



Canada



REPORT OF THE GENDER-BASED CLIMATE RESILIENCE ANALYSIS FOR SAINT LUCIA



EnGenDER

Enabling Gender-Responsive Disaster Recovery,
Climate and Environmental Resilience in the Caribbean

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List of Acronyms and Abbreviations

AF	Adaptation Fund
CANARI	Caribbean Natural Resources Institute
CARICOM	Caribbean Community
CARIWIG	Caribbean Climate Weather Impacts Group
CCRIF	Caribbean Catastrophe Risk Insurance Facility
CDEMA	Caribbean Disaster Emergency Management Agency
CEDAW	Convention on the Elimination of All Forms of Discrimination Against Women
COVID-19	Novel Coronavirus disease 2019 (due to SARS-COV-2 virus)
CRFM	Caribbean Regional Fisheries Mechanism
CSO	Civil society organization
ECLAC	Economic Commission for Latin America and the Caribbean
EnGenDER	Enabling Gender-Responsive Disaster Recovery, Climate and Environmental Resilience in the Caribbean
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
GenFish Plan	Action Plan for Gender Equality and Youth Empowerment for the Fisheries Sector
GHG	Greenhouse gas
HACCP	Hazard Analysis and Critical Control Points

IICA	Inter-American Institute for Cooperation on Agriculture
IPCC	Intergovernmental Panel on Climate Change
IWRM	Integrated water resources management
J-CCCP	Japan-Caribbean Climate Change Partnership
LGBTQIA+	Lesbian, Gay, Bisexual, Transgender, Queer, Intersex and Asexual and their allied community
MSME	Micro, small and medium enterprise
NAMA	Nationally Appropriate Mitigation Actions
NAP	National Adaptation Plan
NCCC	National Climate Change Committee
NDC	Nationally Determined Contributions
NEMO	National Emergency Management Organization
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
REASAP	Resilient Ecosystems Adaptation Strategy and Action Plan
SAMOA Pathway	Small Island Developing States Accelerated Modalities of Action
SASAP	Sectoral Adaptation Strategy and Action Plans
SDG	Sustainable Development Goal
SIDS	Small island developing states
SLNRWP	Saint Lucia Network of Rural Women Producers
SOCC	State of the Caribbean Climate Report
SST	Sea surface temperature

UNDP	United Nations Development Programme
UNCCD	United Nations Convention to Combat Desertification and Land Degradation
UNCLOS	United Nations Convention on the Law of the Sea
UNFCCC	United Nations Framework Convention on Climate Change
WASCO	Water and Sewerage Company Inc.
WRMA	Water Resource Management Agency
YAEP	Youth Agri-Entrepreneurship Programme

Executive Summary

This report synthesizes the findings from the gender-based climate resilience analysis in Saint Lucia 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, key vulnerable populations and future generations in the Caribbean. It supports 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 Saint Lucia was to provide:

- 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 analyzes data on existing gender and social inequities and how climate change will impact and shape the vulnerabilities among men, women and key vulnerable groups, and highlights key gaps, opportunities and challenges for the three priority sectors identified for Saint Lucia:

- Agriculture (crops and livestock)
- Fisheries
- Water

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 Saint Lucia.

Key findings and recommendations

Saint Lucia has developed progressive policy and institutional frameworks for climate change through the National Climate Change Adaptation Policy, NAP and Sectoral Adaptation Strategies and Plans (SASAPs) for agriculture, fisheries and water, and an updated NDC. In all of these, gender is included to varying degrees and oversight, and implementation is supported through the efforts of lead agencies and coordinating mechanisms like the National Climate Change Committee.

There has also been a shift within the priority sectors as women have become more involved in the agricultural and fishing sectors over the last 10 to 20 years, playing active roles in agro-processing and the post-harvest value chain. There has also been targeted efforts to promote women and youth engagement within these sectors.

Despite this, there remain significant areas for improvement for effective gender mainstreaming into adaptation and resilience building in the priority sectors and beyond. There needs to be better coordination and oversight through officially designated gender focal points within the lead agencies

for climate change and the priority sectors of agriculture, fisheries and water, along with stronger linkages with the work of the Division of Gender Relations and development of specific monitoring and reporting systems to track gender outcomes. Lack of resources for implementation of gender-responsive processes and gender mainstreaming also needs to be addressed through improved budgeting and financing. With the proposed development of the gender policy and strategic plan and further mainstreaming of gender into project concepts for financing under the NAP and SASAPs, there is an opportunity to better ensure gender mainstreaming and address the impacts of climate change and related disasters. Specific recommendations for gender mainstreaming in the priority sectors are identified in Table 7 in Section 6, some of which include to:

- expand the application of gender analysis for planning and implementation of policies and programmes to ensure more equitable distribution of opportunities and resources among women and men
- increase institutional support to the Division of Gender Relations so they can expand gender-responsive capacity building services and lend technical expertise to the priority sectors on gender mainstreaming
- reform existing skills training programmes to be gender-responsive, and target young women and young men to become involved in climate-smart agriculture and fisheries, taking into account the full value chain for current and emerging commodities
- invest in infrastructure for the provision of adequate water and sanitation to the most poor and vulnerable communities

The data from the baseline analysis further highlights structural inequalities across several areas of development, which have left households vulnerable to climate-related and other shocks. Based on the impacts of and response to the COVID-19 pandemic, it is clear that there are many Saint Lucians that are not only income poor but prone to slipping into income poverty easily. This income poverty is due to lack of access to decent work, and is compounded by the limited coverage provided by social protection programmes that increase the vulnerabilities of the poor and non-poor alike in the face of a shock. Food insecurity and challenges in access to water and proper sanitation are serious concerns. The main structural inequalities of concern in Saint Lucia, which will exacerbate the adverse impacts of climate change, include:

- overall income insecurity, which means that the non-poor are easily susceptible to slipping into poverty, as has been observed during the COVID-19 pandemic
- disproportionate levels of poverty among women and children in their care, and a higher burden of care on female-headed households
- low coverage of social protection programmes
- high levels of food insecurity among the most vulnerable
- lack of access to decent work as a result of lower earnings for women, more than men, and higher levels of income poverty among women, as well as occupational sex segregation, which further limits women's access to economic opportunities
- poor housing conditions, poor sanitation, lack of access to insurance for the coverage of damage and loss due to climate hazards contributing to vulnerability, particularly in rural areas

The areas of most concern, which continue to experience multiple deprivations including in access to water and sanitation, were districts and communities in Anse la Raye, Bexon, Canaries, sub-urban/rural Castries (including Marchand Road), Dennery, Gros Islet, Laborie, Marc, Micoud, Ravine Poisson and Soufriere. These areas saw deprivations and or growing poverty and inequality over a 10-year period from 2006-2016, and also are among those areas frequently impacted by climate-related hazards.

Key recommendations for addressing inequality in access to income and employment, building on those in the Saint Lucia National Report on Living Conditions (Kairi Consultants Limited, 2018), include to:

- promote gender sensitivity across socio-economic programmes.
- develop initiatives to deal with educational inequity and inequality, with special focus on the needs of vulnerable groups such as at-risk youth, young mothers, single mothers, unemployed persons and PWDs.
- facilitate the adoption of flexible working arrangements and expansion of child-care facilities like nurseries and after-school-care to afford greater participation of women in labour market and in educational and training programmes, including in those offered on evenings.
- revisit training programmes to improve gender equity in education and training as the basis for removal of gender segmentation within the labour market.

The COVID-19 pandemic has also forced shifts in the workforce and socio-economic landscapes since March 2020, and perhaps provides an opportunity to 'build back better' through investing in areas that would have emerged as being more adaptive. Research into ways that people and businesses have adapted over the course of the pandemic is worthwhile. There are obvious arenas of virtual business management and decentralized food distribution that will lay the groundwork for small businesses and the shoring up of local economies amidst a contracting economy. As tourism is a key, fast-growing sector and one of the first affected in the event of both climate-related and economic shocks, it is worthwhile to consider the need to shift focus away from tourism and diversify local economies. There is also a significant opportunity to support women's and youth entrepreneurship, and access to new and emerging markets at local and regional levels, noting that women have lower labour force participation rates than men and youth are among the most vulnerable to poverty. Increasing investment and training for micro, small and medium enterprise (MSME) development is critical at this time.

1. Introduction

This report synthesizes the findings from the gender-based climate resilience analysis in Saint Lucia 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, key vulnerable populations and future generations in the Caribbean. It supports 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 report presents and analyzes data on existing gender and social inequities and how climate change will impact and shape the vulnerabilities among men, women and key vulnerable groups. It highlights 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 Saint Lucia.

The Caribbean Natural Resources Institute (CANARI) provided technical assistance to UNDP to undertake the gender-based climate resilience analysis from September 2020 to May 2021 and develop this report under the EnGenDER project.

1.1 Objectives

The objective of the gender-based climate resilience analysis in Saint Lucia was to provide:

- data on the gendered inequality and vulnerability of women and men in priority sectors (e.g. 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 the development of tailored capacity building initiatives for gender mainstreaming in the priority sectors identified for Saint Lucia. It will also 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 the 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 Saint Lucia, based on its National Climate Change Adaptation Policy and NAP:

- Agriculture (crops and livestock)
- Fisheries
- Water

2. Country Overview

Saint Lucia is located on the volcanic arc in the Lesser Antilles, with Martinique to the north and Saint Vincent and the Grenadines to the south. It has 616 km² of land area and 522 km² of coastal shelf area. Saint Lucia has a mountainous central range running from the north to the south of the island. The hilly nature of the interior also gives rise to rivers and valleys. The highest point of the island is Mt. Gimie, which stands at about 950 m above sea level (Government of Saint Lucia, 2018a).

The climate in Saint Lucia is tropical, with the typical dry (December – May) and wet (June – November) seasons; the latter of which overlaps with the hurricane season. Most of the rainfall occurs in the central, higher altitude terrain, averaging around 3,420 mm per year. At the coastline, there is less rainfall with an estimated 1,265 mm annually¹. Generally, rainfall is less predictable during the dry season than the wet season. Temperatures on the island are generally warm throughout the year, averaging around 28°C and dropping during December and March. The temperature at sea is usually around 26.7°C with increased wind speed during January and July, and more extreme conditions during the hurricane season (Wandel & Cowing, 2017).



Figure 1. Map of Saint Lucia (UNDP J-CCCP, 2016)

Saint Lucia's population was 165,595 persons in 2010 with an estimated population of 177,301 in 2017 (49.64% males and 50.37% females) (The Central Statistical Office of Saint Lucia, 2019). Approximately 43% of the people are 30 years and younger, based on 2017 estimates (The Central Statistical Office of Saint Lucia, 2019). Life expectancy has increased from 2003 to 2012 for both male and female, with female life expectancy estimated at 77.8 years and male at 72.2 years (The Central Statistical Office of Saint Lucia, 2014). Most of the population is settled along the coast, as with most Caribbean islands, where development, agriculture, coastal resources, tourism, fisheries and other economic activity is concentrated (UNDP J-CCCP, 2016; Government of Saint Lucia, 2018a).

Saint Lucia is recognized as a middle-income country with a steadily growing GDP since 2002 (UNDP J-CCCP, 2016). Saint Lucia's economy was previously agriculture-based, primarily centred on the banana industry, but tourism has become the primary revenue earner. Tourism accounted for 40.7% of GDP in 2019 (WTTC, 2020). Whereas crops and livestock agriculture contributed an estimated 0.13% towards GDP, fisheries contributed 0.3% and the water sector contributed 7% in 2019 (The Central Statistical Office of Saint Lucia, 2019). Total GDP for 2019 was estimated at US\$2.099 billion at constant prices (The Central Statistical Office of Saint Lucia, 2019).

¹ The rainfall also varies between the north and south of the island, with the north receiving an average of 1,450 mm annually and the south 1,900 (Government of Saint Lucia, 2018).

2.1 Climate change and its impacts

Saint Lucia's vulnerability to climate change is due to the island's small land mass, location within the hurricane belt, location of social and economic infrastructure near the coastline, limited human and financial resources, and dependency on tourism and agriculture.

Hurricanes can severely impact households via loss of assets, such as crops and homes, leading to further loss of livelihood (UNDP J-CCCP, 2016). Tropical Storm Debbie in 1994 resulted in estimated losses of US\$85.1 million (Government of Saint Lucia, 2003). The 1996 October Tropical Wave resulted in US\$4.4 million in property and infrastructure damage in the Soufriere, Anse La Raye, Vieux Fort and Castries areas (NEMO 2014). Economic impact was estimated at US\$20 million for Tropical Storm Lili in 2002, US\$2.6 million for Hurricane Ivan in 2004, and US\$18.8 million for Hurricane Dean in 2007 (Government of Saint Lucia and World Bank, 2014; NEMO, 2014). The impacts of Hurricane Tomas in 2010 cost Saint Lucia 43.4% of its GDP, with estimated damages of US\$336 million to housing, infrastructure, agriculture and tourism (Ministry of Sustainable Development, Energy, Science and Technology, 2015). It was reported that approximately 5,952 persons (3.5% of the population) were severely affected and eight persons lost their lives after the Hurricane. It was further noted that the most impacted areas also correlated with the location of vulnerable groups (ECLAC, 2011).

A tropical trough system affected Saint Lucia outside of the hurricane season on December 24 and 25 2013, and produced extreme rainfall (>224mm within 2-3 hours) which led to flash flooding and landslides. This trough system impacted 2,600 persons and caused US\$89.2 million in damages (Government of Saint Lucia and World Bank, 2014; Government of Saint Lucia, 2018a). Poor engineering and construction of homes exacerbated the risk of damage by landslides (UNDP J-CCCP, 2016). Flooding has also led to displacement of persons and damage to property, particularly in low-lying coastal communities (NEMO, 2014). Further, since 2012, Saint Lucia has increasingly experienced drought conditions due to decreased rainfall (Government of Saint Lucia, 2017a).

High risks groups that are vulnerable to these climate-related disasters include female-headed households, children and elderly. Female-headed households were found to have increased vulnerability to the impacts of Hurricane Tomas as they represented 44% of households and comprised 47% of low to middle-income households (ECLAC, 2011). Women in female-headed households were associated with lower employment levels and lower wage brackets in the labour market (ECLAC, 2011). Female-headed households also had large household sizes, and were more likely to live in poor housing in disaster-prone areas (ECLAC, 2011). It was also noted that socially vulnerable female-headed households, which were not classified as poor, might move below the poverty line in the event of a natural disaster. This holds implications for children, adolescents and elderly persons who are within the care of female-headed households. Children and elderly can further be affected due to the closure or inaccessibility of schools and health centres/hospitals, adding to the responsibility of women in female-headed households (ECLAC, 2011).

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

Saint Lucia's Climate Change Adaptation Policy was developed in 2015 as a guide for implementing efforts to address the impact of climate change through a comprehensive, coordinated and participatory approach to the national sustainable development agenda and to ensure preservation

of the way of life for Saint Lucians (Government of Saint Lucia, Ministry of Sustainable Development, Energy, Science and Technology, 2015). The policy outlines six objectives and seven guiding principles for its implementation, and aims to carry out adaptation through facilitation, implementation and financing. Under outcome 1 on implementing adaptation measures, the policy highlights the need to understand the differential vulnerabilities of poor women, men, children and the elderly in designing response strategies, and consider strategies and instruments to build climate resilience in households, vulnerable groups and communities. Saint Lucia's updated NDC (2021) is aligned to the Climate Change Adaptation Policy, and highlights mainly mitigation actions which aim to reduce greenhouse gas emissions to 7% by 2030, relative to 2010 emissions. The NDC is supported by an Implementation Plan and a Financing Strategy and reflects the position taken in the Climate Change Adaptation Policy, NAP, and Sectoral Adaptation Strategy and Action Plans (SASAPs) in its commitment to gender equality (Government of Saint Lucia, 2021).

Saint Lucia's NAP (2018-2028) outlines a 10-year process for adaptive and coordinated action to address climate change nationally. It aims to create the enabling environment needed and fast-track climate change and disaster management actions in the country. The ten-year NAP serves as a means of identifying immediate, medium and long-term climate change adaptation needs, and developing and implementing strategies and actions to address those needs. It is organized into seven priority sectors: water, agriculture, fisheries, infrastructure and spatial planning, natural resource management, education, health and tourism (Government of Saint Lucia, 2018a). Gender is included in the NAP, where a section outlines the approach to "mainstreaming of gender across all activities involved in the NAP process, with the aim of decreasing gender-based vulnerabilities, promoting gender equality in decision-making and ensuring the implementation of adaptation measures does not impose additional burden to women, in particular, and does not promote the domination of any gender over others" (Government of Saint Lucia, 2018a: 47).

The overarching NAP is supplemented by several documents, including: Saint Lucia's NAP Stocktaking, Climate Risk and Vulnerability Assessment; Saint Lucia's NAP Roadmap and Capacity Development Plan 2018-2028; a National Climate Change Research Policy and Strategy; Saint Lucia's Climate Change Communications Strategy; Saint Lucia's Private Sector Engagement Strategy; Saint Lucia's Climate Financing Strategy; a Monitoring and Evaluation Plan of Saint Lucia's National Adaptation Planning Process; Sectoral Adaptation Strategy and Action Plans (SASAPs) for the agriculture, fisheries and water sectors; and the Resilient Ecosystems Adaptation Strategy and Action Plan 2020-2028 (REASAP). The SASAPs and REASAP have an accompanying portfolio of project concept notes and there are Guidelines for the Development of SASAPs. Currently efforts are ongoing to develop SASAPs for infrastructure, health and education, and there is a plan to update the National Adaptation Strategy and Action Plan (2015) for the tourism sector (Government of Saint Lucia, 2018a, 2018b, 2018c, 2018d, 2018e).

The lead government agency for climate change is the Department of Sustainable Development in the Ministry of Education, Innovation, Gender Relations and Sustainable Development. The Department of Sustainable Development is also the Designated National Authority for the Adaptation Fund (AF) and supporting implementation of the 'Building Resilience for Adaptation to Climate Change and Climate Variability in Agriculture in Saint Lucia' project, which will give attention to gender considerations. Under the Green Climate Fund (GCF), the National Designated Authority is the Department of Economic Development Transport and Civil Aviation, which is also developing a portfolio of projects. The lead agency for disaster management is the National Emergency Management Organization (NEMO) and is responsible for coordinating different government entities who support disaster management action in the various sectors.

The National Climate Change Committee (NCCC) is the coordinating mechanism for Saint Lucia's Climate Change Adaptation Policy and NAP (Government of Saint Lucia, 2018a). It is an advisory mechanism consisting of a wide cross-section of members representing government agencies, CSOs, the private sector and academia.

The Climate Change Adaptation Policy and NAP are also aligned with a number of international and regional climate change and environmental agreements, guidelines and frameworks to which Saint Lucia is party to, including (Government of Saint Lucia, 2017a):

- Agenda 2030 and the Sustainable Development Goals (SDGs)
- Agreement Establishing the Caribbean Regional Fisheries Mechanism (CRFM)
- Caribbean Community (CARICOM) Regional Framework for Achieving Development Resilient to Climate Change and its Implementation Plan (2011-2021)
- Caribbean Comprehensive Disaster Management Strategy
- CARICOM Energy Policy
- CARICOM Common Fisheries Policy
- Strategy and Action Plan on Disaster Risk Management and Climate Change Adaptation in Fisheries and Aquaculture in the CARICOM and Wider Caribbean Region
- Liliendaal Declaration on Climate Change and Development in the CARICOM (2009)
- Code of Conduct for Responsible Fisheries and Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication
- Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena Convention)
- Eastern Caribbean Regional Climate Change Implementation Plan
- Eastern Caribbean Regional Ocean Policy
- Organisation of Eastern Caribbean States (OECS) Model Water Policy
- OECS Land Policy Guidelines
- St. George's Declaration of Principles of Environmental Sustainability in the OECS (2001) and the OECS Environmental Management Strategy
- Small Island Developing States Accelerated Modalities of Action (SAMOA pathway), and the Barbados Programme of Action and the Mauritius Strategy
- The Vienna Convention for the Protection of the Ozone Layer (1985) and The Montreal Protocol on Substances that Deplete the Ozone Layer
- United Nations Convention on Biological Diversity
- United Nations Framework Convention on Climate Change (UNFCCC)
- United Nations Convention to Combat Desertification and Land Degradation (UNCCD)
- United Nations Convention on the Law of the Sea (UNCLOS)

3.2 National gender policies, plans and coordinating mechanisms

The Division of Gender Relations within the Ministry of Education, Innovation, Gender Relations is the lead agency for gender in Saint Lucia. There is currently no national gender policy. The country is in the process of developing a strategy with four areas of focus: 1) ending gender-based violence; 2) health; 3) governance; and 4) environmental sustainability. There is, however, a Saint Lucia Social Protection Policy where gender is included throughout (Government of Saint Lucia, 2015a). It is addressed in two objectives of the policy that seek to "outline and adopt life-cycle, human development and rights-based approaches to provide services to the most vulnerable and poorest populations (including child sensitive and gender-responsive approaches)" and "develop Standard Operation Manuals and toolkits for achieving equity and efficiency as well as child sensitive and gender-responsive programmes" (Government of Saint Lucia, 2015a: 20). Climate change adaptation is also briefly mentioned in the policy.

There is no coordinating mechanism for gender in Saint Lucia, however, there are bodies for other vulnerable groups such as the National Council of and for Older Persons and the National Council of and for Persons with Disabilities. Saint Lucia also has a National Coordinating Committee for Human Rights, established by Cabinet in 2019, with the responsibility to monitor and report on human rights issues. This committee includes the Division of Gender Relations, Coalition of Civil Society Organizations, National Youth Council, and National Council of and for Persons with Disabilities (Department of External Affairs, n.d.).

Saint Lucia also has international obligations under the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), and the Division of Gender Relations is responsible for coordination and reporting on these activities. Other commitments, conventions and instruments to which the Government is signatory are listed in Table 1 (Ranjitsingh, 2016).

Table 1. List of commitments, conventions and instruments relevant to Saint Lucia regarding human rights, women’s rights and gender equality.

International and regional commitments	ILO conventions	Additional international and regional instruments
Convention on the Elimination of All Forms of Discrimination against Women (CEDAW)	Forced Labour Convention, 1930 (No. 29)	Nairobi Forward-looking Strategies for the Advancement of Women (1985)
International Covenant on Civil and Political Rights (ICCPR)	Freedom of Association and Protection of the Right to Organize Convention, 1948 (No. 87)	Beijing Declaration and Platform for Action (1995)
Convention on the Elimination of All Forms of Racial Discrimination (CERD)	Right to Organize and Collective Bargaining Convention, 1949 (No. 98)	Millennium Development Goals (2000)
Convention on the Rights of the Child (CRC)	Equal Remuneration Convention, 1951 (No. 100)	Commonwealth Plan of Action for Gender Equality 2005–2015
Optional Protocol to the Convention on the Rights of the Child on the involvement of children in armed conflict	Abolition of Forced Labour Convention, 1957 (No. 105)	Strategic Plan 2011–2016 of the Inter-American Commission of Women (CIM 2011).
Convention on the Rights of Persons with Disabilities (CRPD)	Discrimination (Employment and Occupation) Convention, 1958 (No. 111)	
Inter-American Convention on the Prevention, Punishment and Eradication of Violence Against Women (‘Convention of Belem de Para’)	Worst Forms of Child Labour Convention, 1999 (No. 182)	

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 influence 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, men and other genders and vulnerable groups, taking their needs and perspectives into account, and helping to 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 that 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. **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 impact of policy provisions on these groups.

3. **Institutions** – The degree to which national machineries focusing on climate change and priority sector machineries have the capabilities and resources to effectively facilitate gender mainstreaming.

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

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.

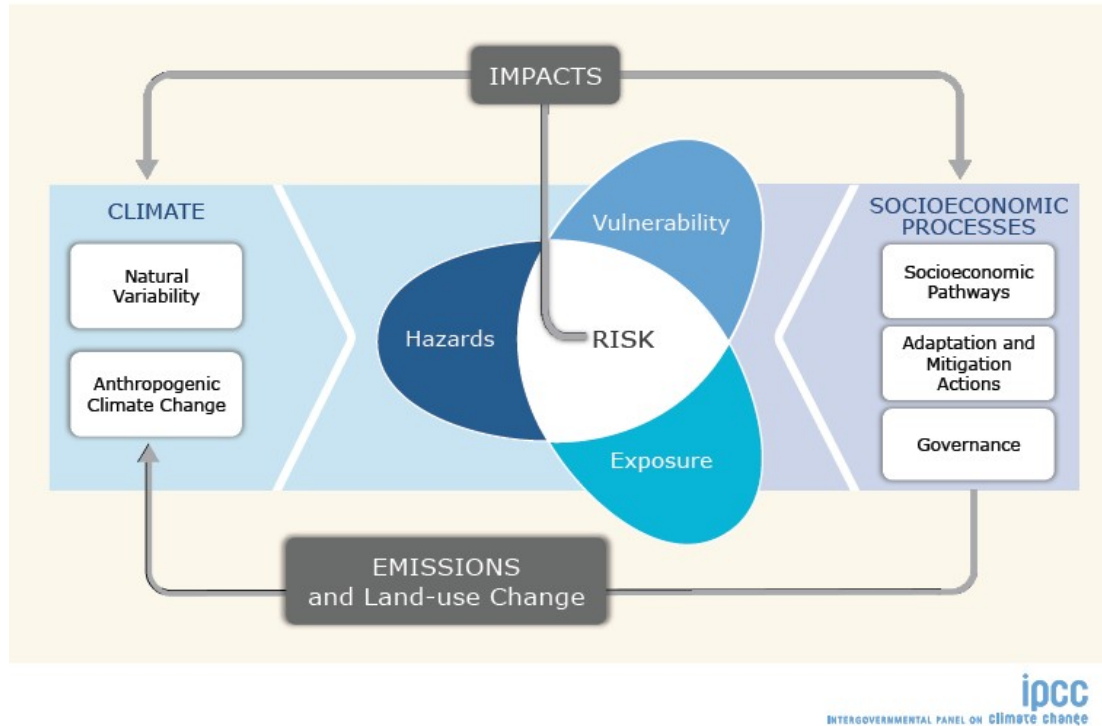


Figure 2. Climate Risk Model, including linkages between vulnerability, hazards and exposure (Source: IPCC 2014)

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

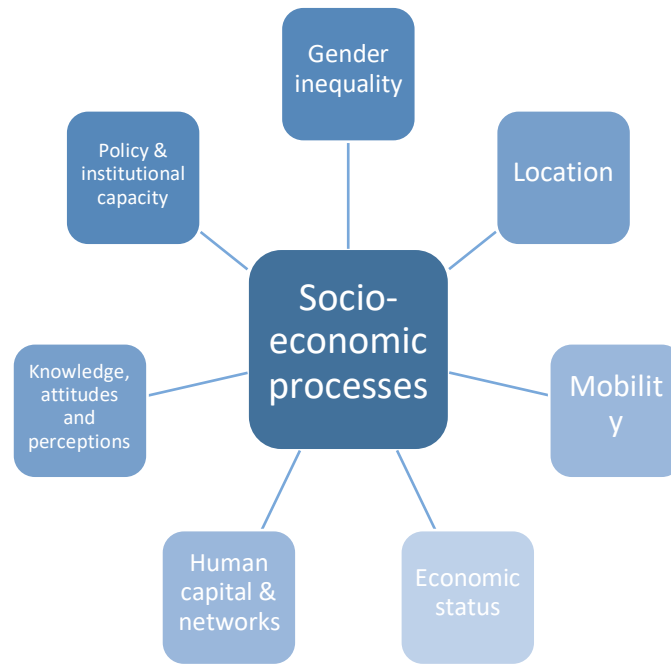


Figure 3. Socio-economic processes that influence climate and disaster risk and vulnerability

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 analyzed for the two priority sectors. The analysis considered 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, along with 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 analyzed 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 analyzed 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 or not there are biases towards gender, LGBTQIA+ and other related issues

4.2.2 Key assumptions and limitations

In developing and applying this GBA+ framework, there were a number of assumptions and limitations that have 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 LGBTQIA+, indigenous peoples and remote/inaccessible communities.
4. Given the available data, 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 requires 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.

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 to 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 Saint Lucia. Relevant national and regional documents and statistics were collected of 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, as well as 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, 15 key informants were interviewed from key government agencies and civil society organizations (CSOs) (targeting 4 men and 11 women) in November 2020. 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 Saint Lucia more broadly. See Appendix 1 and 2 for the interview questions and list of key informants, respectively.

A regional online survey was also administered in November 2020 to gain wider stakeholder inputs, including from farmer organizations, small agri-businesses and CSOs working on gender and climate change issues. There were only two respondents from Saint Lucia representing farmer organizations or other CSOs of the total 34 respondents. Due to the poor survey response, no detailed statistical analysis could be undertaken based on the online survey. See Appendix 3 for the online survey questionnaire.

4.3.1 Climate and socio-economic vulnerability profile

In addition to the above, a climate and socio-economic vulnerability profile was 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 sectors, to inform climate change planning and programming in Saint Lucia.

The profile draws on and analyzes 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. For this reason, the profile focuses on access to labour and employment as a key theme.

The profile specifically addresses the main climate change trends and projections, potential key impacts, overall socio-economic vulnerabilities, and climate change-related shocks and their intersections with structural inequalities in relationship to access to decent work⁴.

The latest climate change data and projections were sourced from the State of the Caribbean Climate (SOCC) 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)⁵, Regional Climate Models (RCMs) as well as statistical downscaling⁶ techniques. Additional data and maps were sourced from the Caribbean Climate Weather Impacts Group (CARIWIG) Portal⁷.

Data on the labour force, poverty and socio-economic conditions were primarily sourced from the following, and the limitations noted in relation to when the data was collected, sample size and the level of disaggregation:

- The most recent Labour Force Survey Report from the first quarter of 2020 (The Central Statistical Office of Saint Lucia, 2020)⁸
- The Saint Lucia National Report of Living Conditions 2016 (Kairi Consultants Limited, 2018)
- The Socio-Economic Impact of the COVID-19 Pandemic in Saint Lucia: Findings from the Saint Lucia COVID-19 High Frequency Phone Survey - Analysis of the 1st round of data collection (May 5 to 18, 2020) (The Central Statistical Office of Saint Lucia and the World Bank, 2020)⁹

⁴ 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>

⁵ 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 parameterizations 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 inter-annual climate predictions. (Available at https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_AnnexI_Glossary.pdf)

⁶ Downscaling is a method that derives local-to-regional-scale (up to 100 km) information from larger-scale models or data analyzes. 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 global climate model. (Available at https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_AnnexI_Glossary.pdf)

⁷ See http://cariwig.caribbeanclimate.bz/#future_data_viewer

⁸ While the labour force survey is based on a nationally representative survey sample, there were challenges with data collection highlighted by the Central Statistical Office of Saint Lucia as follows: “The results for this period do not correspond to the regular survey which normally runs for a quarter and may have lost comparability with previous records in the statistical series. The current situation with COVID-19 has negatively impacted the collection of data for the quarter, particularly March. Thus, the results predominantly reflect developments in the labour market in January and February. There were higher levels of refusals, as well as, interviews which were not conducted and this has resulted in a sampling error which has increased from +/-2.5% to +/-3.6% for the period under review (1st Qtr.)”

⁹ This survey was based on a nationally representative sample size

- Caribbean COVID-19 Food Security and Livelihoods Impact Survey, Saint Lucia Summary Report, May 2020 (The World Food Programme, 2020)¹⁰

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 Saint Lucia, which are typically much more effective in engaging the marginalized and vulnerable groups that the analysis hoped to target. Additionally, there were further difficulties in mobilizing CSO stakeholders to participate in the online survey and the level of engagement was lower than expected. The poor survey response 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 5.2 are largely based on secondary data, including recent gender and socio-economic assessments for specific projects and initiatives within the priority sectors.

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 Saint Lucia, 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 limits the depth of the analysis.

5. Findings for the Gender-based Climate Resilience Analysis

5.1 Sectoral Analysis

5.1.1 Agriculture

The agricultural sector supports the socio-economic development of rural communities. The sector is mostly comprised of small-scale farmers with an average farm size of 3 acres utilizing traditional production systems with limited modern technology (Government of Saint Lucia, 2016a). In 2012, it was estimated that the agriculture sector provided 21% of Saint Lucia's total employment. Due to natural disasters, decline in the banana sub-sector, loss of European Union preferential markets, pests and diseases, GDP in the sector has declined over from 1990 – 2015 from 13.85% to 3% (Government of Saint Lucia, 2016a, 2016b). Despite this, production of bananas still dominates the sector, occupying 48% of cultivated land and 41.4% of the sector's gross output (Government of Saint Lucia, 2017a, 2018c). There has also been a shift to other crops (e.g. root crops) and livestock in the sector

¹⁰ This survey was not based on a nationally representative sample size

(Government of Saint Lucia, 2016a). With the decline of banana production, there has been a 22.5% decrease in the proportion of the working population involved in agriculture between 1980 and 2010. Between the period 1987 to 2007, total area of holdings under cultivation also declined by 42% (Government of Saint Lucia, 2016a).

The Department of Agriculture under the Ministry of Agriculture, Fisheries, Physical Planning, Natural Resources and Cooperatives is the lead agency that oversees the development of the agriculture sector through technical support, and regulatory and advisory services. The Department includes an Extension Division to conduct agricultural educational and advisory services with farmers and other rural folk engaged in the agriculture sector.

The National Agricultural Policy (2009 – 2015) has been updated with the Draft Agricultural Policy Framework and Strategy (2016-2021). This policy framework includes plans for eleven priority areas including Priority Area 8 on increased youth and female involvement in agriculture, and Priority Area 11 on disaster risk reduction and climate change adaptation. Priority Area 8 speaks to creating “the enabling environment and opportunities that will stimulate the increased involvement of youth (including women) in agriculture production and agribusiness enterprises” (Government of Saint Lucia, 2016a: 93). This priority is to be supported by organizations, such as the Saint Lucia Agricultural Forum for Youth, and programmes, such as the Youth Agri-Entrepreneurship Programme (YAEP), which seek to promote youth involvement in agriculture through understanding of best practices, use of technology and mechanisms to promote sustainable agriculture.

Saint Lucia’s Agriculture SASAP (2018-2028) is one of three developed thus far under the Saint Lucia NAP. It was developed within the same 10-year timeframe for the inclusion and promotion of climate-resilient agriculture on the island. It outlines solutions to challenges in the sector which were developed through a participatory process. The plan highlights 45 measures for creating climate-resilient agriculture systems organized in four main outcomes and includes general gender considerations, such as including activities to reduce the vulnerabilities of women and men, as called for by the UNFCCC in NAP processes. Other policies related to the agriculture sector include the Agricultural Diversification Strategy 2001-2005, Policy Framework for the Development of the Agricultural Sector, 2004 – 2014, Saint Lucia, Medium Term Development Strategic Plan 2012-2016, National Food and Nutrition Security Policy and Action Plan.

The ways in which different genders are engaged in the agriculture sector, existing inequities and vulnerabilities, and opportunities and barriers for empowerment of women and key vulnerable groups are outlined below in terms of access to resources, risks to their livelihoods and supporting ecosystems, influence and participation in decision-making and culture and gender relations.

Access to and Control of Resources

Agriculture in Saint Lucia is associated with persons from largely rural backgrounds and male-dominated (Figure 4). In 2015, 19% of males and 9.7% of females were employed in the agriculture sector (ILO, 2016). There is, however, an overall decline in employment within the agriculture sector as opposed to the services sector which has seen an increase (ILO, 2018).

Although the data available is outdated, the last 2007 agriculture census recorded 9972 land-holders, of which 98% were categorized as individuals, reflecting the level of autonomy within the sector. Although male land-holders were in the majority, and outnumbered females three to one, from 1996 to 2007 there was an increase in the number of female holders from 26% to 30% (Figure 5 and 6) (Paul, 2007).

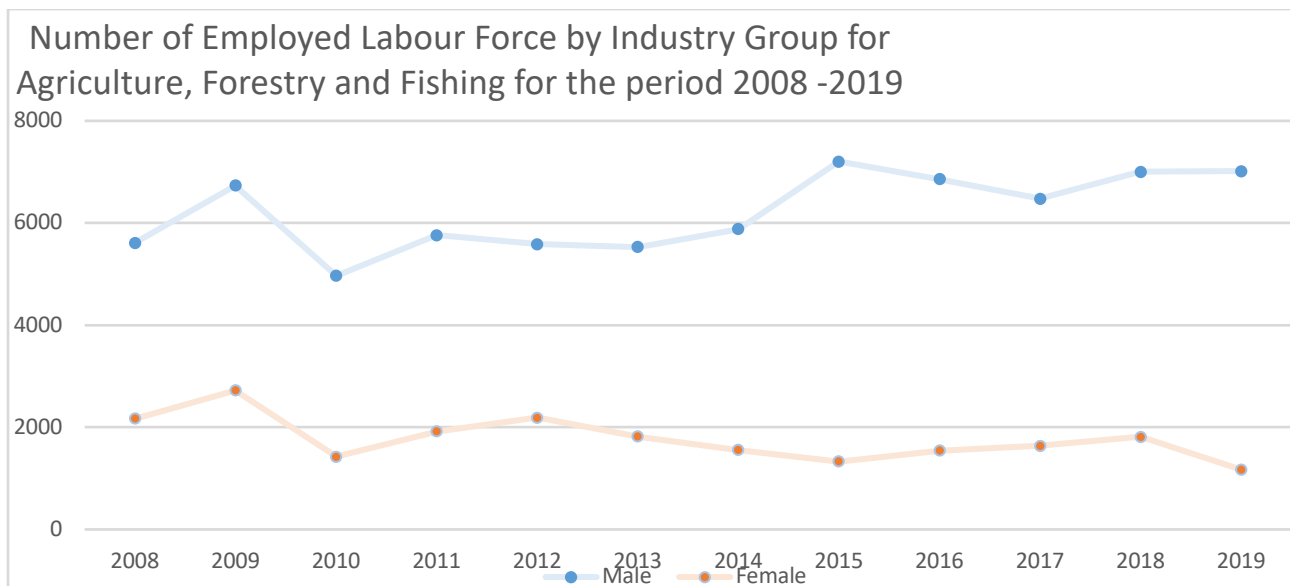


Figure 4. Number of Employed Labour Force by Industry Group for Agriculture, Forestry and Fishing for the period 2008-2019 (The Central Statistical Office of Saint Lucia, 2020)

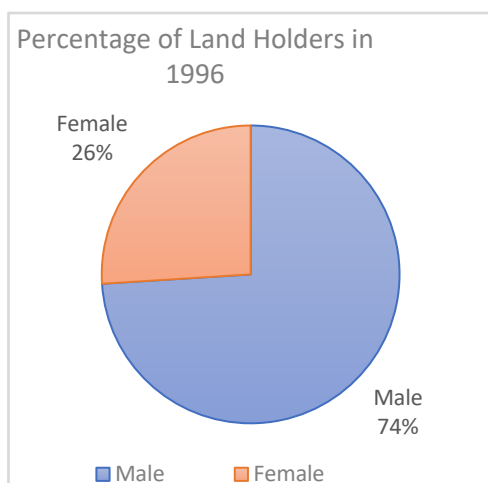


Figure 5. Percentage of Land Holders in 1996 (Paul, 2007)

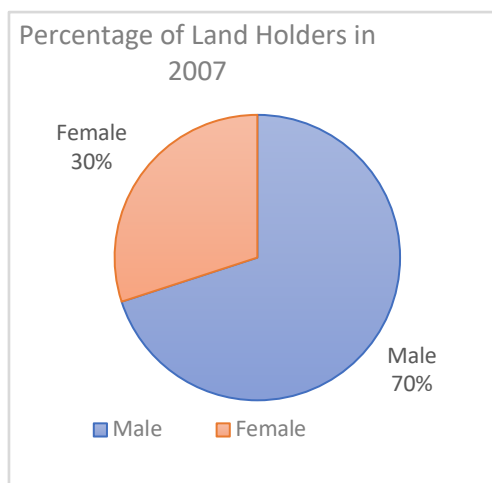


Figure 6. Percentage of Land Holders in 2007 (Paul, 2007)

In the past, women were involved with planting, weeding, helping with harvest and preparing post-harvest products. For example, within the banana industry, women were involved in spraying, washing and packing bananas (ECLAC, 1983). In recent times, there has been an increase in women farmers who manage farms and hire labour and tractors for land preparation. Generally, more men have ownership of lands but, based on records from agencies, there is an increase in women registered as farmers. These women farmers have access to primary resources (e.g. land and associated infrastructure) (Jean-Baptiste, 2020, pers. comms.). Although manual land preparation is male-oriented work, most other work on farms can be facilitated by women. If there is mechanization of land preparation, both men and women are involved. There are, however, cases where men would not want to do weeding and maintenance of farms and would recruit women (Jean-Baptiste, 2020, pers. comms.).

In key informant interviews, it was noted that men typically get paid more per hour/day than women regarding field labour (Jean-Baptiste, 2020, pers. comms.). Average wage and earnings for men were

also higher than women for skilled agricultural, forest and fishing workers based on 2016 census data (Saint Lucia Central Statistical Office, 2017). However, this gender pay gap is specific to farm labourers and not indicative of the public sector where there are policies and procedures in place to ensure equal pay for the same work.

While there has been an increase in women registered as farmers, their ability to access land is limited compared to male counterparts. It was suggested that female-headed households were 5.4% less likely to own land than male-headed households (Paul, 2007; Kairi Consultants Limited, 2018). For both male and female land-holders, family land and freehold land is the most common form of land tenure (Paul, 2007). Although, there has been a shift over the years as middle-class women with stable employment in the public and private sectors have been increasingly acquiring land, insecure land tenure can limit access to credit and loans, and women farmers and producers maybe more affected than their male counterparts (Ranjitsingh 2016).

Women are more likely to be involved in subsistence farming and agro-processing activities at the household level (e.g. selling homemade products such as jams, jellies, cheeses, fudges and pepper sauce to their local communities via word of mouth) (Ranjitsingh, 2016; CRFM 2020; Jean-Baptiste, 2020, pers. comms.). However, rural women are unable to expand their agro-processing businesses as production is mostly conducted within their homes and they are unable to export to regional and international markets due to the required product standards (Ranjitsingh 2016). Although support is available to rural women from the Ministry to facilitate agro-processing activities, there is limited outreach from extension services (CRFM 2020). The Saint Lucia Network of Rural Women Producers (SLNRWP) are currently developing agro-processing facilities for women to develop products that will meet Hazard Analysis and Critical Control Points (HACCP) standards (Ranjitsingh 2016). The SLNRWP provides training and supports capacity building of rural women farmers and agro-processors who can become part of local clusters for agro-processing, as well as craft-making, ceramics and soap-making. Another CSO involved in supporting rural women in agriculture is Helen's Daughters which focuses on improving marketing access and conducting capacity building exercises to better allow for the economic development of rural women (Helen's Daughters, n.d.).

Through the Inter-American Institute for Cooperation on Agriculture's (IICA) collaboration with the Government of Saint Lucia, projects have been developed promoting women and youth participation in agriculture. One such activity was the 'Building Managerial Capacity among Rural Women for Operation of the Anse Ger Processing Facility.' Through this project, the Micoud Cluster of the SLNRWP developed management and business operation skills related to operation of the Anse Ger Agro-processing Facility which was officially handed over to the group in 2019 (IICA, 2018). The CARICOM Development Fund has also provided support to the Youth Agri-Entrepreneurship Project through provision of a grant estimated at US\$1.37 million to support 150 young entrepreneurs in becoming full time farmers through provision of training, tools, and land preparation/infrastructure support (CARICOM Development Fund, 2017).

Water for farming is mostly open access via surface water sources (e.g. rivers, streams, ponds) and rainwater harvesting. However, there is a requirement for an abstraction license for farmers to use groundwater. The Water Resource Management Agency (WRMA) manages access to these resources, and a license for farmers is essentially free within reason. Under the Youth Agri-Entrepreneurship Project, both male and female farmers were given two tanks at 1,000 gallons each for harvesting rainwater off the roofs (Jean-Baptiste, 2020, pers. comms.). Location, rather than gender, is often the determining factor regarding access to water in rural communities where access is provided through rainwater harvesting or pipes from ravines (Darrel, 2020, pers. comms.). Though both male and female holders use limited equipment, it was noted that men have greater access to and use of agriculture machinery and equipment, such as trucks, tanks, pumps and sprinklers, than females (Ranjitsingh,

2016). This is as a result of the proportion of women lacking ownership and tenancy, as well as the necessary documentation to access credit and finance through lending institutions (Ranjitsingh, 2016).

Financial institutions, such as the Bank of Saint Lucia and the Saint Lucia Development Bank, provide credit, loans and other financing for the sector. Due to the size of loans, The Bank of Saint Lucia has more male than female clients, and they utilize loan facilities for purchasing agriculture equipment and vehicles. The Saint Lucia Development Bank has stringent requirements for loan applications, including land registers, title deeds, building plans and financial statements. Women and young persons are less likely to have access to credit as they are less likely to own businesses and have the required documents (Paul, 2007; C. Charles, 2020 pers. comms.). Women may also not be as invested in agriculture as a business but rather as livelihood support (C. Charles, 2020 pers. comms.). However, once all requirements are met, the loan provision system is considered gender neutral, and support is provided to new entrants throughout the project cycle. However, these institutions do not record sex disaggregated data systematically or some do not have specific gender policies. However, the Saint Lucia Development Bank has developed a Gender Equality Policy and Action Plan to address gender gaps in accessing financial services (Saint Lucia Development Bank, 2020). At credit unions, a similar pattern can be seen where not many women apply for loans. For women who do apply for loans, their activities are more focused on rainwater harvesting and livestock rather than crops (D. Charles, 2020 pers. comms.). It should be noted that women-focused NGOs within the agriculture sector have been able to receive international and regional grants and technical assistance to support their work (Darrel, 2020, pers. comms.).

Additionally, younger and middle-aged women are able to access incubator facilities provided through the government and European Union funds to support entrepreneurs to refine their products and develop their businesses (Jean-Baptiste, 2020, pers. comms.).

Risks to livelihoods and ecosystems

Extreme events such as landslides, flooding, droughts, and hurricanes and tropical storms have impacted the sectors over the years. For example, a trough system affected Saint Lucia outside of the hurricane season on December 24 and 25, 2013, and produced extreme rainfall (> 224mm within 2-3 hours) which caused damage and loss to agriculture infrastructure estimated at US\$12.9 million (12.9% of total damage and loss). Approximately 5% of total agricultural land was impacted from the trough, affecting 286 farmers with stock, production and equipment (Government of Saint Lucia and World Bank, 2014). For Hurricane Tomas in 2010, the estimated damage to the agriculture sector was US \$56.21 million. Farmers accounted for 1% of the population impacted by Hurricane Tomas (1330 farmers). Of the total estimated damage, 36% was attributed to bananas and 8% for other crops (ECLAC, 2011). Active farmers decreased by 500 after Hurricane Tomas and this added to reduction in farmers due to abandoning of farms, loss of agricultural lands due increased development, displaced workers seeking livelihood in tourism and construction sectors and urban migration (Government of Saint Lucia 2015b; Government of Saint Lucia 2017a; Government of Saint Lucia, 2018c). Hurricane Dean in 2007 caused US\$10 million in losses to the sector and destroyed 67% of the banana industry (FAO, 2015a). Since 2012, Saint Lucia has increasingly experienced drought conditions due to decreased rainfall, with droughts in 2020 causing farmers to over abstract water (Government of Saint Lucia, 2017c; Jean-Baptiste, 2020, pers. comms.).

Focus groups in some affected communities post-Hurricane Tomas indicated that men and women had different concerns regarding the impacts of the hurricane. Women identified the possible increased dependency on male relatives/partners to meet basic needs due to difficulty in being able to earn an income or meet family's needs through subsistence farming, and the associated pressures for transactional sex. Women incurred losses related to their crops, land (due to slippage) and loss of shops. The concerns of men were related to inability to farm due to lack of access to their lands and

washed away land areas. Men also were seeking food and resources for their families post-disaster but indicated potential employment due to clean-up work (ECLAC, 2011).

Post-disaster, support is distributed equally based on needs assessment and there are no specific barriers for women farmers and agri-processors to access such support. Pre-disaster inventory conducted by field officers are used to determine farmer's losses and guides fair distribution of resources (Jean-Baptiste, 2020, pers. comms.). It is expected that the provision of these services would reflect the proportion of male and females within the sector. However, if persons are squatting or don't have clear ownership (e.g. freeholder, lease from private/government agency or formal agreement from land owner), then they are not able to apply for agricultural concessions, government incentives, loans or access relief. If women or vulnerable groups fall into this category, they may not be able to access post-disaster support. The Ministry of Agriculture can engage development banks and cooperative credit unions to vouch for persons who have good record keeping and are involved in agriculture to request reduced timeframe for repayment of loans and other measures to assist persons with uncertain tenancy in some cases (Jean-Baptiste, 2020, pers. comms.).

The Livelihood Protection Policy, developed through the "Climate Risk Adaptation and Insurance in the Caribbean" project, is an insurance product designed to protect individual against losses resulting from extreme weather events. The insurance policy is available through credit unions, cooperatives and banks such as the St. Lucia Civil Service Co-operative Credit Union and the Dennerly Credit Union. In 2016, this facility provided smaller farmers and other individuals with pay-outs amounting to US\$102,000 for losses incurred during Tropical Storm Matthew (CCRIF-SPC, 2020).

In general, PWDs (e.g. visually or physically disabled) are not always specifically considered, and there are some activities in agriculture where hard labour is required and it becomes a challenge to adapt the scenario for PWDs. Moving forward, there can be considerations given if PWDs indicate interest (Jean-Baptiste, 2020, pers. comms.).

In the future, climate change is expected to increase the cost of production in farming, which would affect small-scale farmers and can cause a decline in the agriculture-based livelihoods of poor, rural farming communities (Government of Saint Lucia, 2018c). Saint Lucia is also an importer of food, and with the change in global food production, increased food prices would mainly affect the rural poor and vulnerable populations who are purchasing food as well (Government of Saint Lucia, 2018f). Impacts of climate change are expected to be similar for both men and women involved in the sector. However, agro-processors (mainly women) would have less direct impact on their businesses but can be affected due less raw material available to develop their products due to crop losses from climate-related disasters (Jean-Baptiste, 2020, pers. comms.). Adapting to climate change impacts in the agriculture sector may be particularly challenging due to low social and financial capital and increasing water insecurity. After Hurricane Tomas in 2010, women involved in agriculture, particularly female headed households, were challenged in supplementing income off the farm to account for losses incurred (IICA, 2017). Currently, farmers are able to utilize river water for irrigation once they have an abstraction license. With projected increases in droughts, water shortages would become more frequent hence reducing farmers water supply (Government of Saint Lucia, 2018e).

Participation in decision-making

Men are the ones generally in charge within a household situation but farm ownership can also be familial being managed by both husband and wife (Darrel, 2020, pers. comms.). After their husbands pass away, the land ownership title is passed on to women, who then have the responsibility to determine how land is divided up amongst their children. In the past, boys would have been expected to take over the property, but now families will transfer the land to whoever would be interested in taking over the property and farms (Jean-Baptiste, 2020, pers. comms.). In these cases, women can

own land through transference/inheritance. They may also lease land for farming (Jean-Baptiste, 2020, pers. comms.). Women are also diversifying their income through lease arrangements and investors. Over time the sector has shifted from artisans involved in physical activity to persons who are looking to invest. Many of the women may be seen as investors as they are people with full-time jobs, leasing land for farming and hiring laborers and equipment to support agriculture (Jean-Baptiste, 2020, pers. comms.).

Culture, roles and gender relations

As noted above, more men than women are employed in the agriculture sector due to traditional views of men's involvement in manual labour. Further, analysis of the last 2007 agriculture census indicated that both male and female land-holding households comprised of older persons involved in agriculture, with limited access to resources and a focus on household maintenance rather than profit maximisation. On average, individual land-holder's household sizes were small, with around 3.3 persons and land-holders were 65 years and over (Paul, 2007). This has implications for household labour and the productivity of holdings, particularly for female land-holders.

Youth participation in the sector has been lacking, and land desertion is more prevalent amongst younger persons of both sexes. There was a noticeable decline in the 15-19 and 20-24 age categories for both male and female land-holders, with desertion rates greater for young male holders in the last agriculture census (Paul, 2007). Urbanization has been impacting agriculture labour supply as more young men and women from rural households are migrating to the capital and larger towns (Paul, 2007). Also, youth involvement in agriculture is constrained due to inadequate technical training and difficulties in accessing land and capital investment, as the sector is considered high risk due to low profitability (Government of Saint Lucia, 2016a).

The YAEP currently supports youth involvement in agriculture (Ranjitsingh, 2016). Under the YAEP, young women have been actively targeted for training and other support to engage in livestock production (pigs, poultry and small ruminants) and crop production using greenhouses (Jean-Baptiste, 2020, pers. comms.). Government also facilitates access to lands for young women and young men under the programme through lease arrangements (Jean-Baptiste, 2020, pers. comms.). Within the agriculture sector, there is overall an increasing number of women getting involved in Farmer Field School exercises and other capacity building efforts (Government of Saint Lucia, 2018c).

5.1.2 Fisheries

Although the fisheries sector in Saint Lucia contributes less than 1% to GDP, it contributes to national food security and supports the livelihoods of an estimated 1,170 households in coastal and rural communities and the tourism sector through provisions of stock to hotels and restaurants (Government of Saint Lucia, 2013a; Government of Saint Lucia, 2018d). Fishers target multiple fisheries utilizing traditional methods such as pots, netting and trolling from small pirogues and wooden canoes. The main fish species caught include wahoo, blue marlin, tunas (blackfin, yellowfin and skipjack) and dolphinfish. In 2016, total annual production was estimated at 1,732 metric tonnes for commercial capture fisheries (Government of Saint Lucia, 2017d). Aquaculture is an emerging industry and comprises of both freshwater and coastal aquaculture (Government of Saint Lucia, 2018d). The last fisheries census, conducted in 2012, indicated most persons involved in the fisheries sector are motivated by cultural/traditional reasons and the sector also acts as a safety net to supplement income as most fishers have an alternative occupation during low seasons (Government of Saint Lucia, 2013a).

The Department of Fisheries under the Ministry of Agriculture, Fisheries, Physical Planning, Natural Resources and Cooperatives is the lead agency for the fisheries sector. It has developed a number of progressive policies and plans to support its work. The Draft National Policy for the Fisheries Sector

(2020 -2030) seeks to promote sustainable fisheries management and governance. The Policy lists nine priority areas. Priority 2 speaks to managing climate and disaster risks and speaks to the implementation of the Fisheries SASAP. Priority 3 speaks to equal opportunities for men, women and youth in the fisheries sector. Saint Lucia’s Fisheries SASAP (2018-2028) has the goal of developing the fisheries sector and securing fisheries livelihoods through climate change adaptation. The plan was also developed through a highly consultative process. The Fisheries SASAP has 31 measures for sustainable development of the sector, which are organized into four overarching outcomes. As with the other SASAPs, there is a section included to highlight gender considerations, but there are no specific provisions to ensure gender equity. The Saint Lucia Action Plan for Gender Equality and Youth Empowerment for the Fisheries Sector (GenFish Plan, 2020) specifically seeks to support mainstreaming of gender into the fisheries sector through four objectives. These include cross-sectoral collaboration on gender equality and youth engagement, enhancement of gender-disaggregated data collection and analysis to understand socio-cultural factors impacting poverty and labour, develop gender-responsive approaches and strengthen engagement with stakeholders to mainstream gender in the fisheries sector.

The ways in which different genders are currently engaged in the fisheries sector, existing inequities and vulnerabilities, and opportunities and barriers for empowerment of women and key vulnerable groups are outlined below in terms of access to resources, risks to their livelihoods and supporting ecosystems, influence and participation in decision-making and culture and gender relations.

Access to and control of resources

The 2012 Census of the Fisheries Sector indicated that the sector is male-dominated, with men representing 97% of those employed and only 3% being women (Figure 7). The census also recorded total fishing household population, of which 2,138 (60%) were male and 1,402 (40%) were female (Figure 8) (Government of Saint Lucia, 2013a). This indicates indirect involvement/dependency of women related to the fisheries sector. Most fishing households had an average of three persons per household. The average age within these households was between 25-44 years for both male and females. Houses and land were individually owned with 29% of fishing households located on family land (Government of Saint Lucia, 2013a).

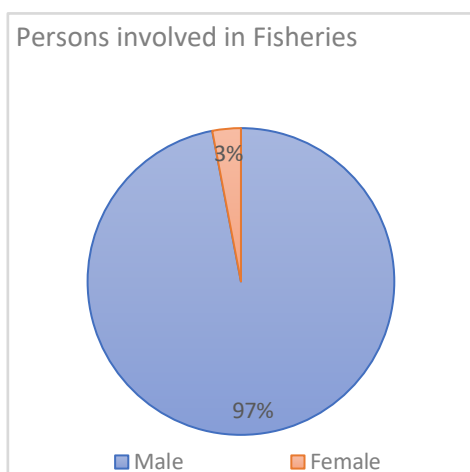


Figure 8. Persons involved in Fisheries by Sex (Government of Saint Lucia, 2013a)

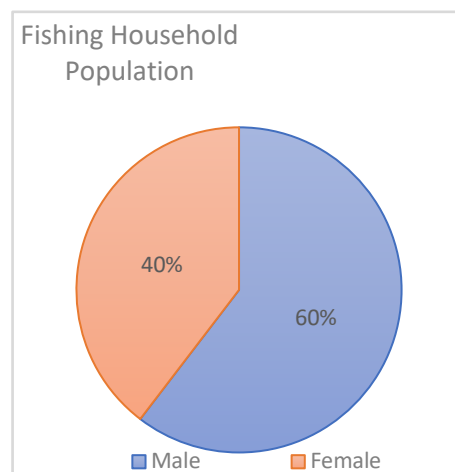


Figure 7. Fishing Household Population by Sex (Government of Saint Lucia, 2013a)

Although the census data indicated that males dominated the fishing sector across all roles (boat owner, vendors, builders, suppliers), the women who were recorded were mostly vendors or boat owners (Figures 9 and 10). Women boat owners act mainly as investors as they provide equipment (e.g. pots, nets, tackle, other gear) and engines for fishers (Louise-Felix, 2020). Within the sector it was noted, that 50% of males had one role, whilst 31% had two roles. The majority of females (31%) were stated as having only one role (Government of Saint Lucia, 2013a). Of persons surveyed in the fisheries census, 61% were employed full time within the fisheries sector, with 26% indicating there were employed part-time and 6% indicating they were boat owners (Government of Saint Lucia, 2013a).

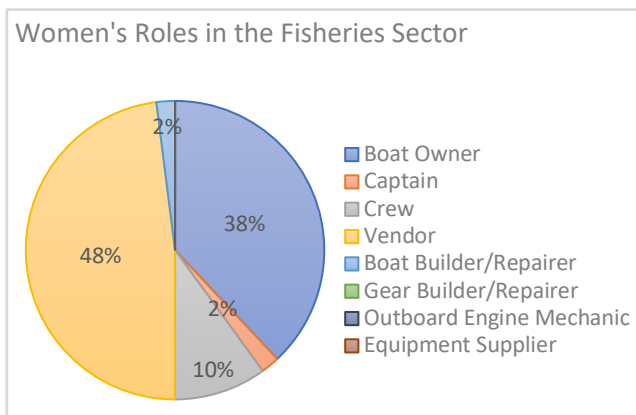


Figure 9. Women's Roles in the Fisheries Sector (Government of Saint Lucia, 2013a)

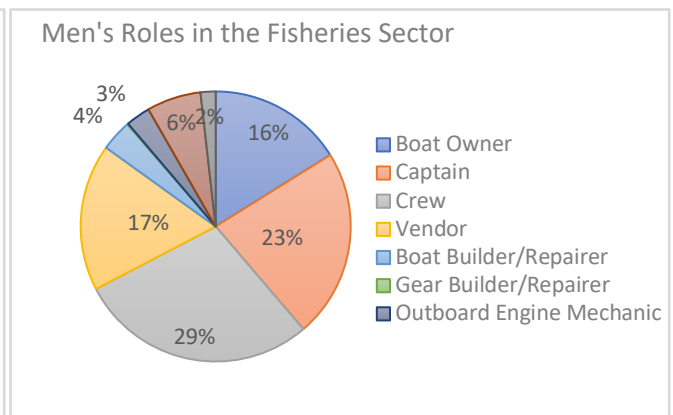


Figure 10. Men's Roles in the Fisheries Sector (Government of Saint Lucia, 2013a)

Whilst the census may be outdated, recent anecdotal evidence suggests that the patterns noted above remain the same today, with fishers largely being men and women engaging largely as boat owners and as vendors in post-harvest activities (Charlery, 2020, pers. comms.; Williams-Peter, 2020, pers. comms.). The higher participation of women in fish vending is linked to a change in system for selling fish. Previously, the main means for selling fish was a centralized fish market where fishers would directly sell their catch. However, since the centralized market was closed, there have been more 'middle persons' buying fish directly from fisherfolk and selling to their own outlets/buyers. There is more opportunity therefore for both men, who are not fishers, and women to engage in buying and selling of fish (Charlery, 2020, pers. comms.).

The majority of persons employed in the sector gain 25%-50% of their household income from the fisheries sector (Williams-Peter, 2020, pers. comms.). Fisherfolk further supplemented their income through employment in farming, tourism or construction (Government of Saint Lucia, 2013a). Given that fishing may not be the primary source of income for many women, who are boat owners and vendors, this allowed them greater flexibility to adjust to changes within the sector such as when fish landings and sales are low. For example, female boat owners, who may also be a farmer, can assess when fishing is no longer profitable and can then shift their focus to farming. This may not be the case for men who are boat captains and crew members and are largely dependent on fishing for their income (Felix, 2020, pers. comms.).

Fishers are able to access information from the Department of Fisheries as every port/landing site is usually assigned an extension officer who ensures fishers are licensed, conducts safety checks on boats, and collects necessary data (Charlery, 2020, pers. comms.). Training is also provided to registered fishers by the Department of Fisheries and this is also extended to informal/non-registered fishers who participate in fishing activities (Williams-Peter, 2020, pers. comms.). Most registered

fishers benefit from training, such as safety at sea/sea survival, navigation, first aid and training related to fish aggregating devices (FADs) (Government of Saint Lucia, 2013a). Training may also be conducted for cooperative managers and fish processors and can occur at landing sites to ensure that training is accessible. However, it was noted that most attendees at trainings are fishers and mostly male if focused on specific day-to-day operations of fishing. This precludes women from attending training as representatives for their partners/family (Charlery, 2020, pers. comms.).

Across the board, access to finance is challenging due to the socio-economic situation of fisherfolk, including their limited access to land and home ownership status (Williams-Peter, 2020). Fisheries are seen as a high-risk sector and loans are difficult to access (Charlery, 2020, pers. comms.). However, it was noted that fisherfolk may more readily access finances through credit unions due to more favourable lending conditions (Charlery, 2020, pers. comms.; Williams-Peter, 2020, pers. comms.). Furthermore, boat owners indicated that they were able to obtain credit from banks or credit unions, though, repaying was difficult during the low season (Government of Saint Lucia, 2013a). Due to the nature of the fisheries sector, there may be more men than women accessing financing, however, this may not necessarily reflect any specific gender bias or barriers (Felix, 2020, pers. comms.).

Risks to livelihoods and ecosystems

Key challenges facing the sector include the high cost of fuel and fishing equipment, overfishing, destruction to coral reefs that support reef fisheries and climate change and related impacts. These impacts include extreme weather such as hurricanes and tropical storms, ocean acidification, warmer ocean temperatures and mass sargassum seaweed influxes. The December 2013 tropical trough resulted in estimated damage for the fisheries sector of US\$203,869 due to loss of assets and livelihoods (Government of Saint Lucia and World Bank, 2014). It was estimated that the fisheries sector experienced total damage and loss of US\$0.6 million due to Hurricane Tomas (ECLAC, 2011). Mass sargassum influxes have also impacted the fisheries sector, damaging vessels, engines and equipment, whilst also reducing access to fishing grounds (Daniel-Thomas, 2020). For 2018, sargassum clean-up efforts were estimated to cost US\$444,000 – 666,000 (Sealys and Felix, 2017).

As it pertains to climate-related disasters, men are more likely to face the direct impacts of these disasters due to their work as fishers out at sea and their significant involvement and dependency on the fisheries sector. However, their households and dependents would also be impacted indirectly, along with downstream activities that are dependent on fisherfolk such as processing and vending (Charlery, 2020, pers. comms.; Williams-Peter, 2020, pers. comms.). Women are therefore vulnerable to an extent due to their household status and roles in downstream activities.

Under the Caribbean Catastrophe Risk Insurance Facility (CCRIF), there is the Caribbean Oceans and Aquaculture Sustainability Facility (COAST) which provides support for disaster recovery to the fisheries sector. Support after climate-related disasters is also available through a distress fund established by fishing cooperatives, which members can access to repair boats (Charlery, 2020, pers. comms.; Williams-Peter, 2020, pers. comms.). For example, disaster relief was provided to boat owners and captains through fishing cooperatives in 2011 post-Hurricane Tomas. The government may also provide subsidies to fishers (e.g. for boat repairs and to purchase engines/gear) (Baptiste, 2011). This support again is skewed towards males who are at the forefront of impacts from climate-related disasters.

To cope and adapt to climate change and related disaster impacts, fisherfolk have been investing in bigger engines so boats can tolerate rough seas, adopting new technologies to improve engine efficiency and more efficient fishing practices (such as utilizing FADs and bycatch), and catching different types of fish (e.g. Kawang that is now more abundant) (Felix, 2020, pers. comms.). Fishers are also getting involved in seamoss farming to provide an income stream in the interim, but this also

faces similar risks to fishing. There is however limited information on how women would be able to cope along the value chain after climate-related disasters (Charlery, 2020, pers. comms.).

Participation in decision-making

Although women represent a small portion of fisheries sector, their numbers have increased in areas of cooperative management, ownership of boats, and as key staff within Fisheries Department allowing women significant input into the decision-making process (Felix, 2020, pers. comms.). Notably, the administrative aspect of the fisheries sector (as it relates to cooperative management, data entry, book-keeping, etc.) is female-dominated with most managers of local fishing cooperatives being female (Charlery, 2020, pers. comms.). Currently, all the staff of Goodwill Fishing Cooperative are women (Charlery, 2020, pers. comms.). Apart from the cooperatives, it was also noted that women have senior managerial positions within the Fisheries Department (Williams-Peter, 2020, pers. comms.). This is in keeping with a broader trend in Saint Lucia, which is one of three countries where more than 50% of managers are women (53.1% in 2016) (ILO, 2015; Central Statistical Office of Saint Lucia, 2017).

However, other vulnerable groups, such as PWDs, have not been specifically considered within the fisheries sector. Facilities at berths and jetties are not designed to cater to the needs of PWDs and can be a constraining factor preventing PWDs from entering the sector (Charlery, 2020, pers. comms.). Also, PWDs lack access to information and training, and are not specifically considered when designing training courses for the sector (Felix, 2020, pers. comms.).

Culture, roles and gender relations

Women's role in fisheries as managers, venders or boat owners are in part due to societal roles and acceptance that the physical and high risk nature of fishing is better suited for men rather than women. Most fishers use open pirogues, and go out for hours to fish, leaving early in the morning. There are no sanitary facilities aboard pirogues for women and this can be a constraining factor preventing women from engaging in this aspect of the fisheries sector (Charlery, 2020, pers. comms.). Often changes in technology have also made it challenging for women to enter the fisheries sector. Traditionally, lobster fishing in Saint Lucia was typically done through lobster pots and freediving. While practices are now shifting to utilize SCUBA technology which is less of a safety risk than freediving, diving is still often considered high risk and can deter women from becoming involved in this type of fishing (Luna *et al.* 2020).

Women's preference may also lie in fisheries management, sales and marketing and value-added processes, as they may not want to go out to catch fish and engage in labour-intensive activities such as pulling nets. As noted in Figures 11 and 12, only 9% of women surveyed in the last fisheries census indicated their involvement was due to a desire to become a fisher as compared to 34% of men surveyed. There is then a need to further analyze women's preferences regarding their involvement in the sector.

Notably, in the last fisheries census, the majority of males (527) and females (18) in the sector indicated that they were involved in the sector due to family traditions (Figures 11 and 12). Less than 1% of males and only 3% of females indicated the need to earn an income as the primary reason for their involvement in the fisheries sector. This indicates a cultural barrier to engaging young persons and women, who have no ties to the fishing, in the sector.

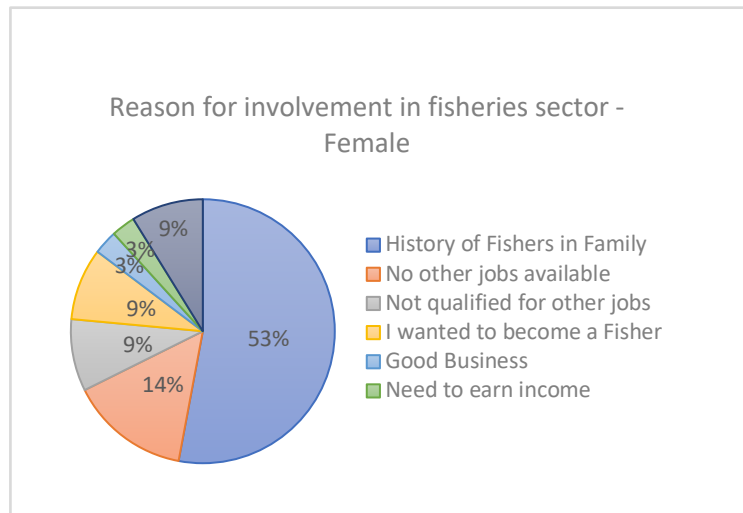


Figure 11. Reason for involvement in fisheries sector - Females (Government of Saint Lucia, 2013a)

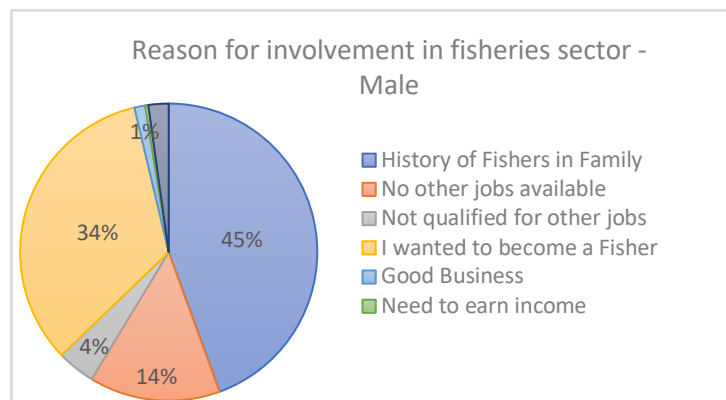


Figure 12. Reason for involvement in fisheries sector - Males (Government of Saint Lucia, 2013a)

5.1.3 Water

In Saint Lucia, freshwater sources include rivers, wetlands, streams and springs, which are part of 37 watersheds. There is limited ground water storage and surface water catchment areas are small due to the island's rugged terrain and impermeable rocks. Saint Lucia's renewable water resources are approximately 300million m³/year (FAO, 2015b). Water storage is mainly provided by the John Compton Dam and the Millet Reservoirs for mostly the northern part of the island. Although water production is estimated at 18.9m³ per year, water losses are incurred during distribution and during the dry season where water production is 25% less than wet season (Government of Saint Lucia, 2018e). Groundwater though limited is utilized for irrigation (Government of Saint Lucia, 2010). Increased water withdrawal and consumption has been attributed to population growth and growth in tourism sector (FAO, 2015b). In 2015, domestic sector use of water accounted for 57% of all water, which included domestic garden irrigation and household use (Government of Saint Lucia, 2017a; 2018e).

About 95% of households have access to pipe-borne water (Government of Saint Lucia, 2004). However, the other 5% are generally poor, rural households that rely on rainwater or untreated water from rivers that can be contaminated due to erosion, agricultural run-off and untreated effluent. According to the 2010 census, 62.8% of households had toilet facilities and septic tanks whilst 23.1%

used pit latrines (The Central Statistical Office of Saint Lucia, 2019). Within poor households, 39.9% utilized pit latrines, whilst it was estimated that 15% of poor households had no facilities (Kairi Consultants Limited, 2018).

The WRMA has responsibility for protecting, controlling and allocating water resources within the country. The Water and Sewerage Company Inc. (WASCO) is legally mandated to manage water supply and sewerage services for consumers, whilst the Forestry Department manages watersheds. The National Utilities Regulatory Commission is the regulatory body for water and electricity and functions as an advisory body to the Minister as it relates to policy formulation (National Utilities Regulatory Commission, 2017).

The National Water Policy is currently being updated with plans to include gender considerations. The 2004 version of the policy highlights six specific objectives related to integrated water resource management (IWRM), improved management and equitable allocation and contribution of water to agriculture, industries and environmental sustainability. The guiding principle of the policy also speaks to women having a central role in providing, managing and protecting water resources. Saint Lucia also has a Roadmap for the Preparation of an IWRM Plan which seeks to develop an overall plan to implement policy objectives. Saint Lucia's Water SASAP (2018-2028) has its overall goal to reduce the impacts of climate change and climate variability on the water resources of the island and to promote the sustainable use and management of water resources now and in the future. The development of the SASAP was participatory, with stakeholders contributing to the development of the 70 adaptation measures for enhancing water management. The plan is guided by four outcomes and aligned objectives, and gives consideration to gender such as focusing on the specific vulnerabilities of women and men and promoting gender mainstreaming as called for by the UNFCCC.

The ways in which different genders are currently engaged in the water sector, existing inequities and vulnerabilities, and opportunities and barriers for empowerment of women and key vulnerable groups are outlined below in terms of access to resources, risks to their livelihoods and supporting ecosystems, influence and participation in decision-making and culture and gender relations.

Access to and control of resources

Estimates from the Central Statistical Office indicate a male-dominated sector, with a projected increase in female labour force from 2010-2019 (Figure 13) (The Central Statistical Office of Saint Lucia, 2020). There are more than twice as many men than women employed in the water sector as it relates to water supply, sewerage, waste management and remediation activities. Despite Saint Lucia having over 50% of managers being women nationally, within the water sector, there are more men employed as managers and earning higher wages than women in non-managerial positions, including at the WRMA and WASCO (ILO,2018).

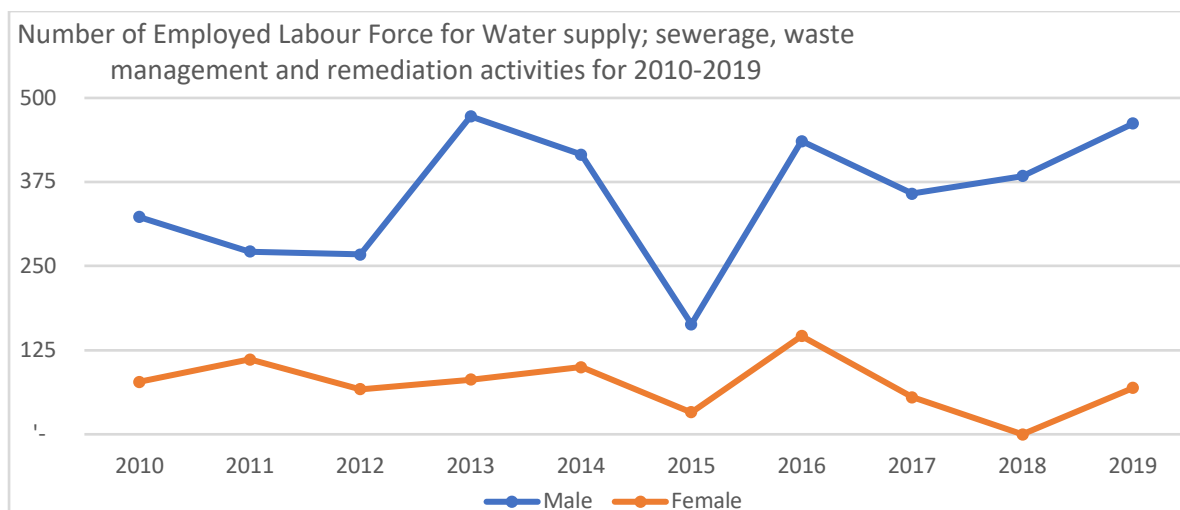


Figure 13. Number of Employed Labour Force for Water supply; sewerage, waste management and remediation activities for 2010-2019 by Sex (Source: The Central Statistical Office of Saint Lucia, 2020)

Access to water is shaped by socio-economic factors, location and types of use. Access to rainwater for households may be limited by socio-economic standing of persons and their ability to pay for tanks to store potable water. In rural communities, where there is no pipe-borne water, households may utilize a rudimentary system for water collection such as a metal drum and piping from their roof (Montoute, 2020, pers. comms.). Those who are squatting or have issues with land tenure would also not be able to secure a water connection. A Knowledge, Attitudes and Practices survey conducted in the Anse La Raye village on the west coast of Saint Lucia indicated that 42% of households in the area did not have a water connection and 20% had no toilets due to land tenure issues and space restrictions (Montoute and Cashman, 2015). Women and children in Anse La Raye were observed collecting water and doing laundry at standpipes, and may also use rivers for laundry purposes. Poor, rural communities also have smaller lots, which affects sanitation infrastructure in squatting areas and may force persons to use public facilities. In the survey, women expressed feeling unsafe in public facilities as female public bathrooms are not secure and lack curtains or doors for privacy. Single female-headed households were most affected by these challenges (Montoute and Cashman, 2015).

Access to water for farming or other commercial uses on private land is also restricted as a license is required for the abstraction of water from any natural sources (unless for domestic use). However, lack of manpower at WRMA makes it challenging to monitor illegal abstraction of water (Montoute, 2020, pers. comms.).

Risks to livelihoods and ecosystems

Extreme events, such as hurricanes and tropical storms, have significantly impacted the water sector. The December 2013 trough system led to estimated total losses and damage to water and sanitation infrastructure of US\$6.4 million (Government of Saint Lucia and World Bank, 2014). Damage to pipe networks, and sedimentation at John Campton Dam, led to no pipe water access for certain communities for up to 10 days. Nineteen water supply systems were affected on the island, affecting 86% of WASCO's customer base. Also, abstraction systems were affected by flood damage and heavy siltation. Water trucks provided relief to some of these locations and NEMO's portable water treatment units were also used to ensure water supply. After Hurricane Tomas, the damage to the water sector was estimated at \$US46.2 million. Around 80% of the population (137,896 persons) were without potable water for two weeks after the hurricane due to siltation of the dam, and also due to damage to back up generators and pumps. The impacts of the hurricane exacerbated water supply issues in rural areas such as Vieux Fort leading to less treated water being delivered post-hurricane.

There was a notable increase in gastroenteritis in children under 5 years for 2010 (47% increase), which may be correlated with the hurricane's impacts on access to and the quality of potable water (ECLAC, 2011).

Currently, farmers are able to utilize river water for irrigation once they have an abstraction license, but water shortages could become more frequent with projected increases in droughts (Government of Saint Lucia, 2018e). This will affect both rainfed and irrigated agriculture, related livelihoods and farming households.

Post-disaster, men, women and vulnerable groups such as the elderly would be affected differently due to their water requirements. Water shortages may affect women first due to their domestic responsibilities, particularly in rural areas. After Hurricane Tomas in 2010, water disruptions forced women and children to collect water for washing and bathing from the upper parts of rivers, such as the Petite River and Grande River, near the Anse La Raye village which correlated with skin infections and rashes (Montoute and Cashman, 2015). Single female-headed households may be especially affected during these periods as women fetching water with children are less like to carry large amounts of water and are at increased security risks. Implications of lack of water during these periods can affect personal hygiene of women and use of water in agriculture (Medoza, 2019). The issue of theft of water from tanks post-disaster has also led to men remaining at home to safeguard water resources instead of evacuating to shelters in certain instances, which can put them at personal risk.

The Ministry of Health has conducted campaigns post-disaster, related to accessing safe water. Community health centres distribute water purification tablets for use. WASCO, NEMO and private companies mobilize water trucks to provide water to communities whose water supplies have been affected by the disaster (Montoute, 2020, pers. comms.).

5.2 Policy and Institutional Analysis

5.3.1 Policy Analysis

This section provides an analysis of the key national climate change policies and plans, and the policies and plans for the three priority sectors, including the degree to which they have taken into consideration the different needs and impacts of various genders and other key vulnerable groups, including PWDs, elderly and indigenous communities. See Table 2.

While all the policies identified include gender considerations, including the NAP and SASAPs for agriculture, fisheries and water, most do not include specific provisions to ensure gender equity in policy implementation. There is also limited gender-responsive budgeting, and institutional mechanisms to facilitate gender mainstreaming are not clearly specified. However, a gender policy and strategic plan is currently being developed looking at governance, health and climate change, GBV, capacity development, and gender mainstreaming training. Through this process, gender-specific assessment for sectors are being planned and efforts to put in place appropriate systems for monitoring and reporting on gender outcomes (Department of Sustainable Development, 2020).

Table 2. Policy analysis for national and sectoral levels

Policy	Clearly stated mandate for inclusion of various genders (and other vulnerable groups)	Specific provisions to ensure gender equity as part of policy implementation	Budget, committee or other institutional mechanism(s) exist to address gender concerns
National Level			
Saint Lucia Climate Change Adaptation Policy (2015)	The policy identifies the importance of stakeholder ownership and participation inclusive of women and other vulnerable groups	Under outcome 1 (implementing adaptation measures), the policy highlights the need to understand vulnerabilities of vulnerable groups inclusive of poor women, men, children and elderly in designing response strategies and consideration of strategies and instruments to build climate resilience in households, vulnerable groups and communities	No provisions
National Adaptation Plan (NAP) (2018-2028)	Gender considerations included in the country NAP, where it reiterates the call of the UNFCCC for gender mainstreaming to decrease vulnerabilities, promote equality in decision making and ensuring adaptation measures are gender sensitive	NAP to include activities based on women and vulnerable groups and aims to also include data collection and assessment Also highlights that implementation of climate-related policy falls mainly to women who occupy leadership positions in various Ministries There is also an accompanying Monitoring and Evaluation Plan for the NAP process which takes into consideration issues related to gender	No provisions
Saint Lucia National Social Protection Policy (2015)	Policy is guided by the principal of child and gender sensitivity, and equity and inclusion. Gender is included in two objectives of the policy which speaks to gender responsive approaches in providing services to most vulnerable populations and also speaks to developing operation manuals and toolkits for gender sensitive programmes	Policy speaks to developing, reforming and strengthening interventions and regulations concerning GBV	No provisions
Sectoral Level			

Policy	Clearly stated mandate for inclusion of various genders (and other vulnerable groups)	Specific provisions to ensure gender equity as part of policy implementation	Budget, committee or other institutional mechanism(s) exist to address gender concerns
Sectoral Adaptation Strategy and Action Plans (SASAPs) for the water, agriculture and fisheries sectors	SASAPs have identical provisions to each other and is the same as the NAP mentioned above	Similar to NAP	No provisions
Draft Agricultural Policy Framework and Strategy (2016-2021)	This policy includes plans for eleven priority areas including Priority Area 8 - 'increased youth and women involvement in agriculture'. Priority Area 8 goal focuses more on youth involvement rather than specifying opportunities for women.	No gender analysis provided/ to be conducted or other considerations	The policy speaks to development of a climate adaptations financing facility and indicates equitable funding across all socioeconomic and gender groups
Draft National Policy for the Fisheries Sector (2020 -2030)	The Policy lists nine priority areas and the strategy of Priority 3: Social and Cultural Development speaks to equal opportunities for men, women and youth in the fisheries sector	No gender analysis provided/ to be conducted or other considerations	No provisions
National Water Policy (2004) (Policy is currently being updated)	The guiding principle of the policy also speaks to women having a central role in providing, managing and protecting water resources	No gender analysis provided/ to be conducted or other considerations	No provisions
National Policy for Wastewater Management (2018)	The policy highlights gender in the context of waste management and hygiene as it relates to the Sustainable Development Goals	No gender analysis provided/ to be conducted or other considerations	No provisions

5.3.2 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 (Table 3).

The main national coordination mechanism to support climate change action identified by key informants is the NCCC, and it is comprised mainly of women. Gender concerns are included in committee discussions due to Gender Relations having a representative on committee. The Caribbean

Youth Environment Network also sits on the committee. Police youth groups that work with at-risk youth are also engaged in the NCCC. The NCCC also has the ability to co-opt organizations as needed for discussions, such as the National Youth Council and various cooperatives. Apart from the larger NCCC, there is a smaller technical group is responsible for taking immediate decisions regarding climate change issues and this group also includes Gender Relations. Additionally, there is a Saint Lucia CSO Coalition which supports coordination among CSOs and assists them in addressing climate change adaptation and mitigation.

At the sectoral level, there is no formal focal points for gender or gender experts on staff for the lead agencies responsible for agriculture, fisheries and water. This limits their capacity to implement gender-responsive processes and support mainstreaming

Table 3. Institutional analysis for national and sectoral levels

Agency/ Coordinating body	Capacity for gender mainstreaming	Programmes show evidence of integrating gender considerations and learning	Financing, budgeting and institutionalisation of gender equity	Coordination and decision making promotes gender equity	Organizational culture and advocacy for gender mainstreaming
National Level					
National Climate Change Committee (NCCC)	There is one Committee member from the Division of Gender Relations Department and one representative from the Women in Agricultural NGO The Caribbean Youth Environment Network also sits on the committee. Police groups that work with youth at risk are engaged in the NCCC. The NCCC also has ability to co-opt organizations as needed for discussions, such as the National Youth Council and various cooperatives.	Gender concerns are included in committee discussions due to the Division of Gender Relations having a representative on committee	Apart from the larger NCCC, there is a smaller technical group that is responsible for taking immediate decisions regarding climate change issues including expediting financial matters including matters related to the GCF; this group also includes the Division of Gender Relations	Majority of NCCC members are women	Gender consideration given in committee discussions due to presence of the member from the Division of Gender relations
Department of Sustainable Development	Existing Technical Officer acts as informal gender focal point though is not an expert in gender. Focal point has attended workshops dealing with gender mainstreaming and has passed on information to staff. Since it is not an official	In the 'Integrated Ecosystem Management and Restoration of Forests on the South East Coast of Saint Lucia' Project, a gender analysis is to be conducted to propose gender mainstreaming options for the project. In the recently approved	Department does not collect gender disaggregated data but ensures coordination of on the ground action of all sectors through NCCCC. No information on sources of funding	Gender focal point is a woman and department is headed by a woman	Gender Focal point present Chairs NCCC where there is a representative from the Division of Gender relations

Agency/ Coordinating body	Capacity for gender mainstreaming	Programmes show evidence of integrating gender considerations and learning	Financing, budgeting and institutionalisation of gender equity	Coordination and decision making promotes gender equity	Organizational culture and advocacy for gender mainstreaming
	<p>designation, as the Focal point network has not become official, no responsibilities have been indicated on paper.</p>	<p>Adaptation Fund project, gender considerations were included.</p> <p>Under Complimentary Funding, requested guidelines to look at gender considerations across sectors.</p> <p>Submitted country programme to GCF and number of readiness projects (including gender considerations), such as GCF Readiness proposal submitted to develop a comprehensive climate finance tracking framework. Gender considerations are a requirement in international funding such as the GCF.</p> <p>Monitoring and Evaluation Plan approved by Cabinet in 2018 for NAP process includes annual reporting which takes into consideration issues related to gender. Hence, monitoring and evaluation is sometimes conducted to determine gender mainstreaming in policy and related strategies. However, this relies on implementing agencies for sectors to roll out.</p>			

Agency/ Coordinating body	Capacity for gender mainstreaming	Programmes show evidence of integrating gender considerations and learning	Financing, budgeting and institutionalisation of gender equity	Coordination and decision making promotes gender equity	Organizational culture and advocacy for gender mainstreaming
Sectoral Level					
Department of Agriculture	<p>No specific multi-stakeholder coordination mechanism for Agriculture Sector. Only Planning Unit within Ministry of Agriculture. Chief Planning Agriculture Officer coordinates across agriculture and fisheries. Department has representation on NCCC.</p> <p>There is no formal gender focal point but Chief Extension Officer does a lot of gender work with the Gender Affairs and through various projects / proposals.</p>	<p>Informal assignee does a lot of gender work with the Gender Affairs and through various projects/proposals as it relates to project gender requirements.</p> <p>Gender was enshrined but not clearly defined in the old policy document and work on climate resilient agriculture was not enshrined or defined in policy. But gender and environmental responsibility is emphasized and well defined in the revised policy as it relates to climate resilience (in draft).</p> <p>Funding from Adaptation Fund requires gender assessments to be carried out in the first three months of project implementation. Project considers solar energy, rainwater harvesting, slope stability, and capacity building/training.</p>	<p>Agricultural census in 2006 included gender disaggregated data but due to change in industry, there is need to conduct an updated census, however, currently funding is not available. Two-page document on agriculture was supposed to be inserted into national survey but postponed due to COVID-19.</p>	<p>In 2011, the Ministry of Agriculture was male dominated with estimated 360 male to 201 female employees (Ranjitsingh, 2016).</p> <p>50:50 gender ratio in terms of extension officers within Ministry of Agriculture.</p>	<p>No formal focal point.</p>

Agency/ Coordinating body	Capacity for gender mainstreaming	Programmes show evidence of integrating gender considerations and learning	Financing, budgeting and institutionalisation of gender equity	Coordination and decision making promotes gender equity	Organizational culture and advocacy for gender mainstreaming
Department of Fisheries	No specific multi-stakeholder coordination mechanism for the Fisheries Sector. There is an assigned gender focal point under the Caribbean Regional Fisheries Mechanism (CRFM) project regarding gender policy in fisheries. Chief Fisheries Officer and Deputy Chief Fisheries Officer participated in training course held by the Gender Division.	There is a draft gender action plan for the fisheries sector in Saint Lucia (GenFish)	Fisheries Sector Census 2011 collected information on land ownership (indicator to support loans) and information collected on households was disaggregated. However, update census data are not available due to funding. Fishers registration is disaggregated into male/female. No information on financing	Senior personnel within Department are women.	Informal gender focal point present.
Water Resources Management Agency (WRMA)	There are no gender experts on staff but water resources specialist's field of study included gender and water resources. The director of the agency attends workshop / training / sensitisation sessions and also sits on the NCCC. There is a greater need for stakeholders / technicians/ administrations making decisions to understand gender issues related to water access.	At a policy validation workshop, gender was highlighted in the development of the new sectoral policy. World Bank funding includes gender consideration as a requirement.	No data collected in terms of gender disaggregated data on application for licenses No information on financing	Most senior technical personnel are men.	Need for champion to assist in mainstreaming gender in sector

5.3 Climate Change 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 Saint Lucia, including for the three priority sectors. 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 sectors of agriculture, fisheries and water, 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.

As noted in the methodology in section 4.3.1, it was difficult to obtain downscaled climate change projections for Saint Lucia 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 Saint Lucia based on three data sources namely UWI-Climate Studies Group Mona (2020), Government of Saint Lucia (2018c) and Caribbean Weather Impacts Group (CARIWIG) (2021).

The SOCC Report (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 GCM projections described in the SOCC were run using several Representative Concentration Pathway (RCP)¹¹ scenarios, specifically RCP2.6, RCP4.5, RCP6.0, and RCP8.5¹² from the Intergovernmental Panel on Climate Change (IPCC's) Fifth Assessment Report (AR5). Each of these scenarios assume different 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

¹¹ 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_AnnexI_Glossary.pdf)

¹² 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.

(PRECIS) model which use a relatively fine scale 25km grid resolution and are based on the IPCC Special Report Emissions Scenario 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 14. 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. Saint Lucia 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.



Figure 14. Regional Rainfall and Precipitation Zones
(Source: UWI-Climate Studies Group Mona, 2020)

Projected drier conditions for Saint Lucia were also described in the Government of Saint Lucia (2018c) which also noted that:

- There is expected to be an increase in the frequency of hot days and hot nights.
- Based on a high emissions scenario related to the 1979 to 2009, mean annual temperature is expected to increase from 1.8 to 3.1°C by 2080 based on the GCM and 2.4 to 3.3°C based on the RCM (Government of Saint Lucia, 2018c).
- Sea surface temperature (SST) is expected to increase by 0.8 to 3% by 2080.
- Annual precipitation is expected to decrease by 11 to 32% by 2080 based on the RCM.
- Tropical storms and hurricanes are projected to become more intense, though not necessarily more frequent. Sea level is expected to rise up to 1.45 m by 2100 based on the 1989-1999 baseline.

Apart from information presented above from the UWI-Climate Studies Group Mona (2020) and Government of Saint Lucia (2018), additional climate projection information has been downloaded from the [Caribbean Weather Impacts Group \(CARIWIG\)](#) 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 standardized by using the month of March for each map. Figures 15, 16 and 17 below portray projected changes in mean daily temperature, mean daily rainfall and proportion of dry days respectively. Figure 15 below displays a trend of increasing mean daily temperatures, with an anticipated increase of around 2°C in the month of March by 2100. Figure 16 showcases a decrease in rainfall levels when comparing time slices 2011-2040 to time slices 2041-2070 and 2071-2100. Figure 17 illustrates the increase in proportion in dry days for the time slice 2041-2070 (1-3%) and the time slice 2071-2100 (1-3%)

Figure 15. Maps of Saint Lucia showing projected change in mean daily temperature from 2011-2100

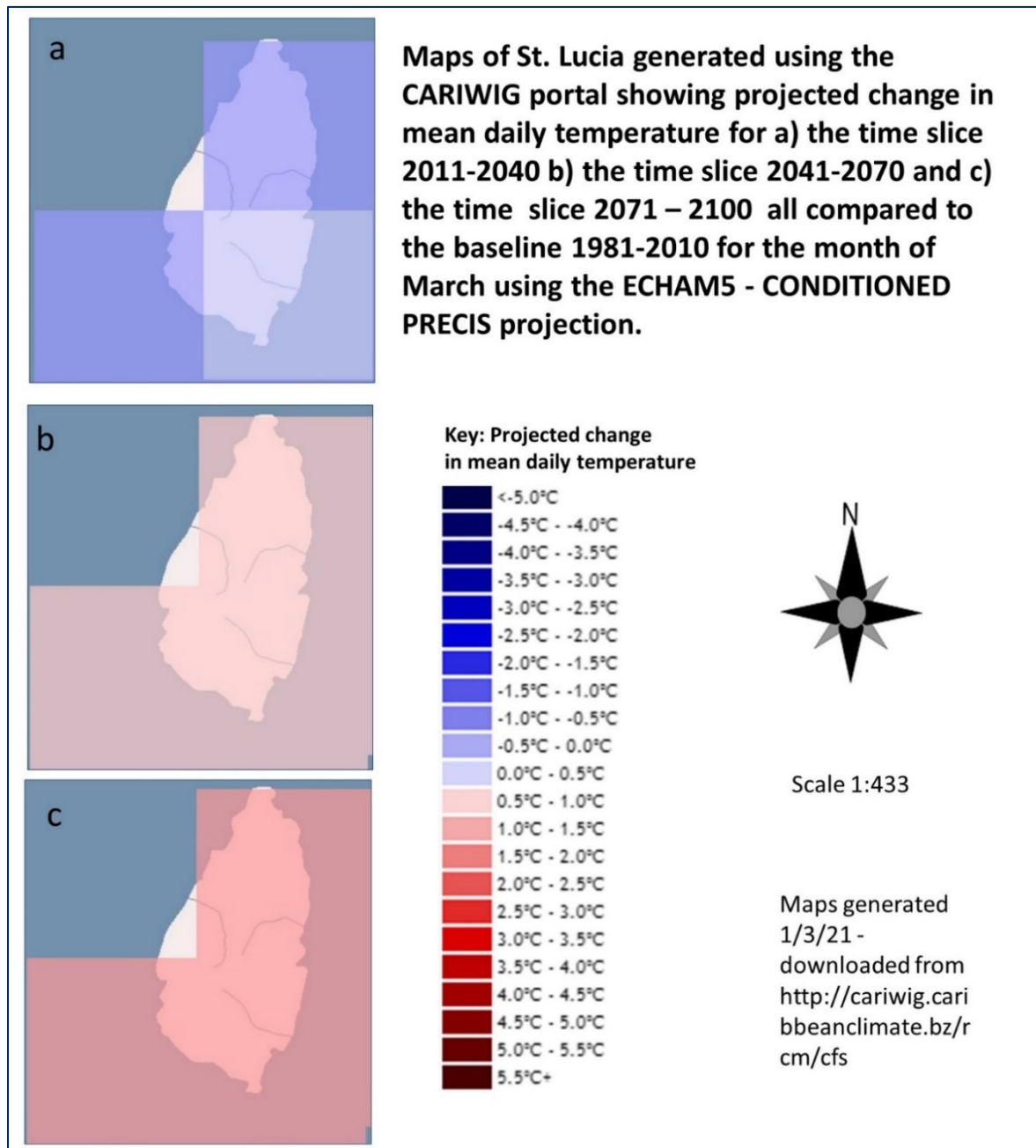


Figure 16. Maps of Saint Lucia showing projected change in mean daily rainfall from 2011-2100

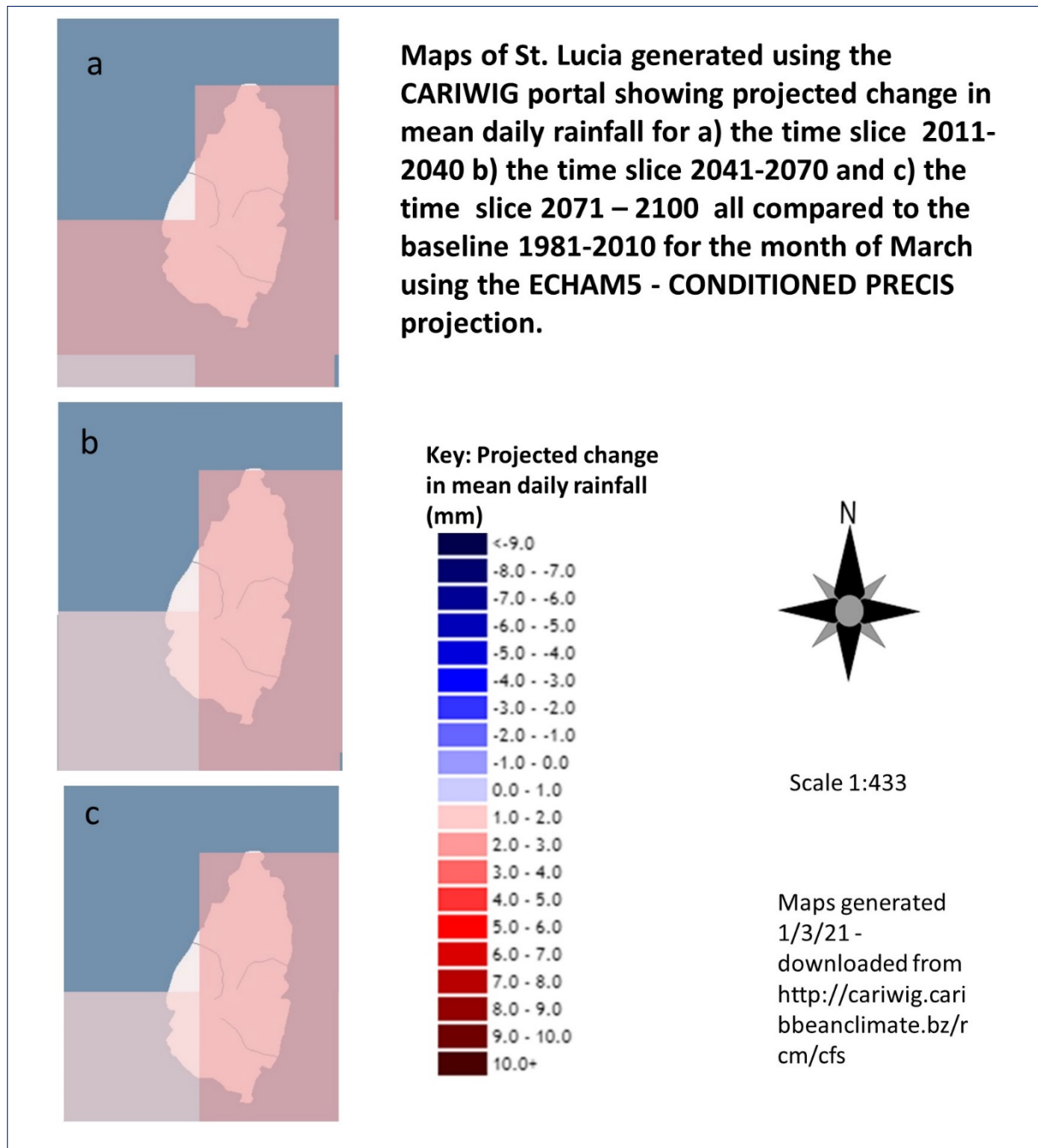
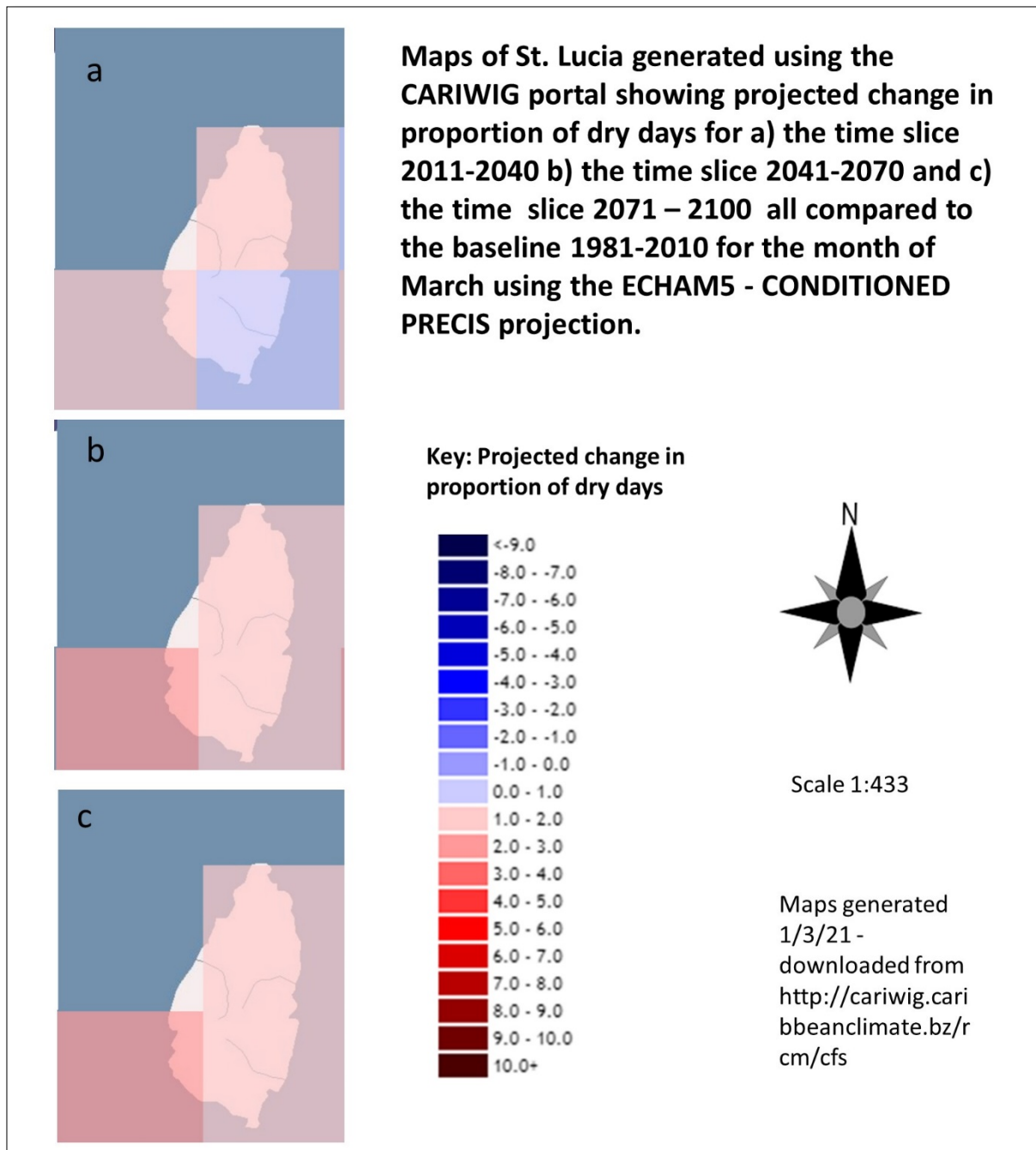


Figure 17. Maps of Saint Lucia showing projected change in proportion of dry days from 2011-2100



The potential impacts of climate change on the priority sectors of agriculture, fisheries and water are further highlighted below. For the agriculture sector, the projected climate change described above and related hazards would significantly affect crop production due to changes in precipitation patterns and increased temperatures, and there would be increased crop loss and damage due to increased storm intensity and stronger winds. Rising temperatures, and decreasing rainfall will likely result in more frequent and intense droughts. The suitability of arable land for specific crops, and the prevalence of pests, weeds, and diseases, is expected to shift with these changes in temperature and precipitation (Government of Saint Lucia, 2018e). The drought of 2010 led to a 15% reduction in banana exports for the beginning part of 2010. Flooding events and hurricane winds have also destroyed banana fields affecting production (Government of Saint Lucia, 2018d). While farmers are allowed to utilize river water for farming activities and irrigation by applying for an abstraction license,

they can be prohibited from such uses during water-related emergencies, which can affect their crop yields (Government of Saint Lucia, 2018g). Livestock production is also expected to be impacted from heat stress, and reduced grazing pastures, reduced availability of water and increased prevalence of diseases (Government of Saint Lucia, 2018e). Livestock farmers have already incurred losses to poultry due to heat-related sicknesses (Singh, 2016).

Key climate change impacts on the fisheries sector would include decreased abundance of reef fisheries, which would affect coastal communities that depend on these fisheries, due to coral bleaching from rising SST and ocean acidification. Availability of high value species such as lobster and shrimp, and ocean pelagic species are also expected to be impacted by changing ocean conditions, currents and migratory patterns. This may lead to higher capital investment into the sector, or fisherfolk seeking alternative livelihoods and would require retraining programmes (Government of Saint Lucia, 2018f). Other potential impacts of climate change on fisheries and aquaculture also include:

- damage to fish nurseries and breeding habitats due to heavy siltation and sea level rise;
- damage / loss of fishing gear, vessels and onshore infrastructure and port facilities;
- fishing days lost due to bad weather;
- flooding of aquaculture farms; and
- migration of fisheries stock, change in species diversity and variability of yields.

These impacts would lead to loss of income and livelihoods, reduced food security and loss of cultural traditions (Government of Saint Lucia, 2018c).

Water supply and quality will also be affected due to siltation and damage to water intakes, dams and reservoirs. In 2010, landslides caused by Hurricane Tomas caused the John Campton Dam to become inaccessible and residents resorted to using water from unsafe sources due to lack of pipe borne water. Debris can also block dams and reservoirs during flooding events leading to reduced water supply and quality and lack of water treatment particularly in rural communities. Flooding can also lead to an increase in vector borne diseases (Government of Saint Lucia, 2018g). Other potential impacts of climate change on water resources and services include contamination of water sources from latrines and septic tanks, agricultural chemicals and pig farms in rural areas, and reduced availability of freshwater resources due to decreased rainfall, increased temperatures and saltwater intrusion. The repercussions of these impacts include increased costs of treating and supplying potable water and maintaining water infrastructure with the possibility of conflict over water resources (Government of Saint Lucia, 2018c).

5.3.2 Socio-economic vulnerability

Generally, Saint Lucia entered into the COVID-19 pandemic with relatively high poverty rates and low social protection coverage, which exacerbated the impacts of the pandemic. These rates also shed light on socio-economic fragility in the context of adaptation to climate change and other shocks. Key concerns include (Government of Saint Lucia, 2017a):

- the erosion of financial assets as a result of climate-related hazards including loss of farm income and jobs and increased costs of living, such as higher expenses for purchasing food
- the damage to human assets as a result of extreme weather events, leading to food insecurity, under-nourishment and chronic hunger due to failed crops or spikes in food prices most severely felt among poor urban populations, which is often overlooked
- vulnerable groups, such as women, children and the elderly, are already beset by a number of socio-economic and psycho-social problems including poverty, food insecurity and lack of proper diets, poor shelter and housing, inadequate hygiene and water quality, and limited education and labour skills. It is very likely that these living conditions would be exacerbated by climate change including sea level rise, more intense storms and storm surges, and droughts.

- observed evidence suggests that climate change and climate variability exacerbate existing poverty and inequalities, and trigger new vulnerabilities

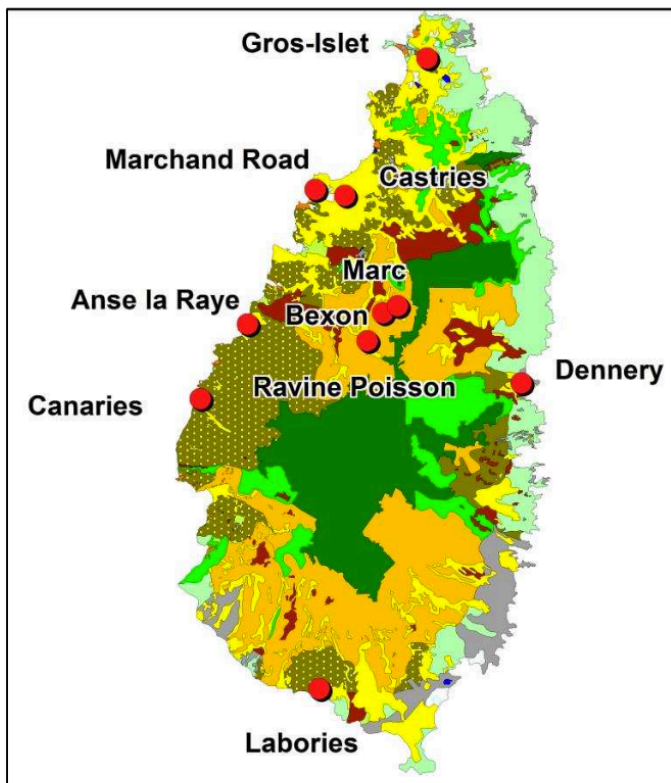


Figure 18. Towns and villages where vulnerable groups are located in Saint Lucia (Source: Government of Saint Lucia, 2017a)

As can be seen in the adjacent figure, there are several areas of concern throughout Saint Lucia where vulnerable groups reside and are likely to settle as a result of the compounded impacts caused by climate change. These include Gros Islet, Marchand, Castries City, Marc, Bexon, Anse la Raye, Canaries, Ravine Poisson, Laborie and Dennery. As noted above, vulnerability in this context is characterized particularly in relation to poverty, food insecurity and lack of proper diets, poor shelter and housing, inadequate hygienic conditions and water quality, lack of education and labour skills and poor housing and shelter.

Particularly, of note are the rural areas inland and areas along the coast in rural communities, where livelihoods are most dependent on natural resources such as agriculture, forestry and fishing.

The Saint Lucia COVID-19 High Frequency Phone Survey conducted in May 2020 (The Central Statistics Office of Saint Lucia and World Bank, 2020) found that:

- 43% of respondents, who had worked before March 2020, were not able to work the week before the phone survey.
- About 75% of households reported labour income losses post-COVID, with the poorest faring the worst.
- About 86.5% of households dependent on non-farm family businesses suffered income losses, and this was as high as 91.9% for poor and 93.6% for rural households.
- In farming, around 80% of family businesses experienced reduction in revenue, with poor (80.9%) and rural (80.4%) households suffering slightly more compared to non-poor and urban households.
- Almost 65.2% of households experienced a decline in wage employment of their members, and about 63.3% of households reported reduced assistance from non-family individuals. For both of these sources of income, poor and urban households suffered greater losses.
- Additionally, 57.9% of households experienced a decrease in international remittance income, with 53.3% reporting less assistance from family within the country.
- 73.8% of households depending on property and investment income and savings reported reduced income, with larger effects for urban (76%) and non-poor (75.5%) households.

The World Food Programme (2020) COVID-19 impact and livelihoods survey further noted that:

- 28% of respondents were eating less preferred foods, and 21% were skipping meals or reducing consumption. These are higher percentages than the regional survey averages.
- Widespread disruptions to livelihoods were reported by 80% of respondents, primarily owing to movement restrictions and concerns about the outbreak.
- 53% of respondents indicated that they have lost their job or are experiencing reduced salaries.

Following on this, access to labour or employment can be considered crucial to building adaptive capacity and managing recovery from shocks. Climate change is likely to impact access to labour and, specifically, decent work¹³ in some fundamental ways 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.

Addressing access to decent work and income will therefore be a critical component of addressing climate change and its impacts.

In the context of climate change, it is easy to see how these already high levels of income loss would become worse, given that the main economic sectors such as tourism and agriculture that households depend upon are also the most vulnerable to the negative impacts of climate change.

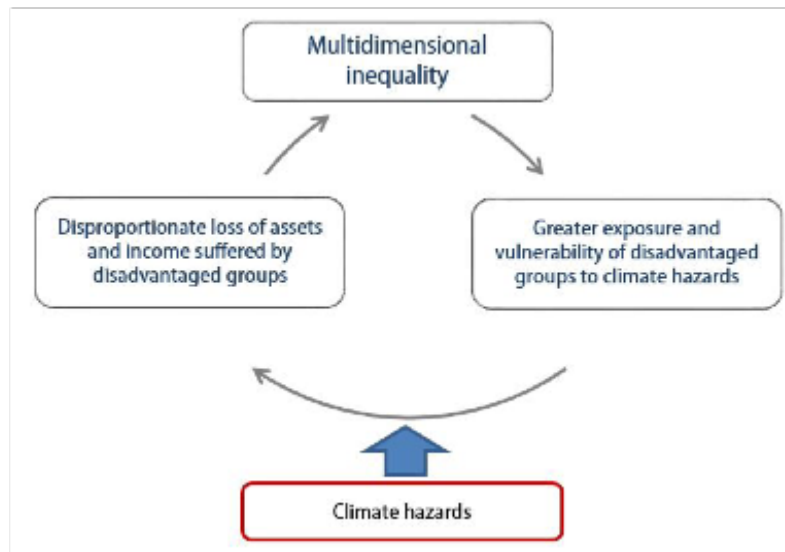
Income poverty is a critical factor. The Saint Lucia National Report of Living Conditions 2016 found that the head count poverty level was 25% based on the money metric measure (Kairi Consultants Limited, 2018). They also noted that over 40% of poor children live in male-headed households, although there is a higher poverty rate in female-headed households (42.3%) and an increase in the share of poor children living in female-headed households from 48.6% to 58.2% from 2006 to 2016 (Kairi Consultants Limited, 2018). Further, rural households headed by males were on average 2.8 persons compared to those headed by females at 3.1 persons and, among poor households, male-headed households were 3.4 persons on average compared to female-headed households with 4.8 persons.

5.3.3 Climate change-related shocks and structural vulnerability

The structural inequalities faced by particular groups of people 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 19) (Nazrul Islam and Winkel, 2017).

¹³ 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>

Figure 19. Inequality and Climate Change Vicious Cycle (Source: Nazrul Islam and Winkel, 2017)



Understanding inequality is critical to address the needs of the most vulnerable in Saint Lucia, and secure the health and safety of households and communities. The Saint Lucia National Report of Living conditions 2016 found that, while there were decreases in poverty generally, there was increased inequality over the 10 year period of the study from 2006 to 2016. At the district level, there significant increases in the rate of inequality in Anse la Raye and Canaries from 34.8 to 41.9, in Soufriere from 40.1 to 58.1, in Dennery from 33.9 to 41.6, and in Micoud from 42.2 to 50.7 (Kairi Consultants Limited, 2018). Only two districts experienced a decrease in inequality, Choiseul from 38.1 to 33.9 and Gros Islet from 46.3 to 38.9, where there was a relative increase in the population along with a better distribution of income within the community (Kairi Consultants Limited, 2018).

In addition, the report assessed district level headcount deprivation levels in the areas mentioned above related to access to water, whether the household has been affected by a climatic event and whether the household has homeowner insurance on the dwelling unit they occupy (see Table 4). It found that (Kairi Consultants Limited, 2018):

- About 11.1% of Saint Lucia's population were deprived of a regular water supply for four days or more. The districts with the highest levels of deprivation in terms of access to regular water supply were Choiseul, Dennery, Micoud and Soufriere, with 39.4%, 37.9%, 21.7% and 17.9% of population deprived respectively.
- 8.7% of the population were categorized as deprived because their households experienced significant shocks as a result of a climate-related event in the past five years.
- A higher proportion of the population in the district of Anse la Raye (22.3%) experienced the effects of a climatic-related event in the past five years compared to elsewhere in the country. This was followed by 14.2% of the population in suburban/rural Castries and 10% in Vieux Fort district.

With increased temperatures leading to drying, the implications for increased deprivation in water is concerning, especially noting that deprivation levels in Choiseul, Denney and Micoud were already high.

Further to the above, the report highlights that there were high levels of deprivation among households in relation to lack of home insurance. The findings include that 65.4% of the overall population in Saint Lucia were deprived because they lived in homes not covered by homeowner

insurance. Six of Saint Lucia’s ten districts had even higher levels of their population living in dwellings not covered, including Laborie (86.6%), Choiseul (84.7%), Dennery (83.5%) and Micoud (74.6%) (Kairi Consultants Limited, 2018).

Table 4. Headcount Deprivation for the Environmental Dimension contained in the 2016 Survey of Living Conditions for Saint Lucia

District	Headcount Deprivation for the Indicators:			Population Size
	Access to a Regular Water Supply (4 days or more)	Significantly Affected by Climatic Event in the Past Five Years	Access to Home Owner Insurance on Dwelling Unit	
	%	%	%	
Castries City	1.0	4.6	57.6	4,173
Castries Suburban/Rural	8.8	*14.2	*68.5	43,545
Anse la Raye/Canaries	0.0	*22.3	56.1	8,291
Soufriere	*17.9	6.9	53.5	8,472
Choiseul	*39.4	4.2	*84.7	6,098
Laborie	0.7	1.3	*86.6	6,701
Vieux Fort	0.8	*10.0	*69.3	16,284
Micoud	*21.7	3.6	*74.6	16,284
Dennery	*37.9	6.4	*83.5	12,599
Gros Islet	9.2	7.0	51.0	25,210
Mean/Total	11.1	8.7	65.4	165,596

Source: Central Statistics Office of Saint Lucia 2016 SLC-HBS

** figures above the national average*

These findings highlight specific deprivations facing poor and often rural households in Saint Lucia due to poverty, food insecurity, dependence on climate-sensitive livelihoods like agriculture, fisheries and tourism, lack of access to water, and lack of access to insurance for the protection of dwellings and to buffer against long recovery periods post climate-related disasters. It is clear to see why these households would be highly vulnerable to the impacts of climate change, would struggle to recover from related shocks and why they would take longer to recover.

Notably, the report also found that if an individual moved from a male-headed urban household to a female-headed urban household, the probability of being poor rose 13% (Kairi Consultants Limited, 2018). In the rural setting, moving to a female-headed household decreased the likelihood of being poor by 9.5% (Kairi Consultants Limited, 2018). However, poverty in rural areas is still higher than in urban areas, and as noted previously the larger household size and burden of care and higher poverty levels in rural female-headed households than in male-headed households. Generally, women and children are likely to face higher levels of poverty than men.

In light of the above, and the dynamics in poor households especially as it relates to higher levels of income poverty among female-headed households and child poverty noted in 5.3.2, the need for stronger social protection is paramount in order to reduce further deprivation due to climate change-related hazards and build households’ resilience.

The COVID-19 pandemic provides a valuable opportunity to explore the functioning of the current social protection programmes in Saint Lucia. Data was collected in the Saint Lucia COVID-19 High Frequency Phone Survey (The Central Statistics Office of Saint Lucia and World Bank, 2020) on access to public transfers through safety net programmes as a way of gauging household resilience to shocks. Table 5 shows the critically low level of social programme coverage among poor households, and that there are limited resources to be extended to non-poor households where large numbers of non-poor

employed persons lost employment and needed to access support. Overall national coverage across all the social programmes offered ranges between 0.4 and 5.3%.

Table 5. Coverage of Government Social Protection Programmes in Saint Lucia

	National	Non-Poor	Poor	Rural	Urban
Home Care Packages	5.3%	4.7%	8.2%	5.8%	5.1%
Welfare services	3.3%	1.9%	9.9%	3.4%	3.3%
Grant-Children with Disabilities	1.4%	1.5%	1.0%	1.5%	1.3%
Education support (SSDF)	1.4%	0.8%	4.2%	1.7%	1.2%
Allowance due to COVID 19	1.4%	1.6%	0.3%	0.7%	1.7%
Housing support (SSDF)	0.6%	0.7%	0.0%	0.0%	0.8%
National Meals Program	0.4%	0.4%	0.4%	0.2%	0.5%

Given the high percentages of households reporting loss of income, and diminished access to food, it is clear that there are high levels of deprivation being experienced currently, and that there were high levels of income poverty and food insecurity before the onset of the COVID-19 pandemic. The Central Statistics Office of Saint Lucia and World Bank (2020) survey also found that:

- About 34.5% of households surveyed reported a decrease in unemployment benefits.
- 25% of households reported lower government assistance (24.6%), non-governmental assistance (12.3%) and lower pension income (8.4%).
- Certain programmes do not cover or target the poor more than the non-poor. For example, allowances made for COVID-19 cover the non-poor slightly more than the poor, possibly because job losses in non-poor and urban households are much bigger than for the poor that already experience high levels of under/unemployment.
- While poorer households have higher access to social transfers such as welfare services, home care packages and education support, the coverage of these programmes is low.

The implications of this in the event of future climate-related hazards are very significant recognizing that individuals or households, who received assistance as a result of pre-existing vulnerabilities prior to the COVID-19 pandemic, likely had that assistance reduced with the COVID-19 pandemic.

Further, the Saint Lucia National Report of Living Conditions 2016 noted that generally occupational sex segregation is a feature of the labour market. A higher percentage of men were in the agriculture, forestry and fishing, transport and communications, and construction industries, while the service industries attracted a higher percentage of women in accommodation and food service, educational and public services. Also, lower labour force participation rates among women are persistent, and there are higher unemployment rates among women (17.5%) compared to men (16.9%) (Kairi Consultants Limited, 2018). Males also experienced a larger increase in median earnings than females, and females earned less than males in every educational category in 2016 (Kairi Consultants Limited, 2018). This highlights the structural inequalities in women's access to employment, and the likelihood of them being both unemployed and underemployed.

This pattern has remained consistent with the most recent Labour Force Survey conducted in the first quarter of 2020, which found that unemployment rates among females are substantively higher than for males at 22% and 14%, respectively (The Central Statistics Office of Saint Lucia, 2020). See Table 6. The Labour Force Survey also reported the labour force participation rate (calculated as a percentage of the working age population) as 69.9%, the youth unemployment rate as 37% and the overall unemployment rate as 17.6% (The Central Statistics Office of Saint Lucia, 2020).

Table 6. Labour Force Indicators for Saint Lucia in 1st Quarter of 2020

Labour Force Indicators	1st Qtr. 2020
Estimated Household Population	169,484
Population 15 years and over	139,075
Labour Force	97,233
of which - Male	52,912
of which- Female	44,321
Employed Labour Force	80,112
of which -Male	45,524
of which -Female	34,589
Persons who want work	
(i) The Unemployed	17,121
of which - Male	7,389
of which- Female	9,732
(ii) Non-Seekers	2,782
Unemployment Rate %	17.6%
of which - Male	14.0%
of which- Female	22.0%
Youth Unemployment Rate %	37.0%
Relaxed Unemployment Rate %	20.5%
Non-Job Seeking Rate %	2.9%
Population under 15 years (%)	17.9%
Labour Force as a Percentage of Total Population	57.4%
Labour Force as a Percentage of Population 15 years and over OR Labour Force Participation Rate	69.9%

Source: Central Statistical Office of Saint Lucia, Labour Force Survey, 1st Qtr. 2020

6. Conclusions and Recommendations

Saint Lucia has developed progressive policy and institutional frameworks for climate change through the National Climate Change Adaptation Policy, NAP and SASAPs for agriculture, fisheries and water and an updated NDC. In all of these, gender is included to varying degrees and oversight and implementation is supported through the efforts of lead agencies and coordinating mechanisms like National Climate Change Committee.

There has also been a shift within the priority sectors as women have become more involved in the agriculture and fisheries sectors over the last 10 to 20 years, playing active roles in agro-processing and the post-harvest value chain, and there have been targeted efforts to promote women and youth engagement in these sectors.

Despite this, there remain significant areas for improvement for effective gender mainstreaming into adaptation and resilience building in the priority sectors and beyond. There needs to be better coordination and oversight through officially designated gender focal points within the lead agencies for climate change and the priority sectors of agriculture, fisheries and water, stronger linkages with the work of the Division of Gender Relations and development of specific monitoring and reporting

systems to track gender outcomes. Lack of resources for implementation of gender-responsive processes and gender mainstreaming also needs to be addressed through improved budgeting and financing. With the proposed development of the gender policy and strategic plan, and further mainstreaming of gender into project concepts for financing under the NAP and SASAPs, there is an opportunity to better ensure gender mainstreaming and address the impacts of climate change and related disasters. Specific recommendations for gender mainstreaming in the priority sectors are identified below in Table 7.

Table 7. Summary of recommendations for the identified priority sectors in Saint Lucia

Priority sector	Recommendations
Agriculture sector	<p>Address informal employment in the sector and the limited access to social protection, pay inequalities between women and men, and revise agriculture policies and plans to incorporate attention to the provision of decent work and the better regulation of employment in the sector.</p> <p>Reform existing agrobusiness and skills training programmes via the Department of Agriculture to be gender-responsive, and target young women and young men to become involved in climate smart agriculture, taking into account the full value chain, and agro-processing for current and emerging agriculture commodities.</p> <p>Increase direct collaboration with the Ministry of Agriculture and women farmers/farming co-ops and relevant CSOs, particularly in rural areas.</p> <p>Implement gender responsive value chain analysis as part of market analysis undertaken, including data on women’s roles on farms and family-based agrobusiness, as well as women’s access to income and capital, including their socioeconomic status and issues related to burden of care.</p> <p>Enforcement of labour and sanitation standards on farms and other agriculture related facilities, to ensure the health and safety of women and men.</p> <p>Address inequality of access to grants, loans and micro-finance opportunities for women farmers and agro-processors, and increase women’s access to the same, through targeted and gender-responsive financing schemes.</p> <p>Support business skills training including financial literacy to support women led MSME agrobusiness and penetration of the most lucrative arenas in agriculture value chains, including export markets</p> <p>Target incentives and guarantor schemes to young men and women farmers, to promote climate smart innovation, using new technologies, and provide opportunities for further development of small businesses.</p> <p>Support access to affordable insurance which provides good coverage for asset protection as well as livelihood protection in the event of a shock/climate hazard.</p>

Priority sector	Recommendations
Fisheries sector	<p>Registration of informal fisherfolk, including fish vendors and processors who may be women, to ensure they can access extension, relief and other support services and are taken into account in ongoing data collection and monitoring as well as decision-making and planning processes.</p> <p>Awareness raising on the different roles and options available across the fisheries value chain and training specifically targeted to young girls and women (e.g. product development, engine repairs) to better engage them in the sector.</p> <p>Build on existing programmes promoting youth involvement in the fisheries sector within the Department of Fisheries to specifically target young women and enhance their participation based on their identified preferences.</p> <p>Need to promote cottage industries, value added opportunities and avenues for fish processing, particularly focused on less labour-intensive activities using innovative, automated methods, to increase employment opportunities for women.</p> <p>Design loans and other financial facilities for the fishing sector to support further involvement of women, building on the current trend of increased numbers of female boat owners and investors.</p> <p>Support fisherfolk access to affordable insurance which provides good coverage for asset protection as well as livelihood protection in the event of a shock/climate hazard.</p>
Water sector	<p>Invest in infrastructure for the provision of adequate water and sanitation to the most vulnerable communities, and those experiencing compounded socioeconomic deprivation due to structural inequalities. These include but are not limited to Anse la Raye, Bexon, Canaries, Dennery, sub-urban/rural Castries (including Marchand Road), Gros Islet, Marc, Laborie, Micoud, Ravine Poisson and Soufriere.</p> <p>Address non-revenue water losses due to poor infrastructure and invest in storage to better deal with increasing water shortages and droughts.</p> <p>Implement 'pro-poor' policies to support low income families in accessing water, ensuring that water is affordable and that daily needs can be met. This should include a focus on income poor single female headed households with burden of care for children and others in their households.</p> <p>Implement awareness raising and specific gender-responsive and community-led climate resilient water management initiatives, including for rainwater harvesting and storage. This should also translate into the development and implementation of sustainable wastewater management to address related issues of water quality and inadequate sewage disposal and sanitation.</p>

Priority sector	Recommendations
Cross-cutting	<p>Improve data collection to include intersectional analysis of socio-economic sectors and climate-smart resource management and planning. This should include community stakeholders most dependent on agriculture and fisheries. Data should be disaggregated by sex, age and community to support socio-economic and natural resource decision-making, including where resources permit, conducting an updated census for the agriculture and fisheries sectors.</p> <p>Provide more institutional support for the Division of Gender Relations, including for access to the key decision-making arenas on climate change adaptation and mitigation. Provide the Division with additional staff with technical expertise in gender and climate change for priority sectors, who will administer in house training on gender responsive climate change policy and planning in lead agencies of priority sectors.</p> <p>Support gender equality objectives through the application of gender analysis for planning and implementation of policies and programmes to ensure more equitable distribution of opportunities and resources among women and men. This should result in the development of targeted services that meet the differential needs of men and women and those in their care.</p>

The data from the baseline analysis further highlights structural inequalities across several areas of development, which have left households vulnerable to climate-related and other shocks. Based on the impacts of and response to the COVID-19 pandemic, it is clear that there are many Saint Lucians that are not only income poor but prone to slipping into income poverty easily. This income poverty is due to lack of access to decent work, and is compounded by the limited coverage provided by social protection programmes that increase the vulnerabilities of the poor and non-poor alike in the face of a shock. Food insecurity and challenges in access to water and proper sanitation are serious concerns. The main structural inequalities of concern in Saint Lucia, which will exacerbate the adverse impacts of climate change, include:

- overall income insecurity, which means that the non-poor are easily susceptible to slipping into poverty, as has been observed during the COVID-19 pandemic
- disproportionate levels of poverty among women and children in their care, and a higher burden of care on female-headed households
- low coverage of social protection programmes
- high levels of food insecurity among the most vulnerable
- lack of access to decent work as a result of lower earnings for women, more than men, and higher levels of income poverty among women, as well as occupational sex segregation, which further limits women’s access to economic opportunities
- poor housing conditions, poor sanitation, lack of access to insurance for the coverage of damage and loss due to climate hazards contributing to vulnerability, particularly in rural areas

The areas of most concern, which continue to experience multiple deprivations including in access to water and sanitation, were districts and communities in Anse la Raye, Bexon, Canaries, sub-urban/rural Castries (including Marchand Road), Dennery, Gros Islet, Laborie, Marc, Micoud, Ravine Poisson and Soufriere. These areas saw deprivations and or growing poverty and inequality over a 10-year period from 2006-2016, and also are among those areas frequently impacted by climate-related hazards.

Key recommendations for addressing inequality in access to income and employment, building on those in the Saint Lucia National Report on Living Conditions (Kairi Consultants Limited, 2018), include to:

- promote gender sensitivity across socio-economic programmes.
- develop initiatives to deal with educational inequity and inequality, with special focus on the needs of vulnerable groups such as at-risk youth, young mothers, single mothers, unemployed persons and PWDs.
- facilitate the adoption of flexible working arrangements and expansion of child-care facilities like nurseries and after-school-care to afford greater participation of women in labour market and in educational and training programmes, including in those offered on evenings.
- revisit training programmes to improve gender equity in education and training as the basis for removal of gender segmentation within the labour market.

The COVID-19 pandemic has also forced shifts in the workforce and socio-economic landscapes since March 2020, and perhaps provides an opportunity to 'build back better' through investing in areas that would have emerged as being more adaptive. Research into ways that people and businesses have adapted over the course of the pandemic is worthwhile. There are obvious arenas of virtual business management and decentralized food distribution that will lay the groundwork for small businesses and the shoring up of local economies amidst a contracting economy. As tourism is a key, fast-growing sector and one of the first affected in the event of both climate-related and economic shocks, it is worthwhile to consider the need to shift focus away from tourism and diversify local economies. There is also a significant opportunity to support women's and youth entrepreneurship, and access to new and emerging markets at local and regional levels, noting that women have lower labour force participation rates than men and youth are among the most vulnerable to poverty. Increasing investment and training for MSME development is critical at this time.

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8. Appendices

8.1 Appendix 1 – List of Key Informants

Name	Title	Organization	Gender
Marie-Louise Felix	National Project Coordinator	FAO - Climate Change Adaptation in the Eastern Caribbean Fisheries Sector Project (CC4FISH)	Female
Kemuel Jean-Baptiste	Chief Extension Officer	Ministry of Agriculture, Fisheries, Physical Planning, Natural Resources and Co-operatives	Male
Dawn Pierre-Nathaniel	Deputy Chief Sustainable Development and Environment Officer	Sustainable Development and Environment Division, Department of Sustainable Development	Female
Bethia Tomas	Science and technology officer		Female
Maier Sifflet-Beake	Programme Support Officer		Female
Ruth Phillips	National Climate Finance Advisor		Female
John Calixte	National Project Coordinator		Male
Miguel Montoute	Water Resources Specialist	Water Resource Management Agency Ministry of Agriculture, Fisheries, Physical Planning, Natural Resources and Co-operatives	Male

Robin Darrel	President	Saint Lucia Network of Rural Women Producers	Female
Sarita Williams-Peter	Chief Fisheries Officer	Department of Fisheries, Ministry of Agriculture, Fisheries, Physical Planning, Natural Resources and Co-operatives	Female
Jeanine Compton-Antoine	Corporate Services Manager and Officer	Saint Lucia National Trust	Female
Maria Medard	Deputy Director	National Emergency Management Operations	Female
Catherine Charles	Service Delivery Manager	Saint Lucia Development Bank	Female
Kaygianna Charlery	Operations Manager	Goodwill Fishing Cooperative	Female
Dave Charles	Business Development Officer	National Farmers and General Workers Cooperative Credit	Male

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, Saint 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 input 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?

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
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9.

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.

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If you answered no, skip to Question 11.

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

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.....

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.

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

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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

15.

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?

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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?

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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.

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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

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