



Report of the Gender-based Climate Resilience Analysis for Grenada, Carriacou and Petite Martinique

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List of Acronyms and Abbreviations

AR5	Intergovernmental Panel on Climate Change Fifth Assessment Report
CANARI	Caribbean Natural Resources Institute
CARICOM	Caribbean Community
CARIWIG	Caribbean Weather Impacts Group
CCCCC	Caribbean Community Climate Change Centre
CDEMA	Caribbean Disaster Emergency Management Agency
CERT	Community Emergency Response Team
CEDAW	Convention on the Elimination of All Forms of Discrimination Against Women
COVID-19	Novel coronavirus SARS-COV-2 disease
CRFM	Caribbean Regional Fisheries Mechanism
CSO	Civil society organization
EnGender	Enabling Gender-Responsive Disaster Recovery, Climate and Environmental Resilience in the Caribbean
FAO	Food and Agriculture Organization of the United Nations
FCDO	Foreign, Commonwealth and Development Organization
GAC	Global Affairs Canada
GBA+	Gender Based Analysis+
GBV	Gender-based violence
GCF	Green Climate Fund
GCM	General Circulation Model
GDP	Gross Domestic Product
GEF	Global Environment Facility
GEPAP	Gender Equality Policy and Action Plan 2014-2024 for Grenada, Carriacou and Petite Martinique
GHG	Greenhouse gas
ILO	International Labour Organization
IPCC	Intergovernmental Panel on Climate Change
IPV	Intimate partner violence
LGBTQIA+	Lesbian, Gay, Bisexual, Transgender, Queer, Intersex, Asexual and the ally community
MSME	Medium, small and micro enterprise
MTDS	Mid Term Development Strategy

NaDMA	National Disaster Management Agency
NAMA	Nationally Appropriate Mitigation Actions
NAP	National Adaptation Plan
NCCC	National Climate Change Committee
NDC	Nationally Determined Contributions
OECS	Organisation of Eastern Caribbean States
PRECIS	Providing Regional Climates for Impact Studies
PWDs	Persons with disabilities
RCM	Regional Climate Model
RCP	Representative Concentration Pathway
SAEP	Climate Smart Agriculture and Rural Enterprise Programme for Grenada
SDC	Sustainable Development Council of Grenada
SDG	Sustainable Development Goal
SIDS	Small island developing states
SOCC	State of the Caribbean Climate 2017 Report
SST	Sea surface temperature
TAMCC	T.A. Marryshow Community College
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UN Women	United Nations Entity for Gender Equality and the Empowerment of Women

Executive Summary

This report synthesises the findings from the gender-based climate resilience analysis in Grenada, Carriacou and Petite Martinique under the ***Enabling Gender-Responsive Disaster Recovery, Climate and Environmental Resilience in the Caribbean (EnGenDER) Project***. The project's overall goal is to improve gender-responsive climate and disaster resilience including for women and girls and key vulnerable populations and future generations in the Caribbean. It is supporting climate change, disaster risk reduction and environmental management interventions by leveraging sector-level entry points (e.g. National Adaptation Plans [NAPs] and Nationally Appropriate Mitigation Actions [NAMAs]) in nine Caribbean countries from 2019-2023. These countries include Antigua and Barbuda, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, Saint Vincent and the Grenadines and Suriname. The project is being led by the United Nations Development Programme (UNDP) and funded by Global Affairs Canada (GAC) and the United Kingdom Government.

The objective of the gender-based climate resilience analysis in Grenada was to provide the following:

- data on the gendered inequality and vulnerability of women and men in identified priority sectors (e.g. identified via NAPs, NAMAs or Nationally Determined Contributions [NDCs]);
- data on the successes and barriers to women's empowerment and participation in contributing to each identified priority sector, and the opportunities for policy articulation to strengthen the integration of gender equality into sectoral planning and implementation processes to address both adaptation and resilience; and
- data and information on the projected localized climate change impacts on men and women, persons with disabilities (PWDs), indigenous populations and other vulnerable groups within the priority sectors.

The report presents and analyses data on existing gender and social inequities, how climate change will impact on and shape the vulnerabilities among men, women and key vulnerable groups, and key gaps, opportunities and challenges for the three priority sectors identified for Grenada:

1. Food security (agriculture)
2. Disaster Management
3. Health

It also provides recommendations to guide the development of gender-responsive and socially inclusive policies and plans to build climate resilience in the priority sectors identified for Grenada.

1.1 Key findings and recommendations

Grenada is one of the few CARICOM countries where national climate change and gender policies and the NAP are well aligned, with gender equality and mainstreaming specifically considered within its climate change strategies and resilience framework. It has also been able to leverage funding through various climate funds to address climate and disaster resilience, including capacity building of national authorities, research and development in the area of climate change adaptation and disaster risk management, and piloting of climate-smart technologies with consideration of gender, youth, PWDs and other vulnerable groups.

However, there remain significant structural inequalities that contribute to vulnerability to climate-related hazards and other socio-economic shocks. These structural inequalities, including gender-based

inequalities, ultimately limit the potential to build adaptive capacity and resilience in the priority sectors and more widely. This has resulted in disproportionate vulnerability of certain groups to poverty, food insecurity and reliance on informal/vulnerable employment in climate-sensitive economic sectors, such as agriculture, fishing and tourism. Women and children in their care, and rural and coastal communities, are of most concern in this regard.

With projected climate change likely to adversely impact agriculture including crops, livestock and fisheries, food security is an increasing concern. While there has been increased local food production, and the agriculture sector has expanded since the COVID-19 pandemic unlike other sectors, reliance on food imports remains high. Without greater integration of green and climate smart approaches, technologies and investments, climate change hazards will quickly erase sectoral gains and put those people newly reliant on the industry for their livelihoods, at great risk and vulnerability to poverty.

Whilst both men and women experience hardship and deprivation, women are particularly vulnerable as a result of their socio-economic marginalization perpetuated by their ascribed gender roles. Data indicate that women have lower labour force participation rates than men and are more likely to lose their jobs/be retrenched, and only women reported resigning from work to take care of children. Data also indicates that women are also more likely to be engaged in low-skilled and low-paying jobs in the service-based economy based on traditional 'female' roles in Grenada. Female-headed households, including children and other vulnerable groups like elderly and PWDs, also face similar challenges. Data indicates that they are disproportionately affected by poverty, and more likely to be unemployed than their male-headed households.

The COVID-19 pandemic, which has already forced shifts, provides an opportunity to 'build back better' through investing in both recovery of affected sectors as well as investing in emerging green sectors and climate-resilient development. It provides a valuable opportunity to support women's entrepreneurship and access to new and emerging markets at the local and regional levels. The same can be applied to youth, which are among the most vulnerable to poverty and have limited access to the labour market. Increasing investment and training for green and climate-smart micro, small and medium enterprise (MSME) development is critical at this time, and this needs to be gender-responsive and inclusive to ensure that women, youth and other marginalized groups are effectively engaged. This can help drive economic development and expansion in more equitable ways and contribute to improved access to decent work and income and increased resilience.

Specific recommendations for gender mainstreaming in the identified priority sectors for Grenada are outlined in Table 13 in section 6.

1 Introduction

This report synthesises the findings from the gender-based climate resilience analysis in Grenada, Carriacou and Petite Martinique under the ***Enabling Gender-Responsive Disaster Recovery, Climate and Environmental Resilience in the Caribbean (EnGenDER) Project***. The project's overall goal is to improve gender-responsive climate and disaster resilience including for women and girls and key vulnerable populations and future generations in the Caribbean. It is supporting climate change, disaster risk reduction and environmental management interventions by leveraging sector-level entry points (e.g. National Adaptation Plans [NAPs] and Nationally Appropriate Mitigation Actions [NAMAs]) in nine Caribbean countries from 2019-2023. These countries include Antigua and Barbuda, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, St. Vincent and the Grenadines and Suriname. The project is being led by the United Nations Development Programme (UNDP) and funded by Global Affairs Canada (GAC) and the United Kingdom Government.

The report presents and analyses data on existing gender and social inequities, how climate change will impact on and shape the vulnerabilities among men, women and key vulnerable groups, and key gaps, opportunities and challenges. It also provides recommendations to guide the development of gender-responsive and socially inclusive policies and plans to build climate resilience in the priority sectors identified for Grenada.

It was developed by the Caribbean Natural Resources Institute (CANARI), which provided technical assistance to UNDP to undertake the gender-based climate resilience analysis under the EnGenDER project from September 2020 to May 2021.

1.1 Objectives

The objective of the gender-based climate resilience analysis in Grenada was to provide the following:

- data on the gendered inequality and vulnerability of women and men in priority sectors (e.g. identified via NAPs, NAMAs or Nationally Determined Contributions [NDCs]);
- data on the successes and barriers to women's empowerment and participation in contributing to each identified priority sector, and the opportunities for policy articulation to strengthen the integration of gender equality into sectoral planning and implementation processes to address both adaptation and resilience; and
- data and information on the projected localized climate change impacts on men and women, persons with disabilities (PWDs), indigenous populations and other vulnerable groups within the priority sectors.

This analysis will inform development of tailored capacity building initiatives for gender mainstreaming in the priority sectors identified for Grenada, and support the development of gender-responsive and socially inclusive NAPs, NAMAs and sectoral plans that reflect up-to-date information on climate change impacts and needs of men, women, PWDs, indigenous populations and other vulnerable groups under the EnGenDER project.

1.2 Scope

The gender-based climate resilience analysis focused on the following priority sectors identified for Grenada based on its NAP and other national climate change policies and plans:

- Food Security (Agriculture)

- Disaster Management
- Health

For food security, only the agricultural sector is considered, including crops and livestock. The NAP recognizes agriculture, fisheries and forestry as distinct sectors which are addressed separately throughout the plan.

2 Country overview

Grenada, Carriacou and Petite Martinique¹ (referred hereon as Grenada) are located in the Windward island chain just south of Saint Vincent and the Grenadines and north of Trinidad and Tobago. The tri-island state is volcanic, with an overall land area of 344.5 km². Mainland Grenada has a land area of 312 km² (The Nature Conservancy, 2013). The volcanic nature has led to the mountainous landscape of the islands, with the formation of coral reefs around them. The highest point in Grenada is Mount St. Catherine which stands at 833 m above sea level. In Carriacou, the highest points are Mount Carre and High North at an elevation of 291 m above sea level (Felician & Joseph-Brown, 2012).

There are expansive sandy beaches and other rich coastal habitats, including coral reefs, mangroves and seagrass beds, throughout the tri-island state (Felician & Joseph-Brown, 2012). Grenada has a tropical humid climate, with the typical wet (June to December) and dry seasons (January to May) (FAO, 2015) and temperature on the islands average 26 °C year-round (Felician & Joseph-Brown, 2012). The islands have an average rainfall of 2,350 mm, with a high of 4,500 mm in the mountainous interior and 1,000 mm at the coastline (FAO, 2015).

Grenada has a population of over 112,000 persons (2018 estimate), with 89% of the population settling in mainland Grenada, 10% in Carriacou and 1% in Petite Martinique (FAO, 2015). Development, infrastructure and settlement in Grenada occurs mainly at the coastline, with the capital St. George's located on the southwest coast and certain coastal roads and communities situated at or below sea level.



Figure 1. Map of Grenada (mapsopensesource, n.d.)

¹ Carriacou and Petite Martinique belong to the group of Southern Grenadine Islands. Carriacou is also the largest of the Grenadine Islands.

Grenada is categorized as an upper-middle income country with an estimated GDP of US\$834 million in 2013 (FAO, 2015). The economy is based heavily on tourism which generates most of the national revenue, foreign exchange and jobs. Services account for approximately 80% of the GDP. Agriculture, though contributing less to the GDP, also has a critical role in generating income for the country and providing employment. Agricultural products include nutmeg, cocoa, cinnamon, citrus, banana and other exports, as well as fish, with valuable commercial species like yellowfin tuna (FAO 2015).

2.1 Climate change trends and impacts

Grenada is highly vulnerable to climate change and related disasters. In 2004 and 2005, Hurricanes Ivan and Emily devastated Grenada, and the country is still rebounding years later. Hurricane Ivan damaged around 90% of the houses on the island and there was a total loss estimated to be US\$2.4 billion, two times the country's GDP (United Nations Development Programme, 2019). Grenada also experienced a drought in 2009 causing water shortages on the island. The event had great impacts on the country and its citizens and, although it is not a yearly event, the possibility of another severe drought can have detrimental impacts on the population and the environment. The impacts of drought and other climate-related events are intensified by human activity leading to other damaging environmental impacts such as adhoc development, land degradation, coastal erosion and contamination, pollution, solid waste and invasive species (Singh, 2010).

According to the National Climate Change Policy (Government of Grenada, 2017), the island is expected to be affected by the increased intensity of tropical storms, increased average annual temperature and SST and decreased average annual rainfall. It is also expected that the island will experience more drought events, coastal erosion, unpredictability of seasons (wet and dry) and saline intrusion. Specific projections include (Government of Grenada, 2017):

- A temperature increase of between 0.3 to 1.2 °C in the 2020s and 0.7 to 2.2 °C in the 2050s using a General Circulation Model (GCM).
- Increases and decreases between -40 mm to +7 mm in rainfall a month, by the year 2080, according to the GCM, with most models suggesting a general decrease in rainfall.
- Sea level in the Caribbean Basin is expected to rise to 0.24 m by the year 2150.
- With a 1 m rise in sea level, Grand Anse beach on the south west will be reduced by 22% and Marquis beach on the east coast will be entirely gone with a rise of 0.5 m.
- Eight per cent increase in hurricane intensity with every 1°C increase in SST.

With its heavy dependence on a few economic activities, largely tourism, climate-related events can disrupt the country's economy as it did with Hurricane Ivan and impact on human well-being, livelihoods and the natural environment (Government of Grenada , 2017).

Further analysis of climate change impacts on the priority sectors based on future projections can be found in section 5.3.

3 Policy and institutional context

3.1 National climate change policies, plans and coordinating mechanisms

The National Climate Change Policy for Grenada, Carriacou and Petite Martinique (2017-2021) provides the overarching framework for climate change adaptation and mitigation. The vision of the policy is to

empower nationals to manage impacts of climate change and focus on low-carbon development and resilience locally and for Grenada as a whole (Government of Grenada, 2017). It has eight main objectives and will be implemented through 13 cross-cutting strategies, which are aligned with the NAP and NDC (UN Women, 2020).

The NAP provides a framework for the coordination of climate adaptation efforts and sustainable financing for these efforts. It is a five-year plan for 2017-2021 that prioritises adaptation actions identified in sectoral plans and area management plans. It is aligned with the National Climate Change Policy, NDC, development goals for the country and the Caribbean Community (CARICOM) Regional Framework for Achieving Development of Resilient to Climate Change and Implementation Plan 2011-2021 (Government of Grenada, 2017). It highlights sectoral priorities and is comprised of 12 cross-sectoral programmes, including agriculture, fisheries and health, with related indicators and goals (UN Women, 2020).

Grenada's NDC outlines pathways to reduce its GHG emissions by 30% by the year 2025 and by 40% by 2040 (referenced from 2010 estimations) as part of the country's commitment under the United Nations Framework Convention on Climate Change (UNFCCC) and its aligned Paris Agreement. It focuses on reducing emissions from the forestry, waste, electricity and transport sectors.

The lead agency for climate change is the Ministry of Tourism, Civil Aviation, Climate Resilience and the Environment. It is responsible for oversight of implementation of the climate change policy and allied plans. It is also the focal point for the UNFCCC. The key coordinating mechanism is the National Climate Change Committee (NCCC). It is an inter-agency mechanism made up of 13 government representatives and comprises of four sub-committees: mitigation, adaptation, finance and sustainable development, and international negotiations and relations (Government of Grenada, 2017). It is the primary advisory committee for climate change in Grenada. The NCCC works closely with the Sustainable Development Council, which provides a medium for citizens to give input on government interventions related to environmental matters (including climate change) and social and economic development from planning to evaluation. The NCCC participates in council meetings to give updates to its members and receive their feedback (Government of Grenada, 2017).

Regionally, the Government of Grenada collaborates with a range of intergovernmental and technical agencies for climate change adaptation and mitigation, including the Organisation of Eastern Caribbean States (OECS) Commission and CARICOM agencies such as the Caribbean Community Climate Change Centre (CCCCC), the Caribbean Disaster Management Agency (CDEMA) and the Caribbean Institute for Meteorology and Hydrology (Government of Grenada, 2017).

Internationally, Grenada is a signatory to the UNFCCC, and also committed to the achievement of targets set out in the Agenda 2030 and its Sustainable Development Goals (SDGs), particularly Goal 13 on climate action. (Government of Grenada, 2017).

3.2 National gender policies, plans and coordinating mechanisms

Grenada's Gender Equality Policy and Action Plan (GEPAP) (2014-2024) provides a framework for guiding the mainstreaming of gender. The main aim of the policy is to remove constraints to the promotion and progress of gender equality. It is guided by the Growth and Poverty Reduction Strategy 2014 -2018 and the Constitutional right of the individual (1974), along with international treaties such as CEDAW (Division of Gender and Family Affairs, 2014). The policy was developed through a highly consultative process and

provides guidance to stakeholders in all sectors, public, private and civil society, on gender issues by prescribing actions, indicators and outcomes to follow (UN Women, 2020). The gender policy makes reference to climate change throughout. It also has an objective to “integrate gender equality into disaster management, climate change and related strategies, as a means of facilitating men’s and women’s complementary roles in environmental management and building a ‘green economy’” (Division of Gender and Family Affairs, 2014, p. xv).

The agency with responsibility for leading gender development in Grenada is the Division of Gender and Family Affairs in the Ministry of Social Development and Housing. There is a National Gender Equality Commission, which is comprised of representatives from various stakeholder groups such as civil society organizations (CSOs), unions, religious organizations and the private sector, including both men and women. There is also an Inter-Ministerial Council on Gender Focal Points that was established in 2017 to promote the mainstreaming on gender within the Government of Grenada (National Plan Secretariat, 2019). Its membership was broadened in 2019 to ensure wider representation and engagement across sectors. Gender Focal Points are appointed by each ministry and statutory body with the main role of guiding and promoting gender mainstreaming withing the ministry or statutory body which they represent. They help to ensure that gender quality and equity guides processes policy formulation and implementation. Gender Focal Points also engage in: gender analysis to highlight gender issues in various sectors; data collection, analysis and dissemination for gender-disaggregated data; and collaborative work with the Division of Gender and Family Affairs, gender experts, civil society, academia and regional and international agencies (Division of Gender and Family Affairs, 2014). Other mechanisms exist for vulnerable groups, such as the Grenada National Council for the Disabled (National Plan Secretariat, 2019) and the National Youth Council (Division of Gender and Family Affairs, 2014). Further international and regional commitments related to gender equality and social inclusion are listed below in Table 1 (Division of Gender and Family Affairs, 2014).

Table 1. List of commitments, conventions and instruments guiding human rights, women’s rights, social inclusion and gender equality in Grenada

International and regional commitments	Additional international and regional instruments
<ul style="list-style-type: none"> • Agenda 2030 and the Sustainable Development Goals (SDGs) • Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) (1979), which was ratified in 1990 • Convention on the Rights of the Child (1989); which was ratified in 1990 • International Covenant on Civil and Political Rights (1966); which was ratified in 1991 • International Covenant on Economic, Social and Cultural Rights (1966); which was ratified in 1991 • Inter-American Convention on the Prevention, Punishment and Eradication of Violence against Women (‘Convention of Belem de Para’); which was ratified in 2000 	<ul style="list-style-type: none"> • Nairobi Forward-looking Strategies for the Advancement of Women (1985) • Beijing Declaration and Platform for Action (1995) • Millennium Development Goals (2000) • Commonwealth Plan of Action for Gender Equality 2005–2015 • Inter-American Commission of Women Triennial Program of Work (2013-2015) • International Conference on Population and Development Programme of Action (1994) • Brasilia Consensus (2010) • Caribbean Joint Statement on Gender Equality and the Post-2015 and SIDS Agenda (2013) • Santo Domingo Consensus (2013) • UN Women’s Action Plans; and UN Economic Commission for Latin America and the Caribbean’s Gender Equality Observatory

4 Approach and methodology

4.1 Gender-Based Analysis+ Framework

A Gender-Based Analysis+ (GBA+) framework was used to guide the analytical process, and inform specific data collection and analysis, in order to assess how diverse groups of women, men, and gender diverse people may experience climate change policies, programmes and initiatives. The “plus” in GBA+ considers many other identity factors in addition to gender, such as race, ethnicity, religion, age, and mental or physical disability, and how the interaction between these factors influences the way different groups of people might experience government policies and initiatives².

The GBA+ framework provides a systematic way to identify key issues and factors that contribute to gender and other social inequalities. The framework also takes a multi-level approach, focusing on individual, relational and structural factors within both public and private spheres as individuals are likely to experience gender differently, or hold different roles, within different groups or relationships.

The framework is a means to a bigger end, with the goal of devising and implementing policies and programmes which do not exclude or harm women and other vulnerable groups of men, women and other genders, which take their needs and perspectives into account, and which may help redress some of the existing gender imbalances.

4.2 Applying GBA+ to understand climate change vulnerability and resilience

Given the objectives of the EnGenDER gender-based climate resilience analysis, the GBA+ framework was designed to support three broad areas of analysis:

1. Vulnerability and Capacity:

- a. Vulnerability refers broadly to the long-term factors which weaken people's and systems' abilities to cope with the sudden onset of disaster, or with drawn-out emergencies (Oxfam, 1999). It also makes people more susceptible to disasters. In the context of climate change, vulnerability is understood as the propensity or susceptibility to be adversely affected by climate change risks, including climate variability and extremes (IPCC, 2014) as shown in Figures 2 and 3. It is important to note that vulnerabilities exist before disasters, contribute to their severity, make effective disaster response harder, and continue after the disaster.
- b. Capacity describes the existing strengths of individuals, households and social groups. In the context of climate change, adaptive capacity is defined as the ability of systems, institutions, humans and other organisms to adjust to potential damage, take advantage of opportunities, or respond to consequences (IPCC 2014). This is related to people's material and biophysical resources, their social resources, and their beliefs and attitudes. Capacities are built over time and determine people's ability to cope with crisis and recover from it (Oxfam, 1999; IPCC, 2014).

² Government of Canada. Gender-based Analysis Plus: <https://cfc-swc.gc.ca/gba-acis/references-bibliographie-en.html> [Accessed September 1, 2020]

2. **Policy** – The degree to which national climate change policies and plans, as well as key sectoral policies and plans, have taken into consideration the different needs of various groups of men, women and other key vulnerable groups (e.g. elderly, youth, PWDs, LGBTQIA+ and indigenous communities) and the impacts of policy provisions on these groups.
3. **Institutions** – The degree to which national machineries focused on climate change, and priority sector machineries, have the capabilities and resources to effectively facilitate gender mainstreaming.

This framework for analysis draws on conceptual frameworks and tools for analysis from the NAP Global Network and UNFCCC (2019), IUCN, UNDP and Global Gender and Climate Alliance (2009), Oxfam Capacities and Vulnerabilities Framework (1999) and work developed by the Caribbean Regional Fisheries Mechanism’s Mainstreaming Gender Equality in Fisheries of the Caribbean project³.

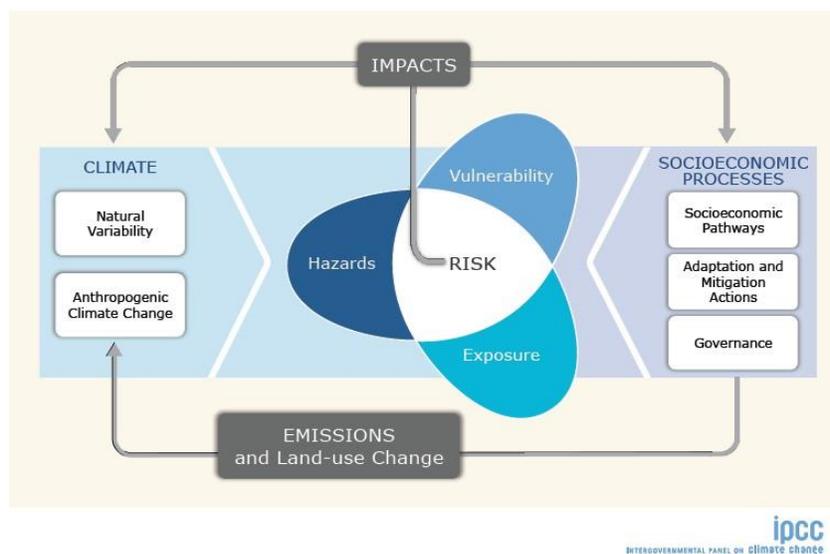


Figure 2. Climate Risk Model, including linkages between vulnerability, hazards and exposure (Source: IPCC, 2014)

³ See https://www.crfm.int/~uwohxixf/images/CRFM_Tech_Advisory_Doc_No_2020-09_Priority_areas_-_gender_mainstreaming_initiative_22.10.2020.pdf



Figure 3. Socio-economic processes that influence climate and disaster risk and vulnerability

4.2.1 Key considerations for analysis

Key issues of concern and factors to consider within the three broad areas of analysis are outlined below.

Vulnerability and Capacity

Specific vulnerabilities and capacities, including coping and adaptive strategies, were analysed for the two priority sectors looking at the ways in which men, women and key vulnerable groups have been or are impacted by climate change and related disasters. This analysis took into account the biophysical, financial/material and social assets available for specific groups. In particular, it looked at the following key aspects:

- **Access to and control over resources** to understand what differences exist between men and women and key vulnerable groups in terms of their access to critical resources such as land, equipment/tools, financing, information and educational/training opportunities needed to support their day-to-day work and response and recovery to climate-related hazards.
- **Livelihoods and supporting ecosystems** to understand what are the past and current impacts of climate-related hazards on the main livelihoods of men, women and key vulnerable groups and the supporting ecosystems that provide goods and services and whether any shifts have occurred in livelihoods.
- **Participation in decision-making** to understand how men, women and key vulnerable groups are engaged and represented in decision-making and consultative processes at the sectoral and local levels, including within households and local organizations, and whether they face disadvantages or barriers to their engagement.
- **Culture, roles and gender relations** to understand how cultural attitudes, beliefs and social norms and relations, including gender biases and gender-based violence (GBV), affect the roles,

relationships and opportunities available to men, women and key vulnerable groups and shape their vulnerabilities and capacities.

Policy

National climate change policies and plans, and relevant policies and plans for the priority sectors, were analysed in terms of the following aspects:

- whether there is a clearly stated mandate for addressing gender equality and social inclusion, including for specific vulnerable groups
- whether there are specific provisions to ensure consideration of gender equality, including gender-focused research, data collection and monitoring, as part of the implementation process
- whether there is a budget or institutional mechanism(s) in place to address gender concerns

Institutions

The national machineries focused on climate change, and priority sector machineries, were analysed in terms of the following aspects:

- capacity for gender mainstreaming, including technical knowledge and skills to conduct gender analysis and facilitate mainstreaming
- programmes show evidence of integrating gender considerations in the design and implementation and adjusting based on learning
- whether there is financing and budgeting that is gender-responsive
- whether structures and procedures have been designed and put in place to support substantive gender work, including collecting and analysing gender disaggregated data
- coordination and decision making, including whether there is an established gender focal point and level of collaboration and coordination with the lead agency for gender affairs and key gender machineries
- organizational culture and advocacy, including presence of leaders and champions that advocate for gender equality and whether there are biases towards the issues of gender, LGBTIA+ and other

4.2.2 Key assumptions and limitations

In developing and applying this GBA+ framework, there were a number of assumptions made and limitations that had to be taken into account, including:

1. When we refer to gender and differences between men and women we are also taking into account all the intersecting vulnerabilities such as age, disability, class, race and ethnicity and other factors.
2. While gender equality in terms of numbers of men and women in organizations and leadership positions is a key strategic goal for gender equity, it does not, by itself, signal that gender concerns and gender consciousness are implied.
3. Many of the concerns of 'invisible' populations will not be taken into consideration simply because they are marginalized in society. These may include LGBTIA+, indigenous peoples and remote/inaccessible communities.
4. Given the available data and time and capacity constraints, specific analysis of several key vulnerable groups in the GBA+ landscape could not be undertaken. As such, reference to these groups based on interviews and focus groups will be anecdotal and therefore requiring further research to expand on the baseline's findings.

4.3 Methodology

CANARI utilized a suite of tools to collect data and effectively engage and gain inputs from diverse stakeholders, including typically underrepresented groups such as women producers and women-led enterprises, youth, PWDs and the very poor, for the gender-based climate resilience analysis using virtual and in-person methods.

A comprehensive desk review was conducted to understand the policy and institutional context, climate change impacts and vulnerabilities, current climate change initiatives, and climate financing options as well as identify key opportunities, challenges and past recommendations to support a gender-responsive and socially inclusive approach to adaptation and resilience building in the priority sectors in Grenada. Relevant national and regional documents and statistics were collected for the priority sectors for the desk review, including national and sectoral policies and plans, legislation, census data, vulnerability assessments, gender assessments, poverty and other socio-economic assessments, funding proposals and project documents for climate change adaptation and resilience initiatives.

A gap analysis was conducted based on the desk review to identify key data gaps and needs in assessing climate change impacts and vulnerabilities and key opportunities and challenges for mainstreaming gender in the priority sectors. This gap analysis informed the identification of target stakeholders and the design and delivery of the data collection tools for the stakeholder consultations to ensure that specific gaps are filled, and tools are tailored to the local context and needs.

Data collection included key informant interviews and an online survey, using largely virtual methods, focusing on filling data gaps and supplementing the desk review findings. In total, nine key informant interviews were conducted in November 2020 with key government agencies and civil society organizations (CSOs) (targeting 3 men and 9 women)⁴. The interviews sought to capture relevant data based on the GBA+ framework and allow for more in-depth exploration and discussion of local perceptions, experiences and the economic, political and socio-cultural factors shaping gender and social inequalities and vulnerability to climate change and disasters in the priority sectors and Grenada more broadly. See Appendix 1 and 2 for the list of key informants and the interview questions, respectively.

A regional online survey was also administered in November 2020 to gain wider stakeholder inputs, including from community groups, youth groups, farming associations, fisherfolk organizations, diving and yachting group, small agri-businesses, government agencies and national and regional CSOs working on gender and climate change issues. Unfortunately, there was only one respondent to the survey representing an environmental CSO. As a result of the low level of response, no detailed statistical analysis could be undertaken based on the online survey.

4.3.1 Climate and socio-economic vulnerability profile

In addition to the above, a climate and socio-economic vulnerability profile was also developed to better understand the potential impacts of climate change, related vulnerabilities and how this may shape the socio-economic context, including for men, women and key vulnerable groups engaged in the three priority areas, to inform climate change planning and programming.

⁴ There were multiple persons on two of the interviews, thus a total number of 12 persons engaged in the process.

The profile draws on and analyses the latest available climate change data and projections and socio-economic data, focusing on those variables that are most significant or catalytic in terms of climate change adaptation and resilience. Therefore, the idea was not only to identify socio-economic vulnerabilities that would be compounded by climate change but, conversely, to identify vulnerabilities which, if they were positively addressed, would produce far reaching/catalytic impacts. This is why the profile focuses on access to labour and employment as a key theme.

The profile specifically addresses the main climate change trends and projections and potential key impacts, overall socio-economic vulnerabilities, and climate change-related shocks and their intersections with structural inequalities in relationship to access to decent work⁵.

The latest climate change data and projections were sourced from the State of the Caribbean Climate Report (UWI-Climate Studies Group Mona, 2020), focusing on temperature, rainfall and sea level rise as well as rapid onset extreme events like hurricanes and floods. The projections are for three time periods, 2030, 2050 and 2100, and based on a range of General Circulation Models (GCMs)⁶, Regional Climate Models (RCMs) as well as statistical downscaling⁷ techniques. Additional data and maps were sourced from the Caribbean Climate Weather Impacts Group (CARIWIG) Portal⁸.

⁵ As defined by the United Nations (2018), decent work “means opportunities for everyone to get work that is productive and delivers a fair income, security in the workplace and social protection for families, better prospects for personal development and social integration. It is also important that all women and men are given equal opportunities in the workplace. See: <https://www.un.org/sustainabledevelopment/wp-content/uploads/2018/09/Goal-8.pdf>

⁶ A climate model (including Global or Regional) is a numerical representation of the climate system based on the physical, chemical and biological properties of its components, their interactions and feedback processes, and accounting for some of its known properties. The climate system can be represented by models of varying complexity; that is, for any one component or combination of components a spectrum or hierarchy of models can be identified, differing in such aspects as the number of spatial dimensions, the extent to which physical, chemical or biological processes are explicitly represented, or the level at which empirical parametrizations are involved. There is an evolution towards more complex models with interactive chemistry and biology. Climate models are applied as a research tool to study and simulate the climate and for operational purposes, including monthly, seasonal and interannual climate predictions. (Available at https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_AnnexI_Glossary.pdf)

⁷ Downscaling is a method that derives local- to regional-scale (up to 100 km) information from larger-scale models or data analyses. Two main methods exist: dynamical downscaling and empirical/statistical downscaling. The dynamical method uses the output of regional climate models, global models with variable spatial resolution, or high-resolution global models. The empirical/statistical methods are based on observations and develop statistical relationships that link the large-scale atmospheric variables with local/regional climate variables. In all cases, the quality of the driving model remains an important limitation on quality of the downscaled information. The two methods can be combined, e.g., applying empirical/statistical downscaling to the output of a regional climate model, consisting of a dynamical downscaling of a general circulation model (Available at https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_AnnexI_Glossary.pdf)

⁸ See http://cariwig.caribbeanclimate.bz/#future_data_viewer

Socio-economic data was primarily sourced from the following key data sources, and the limitations noted in relation to when the data was collected and the level of disaggregation:

- 3rd Quarter 2020 National Labour Force Survey Results, Basic Tables, Grenada, Carriacou and Petite Martinique (Central Statistics Office, 2020a)
- 4th Quarter 2019 National Labour Force Survey Results, Basic Tables, Grenada, Carriacou and Petite Martinique (Central Statistics Office, 2020b)
- Caribbean COVID-19 Food Security & Livelihoods Impact Survey, Grenada Summary Report, November 2020 (World Food Programme, 2020)
- COVID-19 and the English- and Dutch-speaking Caribbean labour market: A rapid assessment of impact and policy responses at the end of Q3, 2020 (International Labour Organization (ILO), 2020)
- Grenada's Growth and Poverty Reduction Strategy 2014 – 2018 (Government of Grenada, 2014)
- Grenada's Climate Smart Agriculture and Rural Enterprise Programme, Supervision Report, January 2021 (International Fund for Agricultural Development, 2021)

Attention is paid to the COVID-19 pandemic as much as possible in light of the lack of data on its impacts to date, and structural analysis is used to highlight trends and areas of concern. COVID-19 related data combined with labour and other socio-economic data provides a more relevant contextual analysis.

GBA+ is also integrated to address the equitable participation of women and men in the development areas being discussed, as well as key vulnerable groups, and socio-economic analysis takes into account vulnerabilities associated most closely with gender and employment in the context of climate change.

4.3.2 Limitations

The COVID-19 pandemic prevented the CANARI team from conducting planned in-person activities, including focus groups and in-person meetings during a mission to Grenada, which are typically much more effective in engaging the marginalized and vulnerable groups that the analysis hoped to target. The level of stakeholder engagement in consultations was lower than expected. Due to the limited time for data collection, interviews with representatives of the Health Sector and Disaster Management sector did not take place, though several attempts were made to do so. Poor survey response also meant that statistical analysis could not be undertaken for the survey data.

As such, the sectoral analysis presented in section 5.1 and policy and institutional analysis in section 5.2 were largely based on secondary data, including recent gender and socio-economic assessments for specific projects and initiatives within the priority areas.

For the vulnerability profile in section 5.3, it was difficult to obtain downscaled climate change data and the most up-to date socio-economic data for Grenada, recognizing that COVID-19 has had a significant effect on the current landscape. However, the data utilized is seen as legitimately indicative of socio-economic conditions of concern in addressing vulnerability to the impacts of climate-related hazards and other shocks. Additionally, it is worth noting that the climate change data and socio-economic data are at different geographic scales, with the climate change data of coarser resolution than the socio-economic data. This also limited the depth of the analysis.

5 Findings of the gender-based climate resilience analysis

5.1 Sectoral analysis

Drawing on the GBA+ framework, this section analyses gender differences and inequities and issues of concern to key vulnerable groups, including PWDs, youth and elderly, for the three priority sectors in the context of access to and control of resources, livelihoods and supporting ecosystems, participation in decision-making, and culture and gender relations.

5.1.1 Food security (Agriculture)

Grenada's main export crops are cocoa, nutmeg and bananas. After Hurricane Ivan in 2004, revenue from agricultural exports reduced from just over US\$15 million (2002) to US\$8.3 million (2005) (Dottin, n.d.). Hurricane Ivan severely affected these and other agricultural products, and although there has been some growth in the nutmeg and cocoa subsectors, production is still not at the level it once was prior to 2004. The banana industry also suffered great losses, with farms unable to recover from the impacts of Hurricane Ivan and the industry declining since (Dottin, n.d.).

Since the easing of the global financial crisis in 2012 and the hurricanes in 2004 and 2005, the instituting of government fiscal and management restructuring has led to the steady growth in the Grenadian economy. The agricultural sector is one of the sectors contributing to this growth, making up an average 5% of the national GDP between 2010 and 2014 (James, 2015). The agricultural sector has grown around 7.4% per year for the same period (James, 2015). See Figure 4 below. However, despite this economic growth in the agricultural sector, there has been a decrease in the number of farms and the amount of productive land (James, 2015).

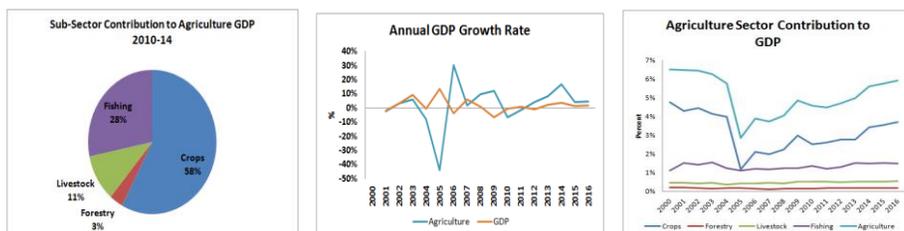


Figure 4. Agriculture contribution to national GDP between 2000 and 2016 and the sub-sector contribution to overall agricultural GDP as presented in the National Agricultural Plan 2015-2030 (James, 2015)

In Grenada, the Ministry of Agriculture and Lands is responsible for the management of the sector and the implementation of aligned policy and plans (Table 2), while the main coordinating mechanism identified for food security is the Grenada Food and Nutrition Council. This is a statutory body responsible for the providing support in governance and the provision of services for the agricultural sector (James, 2015). The Grenada Food and Nutrition Council does address climate change impacts on food security and emphasises the need for building resilience in the food sector nationally. Gender is also recognized as a key concern, with the shortcomings in gender research and responsiveness at the policy level noted as an area to address.

Table 2. Key national policies and plans for Grenada’s agricultural sector

National plan or policy	Description
National Agricultural Plan 2015 – 2030 (James, 2015)	The plan was developed with the primary objective of catalysing growth and development in the agricultural sector by creating a participatory implementation framework to address issues affecting food security, poverty reduction and livelihoods and income. The plan has five strategic focus areas with several. Strategic focus area 3 looks at climate change states “To strengthen the agricultural sector’s resilience to climate change and natural disasters, reduce its adverse impact on climate change and the environment, and ensure that development is socially, economically, and environmentally sustainable”.
Grenada Food and Nutrition Security Policy 2013 (Government of Grenada , 2013)	The goal of the policy is to encourage sustainability and availability of food, ensure access, nutritional security and stability of supply for all citizens. It provides a framework for implementation of coordinated measures and interventions at all levels in the sector and including all stakeholders, including the government, private and civil society sectors. Climate change is mentioned throughout the document.
Blue Growth Coastal Master Plan Grenada (Government of Grenada, 2016)	The Blue Growth Master Plan is an overarching document for the development of the blue economy in Grenada and the sustainable use of its coastal and marine resources. It has three policy goals based on governance, sustainability and capacity development, with several policy objectives under each of these. Climate change is addressed in setting the context for the development of the plan.

The following sections examine gender differences in food security, highlighting gender roles, inequalities and vulnerabilities and is analysed on access and control over resources, livelihoods and ecosystems, their participation in decision-making and culture roles and decision-making.

Access to and control over resources

According to James (2015), 9.6% of the working population was employed in agriculture in 2013. There were around 9,206 farmers, of which 6,078 were registered. The majority of these farmers were men work (71%) (James, 2015). This gender imbalance remains to today. Data further shows that there has been a decrease in farm employment with the increased mechanization of the sector and reduced need for labourers.

In considering access to land, men in Grenada have had and continue to have greater access to land and ownership of land (see Table 3). Land in Grenada has historically been passed on through generations, with the men/boys in the family usually inheriting the land. However, this tradition is changing. There has been a shift with more women becoming land/farm owners and employing men on their farms or in other agri-businesses. This shift may be linked in part to the increased mechanization of the sector which provides greater opportunities for women's engagement as less heavy manual labour is required. Men have greater access to land and land ownership, and although progress is being made on mainland Grenada for increased access to land for women, it is still largely the case in the Grenadines islands of Carriacou and Petite Martinique (Marryshow, 2020; Clarke-Frank, 2020). As such, men are more likely to access loans or credit, as a farm/landowner and deed holder. A woman who does not own land has less security and has a lower probability of obtaining loans. For the most part, land in Grenada is inherited. In this scenario, if land is divided among family members, it becomes uneconomical for agricultural production.

Table 3. Land ownership by gender as recorded in 2013 (Baksh, 2014)⁹

Gender	Land Ownership					
	Owned	Rent/Leased	Family Land	Other	Government Lands	Not specified
Males	532	210	339	21	11	21
Females	199	49	86	6	3	4
Total	731	259	425	27	14	25

While men are engaged in the more physically intensive work around the farm, women may do less physically intensive or administrative tasks on the farm. Typically, women fulfil roles in agro-processing and post-harvest activities. Women make up the majority of agro-processors in the cottage industry level, with over 100 products made in small businesses in rural areas. This includes products from cocoa, including chocolate, cocoa powder and cocoa butter, honey, juices, jams/jellies and various other value-added products. Women are also more likely to tend to smaller livestock such as poultry, whereas men are engaged in rearing larger livestock like cattle.

Notably, over the years there has been a decline in food imports, though meat imports have been steadily increasing. The declining import bill can be attributed to increased prices in imports, but also increased consumption of locally produced food. Although more persons are eating locally produced food, around

⁹ Sourced in the Country Gender Assessment from the Grenada small farmers vulnerability reduction initiative project (GSFVRIP), Ministry of Agriculture, Government of Grenada, 2013.

70% of the food offered is imported, highlighting ongoing concerns over food security (James, 2015).

Access to training and other capacity building initiatives has been increasing for women as more of them are taking advantage of opportunities (Marryshow, 2020). In some cases, there may be more women than men participating in training, because the latter are working. In the Grenadines, more so Petite Martinique, men culturally have greater access to training (Clarke-Frank, 2020).

Livelihoods and ecosystems

The agriculture sector is particularly affected by changing rainfall patterns which affects what and when farmers can plant, especially as most fields are rain-fed, and vulnerable to extreme rainfall events including floods, droughts and hurricanes. Since Hurricane Ivan struck Grenada in 2004, there has been a shift in employment and the types of work available. Construction bloomed, while agriculture declined. Construction work was considered a male profession and encouraged migration for work in construction. Women were then left at home to care for children and had limited opportunity for income generation. It was also noted that many women who were employed as domestic workers lost their jobs after the hurricane and there was limited opportunity for other income in the short and medium term (UNDP, 2019).

An example of this was the impact on the nutmeg industry due to Hurricane Ivan, where many women from rural parishes were affected due to loss of income. They were forced to migrate in search of work or developed short term coping mechanisms such as rationing of food and refraining from purchasing agricultural inputs such as fertilisers (UNDP, 2019). Extreme events, like hurricanes, often magnify the gender roles or differentiation of labour and the vulnerabilities of various groups. Over the years, there have been extreme weather patterns, with a very bad drought in 2009/2010. There have also been several flooding events at unpredictable times.

The livelihood impacts on men and women depended mainly on their roles (Marryshow, 2020, pers. comm; St. Louis, 2020, pers. comm.) according to interview participants. As most of the farmers in Grenada are male, they are affected by loss and damage to crops. In the aftermath of Hurricane Ivan and Emily, assistance was given to landowners and farm owners, but workers did not receive the same benefit. This was seen in the nutmeg industry, where assistance was provided to the farm, but those working on the farm, including females, had to fend for themselves. Those who did not own the land they worked were unable to get the land back into production after the hurricanes, because the owners retained the land, or the farmers could not afford to restart. This occurred in some of the lower income communities/parishes. A few persons noted that agriculture was significantly impacted by climate-related events and that women farmers were more vulnerable to impacts and less able to recover. Access roads to land were also greatly impacted by hurricanes and, given Grenada's terrain, many farmers were unable to get back into production because their land is inaccessible. Tree crops are not cultivated as they once were, even though some women are trying to get back into selling spices such as nutmeg. In Petite Martinique, men are more affected by climate change on livelihoods, as they are the ones primarily engaging in agriculture and fishing, and who create employment for others. Women and other vulnerable groups, such as the elderly, children and PWDs are not (in most instances) directly affected and are supported through the extended family (Clarke-Frank, 2020).

Learning from these experiences in the past, there have been initiatives aimed at building resilience in the sector. The Ministry of Agriculture has been working with farmers to get involved in rainwater harvesting, which ensures a more regular supply. They have also been working with farmers on solutions for protecting crops and enabling year-round planting, like the construction of shade houses and other protective technologies, as well as climate-friendly approaches to irrigation, which will save on water use and protect the system from high wind. Persons are now also getting into aquaponics and hydroponics. The ministry is also looking at getting persons back to composting and decreasing dependence on chemical fertilizers and encouraging farmers to learn more about the structure and building up of soil, particularly now as the pandemic has decreased the availability of chemical fertilizers. Grenada has recently shifted focus to tourism from agriculture but due to COVID-19, and the need for food security, there is a redirection of efforts to agriculture (St. Louis, 2020, pers. comm.). There have also been increased outbreaks in vector borne diseases such as dengue and food prices have become unpredictable. For the Grenadine islands, coastal erosion is one of the main risks from climate change due to sea level rise. Coupled with overgrazing by livestock, which causes loosening of topsoil and increased sedimentation, nearshore reefs are also threatened by coral bleaching. Droughts and decreased rainfall and access to water are also significant challenges (Baker, 2020, pers. comm.).

Participation in decision-making

Although there is no coordinating mechanism for food security outside of the Food and Nutrition Council, which is a statutory body, CSOs such as the Grenada Network of Rural Women Producers and Agency for Rural Transformation play a significant role in advocating for women's rights and representation in the sector. The Grenada Network of Rural Women Producers are regularly consulted and sit on national mechanisms such as the SDC. Further, there is collaboration with the Grenada National Organization of Women Inc. which is an umbrella organization for women and women-focused groups in Grenada and regarded as a coordinating mechanism for advocating on women's issues. There is also a similar network for PWDs.

However, the extent of influence of these groups/networks in decision-making is unclear based on current data.

Culture, roles and gender relations

In Grenada, men are still often seen as the head of the household, with men seen as being "in charge" (Division of Gender and Family Affairs, 2014). Generally, women are tasked with caring for children and the elderly (Division of Gender and Family Affairs, 2014). There are therefore expectations of what roles men and women should play and particular areas highlighted as male careers, such as agriculture and fisheries. These gender biases persist, although Grenada has sought to address gender inequalities in education overall. There remains a tendency for women and girls to pursue certain areas of study based on expected female career paths and incomes, while there is lower participation in tertiary level education by boys/men but greater participation in vocational education and training (National Plan Secretariat, 2019).

5.1.2 Disaster management sector

The agency with primary responsibility for national disaster management in Grenada is the National Disaster Management Agency (NaDMA). The main coordinating mechanism for disaster management is

the National Disaster Management Advisory Council. This was established to oversee the activities and management of NaDMA. It is comprised of several committees, such as Health Services, Search and Rescue, Disaster Relief Management to name a few (Caribbean Disaster Emergency Responsive Agency, 2005).

The Grenada National Integrated Relief Plan 2005 has provided the primary framework for managing disaster recovery post-Hurricane Ivan. The plan identifies key roles and functions, applicable to hurricanes and storms and other natural disasters. The plan also makes provisions for the development of eight sub-plans. However, the plan is in need of updating. There are currently no disaster management plans or gender plans for the priority sectors of food security, disaster management (UN Women, 2020).

Access to and control over resources

After Hurricane Ivan, it was there was a lack of proper and safe toilet facilities for women in shelters and not enough consideration is given to ensure the specific needs of women are met, like hygiene products. There are also concerns related to the safety of women in these facilities, with past reports of rape of women and girls and other forms of gender-based violence (Williams, 2020).

It was also mentioned that after the hurricane, and even today, elderly men were and are very disadvantaged as there is an emphasis on women and children. For those who did not have caregivers, these elderly men face significant constraints in accessing services and other needs. For example, existing government programmes, like the Support for Education, Empowerment and Development (SEED) programme, provide aid to children but not their parents and grandparents. There is also a lack of facilities for PWDs, even at their homes. In the event of a flood or landslide, there may not be accessible ways for PWDs to get out of a building and other such considerations.

Grenada has a national emergency evacuation plan and security guidelines for shelters. There are also National Disaster Committees and District Emergency Committees established for coordination and communication among shelters. The District Emergency Committees also help to link the communities with NaDMA and the National Disaster Committees. The Grenada Red Cross Society, and other CSOs sit on several of these committees, as well as members of the private sector. Although there is no committee established to specifically address the needs of women, elderly, PWDs or other vulnerable groups, provisions are made in the National Disaster Management Plan, particularly under the functions of the various District Committees (NaDMA, 2005).

Culture, roles and gender relations

The disaster management sector was noted as being male dominated, with many heads of technical departments being men, but the permanent secretaries have been mixed. For resources like water, there was no difference seen between genders or groups.

Interestingly, in interviews, there was a perception that women were better at coping than men (Marryshow, 2020, pers. comm.; St. Louis, 2020, pers. comm.; Ferguson, 2020, pers. comm.). It was noted that women would try different things to cope like baking, sewing and backyard gardening to ensure they have income and even use social media as a means of selling. Men were viewed as more likely to stick to what they were doing before, and so it is more difficult to convince men to change or try a new technique.

Additionally, as noted above, there is generally greater attention placed on women, especially pregnant women, and children in disaster response and in providing assistance. This means men are often left to fend for themselves and can also limit their options in terms of coping mechanisms in the event of natural disasters.

5.1.3 Health sector

The health sector in Grenada comprises all agencies and organizations mandated to provide health services, with the aim of promoting, preventing and rehabilitating public and personal health care by public and private entities. Notably, Grenada has an aging populace, with an estimated 12% of residents being 60 years or older. Increased life expectancy and a decreasing fertility rate is expected to lead to greater government expenditure on health care and social and national programmes like pensions (*Government of Grenada, 2016*).

The lead agency is the Ministry of Health and Social Security. While there is no overarching health coordinating mechanism, there are also several councils mentioned in the Health Sector Strategic Plan such as the Medical and Dental Council, Pharmacy Council, Nurses and Midwives Council that support work in their respective areas (*Ministry of Health and Social Security, 2016*).

The Strategic Plan for Health 2016-2025 guides the work of the ministry. The plan was developed to provide guidance on activities undertaken by all stakeholders in the sector, including the implementation of strategies and plan for management, coordination and participation of actors within the health sector and planning the annual expenditure for the health sector in Grenada. Climate change is mentioned in the document and addressed in section 2.1.8 on Emergency Preparedness and Disaster Management (*Ministry of Health and Social Security, 2016*).

Access to and control over resources

From the existing strategic plan for the sector, specialised health care for women is primarily based around support and obstetric care for pregnant women. There is no corresponding specialised health care for men. However, the Ministry has carried out several initiatives for education and outreach on the importance of men's health and has conducted assessments on the low interest of men in seeking health care. Key challenges that contribute to this include: the inequitable distribution of resources, with more emphasis on children and pregnant women; lack of specialized services for men; roles and lifestyle of men, for example livelihoods such as farmers and fishers that may not align with the availability of services; and the lack of indicators or standards or "checkpoints" for boys within institutions (*Government of Grenada, 2016*).

Other vulnerable groups, such as the elderly, also face challenges with access to resources. One example being the limited facilities available for long-term care. There are three in Grenada, one government owned and two privately operated. There is often a waiting list for persons to get into these facilities. Other issues include the lack of training in geriatric care, outdated policies, inability for persons to access/afford geriatric care, and limited understanding or consideration of mental health for older residents (*Government of Grenada, 2016*). For "human health and social work", 2001 and 2011 census data show that there were 1,519 women employed in the area, while only 285 men were employed, while for jobs in information and communication, there were more men (324) employed than women (226) (*Baksh, 2014*).

The public and civil society are engaged through the use of media to share information about public health issues, however there is no mechanism that allows civil society participation in public health decision-making and reaching of national health targets. The Ministry of Health considers input from civil society, but they are not involved in decision-making with respect to the management of public health (Government of Grenada, 2016).

Livelihoods and ecosystems

Climate change affect health both directly and indirectly through sudden onset events and slow onset events. Extreme events like tropical storms, hurricanes, intense rainfall, flooding, landslides and extreme heat can cause direct injury or kill persons. It can also create conditions favourable to the change and spread diseases. Grenada is also affected by slow on set impacts of climate change which can indirectly lead to health issues/challenges (Pochanke-Alff, et al., 2016).

More intense rainfall events can lead to increased occurrence of vector borne diseases- mosquito borne diseases such as dengue, chikungunya and zika can be difficult to manage, leading to outbreaks. Rodent borne diseases such as leptospirosis can also occur during flooding events where water supplies might be contaminated. Water borne diseases can also occur, especially in communities where pit latrines are still used and/or water supplies are contaminated with sewage. This can even extend to the dry season when there is less water available causing diarrheal diseases. Drought conditions can also lead to an increase in particulates in the air, causing respiratory illness, like asthma and increased occurrence of respiratory infections, particularly for those with chronic respiratory illnesses (Pochanke-Alff, et al., 2016).

These impacts of climate change can also indirectly affect food and nutritional security. The agricultural sector of Grenada is vulnerable to changes in climate variability, and will be affected by extended drought conditions, increased temperatures, storms, hurricanes and heavy rainfall. Drought conditions can affect crop yields, particularly in the north east of Grenada and Carriacou. Food supply chains can be disrupted, crop growth and pest and weed occurrence can be changed, and food production overall can be decreased. The decrease in food production and availability can lead to rise in prices, which can lead to malnutrition and vitamin deficiencies in poorer and vulnerable communities (Pochanke-Alff, et al., 2016).

Culture, roles and gender relations

In Grenada, gender stereotypes still exist, and is thought to be passed on through generations and reinforced by socialisation, culture, media and religion. This has led to some degree of normalisation of gender-based violence (GBV) and/or intimate partner violence (IPV) as it is seen as correcting wrong behaviour. However, there is evidence of change and transformation of these stereotypes and associated behaviours. Both men and women have started more fulfilling more non-traditional roles in jobs and at home and there are more women in leadership positions. Grenada, for example, has one of the highest number of women parliamentarians in the Caribbean (Nicholson & Deshong, 2018).

Women are generally the decision-makers on issues regarding health and also tend to utilize health services more frequently and earlier than men. Men are less willing to seek out preventative treatment, regarding it as a sign of weakness. There are also gender issues around reproductive health, where there is a lack of sex education, engagement in unprotected sex (including incidences where women are unable to demand protection due to unequal power dynamics), and increases cases of sexually transmitted infections/diseases (Baksh, 2014).

In the health sector, there is also a gendered division where women are usually nurses, care workers and aides, while men are doctors and paramedics. Over the years, however, women have been increasingly getting into medical programmes at St. George's University and medical professions such as doctors and dentists where they now outnumber men. Men are now moving toward the information and communications technology (ICT) and innovation sectors.

An example was given of the Grenada Red Cross (Dickson, 2020), which manages a range of programmes at the community level including on health, water and sanitation and emergency response, which is mostly female-based. The board of the organization has even numbers of men and women, but all the project managers are female and most of the first responders are male. There is also a higher level of female volunteers compared to male volunteers.

5.2 Policy and institutional analysis

5.2.1 Policy analysis

The degree to which national climate change and gender policies, as well as key sectoral policies and plans, have taken into consideration the different needs and impacts of various genders and other key vulnerable groups, including PWDs, youth and elderly, are outlined below in Table 4.

Table 4. Findings of analysis on key climate change, gender, food security (agriculture), disaster management and health policies and plans

Policy	Clearly stated mandate for inclusion of various genders (and other vulnerable groups) in policy	Specific provisions to ensure consideration of gender equity and gender analysis as part of policy implementation	Budget, committee or other institutional mechanism(s) exist to address gender concerns
Climate change			
National Climate Change Policy for Grenada, Carriacou and Petite Martinique (2017-2021) (Government of Grenada, 2017)	Yes. There is very limited mention of the involvement of gender and youth groups in the National Climate Change Committee (NCCC) under outcome 3.	No. There is no mention of gender equity and gender analysis.	No. There is no specific budgeting mechanism, committee or institutional mechanism identified for gender. There is the NCCC and the Sustainable Development Council (SDC), which gender and youth focused groups, among others, can participate and engage.
National Climate Change Adaptation Plan (NAP) for Grenada, Carriacou and Petite Martinique 2017-2021 Invalid source specified.	Yes. There is some mention of gender-sensitivity in defining the NAP process. It is also mention in Programme of Action 1 (institutional arrangements, inter-sectoral coordination and participation) where the inclusion of youth and gender groups are suggested for the NCCC.	Yes. There is no specific mention of gender equity, however, analysis and reporting on progress addressing gender issues were identified as a priority action, in monitoring and evaluating of the NAP.	Somewhat. There is the intended establishment of the Community Climate Change Adaptation Fund, in which gender considerations will be included. The NCCC was identified as the coordinating mechanism in which youth and women groups can be engaged, as well the SDC for wider engagement of the public.
Nationally Appropriate Mitigation Action (NAMA): Mainstreaming Solar PV in Grenada Invalid source specified.	No. There is no mandate for gender inclusion.	No. There are no specific provisions for gender equity in the plan. However, equality is identified as an indicator for positive impact, i.e., the quality of jobs given and the condition of jobs for men or women.	No. There is no specific budget, committee or other institutional mechanism mentioned to address gender issues. There was mention of the NCCC and the establishment of a Project Steering Committee for the NAMA.
Grenada Intended Nationally Determined Contributions Invalid source specified.	No. There is no mandate for gender inclusion.	No. There is no specific provision to ensure consideration of gender equity and gender analysis.	No. There is no specific budget, committee or other institutional mechanism mentioned to address gender issues. However, under adaptation, one of the key action identified for mainstreaming climate change adaptation, is "Building the resilience of

			communities”, where CBOs and NGOs will be engaged through training and capacity building.
National Sustainable Development Plan 2020-2035 (National Plan Secretariat, 2019)	Yes. There is a clearly stated mandate for the inclusion of gender considerations and gender issues in the plan. Outcome 3 (of the National Development Outcomes) is stated as “A resilient, Inclusive, Gender-Sensitive and Peaceful Society”.	Yes. There are provisions for gender equity and gender analysis in the plan, specifically strategic actions under National Outcome 3. Although gender equity is not mentioned in the plan, social equity is addressed in a broader sense and gender equality is addressed throughout the plan, particularly in regard to the SDGs and the Gender Equality Policy and Action Plan (GEPAP) implementation.	Yes. There is no specific budget identified for gender considerations, but there is mention of strengthening of social protection and child protection through budgets and service standards, which are equitable and socially inclusive, under Outcome 3. There is also mention of a technical working group for the plan, which included representatives of the youth groups, farming associations, CSOs, religious bodies, public and private sectors. It also mentions the establishment of community steering committees, community disaster risk management committees and the Inter-ministerial Council of Gender Focal Points and the National Council for the Disabled.
Gender			
Gender Equality Policy and Action Plan (GEPAP) 2014-2024 (Division of Gender and Family Affairs, 2014)	Yes. There is a clearly stated mandate for the inclusion of gender considerations and gender issues in the plan. The plan provides a framework for tackling gender issues in Grenada and acts as a guide to government, public and private sector and civil society on gender.	Yes. There are provisions for gender equity and gender analysis throughout the plan. Examples include indicators such as the amending of NIS to it addresses gender equity and the evidence of gender equity in access to loans and credit from banks, as evidenced by sex-disaggregated data. Gender analysis is identified as an outcome under Policy Commitment 6 for Gender, Leadership and Decision-Making examining women’s roles and opportunities for leadership. It is also mentioned in other policy commitments.	Yes. Gender budgeting is highlighted throughout the strategy, and is specifically addressed as an aim of the framework, i.e., “ensuring the full and equal participation of men and women in the development process...through gender responsive budgeting, allocation of necessary financial and human resources to address gender gaps in all sectors and at all levels...” The plan also identifies, legislative and other mechanisms for addressing issues like Gender-Based Violence such as the

			National Domestic Violence and Sexual Abuse Protocol. There are several coordinating mechanisms established, including the GEPAP Technical Committee, Gender Working Group, Gender Focal Points and the National Gender Equality Commission. Several other groups representing women, youth, children's rights and PWDs were mentioned.
Grenada's Growth and Poverty Reduction Strategy (GPRS) 2014-2018 (Antoine, et al., 2014)	Yes. There is a mandate for gender included in the strategy. It was linked to the Millennium Development Goal which highlights "achieving gender equality and empowerment of women", which is now SDG 5 on gender equality. It also recognizes as an overarching challenge gender differences in access to "safety net programs".	Yes. There are provisions for gender equity under Thematic Focus II as priority area, with objectives to mainstream gender and policies to promote gender equality. It also highlighted as a strategic objective under Thematic Focus IV, Priority Area- Institutional and Legal Reform. No mention is made of gender analysis, but there is identification of the need for analysis/assessments for youth, children.	No. There is no specific budgeting mechanism, committee or institutional mechanism identified for gender. There is mention however, of the establishment of a Committee of Social Partners and the National Trade Policy Co-ordinating Committee which will include representation from civil society.
Food security (agriculture)			
National Agricultural Plan 2015 – 2030 (James, 2015)	No. There is no mandate for gender inclusion. Although it is mentioned of the role of women in the sector, the inclusion of youth and increasing access to nutritional needs of vulnerable groups.	No. There is no specific provision to ensure consideration of gender equity and gender analysis.	No. There is no specific budgeting mechanism, committee or institutional mechanism identified for gender. There is however, the establishment of a Thematic Working Group, a multi-stakeholder group, including civil society, which inputs into implementation and monitoring of the plan.
Grenada Food and Nutrition Security Policy 2013 (Government of Grenada , 2013)	Yes. There is mention, though limited, of gender sensitivity as part of human rights principles which guide the implementation of the policy.	No. There is no specific provision to ensure consideration of gender equity and gender analysis. However, equity is addressing more generally in terms of access to resources and the lack of gender analysis and social data to inform decision-making is an important policy gap.	No. There is no specific budgeting mechanism, committee or institutional mechanism identified for gender. However, there is a National Food Security Committee where civil society, including farming groups can be engaged. There is also the Food and Nutritional

			Security Commission which also has provisions stakeholder participation.
Disaster management			
Grenada National Integrated Relief Plan 2005 (Caribbean Disaster Emergency Responsive Agency, 2005)	No. There is no mandate for gender inclusion.	No. There is no specific provision to ensure consideration of gender equity and gender analysis. Provisions are made for damage and needs analysis generally and not specific to gender/gender equity.	No. There is no specific budgeting mechanism, committee or institutional mechanism identified for gender. There is however, the Welfare and Voluntary Disaster Committee - an NGO response unit.
National Disaster Plan (NaDMA, 2005)	No. There is no mandate for gender inclusion. Children and elderly however, are prioritised.	No. There is no specific provision to ensure consideration of gender equity and gender analysis.	No. There is no specific budgeting mechanism, committee or institutional mechanism identified for gender. However, to support the work of the National Disaster Management Advisory Council, several National Disaster Management committees were established, some of which have representation from civil society.
Health			
Strategic Plan for Health 2016-2025 (Ministry of Health and Social Security, 2016)	Yes. Gender sensitivity is considered in the provision of primary healthcare as a strategic objective, under the key related building block- Health Services Delivery. The plan also recognizes key challenges associated with gender and marginalized groups.	Yes. The plan explicitly identifies gender equality and equity as a cross-cutting issue which should be mainstreamed in primary healthcare and support services. Equity is also identified as a guiding principle, covering gender. There is no direct mention of gender analysis however, it is recognized as a gap, and there are provisions for situational and other analyses in the plan.	No. There is no specific budgeting mechanism, committee or institutional mechanism identified for gender.

In reviewing key climate change, gender and sectoral policies and plans, there were a number of gaps in provisions in the mandate on gender equity and gender analysis, gender-responsive budgeting and mechanisms to deal with gender issues, even though gender issues and sensitivity are recognized. The NAP (2017-2021), National Sustainable Development Plan (2020-2035) and GEPAP (2014-2024) were strongest in addressing gender mainstreaming in the mandate and throughout the plans. These provide comprehensive and useful frameworks for guiding the mainstreaming of gender in all sectors. Sectoral plans, although some do mention gender, still lack strategic outcomes and actions for including gender considerations and responsiveness the in the sectors. It is notable as well that, in most cases, vulnerable groups identified were youth/children and elderly. There was limited mention of PWDs. There is also little indication of the status of implementation of these plans and whether interventions gender equity and equality have taken place or are still to be done.

5.2.2 Institutional analysis

The analysis also examined the degree to which the lead agencies of the three priority sectors, as well as national climate change machineries, have the capacity and capabilities to facilitate gender mainstreaming into climate change and resilience actions. See Table 5 for a summary of the findings.

Table 5. Findings of institutional capacity analysis of key agencies and coordinating mechanisms

Agency/ Coordinating body	Capacity for gender mainstreaming	Programmes show evidence of gender consideration and learning	Gender- responsive financing and budgeting	Coordination and decision making promotes gender equity	Organizational culture and advocacy for gender mainstreaming
Climate change					
Ministry of Climate Resilience, The Environment, Forestry, Fisheries and Disaster Management	There are gender focal points within the various divisions of the ministry, but particular to the EnGenDER project	The National Sustainable Development Plan 2020-2035 and the NAP were developed with a gender lens, with particular attention to women and youth. The NAP will be revised in 2021, and there will be further inclusion of gender considerations (St. Louis, <i>et al.</i> , 2020, pers. comm.). Associated projects and activities should then also be developed with gender considerations.	N/a	N/a	N/a
National Climate Change Committee (NCCC)	This is one of the key mechanisms identified. In the NAP and policy, it was highlighted that civil society groups focussed on women and youth should be engaged in the committee	N/a	N/a	N/a	N/a
Sustainable Development Council	This mechanism has the most participatory structure, as it allows for the participation of the	The council's works is directed at sustainable development and environmental matters, in some cases acting as the focal point for projects/programmes. However, due to its wide cross-	N/a	There is regular participation in the council's monthly meetings by women. They are regular attendees and vocal in	The council also comprises representatives from government agencies/ministries and civil society

	wider public, including women-led and/or women focussed groups, as well as groups representing other vulnerable groups.	section of members, gender issues and responsiveness may be considered.		the monthly meetings, and there are known, formal or otherwise, restrictions to their participation (Rosenberg & Thomas, 2005).	organizations, like the Ministry of Agriculture and the Agency for Rural Transformation, who have received some degree of gender training (St. Louis, 2020, pers. comm.; Ferguson, 2020, pers. comm.)
Gender					
Division of Gender and Family Affairs in the Ministry of Social Development and Housing	This is the lead agency for the gender policy and mainstreaming in institutional frameworks and the implementation of the GEPAP.	As part of its regular work programme, the division is responsible for the “National Machinery for Gender Equality and the Advancement of Women in Grenada; coordinating the National Parenting Programme; coordinating mechanism to combat gender-based violence and child abuse”, along with all associated projects and initiatives (Government of Grenada, 2021).	Budgets and funding for the operationalisation of the mandate of the division is part of the national budget and allocations for the Ministry of Social Development. The division is responsible for carrying out gender analysis and monitoring of gender quality indicators.	Under the GEPAP, the division has a lead coordinating role in its implementation, across the public and private sectors and civil society.	The division itself has responsibilities for gender training and sensitising, public awareness raising and communication on gender issues.
Inter-Ministerial Council on Gender Focal Points	There are representatives from each ministry appointed as focal points. It should be noted that these persons, though involved in gender mainstreaming, may not necessarily have gender training.	Gender focal points belong to each government ministry and statutory body with the primary role of promoting gender mainstreaming in these agencies/organizations.	Though evidence is lacking/research is limited, gender focal points are also responsible for advising on the integration of gender considerations. It is unclear the extent to which this is being done.	This is itself a coordinating mechanism, which advises on gender issues at the sectoral level and inputs in the development of gender sensitive solutions.	Gender Focal Points are expected to engage in gender training and professional development. The appointment of focal points within ministries itself is part of the gender mainstreaming process outlined in the GEPAP.
Agriculture					

Ministry of Agriculture and Lands	There is a gender focal point in the ministry.	There are more women participating in training and capacity building, sometimes even more than men.	N/a	N/a	Staff at the ministry, including agricultural officers have received training in gender. However, at the time of interviewing, this training was not extended to field officers (St. Louis, 2020, pers. comm.).
Disaster Management					
National Disaster Management Agency (NaDMA)	There is a gender focal point in the ministry, i.e. the focal point for the EnGenDER project is being moved from the Environment Division to NaDMA.	N/a	N/a	Although there is no coordinating mechanism within NaDMA directly addressing gender, there are the National Disaster Management Advisory Council, the National Disaster Management Committees, and the District Disaster Committee which can address gender specific issues, or interact with organization which represent women another vulnerable groups.	
National Disaster Management Advisory Council	N/a	N/a	N/a	This is a coordinating and decision-making mechanism, supported by the National Disaster Management Committees. These Committees address more specific needs the	N/a

				public for disaster management, which can cover gender issues- as outlined in their functions under the National Disaster Management Plan (NaDMA, 2005).	
Health					
Ministry of Health, Social Security & International Business	There is a gender focal point in ministry.	Programmes do show evidence of gender considerations, particularly to women (pregnant women) and children, but lack more specific programmes to address needs of men.	N/a	N/a	As part of the coordinating mechanism for combating GBV and child abuse, the Division of Gender and Family Affairs is supported by the Ministry of Health, which sits on a technical working group (Government of Grenada, 2021).

Note n/a indicates that there was insufficient data to assess the relevant factor and/or the mechanism is currently inactive.

It should be noted that this list is not exhaustive and other organizations such as the Grenada Food and Nutrition Council do have key roles in the priority sectors, in this case , food security. However, there was limited information and time available to thoroughly examine the institutional capacity of these organizations.

5.3 Climate and socio-economic vulnerability profile

A climate and socio-economic vulnerability profile has also been developed to better understand the current and potential impacts of climate change, related vulnerabilities and how this may shape the socio-economic context in Grenada, including for the three priority areas. It also focuses on the structural inequalities most likely to be exacerbated by the impacts of climate change, particularly gender inequality.

While the profile does not provide a detailed analysis of potential climate change impacts on the three priority areas of food security (agriculture), disaster risk management and health, it does note the implications of negative impacts on households and communities as a result of their decline. This is critical to understanding the structural inequalities needing attention to reduce vulnerability and build resilience to climate-related shocks and hazards. It also provides insights for strengthening these sectors whether directly, as in the case of agriculture, or indirectly by referencing general challenges to climate change adaptation and building resilience.

As noted in the methodology in section 4.3.1, it was difficult to obtain downscaled climate change projections and therefore the climate change data is of coarser resolution than the socio-economic data in the profile. It was also difficult to obtain up-to-date socio-economic data given the impacts of the COVID-19 pandemic since March 2020. However, the data utilized is seen as legitimately indicative of socio-economic conditions of concern in addressing the vulnerability to the impacts of climate change and related shocks, and preliminary data on the changing socio-economic conditions due to COVID-19 is taken into account.

5.3.1 Climate change data and projections

This section outlines projected climate changes for Grenada based on two data sources namely UWI-Climate Studies Group Mona (2020) and CARIWIG (2021).

The State of the Caribbean Climate Report (SOCC) (UWI-Climate Studies Group Mona, 2020) provides projections on temperature, rainfall and sea level rise, as well as information on rapid onset extreme events like hurricanes and floods. The projections are for three time periods, 2030, 2050 and 2100, and are based on a range of GCMs, RCMs as well as statistical downscaling techniques as noted in 4.3.1. The GCMs projections described in the SOCC were run using several Representative Concentration Pathway (RCP)¹⁰ scenarios specifically RCP2.6, RCP4.5, RCP6.0, and RCP8.5¹¹ from the Intergovernmental Panel on Climate Change (IPCC's) Fifth Assessment Report (AR5). Each of these scenarios assume different

¹⁰ Pathways are the temporal evolution of natural and/or human systems towards a future state. Pathway concepts range from sets of quantitative and qualitative scenarios or narratives of potential futures to solution oriented decision-making processes to achieve desirable societal goals. Pathway approaches typically focus on biophysical, techno-economic, and/or socio-behavioural trajectories and involve various dynamics, goals and actors across different scales. (Available at https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Annex1_Glossary.pdf)

¹¹ RCP 2.6 is termed a "stringent" mitigation scenario which assumes global mitigation attempts e.g. massive scale reforestation are able to keep global warming less than 2°C below pre-industrial levels. RCP8.5 is a high greenhouse gas emissions scenario often referred to as "business as usual scenario e.g. continuation of high fossil fuel use which then results in a 4.3°C increase in temperature by 2100, when compared to pre-industrial temperatures. RCP4.5 and RCP6.0 are intermediate scenarios between the extremes of RCP2.6 and RCP8.5 which assumes some mitigation actions e.g. policies to reduce carbon emissions or use of carbon capture technologies.

concentrations of carbon in the atmosphere in the future. Thus, for example RCP2.6 is a scenario where atmospheric carbon levels lead to an increase in temperature of 1.8°C by the year 2100 while the RCP8.5 is a scenario where carbon emissions and ensuing atmospheric carbon lead to a 4.3°C increase in temperature by 2100 compared to pre-industrial temperatures.

RCM projections in the SOCC were based on the Providing Regional Climates for Impact Studies (PRECIS) model which use a relatively fine scale 25km grid resolution and are based on the SRES A1B future (high emissions/atmospheric carbon) scenario which is similar to the RCP8.5 scenario initially and then the RCP6.0 scenario closer to 2100. In the SOCC, RCM data are used to describe projections for six rainfall zones as shown in Figure 5. This figure also shows how rainfall and temperature serve as a unit of analysis to build a zoning framework for the Caribbean region, using the PRECIS regional model. The PRECIS model has identified 6 zones throughout the region, and RCMs suggest that Zone 1 and Zone 6 are likely to see the most drying.



Figure 5. Regional Rainfall and Precipitation Zones
(Source: UWI-Climate Studies Group Mona, 2020)

Grenada is located in Zone 5, along with the other islands of the Lesser Antilles, and is projected to experience drier conditions starting from the 2020s, with drier conditions throughout the year experienced by 2100.

Apart from the information presented above, additional climate projection information has been downloaded from the [CARIWIG](#) portal. This portal provides both data and maps showcasing projections of change in variables such as mean daily temperature, daily rainfall and proportion of dry days. The portal

allows for selection of three different future time slices, two options for baseline time periods to compare against and a choice of either ECHAM5-Conditioned Precip or HADCM3Q0-Conditioned PRECIS where ECHAM5 and HADCM3Q0 are GCMs. The portal generates projections based on specific months thus for the maps provided below this has been standardised by using the month of March for each map. Figures 6, 7 and 8 below portray projected changes in mean daily temperature, mean daily rainfall and proportion of dry days respectively.

Figure 6 below displays a trend of increasing mean daily temperatures, with an anticipated increase of around 0-0.5°C in the month of March during the time slice 2011-2040 compared to the baseline time period. An increase of around 1.5-2°C is anticipated for the same month for 2041-2070 and by 2100 an increase of around 2-3°C for the same month is projected compared to the baseline of 1981-2010. Figure 7 showcases an overall decrease in rainfall levels among the time slices as they progress to 2100. Figure 8 illustrates the increase in the proportion in dry days by almost 1% for the time slice 2011-2040, 1-2% for 2041-2070 and 1-2% for time slice 2071-2100 compared to the baseline period of 1981-2010.

Figure 6. Maps of Grenada showing projected change in mean daily temperature from 2011-2100

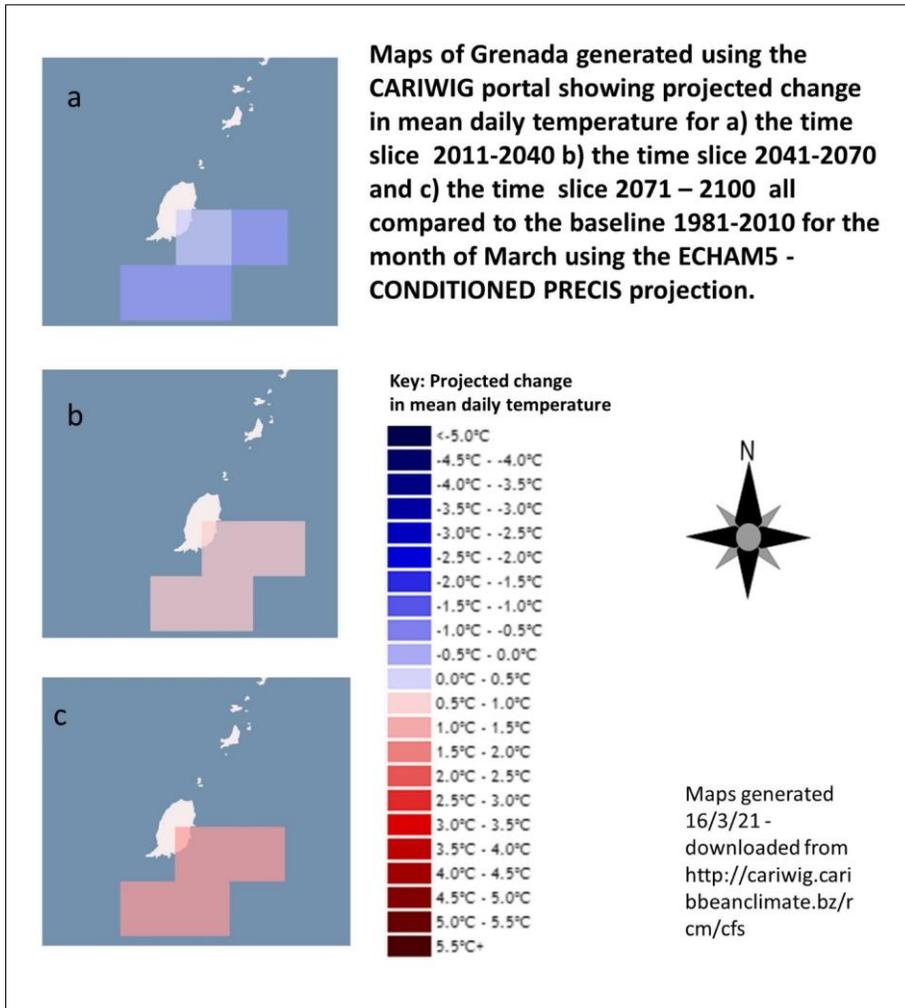


Figure 7. Maps of Grenada showing projected change in mean daily rainfall from 2011-2100

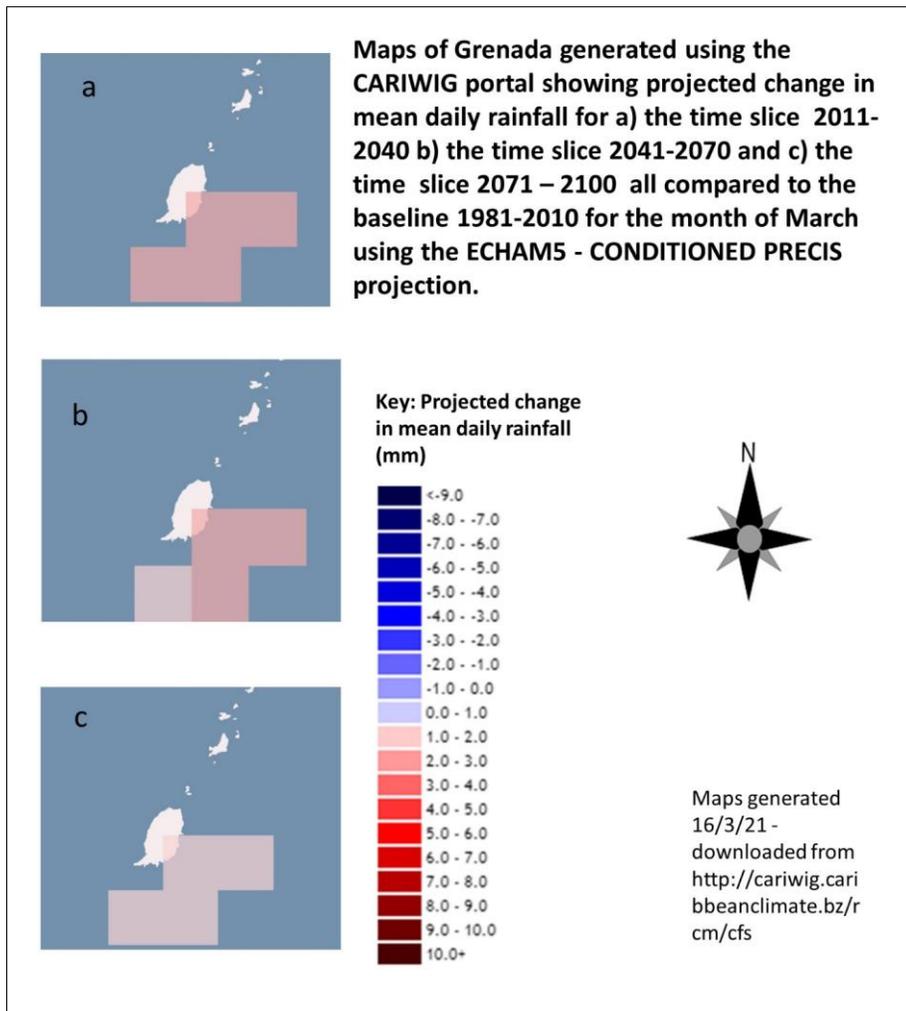
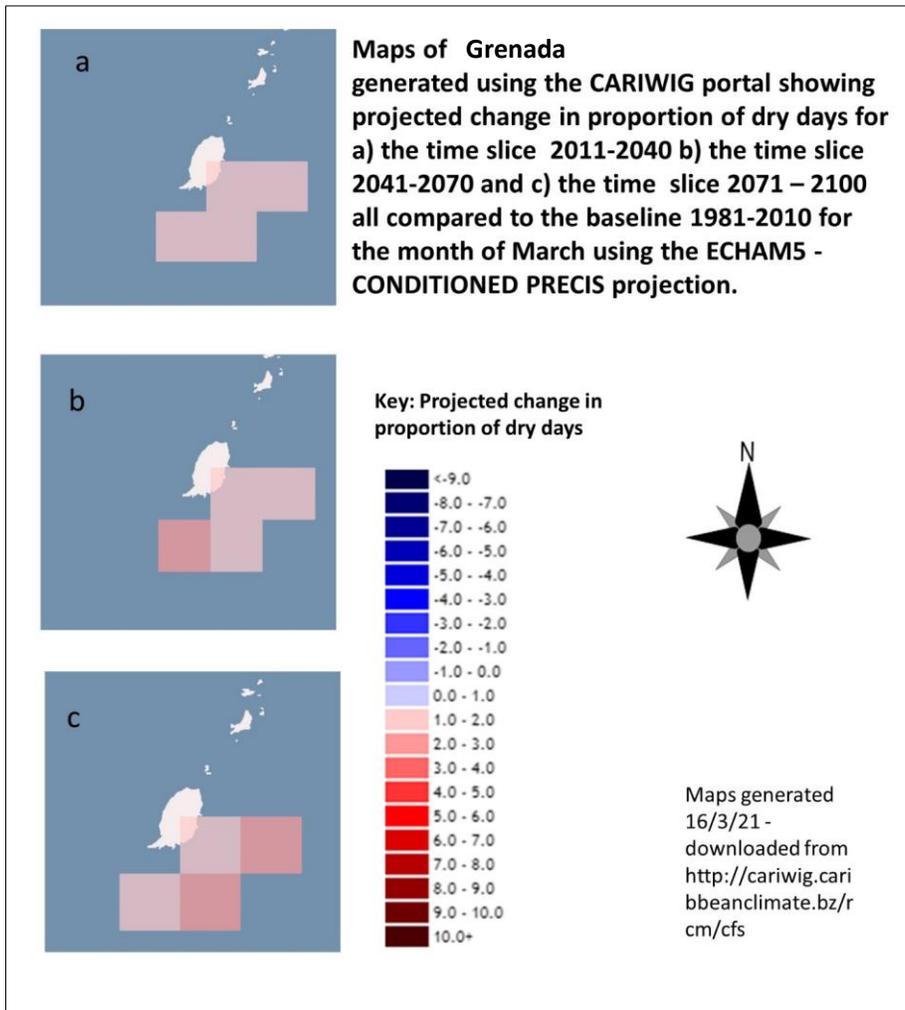


Figure 8. Maps of Grenada showing projected change in proportion of dry days from 2011-2100



Projected climate change and related hazards are expected to impact on Grenada, which was ranked 15th out of more than 170 countries in the Global Climate Risk Index, as outlined in Table 6 based on

Government of Grenada (2017). It highlights priority areas of concern for climate change impacts and the associated impacts on poverty, livelihoods and the environment.

Table 6. Summary of Climate Change Impacts and Implications for Poverty, Livelihoods and the Environment

Sector/Areas of Concern	Climate Change Impacts on Poverty, Livelihoods and the Environment ¹² (Associated human stressors are also noted)
Fisheries, coastal habitats and economic activities	<ul style="list-style-type: none"> • Possible consequences are a reduction in the abundance and diversity of reef fish, with implications for livelihoods, food security and the availability of seafood for the tourism sector. • Warmer waters caused by increasing temperatures can result in coral bleaching and disease outbreak, and may drive pelagic species away from the tropics in search of cooler temperatures and could potentially alter breeding and migration patterns. • Increases in carbon dioxide that dissolves into the ocean causes ocean acidification which damages and destroy corals. • Storm surges and hurricanes have degraded the coral reef further. • Mangrove habitats are exposed to direct storm impacts and are cut down for coastal development. They are also vulnerable to projected climate change impacts such as; alterations to coastal habitats from storm surges, increased tidal action and flood durations. • Changes in global temperature, sea levels, sea-ice extent, ocean acidification and salinity, rainfall patterns and extreme weather events will decrease the range of many marine mammals e.g. whales. • Sea level rise, beach erosion, and flooding caused by heavy rains threaten the coastal areas. This compounds the impacts of sand mining, sedimentation and careless recreational activities. These threats reduce the quantity and quality of goods and services that these eco-systems provide and decrease their resilience to climate change impacts. • Coastal aquifers are threatened by saltwater intrusion from sea level rise, and this is exacerbated by a decrease in groundwater recharge through over-abstraction and decreasing rainfall. The major open wells in Carriacou and Petite Martinique are within 100m of the shoreline thus making them highly vulnerable to saltwater intrusion. Storm surge events caused by tropical storms and hurricanes can also cause extensive damage to aquifers.
Forest ecosystems and economic Activities	<ul style="list-style-type: none"> • Climate change related variations in temperature, seasonal precipitation and extreme weather events will exacerbate the effects of existing human stressors on forest ecosystems, the building and construction industry and agriculture. • Decreased rainfall and increased average daily temperatures could result in a loss of rainforest zones and their possible migration to higher elevations.

¹² Government of Grenada National Climate Change Adaptation Plan (NAP) for Grenada, Carriacou and Petite Martinique 2017 - 2021. Government of Grenada, Ministry of Climate Resilience, the Environment, Forestry, Fisheries, Disaster Management and Information: Sourced online at: https://www4.unfccc.int/sites/NAPC/Documents/Parties/Grenada_National%20Adaptation%20Plan_%202017-2021.pdf

	<ul style="list-style-type: none"> The structure and dynamics of tropical dry forests are driven by periods of water stress, making them vulnerable to climate change. There are increased fire risks and soil erosion and decreased water availability and pollination rates. Hurricanes and storms can also cause serious damage to forest and forest infrastructure.
Infrastructure, land management and related economic assets	<ul style="list-style-type: none"> It is estimated that sea level rise of one meter places 73% of Grenada's major tourism resorts at risk and an estimated 3% of agricultural lands could be lost and incur annual costs of US\$4 million in 2050. Maurice Bishop International Airport is considered the most vulnerable airport in the CARICOM region with regards to sea level rise (Government of Grenada, 2017). Most urban economic and residential infrastructure and activities in Grenada are located along the coast and highly exposed to sea level rise, storm surge and coastal flooding events. All infrastructure located in sloping areas is vulnerable to mass movement (rock fall and landslides) resulting from heavy rainfall, and fallen trees and other impacts from tropical storms and hurricane-force winds. In the past, disasters have adversely impacted infrastructure, disabling water, electricity, and telecommunication facilities for extended periods. Roads and bridges are also negatively impacted, limiting access for post disaster emergency operations. Presently, enough is not being done to upgrade the infrastructure to meet future needs and conditions in response to projected climate change impacts (sea level rise, storm surges, inland flooding and land slippage). Communities located along low-lying coastal areas and on high risk sloping terrain, remain vulnerable to climate risks and the associated debilitating socio-economic impacts. Apart from location, structural integrity of residential infrastructure is also a significant determinant of vulnerability, especially for the poor.
Health	<ul style="list-style-type: none"> Direct risks to health brought about by hurricanes, tropical storms, flooding and heavy rainfalls, but also by extreme heat. Slow-onset climate related changes such as increasing temperatures, sea level rise, reduced annual rainfall and drought, combined with more intense rains, give rise to indirect health impacts such as shifting patterns of vector-borne diseases (e.g. mosquito-borne diseases like dengue, yellow fever, zika etc.)

5.3.2 Socio-economic vulnerability

Grenada's Growth and Poverty Reduction Strategy 2014–2018 (Government of Grenada, 2014) notes high level of poverty and disproportionate vulnerabilities amongst women and children, particularly female-headed households and rural communities to socio-economic shocks. Contextualised by the continued economic fallout of the 2008 global economic crisis, it highlights:

- Low levels of maternal and infant mortality, universal primary education, low fertility and increasing life expectancy exist alongside high and increasing levels of poverty – 32.1% in 1999 and 35.3% in 2008¹³.

¹³ Whilst there has been data collection recently, the most recently published poverty data for Grenada is the Country Poverty Assessment for 2007/2008. Found online at: https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwjo8uOUjr3vAhUixVkkHay_D-QQFjADegQICRAD&url=http%3A%2F%2Fcatalog.ihsn.org%2Findex.php%2Fcatalog%2F4067%2Fdownload%2F55003&usq=AOvVaw3_TsH7Db4i_uH7YLhKvWJ5

- As in most countries around the world, children bear the brunt of poverty. One out of every two children is poor and 53% of the poor are children.
- Almost half the households in Grenada (47%) are female-headed. Of these, more than 20% in the rural areas are poor as compared to 13% of male-headed households.
- For the urban households, 44% of female heads live in the bottom 3 quintiles as opposed to 18.6% for the males. Over half the female heads (56%) are unemployed compared with the male heads where only a quarter has no work.
- Price increases in food and fuel and the global economic crisis in 2008 have contributed to a slowdown in growth, job losses, and declining remittances.

12 years after the 2008 global economic crisis, the current COVID-19 pandemic has unfortunately served to further validate that there is continued fragility of Grenada's social and economic infrastructure. If we use the impacts of the COVID-19 pandemic as a proxy for understanding the likely impacts of climate change hazards on the labour market, the following observations made by the International Labour Organization (ILO) (2020) are of critical note¹⁴:

- Youth shifting out of the active labour force:
 - During Q2 of 2020 the participation rate of youth aged 15-24 showed a marked plunge with respect to the same quarter of 2019 (39.42% vs 51.4%) and in comparison adults aged 25-64 (77.7% vs 83.2%).
 - The COVID-19 crisis caused an increase in the economic inactivity rate for youth who gave up actively engaging in the search for employment or declaring themselves available for employment. This is consistent with available evidence suggesting young workers are the first to be dismissed in the event of a crisis.
- Self-employment seeming to play a minor, if any, buffering tole:
 - Data for Q2 of 2020 indicate a marked drop in both the number of employers (1,458) and workers (6,018) with respect to the previous years.
 - This seems to indicate that the shift to self-employment did not occur as a subsistence measure which is often the case during major economic downturns.
- Industries which showed the largest decline in the relative employment share were, respectively, construction (-3.6% over the average employment share from 2017-2019), accommodation and food services (-2.8 per cent), transportation and storage, (-2.8%) and manufacturing (-2.6%). However, there were gains in agriculture in comparison to most other sectors.
- Long-term unemployed are still represent the bulk:
 - Amongst the people unemployed by Q2 2020, most were already unemployed for more than three months (> 80 per cent). The implication is that while the COVID-19 pandemic did/will generate a change into the volume of people unemployed, its composition has to be remembered in terms of those already unemployed previous to the pandemic.
 - This will generate not only an increase in the total number of jobseekers to potentially assist but will affect the capacity of Government to maintain some degree of labour market attachment for both categories and avoid more permanent or long-lasting scarring effects.
- Retention in public administration seeming to temper job losses:

¹⁴ ILO (2020) uses the results of the Government of Grenada's Central Statistics Office 4th Quarter 2019 Labour Force Survey and compares this to the 2nd Quarter Labour Force Survey Results

- The increase in the share of people who were previously employed in wholesale and retail trade (9.7% on average over the previous years versus 14.9% in Q2 2020) that comprised those unemployed.
- The decrease in the share of people who were previously employed in public administration (7.3% in Q2 2020 versus 13.3% on average over the past three years) that comprised those unemployed, hinting that the reduction in the turnover in public administration somehow played a support role during the COVID-19 crisis.”

The World Food Programme (2020) further notes the following COVID-19 impacts¹⁵:

- In June 2020, 62% of respondents reported job loss or a decline in salaries in their households, compared to 48% in April 2020. Households increasingly depend on informal/ casual labour, support from family and friends and government assistance.
- Almost 75% of respondents observed an increase in food prices in June 2020, twice as many than in April 2020.
- The vast majority of respondents have changed their shopping behaviour. Compared to April, many more respondents are buying cheaper or less preferred goods or smaller quantities than usual, and fewer respondents make bulk purchases.
- Food security appears to have deteriorated. Household food stocks have declined in June 2020 compared to April 2020, with 17% reporting that they had no food stocks. 31% of respondents reported skipping meals or eating less than usual, up from 19% in April.
- Disaggregated analysis between men and women and among income and age groups was not feasible based on the sample size. However, the regional results found that adverse impacts to income and food consumption were more widespread among low-income households.

Addressing poverty and access to income, and access to decent work¹⁶, is therefore a critical component of addressing vulnerability and managing recovery from socio-economic and climate-related shocks. Climate change is likely to impact access to labour and decent work in fundamental ways including via:

- Economic restructuring, resulting in the displacement of workers and possible job losses as well as job creation attributable to the greening of enterprises and workplaces.
- The need for enterprises, workplaces and communities to adapt to climate change to avoid loss of assets and livelihoods and involuntary migration.
- Adverse effects on poor households’ incomes from higher energy and commodity prices.

Further, the results of the most recent Labour Force Survey undertaken by the Government of Grenada (Central Statistics Office, 2020a, 2020b) indicate that employment, unemployment and labour force participation rates are markedly varied for male and females, and for youth, in 2020 versus 2019 in a pre-COVID context. See Tables 7 and 8. Specifically, it is observed that:

¹⁵ Analysis is based on June 2020 survey results. It should be noted the sample size is not representative, but indicative of overarching trends.

¹⁶ As defined by the United Nations (2018), decent work “means opportunities for everyone to get work that is productive and delivers a fair income, security in the workplace and social protection for families, better prospects for personal development and social integration. It is also important that all women and men are given equal opportunities in the workplace”. See at: <https://www.un.org/sustainabledevelopment/wp-content/uploads/2018/09/Goal-8.pdf>

- Male employment rates for the 3rd quarter of 2020 were at 85.3% and females at 70.9%.
- Females have lower employment rates across all age categories except for the 65+ category, and higher unemployment in all age categories except for the 65+ age group (females seem to be working into their elder years).
- Females have lower labour force participation rates at 57.9 % in the 3rd quarter of 2020, and at 61.8% in the 4th quarter of 2019, as compared to their male counterparts with labour force participation rates of 75.7% in the 3rd quarter of 2020 and 78.2% in the 4th quarter of 2019.
- Females saw a larger drop in employment from 81.7% in the 4th quarter of 2019 to 70.9% in the 3rd quarter of 2020, whilst employment amongst males had a small decrease from 87.5% in the 4th quarter of 2019 to 85.3% in the 3rd quarter of 2020.
- Whilst youth in general are marginalized in the labour market, unemployment amongst female youth (ages 15 – 24) is markedly higher in comparison to male youth in both surveys. In the 3rd quarter of 2020, female youth unemployment was 59.6% and male youth unemployment was 33.1%, and in the 4th quarter of 2019, female youth unemployment was at 53.2% and male youth unemployment was at 20.4%.

Table 7. 3rd Quarter 2020 Labour Force Survey Data Labour Market Indicators by broad age group and sex

Sex	Broad Age Group	Economic Status			Economic Inactivity Rate
		Employment Rate	Unemployment	Participation Rate	
Male	15 - 24	66.9	33.1	57.0	43.0
	25 - 64	89.1	10.9	93.0	7.0
	65+	83.6	16.4	23.5	76.5
	Total	85.3	14.7	75.7	24.3
Female	15 - 24	40.4	59.6	40.2	59.8
	25 - 64	74.9	25.1	80.9	19.1
	65+	94.9	5.1	8.4	91.6
	Total	70.9	29.1	57.9	42.1
Total	15 - 24	55.7	44.3	48.4	51.6
	25 - 64	82.4	17.6	86.8	13.2
	65+	87.9	12.1	14.0	86.0
	Total	78.6	21.4	66.2	33.8

Table 8. 4th Quarter 2019 Labour Force Survey Data: Labour Market Indicators by broad age group and sex

Sex	Broad Age Group	Economic Status			Economic Inactivity Rate
		Employment Rate	Unemployment Rate	Participation Rate	
Male	15 - 24	79.6	20.4	64.2	35.8
	25 - 64	89.9	10.1	91.7	8.3
	65+	78.7	21.3	33.6	66.4
	Total	87.5	12.5	78.2	21.8
Female	15 - 24	59.7	40.3	53.2	46.8
	25 - 64	86.1	13.9	79.6	20.4
	65+	92.9	7.1	7.6	92.4
	Total	81.7	18.3	61.8	38.2
Total	15 - 24	70.4	29.6	58.6	41.4
	25 - 64	88.1	11.9	85.6	14.4
	65+	82.0	18.0	18.6	81.4
	Total	84.9	15.1	69.7	30.3

Tables 9 and 10 further contextualise the economic insecurity of females relative to males. Results on reasons for stopping work for both the 3rd Quarter 2020 and 4th Quarter 2019 Labour Force Survey show that females are more likely to lose their jobs, be retrenched and have short-term employment, more females than males are unemployed due to business failures, and only females reported resigning from work to take care of children (Central Statistics Office, 2020a, 2020b). However, of note is that both sexes saw job losses in 2020 as compared to 2019 due to the COVID-19 pandemic.

Table 9. 3rd Quarter 2020 Labour Force Survey Data: Unemployed by Reason for Stopping Work in Last Job by Sex

Reasons for Stopping Work	Sex				Total	Total %
	Male	Male %	Female	Female %		
Lost job	1252	28.5	1348	17.8	2600	21.7
Job completed	1067	24.3	1919	25.4	2987	25.0
Resigned to study	-	-	-	-	-	-
Resigned to take care of children	-	-	170	2.3	170	1.4
Retrenched	40	0.9	97	1.3	137	1.1
Business Failed	174	4.0	362	4.8	536	4.5
Moved to another area	-	-	-	-	-	-
Retired	-	-	-	-	-	-
Other	960	21.8	1651	21.8	2611	21.8
Don't know	36	0.8	166	2.2	202	1.7
Not Stated	871	19.8	1843	24.4	2714	22.7
Total	4400	100.0	7557	100.0	11958	100.0

Table 10. 4th Quarter 2019 Labour Force Survey Data: Unemployed by Reason for Stopping Work in Last Job by Sex

Reasons for Stopping Work	Sex				Total	Total %
	Male	Male %	Female	Female %		
Lost job	265	6.6	625	12.7	890	10.0
Job completed	1894	47.5	1762	35.8	3655	41.0
Resigned to study	-	-	-	-	-	-
Resigned to take care of children	-	-	192	3.9	192	2.2
Retrenched	55	1.4	229	4.7	285	3.2
Business Failed	91	2.3	334	6.8	425	4.8
Moved to another area	51	1.3	-	-	51	0.6
Retired	246	6.2	41	0.8	287	3.2
Other	166	4.2	255	5.2	420	4.7
Don't know	62	1.5	-	-	62	0.7
Not Stated	1158	29.0	1479	30.1	2637	29.6
Total	3988	100.0	4917	100.0	8905	100.0

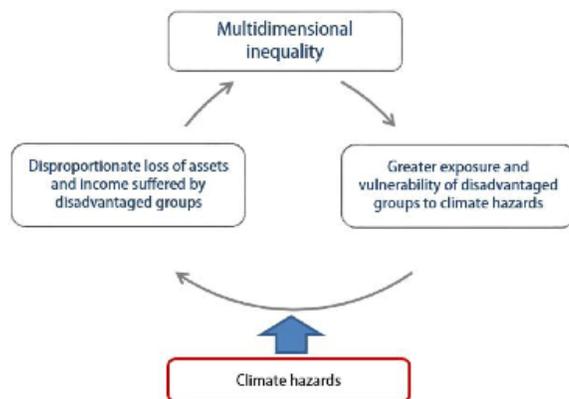
The vulnerability of female-headed households to shocks is also illustrated when looking at the impacts of the COVID-19 pandemic. While there is not much difference in the 4th Quarter 2019 Labour Force Survey data, which showed a 9% unemployment rate amongst male household heads and a 10.1% unemployment rate amongst female household heads, this had shifted to a 6.8% unemployment rate amongst male household heads and a 24.9% unemployment rate amongst female household heads in the 3rd Quarter 2020 (Central Statistics Office, 2020a, 2020b). Unemployment amongst female household heads therefore more than doubled. Further to this, the spouses/partners of female household heads are also more likely to be unemployed than in male household heads. Data for the 3rd quarter of 2020 shows unemployment amongst the spouses/partners of female-headed households at 26.8% and for spouses of male-headed households at 7.9%. In the 4th quarter of 2019, spouses/partners of female-headed households had an unemployment rate of 14.2% and those in male-headed households at 2.4% (Central Statistics Office, 2020a, 2020b).

The Labour Force Survey data highlight structural inequality and, more specifically, gender inequality in access to labour, with women being disproportionately deprived relative to men. Further, if we use the impacts of the COVID-19 pandemic as a proxy for assessing how climate change hazards will affect labour markets, it is clear that women and men are impacted differently due to inequalities in how men and women are positioned in society, and that women are will be disproportionately affected by the most extreme deprivations from climate-related hazards and by extension children in their care. This structural inequality is explored further in the next section.

5.3.3 Climate-related shocks and structural inequalities

The structural inequalities faced by particular groups of people also need to be taken into account in understanding vulnerabilities as these inequalities can lead to: increased exposure of disadvantaged groups to climate-related hazards; increased susceptibility to damage caused by climate-related hazards; and decreased ability to cope with and recover from the damage (see Figure 9) (Nazrul Islam and Winkel, 2017).

Figure 9. Inequality and Climate Change Vicious Cycle (Source: Nazrul Islam and Winkel, 2017)



As noted above, the status of women and children are of major concern in addressing vulnerability as there are disproportionate levels of poverty amongst them and access to the labour market and income. Rural populations are also highlighted as disproportionately vulnerable to poverty in the Growth and Poverty Reduction Strategy 2014–2018 (Government of Grenada, 2014) 2014-2018.

While the gendered division of labour in the household is shifting, it is acknowledged that this has perpetuated women’s vulnerability to poverty and by extension those in their care. It is still very much a feature of Grenadian life and is mirrored in the form of occupational sex segregation in the labour market. This is perpetuated to an extent by educational and vocational skills training programmes. It is often expressed that training programmes are not exclusive, and that women engage in skills training and employment activities related to stereotyped gender roles and this is their choice. However, if women are socialised to pursue these roles and further to develop those particular skill sets, then it would follow that they would fulfill these expectations of them.

For example, the Grenada Climate Smart Agriculture and Rural Enterprise Programme (SAEP) has been established by the Rural Development Unit, Ministry of Finance to improve livelihoods through investments in agriculture, teaching climate-smart practices and providing business skills training and technical services to enterprises in rural communities (Ministry of Finance, 2020). The SAEP Supervision Report, January 2021 provides the following data on the number of female and male trainees in the Vocational Skills Training Programme (Table 11). Of note is that the programme targets youth, and that there is clear a gendered division in skills training, which mirrors the gendered division of labour according to socially prescribed gender roles. Females are disproportionately engaged in skills training related to caregiving like food preparation, and service-based professions like tourism, allied health, housekeeping and child care. Males are disproportionately engaged in technical skills training related to solar photovoltaic (PV) installation, plumbing and computer engineering. Of note is that males are engaged in skills building that are part of more lucrative, stable and emerging markets like information technology

and renewable energy, while females will be largely limited to the service-based sector with a large number of low-skilled jobs related to child care, domestic work and housekeeping in hotels.

Questions arise as to whether there is gender responsive targeting done to promote training programmes, and whether there is a targeted effort to support women in transitioning in their thinking about what they can achieve, and also to encourage these typically male delineated economic sectors to be more inclusive. Structural inequality based on gender is further reinforced if there is a failure to address women's limited labour market access and their corresponding disproportionate vulnerability to poverty. In the context of building resilience and adaptive capacity to climate change-related shocks, climate-smart technologies, such as PV and information technology, are critical both for built in adaptation of infrastructure and for economic resilience as renewable energy and clean technology become increasingly relevant.

The gender-based structure of the educational and vocational training system is predictably mirrored in the labour market, with occupational sex segregation as a key feature in Grenada. Table 12 shows data on the structure of the labour market according to industry and sex for the 3rd quarter of 2020 and the 4th quarter of 2019 (Central Statistics Office, 2020a, 2020b). Notably, the typically 'male' industries are employing very few females, although they are among the top five largest employing industries. The exception is the education and wholesale and retail trade industries, which are predominately stereotyped 'female' industries and part of the service-based economy.

It is clear that sectors with overrepresentation of males largely involve working with machines and tools and those with overrepresentation of females centre around working with people. Given the low participation of females in the labour force relative to males, it is clear that these traditionally 'male' industries could definitely accommodate increased female employees as part of their expansion. In that vein, of note is the Construction industry which has seen increased female participation. It would be worthwhile to see if this is a sustained shift over time.

Table 11. No. of Vocational, Skills Training Participants by Type of Course and Sex as of 30 November 2020, Grenada Climate Smart Agriculture and Rural Enterprise Programme (SAEP)¹⁷

Service provider / Course	Trainees	
	Male	Female
GNTA/Batch 1		
Crop production	2	3
Agrofood processing	1	11
Food preparation and cookery	1	9
GNTA/Batch 2		
Allied health 1	0	17
Community tourism	2	11
Allied health 2	2	11
TAMCC/Batch 1		
PV installation	15	2
Web development	9	4
Fish processing	3	5
TAMCC/Batch 2		
Wall and floor tiling 1	14	10
General agriculture-Carriacou	7	8
General agriculture	3	8
Wall and floor tiling 2	11	4
NEWLO/Batch 1		
Housekeeping	0	23
Early Child Care	0	22
Electrical installation	14	2
NEWLO/Batch 2		
Plumbing	18	1
Computer engineering	18	3
TOTAL trainees 274	120 (44%)	154 (56%)

Table 12. Largest employing industries disaggregated by sex, for the 3rd quarter of 2020 and the 4th quarter of 2019¹⁸

	LFS Survey	Industry Grouping	No. Females	No. of Males	Total
1	2020 3 rd quarter LFS	Wholesale and retail trade; repair of motor vehicles and motorcycles	3884	4764	8648
	2019 4 th quarter LFS		3467	2729	6196
2	2020 3 rd quarter LFS	Agriculture, Forestry and Fishing	722	3936	4657
	2019 4 th quarter LFS		1132	4199	5330
3	2020 3 rd quarter LFS	Construction	300	4064	4364
	2019 4 th quarter LFS		130	6928	7058
4	2020 3 rd quarter LFS	Transportation and storage	204	2330	2533
	2019 4 th quarter LFS		230	2079	2310
5	2020 3 rd quarter LFS	Education	2965	1442	4407
	2019 4 th quarter LFS		2875	1031	3905

Noting the policy priorities of promoting the blue-green economy, and climate resilient development, the current labour market structure would have to shift to accommodate the same and these structural inequalities addressed. This shift should not be to the exclusion of men, but to expand access to the labour force and decent work more equitably. This includes more representation of men in areas typically engaging mostly women so that no one needs to be excluded from the labour market.

¹⁷ Grenada Climate Smart Agriculture and Rural Enterprise Programme, Supervision Report, January 2021, International Fund for Agricultural Development (IFAD), p. 7. Sourced online at: <https://www.ifad.org/documents/38711624/40089498/Grenada%202000001475%20SAEP%20Supervision%20Report%20January%202021/8b64efcb-9565-50c9-c044-bbee7e22cf5a>

¹⁸ Ibid.

6 Conclusions and recommendations

Grenada is one of the few CARICOM countries where national climate change and gender policies and the NAP are well aligned, with gender equality and mainstreaming specifically considered within its climate change strategies and resilience framework. It has also been able to leverage funding through various climate funds to address climate and disaster resilience, including capacity building of national authorities, research and development in the area of climate change adaptation and disaster risk management, and piloting of climate-smart technologies with consideration of gender, youth, PWDs and other vulnerable groups.

However, there remain significant structural inequalities that contribute to vulnerability to climate-related hazards and other socio-economic shocks. These structural inequalities, including gender-based inequalities, ultimately limit the potential to build adaptive capacity and resilience in the priority sectors and more widely. This has resulted in disproportionate vulnerability of certain groups to poverty, food insecurity and reliance on informal/vulnerable employment in climate-sensitive economic sectors, such as agriculture, fishing and tourism. Women and children in their care, and rural and coastal communities, are of most concern in this regard.

With projected climate change likely to adversely impact agriculture including crops, livestock and fisheries, food security is an increasing concern. While there has been increased local food production, and the agriculture sector has expanded since the COVID-19 pandemic unlike other sectors, reliance on food imports remains high. Without greater integration of green and climate smart approaches, technologies and investments, climate change hazards will quickly erase sectoral gains and put those people newly reliant on the industry for their livelihoods, at great risk and vulnerability to poverty.

Whilst both men and women experience hardship and deprivation, women are particularly vulnerable as a result of their socio-economic marginalization perpetuated by their ascribed gender roles. Data indicate that women have lower labour force participation rates than men and are more likely to lose their jobs/be retrenched, and only women reported resigning from work to take care of children. Data also indicates that women are also more likely to be engaged in low-skilled and low-paying jobs in the service-based economy based on traditional 'female' roles in Grenada. Female-headed households, including children and other vulnerable groups like elderly and PWDs, also face similar challenges. Data indicates that they are disproportionately affected by poverty, and more likely to be unemployed than their male-headed households.

The COVID-19 pandemic, which has already forced shifts, provides an opportunity to 'build back better' through investing in both recovery of affected sectors as well as investing in emerging green sectors and climate-resilient development. It provides a valuable opportunity to support women's entrepreneurship and access to new and emerging markets at the local and regional levels. The same can be applied to youth, which are among the most vulnerable to poverty and have limited access to the labour market. Increasing investment and training for green and climate-smart micro, small and medium enterprise (MSME) development is critical at this time, and this needs to be gender-responsive and inclusive to ensure that women, youth and other marginalized groups are effectively engaged. This can help drive economic development and expansion in more equitable ways and contribute to improved access to decent work and income and increased resilience.

Specific recommendations for gender mainstreaming in the identified priority sectors for Grenada are outlined in Table 13 below.

Table 13. Recommendations for gender mainstreaming in the identified priority sectors for Grenada

Sector	Barriers	Recommendations
Food security (agriculture)	<ul style="list-style-type: none"> Limited collection and analysis of gender-disaggregated data in the sector to inform decision-making. Gender imbalance in access to resources, particularly land ownership and finance/credit Limited development of the agricultural and fisheries value chains, including agro-processing and other value adding activities Limited skills in climate-smart agricultural and fisheries practices and use of new technologies 	<ul style="list-style-type: none"> Streamline existing data collection and analysis systems to include the gathering and use of gender-disaggregated data in decision-making and development of interventions in the sector, and the associated training of relevant staff in the collection and analysis of gender data. Improve access to micro-finance, including credit, grants and small loans, for women and other disadvantaged groups to ensure they can acquire land, equipment and other critical inputs for on-farm and off-farm activities. This should include reviewing application procedures, criteria for accessing loans and reporting requirements for banks and other lending institutions relevant to the sector. Access to finance/financial assistance should also be extended to post-disaster recovery, including for persons in the agro-processing industry, farmworkers and non-land owners. Expand educational programmes and training for farmers and agro-processors through institutions like T.A. Marryshow Community College (TAMCC), the ministry or other groups, in the agriculture, agribusiness, entrepreneurship, administration, marketing, value-addition (packaging and labelling) should be made available, particularly to women and youth in rural or poor communities. Establish demonstration and pilot projects in collaboration with community and agriculture-based groups and through 4-H clubs to educate and train persons in greening and climate-smart approaches to agriculture. Support gender-responsive value chain and market analysis, for identifying agricultural development needs and opportunities focusing on climate change adaptation and mitigation, including for climate-smart crop diversification, investment and expansion, targeting rural youth and women in on-farm, agro-processing and marketing activities.

Disaster management	<ul style="list-style-type: none"> • Lack of an up-to-date national disaster policy and plan or sector-specific disaster plans to enable a coordinated and inter-sectoral approach to disaster management • Limited understanding of the impacts on and needs of women and other vulnerable groups in times of disaster, particularly in shelters. • Limited aid for elderly affected by extreme events • Lack of interventions directed at men, particularly to assist in coping mechanisms post-disaster. • Better utilize existing coordinating mechanisms to engage civil society and other stakeholders specific to disaster management. 	<ul style="list-style-type: none"> • Revise and update national and sectoral disaster-related policies and plans, which should include a focus on gender-responsiveness and an integrated approach to adaptation and disaster risk management. Specific attention is needed to gender-responsive risk awareness and assessments, including for hazard analysis and vulnerability and capacity assessment to guide planning and implementation. • Provide further training in gender sensitivity and responsiveness for staff at NaDMA, including for both mitigation (structural and non-structural) and preparedness (e.g. data collection, vulnerability assessments, hazard mapping, early warning systems and shelter management) activities. Training in post-disaster needs assessment (gender- and ageresponsive) should also be done, at the ministry level and at the community level. • Implement gender-responsive Community Emergency Response Teams (CERT) training and early warning systems design and implementation to enhance disaster preparedness and response. • Develop and provide training, through institutions like TAMCC and UWI School of Continuing Studies and other organizations for caretakers and geriatric nurses in disaster preparedness and needs of elderly during these times. This can be integrated into existing programmes. • Establish programmes and personnel to better support men during and after disasters, through resources and psycho-social support. • Strengthen coordinating mechanisms, such as the National Disaster Committees and District Emergency Committees, and ensure input by civil society and other non-government stakeholders in disaster management, and inform the revision of the national disaster management plans and sectoral plans. These mechanisms can include national Gender Focal Points already appointed in various ministries and government agencies.
Health	<ul style="list-style-type: none"> • Lack of specialised care and support services for men in public healthcare system, 	<ul style="list-style-type: none"> • Provide gender-responsive health services, including for targeting of women and men according to their differential needs and

	<p>coupled with an aversion to seeking preventative care by men.</p> <ul style="list-style-type: none"> • Lack of education and awareness on reproductive and sexual health, especially for women. • Lack of training and understanding of geriatric care and needs of the elderly and lack of facilities for their care, at their homes or in public or private facilities. • Lack of a coordination mechanism engaging civil society and other stakeholders to provide input on public health decisions. 	<p>patterns in health seeking behaviour. For example, addressing the special reproductive and health needs of women, and for addressing the lack of health seeking behaviour in men.</p> <ul style="list-style-type: none"> • Provide further training in gender sensitivity and responsiveness to staff at public health agencies, including district officers and staff at community health centres. This should recognize the differential needs of men and women, girls and boys, and support comprehensive and integrative approaches to health management in the context of climate change, that is, for addressing both psychosocial (mental/emotional health) and physiological health needs. • Develop reproductive and sexual health programmes through educational institutions and/or campaigns targeted at both women and men. • Develop and provide training, through institutions like TAMCC and UWI School of Continuing Studies and other organizations for caretakers and geriatric nurses to support the specific health needs of elderly. • Implement specialised programmes for care of elderly via the Ministry of Health extension services to support at home elderly, that is, provision of careworkers or training for family members and ensuring that health and other needs are met. • Establish a national coordinating mechanism with representatives from civil society and other stakeholders operating in the health sector to provide oversight and enable enhanced coordination and implementation.
Gender-responsive policy, planning and programming	<ul style="list-style-type: none"> • Persistence of gender stereotypes and gender and structural inequalities which contribute to vulnerability to climate-related and other shocks which affect adaptive capacity and resilience of vulnerable groups in the priority sectors and beyond. • Lack of understanding on the concept of gender, gender issues and gender-sensitivity/responsiveness with many operational processes and 	<ul style="list-style-type: none"> • Strengthen institutional support for implementation of the gender policy, including adequate budgeting for strategic and essential activities related to the preparedness, response and recovery needs of women and men, boys and girls. This includes budget lines in ministry and department budgets/expenditure specifically addressing gender-responsive actions/gender mainstreaming actions. • Provide the relevant training in disaster risk management for Gender Focal Points, so that they can facilitate training programmes for other government staff on gender

	<p>interventions being gender-blind.</p> <ul style="list-style-type: none"> • GBV (and IPV) is an overarching issue which has become more prevalent during shocks like COVID-19. 	<p>responsive disaster risk preparedness, response and recovery planning and implementation</p> <ul style="list-style-type: none"> • Design and implement community-based and national level public education and awareness on difference among genders, gender equality and the differential vulnerability of women and men, boys and girls, other vulnerable groups including those of alternative gender and sexual identities, to the impacts of climate change hazards. This can be done through educational and vocational training institutions, through existing school curricula, media campaigns and projects. GBV and IPV can be specifically addressed.
Cross-cutting	<ul style="list-style-type: none"> • Limited data and understanding on the level of implementation of actions and targets in national plans and policies, particularly those addressing gender issues. • Lack of understanding on the concept of gender, gender issues and gender-sensitivity/responsiveness with many operational processes and interventions being gender-blind. • Limited labour force participation rates by women, who are often more heavily engaged in low-paid, low-skilled and informal work 	<ul style="list-style-type: none"> • Adapt data collection tools like the Labour Force Survey and the census to better capture greening and climate smart sub-sectors as well as other emerging sectors to support evidence-based planning and programming. • Establish regular monitoring and evaluation programmes to measure the level of implementation national policies and plans, like the GEPAP and sectoral plans and to recommend gaps and areas for improvement and areas of success. This process can involve gender-based coordinating mechanisms, with input from civil society actors working on gender-related issues. • Recognize and support women's entrepreneurship as a way to support them earning an income, given that most women in Grenada are employees and not employers. This would also create opportunities for sustainable small business development in Grenada, and in particular in rural communities.

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8 Appendices

8.1 Appendix 1 – List of key informants

Name	Organization	Position	Gender
Aria St. Louis	Environment Division	Head of Department/ Focal point for Biodiversity	Female
Benedict Peters	Environment Division	Division focal point for EnGenDER	Male
Kerricia Hobson	Environment Division	Climate Change Focal Point for Adaptation	Female
Marina Fastigi	KIDO Foundation		Female
Dario Sandrini	KIDO Foundation		Male
Sandra Ferguson	Agency for Rural Transformation (ART)	Manager	Female
Theresa Marryshow	Grenada Network of Rural Women Producers (GRENROP)	President	Female
Akeisha Clarke-Frank	Petite Martinique Women in Action	President	Female
Samantha Dickson	Grenada Red Cross Society	President	Female
Dessima Williams	GRENEED	Executive Director	Female
Davon Baker	Ministry of Carriacou and Petite Martinique Affairs	Information Technology Manager and Climate Change Focal Point	Male
Lauren St. Louis	Ministry of Agriculture	Agricultural Officer, Extension Division	Female

8.2 Appendix 2 – Key Informant Interview Questions

Name of interviewer:

Date:

Name of participant:

Organization/Title:

Gender:

Introduction: This gender-based baseline analysis is part of the Enabling Gender-Responsive Disaster Recovery, Climate and Environmental Resilience in the Caribbean (EnGenDER) project from September to March 2020. This analysis will inform tailored capacity building for gender mainstreaming in the priority sectors identified for the project countries, and support the development of gender-responsive and inclusive National Adaptation Plans and sectoral plans. The assessment is being implemented by the Caribbean Natural Resources Institute (CANARI) in collaboration with the United Nations Development Programme (UNDP) – Barbados Office and country focal points in nine countries including Antigua and Barbuda, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, St. Vincent and the Grenadines and Suriname.

1. a) Can you please describe your role and responsibilities?
b) How long have you served in this role?

Country/ sectoral context

2. What are the policy priorities for your sector?
3. Is there a sectoral policy or plan? Does it include a gender focus?
4. Can you describe the different roles and division of labour between men and women, if any, in your sector?
5. What is the situation in terms of access and control of resources (land, water, finances etc)?
 - a) How many men vs women own agricultural or other land?
 - b) How many women apply for or are granted loans?
 - c) Who collects or manages access to water (e.g. via communal pipes, wells, rainwater tanks, rivers etc.)?
6. What is the level of access to information, services (e.g. extension, credit/loan programmes etc) and employment and economic opportunities?
 - a) Does it differ among men and women?
 - b) Does it differ by age, ethnicity or for PWDs, migrant or indigenous populations?
7. What information is collected to understand gender roles, needs and any inequalities for your sector (e.g. gender disaggregated data)? If none/limited, why?
8. What types of data do you need to help you make better decisions about the needs of men, women and vulnerable groups (e.g. elderly, PWDs, indigenous communities) in planning?

Climate change impacts, needs and capacities

9. What climate change impact or vulnerability assessments have been done nationally/ for your sector? Did any of these include a gender focus?
10. Can you share key experiences and lessons from past climate-related disasters (e.g. hurricanes, floods or droughts) over the last 10-20 years?
 - a) Were men and women impacted differently?
 - b) Were vulnerable groups – children, elderly, PWDs, rural poor, indigenous or migrant populations – impacted differently?
 - c) Have these impacts and needs been documented in post-disaster needs assessments (PDNAs) that can be shared?
 - d) Were any special provisions made for men, women and other vulnerable groups in national or sectoral plans and projects based on these experiences?
11. What are the current or projected impacts of climate change and related disasters on your sector?
 - a) How do these climate change impacts differ for men and women?
 - b) How do these climate change impacts differ for vulnerable groups – children, elderly, PWDs, rural poor, indigenous or migrant populations?
12. How do people cope/deal with these climate change impacts?
 - a) How do men and women cope?
 - b) How do vulnerable groups cope (e.g. children, elderly, PWDs, rural poor, indigenous or migrant populations)?
13. What are possible factors determining these differences in impacts and ability to cope experienced by men, women and vulnerable groups?
14. Is there a sectoral adaptation or disaster plan? Is climate change integrated into the current sectoral policy/plan?
15.
 - a) How are the different impacts and needs of men, women and vulnerable groups factored into the sectoral policy or plans?
 - b) How are these differences factored into climate change projects or programmes to ensure equitable access to resources and benefits?

Access to climate finance

16.
 - a) What climate finance options and frameworks (e.g. GCF or GEF country programme/strategy, climate investment plan for specific sectors) exist to support implementation of national and sectoral policies, plans and projects?
 - b) What criteria or other measures are in place to ensure climate finance addresses gender concerns and promote gender equality?
 - c) What measures are in place to ensure climate finance addresses the needs of key vulnerable groups (e.g. elderly, PWDs, poor and indigenous communities)?

Participation and influence in decision-making

17. What coordination mechanism(s) exist to support climate change action at the national or sectoral levels?
 - a) Do these coordination mechanisms include women and/or representatives of women-focused NGOs or groups?
 - b) Do these mechanisms engage other vulnerable groups (e.g. youth, PWDs, indigenous or migrant populations)?
 - c) Do these mechanisms support awareness and action to address gender concerns? If so, how?
18. Who/what organizations need to be involved in these coordination mechanisms to ensure that gender considerations are integrated?
19. Does your agency/organization have a gender expert on staff? Do you have a gender focal point?
20. Have you had specific training to build your knowledge and skills to address gender concerns? If so, please describe.
21. What do you see as key challenges for mainstreaming gender in your sector?
22. What recommendations do you have for mainstreaming gender in your sector?

8.3 Appendix 3 – Online Survey

About the survey: This survey aims to capture existing information and local perspectives on the impacts of climate change and related disasters on men, women and key vulnerable groups – elderly, persons with disabilities, poor rural and indigenous communities, and migrants – and opportunities and barriers to ensure gender equality and social inclusion in climate change responses in nine Caribbean countries, including Antigua and Barbuda, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, Saint Vincent and the Grenadines and Suriname. This will provide baseline data to inform the development of national and sectoral policies and plans to adapt and build climate resilience.

This baseline analysis is being implemented from September to December 2020 by the Caribbean Natural Resources Institute (CANARI) in collaboration with the United Nations Development Programme (UNDP) – Barbados and the Eastern Caribbean and national focal points for the nine target countries as part of the project, [Enabling Gender-Responsive Disaster Recovery, Climate and Environmental Resilience in the Caribbean \(EnGenDER\)](#).

We would greatly appreciate your inputs into this baseline analysis. This survey should take no more than 15-20 minutes to complete.

For further information, please see the [brief](#) on the baseline analysis. You can also contact the CANARI Project Manager Dr. Ainka Granderson at ainka@canari.org.

General Information

1. Would you be willing to share your full name as part of this survey?

Yes – happy to share my name No – prefer to remain anonymous

If yes, please provide your full name:

2. What type of organization do you work for?

Academic or research institution

Civil society organization (NGO or community group)

National or local government

Private enterprise

Other:

3. A) What is your role at this organization?

B) How long have you served in this role?

Less than 1 year 1-4 years 5-9 years Over 10 N/A

4. Which of the following sectors do you work in? (Tick all that apply)

Agriculture (crops and livestock)

Banking and finance

Climate change

Disaster management

Energy

Fisheries

Forestry

Gender and social development

Health

Housing and infrastructure

Natural resource or protected areas management

Transport

Water

Other:

5. What is your gender?

Female

Male

Other:

6. What is your age?

Under 20

20-39

40-59

Over 59

7. Where are you based?

Commented [NR1]: 1.TAG suggested change- Are You:
Or (What is your gender identity?)
Not sure this made sense, so left as is.

Antigua and Barbuda, Belize, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Other:

Climate change impacts, needs and capacities

8. A) How would you assess the level of impact of the following climate hazards on your sector or livelihood? (circle or check the relevant rating)

Climate hazard	No/ hardly any impact	Little impact	Medium impact	Significant impact	Very severe impact
Dry spell and drought	1	2	3	4	5
Heatwave	1	2	3	4	5
Flood (e.g. river, ravine)	1	2	3	4	5
Landslide	1	2	3	4	5
Hurricane and storm	1	2	3	4	5
Storm surge	1	2	3	4	5
Sargassum seaweed influx	1	2	3	4	5
Rising sea level and coastal erosion/flooding	1	2	3	4	5
Unpredictable or variable rainfall	1	2	3	4	5

Warmer ocean (e.g. coral bleaching)	1	2	3	4	5
Change in ocean currents and chemistry (e.g. acidification)	1	2	3	4	5
Rising incidence of diseases (e.g. Dengue, Zika, etc)	1	2	3	4	5

Other climate hazards:.....

Climate hazard	No/ hardly any impact	Little impact	Medium impact	Significant impact	Very severe impact
Other	1	2	3	4	5

B) For those hazards ranked 4 or 5, what were the impacts on your sector or livelihood? (tick all that apply)

- Property Damage
- Economic loss
- Decline in viability of your livelihood (e.g. agriculture, fishing, small business)
- Health impact
- Other: _____

C) For those hazards ranked 4 or 5, please describe the strategies used to cope with these impacts on your sector or livelihood:

- Seek government assistance
- Seek assistance from family and friends
- Switch jobs or find additional jobs to earn income
- Use savings or access loans to support loss of income
- Get insurance for yourself or your property and equipment
- Move or migrate to another area

Other: _____

9. A) Are men and women impacted differently by climate change and related hazards within your work or sector?

Yes No Unsure

B) If you answered yes to Question 9, please describe the differences in the impacts on men and women.

.....
.....
.....

If you answered no, skip to Question 11.

10. What strategies would you recommend to address these different impacts on men and women?

.....
.....
.....

11. A) Which of the following groups may be more highly impacted by climate change and related hazards? (Tick all that apply)

- Children (under 18 years)
- Elderly (over 60 years)
- Communities dependent on farming, fishing and forestry
- Indigenous communities
- Migrants/ refugees
- Persons with disabilities
- Poor/very poor households
- Single parent households
- Other:

B) For the groups that you ticked above, please describe the specific impacts on these groups and why you think they are more badly impacted.

.....
.....
.....

12. What strategies would you recommend to address these impacts on specific vulnerable groups?

.....

Access and influence in decision-making

13. A) How would you rate your ability to access land and resources (e.g. water, electricity, fuel etc) to support your work or livelihood?

Very Poor	Poor	Average	Good	Very Good
1	2	3	4	5

B) If you ranked your ability as 1 or 2, what are the factors limiting your access? (tick all that apply)

- Government policies or management
- Cultural or traditional values
- Lack of funds
- Lack of access to loans or credit
- Limited availability of land and other resources
- Lack of awareness or education
- Other:

14. A) How would you rate your ability to access to information and services (e.g. agricultural extension, training, credit/loan programmes, etc.) to support your work or livelihood?

Very Poor	Poor	Average	Good	Very Good
1	2	3	4	5

B) If you ranked your ability as 1 or 2, what are the factors limiting your access? (tick all that apply)

- Government policies or management
- Cultural or traditional values
- Lack of awareness or education
- Lack of equipment (e.g. phone, computer, radio)
- Poor communications (e.g. internet or phone service)
- Poor transport (e.g. to access services in urban areas)
- Other:

15. What is the main way in which you access support for your work or livelihood (e.g. funds, equipment, technical support)?

- Through government
- Through local civil society organizations (National NGOs, community groups)

- Through international NGOs (e.g. Red Cross, The Nature Conservancy)
- Through international agencies (e.g. UN agencies, World Bank)
- Through your family and friends (e.g. remittances)
- Other:.....

16. A) Have you been engaged in any coordination mechanism (e.g. advisory group, council, committee) to support joint decision-making or action within your sector or nationally?
 Yes No Unsure

B) If yes, what is this coordination mechanism?

If no, skip to Question 19.

17. If you answered yes to Question 16, how well do you think women or women-focused groups have been engaged in this mechanism?

Very Poor	Poor	Average	Good	Very Good
1	2	3	4	5

18. If you answered yes to Question 16, how well do you think key vulnerable groups (e.g. elderly, persons with disabilities, indigenous communities, youth etc.) have been engaged in this mechanism?

Very Poor	Poor	Average	Good	Very Good
1	2	3	4	5

19. If you ranked engagement as 1 or 2, who or what organizations need to be engaged in the coordination mechanism to ensure that concerns related to gender and key vulnerable groups are integrated?

.....

20. A) What do you see as the key barriers for promoting gender and social equality in your work or sector?

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.....
.....

B) What do you see as the key opportunities for promoting gender and social equality in your work or sector?

.....
.....
.....

Awareness and training

21. A) Does your organization collect information on numbers of women and men in your area of work or sector including their different roles, needs, opportunities and challenges?

Yes No Unsure

B) If yes, please list the type of assessments, what information is collected and how often.

.....
.....
.....

22. Does your organization have a gender expert on staff?

Yes No Unsure

23. A) Have you had specific training to build your knowledge and skills to address gender concerns?

Yes No

B) If yes, please describe what type of training and by whom

.....
.....