, it is heavily dependent on European aid packages which are further linked to public sector development and construction on the island.

Economic reliance on tourism and agriculture means that all the islands are heavily dependent on natural resources. They are therefore highly vulnerable to factors which impact these natural resources and share similar environmental concerns. Critical environmental issues include deforestation, soil erosion, biodiversity loss, land degradation and coastal pollution. These are coupled with expanding populations and limited land space. Climate variability and change are also concerns given ensuing effects such as temperature increase, sea level rise, decreasing rainfall and altered rainfall patterns. Given this, there have been several initiatives geared towards addressing the impacts of climate change, including the iLAND Resilience programme which this project falls under. Of note, is a quick climate screening exercise conducted by CANARI countries which indicated that climate change is key aspect to be factored into the respective policies, strategies and legislation under development. This analysis was done using the CCCCC online CCORAL tool¹, focusing including both the general screening exercise and a detailed vulnerability assessment for technical users.

Given the similar environmental threats, history, socio economic conditions and geographic parameters, this section of the Issues Paper attempts to provide an overview of the regional and international frameworks with a view to capturing relevant aspects to subsequently inform the national deliverables for each country. This approach is further justified by the fact that countries' legislative frameworks are shaped heavily by regional model policies and legislation as well as commitments under international conventions and frameworks. Equally, the countries' frameworks serve as the vehicle for the implementation of the international conventions and frameworks. The following tables summarise the major international and regional environmental frameworks that focal countries ascribe to:

¹ <http://ccoral.caribbeanclimate.bz/>

Table 2: Summary of major international environmental agreements and frameworks to which focal countries are signatories

International convention/ framework	Summary	Implications for project deliverables
UN Framework Convention on Climate Change (UNFCCC)	<p>Caribbean climate challenges include sea level rise, decreasing precipitation, increased intensity of hurricanes and overall higher temperatures. Signatories to UNFCCC have committed to working towards stabilising greenhouse gas concentrations towards minimising impacts to the climate system. More recently Caribbean nations have contributed significantly to drafting of the Paris Agreement at the UNFCCC Conference of Parties in 2015 (COP 21). The Paris agreement subsequently came into force in November 2016. Of critical importance to the region is the fact the Paris agreement specifically recognises the needs of SIDS and provides support for attempts to cap global temperature increase at 1.5°C. Key agreements under the UNFCCC include:</p> <ul style="list-style-type: none"> • The Kyoto Protocol which proposes binding targets for the reduction of greenhouse gas emissions • The Cancun Agreements which address the long-term challenge of climate change over time and encourages countries to take concrete action to speed up the global response. The related Cancun Adaptation Framework seeks to enhance action on adaptation and the development of national adaptation plans. Other aspects of the Cancun Agreements address mitigation, financial, technology and capacity building support. • The Paris Agreement promotes ambitious efforts to mitigate climate change and adapt to its impacts and addresses appropriate financial flows, a new 	<p>The Green Climate Fund associated with the UNFCCC is an important funding source for all Caribbean countries including the four target countries in this initiative and the other OECS countries. This was emphasised during the recent Green Climate Fund Structured dialogue during the 4th Meeting of the Council of Ministers of Environmental Sustainability (COMES) of the OECS in Grenada from April 27 to 28, 2017. Caribbean countries are also keen to utilise the Warsaw International Mechanism for Loss and Damage² to realise its third function of enhancing action and support, including finance, to address the regional impacts on climate change being experienced and that are anticipated. This heavy emphasis on funding should be factored into any climate related deliverable under this initiative.</p>

² The Warsaw International Mechanism for Loss and Damage has three functions:

1. enhancing knowledge and understanding of comprehensive risk management approaches to address loss and damage associated with the adverse effects of climate change, including slow onset impacts;
2. strengthening dialogue, coordination, coherence and synergies among relevant stakeholders; and
3. enhancing action and support, including finance, technology and capacity-building, to address loss and damage associated with the adverse effects of climate change.

	<p>technology framework and an enhanced capacity building framework to support action. The Agreement also provides for enhanced transparency of action and support through a more robust transparency framework.</p>	
<p>Convention on Biodiversity (CBD)</p>	<p>The CBD focuses on the conservation of global biodiversity including the sustainable use of its components and the equitable sharing of benefits arising from biodiversity resources. Country National Biodiversity Strategies and Action Plans (NBSAPs) under the convention address the mobilisation of financial resources, research, the regularisation and consolidation of legislation, public awareness, and use of traditional knowledge. Country reports to the Convention are framed against Aichi Targets. One of the 20 Aichi targets for example aims that by 2010 “the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and that degradation and fragmentation is significantly reduced.”</p> <p>The CBD also has ‘Strategic Plan for Biodiversity 2011-2020’ to guide countries’ focus on mainstreaming biodiversity conservation into different economic sectors. Civil society rights and equity in using and sharing are addressed in the CBD’s Nagoya Protocol. In a similar vein the Mo’otz Kuxtal Voluntary Guidelines are geared towards Prior Informed Consent of indigenous peoples and local communities for using their traditional knowledge.</p>	<p>These aspects will be factored into the development of project deliverables, especially the forestry related documents and the wider environmental management deliverables.</p> <p>The attention to indigenous rights is noteworthy and where possible and appropriate will be referenced in the production of the deliverables.</p>
<p>Convention to Combat Desertification and Land Degradation (UNCCD)</p>	<p>Countries share similar issues related to land degradation including deforestation, overgrazing and soil erosion leading to high rates of surface runoff of sediment laden water. Under UNCCD, Caribbean countries have developed their National Action Plans to address these issues, reinforced by national policies and legislation (including forest policies).</p>	<p>Like the CBD, UNCCD commitments should be factored into project deliverables.</p>
<p>International Convention on Wetlands (Ramsar)</p>	<p>The Ramsar Convention on Wetlands designates wetlands of international importance across the region. Under this convention countries are mandated to safeguard these ecosystems and this will be</p>	<p>Mangroves are already key issues in the forestry related deliverables. Given the obligations under Ramsar- further strengthening of these areas may be needed.</p>

	reflected in project deliverables.	
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	CITES attempts to control the international movement of plants and animals towards improved biodiversity protection. A key aspect is the development, enactment and enforcement of supporting legislation and regulations.	Implications for the project deliverables are similar to those under the CBD and UNCCD with greatest implications for forestry related deliverables. Grenada's forest policy and strategic plan, for instance, may need to ensure significant attention to mangrove management and wildlife management.
Sustainable Development Goals (SDGs)	This is the international framework replacing the Millennium Development Goals. Established in 2015, the SDGs consist of 17 goals articulated through 169 indicators, to serve as "a plan of action for people, planet and prosperity." Specific goals address natural ecosystems and climate change and environmental management and climate change also are mainstreamed into other goals. Consideration of goals and targets relevant to each country will be reflected in project deliverables.	The implementation of the SDGs can be facilitated by national level policies.
Small Island Developing States Accelerated Modalities of Action (SAMOA pathway)	The SAMOA pathway is the outcome and plan of action emanating from the 3 rd Conference of Small Island Developing States, including Caribbean States. It builds on previous SIDS outcomes such as the Barbados Programme of Action from 1994.	The SAMOA pathway recognises the special circumstances and vulnerabilities of SIDS and emphasises actions for climate change and marine resource management issues which will be addressed in the project deliverables.
United Nations Forest Instrument (UNFI)	The UNFI is a non-binding international agreement on sustainable forest management, which was adopted in 2007 at the United Nations Forum on Forests. The agreement was created to promote international cooperation and national actions to address deforestation through conservation and development of sustainable forest-based livelihoods. All signatories are tasked with developing National Action Plans for implementation of the UNFI.	National legislation, policies and action plans related to forests need to be aligned with the National Action Plan for the UNFI and can facilitate its implementation.

Table 3: Summary of major regional environmental frameworks to which focal countries are signatories

Grouping/ organisation	Organisation information	Relevant policies guidelines and frameworks	Implications for project deliverables
<p>Organisation of Eastern Caribbean States (OECS)</p>	<p>The OECS is "<i>an institutional forum to discuss and facilitate constitutional, political and economic changes which would be necessary for the successful participation of Member States in the regional and global economies.</i>"</p> <p>Focuses on cooperation, unity and solidarity amongst six independent countries, three overseas territories and one French department in the Eastern Caribbean.</p> <p>Promotes joint positions and harmonised approaches with regards to the environment and other sectors.</p>	<p>The OECS has developed model policies and regional strategies pertinent to environmental issues. A key framework is the St. George's Declaration of Principles of Environmental Sustainability in the OECS (2001) and the OECS Environmental Management Strategy. The <i>St. George's Declaration</i> is an agreement that was grounded on the belief by its members (of the Organisation of Eastern Caribbean States), that environmental resources must be effectively managed at all levels (locally, regionally and internationally), for sustainable social and economic development to be achieved.</p> <p>Principle 11 of the Declaration suggests that for sustainable productivity to be achieved, its the OECS Member States ought to manage "terrestrial, marine and atmospheric resources, organisms and ecosystems,"³ whilst not hampering the integrity of such natural and ecological processes. The agreement also makes provisions for environmental impact assessments to be conducted for making decisions on development activities. Principle 8 of the St. George's Declaration addresses the causes and impacts of climate change, and a number of other topics related to energy efficiency, renewable energy and disaster risk reduction are included in its outcomes and targets.</p> <p>These two documents constitute the overarching framework outlining the OECS environmental approaches. At the recent meeting of the Fourth Council of Environmental Ministers in April 2017 it was noted that there are plans to revise the existing Strategy.</p> <p>More sector specific environmental guidelines include the Model Water Policy and the OECS Land Policy Guidelines. There is also a Biodiversity Conservation and Sustainable Use Bill, which is a final draft stage. It is intended as a model bill to be adapted and adopted at the</p>	<p>Deliverables will be developed ensuring they are aligned with the regional frameworks.</p> <p>The model OECS documents have already used in the development of OECS country Environmental Management Acts and will be further utilised as needed.</p> <p>Some of the newer bills e.g. the OECS draft Biodiversity Conservation and Sustainable Use Bill will be important revising forestry related legislation.</p>

³ Government of Grenada. (2007). *Road Map toward Integrated Water Resources Management Planning for Grenada*. Prepared by Caribbean Environmental Health Institute and GEF-funded Integrating Watershed and Coastal Areas Management Project. Castries, Saint Lucia.

		national level. The OECS has also produced a Model Environmental Management Act which has been used by several Member States.	
Caribbean Community (CARICOM)	Intergovernmental organisation focusing on economic integration and regional cooperation. Decision making is executed through the Ministerial body of the Council for Trade and Economic Development (COTED). Regional environmental projects are either managed through the Secretariat based in Guyana or through several CARICOM technical agencies.	Relevant environmental frameworks administered by the CARICOM Secretariat or technical agencies include: <ul style="list-style-type: none"> • CARICOM Regional Framework for Achieving Development Resilient to Climate Change and its Implementation Plan (administered by the Caribbean Community Climate Change Centre (CCCCC)) • CARICOM Energy Policy • Caribbean Comprehensive Disaster Management Strategy • Common Fisheries Policy The CARICOM Common Natural Resources Policy Framework and CARICOM Biodiversity Strategy are currently in development.	Deliverables will be aligned with provisions under the various CARICOM Frameworks.
UN-Environment-Caribbean Environment Programme (CEP)	The Caribbean Environment Programme (CEP) was established in 1986. It is administered by a Regional Coordinating Unit. The CEP is geared towards regional cooperation within the Caribbean Sea towards sustainable development of the region.	The CEP Regional Coordinating Unit administers the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena Convention). This is the umbrella agreement protecting the Caribbean marine environment. The Cartagena Convention protocols are also important for biodiversity protection namely: the Protocol Concerning Pollution from Land-Based Sources and Activities, the Protocol Concerning Specially Protected Areas and Wildlife (SPAW) and the Oil Spill protocol. The Regional Coordinating Unit through SPAW also coordinates activities and develops synergies with work under international conventions like the CBD and CITES.	As with the CARICOM frameworks this wider framework is also under consideration in the development of project outputs.

4. ST. KITTS AND NEVIS

4.1 Introduction



St. Kitts and Nevis is a sovereign, democratic federal state comprised of two islands. The islands are approximately 269 km² in size and volcanic in origin, each with centrally located mountain peaks. Rainfall ranges from around 800 mm to 1600 mm per annum. The country is considered water scarce. The population is approximately 52,369⁴. Tourism is the main economic sector. Key environmental concerns for the country include natural disasters, biodiversity loss, land degradation and pollution.^{5,6} Against this backdrop policies and strategies to address the impacts of climate change, which will exacerbate these environmental issues, become critical. This section of the Issues Paper thus focuses on the proposed climate change strategy for St. Kitts and Nevis. The following pages outline some of the key issues and challenges and preliminary suggestions for strategies to address climate change. This section ends with a proposed structure for the strategy document.

Fig. 1: Map of St. Kitts and Nevis (Source: World Atlas)

⁴ <https://www.cia.gov/library/publications/the-world-factbook/geos/sc.html>

⁵ Williams, P.I. (2013). *St. Kitts and Nevis Land Policy Issues Paper*. Prepared for the OECS Social and Sustainable Development Division, Castries, Saint Lucia.

⁶ United Nations Environment Programme [UNEP]. (2010). *National Environmental Summary of the Federation of St. Kitts and Nevis*. UNEP Regional Office for Latin America and Caribbean, Panama City, Panama. Available at <http://www.pnuma.org/publicaciones/Final%20NES%20St%20Kitts%20Nevis%20Nov%202010-%20edited.pdf>

4.2 Deliverable: A National Climate Change Adaptation Strategy

St. Kitts and Nevis is particularly vulnerable to the impacts of climate change as a small island developing state (SIDS). Climate models project the following trends for St. Kitts and Nevis⁷:

- an increase in average air temperatures;
- an increase in sea surface temperatures;
- reduced average rainfall;
- a potential increase in the intensity of tropical storms and hurricanes; and
- sea level rise of 0.5 to 0.6 metres by 2100 across the insular Caribbean⁸.

Climate change is likely to impact adversely on biodiversity, food, energy and water security, human health, physical infrastructure as well as economic development centred on tourism.

Accordingly, the Government of St. Kitts and Nevis has placed a major emphasis on adapting to climate change and promoting climate-resilient development. At the national level, the Government has also prepared a draft National Climate Change Policy to provide overarching guidance for sectoral policies and plans involving adaptation to and mitigation of climate change.

A National Climate Change Adaptation Strategy is now being proposed to operationalise the policy directives outlined in the National Climate Change Policy. This Strategy will complement the National Energy Policy and the National Energy Action Plan 2011, which already provides strategic guidance on mitigation measures, including energy efficiency and transitioning to low-emission renewable energy sources. While mitigation is recognised as an important part of the climate change response, St. Kitts and Nevis should prioritise adaptation as a means of urgently addressing its high vulnerability and low ecological, social and economic resilience to climate change.⁹

Thus, in its current form this strategy will seek to provide guidance on appropriate measures for adaptation and explore opportunities to ensure mitigation co-benefits where possible. It will also embody a participatory and multi-sectoral approach that will engage all stakeholders, ensuring their needs and interests are effectively captured within the policy process.

4.2.1 Policy context

The regional and international policy context is already described in section 3. This section focuses on the national level. The primary policy of relevance is of course the **National Climate Change Policy**. The draft National Climate Change Policy was developed in 2016 to address the adverse impacts of climate change and fulfil the international and regional commitments identified above for St. Kitts and Nevis. The Policy provides overarching guidance for the various sectoral policies and plans that influence climate-resilient development. The strategic objectives of the Policy are:

⁷ Simpson, M. et al. (2012). *CARIBSAVE Climate Change Risk Atlas (CCRA) - Profile for St. Kitts*. Summary Document, March 2012: <http://dms.caribbeanclimate.bz/M-Files/openfile.aspx?objtype=0&docid=5049>

⁸ Nurse, L. et al. (2014). Small Islands. In: *Climate Change 2014: Impacts, Adaptation and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. [Field, C., Barros, V., Dokken, D., Mach, K., Mastrandrea, M., et al. (eds.).] Cambridge University Press. http://www.ipcc.ch/pdf/assessment-report/ar5/wg2/WGIIAR5-Chap29_FINAL.pdf

- protecting the natural environment and human health;
- developing an implementation plan for the Nationally Determined Contributions under the Paris Agreement;
- reducing or avoiding greenhouse gas emissions from all emitting sectors;
- enhancing carbon sinks through efficient and effective natural resource management;
- conserving and building resilience of human and natural systems to adapt to the adverse impacts of climate change, including through capacity building, the application of cleaner and energy efficient technologies, and relevant research and development;
- enhanced agricultural production and food security;
- educating the wider public on the potential impacts of climate change and the recommended adaptation strategies; and
- conserving and guaranteeing a sustainable supply of potable water.

Adaptation is a critical component of the National Climate Change Policy. With the aim to mainstream adaptation into the national development agenda across all sectors, the policy identifies the following actions:

- strengthening existing institutional arrangements for systematic observations, research and climate change modelling including through cooperation with academia, NGOs and the private sector;
- assessing sectoral vulnerability to climate change by conducting vulnerability analyses and formulating adaptation options, including technological application, in biophysical and socio-economic systems;
- revising sectoral policies to include consideration of climate change impacts derived from vulnerability analyses;
- revising national development plans to incorporate climate change vulnerability, impacts and adaptation options with a view to climate proofing new developments and retrofitting existing infrastructure, and strengthening climate resilience, particularly to extreme weather events and slow-onset adverse climate impacts; and
- enhancing the resilience of natural biophysical systems to maximize ecosystem services such as the natural coastal defence.

Other existing national legislation and policies that are relevant to climate change adaptation include¹⁰:

Legislation:

- Agricultural Development Act, 1973
- Development Control and Planning Act, 2000
- Fisheries Act, 1984
- Forestry Ordinance, 1904
- Marine Pollution Management Act, 2002
- Maritime Areas Act, 1984
- National Conservation and Environmental Protection Act, 1987
- National Housing Corporation Act, 1990
- Nevis Development and Control Ordinance, 2005
- Public Health Act, 1969
- St. Kitts Building Regulations, Code and Guidelines (No. 2 of 2000)
- Solid Waste Corporation Management Act, 1996
- Substances that Deplete the Ozone Layer (Control) Regulations (No.6 of 2004)
- Water Courses and Water Works Ordinance, Cap 185 of 1956

Policies/Plans:

- Agricultural Strategic Plan, 2005-2009

¹⁰ Specific priorities and strategies for adaptation to climate change have been developed under the National Adaptation Strategy and Plan for the Water Sector 2014, National Biodiversity Strategy and Action Plan 2014-2019, National Disaster Plan 2013 and the St. Kitts 2013-2016 Agriculture Development Strategy and should be incorporated into a national, multi-sectoral climate change adaptation strategy.

- Impact Assessment Report and National Adaptation Strategy and Plan for the Water Sector, 2014
- Initial National Communication under the United Nations Framework Convention on Climate Change (UNFCCC)
- Medium Term Economic Strategy, 2010-2012
- National Adaptation Strategy for new European Union Sugar Regime, 2006-2013
- National Capacity Self Assessment, 2006
- National Action Programme under the United Nations Convention to Combat Desertification (UNCCD)
- National Biodiversity Strategy and Action Plan under the United Nations Convention on Biological Diversity (UNCBD), 2014-2020
- National Disaster Plan, 2013
- National Energy Policy and National Energy Action Plan, 2011
- National Environmental Management Strategy and Action Plan, 2005-2009
- National Physical Development Plan, 2005
- Nevis Physical Development Plan (2008 draft)
- National Poverty Reduction Strategy and Action Plan, 2012-2016
- National Social Protection Strategy, 2013-2017
- Nationally Determined Contribution (NDC) under the Paris Agreement of the UNFCCC
- Natural Hazard Mitigation Policy and Action Plan, 2001
- St. Kitts Agricultural Development Strategy, 2013-2016
- St. Kitts Tourism Sector Strategy and Action Plan, 2014-2019
- St. Kitts and Nevis Food and Nutrition Security Strategy (draft)

4.2.2. Key issues and challenges

4.2.2.1 Sectoral vulnerabilities

Specific sectors that are likely to be impacted by climate change are:

Agriculture and food security

Impacts: The agricultural sector, which includes crops, fisheries, forestry and livestock, provides a major supply of food and is an important source of income for St. Kitts and Nevis. The agricultural sector represents about 4% of gross domestic product (GDP)¹¹. The agricultural sector is highly sensitive to climate extremes and climate change will threaten food security and impact on agriculture based livelihoods in St. Kitts and Nevis. For instance, greater rainfall variability and extremes will impact on water availability for crop and livestock production. Drought conditions will lead to water stress, while flooding will accelerate soil erosion. Rising sea levels and temperatures are predicted to adversely impact the fisheries sector by changing the population size and distribution of target species. Specific impacts are uncertain but this potentially could mean decreasing nearshore and deep water fish stocks and diminishing benefits associated with fishing activities. Increased incidence of invasive species and new pests and diseases also pose a significant threat for the agricultural sector, and could compound damage from existing pests such as monkeys and roaming animals (cattle, sheep, goats and dogs).

¹¹ Department of Agriculture. (2013). *St. Kitts 2013-2016 Agriculture Development Strategy*. Department of Agriculture, Ministry of Agriculture, Cooperatives, Fisheries, Lands and Housing.

Recommended strategies to address the impacts of climate change based on the National Adaptation Strategy for Response to the new EU Sugar Regime, 2006-2013 that promoted agricultural diversification and the St. Kitts Agricultural Development Strategy, 2013-2016 are:

- Improve agricultural extension services and response mechanisms for agricultural risk and disaster management in small-scale farming and fisheries.
- Strengthen mechanisms for application of science and technology for climate-smart solutions, including drought-resistant species and integrated pest management.
- Promote ecosystem-based approaches to fisheries management through investments in research and practices for marine spatial planning, watershed management and integrated coastal zone management.
- Mainstream sustainable land, water and waste management into sectoral planning.
- Explore synergies with other sectors to develop innovative programmes that support economic diversification and promote enhanced natural resource management, including via agro-forestry and agro-tourism.

Potential challenges to implementation of the above adaptation and resilience strategies include:

- Lack of political commitment and competition with other land uses as agricultural sector is not a major contributor to GDP in comparison to other sectors, such as services, financial and tourism.
- Inadequate capacity for agricultural innovation and product development for small-scale farming and fisheries.
- Weak farm/fishery to market linkages.
- Heavy reliance on imported foods in tourism sector and shift in domestic consumption patterns to convenience/imported foods.
- Poor track record for overseas development assistance (ODA) in the agricultural sector.

Coastal, marine and terrestrial ecosystems

Impacts: Coastal, marine and terrestrial ecosystems in St. Kitts and Nevis are of critical importance to sustainable development. Climate change will pose a significant risk to coastal and marine ecosystems due to sea level rise; extreme weather and storm surges; increased sea surface temperatures resulting in coral bleaching; and ocean acidification. Forests and other terrestrial ecosystems will also be impacted by heat stress due to increased air temperatures; loss of soil and vegetation due to extreme weather such as high winds, heavy rainfall and storms; water stress due to rainfall variability and drought; and increased incidence of invasive species, pests and bacterial and fungal diseases. These changes will impact on the provision of ecosystem services such as watershed protection, coastal protection, and soil stabilisation. Model projections (e.g. the Hadley Centre coupled model [HadCM2]) also indicate that there could be decreased productivity of fisheries, forests and wetlands, with adverse impacts on food supply and associated livelihoods. Vulnerable and endangered species, including those endemic to St. Kitts and Nevis, may also be at risk due to impacts on population size and distribution and habitat availability.

Recommended strategies to address the impacts of climate change as outlined in the National Biodiversity Strategy and Action Plan, 2014-2020 and National Environmental Management Strategy and Action Plan, 2005-2009 are:

- Strengthen conservation and environmental management legislation, regulations, policies and plans through integration of climate change and disaster risk reduction and management considerations into ecosystem-based management.
- Manage ecosystems, and relevant species, to reduce other threats that weaken their resilience, including through reducing the spread of invasive species, deforestation and environmental degradation, and unsustainable resource use.
- Establish a comprehensive system of protected areas, including coastal, marine and terrestrial ecosystems, and a sustainable financing mechanism to support protected area management.

- Build the capacity of resource managers to ensure effective and participatory planning and management of natural resources, including protected areas.
- Enhance carbon sinks through efficient and effective management of forests and wetlands.

Potential challenges to the above strategies:

- Lack of enforcement of existing legislation and regulations for conservation and environmental management.
- Lack of consideration of the environmental costs of ecosystem degradation and loss in national and sectoral budgets.
- Inadequate data to gain a clear understanding of the impacts and potential adaptation strategies for ocean acidification and recent Sargassum seaweed blooms.

Energy security

Impacts: The energy sector in St. Kitts and Nevis is based on diesel-powered plants for electricity generation, diesel and gasoline for road transport, jet fuel and kerosene for aviation and maritime services, and liquefied petroleum gas for domestic uses. Heavy reliance on imported fossil fuels puts St. Kitts and Nevis at risk from fluctuations in global oil prices, and makes it vulnerable to disruptions in power supply due to extreme weather. Climate change will compound these risks as more frequent and extreme weather events will lead to further disruptions in supply and a greater demand for energy to cool homes and businesses due to higher temperatures.

Recommended strategies to address the impacts of climate change and reduce reliance on fossil fuels based on the National Energy Policy, 2011 are:

- Application of technologies and practices that promote energy conservation and efficiency, including regular energy audits, with a focus on the tourism sector where the share of energy use and emissions is likely to increase in the future.
- Establish and enforce building codes and standards for improved energy efficiency, including through design for passive cooling and insulation of new buildings that will be equipped with air conditioning.
- Facilitate cost benefit analysis of potential renewable energy sources on and around St. Kitts and Nevis, taking into account commercially proven technologies and future innovations.
- Promote the increased and coordinated use of renewable energy technologies where appropriate, which are affordable, reliable and environmentally-friendly.
- Encourage private sector involvement and public-private partnerships in the development, financing and deployment of energy efficient and renewable energy technologies.

Potential challenges:

- Government subsidies that have kept electricity prices artificially low, encouraging greater use and counteracting efforts to promote energy efficiency.
- Limited options for alternative, cleaner fuels for aviation and maritime services.
- Lack of in-country expertise to support research and development into appropriate energy efficient and renewable energy technologies.

Human health and well-being

Impacts: Climate change could impact significantly on public health, including of residents and visitors to St. Kitts and Nevis, affecting economic productivity, livelihoods and well-being. Changing rainfall patterns and increases in temperature and humidity are likely to provide favourable conditions for water-borne and vector-borne diseases.

The possible re-emergence of malaria¹² and appearance of new mosquito-borne viruses, such as chikungunya and zika, are of considerable concern. Extreme weather patterns also threaten to compromise sanitation systems and freshwater availability, with the potential for outbreaks of communicable diseases. Heat stress and related illnesses are projected to increase, particularly in the elderly and infirm, with increasing air temperatures. Additionally, impacts on the agricultural sector may indirectly affect human health in terms of nutritional requirements and supply.

Recommended strategies to address the impacts of climate change are:

- Develop and implement a health and sanitation education and awareness raising programme targeted at residents and at tourists, which focuses on disease prevention.
- Mainstream climate change and disaster risk reduction and management considerations into health sector planning and programmes, with emphasis on vulnerable groups.
- Facilitate the development of integrated waste management systems to improve sanitation and sewerage and solid waste disposal on St. Kitts and Nevis.
- Integrate food and nutrition security into health sector planning.
- Integrate human health and climate change considerations into poverty reduction strategies and programmes, recognising the link between disease transmission, the environment and living conditions.

Potential challenges:

- No central sewerage system exists for St. Kitts or Nevis, exacerbating the risk of water contamination and disease spread.
- Approximately 15-20% of St. Kitts and Nevis population use pit latrines or have no access to toilet facilities, and are at high risk from water-borne diseases such as cholera and gastroenteritis¹³.
- Lack of data and understanding on the linkages between disease and climate change, and the effects of newly emerging diseases, such as chikungunya and zika, on the population.

Sustainable physical development

Impacts: The majority of physical infrastructure in St. Kitts and Nevis, including for communications, energy, transport, water and sanitation as well as commercial and residential buildings, is located within two kilometres of the coast. Climate change poses a particularly high risk for this infrastructure due to sea level rise and more frequent and extreme weather, including flooding, hurricanes and storm surge¹⁴. Further expansion of commercial and residential development inland into steep slopes, which are vulnerable to soil erosion and landslides, is also of concern¹⁵.

Recommended strategies to address the impacts of climate change based on the National Physical Development Plan, 2005 and draft Nevis Physical Development Plan, 2008 are:

- Strengthen the enabling legislation, regulations and policies concerning physical development and land-use zoning to address conflicts and gaps with regard to climate change adaptation.
- Harmonise physical development planning with other strategies for enhanced energy, food and water security, conservation and sustainable land management.
- Integrate climate change and disaster risk reduction and management considerations into physical development policies, plans and programmes.

¹² Rawlins, S.C, Hinds, A., Rawlins, J.M. (2008). Malaria and vectors in the Caribbean: the continuing challenge of the disease forty-five years after eradication from the islands. *West Indian Medical Journal* 57(5): 462-469.

¹³ Simpson, M. et al. (2012). *CARIBSAVE Climate Change Risk Atlas (CCRA) - Profile for St. Kitts*. Summary Document, March 2012: <http://dms.caribbeanclimate.bz/M-Files/openfile.aspx?objtype=o&docid=5049>

¹⁴ Williams, P.I. (2013). *St. Kitts and Nevis Land Policy Issues Paper*. Prepared for the OECS Social and Sustainable Development Division, Castries, Saint Lucia.

¹⁵ ibid

- Include climate-proofing considerations in the design of new physical infrastructure and encourage the private sector and communities to retro-fit existing buildings through use of tax breaks and other incentives.

Potential challenges:

- Insecure land tenure that disincentivises leaseholders or landowners from investing in sustainable land management practices.
- Squatting and other unregulated development on state lands, especially on abandoned or underused sugar estates.
- Stabilisation and maintenance of ghauts and old drainage systems is important but lacks funding, including construction of gabion structures and embankments to prevent further erosion and destabilisation of nearby houses and roads.

Tourism

Impacts: Tourism is an important source of employment and revenue for St. Kitts and Nevis following the closure of the sugar industry in 2005, contributing 25-30% of GDP. However, this sector is highly vulnerable to climate change. Current and potential impacts include the degradation of natural ecosystems and biodiversity that serve as tourism attractions; reduced water and energy supply due to saltwater intrusion into groundwater and extreme weather such as drought, floods and hurricanes; loss and damage to physical infrastructure due to sea level rise and extreme weather; reduced access to high-quality local food; and threats to human health.

Recommended strategies to address the impacts of climate change based on the St. Kitts Tourism Sector Strategy and Action Plan, 2014-2019 are:

- Integrate climate change considerations into policies, plans and programmes for planning and development of the tourism sector.
- Explore linkages with other sectors to diversify and expand the sustainable tourism product, including eco-tourism, heritage tourism and agro-tourism.
- Identify and develop innovative, market-based incentives to promote sustainable tourism.

Potential challenges:

- Rapid growth of the tourism sector, which increases risk of overuse and pollution of freshwater resources, land and natural ecosystems, increases greenhouse gas emissions and exacerbates human health risks through spread of communicable diseases.
- Vulnerability to external shocks, such as financial markets, global oil prices and transport networks, that are beyond the control of the government and citizenry.
- Disconnect between tourism sector development strategies and plans in St. Kitts and Nevis.

Water security

Impacts: Most freshwater resources in St. Kitts and Nevis are supplied from groundwater aquifers. Climate change will impact on the availability and quality of freshwater resources in several ways. Erratic rainfall will lead to less recharge of aquifers and reduces the potential for rainwater harvesting as an alternative supply. Nevis already experiences lower levels of rainfall and recharge than St. Kitts due to its geographic location. Sea level rise will also pose a risk to aquifers due to saltwater intrusion. Extreme weather, such as floods and hurricanes, could also damage water infrastructure and impact on sewerage and solid waste management resulting in water contamination.

Recommended strategies based on the Impact Assessment Report and National Adaptation Strategy and Plan for the Water Sector, 2014 are:

- Strengthen legislation and institutions to govern the sustainable use of water resources and address possible conflicts and gaps, including revision of the Water Resources Act and establishment of a new Water Resources Agency.
- Promote integrated water resources management¹⁶ through policies and programmes for water security, including development of a Watershed Policy and Water Policy that consider climate change and disaster risk reduction and management.
- Reduce the vulnerability of the water supply system through climate-proofing water storage, supply and distribution infrastructure.
- Protect freshwater supplies from pollution, including through suitable watershed and wastewater management strategies, in close collaboration with the agricultural and tourism sectors.
- Enable private sector and community participation in integrated water resources management, including enhanced use of water conservation technologies, use of storage tanks, rainwater harvesting and recycling of grey water.

Apart from the above a national integrated water resources management policy is recommended for the country as an overarching framework for climate resilience and water security.

Potential challenges:

- No central sewerage system exists for St. Kitts or Nevis, exacerbating the risk of groundwater contamination through heavy reliance on soakaways and septic tanks. Only one sewerage treatment plant exists at Frigate Bay, St, Kitts.
- Approximately 15-20% of St. Kitts and Nevis population use pit latrines or have no access to toilet facilities, which contributes to water contamination¹⁷.
- Demand for water is expected to increase as the economy grows, especially in the agricultural and tourism sectors where water use could double over the next ten years¹⁰.

4.2.2.2 Cross-cutting issues

Institutional and legislative constraints and gaps

The institutional and legislative framework for adaptation to climate change is derived from the existing legislation, policies and plans discussed in Section 2.3. However, in several instances, these legislation and policies remain in draft or need to be revised. Lack of relevant regulations to support legislation is another challenge. Notably, there is no specific legislation to support climate change adaptation or mitigation. It is therefore recommended that a Climate Change Bill be developed to support the National Climate Change Policy once finalised.

Overall responsibility for climate change adaptation is shared among several ministries and government agencies, including the Ministry of Sustainable Development, Ministry of Agriculture, Cooperatives, Fisheries, Lands and Housing and Ministry of Public Infrastructure. Ensuring effective coordination and information sharing to support a cross-sectoral and integrative approach to adaptation and building resilience is critical. A cross-sectoral and multi-stakeholder approach will also be needed to enable ecosystem-based management, integrated water

¹⁶ Integrated Water Resources Management (IWRM) is defined as “a process which promotes the coordinated development and management of water, land and related resources in order to maximise economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems.” (Global Water Partnership 2010)

¹⁷ Simpson, M. et al. (2012). *CARIBSAVE Climate Change Risk Atlas (CCRA) - Profile for St. Kitts*. Summary Document, March 2012: <http://dms.caribbeanclimate.bz/M-Files/openfile.aspx?objtype=0&docid=5049>

resources management, integrated adaptation and disaster risk reduction and sustainable land management¹⁸. The proposed National Climate Change Adaptation Strategy should therefore aim to clearly identify the institutional arrangements and a plan to operationalise its priorities.

Finally, while almost all the key sectoral policies and plans identify climate change adaptation as a major risk, they have not been informed by vulnerability assessments and do not provide a comprehensive set of actions and targets to mainstream climate change (see Table 4). These sectoral policies and plans will therefore also need to be updated and where possible a strategy and/or action plan developed to operationalise them.

Research, monitoring and knowledge management needs

A comprehensive system of research, monitoring and knowledge management for climate change adaptation is needed to provide reliable data for decision-making and to foster experimentation and innovation. Currently, key baseline data is unavailable and, where data generation is taking place, there is limited dissemination of this information to other sectors. Interdisciplinary research is also important as impacts of climate change cuts across sectors.

Research and monitoring should include:

- Vulnerability and capacity assessments for climate change to identify the key impacts of climate change and vulnerabilities for each of the priority sectors. Currently, vulnerability and capacity assessments have only been undertaken for the water sector in St. Kitts and Nevis
- Technologies and practices for climate-smart agriculture, energy efficiency and renewable energy, and water conservation and management.
- Surveys and assessments of species, habitats and ecosystem services within coastal, marine and terrestrial ecosystems to support conservation and natural resource management.
- Ecosystem-based management approaches, including watershed management, integrated water resources management and integrated coastal zone management, that are relevant to the small island context of St. Kitts and Nevis.
- Linkages between human health, diseases and climate change.
- Strategies to diversify and promote sustainable agriculture, including agro-forestry, agro-tourism and farm and fish festivals.
- Strategies to diversify and promote sustainable tourism, including eco-tourism, heritage tourism and agro-tourism.

A knowledge management system for sharing data and information across sectors and various stakeholders and documenting experiences, lessons learned and best practices for adaptation is also useful to support effective implementation over the long term, however the challenges in establishing such a system is noted.

Integration of adaptation and disaster risk reduction

Climate change has the potential to exacerbate natural disasters, such as droughts, floods, landslides, hurricanes and storm surges, through changing rainfall patterns, more extreme weather and sea level rise. The impacts on lives, infrastructure and livelihoods in St. Kitts and Nevis will be significant given the small size of the islands and economic dependence on climate-sensitive sectors like tourism. Increasing resilience to multiple hazards and disasters, including extreme climate events, will be critical to ensure the viability of the people and economy.

Integrating disaster preparedness and risk reduction considerations into any adaptation projects and programmes for the various sectors will enhance capacity to manage multiple hazards and take advantage of synergies. These

¹⁸ Williams, P.I. (2013). St. Kitts and Nevis Land Policy Issues Paper. Prepared for the OECS Social and Sustainable Development Division, Castries, Saint Lucia.

considerations should factor in the needs of vulnerable communities. Additionally, there needs to be investment in monitoring, forecasting and early warning systems for vulnerable communities and sectors to enable disaster risk reduction.

Effective stakeholder engagement

The National Capacity Self Assessment, 2006 identifies several capacity constraints within the government agencies responsible for climate change and environmental management. These constraints include lack of staff with appropriate expertise, high staff turnover, no performance management system and formal training procedures, lack of accountability for delivering annual work plans, and insufficient budgets.

Engagement of civil society and the private sector in climate change adaptation and building resilience is key given the limited human and financial resources within the public sector. Firstly, efforts to build awareness of the impacts and vulnerabilities related to climate change and potential adaptation strategies are needed to mobilise these stakeholders. Innovative and participatory tools exist for awareness raising and stakeholder mobilisation, which integrate information and communication technologies (ICT), such as community radio, participatory three-dimensional modelling and participatory video. To enable effective stakeholder engagement, capacity building initiatives will also be needed to develop the requisite knowledge and skills for adaptation planning and implementation. Enabling public-private partnerships could also prove invaluable in research, financing and deployment of innovative technologies and practices to support climate change adaptation.

Investment and fiscal planning

Limited funding is available through the government of St. Kitts and Nevis to support the added responsibilities and measures needed to adapt to climate change. The majority of the funding for adaptation planning and implementation is sourced through multi-lateral donors such as the Green Climate Fund under the UNFCCC and the World Bank's Global Environmental Facility, through bi-lateral donors such as the European Union and North American governments, and through regional programmes with CCCCC and sub-regional programmes with the OECS. The ability to access and mobilise these donor funds in a timely manner, however, is a challenge.

Additional mechanisms for financing key investments in climate change adaptation programmes and projects will need to be identified and developed. Public-private partnerships and fiscal measures, such as subsidies and tax incentives, offer potential opportunities. Tax incentives and subsidies will be particularly useful in promoting climate-friendly and climate-proofing behaviours within communities and small businesses that will be facing increasing risks from climate change and need to be financially prepared.

Table 4: Caribbean Climate Online Risk and Adaptation Tool (CCORAL)²⁹ applied to key sectoral policies and plans in St. Kitts and Nevis

CCORAL Policy Screening Questions	National Biodiversity Strategy & Action Plan 2014-2020	National Energy Policy and Action Plan 2011	National Physical Development Plan 2005	St. Kitts Agricultural Development Strategy 2013-2016	St. Kitts Tourism Sector Strategy and Action Plan 2014-2019	National Adaptation Strategy and Plan for the Water Sector 2014
1. Do the objectives of policy/plan include addressing climate change?	✓	✓	✓	✓		✓
2. Has a vulnerability and risk assessment for climate change been undertaken and used to inform policy/plan?						✓
3. Is there potential for the policy/plan to increase vulnerability to climate change?			✓		✓	
4. Does climate change present a significant risk to the sector?	✓	✓	✓	✓	✓	✓
5. Are adaptation options identified to manage risks?	✓	✓	✓	✓		✓

²⁹ The Caribbean Climate Online Risk and Adaptation Tool (CCORAL) is an online support system and toolbox for climate resilient decision-making developed by the Caribbean Community Climate Change Centre (CCCCC). It includes tools for screening budgets, legislation, policies and projects/programmes using a climate change lens and identifying gaps and opportunities for adaptation and building resilience.

CCORAL Policy Screening Questions	National Biodiversity Strategy & Action Plan 2014-2020	National Energy Policy and Action Plan 2011	National Physical Development Plan 2005	St. Kitts Agricultural Development Strategy 2013-2016	St. Kitts Tourism Sector Strategy and Action Plan 2014-2019	National Adaptation Strategy and Plan for the Water Sector 2014
6. Has stakeholder input and support been obtained for the policy/plan including mainstreaming climate resilience?	✓	✓		✓		✓
7. Has communications and public outreach programme been developed including climate change impacts on sector?						✓
8. Has an implementation framework and budget been developed to support adaptation and resilience building?		✓	✓	✓		✓
9. Do the indicators of success enable stakeholders to track progress in addressing climate change?	✓			✓		✓
10. Are any changes to policy/plan required to respond to climate change risks and needs?	✓	✓	✓	✓	✓	

4.2.3 Recommendations for the development of the National Climate Change Adaptation Strategy

4.2.3.1 Scope

The National Climate Change Adaptation Strategy will provide guidance on appropriate measures for adaptation through identification of key priorities and actions that reduce vulnerability to specific impacts from climate change and build resilience over the long term. The Strategy will operationalise the policy directives and objectives outlined in the National Climate Change Policy. It will also be aligned with the relevant sectoral policies at the national level and ensure St. Kitts and Nevis meets its international and regional commitments in ensuring climate-resilient development.

While mitigation is recognised as an important part of the climate change response, St. Kitts and Nevis will prioritise the adoption of adaptation measures as a means of urgently addressing its high vulnerability and low ecological, social and economic resilience to climate change. The Strategy will seek to provide mitigation co-benefits where possible, through prioritising adaptation measures that minimise greenhouse gas emissions and enhance natural ecosystems functioning as carbon sinks.

4.2.3.2 Approach

A participatory and multi-sectoral approach will be used to develop the National Climate Change Adaptation Strategy engaging all key stakeholders in defining the key priorities and strategies. The stakeholder consultations will be comprised of two **national workshops** and **focused interviews with selected key stakeholders** who may have a very high level of responsibility or interest or be challenging to engage in multi-stakeholder processes and will therefore need individual in-depth consultation. These would include government agencies or stakeholders who will be difficult to engage effectively in a workshop setting (e.g. key private sector or community resource users). The consultations will include a discussion of the Issues Paper, clarification of needs, challenges and opportunities and determination of stakeholder consensus on priorities and actions to guide development of the National Climate Change Adaptation Strategy. Following the consultations there will be the preparation of the draft strategy which will undergo another round of consultations before finalisation.

4.2.3.3 Proposed framework and outline

Below a proposed framework and outline are provided for the National Climate Change Adaptation Strategy drawing on the policy directives and goals identified in the National Climate Change Policy and the relevant sectoral policies and plans for St. Kitts and Nevis.

Table 5: Proposed framework for the National Climate Change Adaptation Strategy

Goal: To reduce the vulnerability of St. Kitts and Nevis to the adverse impacts of climate change through cross-sectoral and multi-faceted measures that build adaptive capacity and resilience		
Priority areas for adaptation		
1. Agriculture and food security	<i>Objective:</i> To ensure food and nutrition security, viable livelihoods and biodiversity conservation through innovative and sustainable agricultural strategies	<i>Relevant policies/plans:</i> Food and Nutrition Security Strategy (2014 draft), St. Kitts Agricultural Development Strategy, 2013-2016, National Adaptation Strategy for New European Union Sugar Regime, 2006-2013
2. Coastal, marine and terrestrial ecosystems	<i>Objective:</i> To ensure the health and productivity of coastal, marine and terrestrial ecosystems to build their resilience to climate change and ability to provide ecosystem services through conservation and sustainable use	<i>Relevant policies/plans:</i> National Biodiversity Strategy and Action Plan, 2014-2020, National Environmental Management Strategy and Action Plan, 2004-2009
3. Energy security	<i>Objective:</i> To reduce St. Kitts and Nevis' reliance on fossil fuel imports and the impacts of climate change on the energy sector through energy efficiency and renewable energy that is reliable and affordable	<i>Relevant policies/plans:</i> National Energy Policy, 2011
4. Human health and well-being	<i>Objective:</i> To reduce the adverse impacts of climate change on human health and well-being	<i>Relevant policies/plans:</i> Food and Nutrition Security Strategy (2014 draft), National Social Protection Strategy, 2013-2017
5. Sustainable physical development	<i>Objective:</i> To climate-proof existing and planned physical infrastructure in St. Kitts and Nevis	<i>Relevant policies/plans:</i> National Physical Development Plan, 2005, Nevis Physical Development Plan (2008 draft)
6. Sustainable tourism	<i>Objective:</i> To ensure the long-term sustainability of the tourism sector through a pro-people, pro-planet approach that builds resilience to the impacts of climate change	<i>Relevant policies/plans:</i> St. Kitts Tourism Sector Strategy and Action Plan, 2014-2019
7. Water security	<i>Objective:</i> To provide a safe and reliable water supply to St. Kitts and	<i>Relevant policies/plans:</i> Impact Assessment Report

		Nevis' population and ensure efficient water use	and National Adaptation Strategy and Plan for the Water Sector, 2014		
Cross-cutting issues					
1. Capacity building, communications and stakeholder engagement	2. Disaster risk reduction and management	3. Economic planning and management	4. Research and knowledge management	5. Inter-sectoral coordination	
<i>Objective:</i> To build the capacity of St. Kitts and Nevis' population to effectively plan for and adapt to climate change	<i>Objective:</i> To save lives and protect property from natural disasters and the effects of climate change through comprehensive disaster management in all sectors	<i>Objective:</i> To reduce the economic impacts of climate change, enhance recovery from impacts and explore opportunities through effective fiscal planning	<i>Objective:</i> To establish a comprehensive system of research, monitoring and knowledge management to inform decision-making on climate change adaptation	<i>Objective:</i> To establish linkages between sectors to enable information sharing and effective coordination and implementation	
<i>Relevant policies/plans:</i> National Capacity Self Assessment	<i>Relevant policies/plans:</i> Natural Hazard Mitigation Policy and Action Plan, 2001 and National Disaster Plan, 2013	<i>Relevant policies/plans:</i> Medium Term Economic Strategy, 2010-2012, Poverty Reduction Strategy and Action Plan, 2012-2016			

Proposed Outline of the strategy document

1. Introduction

1.1 Background: Description of the local context and issues within St. Kitts and Nevis, including its geography, population, economy and governance at the community to national levels.

1.2 Climate change impacts and vulnerabilities: Overview of the current and potential impacts from climate change, including observed trends and future projections, in St. Kitts and Nevis. Analysis of vulnerability, including of key sectors and populations, to the current and potential impacts of climate change.

2. National Climate Change Policy: Overview of the National Climate Change Policy including its vision, strategic objectives and priorities for action related to adaptation to climate change.

3. Formulating the National Climate Change Adaptation Strategy: Overview of the process used to formulate the National Climate Change Adaptation Strategy.

4. National Climate Change Adaptation Strategy

4.1 Scope and approach: Scope and approach of the strategy in terms of providing specific guidance on adaptation priorities and actions and operationalising the National Climate Change Policy

4.2 Strategic objectives: The main strategic objectives identified based on desk review and stakeholder consultations.

4.3 Priority areas for adaptation: Identification of the priority areas for adaptation based on desk review and stakeholder consultations, including specific sub-objectives and actions for each area.

4.4 Cross-cutting issues: Overview and analysis of cross-cutting issues and strategies for adaptation to climate change based on desk review and stakeholder consultations.

5. Implementation framework

5.1 Institutional arrangements: Overview of recommended institutional arrangements for oversight and implementation of the National Climate Change Adaptation Strategy and analysis of potential stakeholder roles and responsibilities and institutional readiness.

5.2 Resource mobilisation: Overview and analysis of financing options and mechanisms to support implementation, monitoring and review of the National Climate Change Adaptation Strategy.

5.3 Action Plan: The action plan will outline the timeframe and actions required over the short term, medium term and long term to achieve the strategic objectives and sub-objectives for the priority areas for adaptation.

6. Monitoring and evaluation: The system for monitoring and evaluation of the National Climate Change Adaptation Strategy to track progress in implementation across sectors and update priorities and actions to enable adaptation over the long term.

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