ADAPTATION FUND

CONCEPT NOTE PROPOSAL FOR SINGLE COUNTRY

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project: Coastal Adaptation and Resilience Initiative – St. Kitts and Nevis (CARI-SKN)

Country: Saint Kitts and Nevis

Thematic Focal Area: Coastal Zone Management

Type of Implementing Entity: Regional Implementing Entity

Implementing Entity: Caribbean Community Climate Change Centre (CCCCC)

Executing Entities: Ministry of Public Infrastructure et al. (GovSKN)

Amount of Financing Requested: $10,000,000.00 (in U.S Dollars Equivalent)

Project Formulation Grant Request (available to NIEs only): Yes ☐ No ☒

Amount of Requested financing for PFG: N/A

Letter of Endorsement (LOE) signed: Yes ☒ No ☐

NOTE: The LOE should be signed by the Designated Authority (DA). The signatory DA must be on file with the Adaptation Fund. To find the DA currently on file check this page: https://www.adaptation-fund.org/apply-funding/designated-authorities

Stage of Submission:

☐ This concept has been submitted before

☒ This is the first submission ever of the concept proposal

In case of a resubmission, please indicate the last submission date: Click or tap to enter a date.

Please note that concept note documents should not exceed 50 pages, including annexes.

1. Project Background and Context

1.1. Project Background

Enhancing coastal resilience stands as a top priority for the Government of Saint Kitts and Nevis (GovSKN), given the substantial portion of its population residing in coastal regions and the country's dependence on coastal ecosystems. However, implementing cost-effective climate adaptation solutions poses significant challenges due to financial constraints, limited capacity, and other barriers. In spite of these barriers, the urgency and severity of the climate crisis demands immediate action to protect lives, safeguard livelihoods, and secure the future of coastal communities. In recent years, communities in Saint Kitts and Nevis have experienced firsthand the devastating impacts of climate change, including more frequent and intense storms, rising sea levels, and increased rates of coastal erosion. Therefore, this proposed initiative endeavours to tackle the escalating vulnerability of coastal communities and ecosystems in Saint Kitts and Nevis to the adverse effects of climate change through strategic and targeted interventions. These interventions will focus on critical capacity building efforts and the institutionalization of engineering expertise required to design and implement innovative solutions at the local level.

Specifically, the project's primary objective is to demonstrate transformative adaptation measures within communities by protecting them from climate impacts that threaten their livelihoods and safety. Additionally, it aims to empower local communities by facilitating their ability to design and implement coastal projects independently through the establishment of committees and financing mechanisms. By increasing the resilience of communities and ecosystems, these interventions will enable them to adapt to climate change, ultimately enhancing their economic outlook and livelihoods.

1.2. Country Context

1.2.1. Geographical Setting and Population Demographic

Now experiencing the local consequences of a changing climate, environment, and society, Saint Kitts and Nevis confront an array of challenges amplified by their small size and geographical location. Situated in the northern region of the eastern Caribbean Sea (Figure 1), these islands are uniquely susceptible to the impacts of climate change due to their low- lying coastal areas and limited landmass. With a total landmass of 104 square kilometres and a population of approximately 53,082 (0.00068% of the total world population), the federation comprises the smallest sovereign country in the western hemisphere in terms of both size and population.[1] Despite their small size and minimal contribution to global greenhouse gas emissions, the twin island federation faces disproportionate impacts from climate change compared to larger emitters. Coastal areas, which accommodate the majority of the population and crucial infrastructure, are particularly vulnerable to rising sea levels, coastal erosion, and extreme weather events. The susceptibility to cascading impacts further exacerbates vulnerabilities, with sea-level rise intensifying coastal erosion and amplifying exposure to storm surges and flooding during extreme weather events. These interconnected risks necessitate comprehensive and multi-faceted strategies to enhance resilience and mitigate the adverse effects of climate change on the islands' communities and ecosystems.

While geographically modest in size, Saint Kitts and Nevis holds profound ecological significance, particularly in its expansive marine territories. Historically, the communities inhabiting these islands have drawn sustenance and economic viability from the diverse marine ecosystems enveloping their shores. However, these ecosystems face increasing pressures from climate change, threatening their integrity and resilience. Escalating sea surface temperatures, ocean acidification, and intensified weather phenomena collectively imperil the delicate equilibrium of marine biodiversity.

[1] First Biennial Update Report (BUR1) of the Government of St. Kitts and Nevis

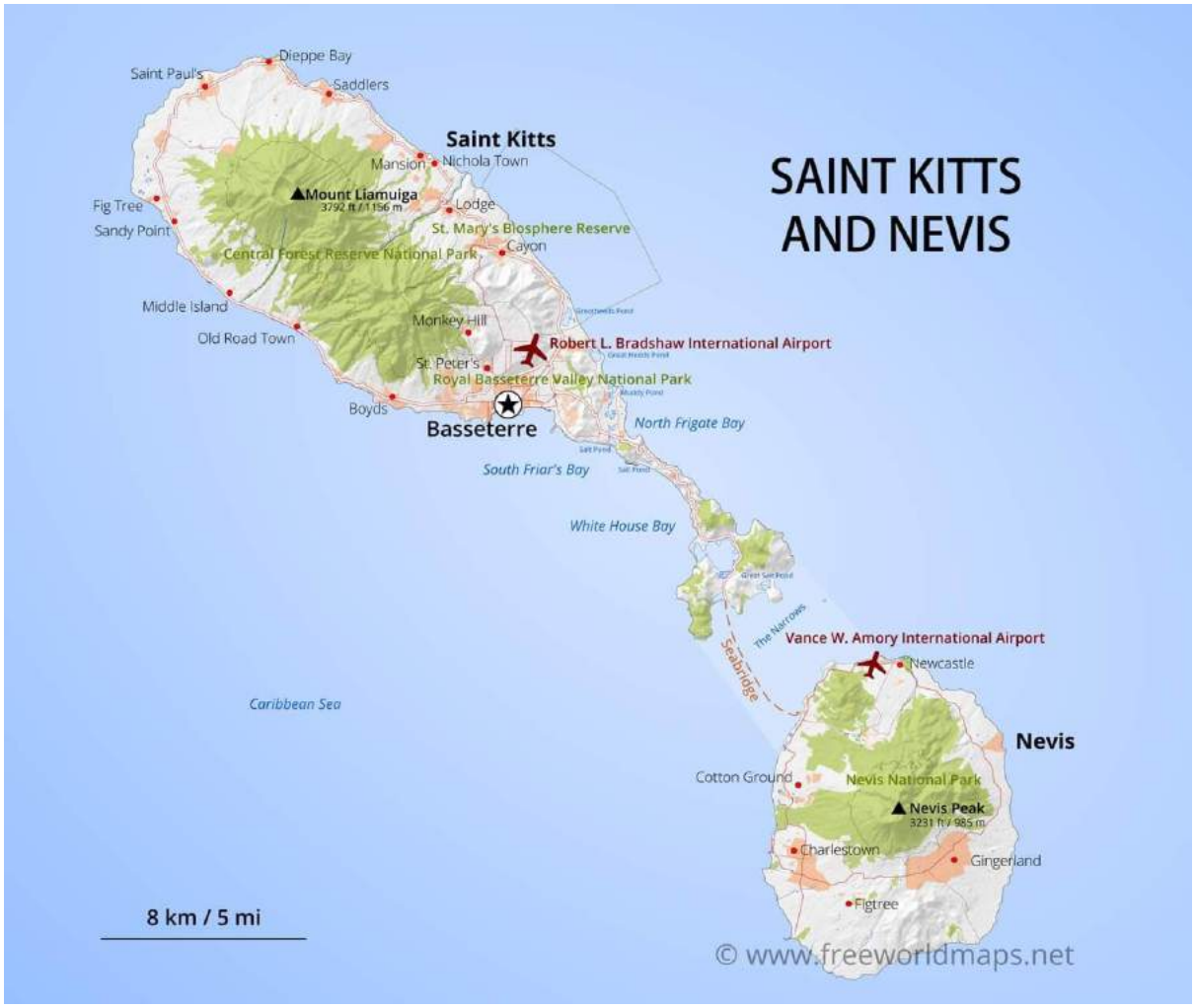


Figure 1: Map of Saint Kitts and Nevis. (Socurce:www.freeworldmaps.net)

Coral reefs, pivotal in supporting both ecological resilience and economic activities such as tourism and fisheries, confront unprecedented stresses, evident in recent bleaching events and structural degradation.[2] The preservation of these natural habitats is not only vital for biodiversity conservation but also for the livelihoods and well-being of local communities who rely on ecosystem services for sustenance and economic activities such as tourism, agriculture, and fisheries. Therefore, sustainable management and conservation of these ecosystems are paramount to safeguarding the islands' ecological balance and promoting long-term resilience in the face of environmental challenges.

As the federation continues to grapple with the mounting challenges posed by climate change, their small size becomes both a defining feature and a critical vulnerability. With nowhere else to go, the islands' limited landmass magnifies the impacts of a changing climate. Now more than ever, adaptation and resilience-building efforts are imperative to safeguard the well-being of communities and preserve the ecological resources that sustain them. Proactive measures must be taken to address these interconnected risks and ensure the sustainability of Saint Kitts and Nevis for generations to come.

1.2.2. Socioeconomic Context

In addition to their size and location, several inherent features make Saint Kitts and Nevis vulnerable to the impacts of climate change. One such feature is their socio-economic dependence on key sectors that are highly sensitive to environmental changes, such as tourism, agriculture, and fisheries. Coastal areas, where the majority of these activities are concentrated, face risks from rising sea levels, coastal erosion, and extreme weather events, threatening infrastructure, livelihoods, and economic stability.

[2] OECS Climate Change Adaptation Strategy and Action Plan 2021-2026.

These sectors also rely heavily on the islands' natural resources and ecosystems, which are increasingly threatened by climate-related hazards such as rising temperatures, increased rainfall variability, and prolonged periods of drought. Disruptions to these sectors not only have immediate economic repercussions but also affect the livelihoods and well-being of local communities. The reliance on tourism leaves the country exposed to external shocks, such as natural disasters and global economic downturns, highlighting the need for diversification and resilience-building measures. Similarly, agriculture remains vital for food security and livelihoods, but climate change impacts pose challenges to productivity, exacerbating food insecurity and economic vulnerabilities. Furthermore, the islands' limited adaptive capacity, characterized by inadequate infrastructure, limited access to financial resources, and institutional constraints, exacerbates their vulnerability to climate change in a number of ways.

Limited access to financial resources hampers efforts to properly invest in climate-resilient infrastructure and technologies, leaving communities more exposed to the impacts of climate change.[3] Institutional constraints, such as fragmented governance structures and regulatory frameworks, impede coordinated and effective responses to climate change, hindering the implementation of adaptation measures and resilience-building initiatives. Fragmented governance structures, characterized by overlapping responsibilities and unclear lines of authority, result in disjointed decision-making processes and inefficient resource allocation. This fragmentation often leads to duplication of efforts, conflicting priorities, and gaps in coordination among government agencies, non-governmental organizations (NGOs), and other stakeholders involved in climate action. As a result, there is a lack of coherence and synergy in the implementation of adaptation measures, making it challenging to achieve meaningful progress in building resilience at the national and community levels.

Moreover, regulatory frameworks in Saint Kitts and Nevis are not adequately tailored to address the complex and evolving challenges posed by climate change. Existing laws and policies lack specific provisions or mechanisms to support climate adaptation efforts, leaving gaps in governance and legal frameworks. Additionally, regulatory processes are known to be slow, bureaucratic, and cumbersome, hindering the timely implementation of climate-resilient projects and initiatives. This regulatory inertia has discouraged investment in climate adaptation and resilience measures, exacerbating the vulnerability of communities to climate-related risks and hazards. In addition to gaps in regulatory content, challenges related to enforcement and compliance monitoring has undermined the effectiveness of existing coastal regulations. Limited capacity and resources within regulatory agencies, coupled with insufficient stakeholder engagement and community participation, also result in weak enforcement mechanisms and a lack of accountability for non-compliance with coastal regulations.

Despite efforts to enhance resilience, the capacity to anticipate, cope with, and recover from climate-related impacts remains relatively low across Saint Kitts and Nevis. Communities lack the necessary knowledge, skills, and resources to effectively prepare for and respond to climate-related hazards, increasing their vulnerability to the adverse effects of environmental changes. Moreover, the slow pace of recovery following climate-related disasters further underscores the limitations of existing adaptive capacity, as communities struggle to rebuild infrastructure, restore livelihoods, and recover from economic losses. This lack of adaptive capacity is compounded by socio-economic disparities, with marginalized groups facing disproportionate risks and bearing the brunt of climate-related disasters. Vulnerable populations, including low-income households, women, children, and the elderly, often lack access to essential resources and services, exacerbating their susceptibility to climate impacts and hindering their ability to recover from environmental shocks. These vulnerabilities underscore the pressing necessity for precisely targeted interventions aimed at fortifying adaptive capacity.

[3] The National Climate Change Strategy for St. Kitts and Nevis, 2018

1.2.3. Gender Context

Natural hazards and climate change impact women and men differently, due to differences in societal expectations of their roles and responsibilities. A preliminary examination of the male-female distribution across sectors in St. Kitts and Nevis shows that women dominate in wholesale and retail, hotel and restaurants, financial intermediation and public administration. The tourism sector has a high concentration of women mainly in housekeeping, reception, and food and restaurant services. Construction and agriculture have greater levels of male participation. Usually, men and women in coastal communities have differences in how they earn their livelihoods. In consequence, women usually have less income, less access to credit, and limited control over their resources.[4] Studies show that the impacts of climate change often magnify existing gender inequalities. Climate adaptation measures should therefore identify and address existing gender differences and ensure that women and girls, and men and boys have equal access to disaster risk reduction and environmental solutions.

A report on enhancing gender integration in the Biennial Update Report process of St. Kitts & Nevis states that an enhanced framework for gender integration across all segments of planning at the national level as well as capacity development in the areas of climate planning and gender analysis at the sectoral level is needed. Moreover, broad-based stakeholder consultation must be integrated as a standard feature of all climate processes. These engagements must not only solicit information from respondents but should inform and empower them and build a sense of ownership of the process. Equal opportunities must be created for full and fair participation of all groups of citizens in the process. The CARI-SKN project takes these recommendations into account and will develop an appropriate gender action plan to ensure taking gender differences in coastal communities adequately into account. Furthermore, the strengthening of data collection and management under Component 2 will ensure gender-disaggregated data collection to build the basis for gender-sensitive coastal zone management decision-making.

1.2.4. Development Context

In terms of development, Saint Kitts and Nevis face challenges related to limited resources, infrastructure, and institutional capacities. The islands' small size and limited landmass constrain development options and increase the pressure on coastal areas for economic activities and human settlements. Additionally, inadequate regulatory frameworks and governance structures pose challenges for integrated coastal zone management and climate adaptation efforts. Addressing these development challenges requires strategic investments in capacity building, institutional strengthening, and community empowerment to foster inclusive and sustainable development pathways that prioritize the well-being and resilience of all citizens. Climate change impacts exacerbate existing development challenges, hindering progress towards national development goals and sustainable development targets. Without effective adaptation measures and holistic development strategies, Saint Kitts and Nevis risk falling further behind in achieving socio-economic advancement and long-term prosperity. Thus, addressing the socio-economic impacts of climate change is essential for promoting inclusive growth, reducing vulnerabilities, and ensuring a resilient future for the country.

1. Climate Context and Vulnerabilities

1.1. Climatology of St. Kitts and Nevis

Located in the Caribbean’s Lesser Antilles, St. Kitts and Nevis experience warm and humid conditions throughout the year, typical of countries with tropical marine climates.[5] The islands' climate is heavily influenced by the surrounding marine environment, with temperatures averaging between 26°C to 28°C during the summer months and slightly cooler temperatures ranging from 24°C to 25°C in the winter months of December to February (Figure 2). Seasonal and diurnal temperature variations are minimal, with only higher elevations experiencing occasional fluctuations below 17°C.

[4] The National Climate Change Strategy for St. Kitts and Nevis, 2018

[5] First Biennial Update Report (BUR1) of the Government of St. Kitts and Nevis

Both islands have distinct wet and dry seasons, with the wet season typically lasting from July to December, coinciding with the North Atlantic hurricane season. During this period, the islands receive substantial rainfall, with monthly averages ranging from 150 to 250 mm. Conversely, the drier season occurs from January to April. Mean annual precipitation on Nevis averages about 1170 mm, while in St. Kitts, rainfall patterns are strongly influenced by altitude. The central mountain range in St. Kitts receives an annual average of 2,500 to 4,000 mm in rainfall, whereas coastal areas experience a more modest annual average of 1,016 mm. Along the South-East Peninsula (SEP) of St. Kitts, mean annual precipitation varies from 990 mm on peaks to 864 mm at Cockleshell Bay.

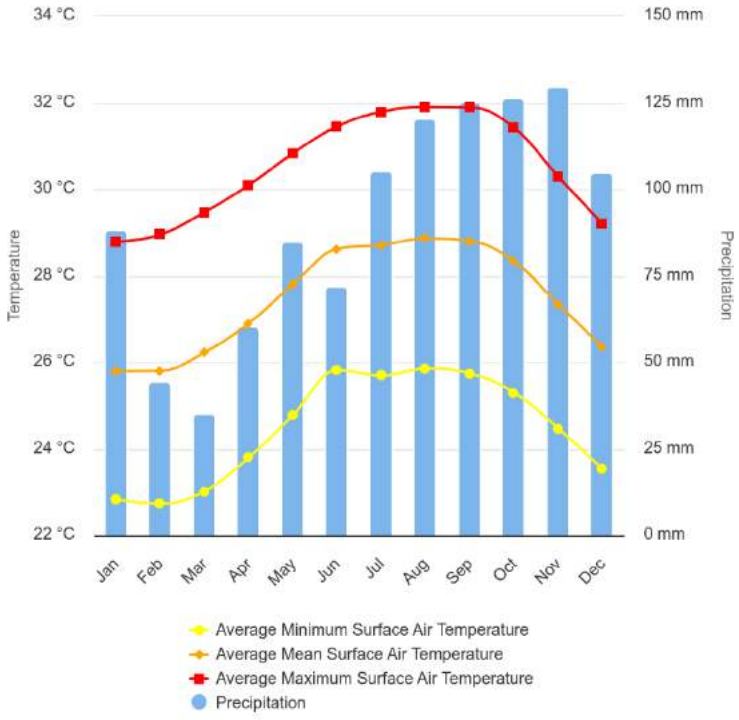


Figure 2: Monthly climatology of Average Minimum Surface Air Temperature, Average Mean Surface Air temperature, Average Maximum Surface Ait Temperature & Precipitation in St. Kitts and Nevis spanning 1991-2020. (Source: World Bank Climate Knowledge Portal)

The prevailing wind on both islands is the north-east trade with mean speeds ranging from 10-20 miles per hour 23 (mph). The periods of seasonal low-pressure July - September have higher wind speeds of 20-30 mph. The regional pattern is locally modified by land and sea breezes. The hurricane season extends from June to November, and there is a high annual frequency of tropical disturbances which generate squalls and high wind velocities.[6]

1.2. Climate change Vulnerabilities

Saint Kitts and Nevis face a multitude of climate change challenges that pose significant threats to the islands' environment, economy, and societal well-being. The islands' vulnerability to climate change is exacerbated by their small size, low-lying coastal geography, and dependence on natural resources. Key challenges include:

[6] Updated Nationally Determined Contribution for St. Christopher and Nevis, 2021

1.2.1. Temperature

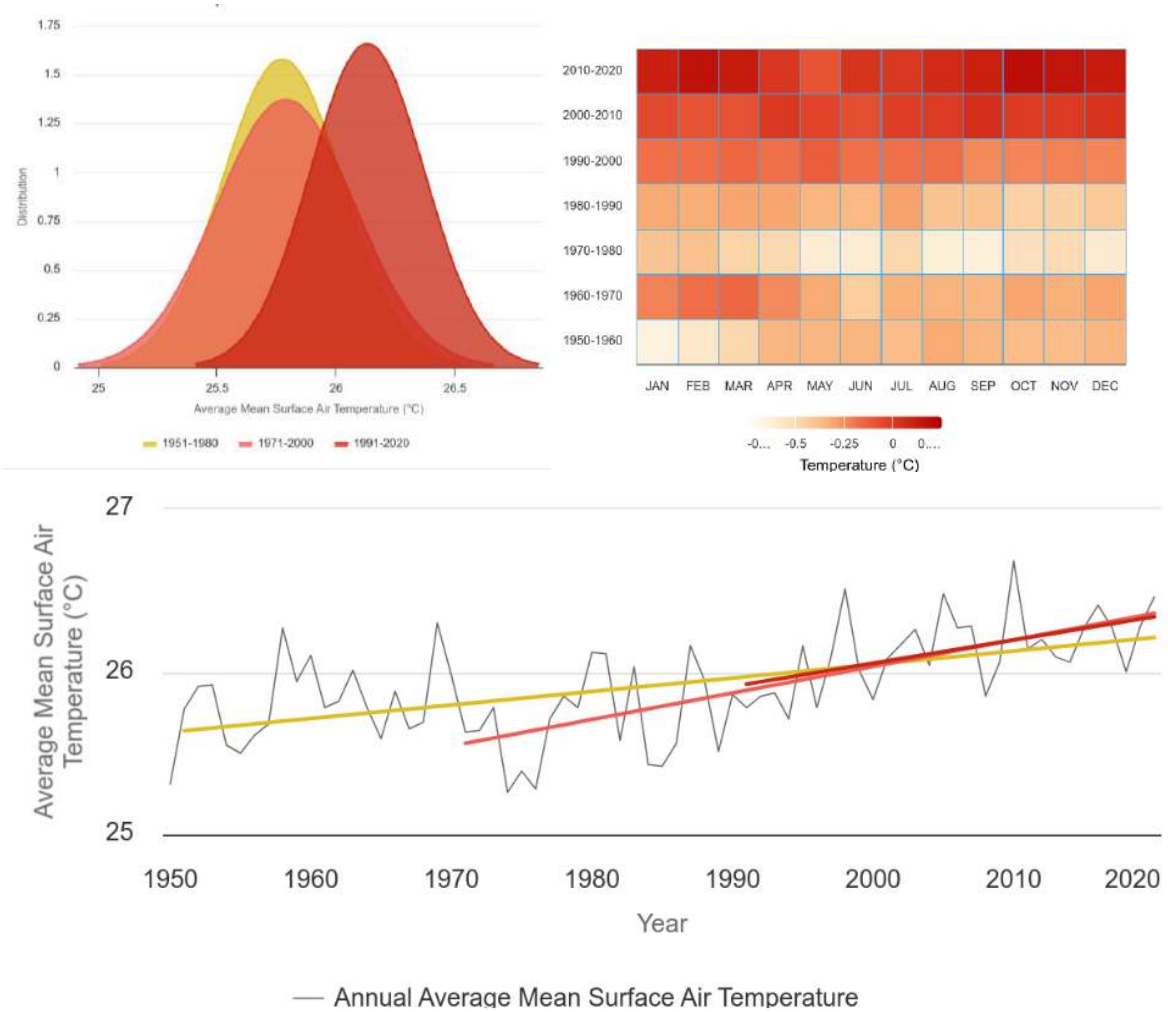


Figure 3: (i) Change in distribution of average mean surface air temperature, (ii) Changes in Average surface Air Temperature Anomaly, and (iii) Observed variation in Average surface Air Temperature in St. Kitts and Nevis, 1950-2020. (Source: World Bank Climate Knowledge Portal)

Moreover, temperature projections indicate a concerning trajectory of rising mean temperatures, with estimates suggesting that by 2100, the mean temperature could increase by approximately 3°C relative to historical averages (Figure 4). Such increases in temperature could have far-reaching implications

for the islands' environment and society, impacting various sectors such as agriculture, water resources, tourism, and public health.[7]

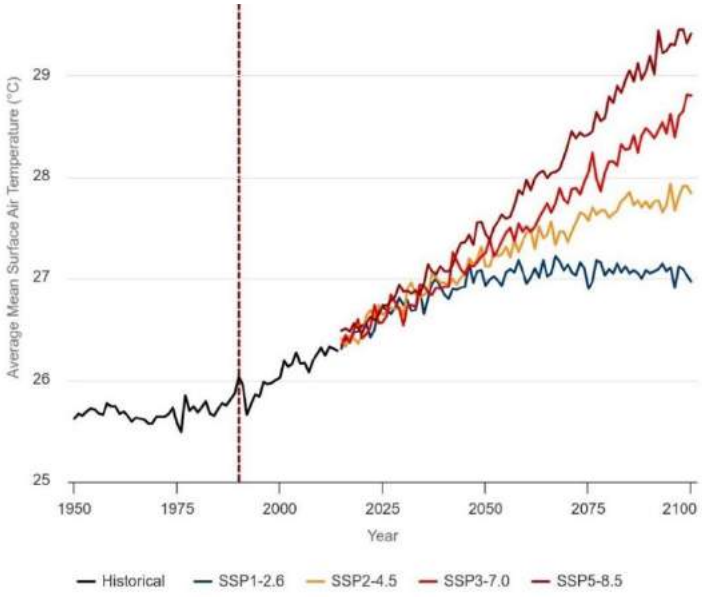


Figure 4: Projected Average Mean Surface Air Temperature St. Kitts and Nevis, Ref. Period: 1995-2014. (Source: World Bank Climate Knowledge Portal)

1.2.2. Rainfall

In recent years, St. Kitts and Nevis have witnessed significant shifts in precipitation patterns (Figure 5), indicative of the increasingly unpredictable nature of rainfall in the region, which is largely attributed to the influence of climate change. These changes include irregular rainfall patterns and more frequent extreme weather events, disrupting the islands' historically distinct wet and dry seasons. During the wet season, typically from July to December, heavier and more erratic rainfall has led to increased risks of flash floods, landslides, and soil erosion. Conversely, the drier season, from January to April, has become more unpredictable, with periods of prolonged drought interspersed with sporadic rainfall. Such alterations in precipitation dynamics have far-reaching implications for water resources, agriculture, and ecosystems, affecting crop yields, food security, and freshwater availability.

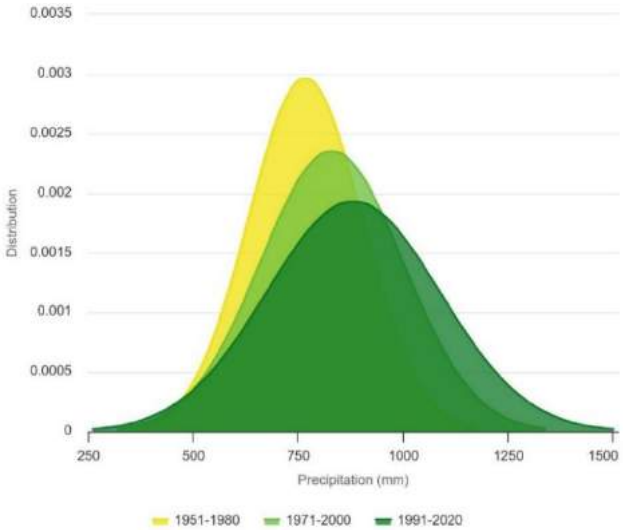


Figure 5: Change in distribution of average annual mean precipitation in St. Kitts and Nevis. (Source: World Bank Climate Knowledge Portal)

[7] Climate Trends and Projections for the OECS Region, 2021

Looking ahead, climate models project further alterations in precipitation regimes for St. Kitts and Nevis, with potentially significant implications for the islands' environment and society. Future projections indicate a continuation of the trend towards more intense rainfall events, accompanied by longer dry spells and periods of drought. However, alongside increased variability, projections also suggest a general decline in annual precipitation levels (Figure 6). This overall decrease in precipitation could exacerbate challenges related to water scarcity and agricultural productivity, further straining water resources and heightening the risk of drought-induced crop failures. Moreover, the intensification of rainfall events increases the potential for flash floods, posing additional risks to infrastructure, livelihoods, and public safety.

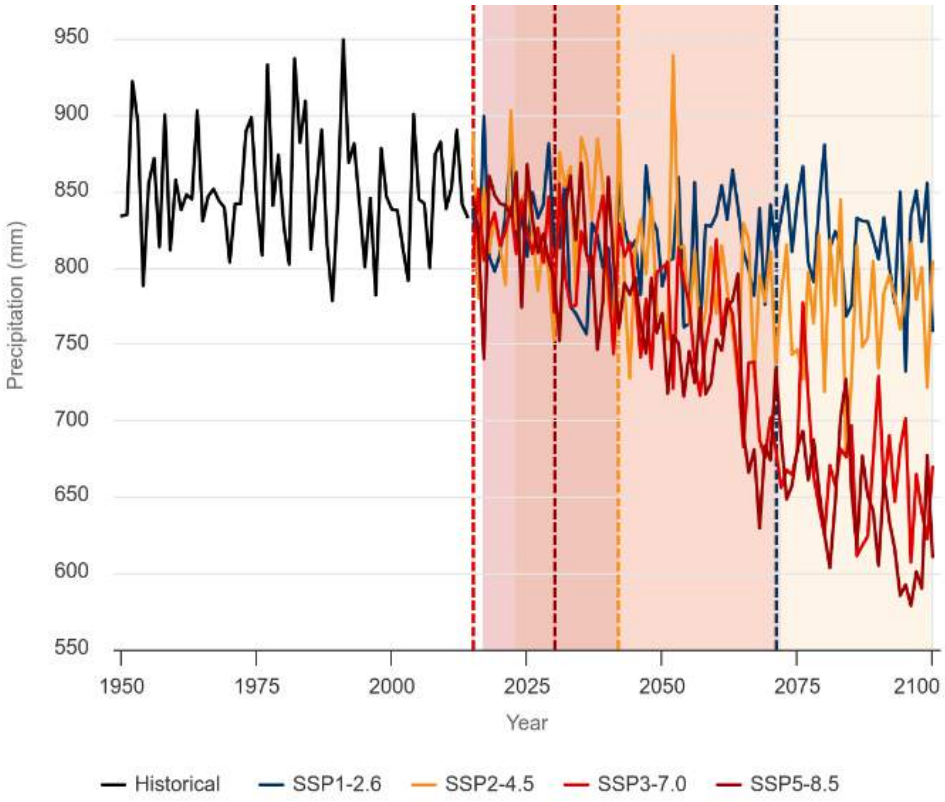


Figure 6: Projected departure from natural variability of precipitation in St. Kitts and Nevis. (Source: World Bank Climate Knowledge Portal)

Furthermore, several studies suggest that increasing evapotranspiration related to global warming leads to an increase in drought severity. This has already been recorded in the last decade. Drier conditions for the entire Caribbean region will more significantly and severely impact the Lesser Antilles. Model projections indicate an overall decrease in annual rainfall in St. Kitts and Nevis, ranging from 3% - 48% during the 21st century, with significant reductions in the wet season from May to November under all scenarios.[8] Also, small to large increases in consecutive dry days are expected. The very low annual rainfall in combination with high evapotranspiration leads to overall drying across all four seasons in the latter half of the century. Such projections raise concerns in the country, as St. Kitts and Nevis is already among the world's top water-stressed countries.

1.2.3. Tropical Cyclones

Tropical cyclones, commonly referred to as hurricanes in the Caribbean, have played a significant role in shaping the history and landscape of the region. Due to its geographical location in the Atlantic hurricane belt, St. Kitts and Nevis experience a high annual frequency of tropical disturbances from June to November. These weather phenomena bring squalls, high wind velocities, heavy rainfall, and the potential for increased costal erosion and flash floods, posing significant threats to the islands' densely populated coastline and economy.

[8] Climate Trends and Projections for the OECS Region, 2021

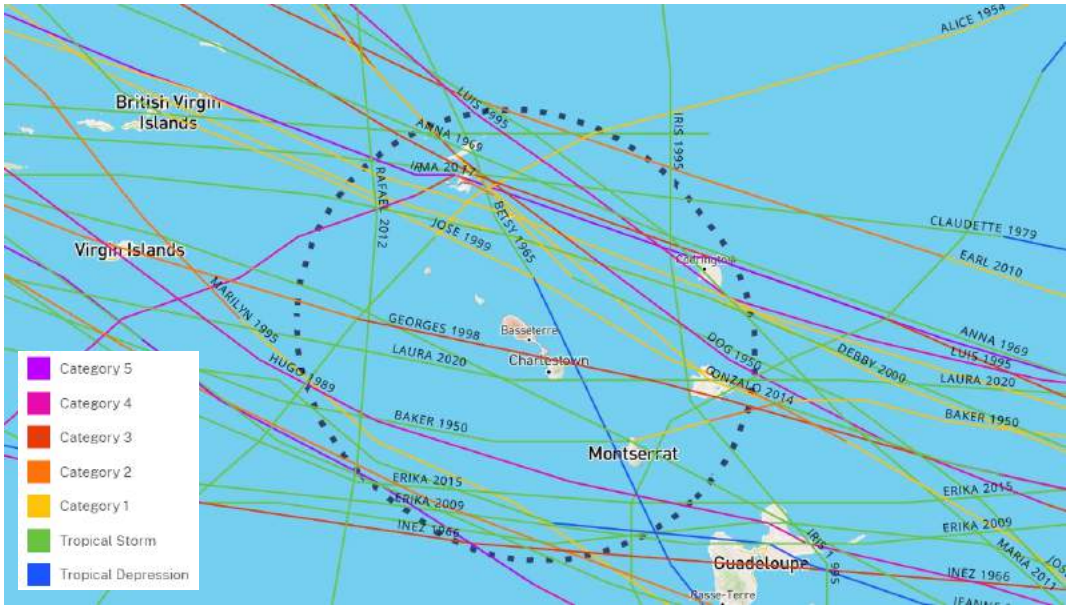


Figure 7: Tropical Cyclone and Hurricane tracks within 60 nautical miles of Saint Kitts and Nevis from 1970 – 2022. (Source: NOAA, Historical Hurricane Tracks)

Over the years, St. Kitts and Nevis have experienced a number of devastating cyclones, with notable events etched into the collective memory of their residents. Historical records document the impacts of powerful storms, such as Hurricane Hugo in 1989, Hurricanes Luis and Marilyn in 1995, Hurricane Georges in 1998 and more recent events like Hurricanes Irma and Maria in 2017 (Figure 7), which inflicted substantial damage to infrastructure and property.[9] Given the islands' heavy reliance on tourism and their densely populated coastal areas, the socio-economic implications of these events were profound. Specifically, the destruction of infrastructure, disruption of tourism activities, and loss of livelihoods following cyclones and hurricanes posed significant challenges to the islands' economic stability and social well-being. Therefore, these events serve as stark reminders of the vulnerability of St. Kitts and Nevis to the destructive forces of nature and underscore the importance of preparedness and resilience-building efforts in the face of future cyclonic threats. Additionally, there has been a notable increase in the number of tropical cyclones passing through the North Atlantic Basin each year as a result of climate change, further highlighting the urgency of enhancing coastal resilience in the region (Figure 8).

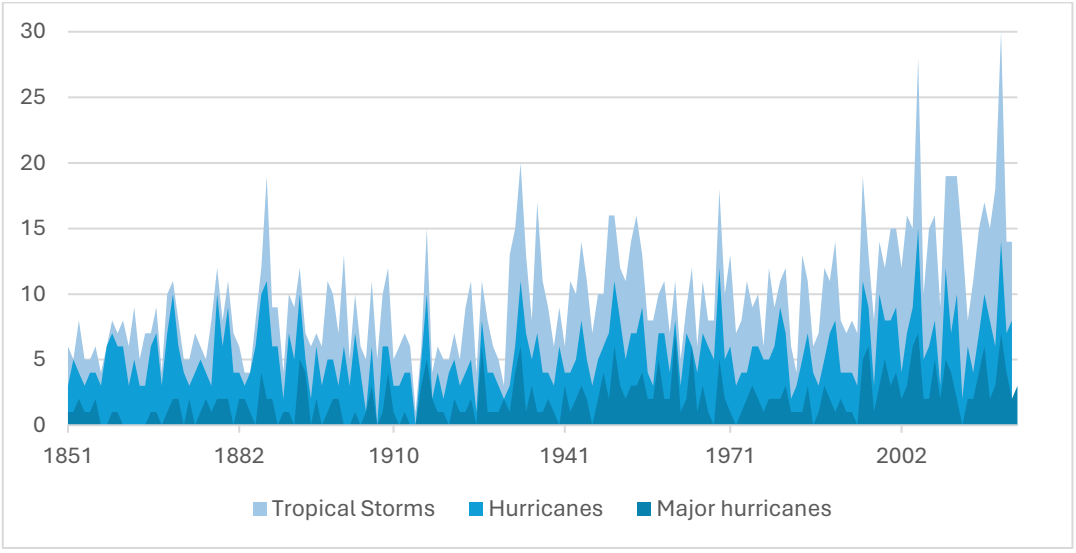


Figure 8: Total Number of Tropical Cyclones, Hurricanes, and Major Hurricanes Passing Through the North Atlantic Basin (1851-2022)

[9] First Biennial Update Report (BUR1) of the Government of St. Kitts and Nevis

Climate projections paint a concerning picture for the future of tropical cyclones in the region. With the continued warming of the Earth's atmosphere and oceans, research suggests further variations in the frequency, intensity, and tracks of hurricanes affecting St. Kitts and Nevis. Models indicate an increase in the number of intense hurricanes, with higher wind speeds and heavier rainfall, posing heightened risks of storm surges, flooding, and coastal erosion.[10] Furthermore, rising sea levels exacerbate the impacts of cyclones, amplifying the threat of inundation to low-lying coastal areas and critical infrastructure. These projections highlight the urgent need for proactive measures to strengthen resilience and adaptive capacities, including improved early warning systems, robust infrastructure investments, and community-based disaster preparedness initiatives.

1.2.4. Sea level rise

Projected sea level rise is a grave concern for Saint Kitts and Nevis and the wider Caribbean region. By 2018, sea levels had already risen by approximately 0.08 meters, leading to the loss of a substantial portion of the country's land area since 1961. By 2032, the World Bank projects sea level rise of between 0.12 and 0.19 meters, increasing to 0.20 to 0.31 meters by 2050 (Figure 9). By the end of the century, projections diverge substantially based on expected greenhouse gas emissions, with the IPCC's intermediate scenario (RCP 4.5) projecting between 0.49 to 0.63 meters of sea level rise.[11]

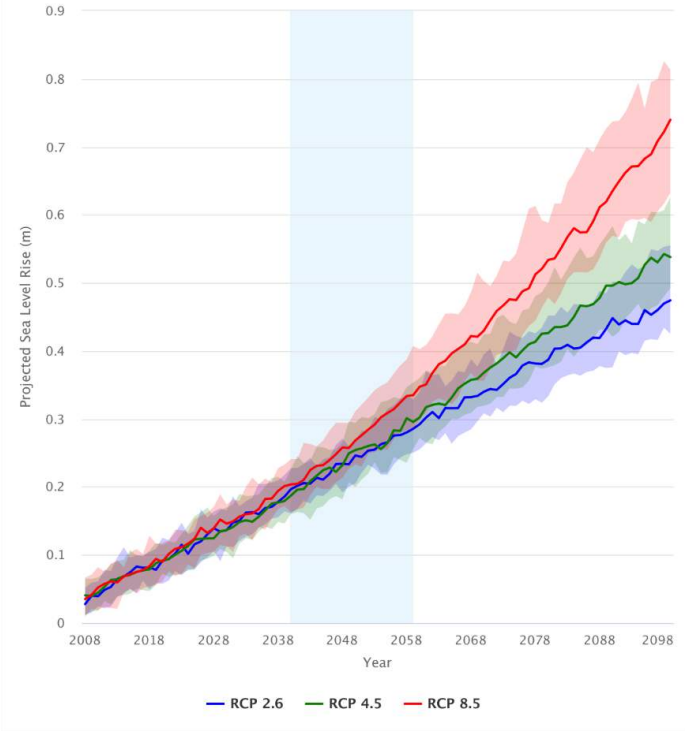


Figure 9: Projected Sea Level Rise along the coast of St. Kitts and Nevis under different scenarios. (Source: World Bank Climate Knowledge Portal)

This anticipated sea level rise is likely to exacerbate the risk of coastal flooding, particularly in areas already at higher risk. Additionally, coastal erosion, already assessed as a medium-high risk, is expected to intensify, posing further threats to infrastructure and coastal communities. Therefore, urgent action is needed to implement adaptive measures, including coastal protection strategies, sustainable land use planning, and the development of resilient infrastructure, to mitigate the impacts of sea level rise and safeguard the future of St. Kitts and Nevis' coastal communities.

Furthermore, the impacts of sea level rise extend beyond the immediate coastal zones, with ripple effects felt across various sectors of the economy and the natural environment. In addition to exacerbating coastal erosion and flooding, higher sea levels can disrupt ecosystems, leading to habitat loss and degradation of critical coastal ecosystems such as mangroves and coral reefs. Such ecological disruptions have far-reaching consequences, affecting fisheries, biodiversity, and the overall resilience of coastal ecosystems. Addressing the challenges posed by sea level rise requires integrated coastal

[10] Climate Trends and Projections for the OECS Region, 2021

[11] Climate Change Knowledge Portal (World Bank), 2024

management strategies, including shoreline protection measures, sustainable land use planning, and efforts to reduce greenhouse gas emissions to mitigate further warming and sea level rise.

1.2.5. Sea Surface Temperature

Sea surface temperatures (SSTs) in the Caribbean are integral to the region's climate and play a vital role in maintaining the health of marine ecosystems. Over the past century, the entire northern tropics, including the wider Caribbean region spanning from 5° to 35°N and 100° to 55°W, have experienced a notable warming trend (Figure 10). Specifically, the SSTs in the Antilles, encompassing the insular countries of the Caribbean (including St. Kitts and Nevis), have shown a slightly higher increase compared to the wider region, with an average rise of approximately 1.32°C per century.[12] This upward trend in SSTs has significant implications for the climate, marine biodiversity, and weather patterns across the Caribbean.

Projections for future SST trends indicate further warming in the region, with potential impacts on hurricane intensities, coral reefs, and other marine ecosystems. Under scenarios representing different levels of CO_2 emissions, future SST trends in the Antilles and the wider Caribbean are expected to range between 0.39 and 2.21°C per century. By mid-century, it is projected that the Caribbean Sea will experience uniformly warm temperatures throughout the year, with SSTs exceeding 28°C across the entire region under higher emissions scenarios. These rising SSTs pose challenges for the resilience of marine ecosystems and coastal communities, as warmer waters can exacerbate coral bleaching events, alter the distribution of marine species, and fuel the intensity of tropical storms and hurricanes.

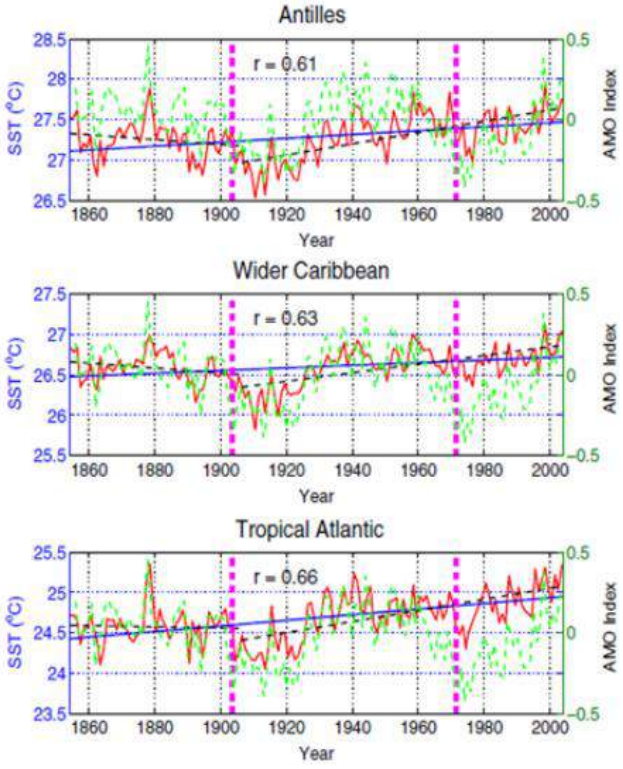


Figure 10: *Annual area average of SST from observations for three tropical north Atlantic regions for the period 1854-2005.*

In the context of St. Kitts and Nevis, these changing SSTs present specific challenges in the near future. The islands' coastal communities rely heavily on marine resources for sustenance and economic livelihoods, including fishing and tourism. Warmer waters can disrupt these ecosystems, leading to declines in fish populations, coral reef degradation, and diminished tourist attractions such as vibrant coral reefs and diverse marine life. In addition, the increased intensity of tropical storms and hurricanes fuelled by warmer SSTs poses heightened risks of coastal erosion, flooding, and infrastructure damage, exacerbating the vulnerability of the small island nation to climate-related disasters. Addressing these

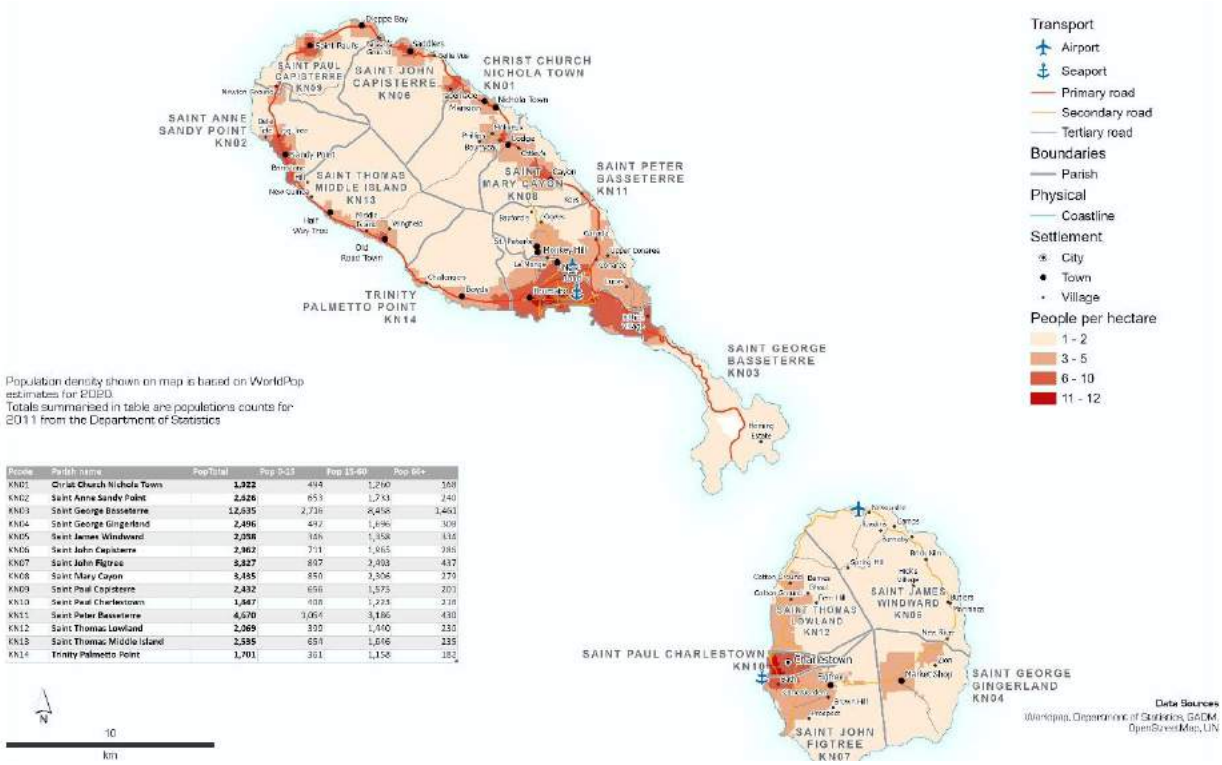
[12] Impacts of Climate Change on Sea Temperature in the Coastal and Marine Environments of Caribbean Small Island Developing States (SIDS)

challenges requires coordinated efforts to enhance marine conservation, strengthen coastal resilience, and adapt to the changing climate in St. Kitts and Nevis.

2. Vulnerability of Coastal Communities and Ecosystems

2.1. Coastal Communities

Coastal communities in Saint Kitts and Nevis, situated at the intersection of human habitation and natural forces, confront a myriad of challenges that stem from their geographical context, socio-economic dynamics, and the escalating impacts of climate change. Nestled along the shores of both islands, these communities find themselves on the front lines of environmental change, facing heightened risks from rising sea levels, coastal erosion, and increasingly frequent and intense extreme weather events. With over 60% of the total population residing in coastal areas, the vulnerability of these communities stands as a critical concern that demands immediate attention and targeted interventions (Figure 11).[13]



Pcode	Parish name	PopTotal	Pop 0-15	Pop 15-60	Pop 60+
KN01	Christ Church Nichola Town	1,822	494	1,260	168
KN02	Saint Anne Sandy Point	2,626	653	1,733	240
KN03	Saint George Basseterre	12,635	2,736	8,438	1,461
KN04	Saint George Gingerland	2,496	647	1,696	309
KN05	Saint James Windward	2,058	586	1,358	414
KN06	Saint John Capisterre	2,362	701	1,965	286
KN07	Saint John Figtree	3,827	897	3,403	437
KN08	Saint Mary Cayon	3,485	850	2,306	279
KN09	Saint Paul Capisterre	2,432	656	1,573	203
KN10	Saint Paul Charlestown	1,447	408	1,223	216
KN11	Saint Peter Basseterre	4,670	1,064	3,186	420
KN12	Saint Thomas Lowland	2,069	800	1,440	230
KN13	Saint Thomas Middle Island	2,585	654	1,696	235
KN14	Trinity Palmetto Point	1,701	361	1,158	182

Figure 11: Population Density map for St. Kitts and Nevis.

Recent data underscores the profound vulnerability of coastal settlements in Saint Kitts and Nevis. These communities, characterized by bustling urban centres, informal housing, and essential infrastructure, are acutely exposed to the perils of climate-related hazards. Basseterre, the capital of and largest city in St. Kitts and Nevis, is home to approximately 14,000 people, constituting about 27% of the country's population.[14] Despite projections indicating that the total population may not experience significant growth, there is an anticipated increase in urban population from 32.9% in 2020 to 45.5% in 2050 (Table 1).[15] Furthermore, the proportion of the workforce employed in vulnerable sectors is expected to rise significantly over time. With these increases, the number of individuals at risk is likely to rise, necessitating concerted efforts to address the challenges posed by urbanization and coastal vulnerability in tandem. Specifically, the encroachment of rising sea levels and the menace of coastal

[13] Updated Nationally Determined Contribution for St. Christopher and Nevis, 2021

[14] Urban Resilience Plan for Greater Basseterre, 2022

[15] First Biennial Update Report (BUR1) of the Government of St. Kitts and Nevis

flooding and erosion loom large, posing imminent threats to housing security, public health, and economic stability. The repercussions of such environmental pressures reverberate deeply, amplifying social disparities and exacerbating the vulnerability of marginalized groups within these coastal enclaves. Moreover, the reliance of coastal communities on marine and coastal resources for sustenance further heightens their susceptibility to environmental degradation and habitat loss, with the degradation of coral reefs and coastal ecosystems jeopardizing the very foundations of livelihoods dependent on fisheries, tourism, and agriculture.

Year	*Population*	*Yearly Change (%)*	*Yearly Change*	*Density (P/Km²)*	*Urban Population*	*Urban Population*
2020	53190	0.77	399	205	32.9	17523
2025	54740	0.57	308	211	33.8	18481
2030	55830	0.4	218	215	35.2	19645
2035	56490	0.23	132	217	37.2	21042
2040	56730	0.08	48	218	39.9	22617
2045	56610	-0.04	-24	218	42.6	24135
2050	56160	-0.16	-90	216	45.5	25561

Table 1: *Projected Changes in Urban Dynamics in St. Kitts and Nevis: 2020-2050.*

Beyond environmental stressors, the vulnerability of coastal communities is compounded by socio-economic inequities which exacerbate the challenges they face in adapting to the impacts of climate change. Poverty, unemployment, inadequate access to healthcare and education, and deficiencies in basic infrastructure deepen the vulnerabilities of coastal residents, impeding their capacity to withstand and recover from climate-related disasters. Vulnerable groups, including women, children, the elderly, and persons with disabilities, bear the brunt of these challenges, grappling with heightened risks of displacement, food insecurity, and loss of income. Historically, the absence of comprehensive risk assessment and early warning systems has left coastal communities vulnerable to the capricious nature of climate hazards, underscoring the urgent imperative for proactive measures and community-driven resilience strategies. Nonetheless, in recent years the government of St. Kitts and Nevis has demonstrated a proactive stance in assessing the nation's vulnerability to climate change impacts. Several projects have been undertaken to evaluate coastal vulnerability, such as the Assessment of the Economic Impact of Climate Change on the Coastal and Marine Sector in the Saint Kitts and Nevis[16], the Multi-hazard Risk Assessment for St. Kitts and Nevis[17], the Climate and Ocean Risk Vulnerability Index (CORVI) Project[18], and the Report of the vulnerability and capacity assessments in coastal and fishing communities in Saint Kitts and Nevis[19]. These comprehensive reports have not only provided crucial insights but have also spurred tangible actions on the ground. Initiatives such as the Rehabilitation of Old Road Bay Road (Figure 12), the Coastal Erosion Mitigation Project at South Frigate and Friars Bay, the Rehabilitation of Old Road Fisheries Complex, and the Construction of Coastal Area Revetments in Irishtown, Fortlands and New Guinea, underscore the government's commitment to addressing urgent coastal concerns.

[16] https://www.cepal.org/en/publications/38607-assessment-economic-impact-climate-change-coastal-and-marine-sector-saint-kitts

[17] https://ceac.preview.com.jm/projects/st-kitts-multi-hazard-risk-assessment/

[18] https://www.stimson.org/2022/corvi-risk-profile-basseterre-st-kitts-and nevis/#:~:text=https%3A%2F%2Fwww.statista.com,to%200.20%20to%200.31%20meters.

[19] https://canari.org/wp-content/uploads/2022/08/CC4FISH-St-Kitts-Nevis-VCA-Report.pdf

Figure 12: *A.) Damaged main road in Old Road Bay after the passage of Hurricane Maria in 2017, B.) Repaired Road in Old Road Bay in 2021, showcasing post-disaster recovery efforts.*

These initiatives signify significant strides toward bolstering coastal resilience and mitigating vulnerability to climate-related hazards in St. Kitts and Nevis. Through meticulous risk assessments and targeted interventions, the government endeavours to shield coastal communities, critical infrastructure, and natural resources from the adverse impacts of climate change. Additionally, these endeavours underscore the imperative of integrating climate adaptation measures into national development strategies and fostering collaborative partnerships among stakeholders to ensure sustainable and inclusive outcomes for all segments of society. Nevertheless, despite these interventions, additional financial support is indispensable to mount a more comprehensive response to the prevailing challenges. Thus, it is only through sustained investment in adaptation strategies and community-driven resilience-building initiatives that St. Kitts and Nevis can effectively confront the risks posed by climate change and pave the way for a more resilient and sustainable future for its populace.

2.2. Coastal Ecosystems

Coastal and marine ecosystems in St. Kitts and Nevis are integral for the sustainable development of the nation, particularly in supporting the tourism and fisheries sectors. However, these ecosystems face significant risks from climate change, including sea level rise, extreme weather events, and storm surges, as well as the compounding effects of increased sea surface temperatures leading to coral bleaching, ocean acidification, and sargassum influx. Such impacts threaten the health and resilience of these ecosystems, with potentially far-reaching consequences for biodiversity, ecosystem services, and the livelihoods of coastal communities. The Climate and Ocean Risk Vulnerability Index (CORVI) conducted for Basseterre underscores the heightened ecological risk faced by coastal communities.[20] It highlights declining coverage and health of key coastal ecosystems, including mangroves, coastal sand dunes, coral reefs, and seagrasses. The medium-high risk score for the rate of occurrence of harmful algal blooms further accentuates additional risks to the ecosystem. These findings emphasize the urgent need for targeted interventions and adaptive strategies to safeguard coastal ecosystems and the invaluable services they provide. Moreover, it underscores the necessity for proactive measures to mitigate the impacts of climate change and enhance the resilience of coastal communities in St. Kitts and Nevis.

Model projections, such as those from the Hadley Centre coupled model (HadCM2), suggest a concerning outlook for the future productivity of coastal and marine ecosystems in St. Kitts and Nevis. These projections indicate a potential decrease in productivity across various key ecosystems, including coral reefs, fisheries, and wetlands. Such declines could have far-reaching consequences, particularly concerning food supply and associated livelihoods, as they are driven by factors such as declining nearshore and deepwater fish stocks and the diminishing benefits from unsustainable fishing practices. The absence of seagrass in seafloor areas renders them more vulnerable to wave action from currents and storms, leading to increased coastal erosion. Seagrasses play a crucial role in stabilizing substrates, akin to land grasses preventing soil erosion on land, and their decline could exacerbate the loss of coastal landmass. Additionally, a report from the Food and Agriculture Organization (FAO) highlights that severe coastal erosion from storm surges and strong ocean currents are a key issue leading to siltation of and the decline in the health of the adjacent coral reefs. These unique coral reef ecosystems serve as a key resource for local fishing communities and also stabilise the coastlines of both islands. Therefore, the interconnected web of ecological degradation underscores the urgent need for proactive measures to mitigate the impacts of climate change and safeguard the sustainability of coastal and marine ecosystems in St. Kitts and Nevis. Efforts to promote sustainable fishing practices, enhance marine conservation, and implement coastal protection measures are imperative to address these emerging challenges and ensure the resilience and viability of coastal communities in the face of ongoing environmental changes. Furthermore, changing ecosystems are expected to impact marine species populations, with vulnerable and endangered coastal and marine species facing heightened risks due to habitat loss. Invasive species such as the Lionfish (Pterois spp.) and halophila stiplacea have proliferated in response to changing environmental conditions, further altering ecosystem dynamics. With majority of the population residing in coastal areas, the threats to coastal ecosystems directly affect the well-being and livelihoods of a significant portion of the island's population. By 2050, estimated losses from the effect of SLR and coral reef decline on coastal lands is projected to amount to between USD 832 – 1 026.4 million.[21] Therefore, urgent action is needed to protect and restore coastal and marine ecosystems in St. Kitts and Nevis, safeguarding their invaluable ecological services and ensuring the resilience of both ecosystems and communities in the face of climate change.

In response to current challenges, the government of St. Kitts and Nevis is already in the process of implementing a statutory marine zoning framework, which can be viewed as a solid foundation from which to develop a more comprehensive approach to the management of coastal and marine environments. From this plan, approximate coastal zones could already be identified and key hot spots resulting from human interaction with the natural environment mapped (Figure 13). However, further work needs to be conducted to enhance the country's understanding of coastal and marine climate vulnerabilities. This includes comprehensive mapping efforts to identify areas of environmental

[20] https://www.stimson.org/2022/corvi-risk-profile-basseterre-st-kitts-and-nevis/#:~:text=https%3A%2F%2Fwww.statista.com,to%200.20%20to%200.31%20meters.

[21] Report of the vulnerability and capacity assessments in coastal and fishing communities in Saint Kitts and Nevis

sensitivity and potential growth, taking into account the impacts of climate change.[22] For example, the update of coastal zone and marine habitats should encompass a benthic survey of both coastlines.

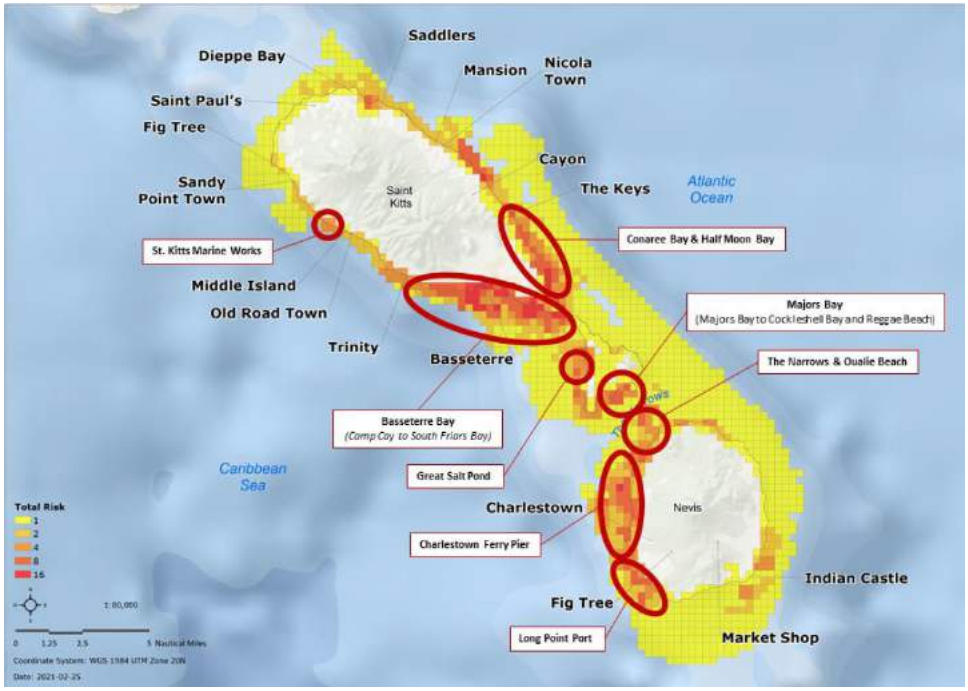


Figure 13: Key hot spots in St. Kitts and Nevis of human interaction with the natural environment.

Currently, there is limited data on the condition of the coastline, particularly with respect to nearshore and onshore activities. By conducting a thorough benthic survey, the country can establish a baseline dataset for comparative analysis with data collected through regular monitoring. This baseline data will serve as a valuable tool for informing regulatory policies and monitoring decisions related to coastal activities, ultimately contributing to more effective management and protection of coastal resources. There is also a need to focus on zoning and management to build the resilience of coastal and marine ecosystems and associated livelihoods to climate change disasters. Although substantive work has already been done, delineation of coastal zones (Figure 14) needs to be updated using pre-defined criteria and characteristics associated with habitat type and geography, biodiversity, climate vulnerabilities, and economic and social activity (industrial, tourism-related, fishing and agricultural activities as well as residential areas).

Moreover, the application of the Ecosystem-Based Management - Driver, Pressure, State, Ecosystem, Response (EBM-DPSER) analytical framework, specifically designed for the Caribbean region, needs to be increasingly utilized to better understand the complex relationships within our marine environment. By leveraging this analytical framework, the country can gain deeper insights into the drivers and pressures affecting coastal and marine ecosystems, as well as their current state and potential responses to management interventions. This will enable more informed decision-making and improved management practices, ultimately enhancing the government's ability to address the challenges posed by climate change and promote the resilience of our coastal and marine environments.

Although the government of St. Kitts and Nevis has proposed and passed several plans and projects for strengthening climate resilience, a lack of funding and inadequate technical and human resources have hindered effective implementation. Addressing these challenges will position local decision-makers well to provide leadership on climate change, mitigate the threats posed by climate and ocean risks and build a resilient and sustainable future.

[22] Assessment of the Economic Impact of Climate Change on the Coastal and Marine Sector in the Saint Kitts and Nevis

Figure 14: Marine zoning in the Nearshore Coastal Area.

3. Project Rationale and Justification

The rationale for undertaking comprehensive climate adaptation measures in Saint Kitts and Nevis is rooted in the imperative to safeguard lives, protect livelihoods, and preserve the islands' natural and cultural heritage in the face of escalating climate change impacts. The vulnerability of coastal communities underscores the urgent need for proactive interventions aimed at enhancing resilience, reducing risks, and fostering sustainable development pathways. By addressing the root causes of vulnerability and building adaptive capacities, this project seeks to mitigate the adverse effects of climate change while promoting inclusive and sustainable development for all inhabitants of Saint Kitts and Nevis.

The justification for prioritizing this project over others in the region lies in the unique socio-economic and environmental context of Saint Kitts and Nevis, coupled with the pressing need to address climate change impacts in a holistic and integrated manner. The islands' small size limited natural resources, and dependence on vulnerable coastal ecosystems render them particularly susceptible to the impacts of sea-level rise, coastal erosion, and extreme weather events. Furthermore, the socio-economic disparities and institutional constraints facing coastal communities exacerbate their vulnerability, underscoring the urgency of targeted interventions to build resilience and enhance adaptive capacities.

Moreover, investing in climate adaptation in Saint Kitts and Nevis aligns with international commitments to address climate change and advance the Sustainable Development Goals (SDGs). By integrating climate adaptation into national development planning, Saint Kitts and Nevis can strengthen its resilience to climate change impacts, reduce disaster risks, and promote sustainable development outcomes. Furthermore, by demonstrating leadership and innovation in climate adaptation, Saint Kitts and Nevis can serve as a model for other small island developing states (SIDS) facing similar challenges, showcasing best practices and lessons learned that can inform global efforts to build climate resilience and achieve sustainable development in the face of a changing climate.

4. Barriers and Root Causes Addressed by the Project

4.1 . Regulatory Barriers: Blue Economy Consistent Plans, Policies and Regulations

As stated in several policy documents, such as the Management Plan for St. Kitts and Nevis Marine Management Area, the regulatory and political framework in St. Kitts and Nevis (SKN) lacks a consequent mainstreaming of coastal zone management into policies and regulations as well as the sufficient promotion of a Blue Economy and ecosystem-based adaptation (EBA) approach. Activities that support coastal zone management and strengthen the resilience of coastal areas require comprehensive and complementary strategies, plans, and regulations. In this regard, the regulatory framework requires the update and revision of several policies as well as lacks key strategies, such as a Blue Economy strategy and action plan, a strategic approach to coastal erosion and siltation, and an integrated coastal zone management policy.

4.2. Institutional Barriers: Capacities and Coordination

The barrier analysis showed that coordination and capacity for coastal zone management are limited among government agencies. The limited alignment of Blue and Green Economy approaches, including the lack of needed shared resources at the ministerial and department level, hinders the effective integration of climate change, ecosystem-based adaptation, and disaster risk reduction considerations into legislation, regulations, and policies. Moreover, according to the country's recently updated Nationally Determined Contributions (NDC), less than 50% of the adaptation actions identified in key parts for coastal resilience of the National Climate Change Adaptation Strategy have been integrated into annual operational plans or have been implemented. Despite financial shortcomings, this is also due to a lack of human resources to implement identified adaptation actions and a lack of a dedicated management regime that regulates and monitors activities and enforces rules and regulations. Particularly the Department of Environment in St. Kitts and the Department of Physical Planning and Environment in Nevis lack adequate capacities to track the results of implemented adaptation measures.

4.3. Technological Barriers: Data management and Monitoring

The backbone of a sufficient policy environment and enforcement are data availability and analysis. SKN has limited data to gain a clear understanding of the impacts of climate change and potential adaptation strategies and lacks a database to strengthen mapping mechanisms for coastal vulnerabilities. The Government of St. Kitts and Nevis (GovSKN) further needs to enhance the linkage of national data collection with regional platforms, like the Biodiversity and Protected Areas Management Regional Information System to enhance data and information availability. On top of that, the country lacks comprehensive systems to monitor national ecosystems and climate impacts, e.g. regarding drinking water, beach erosion, and post-storm monitoring.

4.4. Financial Barriers: Planning Tools and Concessional Finance

For adequately addressing the vulnerabilities outlined previously, SKN lacks the financial resources to implement adaptation actions. For mobilizing capital for climate action, including the engagement of the private sector and alignment of private and public sector resources, SKN lacks structured investment planning tools. In this regard, missing financial instruments, the lack of information on the risk of climate change as well as missing data and rank mechanisms of sustainable investments, hinder the implementation of coastal protection measures and the financing of physical infrastructure. New funding structures, including concessional finance to reduce the risk of investments, and innovative collaborative partnerships are key for the country to finance adaptation measures.

4.4. Social Barriers: Lack of Awareness and Engagement

Communication and awareness about vulnerabilities, needs and approaches of coastal zone management are key to enhancing the effectiveness of adaptation measures. The country lacks the engagement of key stakeholders for coastal zone management, including Blue Economy and ecosystem-based adaptation solutions. Furthermore, the public lack of awareness and access to insurance and other disaster risk reduction measures. Furthermore, education and awareness of

coastal communities, especially of poorer communities who depend on ecosystem services for sustenance and livelihood is insufficient. Moreover, while GovSKN has an Early Warning System for disaster risk management in place, a sufficient notification system for the public is missing.

5. Project Objectives

List the main objectives of the project.

Considering the climate change-related challenges and vulnerabilities that St. Kitts and Nevis is facing, the CARI-SKN objective is to **create a coastal zone management framework in St. Kitts and Nevis that enables financing of critical coastal resilient infrastructure and coastal ecosystem protection measures.** This shall be achieved by removing key barriers that impede the structured identification, planning, financing, and implementation of needed coastal resilience infrastructure. Such coastal adaptation measures shall be well integrated into national legislation and in line with concepts such as the blue economy, ecosystem-based adaptation, and ridge-to-reef.

To comprehensively remove barriers, create an enabling policy environment for coastal resilience measures, and address key coastal climate vulnerabilities, the CARI-SKN project comprises four components:

- **Component 1** implements activities that strengthen the regulatory and political framework for integrated coastal zone management, through building capacities among government agencies, enhancing intergovernmental coordination and stakeholder dialogues, and mainstreaming coastal zone management into legislation.

- **Component 2** then strengthens data management and monitoring systems by establishing comprehensive mapping and monitoring of coastal vulnerabilities as well as the analysis of coastal adaptation and climate resilience needs.

- **Component 3** builds on the results of Component 1+2 and effectively i) operationalises the work of the Coastal Zone Management Committee and ii) implements a priority coastal resilient infrastructure and coastal ecosystem protection project intervention.

- **Component 4** establishes a sustainable financing mechanism, namely the Coastal Resilience Fund, to support the maintenance and potential financing of coastal resilience measures, thereby enhancing the long-term resilience of coastal communities.

Through its four components, the project will strengthen regulatory frameworks, enhance data management and monitoring systems, and implement priority interventions to bolster coastal resilience. By fostering collaboration among government agencies, stakeholders, and communities, the CARI-SKN project strives to build a resilient coastal zone that safeguards both natural ecosystems and human livelihoods against the impacts of climate change.

6. Project Components and Financing

Fill in the table presenting the relationships among project components, activities, expected concrete outputs, and the corresponding budgets. If necessary, please refer to the attached instructions for a detailed description of each term.

Project Components	Expected Concrete Outputs	Expected Outcomes	Amount (US$)
1. Strengthening the regulatory and political framework for integrated coastal zone management.	1.1: Relevant policies are revised and updated to integrate a coastal adaptation and needed strategies and plans specific to coastal zone management are developed, ready for implementation 1.2: A dedicated Coastal Zone Management Committee is established and operational 1.3: Capacities of and coordination among government agencies and coastal communities are enhanced	Government bodies strengthened their capacities regarding blue economy and ecosystem-based adaptation approaches and intergovernmental coordination and stakeholder dialogue are enhanced to mainstream coastal zone management into legislation and ensure effective enforcement of policies and regulations.	$975,000.00
2. Strengthening data management and monitoring systems	2.1: Coastal zones, marine-habitats, and adaptation needs are mapped. 2.2: Continuous data collection, processing, and management is established and strengthened. 2.3: Monitoring systems for beaches and coastal ecosystems are implemented and strengthened and existing Early Warnings Systems are enhanced.	Comprehensive mapping and monitoring of coastal vulnerabilities as well as the analysis of coastal adaptation and climate resilience needs is strengthened to enable identification and planning of project interventions.	$ 1,000,000.00
3. Strengthening of coastal resilient infrastructure and coastal ecosystem protection measures.	3.1: A coastal project implementation toolbox is developed to support structured, effective project implementation with sustainable impacts and meaningful up-scaling potential. 33.2: Priority actions for bolstering coastal resilience are undertaken 3.3: Lessons learned from project interventions collected and provided on dissemination platform.	Priority coastal adaptation measures to enhance the protection and rehabilitation of coastal ecosystems as well as the resilience of coastal infrastructure are implemented, while the institutional mechanism is operationalized to ensure the scale-up potential.	$5,950,000.00

4. Financing mechanism for the maintenance (and potential financing) of coastal resilience measures is established	4.1: Develop a national 'payment for coastal resilience' (PCR) strategy and act, including a prioritization system for allocation of resources and monitoring framework. 4.2: Set-up of 'Coastal Resilience Fund' under the Ministry of Finance (GovSKN), which manages and allocates revenues from taxes under the PCR act. 4.3: Develop a PCR communication strategy, including regional and local communication, and tourism-tailored communication.	The establishment of a sustainable financing mechanism, namely the Coastal Resilience Fund, to support the maintenance and potential financing of coastal resilience measures, thereby enhancing the long-term resilience of coastal communities.	$400,000.00
6. Project Execution cost			$825,000.00
7. Total Project Cost			$9,150,000.00
8. Project Cycle Management Fee charged by the Implementing Entity (if applicable)			$850,000.00
Amount of Financing Requested			$10,00,000.00

Projected Calendar

Milestones	Expected Dates
Start of Project Implementation	March 2025
Mid-term Review (if planned)	August 2027
Project Closing	January 2030
Terminal Evaluation	December 2030

PART II: PROJECT/PROGRAMME JUSTIFICATION

I. Describe the project components, particularly focusing on the concrete adaptation activities of the project, and how these activities contribute to climate resilience.

Component 1: Strengthening the regulatory, legislative, and political framework for integrated coastal zone management.

This component represents the core of the Technical Assistance (TA) provided by the CARI-SKN project, with the primary objective of enhancing the political and regulatory framework for integrated coastal zone management. It seeks to achieve this by integrating coastal zone management principles, alongside concepts such as the blue economy and ecosystem-based adaptation, into the legislative framework of St. Kitts and Nevis. To overcome regulatory barriers, the component focuses on revising, updating, and developing policies, strategies, and plans that embrace coastal zone management and blue economy approaches. Moreover, it directly addresses institutional barriers by facilitating workshops, dialogues, and establishing a dedicated coastal zone management committee tasked with pivotal responsibilities. This component also seeks to tackle social barriers by enhancing awareness, knowledge, and engagement among stakeholders through targeted workshops tailored to specific stakeholder groups. Through these initiatives, *Component 1* leads to the following Outcome:

Outcome 1: Government bodies strengthened their capacities regarding coastal zone management and inter-ministerial coordination and stakeholder dialogues are enhanced to mainstream coastal zone management into legislation and ensure effective enforcement of policies and regulations.

Outcome 1 will be achieved through the following Outputs and Activities:

Output 1.1: Relevant policies and the requisite strategies and action plans are formulated and/or revised/updated to integrate a coastal zone management approach.

- Activity 1.1.1: Develop the following plans and strategies to strengthen coastal protection: (i) a management plan for coral reefs; (ii) a management plan for invasive species including an invasive species pathway assessment;[23] (iii) a marine pollution strategy and action plan, including solid waste, industry point sources, pollution from ports, sewage effluent, non-point source pollutants; (iv) a Blue Economy Strategy and Action Plan; (v) a Strategy on Coastal Erosion and Siltation, including a shoreline management plan; (vi) an Integrated Coastal Zone Management Policy, that includes a coordinating mechanism for linkages between land and marine planning, (vii) a phase out strategy for beach and sand mining.
- Activity 1.1.2: Revise and update the following policies through a marine zoning and coastal adaptation lens: (i) the National Conservation and Environmental Protection Act[24]; (ii) the Aquaculture and Marine Resources Act; (iii) the Fisheries & Aquaculture Policy & Action Plan; (iv) the Draft National Fisheries Management Plan; the (v) Protected Areas System Plan (in line with the Coastal Master & Marine Spatial Plan 2020-2035); the (vi) Coastal Access and Beach Management Strategy; and (vii) the Nevis Zoning Plan Map.

Output 1.2: A dedicated Coastal Zone Management Committee is established and operational.

- Activity 1.2.1: Conduct a capacity needs assessment for the envisaged Coastal Zone Management Committee.

[23] Aligned with the ongoing Invasive Species Pathway project (through the Department of Environment).

[24] The Act includes the preparation of a coastal zone management plan.

- Activity 1.2.2: Based on the Integrated Coastal Zone Management Policy, develop an Integrated Coastal Zone Management Strategy and Action Plan that establishes the implementation plan for a dedicated Coastal Zone Management Committee.[25]
- Activity 1.2.3: Establish a technical Coastal Zone Management Committee and equip the Committee with mandate, Terms of Reference, and support its operation by a responsible Secretariat (see Output 3.1). The Committee will bring together key line ministries, civil society, further relevant Blue and Green Economy-based entities,[26] amongst others. During the AF project lifetime, the activities of the Committee will be borne by the Project Steering Committee (PSC).
- Activity 1.2.4: Build the technical and organisational capacity of the Coastal Zone Management Committee based on the needs assessment.

Output 1.3: Capacities of and coordination among government agencies and coastal communities are enhanced.

- Activity 1.3.1: Conduct an Integrated Coastal Zone Management awareness and capacity development programme with government departments, civil society and NGOs, Fisher Organisations, Coastal Communities, the private sector, and research facilities.
- Activity 1.3.2: Enhance the capacities of the Department of Environment and the Department of Physical Planning in St. Kitts and the Department of Physical Planning and Environment in Nevis to track the results of adaptation measures that have been implemented.

Component 2: Strengthening data management and monitoring systems.

This component significantly contributes to the country's capacity for adaptation planning as well as reacting to extreme climate events that threaten livelihoods and the country's natural environment. Data, information, and monitoring regarding coastal and marine habitats and related climate impacts are vital to strengthening effective decision-making as well as adaptation analysis and planning. These issues will be addressed through comprehensive habitat mapping, strengthened data processing, and installation of monitoring systems for beaches and coastal ecosystems. *Component 2* also addresses directly the prevailing technological barrier of limited mapping of coastal vulnerabilities, limited data management systems, and insufficient monitoring systems. While creating a basis for data availability and mapping, the component also establishes monitoring and vulnerability analysis tools that enable the country to manage data and information sufficiently in the long term. Furthermore, this component also addresses the lack of public communication by enhancing the availability of information and establishing an adequate notification system in case of climate disasters. Through the described interventions, *Component 2* will lead to the following Outcome:

Outcome 2*:* Comprehensive mapping and monitoring of coastal vulnerabilities as well as the analysis of coastal adaptation and climate resilience needs is strengthened to enable identification and planning of project interventions.

Outcome 2 will be achieved through the following Outputs and Activities:

Output 2.1: Climate and Ocean Risk Vulnerability Index (CORVI) updated.

- Activity 2.1.1: Update existing maps and model coastal assets to support adaptation planning.
- Activity 2.1.2: Update coastal vulnerability assessment of coastal management zones, based on activity 2.1.1 and aligned with existing/planned climate vulnerability assessment.
- Activity 2.1.3: Utilize deliverables from activities 2.1.1 and 2.1.2 to further develop the Climate and Ocean Risk Vulnerability Index (CORVI) for St. Kitts and Nevis.

[25] In alignment with the scope of activities of the National Conservation Trust Fund.

[26] Discussions are ongoing in the country, weather to establish a dedicated unit to the field of coastal zone management. The Coastal Zone Management Committee established through the CARI-SKN project will take over all required responsibilities as of this project and might serve as a basis for the establishment of a Coastal Zone Management Unit in the medium term, as needed.

Output 2.2: Improved coastal monitoring and data management systems to support Integrated Coastal Zone Management.

- Activity 2.2.1: Standardize methods of data collection, introduce a continuous data collection approach, and enhance database management, including an online database and dissemination plan to stakeholders.
- Activity 2.2.2: Implement the following coastal zone monitoring programmes with required equipment:[27] (i) Beach monitoring system,[28] including water quality, seasonal and post-storm erosion; (ii) Coastal ecosystems monitoring system, including reefs, silt, sand and sargassum weed, mangroves, and sea surface temperatures.
- Activity 2.2.3: Strengthen the coastal hazard (flood, tsunami, etc.) early warning system by establishing an effective disaster risk mass notification system.

Component 3: Strengthening coastal resilience and enhancing the protection and rehabilitation of coastal ecosystems.

This component operationalizes the work of the Coastal Zone Management Committee by delivering various activities carried out through the Secretariat. In this way, the long-term sustainability of the CARI-SKN project intervention (and future coastal projects) beyond AF's engagement can be ensured. Furthermore, and at the core of the CARI-SKN project, this component implements priority project interventions that are targeted at enhancing the resilience of ecosystems and infrastructure in respective coastal zone management areas, in St. Kitts and in Nevis. These project interventions will be monitored, and respective lessons learned will help to inform future national and regional projects, as well as to ease the identification and prioritization of future projects. Successful implementation of Component 3 leads to the following Outcome:

Outcome 3: Priority coastal adaptation measures to enhance the protection and rehabilitation of coastal ecosystems (and blue economy) as well as the resilience of coastal infrastructure are implemented.

Outcome 3 will be achieved through the following Outputs and Activities*:*

Output 3.1: A coastal project implementation toolbox is developed to support structured, effective project implementation with sustainable impacts and meaningful up-scaling potential.

- Activity 3.1.1: Develop a coastal project implementation toolbox, that involves modules such as project steering structures, financing models, stakeholder engagement approaches, project identification and preparation tools, as well as provisions for elaborating feasibility studies, planning, and a monitoring and evaluation (M&E) framework for coastal management measures (incl. impact and performance indicators).
- Activity 3.1.2: Develop a systematic framework or criteria for prioritizing coastal projects based on factors such as vulnerability assessments, potential impact on communities and ecosystems, cost-effectiveness, alignment with national or regional priorities, and feasibility of implementation.
- Activity 3.1.3: Develop training programs and capacity-building workshops to familiarize relevant stakeholders with the coastal project implementation toolbox, ensuring its proper utilization and maximizing its impact.
- Activity 3.1.4: Establish mechanisms for continuous updating and improvement of the coastal project implementation toolbox to adapt to evolving project needs, emerging challenges, and advancements in best practices and technologies.

Output 3.2: Priority actions for bolstering coastal resilience are undertaken.

[27] One prevailing constraint to monitoring programmes in the country is the lack of adequate monitoring equipment
[28] Examples of technical solutions could be the Aquatic Barrier Prioritization app (online: https://coastalres.wpengine.com/project/aquatic-barrier-prioritization/), or the Marsh Explorer app (online: https://coastalres.wpengine.com/project/marsh-explorer/).

- Activity 3.2.1: Develop engineering designs for comprehensive coastal management solutions encompassing shoreline stabilization techniques, coral reef restoration initiatives, and erosion mitigation strategies, prioritizing ecosystem-based approaches where feasible.
- Activity 3.2.2: Deploy comprehensive measures for the prevention of beach erosion, encompassing shoreline stabilization techniques, vegetative buffers, and engineering solutions tailored to local conditions.
- Activity 3.2.3: Execute targeted initiatives for the restoration of coral reefs, employing coral transplantation, artificial reef structures, and habitat enhancement to enhance ecosystem health and biodiversity.
- Activity 3.2.4: Conduct shoreline management and restoration activities to mitigate erosion and preserve coastal habitats, including the establishment of vegetation buffers, sand replenishment, and infrastructure improvements to stabilize vulnerable areas.

Output 3.3: Lessons learned from project interventions collected and provided on dissemination platform.

- Activity 3.3.1: Compile comprehensive project documentation, including best practices, challenges encountered, and effective strategies employed, to develop a practical guide or toolkit for stakeholders interested in implementing similar coastal resilience projects, thereby facilitating knowledge transfer and supporting the successful replication of similar initiatives.
- Activity 3.3.2: Establish a user-friendly web-based platform for transparently disseminating project progress and outcomes to the public.
- Activity 3.3.3: Facilitate interactive workshops with stakeholders, including coastal communities, to promote awareness of project impacts and foster active participation in coastal zone management initiatives.

Component 4: Financing mechanism for the maintenance of coastal resilience measures is established.

This component is designed to create a lasting financial framework that bolsters coastal resilience initiatives in Saint Kitts and Nevis. By engaging stakeholders extensively and crafting legislative frameworks, a comprehensive 'payment for coastal resilience' (PCR) strategy and act will be established, ensuring efficient resource allocation and robust progress monitoring. Additionally, the establishment of a 'Coastal Resilience Fund,' overseen by the Ministry of Finance, will introduce transparent fund management practices and foster collaboration with financial institutions, thereby adhering to regulatory standards. Complementing these endeavours, a targeted communication strategy will be deployed to amplify awareness of the PCR strategy, facilitate knowledge exchange, and catalyse the replication of successful models throughout the region.

Outcome 4: A sustainable financing mechanism is established, namely the Coastal Resilience Fund, to support the maintenance and potential financing of coastal resilience measures, thereby enhancing the long-term resilience of coastal communities.

Outcome 4 will be achieved through the following Outputs and Activities:

Output 4.1: Develop a national 'payment for coastal resilience' (PCR) strategy and act, including a prioritization system for allocation of resources and monitoring framework.

- Activity 4.1.1: Engage key stakeholders, including government agencies, coastal communities, and relevant experts, in workshops and consultations to gather input for the PCR strategy and act.
- Activity 4.1.2: Draft the PCR strategy and act, incorporating input from stakeholders and aligning with national development goals and climate resilience priorities.
- Activity 4.1.3: Establish a monitoring framework to track the implementation and effectiveness of the PCR strategy, including indicators to measure progress towards resilience objectives and adaptation outcomes.

Output 4.2: Set-up of 'Coastal Resilience Fund' under the Ministry of Finance (GovSKN), which manages and allocates revenues from taxes under the PCR act.

- Activity 4.2.1: Develop operational guidelines for the fund, outlining eligibility criteria, application processes, transparent fund allocation mechanisms, and operationalization procedures.
- Activity 4.2.2: Draft legislation or regulatory frameworks to formalize the establishment and governance structure of the Coastal Resilience Fund.
- Activity 4.2.3: Collaborate with financial institutions to establish secure and accountable mechanisms for managing and allocating revenues into the fund, ensuring compliance with regulatory standards.

Output 4.3: Develop a PCR communication strategy, including regional and local communication, and tourism-tailored communication.

- Activity 4.3.1: Create tailored communication materials, such as informational brochures and multimedia content, to raise awareness and understanding of the PCR strategy among stakeholders.
- Activity 4.3.2: Facilitate knowledge-sharing platforms and regional workshops to disseminate best practices and lessons learned from the establishment of the Coastal Resilience Fund, with a focus on promoting replication and adaptation of the model in other countries within the region.

II. Describe how the project/programme provides economic, social and environmental benefits, with particular reference to the most vulnerable communities, and vulnerable groups within communities, including gender considerations. Describe how the project/programme will avoid or mitigate negative impacts, in compliance with the Environmental and Social Policy and Gender Policy of the Adaptation Fund.

Environmental Benefits

The CARI-SKN project will have direct positive environmental outcomes, as achieved by the envisioned project interventions. Environmental benefits include enhancing resilience against coastal erosion and the protection, conservation, and rehabilitation of coastline ecosystems and biodiversity, including marine ecosystems. This includes but is not limited to: (i) the reduction/elimination of beach sand mining, (ii) the rehabilitation of coral reefs, and (iii) the counteraction of coral bleaching, ocean acidification, and sargassum influx resulting from seal level rise, storms, and increasing sea surface temperatures. Additionally, flood prevention measures will also protect against the destruction of coastal communities and natural habitats. The project's interventions will have several environmental co-benefits that result from direct project outcomes. For instance, in healthy coastal ecosystems, including mangroves and seagrass, the force of currents and overall coastal erosion is decreased and water movements, sediments, and nutrients in coastal watersheds are naturally regulated. Coastal ecosystems moreover can help decrease flooding which would have serious impacts on the habitats of marine and terrestrial fauna and flora. Rehabilitation of ecosystems has various positive effects on biodiversity and the balanced co-existence of marine species, including limiting the spreading of invasive species. The planting of trees, mangroves, seagrass, and vetiver grass will largely benefit biodiversity and create and rehabilitate habitats for native species. The propagation of vetiver grass, for instance, already showed respective positive benefits under the IWEco project activities. Furthermore, enhanced regulations for ecosystem management as well as increased awareness of stakeholder groups will decrease waste pollution in coastal areas, particularly from the tourism sector. In addition, healthy coastal wetlands (including seagrasses) have the capacity to enable blue carbon sequestration, while unhealthy coastal wetlands are potentially great carbon emitters. The project's emission reduction potential is estimated to be a significant co-benefit due to planting of trees, mangroves, seagrass, and vetiver grass. Additionally, sustainable coastal zone management will contribute to future avoided

emissions through the destruction of ecosystems. The concrete carbon emission reduction potential will be modelled for the full funding proposal.

Social Benefits

The CARI-SKN project is poised to deliver significant social benefits by addressing the impacts of flooding, storms, and other extreme weather events that often result in displacement, migration, and loss of livelihoods for coastal communities in St. Kitts and Nevis. By implementing targeted measures to mitigate these effects, the project will not only reduce economic losses but also safeguard cultural heritage and social cohesion. Additionally, the restoration of coastal ecosystems, such as coral reefs and vegetation, will provide tangible benefits to communities reliant on healthy terrestrial and marine environments for their sustenance. For instance, initiatives like coral reef restoration programs will foster a greater diversity of local marine species, ensuring sustainable fishing grounds for local fisheries and supporting the livelihoods of fishers who depend on biodiversity for their income.

Furthermore, the rehabilitation of coastal vegetation will not only enhance biodiversity but also contribute to improved air quality, health, and overall well-being of inhabitants. By promoting a more sustainable management of natural resources, the project will create lasting social impacts, including strengthened community resilience, enhanced livelihood opportunities, and a greater sense of pride and ownership among local residents. Through these efforts, the CARI-SKN project will not only mitigate the immediate risks posed by climate change but also lay the foundation for a more resilient and prosperous future for coastal communities in St. Kitts and Nevis.

Economic Benefits

The protection of coastal ecosystems will yield substantial economic benefits across various sectors, notably in the food industry and tourism sector of St. Kitts and Nevis. The food industry relies heavily on healthy coastal ecosystems and their resources, with marine sources playing a crucial role in food availability. Strengthening marine ecosystems is expected to increase food availability from marine sources, which is particularly vital for fisheries facing economic challenges. Implementing sustainable fishery practices through coastal zone management will ensure the long-term viability of ecosystems and the livelihoods of fishers. Moreover, the tourism sector, contributing approximately 22% to the country's GDP, heavily relies on coastal environments and ecosystems. The sector thrives on the islands' pristine nature and vibrant beaches. Preventing beach erosion and enhancing nature conservation and biodiversity will further attract tourists, thereby boosting revenues for affiliated businesses. Given the tourism sector's potential impact on environmental pollution, effective coastal zone management, including sustainable tourism practices, is imperative.

Furthermore, the project will create gender-inclusive employment opportunities through new roles in coastal zone management and resilient infrastructure construction. Considering the country's susceptibility to climate disasters like hurricanes, which inflict significant economic damage on livelihoods, the CARI-SKN project's resilience measures can mitigate these effects. By safeguarding critical infrastructure and enhancing coastal resilience, the project will help minimize economic losses from extreme weather events, thereby fostering sustainable economic development and prosperity for communities in St. Kitts and Nevis.

III. Describe how the project/programme is consistent with national or sub-national sustainable development strategies, including, where appropriate, national adaptation plan (NAP), national or sub-national development plans, poverty reduction strategies, national communications, or national adaptation programs of action, or other relevant instruments, where they exist.

SKN's *Updated Nationally Determined Contributions* (NDC) express the country's commitment to improving resilience and capacities to adapt to the long-term impacts of climate change and ensure the well-being and prosperity of its population and the health of its natural resources. Furthermore, the NDC outlines the priority areas and actions for the country's sustainable development agenda. In this regard, coastal zone management is identified as a critical pillar of SKN's adaptation approach. The NDC (2021, p. 5) states: "Integrated coastal zone management will build the resilience of coastal and marine ecosystems and associated livelihoods to climate change disasters". The NDC implementation plan

further emphasises concrete actions that are needed for addressing vulnerabilities of coastal and marine ecosystems, however, the NDC also points to a lack of sustainable financing. This project directly aligns its interventions with the identified activities in the *NDC Implementation Plan*.

Moreover, interventions of the CARI-SKN project are closely related to three other important national policies. The *Climate Change Adaptation Strategy* provides guidance on priorities and appropriate measures for adaptation to reduce vulnerability to the impacts of climate change and build resilience over the long term in St. Kitts and Nevis. The policy document suggests seven programmes of action, among which Integrated Coastal Zone Management is one of them. According to SKN's updated NDC, more than 50% of outlined activities in the policy for this field could not be planned or implemented as of yet. The CARI-SKN project takes several of these activities into account. The *Management Plan for St. Kitts and Nevis Marine Management Area: 2021 – 2025*, provide a practical and strategic framework to allow for the effective and efficient management of the country's Marine Management Areas. The policy outlines several sectors that require integration in a sustainable marine management concept, such as conservation, fisheries, tourism and transportation. Project activities align and build on the Marine Management Areas addressed in the policy. The *2021 St. Kitts and Nevis Coastal Master and Marine Spatial Plan* was designed to prepare the Government of St. Kitts and Nevis (GovSKN) for the next generation of marine spatial planning and frame an anticipated fifteen-year transition towards the Blue Economy for St. Kitts and Nevis. While the Marine Spatial Plan lays out marine zoning frameworks, the Coastal Master plan provides Blue Economy investment opportunities and priority projects that have been considered under the CARI-SKN project design.

In addition, the CARI-SKN project is aligned with the following policies, among others:

- Coastal Protection Plan (2001)
- National Environmental Management Strategy (2005)
- National Conservation and Environment Protection Act (2009)
- National Energy Policy (2011)
- National Disaster Plan (2013)
- NCCAS and Plan for the Water Sector (2014)
- Fisheries, Aquaculture and Marine Resources Act (2016)
- Draft Fisheries Management Plan
- National Multi-Hazard Health Disaster Management Plan (2019)
- Protected Area System Plan (2020)
- National Ocean Policy & Strategic Plan (2020)
- Urban Resilience Plan and Playbook for Greater Basseterre (2022)
- CARICOM Regional Framework for Achieving Development Resilient to Climate Change (2009)

The CARI-SKN project is also aligned with the recently developed *GCF Country Programme 2022*, which identifies coastal and marine ecosystems as a priority sector. The Country Programme also emphasizes the importance of actions to mainstream integrated coastal zone management and Blue Economy approaches into legislation as well as to strengthen data availability and management, as addressed by the CARI-SKN project.

Also, the CARI-SKN project aims at leveraging insights and achievements of other conducted projects in the field of coastal zone management in SKN. Examples are the *iLand Resilience Programme*,[29] a project that is funded by the EU and implemented by the Caribbean Natural Resources Institute (CANARI) to provide technical assistance for the development of institutional frameworks towards improved environmental management. Furthermore, the project will seek guidance from regional insights of the *Eastern Caribbean Marine Managed Areas Network (ECMMAN) Project*,[30] which, on a regional level, strengthened and established new Marine Managed Areas, enhanced the capacities of

[29] See online: https://canari.org/wp-content/uploads/2017/08/OECS-GCCA-project-brief_final.pdf
[30] See online: https://www.conservationgateway.org/ConservationByGeography/NorthAmerica/Caribbean/science/management/Documents/ECMMAN%20Project%20Fact%20Sheet%20-%20May%202014.pdf

fishers/coastal communities on marine conservation, and strengthened networking and decision-making tools. Additionally, project activities will be complementary to the *Integrating Water, Land and Ecosystems Management in Caribbean Small Island Developing States (GEF-IWEco) Project*,[31] which is a regional project that addresses water, land and biodiversity resource management as well as climate change. The IWEco project is funded by the Global Environment Facility (GEF) and includes a national sub-project in St. Kitts and Nevis that addresses the impacts of acute land degradation in the College Street Ghaut in St Kitts as well as quarries and sand mining hotspots on Nevis. The CARI-SKN project will also align with the *Climate and Ocean Risk Vulnerability Index (CORVI) Project*,[32] which recently expanded to Basseterre, addressing the lack of data and information on climate-related risks. Additionally, results from the *Climate Change Adaptation in the Eastern Caribbean Fisheries Sector Project (CC4FISH)* will be taken into account. CC4FISH aimed at increasing resilience and reduce vulnerability to climate change impacts in the eastern Caribbean fisheries sector, through the introduction of adaptation measures in fisheries management and capacity building of fisherfolk and aquaculturists.[33] Despite several other regional projects in the field of Blue Economy and coastal adaptation, other national projects that are taken into account are:

- Rehabilitation of Old Road Bay Road
- Coastal Erosion Mitigation Project South Frigate and Friars Bay
- Rehabilitation of Old Road Fisheries Complex

IV. Describe if there is duplication of project/programme with other funding sources, if any.

There is no duplication of efforts anticipated with other funding sources for the CARI-SKN project. However, it is expected to complement existing initiatives and projects (see section above) that share similar objectives and focus areas. Through coordination and collaboration with relevant stakeholders, including government agencies, non-governmental organizations, and international development partners, the project aims to leverage existing resources and expertise to maximize its impact and effectiveness in addressing climate resilience challenges in Saint Kitts and Nevis.

V. If applicable, describe the learning and knowledge management component to capture and disseminate lessons learned.

Replicability is built into the design of the CARI-SKN project interventions. Component 1 is developed to establish a dedicated coastal zone management committee which will govern future coastal zone management projects. While being key to the implementation of CARI-SKN project intervention, the project is also designed to ensure effective replicability of coastal resilience and blue economy activities. Replicability is facilitated through several tasks of the committee, including the maintenance of a coastal protection and coral reef restoration measures pipeline to identify and prioritize new and planned future interventions, the development of a long-term climate finance strategy for coastal protection and blue economy measures, the establishing and managing a monitoring and evaluation framework for the performance of coastal protection measures and project interventions (which can be used for informing lessons learned), and the fostering regional exchange on coastal protection measures.

Moreover, component 3 comprises activities to evaluate the project interventions and develop a report on lessons learned and implications for future coastal protection measures in SKN. Additionally, Component 4 is designed to create a lasting financial framework that bolsters coastal resilience initiatives in Saint Kitts and Nevis. Hence, the design of projects beyond the CARI-SKN project can be well informed by knowledge products and lessons learned from CARI-SKN project interventions.

Strengthened coordination among government agencies and regional institutions in the field of coastal resilience will further increase the exchange of lessons learned and enhance the potential for replicability of project elements. Also, the creation of enhanced availability and access to data

[31] See online: https://www.iweco.org/
[32] See online: https://reliefweb.int/report/saint-kitts-and-nevis/corvi-project-expands-basseterre-st-kitts-and-nevis
[33] CC4FISH was implemented by the Food and Agriculture Organization of the United Nations (FAO) and the national fisheries authorities from the seven project countries: Antigua and Barbuda, Dominica, Grenada, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines and Trinidad and Tobago, with funding from the Global Environment Facility (GEF).

(Component 2), as well as hands-on information by projects will reduce perceived risks of investments in climate resilience technologies and strategies.

In the long-term, project planning and financing tools, as well as lessons learned from CARI-SKN investments will contribute to a long-term conducive environment for well-informed coastal adaptation investments. Both short-term and long-term effects of the project are displayed in the Theory of Change diagram (Figure 15).

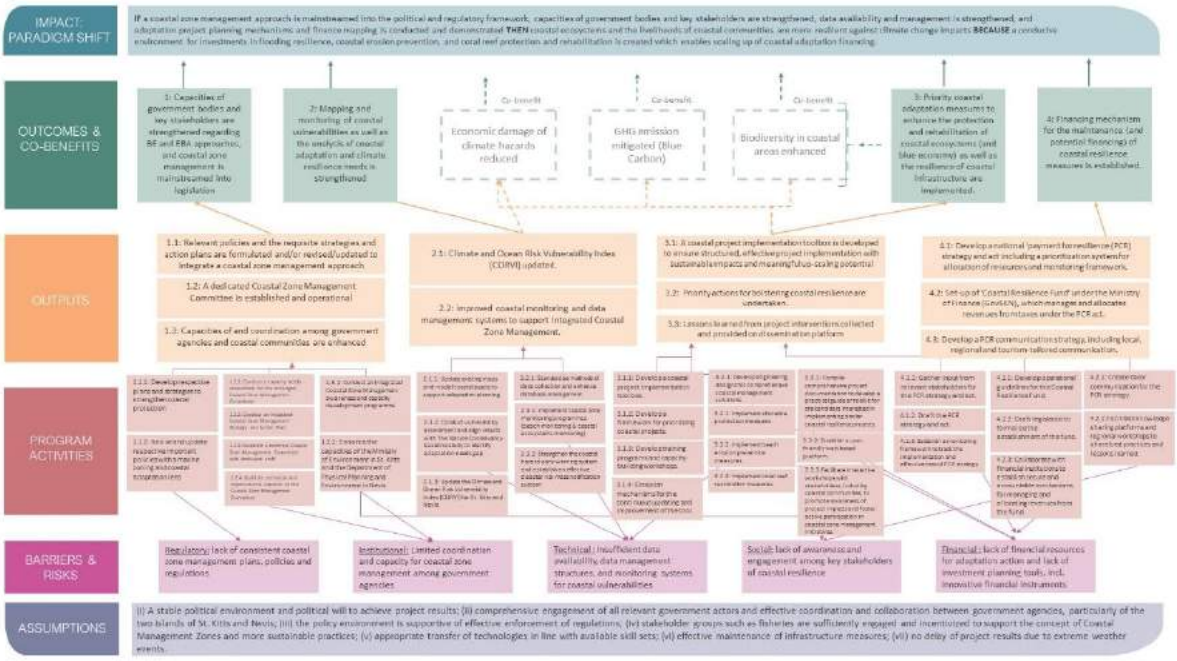


Figure 15: Theory of Change for the Coastal Resilience and Adaptation Initiative - St. Kitts and Nevis.

VI. Describe the consultative process, including the list of stakeholders consulted, undertaken during project preparation, with particular reference to vulnerable groups, including gender considerations, in compliance with the Environmental and Social Policy and Gender Policy of the Adaptation Fund.

The concept note development has placed country ownership at the centre of its processes. Under the 2019 approved GCF Readiness Proposal "Institutional Capacity and Coordination and Country Programming", a country programme was developed that directly informed the initial project idea. The country programme development followed an iterative process which consulted a broad range of stakeholders, based on the established country coordination mechanism, steered by the UNFCCC Focal Point and advised by members of the National Sustainable Development Coordination Committee (NSDCC).

For the Concept Note development process itself, a Working Group (WG) was established which met regularly between August 2023 and March 2024 to give inputs, feedback and reflect on key aspects of the project concept. Regular meetings have been scheduled for validating the achievement of key milestones, such as the validation of country vulnerabilities and needs, the identification of main barriers and root causes, the development of components and project activities, and the development of the project's indicative financing structure. The WG process has been facilitated and led by the UNFCCC Focal Point. The WG aimed at establishing equal representation from the island of St. Kitts and the island of Nevis and included the following member institutions:

- Department of Economic Affairs and Public Sector Investment Planning (NDA)
- Ministry of Environment and Climate Action

- Ministry of Public Infrastructure
- Department of Marine Resources
- Departments of Physical Planning in St. Kitts and in Nevis
- National Emergency Management Agency (NEMA)
- Nevis Disaster Management Department (NDMD)
- Environmental Health Department

As we proceed to craft a comprehensive Funding Proposal, the approach will maintain the existing working group format while establishing a triangular communication structure involving the working group (WG), the Government of St. Kitts and Nevis, and the Caribbean Community Climate Change Centre (CCCCC). Additionally, to ensure inclusivity and gather diverse perspectives, various stakeholder groups will be engaged through interviews and consultations. These groups will encompass the private sector, civil society organizations, regional entities, active NGOs, academia, youth organizations, and specific community groups such as those residing in coastal areas.

VII. Provide justification for funding requested, focusing on the full cost of adaptation reasoning.

a. Justification of AF support

The Government of St. Kitts and Nevis is committed to improving coastal zone management, mainstreaming Blue Economy approaches into legislation, and establishing coastal resilience measures. The CARI-SKN project activities directly align with interventions identified in the country priorities of several key policy documents, including the Nationally Determined Contributions and the SKN Climate Change Adaptation Strategy. Both documents state that over 50% of interventions could not be implemented yet, despite their identification as important for the country's adaptive capacity. A major reason for the lacking enforcement of measures is the limitation of resources, such as human resources and public investment capital. As a small island developing state, St. Kitts and Nevis has a limited public budget that cannot fully cope with the urgent need for large-scale adaptation measures, particularly for the country's coastal areas. Moreover, St. Kitts and Nevis' debt position does not allow for a large deficit spending, if the country wants to achieve sustainable debt levels. The country is especially vulnerable given the COVID-19 pandemic which not only eroded surpluses and GDP but also presented socio-economic hardships that the government had to address in a tight fiscal space. The pandemic resulted in an estimated annual decline in GDP of 14 percent, and a government fiscal deficit of 4.7 percent of GDP (for 2021). The country is in a situation that any major climatic activity or event will present a strain on the finances of the country which can lead to an increase in the debt to GDP. At this stage the country is trying to increase GDP through capital investment, while at the same time providing the social safety nets to individuals who, after two years, are still seeking gainful employment.

b. Alternative funding options

Alternative funding options are very limited. Currently, private sector finance is absent due to lacking incentives, missing information, high perceived investment risks, and low/absent returns on investment. However, through the AF's financing of projects, lessons learned can contribute to crowding in new sources of finance, including the engagement of the private sector for adaptation financing under innovative financial models.

c. Justification of concessionality

The absence of alternative funding options and the limitation of public financial resources for climate adaptation measures stays in contrast to the increasing threats and risks that climate change imposes on the country's coastal areas. Immediate interventions and impact are needed. The AF's support bridges current financial shortcomings and can prevent St. Kitts and Nevis from losing time against urgent climate change risks. In addition, the CARI-SKN project is focussing solely on public goods and

services. In this context, the government of St. Kitts and Nevis is requesting 100% concessionality (grant funding) from the AF. The project will not yield any direct profit to the Government or other private/public entities. This AF grant will play an important role in creating an immediate impact on the ecosystem and livelihoods as well as setting up enabling structures that help embark on a national comprehensive Blue Economy and coastal zone management approach for the benefit of the people in St. Kitts and Nevis. While achieving immediate social and environmental benefits for the country, through a better protected coastline the CARI-SKN project enables economic benefits from an enhanced and more sustainable tourism and fishery sector in the medium to long-term.

VIII. Describe how the sustainability of the project/programme outcomes has been taken into account when designing the project/programme.

In designing the CARI-SKN project, paramount attention has been given to ensuring the sustainability of its outcomes, thereby extending their impact far beyond the conclusion of the project and the subsequent withdrawal of support from the AF. The project has been meticulously crafted to guarantee that its immediate achievements, such as coastal erosion prevention measures, and coral reef protection and rehabilitation interventions, yield lasting effects through strategic arrangements. While traditional physical infrastructure investments necessitate ongoing maintenance efforts beyond the scope of the project, ecosystem-based adaptation solutions, exemplified by coral reef restoration programs, demand continuous oversight, monitoring, and resource allocation to thrive over the long term.

Furthermore, the CARI-SKN project operates on multiple fronts to bolster the sustainability of its impact. It aims to dismantle institutional barriers and foster deeper cooperation in coastal zone management among governmental institutions, civil society entities, and the private sector. The project undertakes to enhance the capacities of key ministries, such as the Department of Environment and the Department of Marine Resources, thereby fortifying coordination and expertise to ensure sustained impact. A pivotal initiative involves the establishment of a novel Coastal Zone Management Committee, poised to infuse political impetus, expertise, and regulatory enforcement capabilities into coastal management efforts, thus securing enduring benefits across various domains of coastal zone management.

Concurrently, the CARI-SKN project endeavours to craft a comprehensive coastal management and Blue Economy framework for St. Kitts and Nevis, setting the stage for securing additional financing for critical resilient infrastructure and ecosystem protection measures. This project thrusts emphasis on fortifying monitoring infrastructure to continually generate valuable data, not only to inform future resilience endeavours within the region but also to furnish a blueprint for sustainable coastal management practices globally. Moreover, the CARI-SKN project lays the groundwork for long-term sustainability by spearheading political and regulatory reforms, bolstering data management capabilities, and establishing administrative structures crucial for scaling up coastal zone management and Blue Economy strategies post-project.

A cornerstone of the project's exit strategy involves the establishment of a Coastal Resilience Fund, intended as a long-term financing mechanism under Outcome 4. This innovative fund, structured around the concept of "payment for ecosystem services," draws from successful models practiced within the region. While detailed plans outlining the fund's structure are pending, its fundamental mandate is to cover the maintenance costs of coastal resilience projects in St. Kitts & Nevis, thus ensuring the continuity of ecosystem protection and rehabilitation efforts beyond the project's implementation period and the full utilization of AF resources. Through these concerted efforts, the CARI-SKN project endeavours to foster a legacy of resilience, sustainability, and environmental stewardship within St. Kitts & Nevis and beyond.

Specifically, sustainability, replicability and scaling up potential are ensured through:

I. A holistic and comprehensive framework approach, including the engagement of vital stakeholder groups, awareness, commitment, and political resources are set up for continuous support of the coastal resilience initiative.

II. Robust monitoring and data analysis tools demonstrate climate vulnerabilities to ecosystems and positive outcomes of interventions. Thus, making the social and economic value of ecosystems more visible to the public and private sectors.

III. The coastal zone management committee which is tailored towards the islands' circumstances and needs to implement coastal resilience projects. Instead of being stand-alone projects, activities of the committee's secretariat establish procedures for prioritizing, planning, and financing coastal zone resilience projects.

IV. The coastal resilience financing mechanism ensures that the maintenance costs of project interventions are covered beyond the CARI-SKN project lifetime. Hence, long-term funding source of CARI-SKN project interventions will be a coastal resilience tax approach (e.g. tourism levy, an arrival tax for cruise ships, a tourism accommodation fee, a local usage fee of protected areas, or a corporate pollution tax).

V. The AF-supported project interventions will showcase well-monitored impacts and the efficient use of resources. Lessons learned can open the field to other funding resources, including private financing models to continue implementing much-needed coastal resilience projects in St. Kitts and Nevis.

IX. Provide an overview of the environmental and social impacts and risks identified as being relevant to the project.

This project includes activities with potential limited adverse environmental or social risks and/or impacts that are few in number, generally site-specific, largely reversible, and readily addressed through mitigation measures. Therefore, as per the initial screening of the project against the Environmental and Social Policy of the Adaptation Fund, it has been initially categorized as having a *Medium Risk* and falls within *Category B*.

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
Compliance with the Law		**Project Risk:** i.) Legal and regulatory changes ii.) Permitting and licensing issues iii.) Litigation and legal disputes **Risk Level:** Medium **Impact:** Non-compliance with the law can have significant repercussions on the project, ranging from financial penalties and legal liabilities to reputational damage and project delays. Failure to adhere to relevant laws and regulations may result in fines, legal actions, or enforcement measures by regulatory authorities, leading to increased project costs and disruptions. Moreover, non-compliance can erode trust and credibility among stakeholders. Legal disputes and litigation arising from non-compliance issues can also consume valuable time and resources, diverting attention away from project objectives and impeding progress. **Next Steps:** Ensuring compliance with legal requirements is fundamental to the success of

		this project. Therefore, the development of the full funding proposal will involve conducting a thorough legal review to identify relevant law and integrate legal considerations into the project design, as well as establish compliance mechanisms and internal controls if necessary. By following these steps, the project can navigate legal complexities, mitigate risks of non-compliance, and ensure adherence to legal frameworks throughout its implementation.
Access and Equity		**Project Risk:** i.) Unequal Distribution of Benefits ii.) Limited Participation and Representation. **Risk Level:** Low **Impact:** Unequal distribution of benefits within the project could lead to social tensions and loss of trust among stakeholders. Marginalized groups may disengage, limiting innovation opportunities and damaging the project's reputation. Additionally, limited participation and representation could result in inadequate consideration of diverse perspectives and needs, leading to suboptimal project outcomes. It may also undermine community ownership and support, reducing the project's overall effectiveness and sustainability. **Next Steps:** Throughout the development of the full funding proposal, a comprehensive Environmental and Social Impact Assessment (ESIA) will be undertaken, alongside the development of an Environmental and Social Management Plan (ESMP), to thoroughly evaluate and propose strategies for mitigating any risks associated with *Access and Equity*. Building upon the outcomes of these assessments, mechanisms may be instituted to foster active stakeholder participation and equitable access to project benefits and resources for all stakeholders and local authorities. This inclusive approach will be complemented by beneficiary mapping efforts, which will ensure fair and equitable distribution of project benefits across communities.
Marginalized and Vulnerable Groups		**Project Risk:** I. Exclusion from project planning and decision-making processes **Risk Level:** Low **Impact:** Neglecting the needs and concerns of marginalized and vulnerable groups poses significant risks to the project's effectiveness and sustainability. Failure to address their specific challenges could lead to social tensions, loss of trust, and disengagement from key stakeholders. **Next Steps:** The proposed project prioritizes the equitable treatment of all community members, particularly those who are marginalized or vulnerable. To ensure their needs are effectively

		addressed, extensive stakeholder engagement and comprehensive social assessments will be conducted during the development of the full funding proposal. This will ensure that the specific needs and vulnerabilities of marginalized and vulnerable groups are captured in the final project activities.
Human Rights		**Risk(s):** I. Violation of Human Rights **Risk Level:** Low **Impact:** Human rights violations within the project could lead to legal challenges, public backlash, and reputational damage. **Next Steps:** The proposed project is committed to upholding and respecting all pertinent national legislation and international conventions pertaining to human rights throughout its implementation. Therefore, to guarantee rigorous adherence to human rights principles and standards, a thorough assessment of potential risks will be undertaken, and corresponding mitigation measures will be outlined within the Environmental and Social Management Plan (ESMP) as part of the full funding proposal. It is also worth noting that St. Kitts and Nevis generally has a positive human rights track record.[34] The country has ratified key international human rights treaties and has taken steps to uphold human rights domestically.
Gender Equality and Women's Empowerment		**Risk:** I. Gender disparities in decision-making and project benefits. **Risk Level:** Medium **Impact:** Gender disparities in decision-making and project benefits can lead to unequal distribution of resources, limited perspectives in planning and implementation, and reduced effectiveness of interventions. Additionally, it may perpetuate existing inequalities, hinder community participation, and undermine the project's overall impact and sustainability. **Next Steps:** The development of the full funding proposal will prioritize the integration of gender-related concerns and initiatives for women's empowerment. This will be achieved by conducting a comprehensive gender assessment followed by the development of a Gender action plan. The gender action plan will provide critical insights to inform targeted interventions and strategies aimed at fostering gender equality and empowerment. Specifically, all participatory and consultative processes will be designed to ensure the active representation of women's groups across all communities,

[34] Saint Kitts and nevis 2021 Humann Rights Report.

		alongside gender experts, and non-governmental organizations (NGOs).
Core Labour Rights		**Risk(s):** I. Violation of workers' rights to fair wages and safe working conditions. II. Exploitation of labor, including forced labor or child labor, in project activities. III. Lack of access to grievance mechanisms for workers to address labor-related concerns. IV. Discrimination in employment practices based on gender, race, ethnicity, or other factors. V. Inadequate provision of health and safety measures for workers, leading to accidents or injuries. **Risk Level:** Medium **Impact:** The risks related to core labor rights pose significant challenges to the successful implementation of the project. Violations of workers' rights, including issues such as exploitation, discrimination, and lack of access to grievance mechanisms, can undermine the project's credibility and legitimacy. Such violations not only harm the well-being of workers directly involved but also contribute to social tensions and community unrest, potentially leading to delays, conflicts, or even project suspension. Additionally, negative publicity resulting from labor rights abuses can tarnish the reputation of the project sponsor or implementing agencies, impacting their ability to secure funding, partnerships, or support from stakeholders. **Next Steps:** The proposed project is committed to upholding core local and international labour laws and rights for all stakeholders involved. Therefore, during the development of the full funding proposal, a comprehensive assessment of risks related to core labour rights will be conducted, and appropriate mitigation measures will be established as necessary. These assessments and mitigation strategies will be integrated into the Environmental and Social Impact Assessment (ESIA) and Environmental and Social Management Plan (ESMP) to ensure that labour rights are protected throughout the project's implementation.
Indigenous Peoples	St. Kitts and Nevis do not have any formally recognized indigenous groups within their population.	
Involuntary Resettlement	The proposed project components do not entail the displacement of individuals from their residences or land.	
Protection of Natural Habitats		**Risk(s):** I. Habitat destruction or degradation II. Habitat fragmentation III. Loss of habitat for various species

		Risk Level: Medium **Impact:** Habitat destruction or degradation, habitat fragmentation, and loss of habitat for various species can have significant socio-economic impacts on key sectors such as fisheries and tourism in the country. These sectors rely heavily on healthy and productive ecosystems to support their operations and generate revenue. Habitat destruction and fragmentation can lead to declines in fish stocks and biodiversity, reducing the productivity of fisheries and diminishing the quality of recreational opportunities for tourists. In turn, this can result in economic losses for coastal communities dependent on fishing income and tourism revenue. Furthermore, degraded habitats may detract from the aesthetic appeal of natural areas, potentially deterring tourists and affecting the tourism industry's viability. **Next Steps:** Based on the proposed activities in Component 3 of this project, it is necessary to assess the project's ecological footprint, potential disturbances to habitats, and impacts on various species. Therefore, during the development of the full funding proposal field surveys, ecological studies, and biodiversity assessments will be conducted to identify sensitive areas and species at risk. These assessments will be included in the ESIA and potential mitigation measures will be proposed in the ESMP. Additionally, consultation with environmental experts and stakeholders will be necessary to gather insights and perspectives on potential impacts and mitigation measures. Through these comprehensive assessments, the project will minimize negative impacts on natural habitats and biodiversity while maximizing conservation efforts and sustainable practices.
Conservation of Biological Diversity		**Risk(s):** I. Decreased biodiversity II. Increased risk of extinction for endemic or vulnerable species III. Disruption of ecosystem functions and services IV. Increased vulnerability to invasive species V. Altered trophic dynamics **Risk Level:** Medium **Impact:** The above risks could undermine the project's objectives by compromising ecosystem resilience, disrupting ecological balance, and diminishing essential ecosystem services. **Next Steps:** The proposed project is committed to ensuring that none of its interventions will result in significant or unjustified reduction/loss of biological diversity or facilitate the introduction of invasive species. To mitigate potential risks and safeguard biodiversity, all project activities will undergo thorough assessment through an ESIA, which includes specific parameters for biodiversity evaluation. This proactive approach

		aims to identify and address any potential impacts on biodiversity, thereby minimizing adverse effects and promoting the conservation of natural habitats and ecosystems throughout the project's implementation.
Climate Change		**Risk(s):** i. Increased Greenhouse Gas emissions **Risk Level:** Low **Impact:** Increased greenhouse gas emissions pose a reputational risk for the country and could undermine progress towards achieving its commitments under the Paris Agreement and Nationally Determined Contributions (NDCs). Failure to mitigate emissions effectively could lead to criticism from the international community and hinder the country's efforts to position itself as a responsible global citizen in addressing climate change. **Next Steps:** During the development of the full funding proposal, a comprehensive greenhouse gas (GHG) mapping assessment will be conducted to ensure that project interventions do not significantly contribute to GHG emissions. It is important to note that the proposed project aims to enhance St. Kitts and Nevis' resilience against climate change impacts while actively contributing to its adaptation and mitigation strategies. It is designed with stringent measures to avoid exacerbating greenhouse gas emissions or contributing to any factors driving climate change. Instead, the project prioritizes the implementation of sustainable practices and resilience-building initiatives that align with the country's climate action goals and commitments.
Pollution Prevention and Resource Efficiency		**Risk(s):** I. Contamination of coastal waters and ecosystems due to inadequate waste management practices. II. Accumulation of marine debris, including plastics and other non-biodegradable materials, leading to habitat degradation and harm to marine life. III. Diminished aesthetic value of coastal areas and recreational sites due to littering and pollution. IV. Inefficient use of limited natural resources **Impacts:** Inadequate waste management practices leading to contamination of coastal waters and ecosystems pose significant risks to the project, potentially compromising the health of marine habitats and water quality. Similarly, the accumulation of marine debris, particularly plastics and non-biodegradable materials,

		threatens coastal ecosystems by causing habitat degradation and harm to marine life. Moreover, the unsightly presence of litter and pollution diminishes the aesthetic appeal of coastal areas and recreational sites, potentially deterring tourists and recreational visitors, and adversely impacting local economies dependent on tourism revenue. Additionally, given the limited resources of St. Kitts and Nevis due to their small size, inefficient use of these resources further exacerbates these challenges, straining already vulnerable ecosystems and compromising their ability to withstand and recover from environmental stressors. These risks highlight the importance of effective pollution prevention measures and resource efficiency strategies to safeguard coastal environments and sustain socio-economic well-being. **Risk Level:** Low **Next Steps:** The project will adhere to both national and international standards to ensure optimal energy efficiency and minimize resource consumption, waste generation, and pollutant emissions throughout its design and implementation phases. These commitments will be detailed in the ESMP, providing comprehensive insight into the project's sustainable practices and environmental stewardship efforts.
Public Health		**Risk(s):** I. Health risks from marine pollution and toxins. II. Injuries from handling hazardous waste and marine debris. **Risk Level:** Low **Impact:** The public health risks associated with the project could lead to increased incidence of waterborne diseases and other health issues among coastal communities. This could strain local healthcare systems, reduce productivity, and lower the overall quality of life for residents. **Next Steps:** The proposed project is committed to safeguarding public health, ensuring that all activities and interventions are carried out with the utmost consideration for the well-being of local communities. This dedication to public health will be thoroughly assessed in the ESIA and outlined and expanded upon in the ESMP, providing a comprehensive overview of the measures and protocols in place to mitigate any potential risks or impacts on public health.
Physical and Cultural Heritage		**Risk(s):** I. Damage to cultural landmarks during project implementation. II. Disruption of traditional practices or cultural activities of local communities due to project interventions. III. Inadvertent destruction of important ecological or cultural sites due to lack of awareness or inadequate safeguards.

		IV. Loss of cultural identity or heritage values due to changes in the physical environment or socio-economic dynamics resulting from project activities. **Risk Level:** Low **Impact:** The risks associated with Physical and Cultural Heritage in the project encompass potential damage to community relations and trust, which could result in resistance or opposition to project activities. Moreover, there may be legal and regulatory challenges arising from non-compliance with heritage protection laws or international conventions, as well as negative publicity and reputational damage for the project sponsor or implementing agencies. Additionally, these risks could have long-term consequences on the cultural identity and heritage values of local communities, impacting their well-being and resilience in the process. **Next Steps:** The proposed project is dedicated to preserving both the physical and cultural heritage of the coastal communities it serves, a commitment that lies at the core of Components 2 and 3. Through these components, the project endeavours to bolster the adaptive capacity of these communities, equipping them to effectively tackle challenges such as coastal erosion and habitat degradation. However, it is imperative that additional assessments be conducted during project development to verify that project interventions do not result in any cultural or physical harm. These assessments will be included in the ESIA and if necessary, mitigation measures will be included in the ESMP.
Lands and Soil Conservation	The enhancement and enforcement of coastal zone policies through Component 1 of this project will strategically designate development zones to mitigate adverse impacts on land and soil conservation. Furthermore, under Component 3, the project will implement shoreline protection measures and beach erosion prevention efforts. These interventions are vital for conserving coastal land and soil, preventing erosion, and preserving soil integrity. By stabilizing the shoreline, maintaining coastal vegetation, and reducing sedimentation, the project will safeguard coastal ecosystems and infrastructure, while advancing sustainable land management practices.	

PART III: Implementation Arrangement

A. Describe the arrangements for project implementation.

The proposed implementation plan outlines the establishment of a Project Steering Committee (PSC) from the project's outset (Figure 16). This committee is tasked with ensuring the structured and effective functioning of both the Coastal Zone Management Committee and the project's implementation process. The committee will meet on a quarterly- to bi-annual basis and will serve to inform on the progress of activities, share information on work plans, discuss issues or challenges that arise during the implementation, and obtain strategic guidance for decisions on key activities. Also, the project Steering Committee will ensure that the vulnerabilities and needs of both islands are fairly considered.

The PSC will consist of representatives from the Accredited Entity and key government bodies, such as the Department of Economic Affairs and Public Sector Investment Planning (NDA), the Department of Environment, the Department of Marine Resources, the Ministry of Public Infrastructure, the Department of Physical Planning (Nevis Island Administration), the National Management Emergency Agency (NEMA), and CSO representatives. During the lifetime of the AF project, the PSC will also serve as the CARI-SKN Committee, established under output 1.2. After the AF project has ended, the PSC ceases but continues its work as CARI-SKN -Blue Committee.

The PSC will advise and steer the Executing Entity (EE) and Project Management Unit (PMU). While the EE (potentially the Department of Marine Resources) will benefit from exchanging information with key public and private stakeholder groups, the PMU will acquire direct assistance from a Technical Working Group that comprises implementing partners and technical consultants and civil society organizations, including youth initiatives.[35] During the lifetime of the AF project, the PMU will also serve as the Secretariat to the CARI-SKN Committee, established under output 1.2 and operationalized under output 3.1. After the AF project has ended, the PMU ceases but continues its work as CARI-SKN Secretariat under the CARI-SKN Committee.

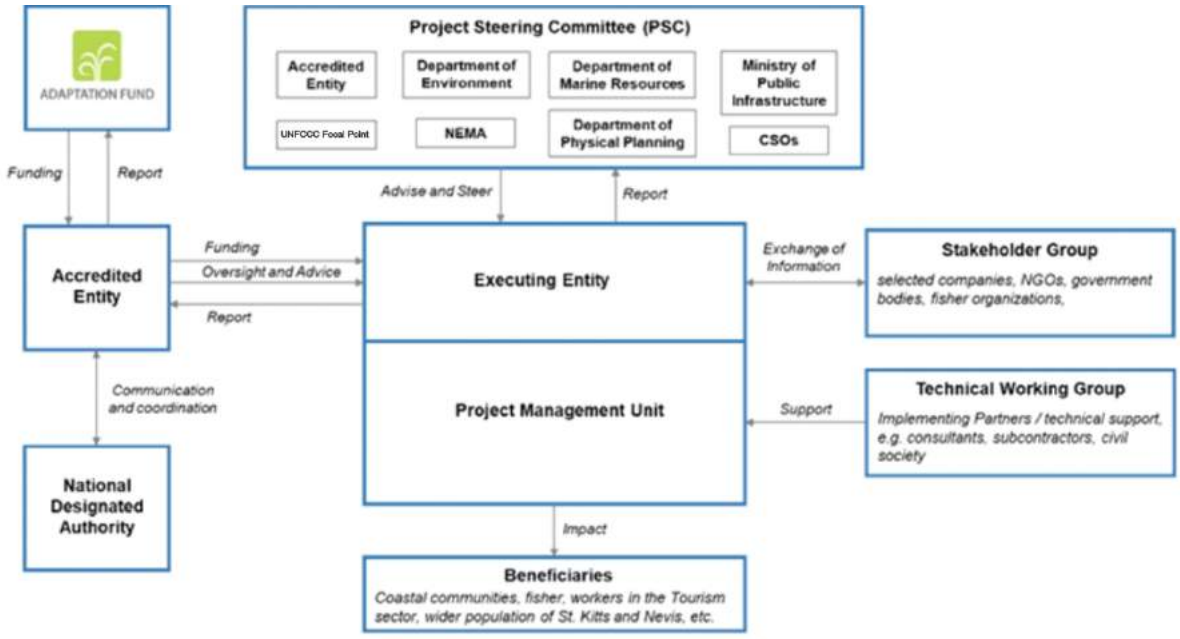


Figure 16: Provisional CARI-SKN Project Implementation Arrangements.

[35] E.g. environment focus Youth groups are the St. Kitts and Nevis Reef Guardians, Caribbean Youth Environment Network, SK Sea Turtle Monitoring Network or the Nevis Turtle Group

B. Describe the measures for financial and project risk management.

The following table provides an overview of key financial and operational risks, including respective mitigation measures taken by the project.

Table 2: *Financial and Project Risk Assessment CARI-SKN Project*

Risk Description	Level of Impact	Probability	Mitigation Measure
Engagement of stakeholders and coastal communities is limited and ineffective. In consequence, insights of stakeholders are missing for effective vulnerability assessments and vital population groups are not engaged enough to participate in coastal ecosystem protection.	Medium	Low	The CARI-SKN project builds upon previous successful stakeholder and engagement experience and takes into account lessons learned from previous engagements of coastal communities. Furthermore, awareness campaigns under Component 1 will raise the willingness to engage in coastal protection.
Enforcement of the updated political and regulatory framework for Coastal Zone Management and Blue Economy approaches is enforced inadequately.	High	Low	The newly established Coastal Zone Management Committee (under Component 1) with dedicated staff will be responsible for coordinating the enforcement of key regulations. Due to this new streamlined approach, enforcement of policies will be enhanced compared to the baseline scenario.
Limited resources and human capacities among government agencies prevent the effective functioning of the Coastal Zone Management Committee.	Medium	Medium	First, AF financing support is important to kickstart the establishment of a Coastal Zone Management Committee. Second, the project strongly ensures the country's ownership, including the provision of additional staff for the Committee.
New monitoring systems are developed, but critical skills and knowledge are lacking to maintain systems in the long term.	Medium	Low	St. Kitts and Nevis already maintains functioning Early Warning Systems and a baseline knowledge and expertise in environmental monitoring systems is present in the country and region. Moreover, comprehensive training is a critical element of CARI-SKN project activities.
Project activities do not align well with national priorities.	Low	Low	National priorities have been extensively considered during the project development. Also, constant contact with the country's NDA has been maintained during the process. In parallel, the GCF Country Programme is under development and the CARI-SKN project scope originates from the Programmes priority sector analysis.
The protection and rehabilitation of ecosystems are not quick enough to keep pace with the impacts of sea level rise and changes in temperatures.	High	Low	Rising sea levels and temperature change are continuous threats to ecosystems in St. Kitts and Nevis. Reaching tipping points of ecosystems would be detrimental to the island. While certain ecosystems are already under high pressure, it is important to increase efforts to protect and rehabilitate ecosystems immediately. This project considers an implementation time that is as quick as possible and as extensive as necessary. The project will come at the right time to systematically protect and rehabilitate nature in SKN.
Rehabilitation of ecosystems may introduce non-native organisms/invasive species	High	Low	While the complexity of ecosystems should not be underestimated, the rehabilitation methods of ecosystems will be established with attention to any potential adverse impacts. Moreover, ecosystem monitoring systems will help to prevent any unintended effects.
Protection of ecosystems and management of coastal areas constrain	Medium	Low	It is important to distinguish short-term local and overall long-term effects. Project activities might restrict touristic activities with regard to

touristic activities and affect the sector's revenue streams.			ecosystem health in certain areas. However, without the protection of coastal ecosystems, the tourism sector would vanish with increasingly destroyed ecosystems in the country. This project can therefore contribute to a long-term sustainable tourism sector.
Complex land tenure in project locations (e.g. of private sector or coastal communities) can cause delays and limit the successful implementation of coastal zone management measures.	Medium	Low	While only a few private-public partnerships in the field of coastal protection exist in the region, the CARI-SKN project ensures adequate engagement of respective local actors throughout all project components. Moreover, potential PPPs will be explored during the implementation of the project to crowd in innovative engagement and financing from private sources as also many economic sectors depend on the health of the islands' ecosystems.
Extreme climate events, particularly during the country's hurricane season, affect the project's progress due to a concentration of forces in the country to cope with damages. Particularly in the second half of the project, extreme weather events could delay the implementation of projects (e,g, hinder the construction of resilient infrastructure).	High	High	While the hurricane season always poses an uncontrollable threat to the island, project activities will be designed with adequate flexibility. Moreover, such risk particularly emphasises the importance of immediate implementation of the CARI-SKN project which will contribute to enhancing the country's resilience to extreme weather events. The construction of infrastructure will consider high-risk months for their timelines.

C. Describe the measures for environmental and social risk management, in line with the Environmental and Social Policy and Gender Policy of the Adaptation Fund.

During the development of the full funding proposal, comprehensive measures for environmental and social risk management will be outlined, aligning closely with the Environmental and Social Policy as well as the Gender Policy of the AF. These measures will be crafted to ensure robust mitigation strategies are in place to address potential environmental and social risks throughout the project's lifecycle.

D. Describe the monitoring and evaluation arrangements and provide a budgeted M&E plan, in compliance with the ESP and the Gender Policy of the Adaptation Fund.

The AE (*CCCCCC*) will be responsible for ensuring adequate monitoring and evaluation of project activities. Led by the AE, the process will be a continuous and systematic assessment of the performance of pre-determined indicators of the project over the course of the project life cycle. Indicators are additionally assessed against the project timeline. The Monitoring and Evaluation process will evaluate, whether implementation activities are going as planned, flag changes or early signs of problems, enable adjustment of activities and plans to respond to unexpected events, and build trust among stakeholders and beneficiaries. M&E will be informed by project monitoring reports of the AE or implementing partners which will be compiled annually. M&E will include risk-based monitoring as well as performance-based monitoring in line with the integrated results management framework of the AF.

Indicative performance indicators will be:

- Beneficiaries (female/male) adopting improved and/or new climate-resilient livelihood options (number of individuals)
- Beneficiaries (female/male) covered by new or improved early warning systems (number of individuals)

- Change in expected losses of economic assets due to the impact of extreme climate-related disasters in the geographic area of the F intervention (value in USD)
- Hectares of terrestrial forest, terrestrial non-forest, freshwater and coastal-marine areas brought under restoration and/or improved ecosystems (Ha)

A detailed monitoring and evaluation plan will be conducted in the course of the Funding Proposal (FP) development.

E. Include a results framework for the project proposal, including milestones, targets and indicators, including one or more core outcome indicators of the Adaptation Fund Results Framework, and in compliance with the Gender Policy of the Adaptation Fund.

During the formulation of the full funding proposal, a comprehensive results framework will be developed, encompassing milestones, targets, and indicators. This framework will include core outcome indicators aligned with the Adaptation Fund Results Framework, ensuring compliance with its Gender Policy. Additionally, it will delineate specific measures to track progress towards gender-responsive outcomes, reflecting the commitment to promoting gender equality and women's empowerment throughout the project's implementation.

F. Demonstrate how the project aligns with the Results Framework of the Adaptation Fund.

Project Objective(s)[36]	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
Component 1: Government bodies strengthened their capacities regarding blue economy and ecosystem-based adaptation approaches and intergovernmental coordination and stakeholder dialogue are enhanced to mainstream coastal zone management into legislation and ensure effective enforcement of policies and regulations.		**Outcome 2:** Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses.	2.1. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased.	USD $975,000.00
		Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level.	3.2. Percentage of targeted population applying appropriate adaptation responses.	
		Outcome 7: Improved policies and regulations that promote and enforce resilience measures.	7. Climate change priorities are integrated into national development strategy	

[36] The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply

Comprehensive mapping and monitoring of coastal vulnerabilities as well as the analysis of coastal adaptation and climate resilience needs is strengthened to enable identification and planning of project interventions.		**Outcome 1:** Reduced exposure to climate-related hazards and threats.	1. Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis	USD $1,000,000.00
		Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets	4.1. Responsiveness of development sector services to evolving needs from changing and variable climate	
		Outcome 8: Support the development and diffusion of innovative adaptation practices, tools and technologies.	8. Innovative adaptation practices are rolled out, scaled up, encouraged and/or accelerated at regional, national and/or subnational level	
Priority coastal adaptation measures to enhance the protection and rehabilitation of coastal ecosystems (and blue economy) as well as the resilience of coastal infrastructure are implemented, while the institutional mechanism is operationalized to ensure the scale-up potential.		**Outcome 3:** Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3.2. Percentage of targeted population applying appropriate adaptation responses	USD $5,950,000.00
		Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets	4.1. Responsiveness of development sector services to evolving needs from changing and variable climate 4.2. Physical infrastructure improved to withstand climate change and variability-induced stress	
		Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress.	5. Ecosystem services and natural resource assets maintained or improved under climate change and variability-induced stress	

		Outcome 8: Support the development and diffusion of innovative adaptation practices, tools and technologies	8. Innovative adaptation practices are rolled out, scaled up, encouraged and/or accelerated at regional, national and/or subnational level	
Financing mechanism for the maintenance (and potential financing) of coastal resilience measures is established.		**Outcome 3:** Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3.2. Percentage of targeted population applying appropriate adaptation responses	USD $400,00.00
		Outcome 7: Improved policies and regulations that promote and enforce resilience measures	7.1. No. of policies introduced or adjusted to address climate change risks (by sector)	
		Outcome 8: Support the development and diffusion of innovative adaptation practices, tools and technologies	8. Innovative adaptation practices are rolled out, scaled up, encouraged and/or accelerated at regional, national and/or subnational level	
Project Outcome(s)	**Project Outcome Indicator(s)**	**Fund Output**	**Fund Output Indicator**	**Grant Amount (USD)**
1.1: Relevant policies are revised and updated to integrate a coastal adaptation and needed strategies and plans specific to coastal zone management are developed, ready for implementation		***Output 7:*** Improved integration of climate-resilience strategies into country development plans.	7.1. No. of policies introduced or adjusted to address climate change risks (by sector)	USD $750,000.00
1.2: A dedicated Coastal Zone Management Committee is established and operational		***Output 3.2:*** Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	3.2.1 No. of technical committees/associations formed to ensure transfer of knowledge.	USD $150,000.00
1.3: Capacities of and coordination among		***Output 2.1***: Strengthened	2.1.2 No. of targeted institutions with	USD $75,000.00

government agencies and coastal communities are enhanced		capacity of national and sub-national centres and networks to respond rapidly to extreme weather events	increased capacity to minimize exposure to climate variability risks (by type, sector and scale)	
2.1: Climate and Ocean Risk Vulnerability Index (CORVI) updated.		***Output 1.1:*** Risk and vulnerability assessments conducted and updated	1.1. No. of projects/programmes that conduct and update risk and vulnerability assessments (by sector and scale)	USD $450,000.00
2.2: Improved coastal monitoring and data management systems to support Integrated Coastal Zone Management.		***Output 1.2:*** Targeted population groups covered by adequate risk reduction systems ***Output 8:*** Viable innovations are rolled out, scaled up, encouraged and/or accelerated.	1.2.1. Percentage of target population covered by adequate risk-reduction systems. 8.1. No. of innovative adaptation practices, tools and technologies accelerated, scaled-up and/or replicated	USD $550,000.00
3.1: A coastal project implementation toolbox is developed to ensure structured, effective project implementation with sustainable impacts and meaningful up-scaling potential		***Output 8:*** Viable innovations are rolled out, scaled up, encouraged and/or accelerated.	8.1. No. of innovative adaptation practices, tools and technologies accelerated, scaled-up and/or replicated	USD $150,000.00
3.2: Priority actions for bolstering coastal resilience are undertaken.		***Output 4:*** Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability ***Output 5:*** Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability	4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by sector and scale) 5.1. No. of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type and scale)	USD $5,725,000.00

3.3: Lessons learned from project interventions collected and provided on dissemination platform		**Output 3.2:** Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	3.2.2 No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders	USD $75,000.00
4.1: Develop a national 'payment for coastal resilience' (PCR) strategy and act, including a prioritization system for allocation of resources and monitoring framework.		**Output 7:** Improved integration of climate-resilience strategies into country development plans	7.2. No. of targeted development strategies with incorporated climate change priorities enforced	USD $150,000.00
4.2: Set-up of 'Coastal Resilience Fund' under the Ministry of Finance (GovSKN), which manages and allocates revenues from taxes under the PCR act.		***Output 8:*** Viable innovations are rolled out, scaled up, encouraged and/or accelerated.	8.2. No. of key findings on effective, efficient adaptation practices, products and technologies generated	USD $200,000.00
4.3: Develop a PCR communication strategy, including local, regional and tourism-tailored communication		**Output 3.2:** Strengthened capacity of national and subnational stakeholders and entities to capture and disseminate knowledge and learning	3.2.2 No. of tools and guidelines developed (thematic, sectoral, institutional) and shared with relevant stakeholders	USD $50,000.00

A. **Record of endorsement on behalf of the government**[2]

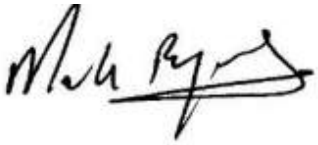
Provide the name and position of the government official and indicate date of endorsement. If this is a regional project/programme, list the endorsing officials all the participating countries. The endorsement letter(s) should be attached as an annex to the project/programme proposal. Please attach the endorsement letter(s) with this template; add as many participating governments if a regional project/programme:

Mrs. Colincia Levine, *Permanent Secretary,* *Ministry of Environment, Climate Action and Constituency Empowerment*	Date*: 23/05/2024* 

B. **Implementing Entity certification**

Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person's name, telephone number and email address

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans(National Climate Change Adaptation Strategy for Saint Kitts and Nevis and St. Kitts and Nevis' Nationally Determined Contributions to the UNFCCC) and subject to the approval by the Adaptation Fund Board, commit to implementing the project in compliance with the Environmental and Social Policy and the Gender Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project.

Mark Bynoe, PhD Implementing Entity Coordinator 	
Date: *April 22, 2024*	Tel. and email: +592 620 0559 and mbynoe@caribbeanclimate.bz
Project Contact Person: Mr. Ryan Phillip	
Tel. And Email: +501 605 8078 and rphillip@caribbeanclimate.bz	

ST. CHRISTOPHER AND NEVIS
MINISTRY OF ENVIRONMENT, CLIMATE ACTION AND CONSTITUENCY EMPOWERMENT
UNIT C21 SANDS COMPLEX
BASSETERRE

Letter of Endorsement by Government

23 May 2024

To: The Adaptation Fund Board
c/o Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

Subject: Endorsement for Coastal Adaptation and Resilience Initiative – St. Kitts and Nevis (CARI-SKN)

In my capacity as designated authority for the Adaptation Fund in St. Kitts and Nevis, I confirm that the above national project proposal is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in St. Kitts and Nevis

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by the Caribbean Community Climate Change Center and executed by Ministry of Public Infrastructure et. al.

Sincerely,

Colincia Levine (Mrs.)
Permanent Secretary
Ministry of Environment, Climate Action and Constituency Empowerment