



# CLIMATE CHANGE

and the Jamaican LGBTQ+ Population:

A pilot study on perceptions, attitudes, behaviors, and impact

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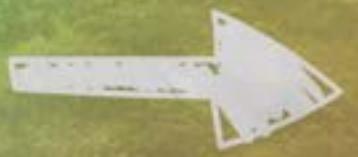


JAMAICA

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## Executive Summary

A mixed methods study was done to assess the attitudes, perceptions and impacts of climate change within the Jamaican LGBTQ+ community. The study comprised of a desk review of disaster risk management framework of four Caribbean countries and the United States of America as well as a quantitative survey used to assess climate change related perceptions, attitudes and impacts of LGBTQ+ living in Jamaica. The quantitative survey consisted of four (4) sections covering: 1) demographic data, 2) knowledge of climate change, 3) experience with climate related disasters and 4) perceptions of government actions toward climate change adaptation. In total, the survey contained forty-two (42) questions. Data analysis was done using a suite of statistical tests available using the Statistical Package for Social Sciences (SPSS). These included: frequencies and crosstabulations and inferential tests including Spearman's rank correlations, Principal Component Analysis w/internal reliability (Cronbach's  $\alpha$ ) and Linear Regression.

Based on the review of the disaster risk management frameworks, only the USA makes explicit mention of the LGBTQ+ community. While the Caribbean countries mentioned vulnerable groups in the disaster risk management and climate change policies, this is often limited to disabled and elderly populations. Specifically for Jamaica, the Disaster Risk Management Act, 2015 and its attendant documentation and established public bodies do not have any provisions that would address the specific needs of the LGBTQ+ community with respect to the emergency response mechanisms.

The results of the survey suggest that income is centrally linked to factors that may influence a person's climate risk perception and vulnerabilities such as: the quality of life, job and housing security, social rank, and access, as well as pro-environmental attitudes and behaviors within the Jamaican LGBTQ+ community. Simple linear regression models statistically significantly predicted that between a non-LGBTQ+ Jamaican and an LGBTQ+ Jamaican with a similar demographic profile, the non-LGBTQ+ person is more likely to own a vehicle. Higher salaries and higher educational attainment were also predictors of pro-environmental behaviors. The two models explained 33.4% and 27.4% of the variations in the data, respectively. These results support previous findings that barriers to employment and education within the LGBTQ+ population reinforces their oppression, marginalization, and ensuing vulnerabilities. The survey instrument had moderate to good reliability based on Cronbach's  $\alpha$  (0.672) and should therefore be modified for future use.

## 1. Introduction

This report presents the findings of a study to assess the impacts of climate change on LGBTQ+ Jamaicans. The study comprised of a desk review of the disaster risk management frameworks of four Caribbean countries and the United States of America as well as a quantitative survey used to assess climate change related perceptions, attitudes and impacts of LGBTQ+ living in Jamaica. The study uses a mixed methods research design, applying both ecofeminist and environmental justice theoretical perspectives to describe the conditions in Jamaica that impact disaster risk management and response, LGBTQ+ attitudes and perceptions of climate change, as well as the social context that impact climate justice outcomes for this marginalized group. Recommendations are made, based on the findings, to promote inclusion of LGBTQ+ voices in climate change planning and advocacy within the Jamaican context. Recommendations are also made to improve the study design for future works of this nature.

## 2. Background

Climate change is a global phenomenon wherein changes to normal climatic conditions of the earth change, causing a shift in weather patterns. According to the UN, “the impacts of climate change are global in scope and unprecedented in scale”<sup>1</sup>. These impacts are being felt due to the frequency, extent and intensity of weather events that cause disasters (Kekeh et al., 2020). Climate change impacts are observed in longer droughts, melting ice caps, rising sea level, stronger and more frequent hurricanes, as well as forest fires and spread of vector born and communicable diseases (National Research Council, 2011; Watson et al., 1998). The negative effects on livelihoods are numerous (McLeman, 2018a, 2018b), and the impacts on different demographics vary due to issues relating to income, marginalization, and access to basic necessities (Gonzalez, 2020). Undoubtedly, different demographics will be impacted at varying scales due to issues relating to income, marginalization, and access to basic amenities needed to sustain life. It is therefore critical that work be carried out at the intersections of these group experiences.

While there has been a significant push to ensure gender balance in the climate response as well as an outlook to protect rural, elderly, and other vulnerable populations, there has been very little research into the impact of climate change on the LGBTQ+ community. Interestingly however, despite the LGBTQ+ community’s vulnerability to climate change, research on the impacts it has on this community is scant (Colfer et al., 2018). Mention is made, though rare, of the need to consider this marginalized group in national strategies for disaster preparedness (Colfer et al., 2018; Department of Homeland Security, 2020; Kaijser & Kronsell, 2014).

In Jamaica, laws prohibiting sexual acts between same-sex partners reinforce stigma and discrimination of lesbian, gay, bisexual, and trans persons by the wider society (Murray et al., 2017). Due to the stigma and discrimination that LGBTQ+ populations face, it is thought that this group is at a higher risk of suffering losses due to climate change related disasters when compared to the general population (Department of Homeland Security, 2020; Vinyeta et al., 2016). Local studies to date have confirmed that the Jamaican LGBTQ+ community is already at risk of exclusion from social, educational and health services due to discrimination (Virri, 2019). Also, a survey of the LGBTQ+ community in April 2020 showed that they were negatively impacted in the early stages of the pandemic, due to government sanctioned Covid-19 containment measures. JFLAG reported that, 87.80% of respondents of the Covid-19 impact survey indicated that they had been impacted financially, emotionally, mentally and/or socially by the curfews and the resulting restrictions in movement across the entire country (JFLAG, 2020).

Across the globe, LGBTQ+ persons face various forms of discrimination and vulnerabilities (Randall, 2020; Vinyeta et al., 2016). Friends of Earth Scotland (FES), in their ‘Why Climate Change is an LGBTQ+ Issue’<sup>2</sup> article reported on such discrimination and other vulnerabilities faced by LGBTQ+ persons across the globe. They

<sup>1</sup> <https://www.un.org/en/global-issues/climate-change#:~:text=From%20shifting%20weather%20patterns%20that,be%20more%20difficult%20and%20costly.>

<sup>2</sup> <https://foe.scot/why-climate-change-is-an-lgbtq-issue/>

reported that during Hurricane Katrina, trans people faced discrimination in emergency shelters, or were even turned away. They reported that the black queer community of New Orleans has yet to fully recover, citing instances where gay people would have lost businesses. In addition, the relocation of the queer-centered health practitioners added to the loss and injury suffered by the black queer community as a result of climate related disasters.

FES also highlighted that homeless people are particularly vulnerable to the climate change impacts due to the increased erratic nature of weather events. This is supported by other research on the impacts of climate change on homeless populations (Gibson, 2019; Kidd et al., 2020). In the United Kingdom, LGBTQ+ youth account for 24% of homeless youths. In Jamaica, displaced LGBTQ+ young people have a history of living on the fringes of society, making their homes in the gullies and other areas. In Jamaica, LGBTQ+ individuals face a significant risk of homelessness and displacement due to social exclusion and discrimination within the housing sector (JFLAG, 2018). This is troubling, as extant literature indicate that homeless people are particularly vulnerable to climate change (Gonzalez, 2020; Randall, 2020). This makes them particularly exposed to the impacts of the climate change especially as it relates to flooding, as in the case of hurricanes. Just as these claims can be made for the LGBTQ+ community, ecofeminist theories tell us that the same claims can be made for other marginalized groups, as climate change is a crosscutting issue (Gaard, 2015). However, given the additional issues of discrimination due to sexual orientation (real or perceived) and gender identity and presentation, it is necessary to specifically highlight the challenges of the LGBTQ+ population apropos the impacts of climate change.

The ‘Jamaican LGBT Community Experience and Needs Assessment’ commissioned by JFLAG in 2019 showed that 61.3% of the LGBTQ+ persons surveyed were earning less than or equal to sixty thousand Jamaican dollars (\$60,000.00JMD) monthly (Moore, 2020). This figure ranged for \$0.00JMD (19.5%) to \$31,000 – \$60,000JMD (21.6%). Based on the lived realities of LGBTQ+ Jamaicans, some members will be less likely to have access to resources to or will lack the ability to relocate. As climate change continues, and the impacts become more severe, the Jamaican LGBTQ+ community can become further marginalized.

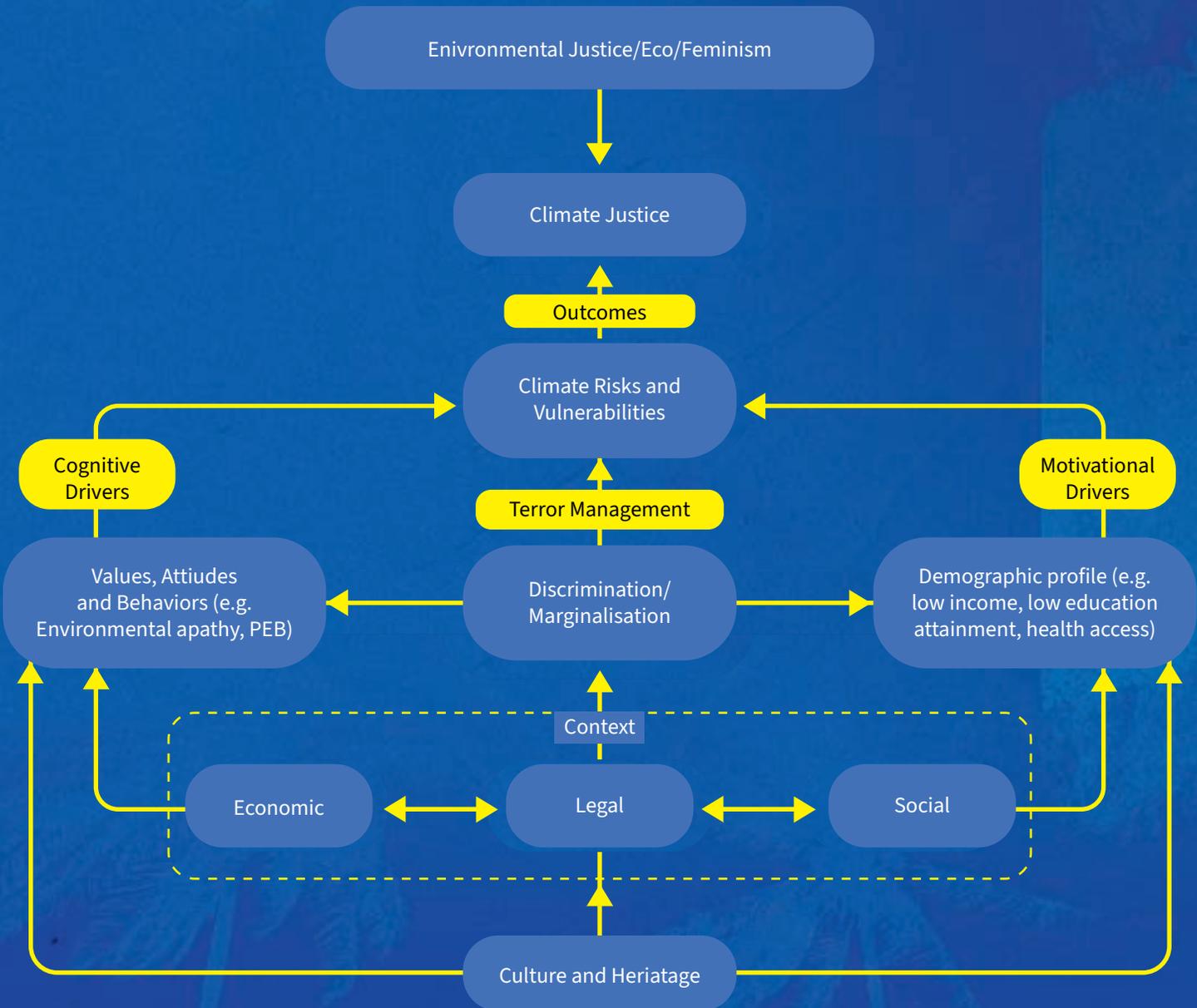
Jamaica has developed its Disaster Risk Management Act (DRMA) to address disaster risk within the country. This piece of legislation only recognises the elderly and those with physical disabilities as being vulnerable. As such, other groups are excluded from consideration, though this may not be the case during operationalisation of the legislation. The Regional Comprehensive Disaster Management Strategy and Programming Framework 2014 – 2024 Draft, considers impacts of different disasters on the lives of: men, women, boys and girls and tailors response strategies for them. It also makes general mention of vulnerable groups.

Climate change does not know borders, class, gender, or race. However, even though the emerging field of environmental justice has already established the baseline of the inequity in the event of environmental related natural disasters due to race, class, geopolitics and gender, there is very little mention of sexuality. To date, much of the discussion on the impacts of Climate Change on the LGBTQ+ community has been had using anecdotal evidence from other marginalized groups, such as women, indigenous people or people of colour, drawing tangents based on the socio-economic profile of LGBTQ+ communities globally. There is an absence of dedicated research in both academia and human rights into this issue, and more so, there has been no conversation around this issue within the Caribbean.

Climate change discourse on resilience and vulnerabilities are also often approached from a scientific and technological perspective (Gaard, 2015). Even though there has been efforts to include women’s rights issues in these discussions, solutions toward building resilience often ignore the realities of other marginalized and disenfranchised communities (Gaard, 2015; Kaijser & Kronsell, 2014). The Bali Principles of Climate Justice which outlines multiple criteria for climate justice for multiple publics does not explicitly speak to equity, inclusion and diversity, with only one of twenty-seven principles speaking very broadly to discrimination and

bias (Bali Principles of Climate Justice, 2002; Gaard, 2015).

The ecofeminist framework recognizes this limitation of climate change discourse and seeks to address this by providing space for the inclusion of intersectional experiences across race, gender, sexuality, religion and other humanistic differences in environmental justice praxes; of which climate justice is one focus area (Gaard, 2015; Kaijser & Kronsell, 2014). The hypothesis that guided this study (Figure 1), is that the socioeconomic and legal context within which Jamaican LGBTQ+ persons exist imparts certain key characteristics linked to values and beliefs (cognitive drivers), demographics and survivability (motivational drivers) that shape climate risks and vulnerabilities as well as perceptions (outcomes).



**Figure 1: Theoretical framework for assessing climate change perceptions, risks and vulnerabilities of the Jamaican LGBTQ+ population.**

The research aimed to assess: 1) the attitudes and perceptions of LGBTQ+ persons toward climate change impacts and related government actions in Jamaica, and 2) the level of impact felt by these persons in the wake of climate change related natural disasters. The following objectives were used to achieve the study's overall aims:

1. To assess the knowledge of LGBTQ+ persons living in Jamaica as it relates to disaster risk management, climate change and its impacts.
2. To determine the level of risks faced and impacts experienced by LGBTQ+ persons as it relates to climate change related disasters.
3. To evaluate the needs of the LGBTQ+ community as it relates to their preparedness for climate change related disasters.
4. To assess the disaster risk management framework with respect to the emergency response mechanisms, and their ability to cater to the specific needs of the Jamaican LGBTQ+ community.
5. To critically compare the emergency response framework in Jamaica to other countries with LGBTQ+ inclusive legislations to assess any potential gaps in ensuring that members of the community are not excluded from the response in the event of disasters.

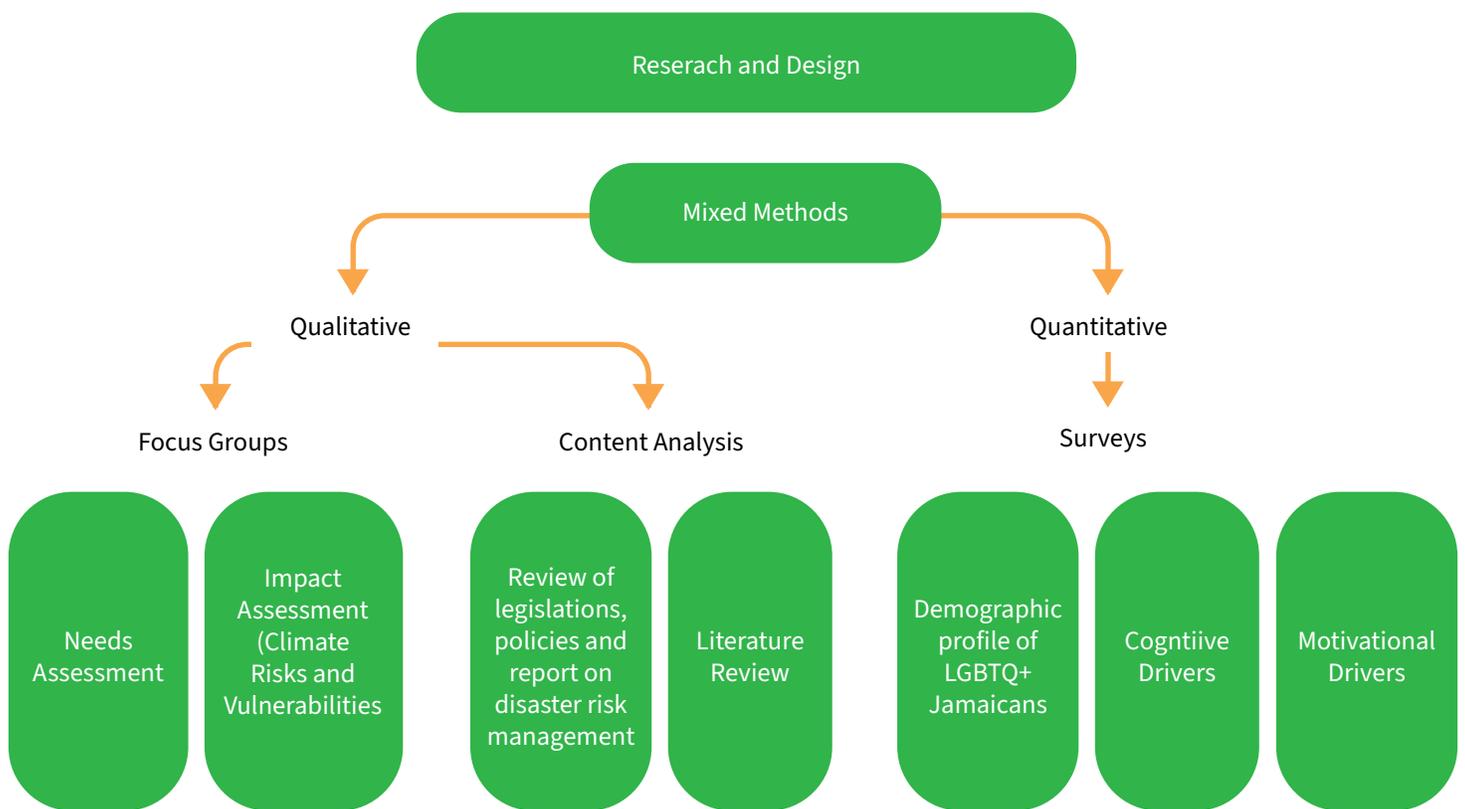


### 3. Methodology

This descriptive study uses a mixed methods design to gather data (Opoku et al., 2016; Walker, 1997). Data were obtained from quantitative survey as well as review of extant literature and from comparative analyses of different legislative frameworks that speak to disaster risk management in Jamaica and other jurisdictions within the Caribbean and the global north. Jurisdictions within the global north were included as reference points for comparison as these countries tend to have more inclusive legislation. Keywords for the searches included a combination of climate change, climate justice and any of the following: *vulnerable or marginalized groups (or communities), LGBTQ+, queer, trans(gender), inclusion, discrimination, bias, and diversity*. The goals of the qualitative research were to:

1. Understand the context in which the disaster risk management framework in Jamaica is situated.
2. Evaluate the Disaster Risk Management Act (DRMA) and its capacity to cater to the needs of LGBTQ+ Jamaicans in the event of a disaster.

This study design (Figure 2) enabled an understanding of the sociolegal context within which the disaster risk management framework in Jamaica is situated. It also enabled the direct evaluation of perceptions of risks faced by the Jamaican LGBTQ+ community. A focus group was included in the study design but had to be cancelled due to lack of participants.



**Figure 2: Mixed Methods Research Design**

Table 1 gives an overview of the kinds of data/information obtained from each aspect of the study design. The mixed methods design enabled the collection of data from a wide cross-section of the sample population using quantitative methods, as well as, delving deeper into the topic using the qualitative methods (Opoku et al., 2016; Walker, 1997).

**Table 1: Data/Information to be acquired from each tool to be used in study.**

Tool	Data/Information to be Acquired
<b>Desk Reviews (Content Analysis)</b>	Comparison of disaster risk management frameworks in different jurisdictions. This will be done to assess comprehensiveness and inclusivity and will serve as a gap analysis for the Jamaican DRMA
<b>Surveys</b>	Demographic data, perceptions, behaviors, and impacts
<b>Focus Groups</b>	Needs of LGBTQ+ Jamaicans as it relates to climate risks and vulnerabilities

Quantitative data were obtained from a survey designed for this study (Babbie, 2020, chpt. 4; Dillman et al., 2014, chpt. 4). The survey consisted of four (4) sections covering: demographic data, knowledge of climate change, experience with climate related disasters and perceptions of government actions toward climate change adaptation. In total, the survey contained forty-two (42) questions. The survey was piloted using a focus group discussion with a convenience sample selected from the target population. Participants in the pilot study were asked to complete the full survey and provide feedback on the content and interpretability of the questions during the focus group. This was done to ensure that the questions were being interpreted as intended; and that the questions covered as much of the concerns of the population as was practicable. Due to time constraints resulting from the delayed start of the project, only ten (10) persons were able to participate in the pilot, thus statistical validation of the instrument was not feasible. However, the reliability and validity of the instrument will be assessed in the final report. The final survey was deployed via Google Forms and promoted via social media and emails using the platforms for JFLAG and TransWave Jamaica Limited (TransWave Ja.) to increase participation in the surveys. The goals of the quantitative studies were to:

1. Describe the demography of the Jamaican LGBTQ+ community.
2. Assess the knowledge and behaviors of LGBTQ+ Jamaicans with respect to climate action.
3. Describe the experiences of LGBTQ+ Jamaicans related to natural disasters.
4. Assess the perceptions of LGBTQ+ Jamaicans with respect to government action toward climate change.

A convenience sample was used for the survey (Babbie, 2020, chpt 7). It ran January 2021 to April 2021 and involved Jamaicans living in Jamaica and in the diaspora. Due to difficulties in securing a complete listing of and information about the target population, the participants who made up the sample were persons who had previously participated in surveys or events conducted by either JFLAG or Transwave. The survey captured the variation in socio-economic and demographic differences among the population. A total of 130 individuals participated in the survey.

Data analysis was done using Microsoft Excel and SPSS. It included both descriptive (frequencies and crosstabulations) (Privitera, 2016, chpt. 2) and inferential statistics (Spearman's rank correlations, Principal Component Analysis w/internal reliability (Cronbach's  $\alpha$ ) and Linear Regression) (Bonett, 2002; Koistinen et al., 2001; Streiner, 2003; Thapa, 1999).

## 4. Results of Desk Review

This desk review examines research and policy documentation regarding disaster management in Jamaica, Barbados, Guyana and the United States of America (USA). The review focuses on disaster risk management with respect to the emergency response mechanisms and their ability to cater to the specific needs of the LGBTQ+ community.

Small Island Developing States face an increased risk of being impacted by climate change induced disasters. Initially, when looking at disasters, countries had primarily focused on preparedness; however, many have begun to take an approach that focuses on risk management. From as far back as 2007, the region has been working towards coping with climate change. The heads of government for CARICOM, through the Caribbean Community Climate Change Centre (5C's) sought to have a regional framework to guide the strategies of the countries within the region. In 2009, the Regional Framework for Achieving Development Resilient to Climate Change was approved. While all the above-mentioned Caribbean countries have a Disaster Risk Management Plan in place, none speaks explicitly to the LGBT population with respect to the recovery plan of each country.

### 4.1. Jamaica's Emergency Response Framework

Jamaica's emergency response is guided by the Disaster Risk Management Act (DRMA), 2015, which makes provisions for the management of disaster response as well as mitigation of disasters, the reduction of risks associated with disaster. Part II, Section 3 of the Act establishes the Office of Disaster Preparedness and Emergency Management (ODPEM), whose functions, inter alia, include, developing and implementing policies and programmes to achieve and maintain an appropriate state of national and sectoral preparedness for coping with all emergency situations which may affect Jamaica. The ODPEM is therefore expected to prepare a National Disaster Risk Response Coordination Plan (NDRRCP) which ideally includes procedures for public bodies and officers, non-governmental organizations, and persons who are required, by law, to perform functions related to the preparedness for and response to disasters. It also should contain procedures for the mobilization of services and systems for disasters.

The DRMA also establishes Parish Disaster Committees (PDCs) which are expected to develop plans for local response to disasters<sup>3</sup>. Local authorities are responsible for the disaster risk management for their respective parishes<sup>4</sup>. Separately, the law makes provisions for a list of shelters and other premises to be created and maintained in consultation with government agencies, local authorities, and members of the private sector<sup>5</sup>.

There are also provisions for the establishment of a National Disaster Fund (NDF) to be used for the mitigation of disasters, the adoption and promotion of preventive and preparedness measures as well as the recovery of relief efforts, in relation to the occurrence of a disaster in Jamaica<sup>6</sup>. This includes funding relief and recovery efforts in the event of disasters<sup>7</sup>. In establishing these different functions, the Act does not make mention of any vulnerable populations, including the LGBT community. However, reference to vulnerable people is made in other documents. The twenty (20) community disaster risk management plans for places like Alligator Pond, Port Maria, and Old Harbour, make mention of vulnerable populations; but this only considers the elderly and physically challenged.

#### 4.1.1. Regional Comprehensive Disaster Management Strategy and Programming Framework 2014 – 2024 Draft

This is a ten-year draft plan developed by the Caribbean Disaster Emergency Management Agency

<sup>3</sup>DRMA, 2015 – Part III, Section 19

<sup>4</sup>DRMA, 2015 – Part III, Section 20

<sup>5</sup>DRMA, 2015 – Part III, Section 25

<sup>6</sup>DRMA, 2015 – Part IX

<sup>7</sup>DRMA, 2015 – Part IX, Section 38

(CDEMA) whose goal is to realize “safer, more resilient and sustainable CDEMA participating states through comprehensive disaster risk management.” The implementation of this plan, based on a comprehensive disaster management (CDM) strategy, cuts across the themes of gender, climate change, information and communications technology and environmental sustainability (Caribbean Disaster Emergency Management Agency, 2014). Among the elements on which the strategic framework is based is community resilience, which has been enhanced for the most vulnerable, with gender concerns addressed at all stages and levels.

This is further expounded under the gender mainstreaming objective, which entails the assessment of the difference between women and men, girls and boys and how this should be considered in the design of policies, strategies and programs aimed at safeguarding populations in the face of the negative effects of disasters and in the recovery and reconstruction thereafter.

Specifically dealing with gender mainstreaming, is Outcome 4: Strengthened and sustained capacity for a culture of safety and community resilience in participating states “Community-based disaster management capacity built/strengthened for vulnerable groups” as outcome 4.2. This speaks to the differentiated impacts of disasters on between women and men; and focuses on highlighting and planning strategies to address those. There is no mention LGBTQ+ people in this outcome.

#### 4.1.2. Jamaica Vision 2030 – National Development Plan, Natural Resources and Environmental Management & Hazard Risk Reduction and Climate Change, Sector Plan

This plan, developed in 2009, was to guide Jamaica’s development to enable the country to achieve developed country status by 2030. National Outcome #14 of the plan, Hazard Risk Reduction and Adaptation to Climate Change, specifically addresses disaster risk management in the face of climate change (Natural Resources and Environmental Management & the Hazard Risk & Reduction and Climate Change Task Forces, 2009). The strategies guiding this national outcome are:

1. Improve resilience to all forms of hazards.
2. Improve emergency response capability.
3. Develop measures to adapt to climate change.
4. Contribute to the efforts to reduce the global rate of climate change.

This plan makes mention of the word vulnerable twelve (12) times, but only in reference to areas and endangered species. No direct reference to vulnerable groups of people was made.

#### 4.1.3. The Paris Agreement

The Paris Agreement<sup>8</sup> is a legally binding international treaty on climate change. It was adopted by 196 countries at the United Nations Framework Convention on Climate Change (UNFCCC) COP 21 in Paris, on 12 December 2015 and entered into force on 4 November 2016. Jamaica as a signatory to this agreement is bound to implement the stated strategies to address climate change. The long-term goal of the agreement is to limit global warming to well below 2 degrees Celsius compared to pre-industrial levels.

In June 2020, Jamaica submitted updates on the nationally determined contributions (NDCs) to the UNFCCC. The updated NDCs was a tougher climate action plan under the Paris Agreement, as targets for forestry were added and commitments were included for stepping up efforts to curb greenhouse gas emissions, particularly from energy production.

<sup>8</sup> <https://www.nrdc.org/sites/default/files/paris-climate-agreement-IB.pdf>

#### 4.1.4. United Nations Sustainable Development Goals (SDGs)

The Sustainable Development Goals (SDGs)<sup>9</sup> were adopted by all United Nations Member States in 2015 as a universal call to action to end poverty for all, protect the planet and ensure that all people enjoy peace and prosperity by 2030. The 17 SDGs which includes no poverty, zero hunger, gender equality and reduced inequalities, takes into consideration that the goals are interdependent, and so development must balance social, economic, and environmental sustainability. These are said to be integrated into the Jamaica Vision 2030 – National Development Plan.

#### 4.2. Barbados

Based on its positioning to the Caribbean and the Atlantic Sea, Barbados, like other SIDS is susceptible to climate related disasters such as hurricanes. According to the Climate Change Knowledge Portal<sup>10</sup>, the island is prone to experiencing a high rise in sea level, coastal erosion, rising temperatures, droughts, changes in rainfall patterns and more intense and frequent tropical cyclones. As a result, much of Barbados' measures focus on addressing climate change through strategies for mitigation and adaptation. When speaking about adaptation regarding climate change, it refers to *“adjustments in ecological, social, or economic systems in response to actual or expected climatic stimuli and their effects or impacts”* Whilst mitigation focuses on *“avoiding and reducing emissions of heat-trapping greenhouse gases into the atmosphere to prevent the planet from warming to more extreme temperatures.”*

In 2012, the Barbados Cabinet approved the Climate Change Policy and had ratified the Paris Agreement on April 22, 2016. In December 2019, the Barbados Comprehensive Disaster Management Country Work Programme for 2019-2023 was revised<sup>11</sup>. Even though research is ongoing, evidence shows that all sectors of the country are more than likely to be substantially impacted by the direct damage of climate change (Environmental Gain Ltd et al., 2018). This may have dire effects on the country's economic growth and development.

Barbados' Comprehensive Disaster Management Country Work Programme for 2019 – 2023 is detailed, results-based and requires the input of stakeholders for desired results at the beginning of the process. Coordinated by the Department of Management, the National Emergency Management System consists of the Emergency Management Advisory Council, its committee, national emergency services, local volunteers, NGO's and Community Based Organizations, regional and international partners and the private sector. The idea behind it is that each organization brought its expertise to ensure that Barbados addresses Disaster Risk Reduction in a comprehensive manner.

The Community Work Programme has output and indicators that are aligned with the following regional and international frameworks:

1. Sendai Framework for Disaster Reduction (2015 – 2030)
2. UN Sustainable Development Goals
3. Caribbean Community CARICOM Strategy (2015 – 2019)
4. Regional Comprehensive Disaster Management Strategy and Results Framework (2014 – 2024)

Within the programme, five priority areas were agreed upon:

1. Priority Area 1 - Institutional Strength for the CDM
2. Priority Area 2 - Preparedness Response and Mitigation Capacity
3. Priority Area 3 - Strengthening Community Resilience

<sup>9</sup> <https://www.jm.undp.org/content/jamaica/en/home/sustainable-development-goals.html>

<sup>10</sup> <https://climateknowledgeportal.worldbank.org/country/barbados>

<sup>11</sup> [https://dem.gov.bb/public/downloads/BarbadosCDMCountryWorkProgramme2019-2023final\\_2.pdf](https://dem.gov.bb/public/downloads/BarbadosCDMCountryWorkProgramme2019-2023final_2.pdf)

4. Priority Area 4 - Research and Knowledge Management
5. Priority Area 5 – Recovery

The programme’s holistic approach is that there are cross-cutting themes that must be addressed in implementing all steps of the activity, including climate change, gender responsiveness, information and technologies, and environmental sustainability.

Under Priority Area 3, Outcome 3, there is a focus on vulnerable groups though the document does not identify those it considers as part of these vulnerable groups.

#### 4.3. Guyana

Similarly, within the Guyana disaster risk management framework, there is nothing that speaks explicitly to the needs of the LGBT community, but this does not mean they are not considered during the implementation of the country’s disaster risk management system.

While Guyana is not within the hurricane zone, it is still susceptible to other climate related disasters. A 2019 assessment done by the United Nations Development Programme (UNDP) focused on gender visibility in the management of climate change. The purpose of this research was to assess how well gender differentiated impacts were accounted for in disaster risk management and mitigation practices (Castello, 2009).

The findings from the assessment found that several different NGOs, government and civil society organizations are involved in the country’s disaster risk management, namely:

1. UNDP and UNAIDS focusing on human rights and women’s rights,
2. International Labour Organization focusing on HIV and AIDs,
3. OFXAM, which provides public education on disaster risk reduction with NGOs,
4. Women’s Affairs Bureau focusing on mainstreaming of gender perspectives, and
5. Woman Across Differences concentrating on the empowerment of women.

The country revised its Multi-Hazard Disaster Preparedness and Response Plan in 2013. The plan ensures that the country can respond effectively and timely to all disasters using a comprehensive management approach in a coordinated manner whilst ensuring “the greatest protection of life, property and health.” Within the plan, there is an Early Recovery Framework. The response, as outlined in the framework, is to be community centered and inclusive. It states that the *“effective reconstruction and resettlement efforts from natural disasters are characterized by a closely coordinated multi-sectoral approach that emphasizes systematic consultation with affected communities as well as close collaboration between government and non-government agencies. The full integration of communities, taking special measures to ensure that poor people and the most vulnerable groups are included in reconstruction, and resettlement strategies are essential for ensuring equity, ownership, transparency and accountability.”*

Guyana does make explicit mention of gender and is aware of disasters affecting individuals, regardless of things such one’s socioeconomic or sex and gender; much of the information speaks of women. The information is centred around how disaster negatively affects them in ways such as them having the burden of care, which can impact their ability to relocate after a disaster; as it relates to men, it spoke about affecting them as breadwinners. Nothing speaks explicitly to members of the LGBTQ+ community. Even when the vulnerable groups are being highlighted, only the elderly and the physically disabled are mentioned.

From the assessment, it must also be noted that at the time it was being conducted, sex-disaggregated data according to disaster impact and death was not collected. However, as previously stated, specific organizations

involved in disaster risk management, such as UNAIDS and UNDP, could highlight and ensure that the needs of the LGBTQ+ community are met during the recovery process. There would have been a chance to highlight the plight of LGBTQ+ people when HIV is brought into the conversation, but rather, they speak about access to antiretroviral drugs after a disaster; nothing explicitly states that gay men or men who have sex with men may be disproportionately affected by climate change.

#### 4.4. Belize

The Belizean government developed a National Climate Change Policy and Action Plan. The country also has ratified international conventions such as the United Nations Framework Convention on Climate Change in 1994 and the Kyoto Protocol in 2003 and established a National Climate Change Office to ensure that they mainstreamed climate change into their national development per these policies. Ensuring that all stakeholders were included in implementing the strategy, the Belize National Climate Change Committee was established as a multi-sector committee comprised of non-state, private and public sector representatives. The action plan contained a principle that stated that gender-differentiated needs and roles must be taken into account and encourage non-discrimination and equity.

In a technical assistance request made on May 20, 2020, by Belize to review the country's Nationally Determined Contributions (NDCs), there is the potential for a more gender-sensitive approach, including the engagement of stakeholders from men's groups, women's groups and civil society organizations. However, there is no explicit mention of the LGBTQ+ community, and even within the country's National Development Framework, there is no mention of the LGBTQ community. This is also evident in the Disaster and Preparedness and Response Act, developed in 2000 and supports the country's disaster risk management framework.

#### 4.5. United States of America

Unlike the Caribbean countries included in this review, the USA, in its disaster risk framework, explicitly mentions the LGBTQ+ community. Research has also been done to understand the cultural roles played by indigenous peoples, lesbian, gay, bisexual, transgender, two-spirit, and queer (LGBT2Q) persons concerning climate change (Vinyeta et al., 2016).

The United States, in its evaluation of disaster risks, understood that preparedness and response begin at the individual level (Department of Homeland Security, 2020). The report stated that readiness for a national disaster relies *“on the contributions of individuals and communities, the private and non-profit sectors, faith-based organizations, and all levels of government.”* As with Jamaica, Guyana, Belize and Barbados, and acknowledging the difference in approach, the USA understands the importance of engaging critical stakeholders during the development and implementation of disaster risk management strategies. They also stated that the LGBTQ+ community are more likely to be severely impacted by disasters and, as a result, may require unique support during disaster preparation and after a disaster. Highlighted too, is that emergency managers may not be able to address all the issues faced by these vulnerable groups; they must engage with organizations to *“restore social safety nets after a disaster.”* Yet, even with these admissions, there is still limited information on the impacts faced by LGBTQ+ people due to climate change.

#### 4.6. Assessment and Conclusion

While most Caribbean countries have ratified some international conventions and many of them have developed policies that are aligned with regional climate change and mitigation policies, what is lacking among the countries is clearly articulating whom they consider being most vulnerable, especially within the recovery framework. One can only infer that through the engagement from stakeholders that are engaged in human rights development this vulnerable group will be considered. As Jamaica, Barbados, Belize and

Guyana are all signatories to the Caribbean Disaster Emergency Management Agency, which is the regional body responsible for disaster management there can be a stipulation that within frameworks related to disaster risk management there be a clear definition of who are the vulnerable groups outside of women, men, children, the elderly and the differently abled.

While Jamaica has legislation to address disaster risk management, the provisions give no consideration to LGBTQ+ people as a vulnerable group. The various plans recognise only the elderly and those with physical disabilities. The UNDP also recognised this limitation as its relations to the inclusion of the impact of climate change on children in Jamaica (United Nations Development Programme, 2020). The Regional Comprehensive Disaster Management Strategy and Programming Framework 2014 – 2024 Draft, which Jamaica also uses to guide its disaster risk management initiatives takes a different approach. It considers the effects natural disasters on the lives of men, women, boys, and girls to tailor strategies for them. It also makes mention of vulnerable groups generally with specific outcomes in this respect. The Jamaica Vision 2030 – National Development Plan is already incorporated in policies and the NDCs under the Paris Agreement. With its wide view of vulnerable groups, the Regional Comprehensive Disaster Management Strategy and Programming Framework 2014 – 2024 Draft, if implemented, could potentially see the inclusion of LGBTQ+ people in the strategies relating to disaster risk management.

However, as it now stands, the DRMA, 2015 and its attendant documentation and established public bodies do not have any provisions that would address the specific needs of the LGBTQ+ community with respect to the emergency response mechanisms. This is inadequate as it relates to environmental and climate justice considerations. The guiding ideology of this body of work, is that just (and equitable) distribution of benefits and burdens is achieved when no group of people, bears a disproportionate burden of negative environmental consequences, which in this case would be possible due to an absence of, or lack of coverage of those groups in public policies (Hess & Ribeiro, 2016). Disaster risk management policies must explicitly identify priority groups and must explicitly denounce discrimination during disaster response and provide for sanctions where these are reported and are proven to have occurred. A Human Rights-Based Approach must also be employed in the response. The response must cater to the diverse needs of the various communities and must be implemented to uphold fundamental principles, which are integrity, dignity, and basic human rights.

It is quite possible that during the recovery implementation, specific organizations may focus needs of the LGBT community, but it may not be stated.

## 5. Results of Survey

130 persons responded to the online survey, however, 1 response set was removed, as it contained incongruent responses. Hence, for this report N=129.

### 5.1. Demographic Profile of Respondents

Of the participants used in this survey, 51% belonged to the 25 – 34 age group, 37% to the 16 – 24 age group, 8% to the 35 – 44 age group and 4% to the 45 – 59 age group (Figure 3).

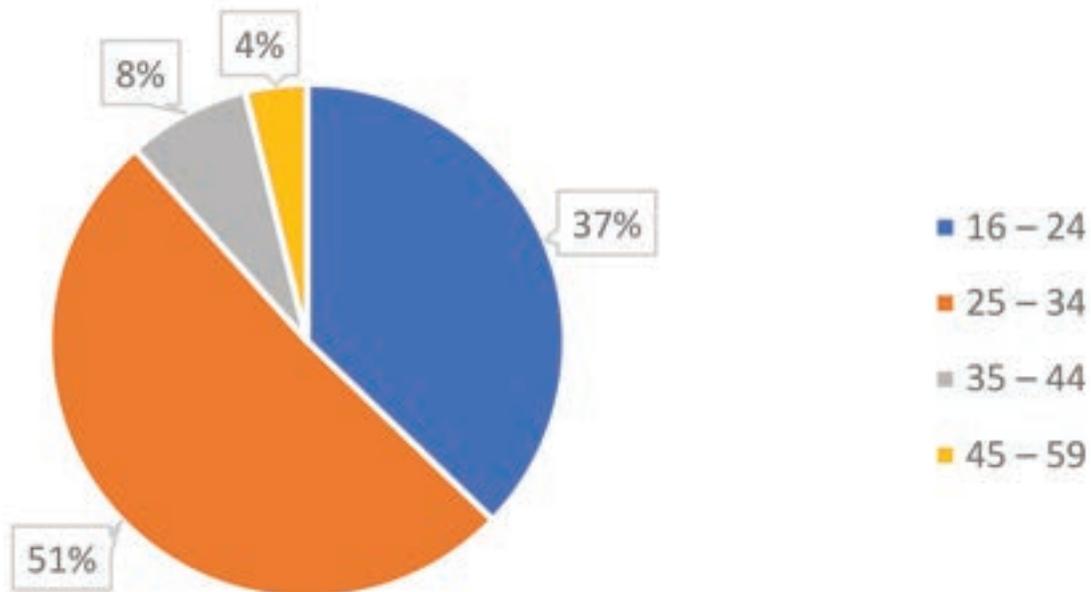
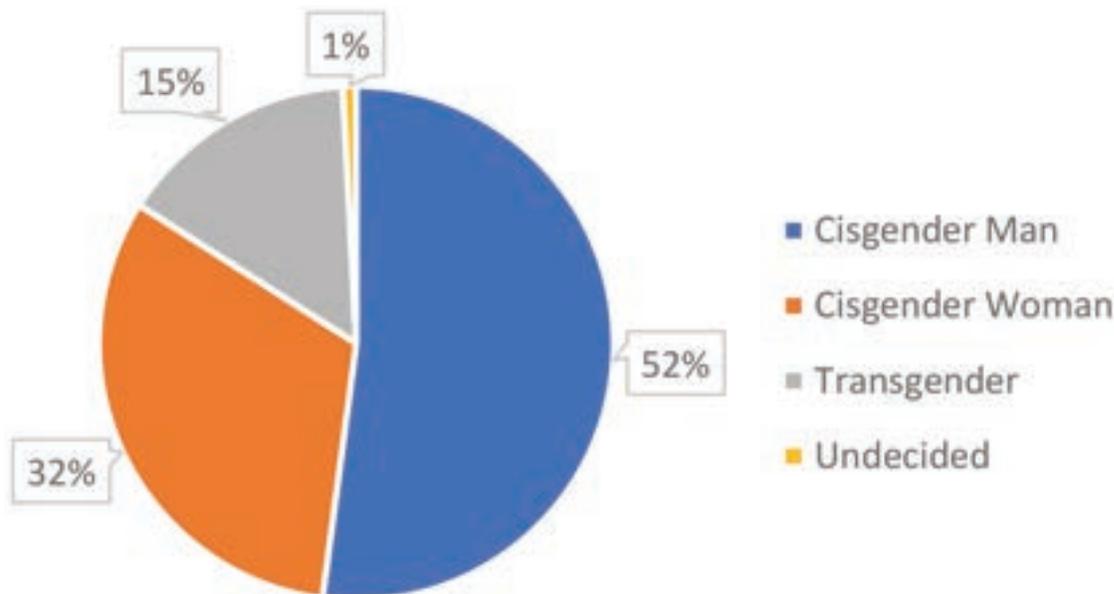


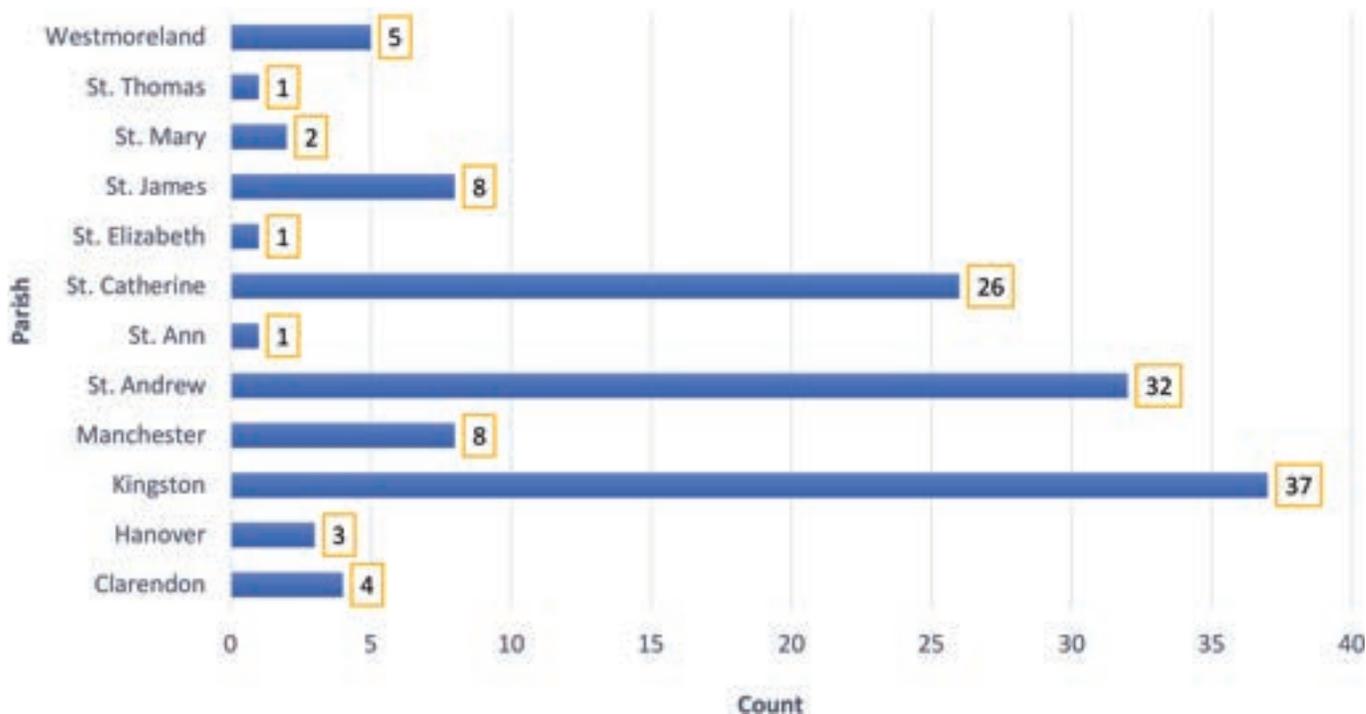
Figure 3: Age of respondents

52% of respondents were cisgender men, 32% were cisgender women, 15% were transgender persons, while 1% of the participants was undecided about their gender. The transgender group was combined to include responses such as transgender man & woman, non-binary, and gender fluid. 78.9% of the respondents identified as being a member of the LGBTQ+ community (gay, lesbian, bisexual, pansexual and asexual), while 19.5% said they were heterosexual and cisgender (non-LGBTQ+).



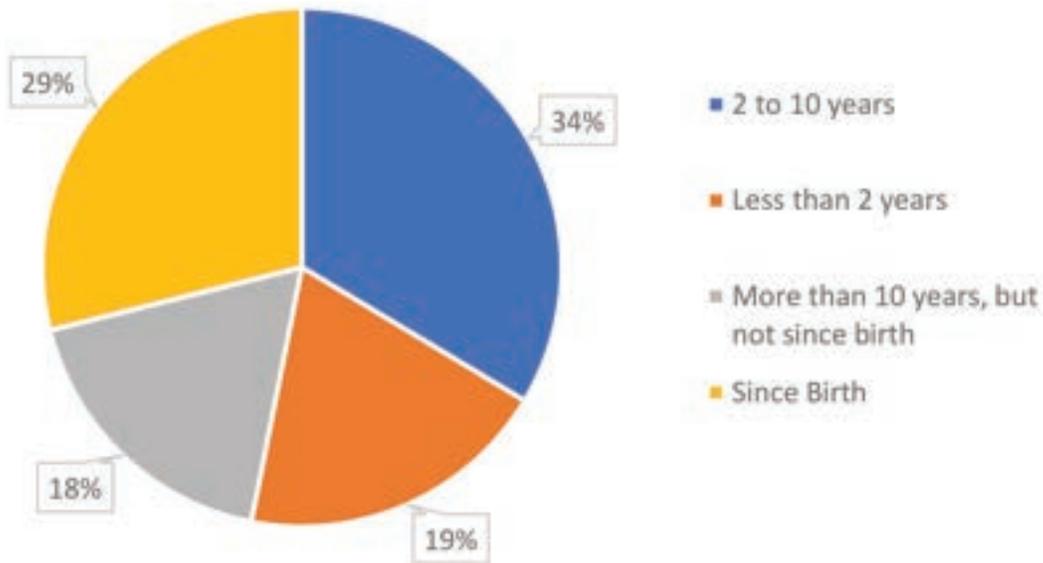
**Figure 4: Respondents' gender identity**

Of the 14 parishes, only 12 were represented in the survey. Kingston accounted for 28.9% of the respondents, while St. Andrew accounted for 25.0% of the respondents. St. Catherine accounted for the third most respondents with 20.3% of the responses.



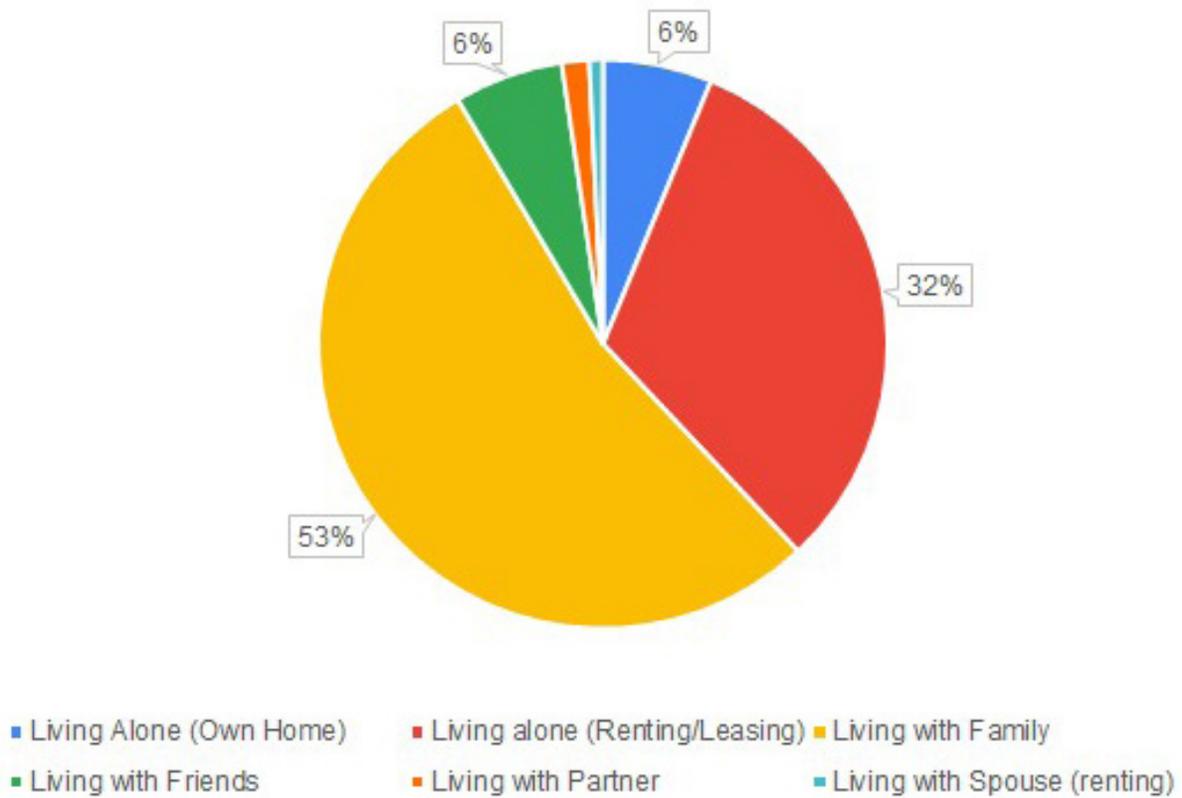
**Figure 5: Respondents' parish of residence**

When surveyed for how long respondents have resided in their current parish, 34% indicated that they have lived there for 2 – 10 years. 29% of the respondents indicated that they have lived in the parish indicated since birth. 18% of the respondents indicated that they have lived in their current location for more than 10 years but not since birth. The remaining 19% of respondents have lived in the current location for less than 2 years.



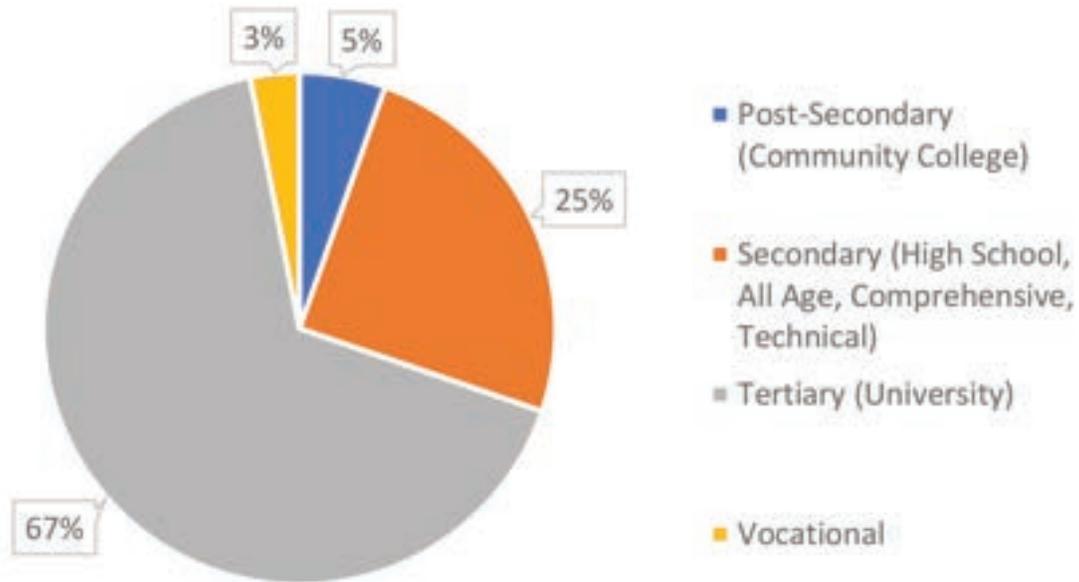
**Figure 6: Respondents' length of residence in the parish**

53% of the respondents indicated that they currently live with family, while 32%, indicated renting or leasing their place of residence. 6% of the respondents responded living with friends and owning their home, respectively. None of the respondents reported being homeless.



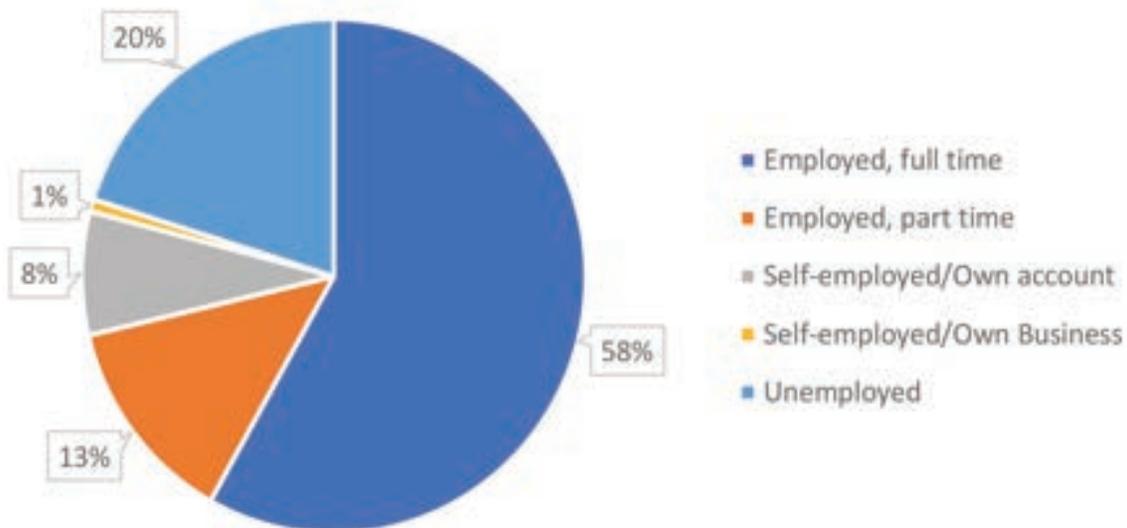
**Figure 7: Respondents' living situation**

Regarding educational attainment, 67% of respondents indicated that they have some level of tertiary education, 25% possess secondary-level education, 5% are educated up the post-secondary level and 3% have attained vocational training.



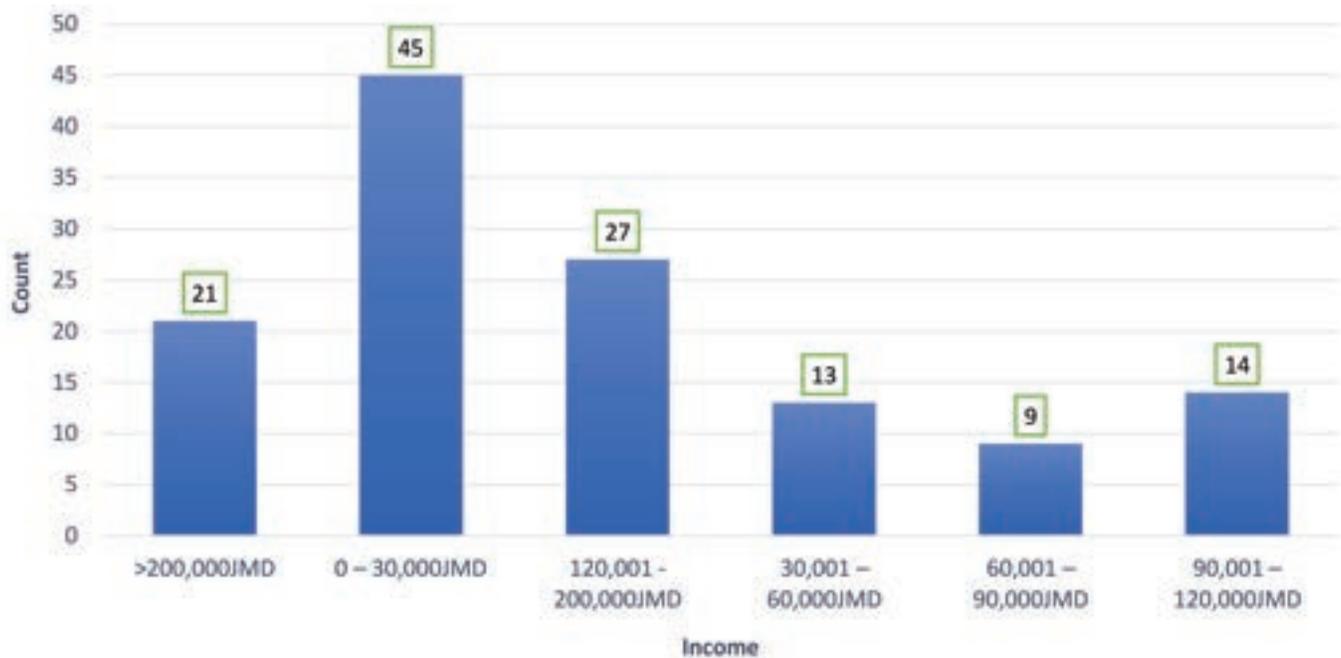
**Figure 8: Respondents' highest level of education**

58% of the respondents reported being employed full-time; 13% reported being employed part-time, while 20% of respondents reported being unemployed. Of the unemployed group, 96.2% identified as LGBTQ+ persons.



**Figure 9: Employment status of the respondents**

Earning from employment was represented mostly by those indicating making 0 – 30000JMD monthly (n=45; 34.9%) followed by those making 120,001 – 200,000JMD (n=27; 20.9%) and >200,000JMD (n= 21; 16.3%) monthly.



**Figure 10: Distribution of respondents' earnings from employment**

Of the respondents indicating that they earn 0 – 30,000JMD monthly, 48.9% were self-employed while 37.8% were employed to a company (17.8% - full-time and 20.0% - part – time), with the remainder being unemployed. 68.9% of this group of respondents were between the ages of 16 -24 years, while 24.4% were aged 25 – 34 years. 84.4% identified as members of the LGBTQ+ community. Residents of Kingston and St. Andrew, accounted for 80.9% of those earning greater than 200,000JMD and 59.2% of those earning between 120,000 – 200,000JMD.

In terms of vehicle ownership, only 23.4% of respondents reported owning a vehicle, the remaining 76.6% reported not owning a vehicle. Within the income category 37.0% of those earning between 120,000JMD – 200,000JMD reported owning a vehicle, while 10.0% of those earning less than or equal to 120,000JMD reported earning a vehicle. 66.7% of those earning >200,000JMD monthly, reported owning a vehicle.

## 5.2. Climate Change Related Knowledge and Behaviors

All 129 respondents reported having heard about global warming or climate change. However, 97.7% reported knowing what global warming or climate change was. Following on this, 92.2% of the respondents thought that climate change is caused by humans. There was an almost equal distribution among the responses for the question asking if respondents thought climate change could be avoided; 34.9% said no and yes, respectively, while 30.2% responded maybe. When asked about where they got information related to climate change, majority (n=107) reported getting information from social media. The next most popular source of climate change information for the respondents was their own research (n=93), followed by international media (n=87) and local television and school (n=72).

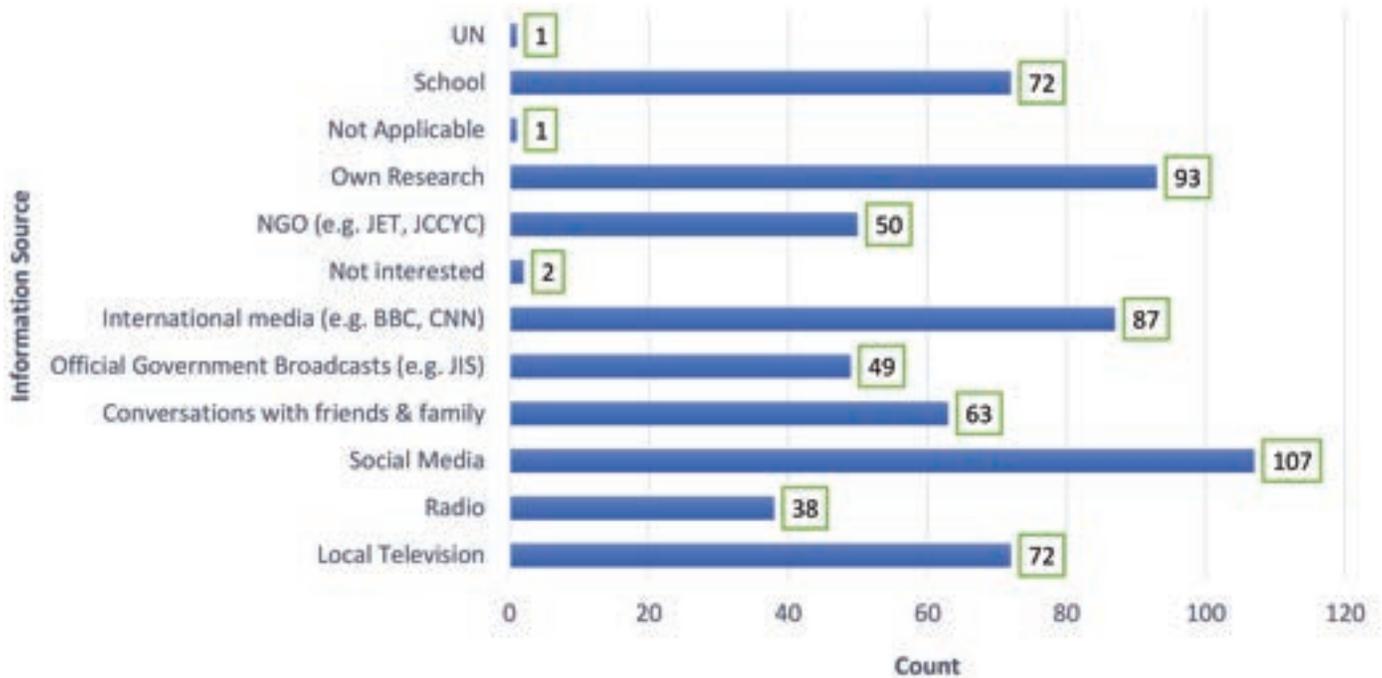


Figure 11: Respondents' source of climate change information

Respondents were surveyed about their understanding of what causes climate change. 112 respondents selected pollution, while 107 selected burning of fossil fuels. 94 respondents recognized increased motor vehicle use as a cause for climate change, while 91 respondents cited the rapid development of industries.

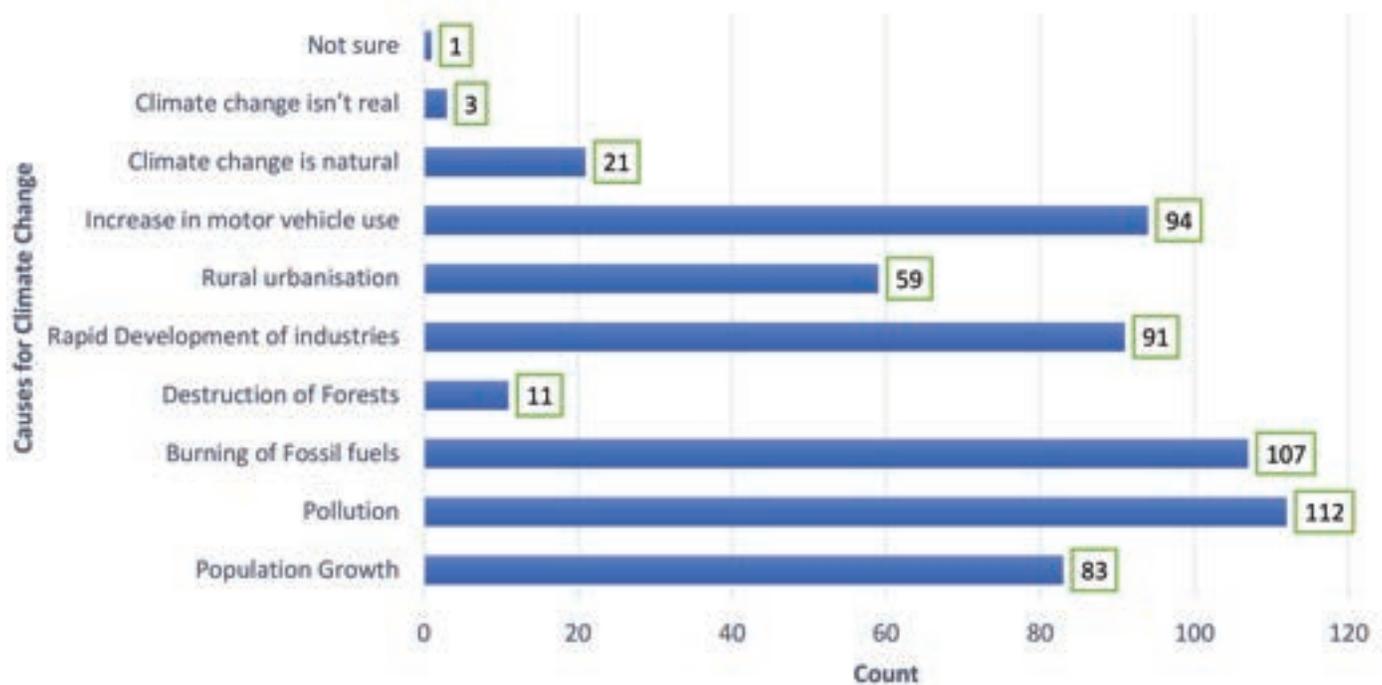


Figure 12: Perceived causes of climate change

76.0% of the respondents reported that they were willing to make personal sacrifices to solve existing environmental problems such as climate change. 20.9% of the respondent indicated that they may be willing to make such sacrifices, while the remaining 3.1% responded that were not willing to make these sacrifices to solve environmental problems. Following this, 72.9% of the respondents reported that environmental impacts influenced how, and where the spent money, while 15.5% said there was no such influence. The remaining 11.6% of the respondents were unsure in this regard. 65.9% of the respondents reported having participated in environmental protection activities, such as beach clean-up, at least once in their lifetime, while 25.6% reported having never participated in any such activity. Of the persons who reported previous participation in environmental protection activities, 24.7% reported earning more than 200,000JMD monthly, while 30.6% reported earning 0 – 30,000JMD monthly.

36.7% of the respondents who reported a willingness to make sacrifices for environmental protection reported earnings of 0 – 30,000JMD per month. 18.9% of those earning greater than or equal to 120,000JMD were willing to make these sacrifices. Similarly, 80% of those earning within the 0 – 30,000JMD range indicated a willingness to make sacrifices for environmental protection while only 37.7% of those earning greater than or equal to 120,000JMD indicated a similar willingness. 74.3% of those identifying as LGBTQ+ indicated a willingness to make sacrifices for the environment, this was 80.8% among those identifying as being non-LGBTQ+ persons.

62.1% of those reporting their highest educational attainment as being secondary school level reported a similar willingness to make sacrifices to ensure environmental protection, while this number was 79.1% among those who reported their highest level of education as being at the tertiary level.

34% of the respondents that reported environmental influence on where and how they spend reported earing 0 – 30,000JMD per month, while 18.1% reported earning at least 120,000JMD per month. Among those that reported being a member of the LGBTQ+ community, 69.3% reported environmental impacts on their

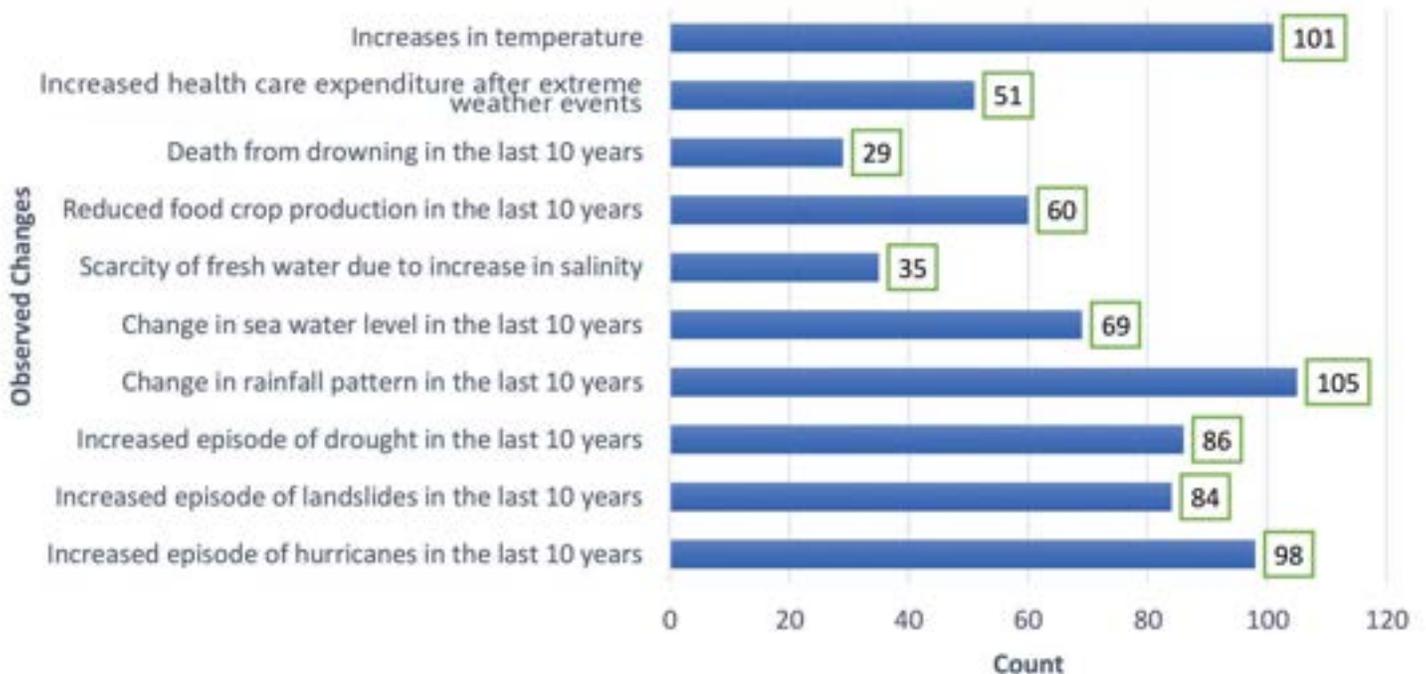


Figure 13: Observed climatic changes within the last 10 years

spending habits, while this number was 84.6% among those that reported being a non-LGBTQ+ Jamaican. Among those that reported having tertiary level education, 67.4% reported environmental influence on their spending patterns; this number was 84.4% among those reporting only secondary education. Chi-test results indicate that neither income, sexual identity nor education were significantly associated with environmental influence or spending patterns.

### 5.3. Experiences with ‘Natural’ Disasters

Respondents reported noticeable changes in weather activities within the last decade. 105 respondents (81%) reported changes in rainfall patterns, while 101 (78%) indicated that temperatures have increased. 98 respondents (76%) noted that the number of hurricanes has increased, whereas 86 (67%) and 84 (65%) respondents reported increases in droughts and floods, respectively.

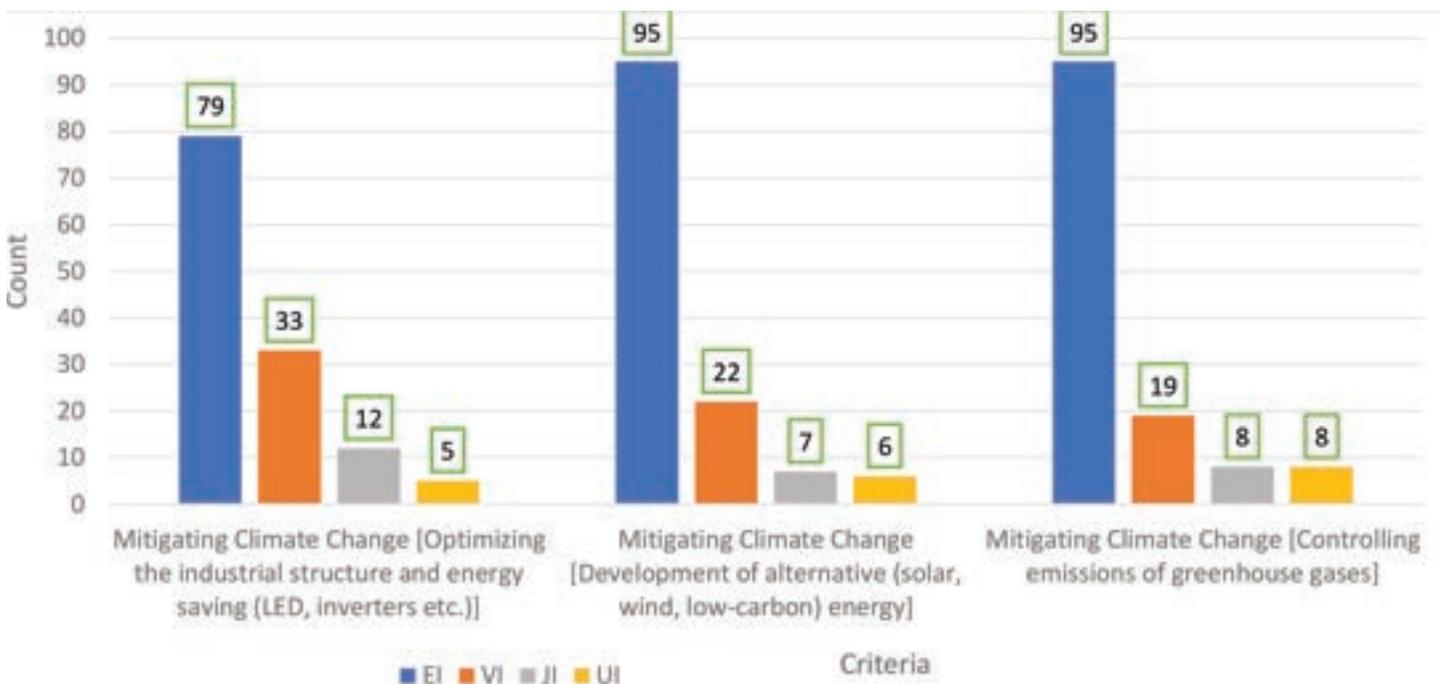


Figure 14: Observed climatic changes within the last 10 years

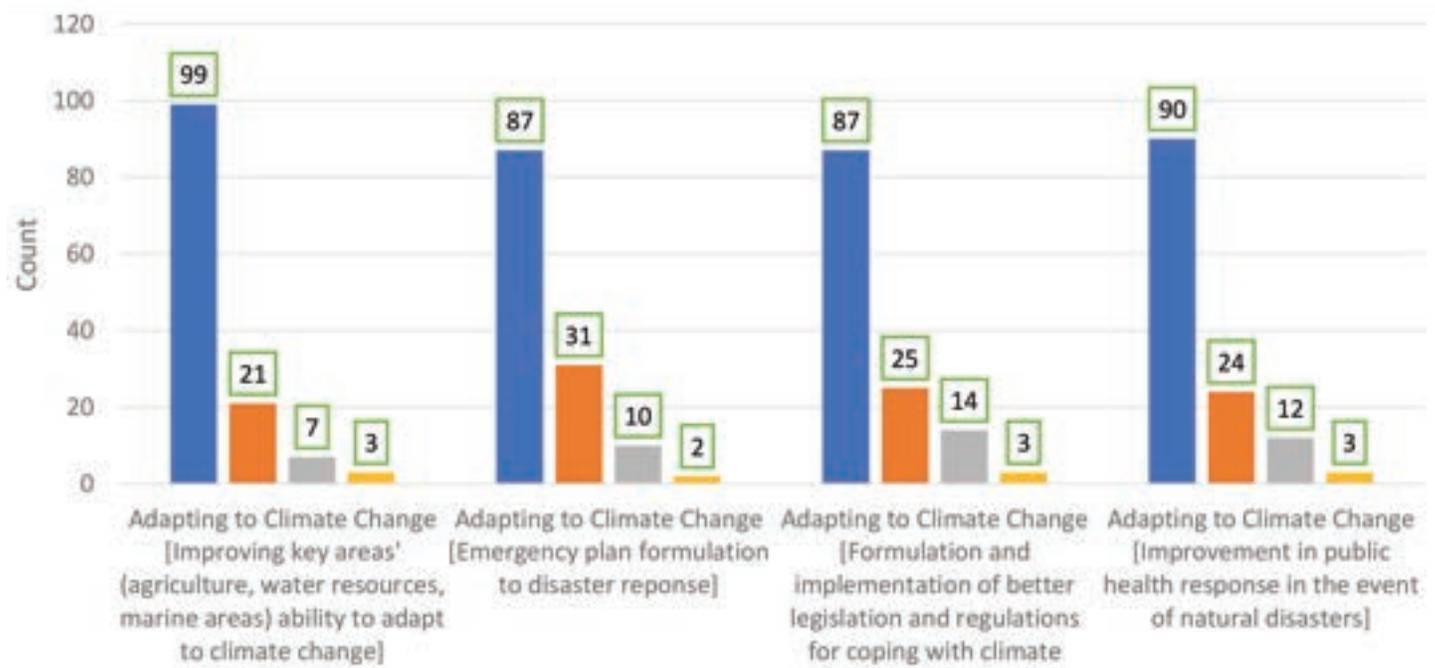
Despite the observed changes reported by the respondents, 94.4% reported never having to relocate during a disaster. Of the 5.6% (n=7) respondents that reported having to relocate during a disaster, 28.6% (n=2) reported having to relocate to an emergency shelter, while 57.1% (n=4) reported that they never had to relocate to an emergency shelter. All 7 respondents that reported having to relocate during a disaster, indicated that they are a member of the LGBTQ+ community. Similarly, the 2 respondents who reported relocating to an emergency shelter reported being a member of the LGBTQ+ community.

Significant Spearman’s rank correlations are given in Table 2.

### 5.4. Perceptions of Government action

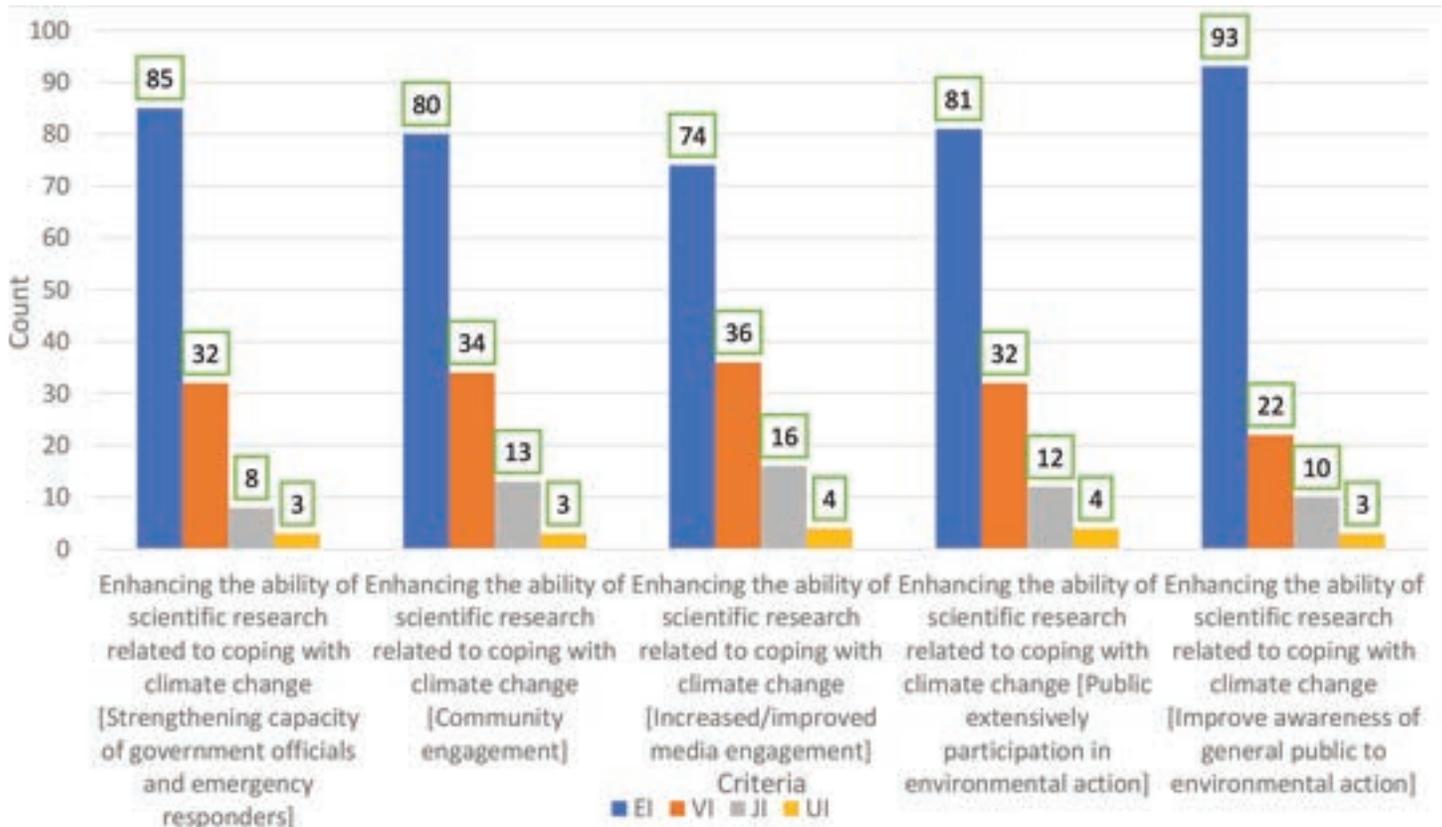
Perceptions towards government action were measured on a 4-point Likert scale, using the following key: EI=Extremely important; VI=Very important; JI = Just Important; UI = Unimportant. Perceptions were assessed on three actions: mitigating climate change, adapting to climate change and enhancing the ability of scientific research related to coping with climate change. All three criteria related to mitigating climate change were

deemed as being extremely important by the respondents, with 95 persons (74%) each, stating that they think it was extremely important to control greenhouse gas emissions and develop alternative energy solutions. 79 persons (61%) thought it was extremely important to optimise industrial structure around energy saving.



**Figure 15: Perceptions of government action towards mitigating climate change**

With respect to climate change adaption, all four criteria were seen as important by majority of the respondents. 87 persons (67%) each responded that emergency plan formulation and improving the legislations for coping with climate change were extremely important. 99 respondents (77%) thought it was extremely important to improve key areas, such as agriculture and water sector, to adapt to climate change and 90 persons (70%) thought it is extremely important to improve public health response to natural disasters.



**Figure 16: Perceptions of government action towards enhancing the ability of scientific research related to coping with climate change**

Similarly, enhancing the ability of scientific research related to coping with climate change was seen as an important step towards addressing climate change among the respondents. Of all the criteria, improving awareness of the general public was seen as the most important, with 93 respondents (72%) selecting extremely important for this criterion.

Table 2: Spearman's rank correlations for demographic characteristics, environmental beliefs and behavior

		Living Situation	Highest level of education	Employment Status	Monthly income	Vehicle ownership	Influence of environmental impacts on consumer spending	Participation in environmental protection activities
Age Group	rho	-.320**	.285**	-.356**	.439**	-.378**	.301**	
	p	.000	.001	.000	.000	.000	.001	
	N	129	129	129	129	128	129	
Sexual Identity	rho					-.243**		
	p					.006		
	N					128		
Gender Identity	rho		-.255**					
	p		.005					
	N		119					
Length of Residence	rho	.305**		.282**	-.342**			
	p	.000		.001	.000			
	N	128		128	128			
Living Situation	rho			.234**	-.347**	.333**		
	p			.008	.000	.000		
	N			129	129	128		
Highest level of education	rho							-.345**
	p							.000
	N							129
Monthly income	rho			-.592**		-.480**		-.257**
	p			.000		.000		.003
	N			129		128		129
Human activities as cause of climate change	rho							.239**
	p							.006
	N							129
Willingness to make sacrifices	rho						.320**	.247**
	p						.000	.005
	N						129	129

### 5.5. Predicting behaviors and risk vulnerability

Linear regression models were done to understand and predict the impact of income, sexual identity, age and living situation on vehicle ownership. The prediction equation was:

$$\text{Vehicle Ownership} = 2.152 - 0.072(\text{income}) - 0.125(\text{age}) - 0.125(\text{sexual identity}) + 0.084(\text{living situation})$$

All four variables statistically significantly predicted vehicle ownership,  $F(4, 127) = 15.406$ ,  $p < 0.0005$ , accounting for 33.4% of the variation in vehicle ownership with adjusted  $R^2 = 31.2\%$ , a medium size effect (Hemphill, 2003).

Similarly, a linear regression model was done to predict participation in environment protection activities. The equation obtained was:

$$\text{Participation} = 2.164 - 0.082(\text{income}) + 0.286(\text{willingness to sacrifice}) - 0.323(\text{education level})$$

All three variables statistically significantly predicted participation,  $F(3, 128) = 15.721$ ,  $p < 0.0005$ , accounting for 27.4% of the variation in participation, with adjusted  $R^2 = 25.7\%$ .

### 5.6. Principal Component Analysis

A principal components analysis (PCA) was ran using nine (9) variables of the 14-question demographic section of the survey instrument based on the correlation statistics Table 2. The overall Kaiser-Meyer-Olkin (KMO) measure was 0.703, however individual KMO measures were not all greater than 0.7, indicating that sampling for each variable can be classified as ‘middling’ to ‘mediocre’ according to (Kaiser, 1974), indicating that that the interpretability of PCA results might be limited. Bartlett’s Test of Sphericity was statistically significant ( $p < .0005$ ), indicating that the data was likely factorizable. Notwithstanding, PCA revealed three components that had eigenvalues greater than one (1) and which explained 30.7%, 14.4% and 11.5% of the total variance, respectively. Visual inspection of the scree plot indicated that these components should be retained (Cattell, 1966). In addition, the two-component solution was interpretable.

The four-component solution explained 56.6% of the total variance. The interpretation of the data was consistent previous studies on attributes of the Jamaican LGBTQ+ community (Christie, 2020; Moore, 2019, 2020). Component loadings and communalities of the rotated solution are presented in Table 3. Due to the negative correlations, those items were reverse coded to facilitate the PCA and Cronbach’s  $\alpha$  (Distefano et al., 2008). Cronbach’s  $\alpha$  was 0.672 for these 9 items.

**Table 3.** Due to the negative correlations, those items were reverse coded to facilitate the PCA and Cronbach's  $\alpha$  (Distefano et al., 2008). Cronbach's  $\alpha$  was 0.672 for these 9 items.

**Table 3: Factor loading of different components obtained from PCA**

Factors	Components		
	Quality of Life	Job/Housing Security	Access and Social Rank
Do you own a vehicle?	0.749		
What is your sexual identity?	0.643		
To what age group do you belong?	0.612		
What is your living situation?	0.455		
How long have you lived in this community?		0.709	
What is your monthly income?	0.418	0.712	
Employment Status: (select one)		0.709	
What is your gender identity?			0.841
What is your highest level of education?			0.738
<b>Number of Items</b>	<b>5</b>	<b>3</b>	<b>2</b>
<b>Eigenvalue</b>	<b>2.764</b>	<b>1.293</b>	<b>1.038</b>
<b>Percentage of variance explained</b>	<b>30.712</b>	<b>14.367</b>	<b>11.535</b>
<b>Total percentage of variance explained</b>	<b>56.615</b>		

## 6. Analysis and Discussion

The results indicated that there is some level of climate risks within the LGBTQ+ community relative to the wider Jamaican population. Here, climate risk is assessed based on; 1) exposure - the likelihood of a disaster happening and the severity of the disaster, and 2) vulnerability - the ability to respond to the disaster (Eckstein et al., 2019). The first variable, i.e., exposure, is related to climatic conditions, and is out of the direct control of humans, as even without anthropogenic climate change, disasters will happen. The second variable, i.e., vulnerability, is critical to our understanding of response mechanisms at various levels, i.e., governmental, community or personal (Eckstein et al., 2019). The ability of persons to respond to a disaster is linked to key demographic characteristics (Colfer et al., 2018; Gonzalez, 2020; Vinyeta et al., 2016) such as income level, attitudes and behaviors; these may be linked to education level, as well as knowledge of and risk perceptions related to climate change.

Unemployment was expressed at a higher rate among the LGBTQ+ respondents compared to the non-LGBT respondents (Christie, 2020; JFLAG, 2018; Moore, 2020). Also, earnings from employment were lowest among the LGBTQ+ and younger survey respondents. This suggests that these groups may have a reduced capacity to act in the event of a climate disaster where financial capital is necessary. Income level was significantly associated with employment status, which, aside from the obvious lack of earning from being unemployed, means that the quality of employment is also important in assessing one's financial freedom and status. Therefore, as it relates to financial status, LGBTQ+ persons appear to be more vulnerable when compared to non-LGBTQ+ Jamaicans.

LGBTQ+ persons in Jamaica have been known to suffer from homelessness and displacement (Christie, 2020; JFLAG, 2018; Moore, 2020). This results in LGBTQ+ persons relocating frequently. The results suggests that LGBTQ+ and non-LGBTQ+ persons relocate at a similar rate. Considering the relative age of the survey respondents, this is expected, as persons tend to relocate for work and school especially if they reside in rural areas where employment and higher education opportunities may be low. In fact, when asked the reasons for relocating, educational (33%) and employment (23%) opportunities were the two most popular responses. 10% reported relocating because of discrimination; all these persons identified as a member of the LGBTQ+ community, indicating that discrimination is a key motivational driver of behaviors within the LGBTQ+ community compared to the non-LGBTQ+ population.

Vehicle ownership was assessed as a proxy for the ability of persons to relocate, if necessary, during, before or after a weather event. In the event of a disaster, evacuation may be necessary and in extreme events, evacuated persons may be permanently displaced (Gonzalez, 2020; McLeman, 2018b). Most persons reported not owning a vehicle, and this was significantly associated with income. This further underscore the earlier point that employment status, and the quality of employment available is important to addressing climate risk vulnerabilities.

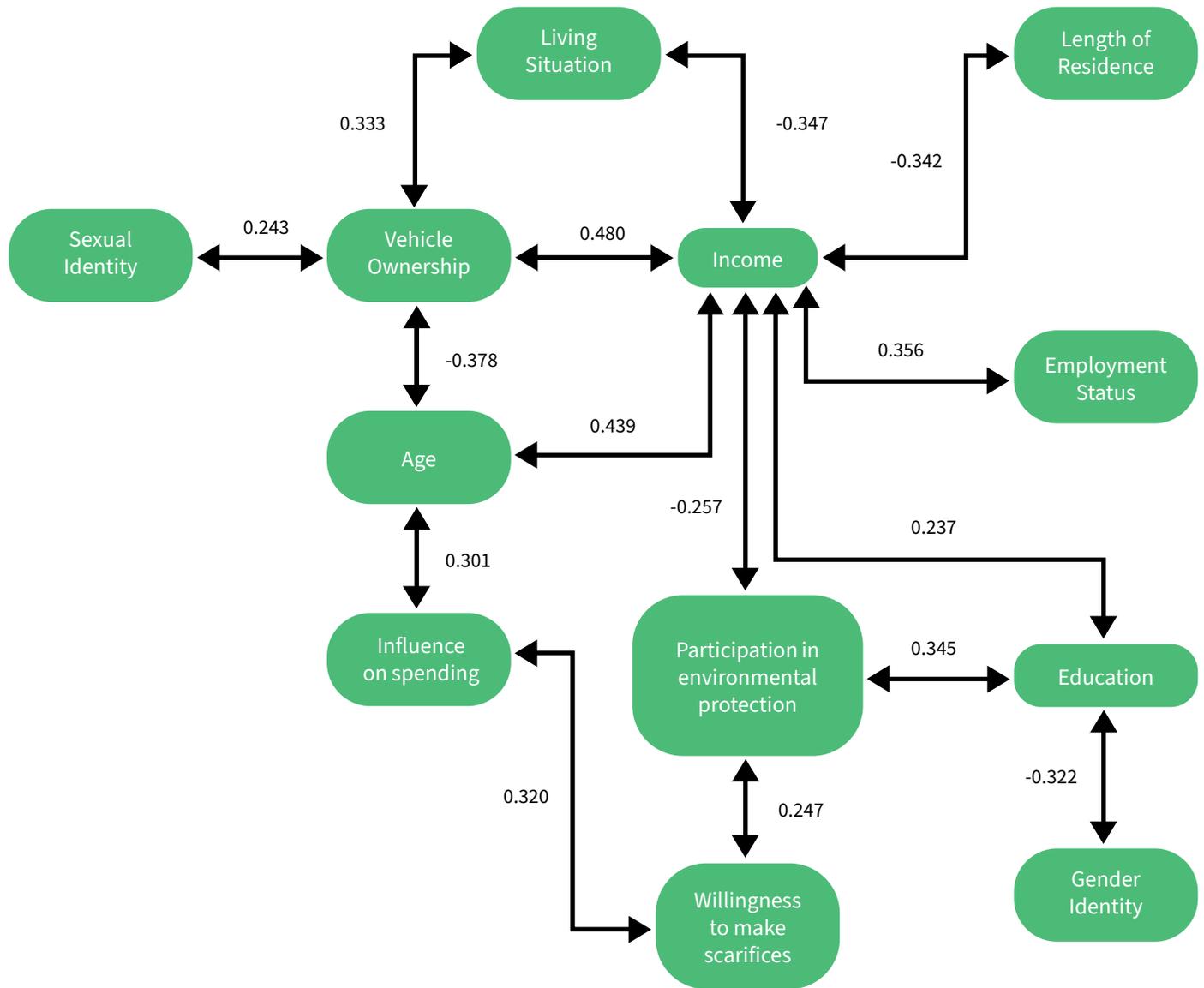
Even though all respondents reported knowing of climate change and global warming in addition to demonstrating positive knowledge-seeking behaviors, there is cause for concern as it relates to taking actions to mitigate climate risks. Most respondents reported observing one or more indicators of climate change, such as rising temperatures and more frequent and intense hurricanes. There was also an overwhelming willingness to make sacrifices to ensure environmental protection, as well as pro-environment consumer choices and behaviors. However, these attitudes and behavior were expressed more significantly among those reporting earning <30,000JMD monthly. Income was significantly associated with these variables, supporting earlier conclusions. These positive behaviors and attitudes were also observed at a higher percentage among those who reported having tertiary level education. However, educational attainment only seemed to have a significant impact on pro-environmental behaviors, such as participating in environmental protection activities (e.g., beach clean-up) and not persons willingness to adjust for the sake of environmental protection.

Educational attainment has been proven to be a good predictor of climate risk perceptions globally (Lee et al., 2015). However, in marginalized communities, this may be constrained by other factors such as income, as in the case of Jamaica.

Even though the associations were not significant, the linkages between educational attainment and pro-environmental behaviors need to be explored further as relates to norm activation (Koger & Winter, 2011) within the LGBTQ+ community. This is being suggested as knowledge of climate change may not be as significant a driver as attitudes and behaviors within this marginalized group (Shi et al., 2016). Terror-management theory suggests that persons and groups will act in the best interest of their own survival and self-preservation and that pro-environment behavior will occur only if the threat of environmental degradation is perceived as higher than other more imminent ones (Fritsche et al., 2010; Greenberg & Arndt, 2011). Therefore, as a marginalized group that faces oppression and violence as risks to their survival, LGBTQ+ Jamaicans are likely to put personal safety above environmental protection and even financial prudence. These phenomena should be further explored to better understand what drives pro-environment consumerism and climate smart behaviors among LGBTQ+ Jamaicans (Newell et al., 2014). Notwithstanding, the results are promising in that, LGBTQ+ Jamaicans appear to value environmental protection and have the appropriate risk perceptions to be willing to make sacrifices and take necessary action for the benefit of the environment. This is also supported by the fact that perceptions towards government actions were in alignment with pro-environment behaviors and attitudes, although these were not significantly correlated.

Despite the overwhelming reports of changes to weather patterns within the last decade, majority (94%) of the respondents reported never having to relocate during, or because of a natural disaster. However, all respondents who reported having to relocate, identified as members of the LGBTQ+ community. Though these variables were not significantly correlated, it is worth further investigation. The data does suggest that LGBTQ+ persons may be at greater risk of displacement during an extreme event, however, this conclusion is constrained by the fact that a probability sampling was not feasible given the lack of information on members of the community.

Spearman's rank correlation data (Table 2) supports previous claims made on the importance of income within the LGBTQ+ community. Vehicle ownership was significantly negatively correlated to both income and sexual identity. This means the non-LGBTQ+ Jamaicans and those earning lower salaries were less likely to own vehicles. Income was also negatively correlated to living situation, meaning that those earning higher salaries tended to live on their own, either renting or owning their home. These results are consistent with expectations. Gender identity was linked to income through its negative correlation with education level (Figure 17). The correlations suggests that trans identified Jamaicans were less likely to have tertiary level education (Christie, 2020) – and are therefore less likely to earn higher incomes and own vehicles. This is consistent with the wider LGBTQ+ community (Moore, 2020). Correlations are illustrated in Figure 17, negative correlations are highlighted in red.

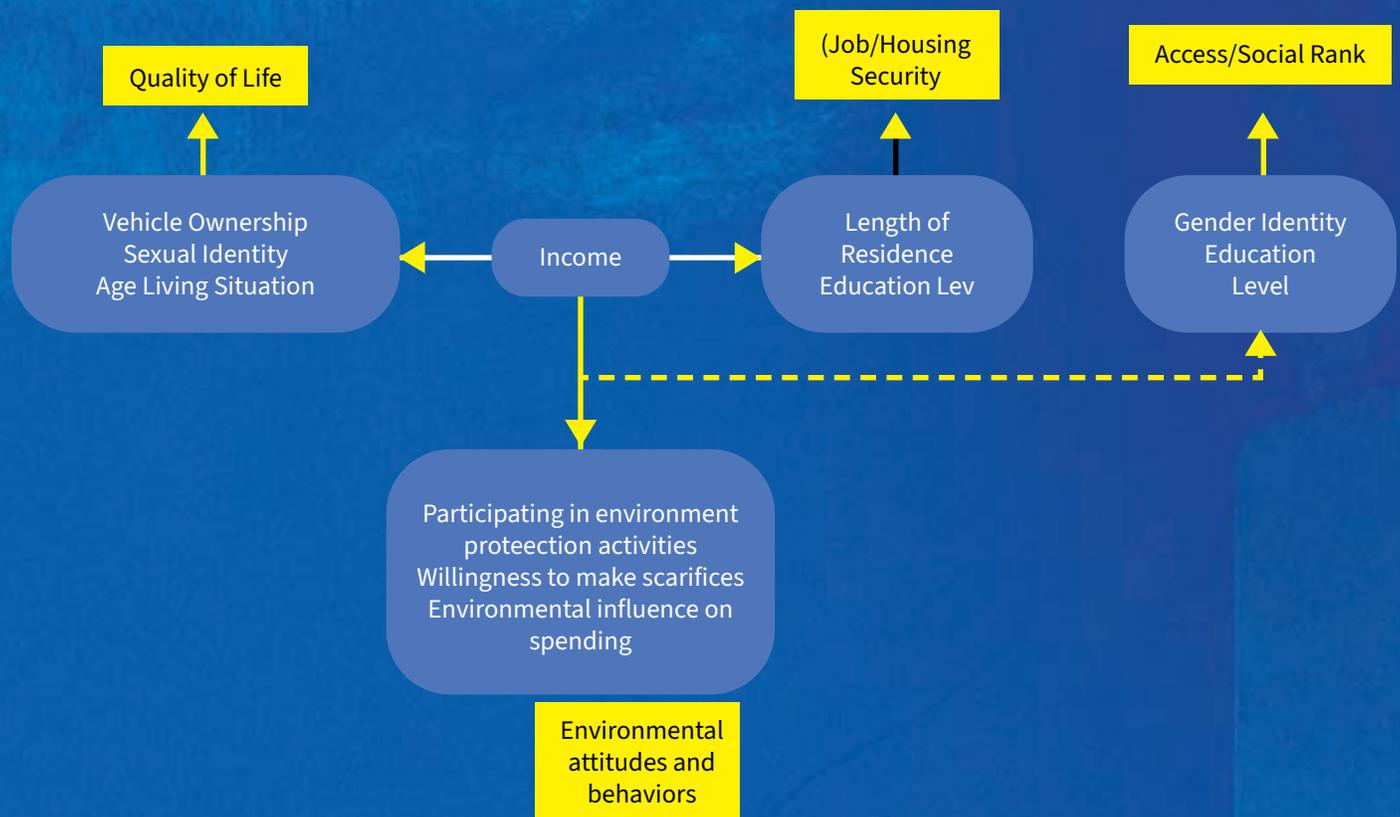


**Figure 17: Correlations diagram from demographic characteristics attitude and behaviors.**

The prediction models showed that income is central to the environmental attitudes and behavior of LGBTQ+ persons. It is also important in determining how vulnerable these persons are during the event of a disaster. Predictions were made for an LGBTQ+ person, aged 25-34, who is earning 120,000 - 200,000JMD monthly and renting a house/apartment. The model predicted that this person would not own a vehicle. In contrast, the model predicted that a non-LGBTQ+ person with a similar profile, was more likely to own a vehicle. Even though income was not predicted by sexual identity in this study, previous studies have demonstrated that LGBTQ+ Jamaicans earn less than non-LGBTQ+ Jamaicans, primarily due to being employed in low skilled sectors and being employed part-time (Moore, 2020). Also, income and sexual identity as a predictors of vehicle ownership suggests that these two variables are interconnected.

Based on the principal factor analysis, three components: Quality of life, Job/Housing Security and Access/Social Rank were explained by nine (9) factors (Figure 18). Income loaded significantly on two factors, again highlighting its centrality in building resilience. Sexual identity was one of four (4) factors that loaded on quality of life, indicating the importance of ensuring anti-discrimination is built into social security systems and disaster response strategies. In this case, quality of life and job/housing security are critical factors that can impact the ability of LGBTQ+ person's respond to disasters. As such barriers to their acquisition should be

addressed (JFLAG, 2018) in an attempt to build disaster risk resilience within the community.



**Figure 18: Centrality of income in explaining key factors for building resilience within the Jamaican LGBTQ+ community**

Access and Social Rank are also important in assessing certain barriers to entry for the LGBTQ+ community. Gender identity and education has been shown to create such barriers (Christie, 2020; Moore, 2019, 2020). Within the Jamaican LGBTQ+ community, trans identified persons are at higher risk of losses from disaster through reduced access to health services and their higher financial deprivations (Christie, 2020).

The component, ‘Environmental attitudes and behaviors’ was added to Figure 18, as income was related to these factors based on the correlations statistics (Table 2). Hence, the framework presented in Figure 18 can be used to explain the main drivers of environmental action and climate risk vulnerability within the LGBTQ+ community. This framework can be verified in the testing phase of this study. The reliability of the instrument to measure this construct was moderate ( $\alpha = 0.672$ ) (Bujang et al., 2018). Therefore, the instrument needs to be refined to improve the reliability. The use of Likert-scales with questions asking persons to self-report on the factors might help in this regard.

Predictions were also made for participation in environmental protection activities for an individual who is earning 30,000 – 60,000JMD monthly, who has tertiary level education and was willing to make sacrifices for environmental protection. The model predicted that this person would be likely participate in an environmental protection program. Correlation statistics (Table 2 and Figure 17) suggests that those who have higher level education, higher salaries and a willingness to make sacrifices for the environment were more likely to participate in environmental protection activities.

## 7. Conclusion & Recommendations

The presented study assessed vulnerabilities of LGBTQ+ Jamaicans as it relates to the impacts of climate change. The data suggests that income is centrally linked to the quality of life, job and housing security, social rank and access, as well as pro-environmental attitudes and behaviors of LGBTQ+ Jamaicans. Simple linear regression models predicted that between a non-LGBTQ+ Jamaican and an LGBTQ+ Jamaican with a similar demographic profile, the non-LGBTQ+ person is more likely to own a vehicle. Even though vehicle ownership was used as a proxy for assessing the capacity to act in the event of a disaster, access (broadly) to vehicular transportation could possibly be a more useful proxy. That is, assessing if anyone within the household owns a vehicle or if persons live in an area that is serviced by public transportation or how easy/difficult it is to access chartered/private transportation.

Higher salaries and higher educational attainment were also predictors of pro-environmental behaviors. These results support previous findings that barriers to employment and education within the LGBTQ+ population reinforces their oppression, marginalization, and ensuing vulnerabilities. In order to ensure that LGBTQ+ persons are not disproportionately affected by climate change, these must be addressed with the aim of ensuring equity in access to education, meaningful employment and housing. The study showed moderate reliability based on Cronbach's  $\alpha$ , and as such recommendations are made to improve this and strengthen the validity of the conclusions. Some considerations for future research of this nature are:

1. Based on knowledge of the experiences of the Jamaican LGBTQ+ community, develop an instrument using Likert scales to evaluate impact. For example, questions such as “during the passage of a hurricane, did you have enough food at home to last until clearance was given for the reopening of business places” could be asked.
2. Shorten the survey and make it targeted to test no more than two constructs related to the theoretical model.
3. Use a snowball sampling method for future studies to improve response rates.
4. Using the known LGBTQ+ community as the sampling frame, recruit respondents using probability sampling methods to ensure generalizability of findings.
5. Collect additional qualitative data using focus group discussions (FGDs). The FGDs can serve as the primary data collection mechanism toward a Needs Assessment for addressing any gaps in the disaster risk management framework.

Also, a review of the local framework for disaster risk management revealed a lack of intentionality in addressing the specific needs of vulnerable groups outside of the elderly and disabled communities. Therefore, additional recommendations are being proposed:

1. Increase advocacy around access to education and employment within the LGBTQ+ population.
  - a. This should center the need for anti-discrimination policies and legislations, as well as support for diversity and inclusion services across public institutions. Legislation that supports the implementation of similar policies within the private sector should also be considered.
2. Increase public education and engagement around the need for inclusion and tolerance among the wider Jamaican population.
  - a. Increasing awareness around the non-discriminatory impacts of climate change will increase public calls for equity in the response mechanisms and resource allocations.
3. Conduct similar sensitization and training sessions for members of institutions involved in climate response as has been done with health care workers, these include:

- a. ODPEM
  - b. CCD
  - c. Ministry of Local Government
  - d. Environmental and climate change NGOs
  - e. Private sector companies
4. Form partnerships with organizations doing climate change research and advocacy to ensure intentionality when conducting research that is meant to be ‘intersectional’.

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## Appendix 1 – Crosstabulation data for perceptions of government (percept\_govt) action with demographic variables

Table 4: Crosstabulation data for perceptions of government action with age group

		To what age group do you belong?				Total
		16-24	25-34	34-44	45-59	
<b>EI</b>	Count	392	496	91	46	1025
	% within percept_govt	38.2%	48.4%	8.9%	4.5%	
<b>VI</b>	Count	111	197	10	9	327
	% within percept_govt	33.9%	60.2%	3.1%	2.8%	
<b>JI</b>	Count	48	74	2	5	129
	% within percept_govt	37.2%	57.4%	1.6%	3.9%	
<b>UI</b>	Count	17	25	5	0	47
	% within percept_govt	36.2%	53.2%	10.6%	0.0%	
<b>Total</b>	Count	48	66	9	5	128

Table 5: Crosstabulation data for perceptions of government action with sexual identity

		What is your sexual identity?			Total
		LGBT	NON-LGBT	Prefer Not to Say	
<b>EI</b>	Count	809	204	12	1025
	% within percept_govt	78.9%	19.9%	1.2%	
<b>VI</b>	Count	253	74	0	327
	% within percept_govt	77.4%	22.6%	0.0%	
<b>JI</b>	Count	100	20	9	129
	% within percept_govt	77.5%	15.5%	7.0%	
<b>UI</b>	Count	43	1	3	47
	% within percept_govt	91.5%	2.1%	6.4%	
<b>Total</b>	Count	101	25	2	128

Table 6: Crosstabulation data for perceptions of government action with education

		What is your highest level of education?				
		Secondary	Post-Secondary	Tertiary	Vocational	Total
<b>EI</b>	Count	269	65	651	40	1025
	% within percept_govt	26.2%	6.3%	63.5%	3.9%	
<b>VI</b>	Count	73	13	233	8	327
	% within percept_govt	22.3%	4.0%	71.3%	2.4%	
<b>JI</b>	Count	22	6	101	0	129
	% within percept_govt	17.1%	4.7%	78.3%	0.0%	
<b>UI</b>	Count	7	0	40	0	47
	% within percept_govt	14.9%	0.0%	85.1%	0.0%	
<b>Total</b>	Count	31	7	86	4	128

Table 7: Crosstabulation data for perceptions of government action with income

		What is your monthly income?						
		0 - 30,000	30,000 - 60,000	60,000 - 90,000	90,000 - 120,000	120,000 - 200,000	>200,000	Total
<b>EI</b>	Count	337	112	69	91	232	184	1025
	% within percept_govt	32.9%	10.9%	6.7%	8.9%	22.6%	18.0%	
<b>VI</b>	Count	101	40	17	50	59	60	327
	% within percept_govt	30.9%	12.2%	5.2%	15.3%	18.0%	18.3%	
<b>JI</b>	Count	57	4	15	16	30	7	129
	% within percept_govt	44.2%	3.1%	11.6%	12.4%	23.3%	5.4%	
<b>UI</b>	Count	28	0	7	8	3	1	47
	% within percept_govt	59.6%	0.0%	14.9%	17.0%	6.4%	2.1%	
<b>Total</b>	Count	44	13	9	14	27	21	128

Table 8: Crosstabulation data for perceptions of government action with perception of causes of climate change

		Do you believe human activities (compared to the natural factors) is the main cause of climate change?		Total
		Yes		
<b>EI</b>	Count	955		955
	% within percept_govt	100.0%		
<b>VI</b>	Count	295		295
	% within percept_govt	100.0%		
<b>JI</b>	Count	123		123
	% within percept_govt	100.0%		
<b>UI</b>	Count	47		47
	% within percept_govt	100.0%		
<b>Total</b>	Count	119		119

Table 9: Crosstabulation data for perceptions of government action with willingness to make sacrifices for environmental protection

		Do you believe human activities (compared to the natural factors) is the main cause of climate change?			Total
		Yes	No	Maybe	
<b>EI</b>	Count	791	15	219	1025
	% within percept_govt	77.2%	1.5%	21.4%	
<b>VI</b>	Count	243	13	71	327
	% within percept_govt	74.3%	4.0%	21.7%	
<b>JI</b>	Count	86	13	30	129
	% within percept_govt	66.7%	10.1%	23.3%	
<b>UI</b>	Count	38	6	3	47
	% within percept_govt	80.9%	12.8%	6.4%	
<b>Total</b>	Count	97	4	27	128

Table 10: Crosstabulation data for perceptions of government action with environmental influences on consumer spending patterns

		Do you think that environmental impacts influence where or how you spend money?			Total
		Yes	No	Maybe	
<b>EI</b>	Count	746	152	127	1025
	% within percept_govt	72.8%	14.8%	12.4%	
<b>VI</b>	Count	222	53	52	327
	% within percept_govt	67.9%	16.2%	15.9%	
<b>JI</b>	Count	108	20	1	129
	% within percept_govt	83.7%	15.5%	0.8%	
<b>UI</b>	Count	32	15	0	47
	% within percept_govt	68.1%	31.9%	0.0%	
<b>Total</b>	Count	93	20	15	128

## Appendix 2 – Instrument

# Climate Risks and Vulnerabilities within the Jamaican LGBTQ Community

Equality JA is conducting a study to assess the attitudes and perception of Jamaicans towards climate change impacts and related government actions in Jamaica. The study will also assess the level of impact felt by these persons in the wake of climate change-related disasters.

The data collected from this survey will be used to document the experiences of the LGBTQ+ community during the passage of extreme climate events (e.g hurricanes). We will use the data to make recommendations that will serve the needs of the LGBTQ+ community and the wider Jamaican population in accessing emergency shelters and services as well as preparing for climate-related disasters.

This survey should take you no more than 15 minutes to complete. And, we encourage honest answers as best as possible to the questions.

All information recorded is strictly confidential.

For additional information, please feel free to contact us at [nickoy@equalityjamaica.org](mailto:nickoy@equalityjamaica.org); [kristi.loeqi@gmail.com](mailto:kristi.loeqi@gmail.com)

## \* Required

Please tell us about yourself.

## 1. To what age group do you belong? \*

Mark only one oval.

- 16 – 24
- 25 – 34
- 35 – 44
- 45 – 59
- 60 and older

## 2. What is your gender identity? \*

Mark only one oval.

- Cisgender Man
- Cisgender Woman
- Non-binary
- Transgender Man
- Transgender Woman
- Other: \_\_\_\_\_

## 3. What is your sexual identity? \*

Mark only one oval.

- Gay
- Lesbian
- Straight
- Bisexual
- Asexual
- Prefer not to say Other:

## 4. In which community do you reside?

\_\_\_\_\_

**5. How long have you lived in this community? \***

Mark only one oval.

- Less than 2 years
- 2 to 10 years
- More than 10 years, but not since birth
- Since Birth
- Don't know/Can't recall

**6. In which parish is this community? \***

Mark only one oval.

- Kingston
- Portland
- Trelawny
- Westmoreland
- Clarendon
- St. Andrew
- St. Thomas
- St. Mary
- St. Ann
- St. James
- Hanover
- St. Elizabeth
- Manchester
- St. Catherine

**7. If you have not lived in this community since birth, why did you move?**

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**8. What is your living situation? \***

Mark only one oval.

- Homeless
- Living with Family
- Living with Friends
- Living alone (Own Home)
- Living alone (Renting/Leasing)
- Living in a Shelter

Other: \_\_\_\_\_

**9. What is your living situation? \***

Mark only one oval.

- African Descent
- Maroon
- Chinese
- Indian
- Mixed
- White/European

Not Stated

Other: \_\_\_\_\_

**10. What is your living situation? \***

Mark only one oval.

- Primary/Elementary
- Secondary (High School, All Age,
- Comprehensive, Technical)
- Vocational
- Post-Secondary (Community College)
- Tertiary (University) Can't

Recall/Don't know Other: \_\_\_\_\_

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**11. Employment Status: (select one) \***

Mark only one oval.

- Employed, full time
- Employed, part time
- Unemployed
- Self-employed/Own Business
- Retired

**12. In which parish is this community? \***

Mark only one oval.

- Professional
- Technician
- Clerks
- Craft/Artisan
- Plant and Machine
- Operator
- Agricultural
- Service, Shop
- Elementary
- Occupation
- Student
- Housewife
- None
- Other: \_\_\_\_\_

**13. What is your monthly income? \***

Mark only one oval.

- 0 – 30,000JMD
- 30,001 – 60,000JMD
- 60,001 – 90,000JMD
- 90,001 – 120,000JMD
- 120,001 - 200,000JMD
- >200,000JMD

**Tell us what you know about climate change.****14. Do you own a vehicle? \***

Mark only one oval.

- Yes
- No

**15. Have you ever heard the phrase climate change or global warming? \***

Mark only one oval.

- Yes
- No
- Can't Recall

**16. Do you know what climate change or global warming is? \***

Mark only one oval.

- Yes
- No
- Maybe

**17. Where do you get your information about climate change? (Tick All that apply) \****Check all that apply.*

- Local Television
- Own Research
- Radio
- School
- Social Media
- Not Applicable
- Conversations with friends & family
- Official Government Broadcasts (e.g. JIS)
- International media (e.g. BBC, CNN)
- NGO (e.g. JET, JCCYC)
- Other: \_\_\_\_\_

**18. Do you believe human activities (compared to the natural factors) is the main cause of climate change? \***  
 Mark only one oval.

- Yes
- No
- Maybe

**19. Where do you get your information about climate change? (Tick All that apply) \***  
 Check all that apply.

- Population Growth
- Pollution
- Burning of Fossil fuels
- Destruction of Forests
- Rapid Development of industries
- Rural urbanization
- Increase in motor vehicle use
- Climate change is natural
- Climate change isn't real
- Decision of Government
- Not sure
- Other: \_\_\_\_\_

**20. Do you think climate change can be avoided? \***  
 Mark only one oval.

- Yes
- No

**21. Are you willing to sacrifice some individual benefit to solve existing environmental problems such as climate change? \***  
 Mark only one oval.

- Yes
- No

**22. Do you think that environmental impacts influence where or how you spend money? \***  
 Mark only one oval.

- Yes
- No

**23. Have you participated in any environmental protection activities (e.g. tree planting, recycling, beach clean-up) related to climate change? \***  
 Mark only one oval.

- Yes
- No

**24. If your answer to the previous questions is yes, please give some examples of these activities.**

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**Experience with Climate-Related Disasters**

**25. Have you noticed any of the following?**

**Tick all that apply: \***

*Check all that apply.*

- Increased number of hurricanes/flood in the last 10 years
- Increased number of landslides or land slippages in the last 10 years
- Increased episode of drought in the last 10 years
- Change in rainfall pattern (more or less rainfall) in the last 10 years
- Change in sea water level in the last 10 years  
Scarcity of fresh water due to increase in salinity
- Reduced food crop production in the last 10 years
- Death from drowning in the last 10 years
- Increased health care expenditure after extreme weather events
- Increases in temperature
- Other \_\_\_\_\_

**26. Have ever had to relocate from your home due to the effects of a natural disaster? (eg. flood, earthquake, landslide) \***

Mark only one oval.

- Yes
- No
- Can't recall

**27. Please tell us why.**

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**Share with us, your experiences with climate related disasters**

**28. If yes, how long ago was this? \***

Mark only one oval.

- Within the last year
- Within the last 2-3 years
- Within the last 4-5 years
- More than 5 years ago
- Not applicable

**29. Within the time period, you selected above, how many times have you had to relocate due to natural disasters? (leave blank if not applicable) \***

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**30. What steps have you taken to reduce your risk of damage from natural disasters? \***

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**31. Have you ever had to use an emergency shelter in Jamaica during the passage of a hurricane? \***

Mark only one oval.

- Yes
- No
- Can't recall
- I didn't know hurricane shelters existed

**32. If you had ever had to use an emergency shelter, were you comfortable discussing your gender identity? \***

Mark only one oval.

- Yes
- No
- Sometimes
- Not Applicable

**33. If you had ever had to use an emergency shelter, were you comfortable discussing your sexual identity? \***

Mark only one oval.

- Yes
- No
- Sometimes
- Not Applicable

**34. If you had ever had to use an emergency shelter, were you comfortable discussing your gender identity? \***

Mark only one oval.

- Yes
- No
- Maybe
- Can't recall
- Not Applicable

**35. How easy was it to access the emergency shelter? (That is, to find out where it was and to get there and benefit from the services they offered) \***

Mark only one oval.

- Very Difficult
- Difficult
- Easy
- Very Easy
- Not Applicable

**36. If you thought accessing the emergency shelter was difficult or very difficult, why did you think this was the case? (Tick All that apply) \***

Check all that apply.

- Limited access due to the number of persons that needed to use the shelter
- Limited access due to insufficient staffing at the shelter
- Stigma and discrimination from shelter staff
- Stigma and discrimination from other users at the shelter
- Not enough supplies to serve all those who needed to use the shelter
- Shelter was too far from where I live
- Could not get to shelter due to being cut off due to weather event I don't own a car/lack of transportation
- Other: \_\_\_\_\_

**37. For any of the barriers you experienced, were you able to lodge a complaint about it/them? \***

Mark only one oval.

- Yes
- No
- Not Applicable

**38. If yes, were those complaints addressed? \***

Mark only one oval.

- Yes
- No
- Not sure
- Not Applicable

## Perceptions of Government Actions

Tell us how you feel about the government’s actions as it relates to climate-related disasters.

Rank the following based on their importance using the scale: EI=Extremely important; VI=Very important; JI = Just Important; UI = Unimportant; NA =No answer was given.

**39. Mitigating Climate Change \***

Mark only one oval per row.

	EL	VL	JL	UL	NA
Optimizing the industrial structure and energy saving (LED, inverters etc.)	<input type="radio"/>				
Development of alternative (solar, wind, low-carbon) energy	<input type="radio"/>				
Controlling emissions of greenhouse gases	<input type="radio"/>				

**40. Adapting to Climate Change \***

Mark only one oval per row.

	EL	VL	JL	UL	NA
Improving key areas’ (agriculture, water resources, marine areas) ability to adapt to climate change	<input type="radio"/>				
Formulation and implementation of better legislation and regulations for coping with climate change	<input type="radio"/>				
Improvement in public health response in the event of natural disasters	<input type="radio"/>				





# J-FLAG

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