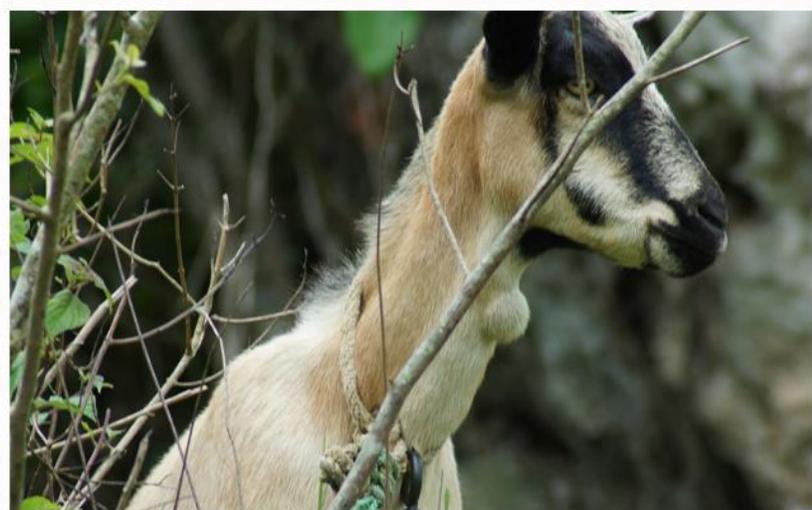


Japan-Caribbean Climate Change Partnership (J-CCCP) Project



RE: KAP/B Study Report- Climate Change Survey in Jamaica
Fr: Vilma Gregory, J-CCCP In Country Communications Consultant
15 November , 2016



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1. Executive Summary

The report highlights the findings from a survey conducted in October 2016 to determine the Knowledge, Attitude, Behaviour and Practices of persons in select areas of Jamaica as it relates to Climate Change.

The survey revealed that a significant 93% of participants had heard the term climate change; however, far less participants (42%) were familiar with the actual meaning of climate change, interpreting the phenomenon to mean “changes in climate”.

Most participants in the study – 83%, also agreed that community practices had led to some of the climate change indicators that they had heard of, had seen and had been dealing with in their communities. They identified environmental management issues such as burning garbage, throwing garbage in rivers, gullies and seas and burning coal. They recognised these as detrimental to their environment.

...while persons may not be 'au fait' with the phenomenon of climate change in its entirety, they are in fact aware that their day to day practices are negatively impacting their environment and wider communities

There was a high level of agreement (84%) that community practices had actually led to climate change. This indicated that while persons may not be *au fait* with the phenomenon of climate change in its entirety, they are in fact aware that their day to day practices are negatively impacting their environment and wider communities. The participants were able to articulate that climate change was manifesting itself through heat waves, extremely hot weather, flooding, prolonged dry season and extreme rainfall.

Participants in the study were aware that reducing certain practices (previously identified) would help them to manage the effects of climate change. However, they said categorically that the responsibility for management of the environment and the associated effects of climate change lies with individuals at the household level firstly and with the government secondly.

This is a strong indication that participants are eager to access information and to get exposure to techniques that will assist them in managing their environment and the effects of climate change.

Submitted by Vilma Gregory to the UNDP Barbados and OECS – 15 November, 2016
, December 01, 2016. Addendum added on February 7, 2017



The specific role of government regarding climate change is perceived as primarily that of public education; participants felt that use of the media and also teaching about climate change in schools via the curriculum would be the best way for positively impacting the knowledge, attitude and practices of Jamaicans to address climate change.

Key components of the communications strategy could consider:

- Conducting interactive town hall meetings to expose persons to information on climate change and to get the necessary information for developing some of the materials to flesh out the campaign
- Visiting select schools /associations/youth clubs to impart information on climate change – this approach will help to mould the younger generation to be more cognizant of climate change and their role in managing climate change
- Framing the content of the campaign to fill the knowledge gap related to the concept of climate change in a manner digestible by ordinary community folks across the demographic profiles that make up the target communities
- Using free-to-air station slots on TVJ and leading radio stations indicated in the survey as most frequently listened to, in order to convey correct practices to promote adaptation and mitigation [to and of climate change]
- Posting “catchy” information of social media platforms such as Facebook and YouTube to explain the phenomenon of climate change and to promulgate methods for managing the related issues at the household and community level



2. Background, Objectives and Methodology of the Study

2.1 Background

The study was conducted as a means of providing feedback to the Japan-Caribbean Climate Change Partnership Programme (JCCCPP), which aims to support Caribbean nations in their efforts to implement policies aimed at long-term planning for adaptation to climate change. The intention is to use the information to aid the development of appropriate Nationally Appropriate Mitigation Actions (NAMAs) and National Adaptation Plans (NAPs) and strengthen institutional capacity of the countries in the region.

More specifically, the findings of the study will be used to inform the strategy for making Jamaicans more climate-smart and will seek to influence prevailing negative behaviours and practices. The outcome is therefore generation of information and insights that will serve to underpin the wider programme needed to foster climate change adaptation, mitigation and disaster risk reduction among Jamaicans.

2.2 Objectives

The aim of this study is to gather information that will feed into the design of the communication campaign to increase awareness and knowledge of Climate Change. The outcome of the study is therefore intended to shed light on how to prepare the communication strategy component of the development of the NAMAS and NAP for Jamaica. Specifically, the objectives of the study are to:

- Determine the gaps in information on Climate Change among citizens across Jamaica regarding their awareness of what climate change is and indicators of climate change (awareness/knowledge)
- Determine how people view / feel about the phenomenon of climate change (attitude)
- Determine the extent to which citizens are carrying out practices at the household and community level that are impacted by climate change (behaviour/practices)



2.3 Methodology

A total of 500 persons were targeted at the household level for participation in this survey from among parishes, captured below.

- Kingston & St. Andrew
- St. Catherine
- Clarendon
- St. Ann
- Trelawny

These parishes were chosen because they represent a large percentage of the country's population.

Kingston and St. Andrew parishes have 24.6% of Jamaica's total population and St. Catherine 19.1%. Together these areas form just over 40% of Jamaica's population. As per the last national census, the 15 to 64 age group form 68% of the total population of Jamaica or just over 1.8 million Jamaicans. Population sizes between 1 million to just under 10 million require a sample size of a minimum of 784 participants to yield a 96% confidence level – with a margin of error at 3.5%. This is standard and acceptable sampling for this type of study internationally. ¹

The mix of Jamaica's topography and geography represented across the parishes ensured a broad participation of the occupational profile of Jamaicans engaged in farming, fisheries, tourism, retail trade and other professions. Hence the communities targeted included city areas as well as suburban/rural and coastal areas.

The data was gathered using a quantitative approach, relying on a structured questionnaire to gather the data. The instrument is captured in **Appendix 1**.

As proposed in the inception report, interviewers randomly selected households in pre-selected communities, targeting household members between 15 years to 64 years, that is, those considered among the working population in Jamaica. In each parish at least two (2) communities were targeted - in some cases three (3), ensuring inclusion of coastal and /or farming towns.

¹Planning Institute of Jamaica. Economic & Social Survey Jamaica 2015.



Due to limitations of time against a national survey sample, approximately 50% of the population in the targeted age groups was surveyed. A mini-sample of at least 30 persons per community was targeted per community.



2.4 3. Profile of the Participants

2.5 3.1 Sample Size & Location

As mentioned in the methodology, 500 participants were targeted for this study. While a total of 507 persons were actually interviewed, subsequent to the data validation and cleaning process, some of the interview results were rejected for quality control purposes.

A final total of 471 interviews ('N') were deemed adequate for consideration for the final report and this sample reflects the outcome of the survey as a representative sample of Jamaicans' awareness, knowledge, attitude, behaviour/practices towards climate change. ²

The sample was drawn from five (5) parishes across the island with the breakdown of the final sample size of 471 spread across them as follows: ³

1. Kingston & St. Andrew	- 137
2. St. Catherine	- 91
3. Clarendon	- 96
4. St. Ann	-73
5. Trelawny	-74

Figure 1 below provides a snapshot of the aggregate profile of the participants by gender, age and education, across the five (5) parishes.

Some of the parishes on the north coast (St. Ann and Trelawny) were chosen for sampling due to their current involvement in projects tracking the impact of climate change on their communities.

² The sample size of 471 is as significant a sample as the 500 targeted initially and the reduction in number of final participants in no way compromises the legitimacy of the findings, and subsequent interpretation and recommendations.

³ Communities targeted are listed in the Survey Instrument in Appendix 1

Figure 1: Profile of Participants in UNDP's Climate Change Survey, 2016

Participant's Profile by Gender, Parish, Age & Education (N=471)		Parishes						
		Number (N) & Percentage (%)	Kingston & St. Andrew	St. Catherine	Clarendon	St. Ann	Trelawny	Totals
Gender	Male	N	73	43	47	39	31	273
		%	53.3%	47.3%	49.0%	53.4%	41.9%	49.5%
	Female	N	64	48	49	34	43	238
		%	46.7%	52.7%	51.0%	46.6%	58.1%	50.5%
	Total	N	137	91	96	73	74	471
%		100%	100%	100%	100%	100%	100%	
Age	15-19	N	17	7	18	5	4	51
		%	12.4%	7.7%	18.8%	6.8%	5.4%	10.8%
	20-34	N	53	20	25	26	30	154
		%	38.7%	22.0%	26.0%	35.6%	40.5%	32.7%
	35-59	N	61	57	53	33	38	242
		%	44.5%	62.6%	55.2%	45.2%	51.4%	51.4%
	60 & over	N	6	4	-	5	2	17
		%	4.4%	4.4%	-	6.6%	2.7%	3.6%
	Undisclosed	N	-	3	-	4	-	7
		%	-	3.3%	-	5.5%	-	1.5%
	Total	N	137	91	96	73	74	471
		%	100%	100%	100%	100%	100%	100%
	Education (Completed)	Primary	N	30	16	19	20	20
%			21.9%	17.65	19.85	35.6%	27.0%	23.6%
Secondary		N	84	53	67	43	43	290
		%	61.3%	58.2%	69.8%	58.9%	58.1%	61.6%
Post- Secondary/Tertiary /College		N	23	22	10	4	11	70
		%	16.7%	24.2%	10.4%	5.5%	14.8%	14.8%
Total Participants		N	137	91	96	73	74	471
	%	100%	100%	100%	100%	100%	100%	



2.6 3.2 Participants by Gender, Age and Education

- The participants were split in almost half by gender with 50.5% being female and 49.5% male, ranging in ages from 15 to just over 60 years old, with those 60 and over being in the minority (3.6%)
- Just over half of the participants (51%) were between 35 and 59 years old while a small percentage (10.8%) were teens (15-19) while 32.7% of the sample were young adults between 20 and 34 years old
- The majority of participants in the survey (61%) had completed education to the secondary level. Almost a quarter of the participants (23.6%) had only completed primary education – a significant percentage of this subset from St. Ann (35.6%) and Trelawny (27%)
- Most participants in this survey (90.7%) had lived in their respective areas (where interviewed) for more than three (3) years with the other 9.3% living in the areas for under three (3) years
- Of the total sample, only (67%) were employed. Of this group, 60.4% were self-employed and the other 39.6% employed to organizations
- The leading area for self-employment were artisans (26.7%), agriculture and fisheries (24.1%) retail trade – e.g. small grocery stores/wholesale/stall/shop, (12.6%), cook shops/restaurants/food carts (9.4%), personal services such as barbers, hairdressers and nail technicians (7.9%) and transportation (5.8%)
- The main area of employment for those working in organizations was the Government of Jamaica – GoJ (17.6%) followed by retail trade (13.6%) and in stores, shops and wholesales (12%), Department/Variety Stores (11.2%) among other areas including transportation (5.5%)
- Figures 2-5 overleaf, provide a synopsis of the demographic composition of the survey sample

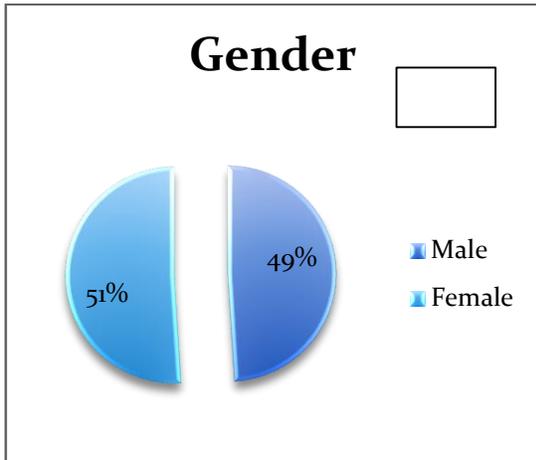


Figure 2: Participants by Gender & Age (N=471)

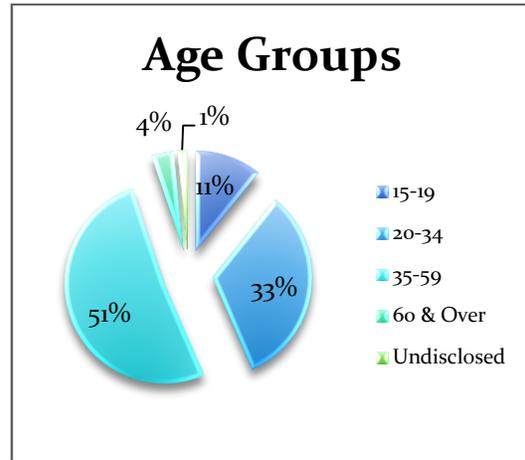


Figure 3: Participants by Age Groups (N=471)

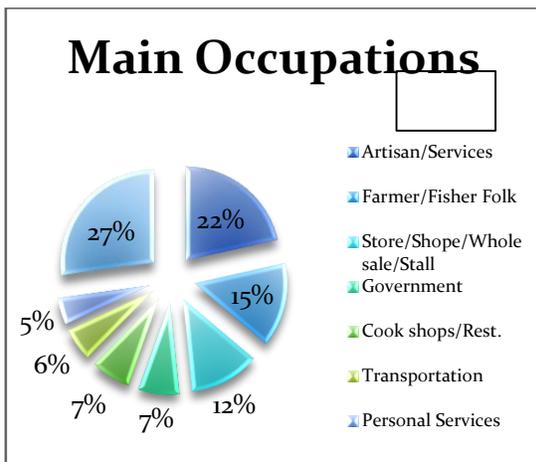


Figure 4: Main Occupations of Participants (n=316)

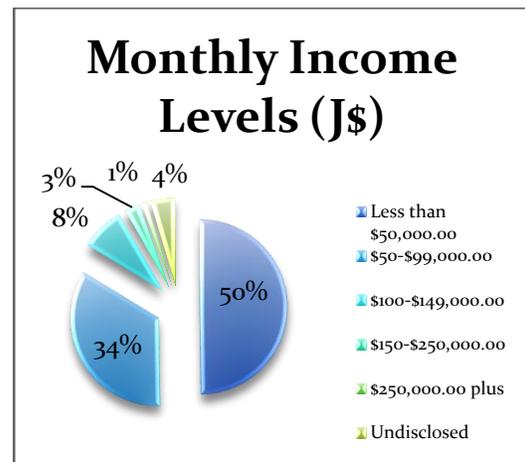


Figure 5: Monthly Income of Participants (n=316)



4. 3. Awareness of Climate Change

2.7 3.1 Awareness of Climate Change and Associated Phenomena

Participants were asked whether they had ever heard the term “Climate Change” and other related terms such as “El Nina/El Nino” and “Global Warming”. While most had never heard the term “El Nina/El Nino” (71.5%), the majority had in fact heard the terms “Global Warming” (88.1%) and an overwhelming majority, “Climate Change” (93.8%). Participants in the parishes of Clarendon (99%) and Kingston and St. Andrew (96.4%) indicated the highest incidence of having heard the term “Climate Change”.

Notwithstanding having heard these terms, however, when asked about the *meaning* of Climate Change, less than half of participants were able to articulate the most basic concept that climate change means a change in weather/weather patterns (42%). Fourteen (14%) indicated that it meant to them a shift in the earth and 10% said it means a change from hot to cold temperatures.

Although teens were a minority in the survey (10%), a significant percentage of this group (64.7%) were of the opinion that climate change implied changes in weather patterns. Just about 40% of participants 20-24 ((40.3%) and 35-59 (40.9) also said climate change means changes in weather/weather pattern.

Other interpretations attributed to the term climate change included: the sun getting hotter/excessive heat, destruction of the ozone layer, rising sea levels and pollution in the atmosphere.

The study revealed that participants living in coastal areas that participated in the study (31%) were no more aware of the meaning of climate change than their counterparts.

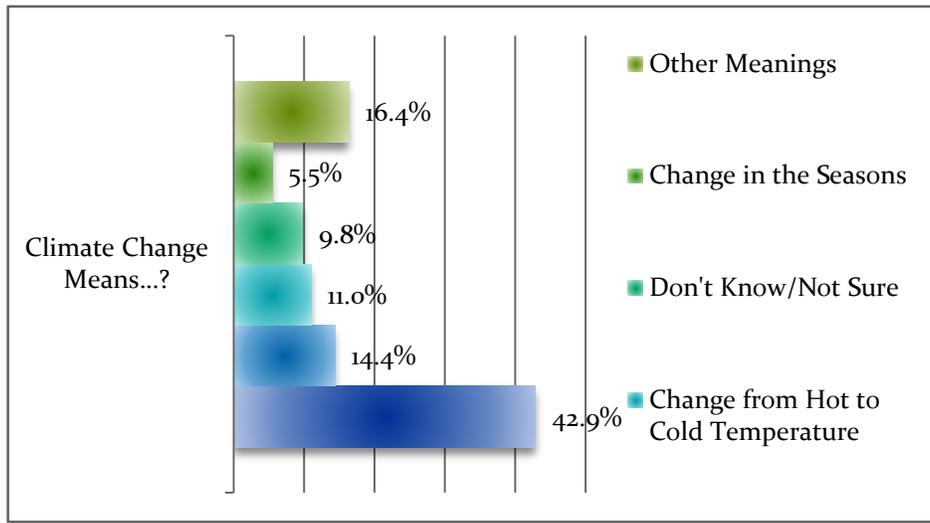


Figure 6: What Do You Think the Term Climate Change Means? (N=471)

2.8 3.2 What they've heard about and Noticed of Climate Change in Their Communities

Participants were then given a brief, simple explanation that climate change means “...changes to the typical climate or atmosphere that result in increases in temperature and extreme weather patterns”. Upon hearing this explanation about climate change, participants were then asked to indicate what specific changes they had heard were occurring with climate.

The incidence of heat waves and hotter summers was the predominant attribute of climate change that participants had heard about (45.5%), followed by droughts/dry season (21.3%), strange/freak acid rain (17.9%), less rainfall (13.0%) and colder temperatures/colder nights/extreme cold temperatures (12.8%), among other attributes mentioned. A significant 23.4% said they were not sure if they had heard about anything specific happening with climate change.

In response to the question of what they had actually seen regarding specific attributes of climate change in their communities, district or parish, most participants indicated “Yes” they had seen incidence of extremely hot temperatures (82%), followed by extremely dry seasons (68.8%).



However, a significant 64% of participants said they had seen shorter dry seasons in their communities, district or parishes. This response came from persons in all parishes surveyed; however, the highest number of responses in this regard came from participants residing along coastal areas (79.2%) and in Clarendon (78.1%).

The charts below provide a snapshot of the myriad responses provided to the question of whether participants had witnessed any indications of climate change in their regions.

Figure 7: What Survey Participants Had Heard About Climate Change

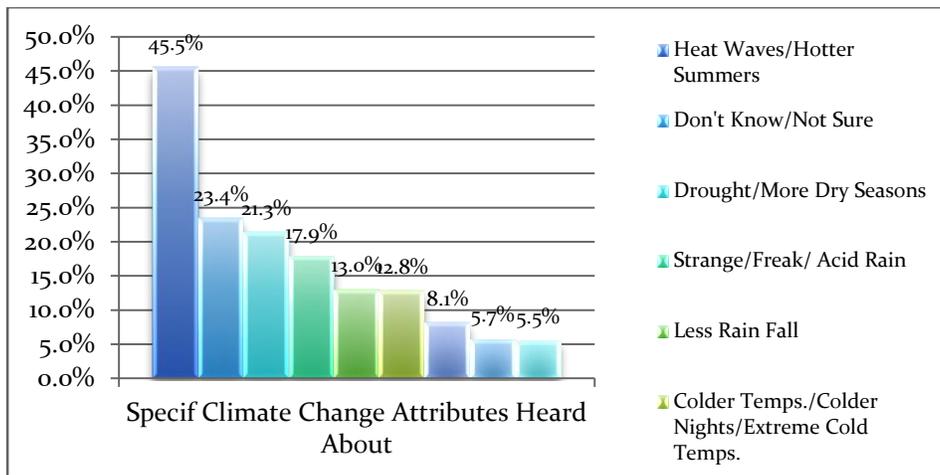


Figure 8: Climate Change Indicators Witnessed in Their Communities

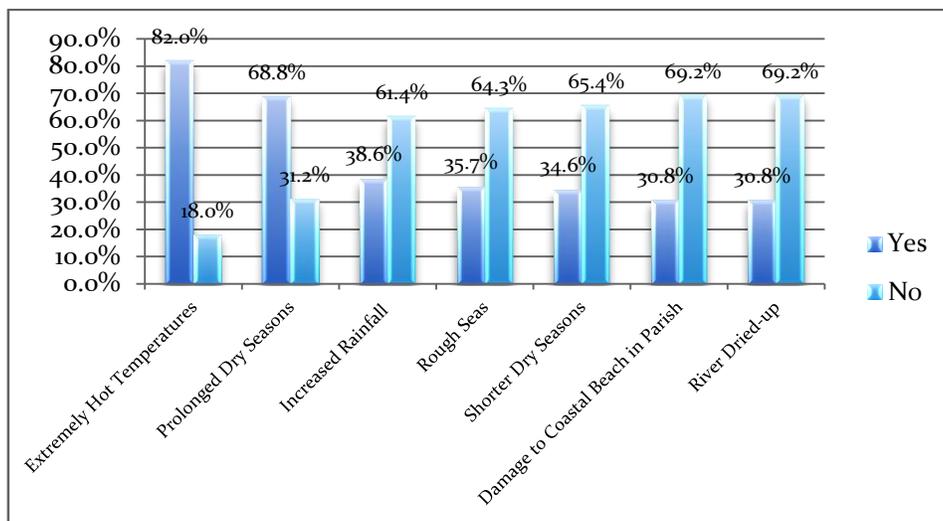


Figure 9: Climate Change Indicators

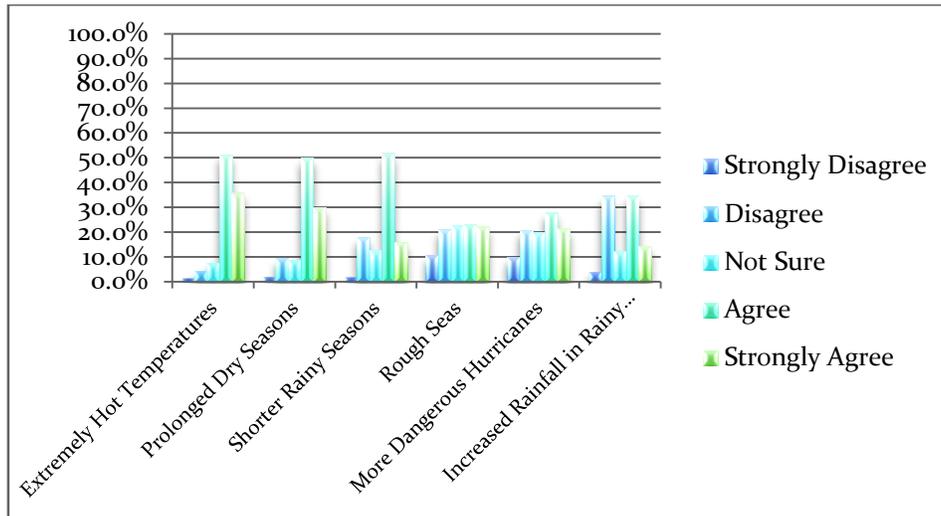


Figure 10: Climate Change Indicators That Had Generated Negative Impact

There was overwhelming agreement among participants that extremely hot temperatures were the top climate change indicators that had a negative impact on their surroundings/communities/districts and parishes. A high percentage of 87.1% agreed with this perspective – 51.2% agreed and 36.9% strongly agreed. Other leading climate change indicators that had also negatively affected them were prolonged dry season, shorter rainy seasons, rough seas and, dangerous hurricanes and increased rainfall.



4. Communities' Practices Have Caused Climate Change

2.9 4.1 Level of Agreement that Community Practices have Caused Climate Change

A significant 84% of participants in this survey agreed that some community practices have led to evidence of climate change in their communities. Slightly more female participants (85.3%) than male participants (82.3%) were of the opinion that some community practices have led to climate change.

Figure 11: Community Practices have caused Climate Change (N=471)

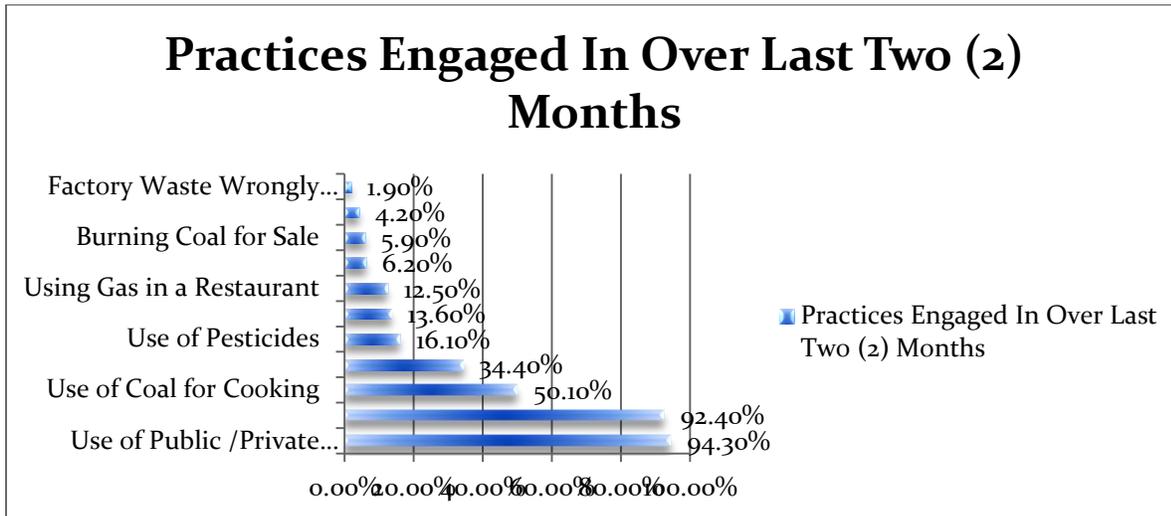


Figure 12: Practices Engaged In That Influence Climate Change (N=471)

In relation to the persuasion that community practices have led to climate change, the youngest and eldest in the sample (those between 15 and 19 years old -86.3% and those over 60 years old – 88.2%), believed that community practices had led to climate change in their areas. A higher percentage of persons residing in coastal areas across the parishes, 89.6% believed that community practices had brought on climate change. The majority of respondents in Clarendon and St. Ann – 88.5% and 87.5%, respectively also felt that community practices had led to climate change and had impacted their environment on a whole.



2.10 4.2 Agreement Regarding Community Specific Practices & Extent of Impact of These Practices on Climate Change Issues Facing Communities

Most participants in the survey had, as expected, used either private or public transportation for commuting (94.3%) and had also used cooking gas at home (92.4%) in the two (2) months leading up to the survey.

However, the incidence of use of coal for cooking and the burning of garbage may be considered high among participants in the survey at 50.1% and 34.4% , respectively.

More females (54.4%) had used coal for cooking than had the males in the survey, while a slightly higher percentage of males (36.5%) in the survey had engaged in burning garbage in the period mentioned than had females (32.4%). More participants between the ages 35- 59 (54.5%) had used coal for cooking than had persons in other age groups.

Just over an average of 50% of all persons interviewed in all the parishes except for Kingston and St. Andrew indicated that they had used coal for cooking in recent times. With St. Ann (63%) having the highest incidence of cooking with coal among the five parishes. However, in Kingston and St. Andrew, up to 40% of persons had cooked with coal in the two (2) months leading up to the survey.

Up to 45.1% of the youngest group in the survey – those 15-19, indicated they had disposed of garbage by burning. Similarly, 45.2% of persons in St. Ann had burned garbage in the months just before the survey. St. Ann had the highest incidence of burning garbage among the five parishes, while St. Catherine recorded the lowest at 26.4%.

Both the use of pesticides and chopping down trees were also recorded as practices that community persons had engaged in more than cursory incidence.

Participants were next asked to indicate the extent of their agreement that the specific practices they had engaged in may have affected their communities. Their responses are captured in Figure 13 below, the highlight being, interestingly, that on-a-whole, participants across the spectrum



were in strong agreement that practices they had been engaging in had negatively impacted their environment.

The top three activities participants felt had caused climate change issues in their community were disposing of garbage in rivers/seas and gullies in in their communities (86.8%) followed by disposal of garbage by burning (85.6%) and disposal of factory waste outside of designated areas, (85.3%).

While in the majority of cases most participants were in agreement that the practices mentioned had impacted their environment and community/ies, in some instances a fair percentage of persons was just not sure if there was an association between the practices [identified] and the occurrence of climate change around them. For example, less than 50% of participants agreed that the use of gas for cooking whether at home or in a restaurant or cook shop, had impacted their environment or communities negatively. Additionally, just under 50% of participants seemed either unsure or outright disagreed that cooking with coal had done harm to their environment or community.

Figure 12: Practices that have Led to Climate Change Impacting Environment/Communities (N=471)

Practices that have Led to Climate Change Impacting our Environment	Strongly Agree & Agree (%)	Not Sure (%)	Disagree & Strongly Disagree	Total*
Disposal of Garbage in Rivers/Seas and Gullies in my Community	86.8%	10.0%	4.3%	100%
Disposal of Garbage by Burning	85.6%	8.7%	5.7%	100%
Disposal of Factory Waste outside of Specified Areas	85.3%	11.5%	4.0%	100%
Use of Public or Private Transportation that uses Gasoline)	80.2%	11.9%	7.9%	100%
Use of Pesticides	80.2%	13%	6.9%	100%
Chopping down Trees	78.8%	13.4%	7.9%	100%
Burning of Coal for Sale	76.2%	10.8%	12.1%	100%
Overgrazing Cattle	53.7%	35.2%	11.0%	100%
Using Coal for Cooking	51.4%	23.6%	25%	100%
Use of Gas for Cooking in Restaurant/Cook shop	43.3%	29.3%	27.4%	100%
Use of Gas for Cooking at Home	42.3%	26.3%	32.5%	100%

*Differences in total (100%) are due to rounding

Participants were next asked to identify the *results* from activities that had influenced climate change in their community/district or parish. The chart below captures the effects suggested and level of agreement with each, led by “Increase in viral diseases” (52.7%) and “Less fish in the sea/ocean” (39.3%) and “Loss of crops” (38.0%).

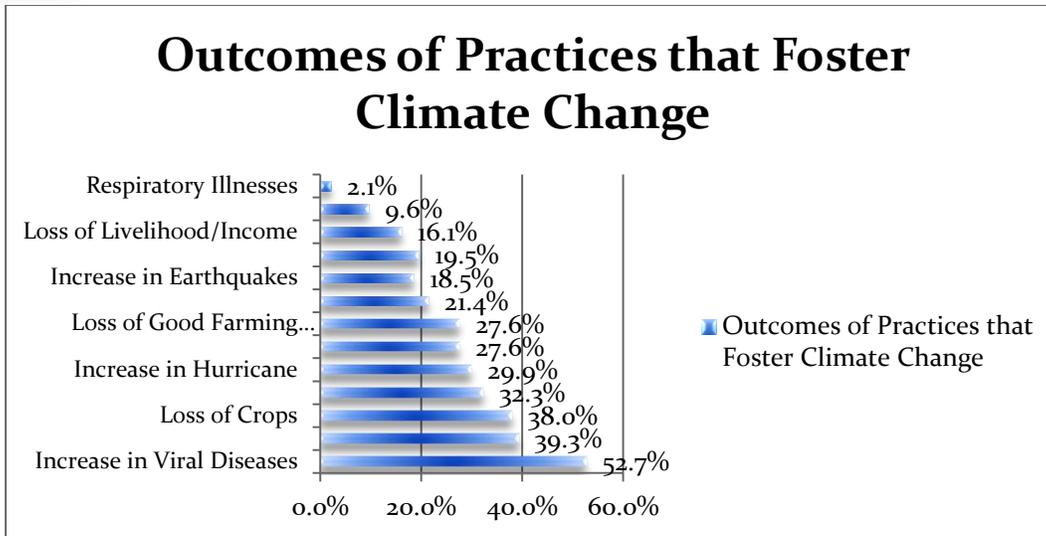


Figure 14: Outcomes of the Community Practices that Foster Climate Change (N=471)

The majority of participants in the survey (75.8%) thought that should the practices identified continue, they will be severely threatened by climate change while 24% disagreed this would be inevitable and less than one per cent (1%) of participants expressed uncertainty about what would happen, should these practices continue.

Most participants in the survey who indicated that their communities would be severely threatened by climate change share a myriad of reasons why they believe such a threat could be imminent.

If Current Practices Continue We Will be severely Threatened by Climate Change



Figure 13: Current Practices will lead to Severe Threat of Climate Change (N=147)

More females than males participating in the survey were of this opinion; while all the age groups had similar conviction regarding the likelihood that if they continued the practices discussed, their communities would be severely threatened by climate change (74%-76%). At the parish level, the majority of participants in Clarendon felt that there was a severe threat pending if the practices continued (91.75%), as did the participants from the coastal areas (90.3%).

Only 37% of respondents in St. Ann felt their practices as discussed, were courting climate change.



Figure 16: Practices will lead to Severe Threat of Climate Change (Coastal Participants (N=144))

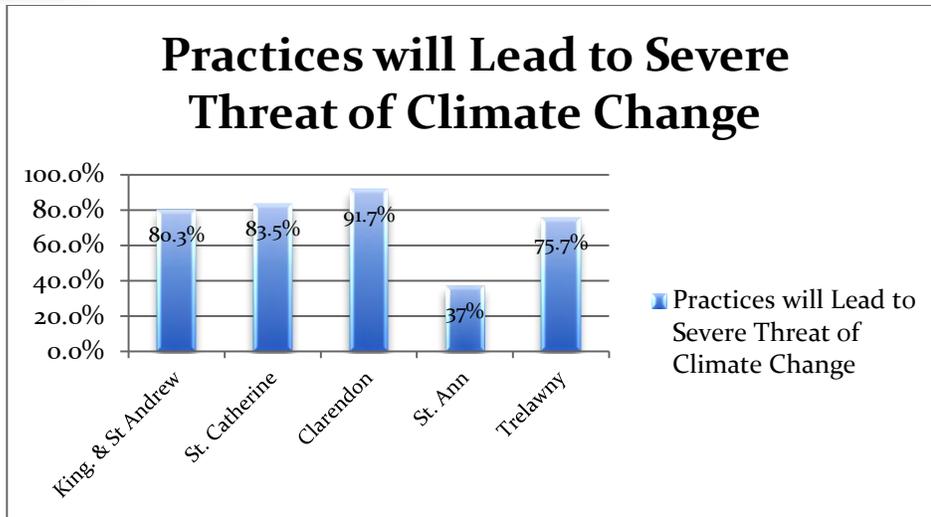


Figure 14: Practices will lead to Severe Threat of Climate Change (Parishes N-471)

Participants who indicated that they felt their practices would lead to severe threat of climate change were then asked to indicate how the threat would occur. Responses from these participants were wide ranging. These included foremost, the possibility for increase in respiratory illnesses and also flooding, as captured in the table below (Figure 18) below.

Why Communities will Face Severe Threat due to Practices Causing Climate Change	Percentage
1. Increase in Respiratory Illnesses	11.8%
2. Flooding	11.5%
3. Culture (Environmental Practices)	8.4%
4. Longer periods of drought	7.8%
5. Mosquito/vector infestation	7.6%



6. Community will get progressively worse	7.6%
7. Improper disposal of garbage	6.2%
8. Communities may have landslides	5.9%
9. Sea level has risen	5.9%
10. Loss of crops/livelihood	5.6%
11. Deforestation – causes temperatures to rise	4.2%
12. High level of air pollution	3.9%
13. Gullies not cleaned & maintained	3.6%

Figure 18: Range of Responses re Why Climate Change is a Severe Threat to Communities
(n=357)

Twenty-four per cent (24%) of participants in the study (113/470) indicated they did not feel that their community practices would lead to a severe threat of climate change and also gave their reason for this opinion, mainly they said:

- They live on the hillside so didn't expect to experience damage to their environment (30.1%)
- They didn't think anything could be done (17.7%) or
- Their communities are involved in taking precautionary measures against the threat of climate change (16.8%)
- They don't live in a flood-prone area (9.7%)

More than half of participants (54.1%) who believed that living on the hillside was a “blessing” against climate change effects were among the young – 15- 34 years old. A significant percentage



of this group (39.8%) also felt less exposed to severe threat of climate change as their communities have already implemented precautionary measures to buffer the effects of this issue. Additionally, 33.3% of the 15-19 age group was of the opinion that due to residing in a non-flood-prone area they would not experience the severe threat of climate change.

More women (35.4%) than men (26.2%) also believed that living on the hillside made them less exposed to the threat of climate change. More women (12.5%) than men (7.7%) also felt that not living in a flood-prone area was also safer, in this regard.

5. 5. The Management of Climate Change

3 5.1 How Communities Handle Some Effects of Climate Change

Participants were asked whether their communities were prepared to handle certain types of water-related effects of severe climate change, specifically hurricanes, drought, floods and landslides. The responses are captured in Figure 19, below. Most participants felt that their communities could adequately manage these specific types of disasters. In particular, the occurrence of a landslide occurring in their communities seemed most daunting, with 73% indicating they would not be able to manage the effects from this type of occurrence.

Based on the responses given, participants seemed to believe they would be much more prepared to handle hurricanes than any of the other three aforementioned types of disasters, should such an event occur in their communities.

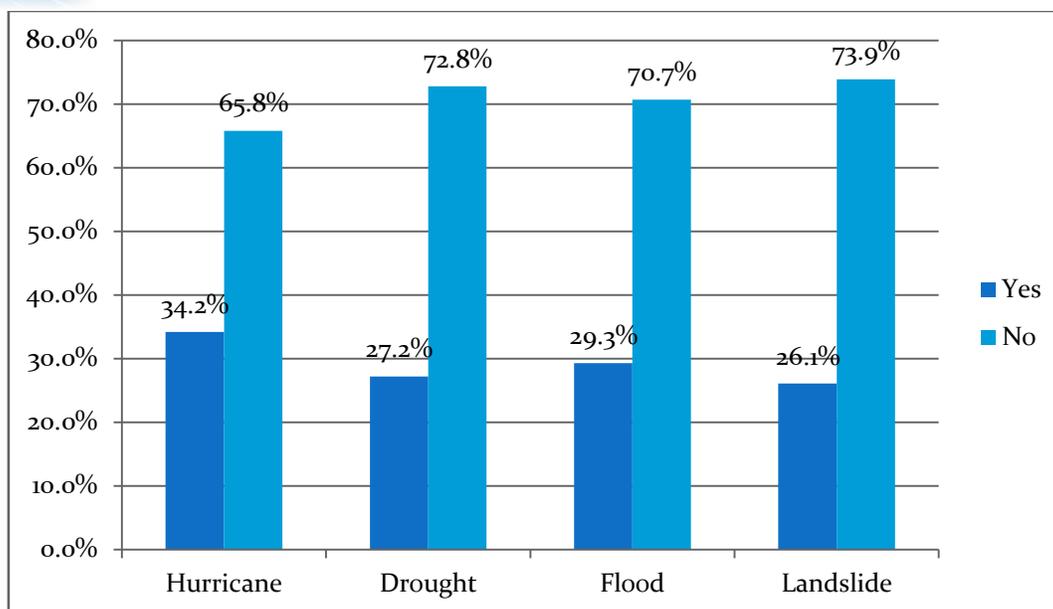


Figure 19: Preparedness for Handling Specific Types of Water-related Disasters (N=471)

At the parish level, participants in Clarendon (82.3%), Kingston and St. Andrew (81%) and Trelawny (79.7%) were least prepared to handle the effects of drought in their communities and parish/region. A high percentage of participants in Kingston and St. Andrew (89.8%) were the least confident that they would be prepared to handle landslides.

4 5.2 Jobs and Industries that would be affected by Climate Change & Extent of Effect

Participants were asked whether they believe that select types of jobs/industries such as tourism, agriculture, fisheries and water supply would be affected by climate change. Most participants felt that agriculture would be the most affected (62.6%), followed by water supply (62.2%), fisheries (43.7%) and least, tourism (22.1%).

They also mentioned a range of other industries that could likely be negatively affected by climate change, including (in order of mention) transport and shipping (20.8%), factories (16.7%), construction (10.4%), mines/quarry (10.45), restaurants (6.25) and auto mechanic shops (6.2%) among others that would be less affected.

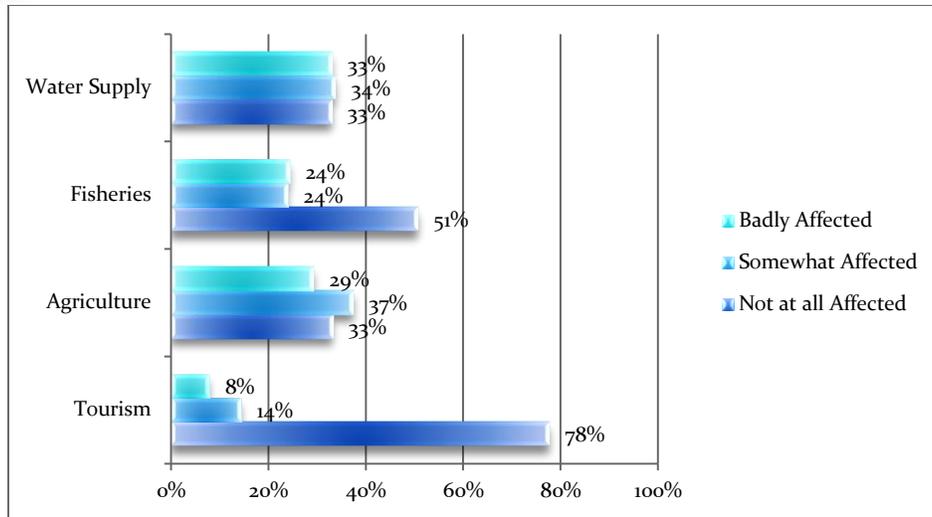


Figure 20: Extent to which Jobs/Industries were affected by Climate Change in Past Two (2) Years

Tourism was seen by most (77.7%) as the industry least affected by climate change/disasters over the last two (2) years, while the water supply and agricultural sectors were both badly and somewhat affected by these issues over the period mentioned.

Of note is the fact that although tourism was reportedly the least affected industry from the effects of climate change and attendant disasters, more participants in Trelawny (66.2%), even more so than St. Ann (16.1%), which also has a high tourism engagement, felt that tourism had been hard hit by disasters in the last two (2) years (66.2%).

More persons in Clarendon (85.4%) felt that agriculture was hard hit by disaster over the last two (2) years, followed by Trelawny (81.1%), St. Catherine (75.8%), St. Ann (58.9%) with Kingston & St. Andrew thought to be the least affected (29.9%) as perhaps it is the [parish] least involved directly in agriculture.

More participants in Clarendon (89.6%) were also of the opinion that fisheries had been affected by disasters over the last two (2) years prior to the survey.

5 6. What can be done to reduce the Effects of Climate Change

Despite the changes witnessed in their communities due to effects of climate change, only a conservative 64% of all participants in the survey indicated that they believed that actions can in fact be taken to reduce the effects of climate change. However, a more significant percentage (7%) of participants in Kingston & St Andrew and St. Catherine thought that something can be done to reduce the effects of climate change. Persons in St. Ann were least optimistic about reducing the effects of climate change (42.5%).

Participants, however, were able to mention the top three (3) things that each could do to reduce the effects of climate change. Together, they offered an extended list of activities that would lead to a reduction of the threat of climate change. The top actions that were identified as key to managing their environment and which should be curtailed are captured in the chart below.

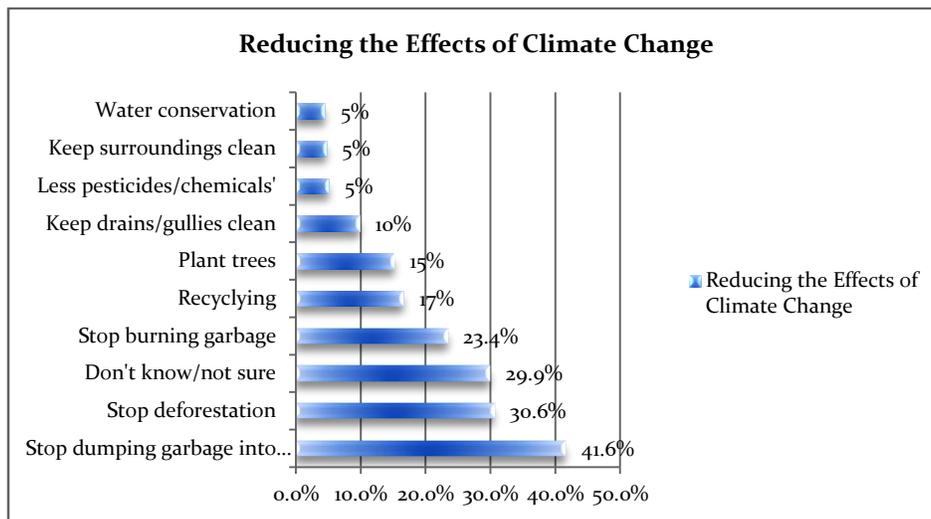


Figure 21: Actions than may be taken to Reduce Climate Change

Participants were then asked specifically to share if they had taken any of a set of steps identified such as purchasing home insurance, to reduce the impact of climate change on their lives. Figure 18 captures the feedback, highlighting that most persons had in fact done very little to manage their environment and the effects of climate change. The most common practice was tree planting and this by a rather low percentage of persons from the total sample (27%).

Notwithstanding, this activity was carried out by more than half of the participants from St. Ann (56.2%). The highest participation in this activity by age group was by persons 60 and older (41.2%) followed by teens in the study (33.9%) and persons 35-59 (28.1%). All other parishes had a very low percentage of the survey participants undertaking tree planting in their communities/parishes – less than 25%.

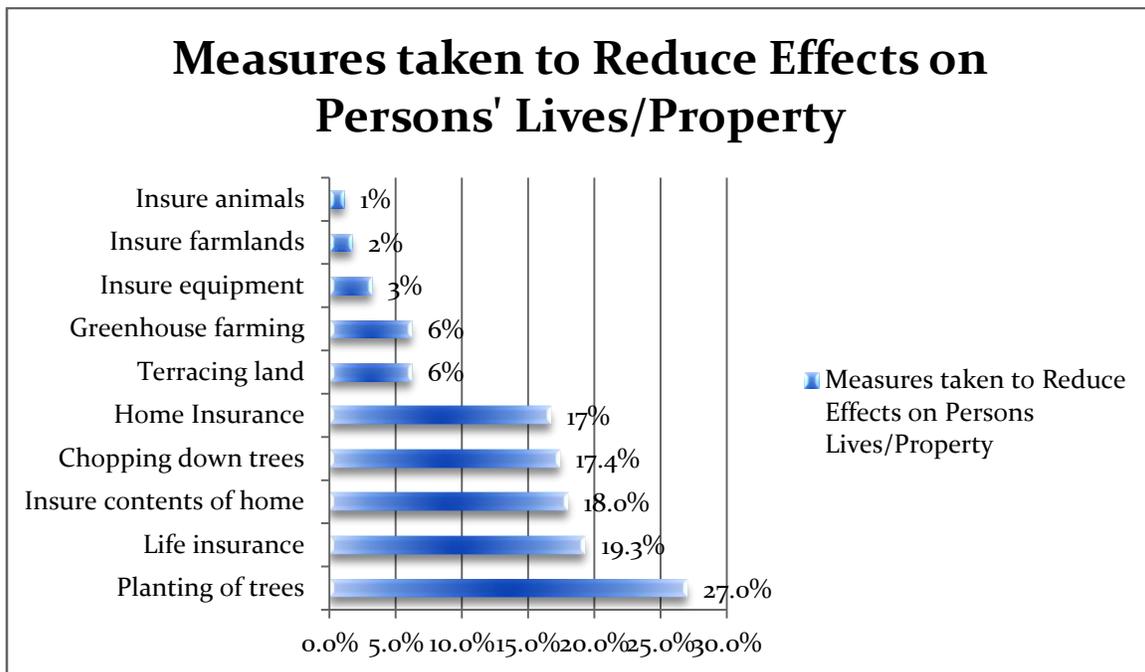


Figure22: Measures Participants have taken to Reduce Effects of Climate Change on their Lives & Property (N=471)

When researchers probed for why participants had not taken any of these measures, the responses were varied. However, the most frequent explanation was that they had no money/could not afford home insurance (54.2%), nor insurance for the contents of their home (52.1%). Some respondents said they did not understand the concept of insurance and others did not give a reason and simply reiterated that they did not have insurance. Other measures such as terracing or tree planting were not understood as measures that could help them to manage against degradation of their environment.

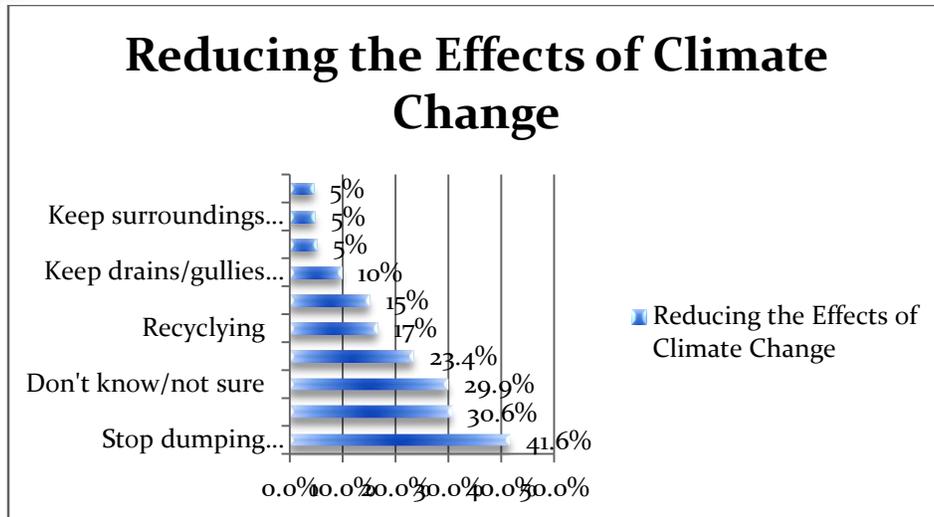


Figure 23: How to Reduce the Effects of Climate Change

6. Who Should Manage Climate Change?

Just more than half (58.8%) of the participants in the survey felt that it is foremost the responsibility of persons at the household level to manage climate change issues on a day-to-day basis. The level of agreement with the concept that individuals/households should manage their environment was consistent across gender and age groups with more than 50% of each of these segments in the survey (except for those over 60 years old (35.3%). Similarly, across the parishes over 50% of respondents agreed that climate change issues need to be managed at the individual household level. This sentiment was shared by persons living in coastal areas (69.4%).

However, participants in the parish of Trelawny did not feel as strongly about individuals/households taking responsibility for climate change issues (41.9%).

The government was seen as the next most responsible entity for managing climate change (29.9%) followed by community leaders (14.3%). Other entities responsible for managing climate change issues on a daily basis are highlighted in Figure 24 below.

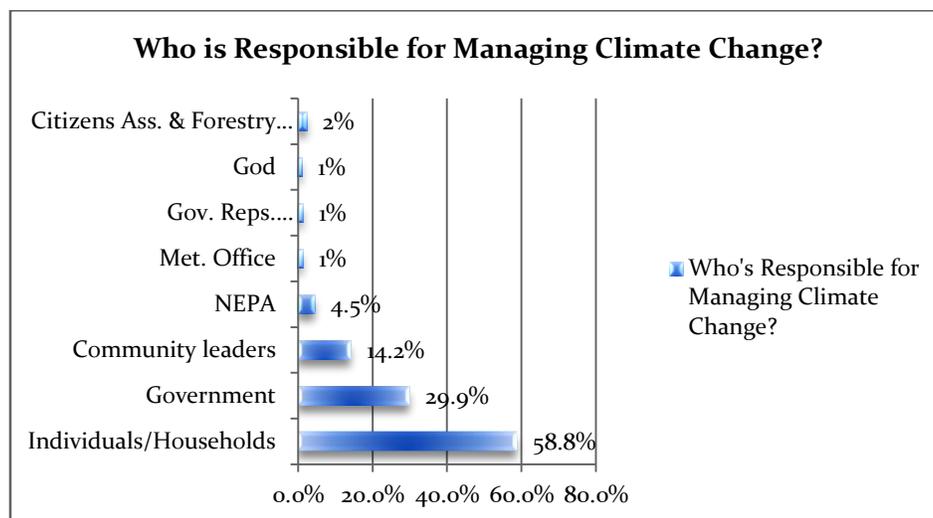


Figure 24: Entities Responsible for Managing Climate Change Issues (N=471)

Finally, participants were asked to give their opinion on whether the government had a responsibility for educating persons about climate change. As indicated by Figure 25, the vast majority of participants (82.6%) seemed convinced that the Government of Jamaica has a responsibility to educate its citizens about climate change and how to deal with the related issues

it presents. This level of response of more than 80% in agreement that government should lead on educating about climate change was recorded across genders and age groups, participants in the parishes and also coastal areas (lowest being St. Ann at (74%).

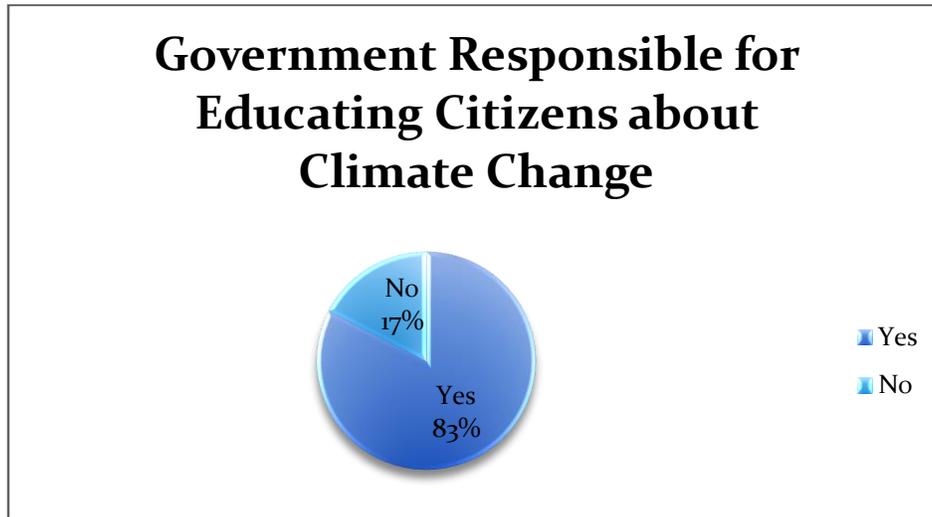


Figure 25: The Government of Jamaica is Responsible for Public Education on Climate Change (N=471)

Participants who believed the Government of Jamaica had a responsibility to educate citizens about climate were also asked to indicate three areas of focus /activities this education should mainly entail when targeting communities. These responses are captured in Figure 26.

In summary, use of the mainstream media was thought to be the most effective means of communicating the concept and issues related to climate change (45.8%). Holding community meetings and seminars was the next most effective approach suggested by more than 40% of participants.

This was followed by the idea that reaching persons via more general public education and at the school level via the curriculum would be very effective as well as leveraging social media, a more modern medium of interacting with the technology savvy citizens.

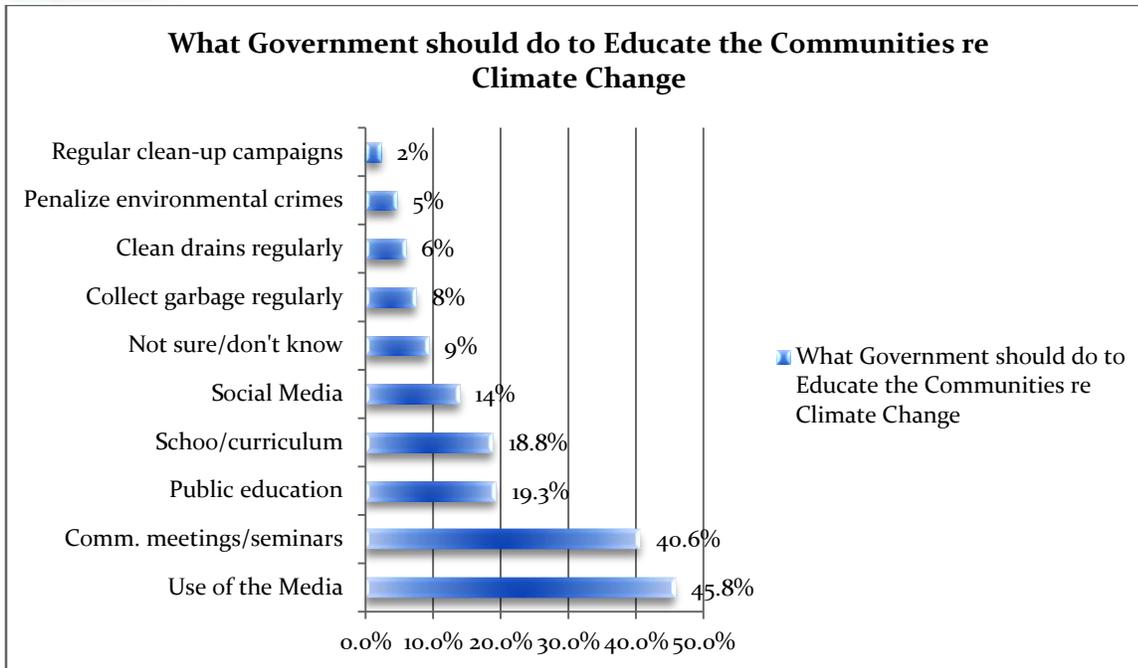


Figure 26: How Government can Educate Citizens re Climate Change and Reducing its Effects on Communities (N=389)

7. Participants Media Profile

In order to match the media usage to the representative sample to aid the dissemination of information on climate change, participants were asked to share their traditional and social media usage.

The radio station participants listen to most frequently is IRIE FM. This was followed by RJR 94 FM and ZIP FM. Others worthy of mention as popular stations are Mello, FAME and Love FM. More males than female participants and more persons over the age of 19 indicated that they listen to IRIE FM, while more females than males in the study as well as persons 35 and over were fans of RJR 94 FM. ZIP FM was more popular among the male participants and the young (under 35 years old).

Participants reported that the TV station they watched most frequently (by both genders) is TVJ (79%) followed by CVM (20.4%), which is watched mainly by persons 35-59 years old and also more popular with persons in St. Ann (35%). The newspaper most widely read by participants in this survey is the Star (32.6%), followed by the Gleaner (17%). A significant 33.8% of participants said they read no newspapers. Internet access on cellular phones was highest among youngsters 15-19 years old (84.3%), followed by those 20-34 years old (82.5%)

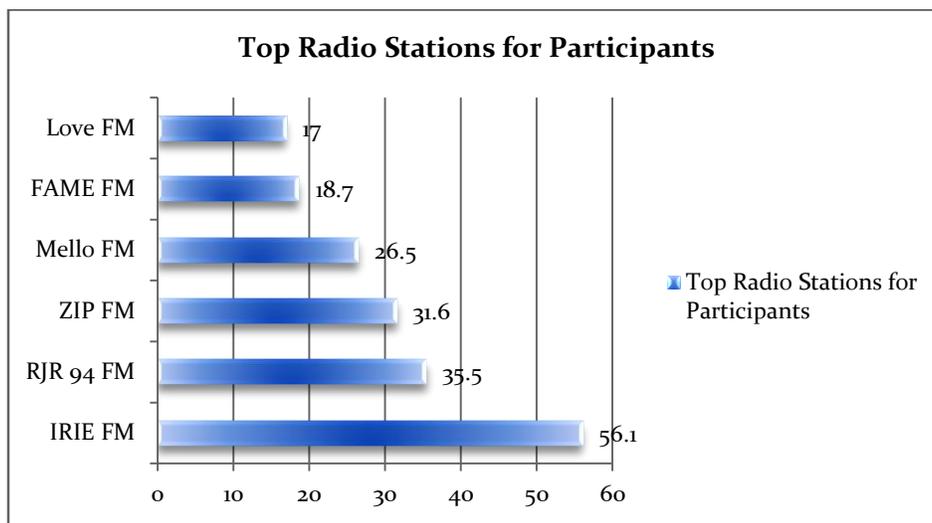


Figure 27: Radio Stations Participants are Listening to Regularly (N=471)

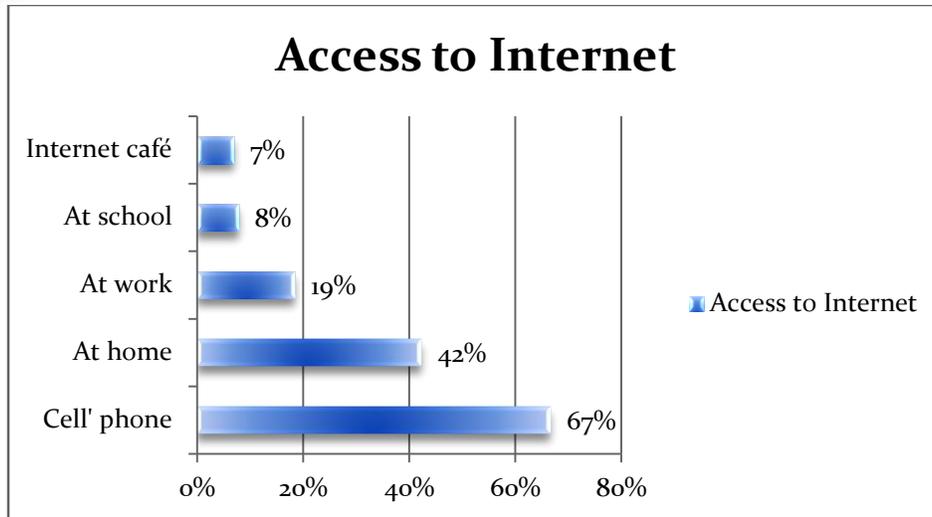


Figure 28: Level of Internet Access Available to Participants (N=471)

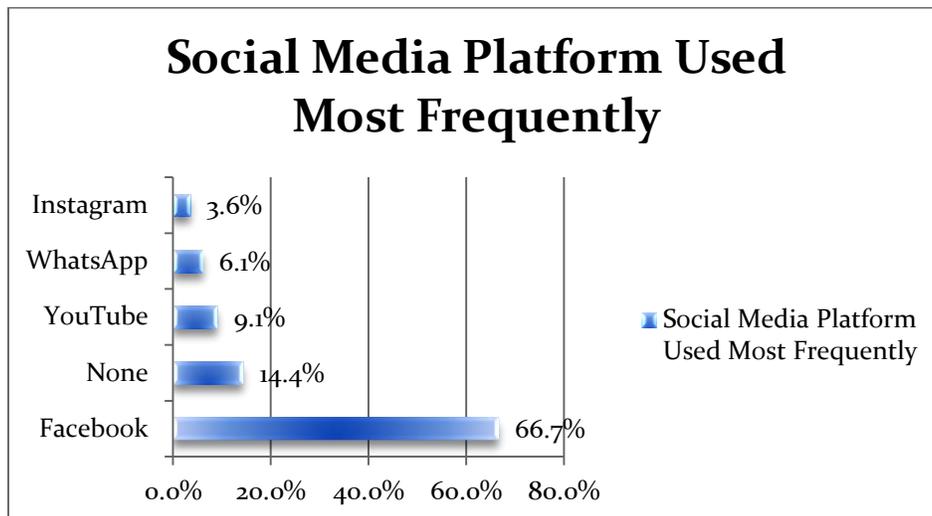


Figure 29: Use of Social Media by Participants (N=471)

While 14.4% of participants reported not using social media, a large percentage (66.7%) indicated their most frequently used Facebook, followed by YouTube (9.1%) and WhatsApp (6.1%).

Almost half of the participants in the survey (48.2%) reported they neither had access to a community library or community centre. However, 36.7% indicated they have access to a community library and 22.6% to a community centre.

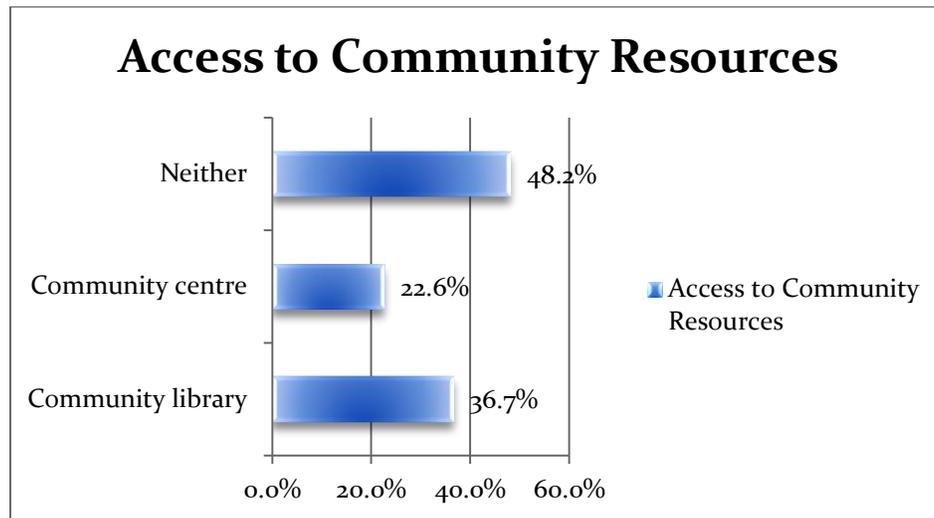


Figure 30: Access to Community Library & Community Centre (N=471)

8. Conclusion

The findings of the study are consistent with the policy to have a renewed focus on managing climate change in Jamaica with a view to adapt to its outcomes thus far and mitigate against further compromise of the nation’s environment.

Summary of Knowledge and Awareness of Climate Change

- Levels of awareness of the issues related to climate change are high among Jamaicans as indicated to responses related to the activities that impact climate change and environmental degradation; however
- Full knowledge/ understanding of the concept of climate change is lacking and needs to be addressed in a structured and concerted way using the public education campaign and as suggested by participants, more active management of garbage disposal by the government/respective authorities



Summary of Attitude to Climate Change

- The respondents in the survey have a positive attitude towards the management of matters related to climate change at their personal/household level. They are willing to be engaged through use of media and through engagement at the community education level.

Practices and Behaviour that Impact Climate Change

- Despite increasing, impending changes to the weather and climate in Jamaica, citizens continue to engage in harmful practices such as burning coal and chopping down trees in their communities. Hence it is urgent to address these practices and offer community persons more readily adaptable alternatives to these practices
- Based on respondents' perspectives on the issues of climate change, it is evident that a concerted effort is needed to educate those less aware of the phenomenon, its causes and likely impact. Decidedly, the planned campaign for building awareness, increasing knowledge and influencing good community practices regarding climate change is timely.

9. Appendix 1: Survey Instrument

Introduction:

Good day/afternoon, my name is _____. Today we are conducting a survey on weather patterns and how this affects the environment and our daily lives. Can you give me about 10 minutes of your time? Before we begin please allow me to be sure you are the best person in this household to participate in the survey:

Screen:

SQ1. Are you between 15 and 64 years old?

Yes 1-Continue No 2-Discontinue with this person and ask for person between 15-64

If more than one such person between 15 and 64 is present at home, follow the birthday rule and ask for the person that has a birthday coming up soonest and interview that individual.

N. B. Participant must have the age profile above in order to continue. If no such person is available in the household, discontinue and go to next appropriate household. Aim is to get equal number of males and females participating in the study in the stipulated age range

Q1. Have you ever heard the term 'El Nino/El Nina'?

Yes 1-Continue No 2-Continue

Q2. Have you ever heard the term 'Global Warming'?

Yes 1-Continue No 2-Continue

Q3. Have you ever heard the term 'Climate Change'?

Yes 1-Continue No 2-Continue

Q4. What do you think the term Climate Change means?

Q5. In a nutshell, Climate Change means changes to the typical climate or atmosphere that result in increases in temperature and extreme weather patterns in your district, country or region. Experts say it is due to how we treat our environment, specifically, practices such as the use of fossil fuels (harmful gasses) and land clearing, to name a few.

Q6. What would you say are some of the specific changes to Climate that you've **heard** about? [Do not read out]

1. _____

2. _____
3. _____
4. Don't know/Not sure

Q7. Please tell me if you have noticed any of the following changes in weather patterns in your community/district/parish that I'm going to read out? [Ask each in box and circle the answer given- Yes / No]

Q8. Tell me to what extent you agree that each of these activities has negatively affected your community /district/parish? [Ask for each activity: Do you strongly disagree, disagree, not sure, agree or strongly agree that has negatively affected my community/district/parish... Read each]

Q7. Change in weather patterns noticed experienced in my community/district/parish	Yes	No	Q8. These activities have negatively affected my community/district/parish				
			Strongly Disagree	Disagree	Not sure	Agree	Strongly Agree
Increased rainfall in the rainy seasons	1	2	1	2	3	4	5
Shorter rainy seasons	1	2	1	2	3	4	5
Prolonged rainy seasons	1	2	1	2	3	4	5
Shorter dry seasons	1	2	1	2	3	4	5
Prolonged dry seasons	1	2	1	2	3	4	5
Extremely hot temperatures	1	2	1	2	3	4	5
Colder temperatures	1	2	1	2	3	4	5
More frequent hurricanes/storms	1	2	1	2	3	4	5
More dangerous hurricanes/storms	1	2	1	2	3	4	5
More humid temperatures	1	2	1	2	3	4	5
Earthquakes or more frequent earthquakes							
Damages to the coastline/beach in this parish	1	2	1	2	3	4	5
Rougher seas	1	2	1	2	3	4	5
Rivers dried up	1	2	1	2	3	4	5
Riverbanks overflowing	1	2	1	2	3	4	5
Landslides	1	2	1	2	3	4	5
Loss of farming land /s	1	2	1	2	3	4	5

Q9. Do you believe that some community practices in Jamaica have led to Climate Change impacting our environment as a whole?

Yes 1—Continue No 2—Continue

Ask All and probe for answer to each Q10A. Have you carried out any of these activities in the last two months or 60 days?	Ask All Q10B. To what extent do you agree these practices have caused Climate Change Issues in Community
---	---

Activities	Yes	No	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
Burning coal for sale	1	2	1	2	3	4	5
Using coal for cooking	1	2	1	2	3	4	5
Use of public or private transportation that utilizes gasoline (for example bus; car; aeroplane; ship; boat)	1	2	1	2	3	4	5
Use of gas for cooking at home	1	2	1	2	3	4	5
Use of gas for cooking in a restaurant or cook shop	1	2	1	2	3	4	5
Disposal of garbage by burning	1	2	1	2	3	4	5
Disposal of garbage in the rivers/sea or gullies in my own community	1	2	1	2	3	4	5
Disposal of factory waste outside of specified area	1	2	1	2	3	4	5
Chopping down trees	1	2	1	2	3	4	5
Overgrazing cattle i.e. allowing cattle to graze in the same area day-to-day	1	2	1	2	3	4	5
Use of pesticide use	1	2	1	2	3	4	5

Q11. Which of the following environmental outcomes of these practices do you believe indicate that Climate Change is affecting your community/district or parish? [Read all and select what is agreed on]

- Loss of good “arable” farming land 1
- Loss of crops 2
- Less fish in the sea/ocean 3
- Increase in natural disasters such as hurricanes 4
- Increase in natural disasters such as flooding 5
- Increase in natural disasters such earthquakes 6
- Availability of water for day-to-day domestic activities such as washing and cooking 7
- Loss of livelihood/income – that is opportunity to practice trade or agriculture for income 8
- Increase in viral diseases such as Chik-V; ZIKA; Dengue Fever 10
- Rising sea levels 11



Rough seas 12

Damage/loss of coral reef 13

Other illness/es mentioned _____

Other changes mentioned _____

Q12. Do you believe that your district/community/parish will be severely threatened by Climate Change if these practices continue?

Yes 1→Q12B No 2→12C

Q12B. Why do you say “Yes” your community will be severely affected by Climate Change of these practices continue? [Probe for details]

Q12C. Why do you say “No” your community ***will not*** be severely affected by Climate Change of these practices continue? [Probe for details]

Q13. Too much water or too little can cause serious damage to our environment – e.g., hurricanes, floods or drought. Do you believe that your community is adequately prepared to handle the effects of any of these extreme environmental disasters at this time?

Hurricane	Yes	1	No	2
Drought	Yes	1	No	2
Flood	Yes	1	No	2
Landslides	Yes	1	No	2

Q14A. Can you identify the types of jobs/industries in your community and parish that that can be negatively affected by Climate Change? [DO NOT READ OUT. If none can be identified skip to Q15A]

Q14B. Please also indicate extent to which each has been affected *in the last 2 years*?

14A. Jobs /Industries Affected Badly	Yes	No	Q14B. Not at All	Somewhat
1. Tourism 3	1	2	1	2
2. Agriculture	1	2	1	3



Community leaders 2

Individuals at the household level 3

Other government agencies or bodies (Specify) _____

Environmental bodies (Specify) _____

Community bodies (Specify) _____

Other Entity (Specify) _____

Q18. Do you think the Government of Jamaica has any responsibility to educate persons and communities/parishes about Climate Change and how to deal with the related issue and threats they present?

Yes 1—Q19 No 2 —Q20A

Q19. [Ask those that said “Yes” at Q18] What are three (3) things you think the Government should do to educate and assist your district/community/parish on how to reduce the impact of Climate Change?

Ask All: Participants’ Media Usage/Access

Q20A. What are the *top three (3) radio stations* that you listen to most frequently in order of preference starting with the one you listen to most, second then third?

1. _____ 2. _____ 3. _____

Q20B. Which local national TV national station do you watch most frequently?

TVJ 1 CVM 2 LOVE 3

Q20C. Which national newspaper do you read most often?

Q20D. Do you have internet access?

a. At home	Yes	1	No	2
b. On your cell’ phone?	Yes	1	No	2
c. At work	Yes	1	No	2
d. At school	Yes	1	No	2
e. Internet Café	Yes	1	No	2
f. Elsewhere _____	[probe]			

Q20E. Which Social Media Platform do you use **most often**? [Chose one only]



Facebook 1 Twitter 2 YouTube 3 Instagram 4

Q21. Do you have access to a:

Community library 1 Community centre Neither 3

Q22. How long have you been living in this community?

Under 3 years 1 3 years /plus 2

Q23. Are you? Employed 1-Q23B Unemployed 2-Q24A Student 3-Q24A

Q23B. Are you? Self Employed/Own A business 1 Type of Business _____-Q23C

An Employee in a business 2 Type of Business _____-Q23BC

Q23C. Is your monthly take home pay: Less than \$50,000.00 1 \$50,000.00 to \$99,000.00 2
 \$100,000.00 to \$149,000.00 3 \$150,000.00 to \$250,000.00 4 Over \$250,000.00 5

Q24A. Note Gender: Male 1 Female 2

Q24B. Confirm Age: 15-19 20-24 25-34 35-44 45-59 60 -64

Q24C. Education Completed: Primary 1 Secondary/High 2 Post Secondary 3

Q25B. Note Parish: Kingston & St. Andrew 1 St Catherine 2 Clarendon 3
 St. Ann 4 Trelawny 5

Q25C. Note Community:

(Kingston & St. Andrew) Harbour View 1 Lawrence Tavern 2
 Manning's Hill 3

(St. Catherine) Old Harbour 4 Portmore 5 Spanish Town 6

(Clarendon) Rocky Point 7 Portland Cottage 8 May Pen 9

(St. Ann) Cascade 10 Ocho Rios 11

(Trelawny) Low River 12 Falmouth 13

Q25D. Note Community Type: Rural 1 Sub-Urban/Urban 2

Q25E. Note if Coastal: Yes 1 No 2

Participants Name: _____ **Contact Number** _____



Thank you for participating in this survey!

Interviewed by: _____ Contact Number _____

Comments: _____ Date _____



Addendum to October 2016 KAP/B Study on Climate Change

Subsequent to a meeting held on January 4, 2017, with representatives from the Climate Change Division (CCD) and the UNDP Jamaica Focal Point representative of the Japan Caribbean Climate Change Partnership (J-CCCP), a decision was taken to do an addendum to the October 2016 KAP/B study report, which was conducted by the Jamaica In-Country Communication Consultant for the project.

It was decided that going forward, the communication activities should take the following into consideration:

- a. The need to use the term **disaster risk reduction (DRR)**, rather than use the term **disasters**. This would match existing national policies and action plans and is considered a more appropriate fit for international discussions on climate change.

The CCD has noted the linkages between reducing disaster risk and responding to climate change. The CCD has also pointed out that “there are guiding national and regional actions to integrate policies and practices, and to strengthen our capacities to support the integration of DRR and climate change”. These actions are reflected in the policy and the thematic working group under Vision 2030 – Jamaica, the 2015 Climate Change Policy Framework document and other policy instruments.

- b. The need to distinguish **climate change** from **environmental management** issues in future message construction and subsequent communication products.
- c. The need to include contextual references to the **2012 National KAP/B study** which had a much wider mandate than the 2016 study. The 2012 study used a mixed methodology of household surveys, online survey and focused groups. This 2012 study therefore had a national and much wider scope than the one done under the J-CCCP, which averaged 500 household respondents.

The 2012 initiative aimed at updating existing information on the knowledge, attitudes and behavioural practices regarding climate change among Jamaicans. It made comparisons with a previous 2005 national KAP study, identifying key changes over the years.

It was noted that the 2012 national survey had household responses from 1,484 persons, 503 online respondents and 276 organizations. The survey also targeted six main sectors: Agriculture, Construction (Built Environment and Human Settlements), Energy, Health, Tourism and Water.

Some of the main findings of the 2012 KAP/B report included the following:

- There was a fairly high knowledge level on climate change and more than 70% of respondents linked it with change / variation in climate globally, temperature and weather patterns.

Submitted by Vilma Gregory to the UNDP Barbados and OECS – 15 November, 2016
, December 01, 2016. Addendum added on February 7, 2017



- More than 70% of respondents were unaware of government activities in climate change.
- An average of 45% of respondents expressed major concern about climate change.
- Respondents identified the following needs for behavior changes: improper waste disposal such as burning garbage, deforestation and increased energy use.
- At the country level, respondents identified the following practices in need of improvement: negligence in garbage disposal, lack of environmental planning and protection, as well as a shortage of public education.
- Community focus groups identified the following practices as important interventions: starting vegetable gardens, recycling plastic bottles and bags, preserving produce, disposing of garbage properly –composting; educating oneself and becoming more aware.
- Sector respondents expressed lack of preparation and insufficient capacity and resources within their agencies to handle climate change needs. They suggested pursuing the following steps: trying to make their own organisation more energy and climate efficient (i.e., energy efficient lights, energy audits, etc.), increased staff training and awareness and enhancement of some building infrastructure (i.e., use of generators), improved inter-agency cooperation.
- Respondents identified the following important adaptation and mitigation strategies: climate smart agriculture that includes energy and water conservation, safe pest management, alternative livelihood solutions that seek to capitalise on positive opportunities that climate change will bring, community auditing, data collection and monitoring and increased public awareness across all sectors.
- Most respondents in the 2012 study relied on traditional media i.e. TV, radio and print, with online respondents selecting the Internet after TV as their main source of information.

The 2012 study also had implications for any public education and campaign strategy, mainly the need for persons to identify actions that they would individually be responsible for, rather than relying solely on government's activities. Some focus groups also suggested the use of popular personalities and the use of drama and road marches. Social media channels were also proposed. It was suggested that future communication interventions should extend beyond information sharing and focus on promoting specific behavioural practices in Jamaica.