

Enhanced Vulnerability Capacity Assessment (EVCA) for **JOST VAN DYKE, BRITISH VIRGIN ISLANDS**



Community : Jost Van Dyke, British Virgin Islands
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Facilitation Team

Peterson Yearwood,
Kristi Creque,
Anisha Brewley,
Austin Carriere,
Venetia George,
Heather Mardenborough,

Disaster Management Officer
Disaster Management Officer
EVCA Field Officer
EVCA Field Officer
EVCA Field Officer
EVCA Field Officer

Contents

1. Acknowledgements	3
2. Enhanced Vulnerability and Capacity Assessment (EVCA) Data	4
Country Context.....	7
3. Risk Analysis Summary.....	9
4. Mitigation Actions Summary.....	11
5. Assessment Data.....	14
6. Population Data	15
7. Hazards – What is Affecting the Community?.....	16
8. Consolidated Risk Information.....	17
9. Mitigation Activities	30
10. Community Survey & Baseline Survey Findings	34
11. Historical Profile.....	38
12. Seasonal Calendar.....	40
14. Mapping.....	41
15. Direct Observations.....	45
15. Venn Diagram	46
16. Conclusion	47
17. References	48

1. ACKNOWLEDGEMENTS

The enthusiasm and willingness of residents, faith-based organizations, business operators, community members and all others from the Jost Van Dyke Community, who attended our series of Community Meetings and Focus Group Discussions to support the Enhanced Vulnerability and Capacity Assessment (EVCA) process. To the District Representative – Hon. Melvin Turnbull and District Officer Ms. Carmen Blyden, for their blessing and support with facilitating community member’s participation. The valued assistance by the S.M.A.R.T Communities Project Team at the Department of Disaster Management (DDM). Additionally, we wish to thank the British Red Cross (BRC) team in the UK office, for their continuous support and guidance.

There are various assessment tools which can be utilized to carry out the EVCA process. For the Jost Van Dyke community, the following tools were used:

- Historical profile-** Historical profile is a way to build pictures of past events that had an effect on a community and stimulate discussion on what has happened in the past. In a historical profile, community members and the EVCA officers create a timeline of the different significant events and developments over the past several decades.
- Seasonal Calendar-** Helps in exploring the seasonality of events in a community over a one-year period. It can be used to show typical hazard patterns including when hurricanes, floods, droughts or diseases normally occur, when social and economic conditions including 'lean periods' and seasonal labour migration takes place, and public events such as holidays and festivals occur, and identify how the correlation between the different events might increase risks.
- Mapping-** Helps in visualizing the resources, vulnerabilities and hazards in a community.
- Direct Observation /Transect Walk-** This involves walking through the community to observe and discuss the daily activities, the surroundings and the risks and resources. It is used to note the sites and topography of the area, to understand interrelationships based on space, and to identify vulnerabilities, hazards, risks, and capacities.
- Disaster Risk and Preparedness Household Survey** This survey was used to determine the residents general knowledge of preparedness, the risk related issues within the community and how residents would like to be engaged for emergency related information.
- Venn Diagram-** Venn diagrams can be used to collect social data by using circles to show the links or relationships between different parts of a community or institution. In the context of a VCA, a Venn diagram is used to examine similarities and differences between institutions, partners, people and issues in a community and to identify problems and possible solutions.
(EVCA Manual Tool Kit, 2019)

2.1 COUNTRY CONTEXT

The Virgin Islands, an overseas territory of the United Kingdom, is self-governed by a democratically elected House of Assembly, with the Governor representing Her Majesty, the Queen.

The British Virgin Islands is a cluster of about 60 islands, cays, and rocks strewn over 3,445 mi² in the north-eastern corner of the Caribbean Sea, east of Puerto Rico. The British Virgin Islands' total land area is 154 km². Of the 15 inhabited islands, the largest are Tortola (56 km²), where Road Town, the capital, is located; Anegada (39 km²); Virgin Gorda (22 km²); and Jost Van Dyke (8 km²).

The British Virgin Islands lies in the path of the hurricane and tropical storms and is vulnerable to wind damage, flooding, and landslides; it is also at risk for earthquakes.

Jost Van Dyke (sometimes referred to as JVD or Jost) rests in the northern portion of the archipelago of the Virgin Islands, located in the Atlantic Ocean and Caribbean Sea. Jost Van Dyke lies about 8 km (5 mi) to the northwest of Tortola and 8 km (5 mi) to the north of Saint John. Little Jost Van Dyke lies off its eastern end.

Great Harbour serves as the commercial centre of the island, it houses the Government Administration Building, the ferry dock, and a Customs and Immigration facility. The waters of Great Harbour provide the most frequent mooring destination for boaters visiting the island, while the strip of beach around the Harbour (its Main Street) is lined with many small businesses. Most of the island's residents, who are primarily employed in tourism, live in the Great Harbour area.

Like many of the neighbouring islands, it is volcanic in origin and mountainous. The highest point on the island is Majohnny Hill at 321m (1,053 ft.).

The island displays a rugged topography with irregular coastline and sheer cliffs that lines the northern coastline. Steep-sloping terrain is another topographic feature that can be found on the island.

The island's population for 2019 is 298, having 142 males, and 156 females. The population for 65 years plus is 28, and 11 for single parents. After the effects from the 2017 Hurricanes, a youth is now disabled and bedridden, also, an elderly women has a mental disability. (Carmen Blyden, 2019)

2.2 COMMUNITY SELECTION CRITERIA

How and why was this community selected?

- The British Virgin Islands Red Cross in collaboration with the Department of Disaster Management used the Strategic Targeting Methodology tool (STM) to select the Jost Van Dyke community as one of the most vulnerable communities. This tool is designed to be used in the determination of the most vulnerable communities in a country, it ensures a transparent, consistent, unbiased and power dynamics in the decision-making that leads to the selection of communities.

Jost Van Dyke was selected because of flooding and poor waste management problems. The community is also known for having a vulnerable population, because of the various effects caused by the 2017 Hurricanes.

3. RISK ANALYSIS SUMMARY

This is a summary of all **High Risk** areas in the community. A Risk is considered high if the community has:

- High Exposure to a Hazard,
- Have a High Vulnerability to the Hazard,
- Low or Medium Capacities to deal with the effects of the Hazard.

3.1. MAIN HAZARDS IN THE COMMUNITY

The residents highlighted that the community is exposed to hurricanes, flooding, mosquitoes and droughts, additionally the community is also vulnerable to coastal impact from siltation, tsunami inundation, storm surges and landslides from the surrounding hillsides.

3.2. HURRICANES

- **Exposure** – The gravity of exposure within the entire Jost Van Dyke community has been graded high. This is due to the low-lying regions being located on the flood plain, and because of the location and topography of the elevated regions within the community.
- **Risk Knowledge** – Community Based First Aid and Community Emergency Response Teams (CERT) are in need of re-training and newer community members exposed to both trainings. According to results from the household survey that consisted of 26 participants; 38% of members have participated in an evacuation drill, 38% knows that the community has an organized group that decides what to do in disasters or emergencies, 92% are aware of the early warning system, 88% are aware of the evacuation routes, and 42% are aware of the emergency shelters.

There are moderate capacities that exist, such as the school within the community that is a certified SMART/ SAFE School¹ (suggesting that resilient activities are carried out and supported). The community is informed about disaster preparedness by community based organizations such as; faith based organizations, radio stations, and social media and the Government or Non-Governmental Organizations (NGO's). A church on the east side of the island serves as the one and only shelter on the island. There is also a community based organisation- Jost Van Dyke Preservation Society that helps in the up-keeping of the Island. The Sister Islands Programmes also exists, this was established by the deputy Governor's Office in 2003 to monitor, promote and facilitate the delivery of Government services to the sister islands-Jost Van Dyke being one of those islands.

- **Health and Basic Needs** – There is a high vulnerability, as there is little preparation to stock up on food prior to a hurricane season and a reliance on unhealthy, canned goods which can lead to illnesses, while, after a storm, cisterns can become contaminated. Many of the community members are still recovering/ rebuilding, and had to relocate, some members do not have running water nor electricity at home. There are moderate capacities in the community – there is a mini market, and other shops and markets on the main island; Tortola. There is a clinic on

¹ Being certified as a SMART and SAFE School requires the completion of two steps; by obtaining the SAFE School certification; schools are to adhere to health and safety policy, and the plant must be in good condition. The second step involves using the Green checklist which ensures that the school meets the requirements for the Green building condition. The Green building condition states that there must be assess to water and energy consumption and the school must have actions put in place to reduce its carbon footprint. It also focuses on how chemicals and cleaning supplies are used and examines indoor air quality, lighting and recycling or reuse practices. SMART AND SAFE Schools certifications are valid for 3 years.

<http://www.bviddm.com/teachers-trained-to-apply-smart-schools-toolkit/>

the island that offers it services to all individuals in need daily, a doctor visits weekly. The Department of Disaster Management in collaboration with the BVI Red Cross has secured storage for emergency contingency stocks on the island for relief distributions to the most vulnerable residents.

- **Connectedness** – The community tends to be neglected in terms of effective handling/ managing of health and risk hazards. Recovery has been generally slow due to the inflated costs of transportation for construction material. The community is connected through faith based organizations, Government ministers, Governmental department directors, DDM, Red Cross volunteers and CERT's.
- **Infrastructure and Services** - The main road that encircles the island was destroyed after the 2017 Hurricanes, and people can no longer travel around the entire island. Many homes and small businesses were destroyed, individuals have rebuilt/ started rebuilding, however, the building structures are poor (wooden). Building structures are out-of-date and in need of repairing and upgrading in line with BVI building standards. The District Officer has expressed her concern on the need for a new school building, community centre, and public bathrooms for tourist. Furthermore, facilities at the Port of Entry needs improvement, and the second port of entry was destroyed during the 2017 Hurricanes. Moderate capacities include support from Government services on the main island (construction workers and trucking businesses), some members within the community are also skilled in construction work as well. There is a church located on the east side of the island that currently serves as an emergency shelter. The Jost Van Dyke community residents used their savings and what they had insured with the insurance companies to rebuild they businesses and homes after the storms of 2017.
- **Natural Assets** - There are severely damaged mangroves and coral reefs as a result of the passage of the 2017 Hurricanes. The District Officer has stated that salt ponds are in need of treatment as they aren't functioning well, causing raw polluted water to flow to the sea. The Jost Van Dyke Preservation Society is a Non-Governmental organization which was established on the island of Jost Van Dyke and currently has an initiative with students on the island to assist with mangrove replanting efforts. The community received support from DDM in 2019 to carry out further studies of the mangroves that were damaged by the storms in 2017. Since then a plan to try various methods of replanting was being used to determine which method would be the most effective with replanting mangroves locally.

3.3. FLOODING

- **Risk Knowledge** - Homes, small businesses, the Government building, the primary school, the Methodist church and other important buildings are all within the flood plain. While the Community slopes downhill, rain water from elevated regions flows down making its way to the sea, this also causes landslides, rock fall, and water flooding homes. Capacities are moderate.
- **Connectedness** -There is a language barrier with some community members living within the low-lying regions that experience flooding and are in need assistance, this sector of the community is not connected. Therefore, the entire community is not inter-connected, however, there are strong associations that exist for some of the social groups which can be targeted to bridge connectivity dysfunctions.

- **Infrastructure and Services** - Some housing is considered out-dated by construction types and need to be updated to include hurricane shutters, whereas insuring that the surrounding of the premises does not contribute to flooding that will cause damages to the home and roads.

3.4. MOSQUITOES

- **Risk Knowledge-** The Community's poor garbage disposal and waste management habits have contributed to the increase in bulk waste/derelict vehicles, resulting in stagnant water which creates the required environment for mosquito breeding sites. The Department of Environmental Health and an NGO named Green VI have been assisting in providing awareness and solutions to the BVI community about the lack of proper waste disposal and how these actions can result in the increase of breeding site for mosquitoes.
- **Connectedness-** Community members are willing to support clean-ups and other activities to improve poor conditions, however, they are discouraged because of lack of timely support from Government and Community Based Organizations to help with these clean-ups and other activities to improve the conditions of the community.
- **Capacities are moderate** - the Environmental Health Division periodically conducts fogging to lower the number of mosquitoes within the area and also provides treatment for mosquito breeding sites. Governmental organizations and Community Base Organizations can support community members in helping to conduct clean-ups to lower the amount of waste within the community.

4. MITIGATION ACTIONS SUMMARY

The community of Jost van Dyke can receive support from faith-based organizations, schools, clinics, Red Cross, the Environmental Health Department (Vector Control Unit) of the Ministry of Health and Social Development, Department of Disaster Management and other organizations in conducting the different mitigation actions listed.

4.1. HURRICANE MITIGATION ACTIONS

- Promote Hurricane preparedness programmes (will be conducted annually within the community), First Aid and CERT training.
- More public community shelters that are equipped and easily accessible to all members of the community to be built or provided.
- Proposed project on the cleaning of the roads that were blocked after the 2017 Hurricanes.
- Replanting of mangroves and the treating of ponds.
- Migrant members to be included in community meetings and community events.

4.2. FLOODING MITIGATION ACTIONS

- Community led project proposed to Government for installation of sediment traps into Ghuts.
- Regular clean-up of Ghuts.
- Repair and fixing of homes supported by the Government.

4.3. MOSQUITO MITIGATION ACTIONS

- Fogging is conducted by The Vector Control Unit, this is only done when there are a lot of complaints from members within the community and/ or if there has been a lot of rainfall. Fogging schedule to be created to better support and control the number of mosquitoes within the community. The Vector Control Unit also provides treatment for mosquito breeding sites.
- Regular clean-ups
- Campaigns on dengue (other mosquito borne diseases, importance of fogging, removing stagnant water, and other practices that will help lower the amount of mosquito breeding sites within the community.
- To engage the youth in clean-ups and other activities.

4.4 DESCRIPTION OF JOST VAN DYKE AREA

Name of the community: Location: Jost Van Dyke

(Images were obtained from google maps and GIS-Imaging, 2019)



5. ASSESSMENT DATA

-Two community meetings were conducted; one was held with members within the community, and the other with the District Officer.

-The first meeting was held on the 8th of October, 2019, and consisted of a total of thirteen participants, 4 males, and 9 females. Participants involved were tourism workers, business owners, Red Cross volunteers residing on the Island, and Government officers. Participants in the meetings were within the age range of 25-50 plus.

-The second meeting was held on the 18th of October, 2019. This meeting was held with the District Officer, Ms. Carmen Blyden, DDM Officer, Ms. Kristi Creque, Red Cross EVCA field officers and DM officer were present as well. In 2021, the Red Cross Disaster Management Officer and the EVCA field officer made another visit to the island to re-confirm the data that was collected in 2019.

-The secondary data and information used came from different websites consisting of limited demographic information, online information sharing the history of hurricanes in community, as well as information from the Central Statistics Office.

HAZARD	EXPOSURE	VULNERABILITY	CAPACITY
PRIMARY DATA	PRIMARY DATA	PRIMARY DATA	PRIMARY DATA
-Community Meeting -Household Survey -Direct consultation with Government officials			
SECONDARY DATA	SECONDARY DATA	SECONDARY DATA	SECONDARY DATA
-Government and other websites			
TOOLS USED	TOOLS USED	TOOLS USED	TOOLS USED
-Direct Observation - Mapping -Seasonal Calendar -Primary/ Secondary data	-Direct Observation -Mapping -Transect walk -Primary/ Secondary Data	-Direct Observation -Mapping	-Direct Observation -Mapping -Primary/ Secondary Data

6. POPULATION DATA

	Total population in Jost Van Dyke		
Breakdown of community population	Male	Female	Total
	142	156	298 (2010 Census)
Elderly and single parents estimate	Elderly (65 year plus) - 28 (Carmen Blyden, 2019)	Single parents- 11	
Disability (estimate if data not available)	31 (having some form of disability or multiple disabilities) (2010 Census)		
% of population that contributed to the VCA	26 participants contributed to the survey		
Type of context	Peri-urban area	Geophysical environment	Costal, highland
Livelihood activities: Agriculture, livestock, fishing, Government employees and officials, shops, restaurants, apartment complexes, hotel workers employed in tourism season.			

7. HAZARDS – WHAT IS AFFECTING THE COMMUNITY?

HAZARD 1- HURRICANE

The hurricane belt includes the Caribbean Sea and Gulf of Mexico, thus Caribbean islands within this area are affected by hurricanes. The British Virgin Islands lies within this area and is therefore exposed to hurricanes. Hurricane season begins on the 1st of June and extends to the 30th of November; however, the peak time is within the months of August and September. Strong winds, sea level rise, and rain clouds are some common warning signs that a hurricane is approaching. A hurricane watch is issued 48 hours in advance of the onset of tropical storm force winds, if conditions worsen an advisory following an alert may be issued. The Department of Disaster Management (DDM) in the BVI is responsible for issuing all warnings and information on natural disasters, they alert the public through the BVI app, and receives support from the Antigua Met Office. Since 1916 seventeen hurricanes have affected the Territory and impacted Jost Van Dyke. The most recent and large impact hurricanes were Irma and Maria in 2017 (both Category 5). Communities were affected with flooding and property damage, it stripped vegetation from hillsides. The Primary school, health clinic, the Methodist church, 2 petrol stations, and most homes were destroyed. In 2019 the effects from Hurricane Dorian caused flooding and minor property damage in some areas.

HAZARD 2- FLOODING

During the hurricane/wet season the territory experiences frequent and heavy rainfall. Heavy rainfall can cause flooding within a community if proper measures are not put into place. Community members residing within the lower regions of the island shared their traumatic experiences of having to swim to higher ground during Hurricane Irma of 2017 because of flooding. Jost Van Dyke can be described as a coastland and highland, signifying that it may be at risk to flooding, especially within the coastal areas. Once a hurricane warning has been issued heavy rainfall is expected, also, weather channels aid the public in knowing what to expect; with this information individuals should have enough time to prepare.

HAZARD 3- MOSQUITO BREEDING SITES

The Aedes Aegypti mosquito is found predominantly in tropical regions. There are many species of the Aedes Aegypti mosquito, and it is the main vector responsible for the spread of several viral diseases including chikungunya, dengue and ZIKA. Mosquitoes thrive in temperatures that are 80 degrees Fahrenheit and above. They are more active during the hot season/summer time. Stagnant/standing fresh water, trash cans, old items/accumulated garbage/bulk waste, gutters, tree stumps and mud piles are known mosquito breeding sites. The poor management of waste disposal and the high prevalence of stagnant water within the community makes the community a perfect breeding site for mosquitoes. Community members have expressed their concerns on the high levels of mosquitoes within the area. The mosquitoes are a nuisance and puts the community to be further infected with mosquito borne diseases.

8. CONSOLIDATED RISK INFORMATION

8.1. HAZARD 1 – HURRICANES

HURRICANE EXPOSURE- HIGH			
<p>The entire community stands to be affected by hurricanes.</p> <p>The low-lying areas of the community are within flood prone areas, the administration building, small businesses, the clinic, pre and primary school, homes, and other buildings are within these areas.</p> <p>The elevated regions within the community are exposed because of its location and topography.</p>			
RISK KNOWLEDGE - HIGH RISK			
Vulnerability aspects	Capacity aspects	Summary of risk	Actions
<p>HIGH</p> <p>-Older people, children, single parents, and people with disabilities in the community are likely to need some level of assistance in the event of a hurricane or other natural disaster.</p> <p>-School teachers in Jost Van Dyke are trained as Community Emergency Response Team (CERT) members and can provide first aid services (there is no information available on how many are trained at the moment); however, they require continuous training to maintain their status and skills.</p> <p>-There is only one small community shelter with a maximum capacity of 15 individuals (Prophecy Church building) on the east side of the island.</p>	<p>MEDIUM</p> <p>-School is certified SMART/ SAFE schools (suggesting that resilient activities are carried out and supported).</p> <p>-There is a community WhatsApp group which is directed by the District Officer Ms. Carmen Blyden. 70% of the residents on the island are within this group.</p> <p>-The community is informed about disaster preparedness by community base organizations (faith-based organizations, radio stations, social media).</p> <p>-A Faith based organization serves as the one and only hurricane shelter.</p> <p>- A community-based organisation- Jost Van Dyke Preservation Society</p>	<p>This is determined as high risk as a result of the high exposure to hurricanes and high vulnerability. The vulnerability level needs to be lowered, while the capacities need to be increased/improved. This will support building community resilience.</p>	<ul style="list-style-type: none"> ● Refresher CERT and First Aid training for school teachers, and other trained individuals. Train new CERT members within the community. ● Ensure that the community is informed on the community shelter, evacuation routes and early warning system.

<p>-There is a lack of knowledge on the community shelter and some individuals are not aware of the early warning system and evacuation routes.</p>	<p>helps in the up-keeping of the Island. -The Sister Islands Programmes also exists, established by the deputy Governor's Office in 2003 to monitor, promote and facilitate the delivery of Government services to the sister islands-Jost Van Dyke being one of those islands.</p>		<ul style="list-style-type: none"> • Develop new / more emergency shelters. • Government to inform the public of the building codes and ensure it is enforced.
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HEALTH AND BASIC NEEDS - HIGH RISK

Vulnerability aspects	Capacity aspects	Summary of risk	Actions
<p>HIGH -Many of the individuals are still recovering/ rebuilding homes from 2017 Hurricanes. Some individuals do not have running water nor electricity at home. -Prior to the hurricane season, there is not much stocking of foods, as many people choose to prepare a few days before a hurricane. -Majority of individuals within the community own cisterns.This can become a health risk as the cisterns can become contaminated after a hurricane. -Members stated that there is a need for ATM banking and a supermarket.</p>	<p>MEDIUM -A mini market is on the island. Residents mostly get their supplies on the main island; Tortola, and bring them across on the ferry (only means of transportation to the island). - Before a hurricane, many people stock up on canned and dry foods as well as drinking water and tap water. -The clinic is open every day and offers its service to all who may need it. A doctor visits the island weekly.</p>	<p>This is determined as high risk as a result of the high exposure to hurricanes and high vulnerability (which needs to be lowered). The moderate capacities need to be increased/ improved - medium risk highlights that the community is not holistically prepared for a hurricane.</p>	<p>-Hurricane preparedness sessions will be provided so that community members are better informed and more knowledgeable about health practices and addressing their basic needs before, during, and after a hurricane, or similar disaster.</p>

SOCIAL COHESION – MEDIUM RISK

Vulnerability aspects	Capacity aspects	Summary of risk	Actions
HIGH	HIGH		

<p>-Displacement that has resulted in individuals living with neighbours, friends, family, and temporary housing provided by the Government.</p> <p>-There is a known separation between the Non-English speaking community and the locals/ residents due to differing culture and the language barrier.</p> <p>Individuals are in temporary housing, but this is only for a certain period, permanent housing arrangements are needed.</p>	<p>-Usually after a hurricane, community members find comfort in being together and supporting one another. Members know that they can depend on each other when they need support.</p> <p>-The Government has supported the community by providing temporary housing and Community outreach organizations have provided support as well.</p>	<p>It is determined that the risk is medium as a result of a high exposure to hurricanes and a high vulnerability. Furthermore, the capacity is high as well, therefore, placing social cohesion within the community at a moderate level.</p>	
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CONNECTEDNESS – HIGH RISK

Vulnerability aspects	Capacity aspects	Summary of risk	Actions
<p>MEDIUM</p> <p>-Rules/laws (e.g. dumping of bulk waste) are not enforced within the community are not adhered to by some members of the community members. Derelict boats have been situated for 12 years or more.</p> <p>-Community tends to be neglected at times by the Government in terms of effective handling/managing of health and risk hazards. Recovery has been generally slow due to the inflated costs of transportation for construction material.</p>	<p>MEDIUM</p> <p>Connected through faith-based organizations, Government Ministers and Governmental Department Directors, established connection with DDM through community Shelter, Red Cross volunteers, CERT's. The District Representative visits the island to deal with community issues on a weekly basis.</p>	<p>It is determined that the risk is high due to the high level of exposure to hurricanes, medium level of vulnerability and medium capacities within the community, highlighting that the community is connected, and that these connections must now fulfil their roles within the community.</p>	<p>- Improvement of waste management, regular clean ups and community awareness to be done by conducting campaigns on dengue (and other mosquito borne diseases). Government needs to establish its presence into the community more and encourage the businesses on the</p>

			main island to increase interactions in the Jost Van Dyke community.
INFRASTRUCTURE & SERVICES- HIGH RISK			
Vulnerability aspects	Capacity aspects	Summary of risk	Actions
<p>HIGH</p> <ul style="list-style-type: none"> -The main road that encircles the island is damage, members can no longer travel around the entire island. -Many homes and small businesses were destroyed, individuals have re-built/started rebuilding, however, the building structures are poor (wooden). -About 30% of house structures are out-dated (ex. no hurricane shutters). -A new school building, community centre, and public bathrooms for tourist are needed. -Facilities at the port of entry needs improvement. Other port of entry on the island was damaged after the 2017 Hurricanes. 	<p>MEDIUM</p> <p>Support from Government services on the main island (construction workers, trucking)</p>	<p>The risk to infrastructure and services within the community is considered high due to the high exposure to hurricanes, high vulnerability and medium capacities within the community. Capacities are present, however, much effort is not being given to support the community.</p>	<ul style="list-style-type: none"> - Proposed project on building public bathrooms, and improvement of the facilities at the port of entry. -Cleaning of the roads that were blocked after the 2017 Hurricanes.

ECONOMIC OPPORTUNITIES – MEDIUM RISK			
Vulnerability aspects	Capacity aspects	Summary of risk	Actions
MEDIUM Debt and unemployment for some individuals due to the aftermath of the 2017 Hurricanes.	HIGH -Economic opportunities are available but are limited. Persons with the community have various skillsets that allow them to obtain an income even if it is at a reduced amount.	It is a determined medium risk due to the high exposure to hurricanes. Vulnerabilities are medium due to unemployment which affects livelihoods and there are low capacities reducing the risk to a moderate level.	-Government to support individuals in finding jobs.
NATURAL ASSETS – HIGH RISK			
Vulnerability aspects	Capacity aspects	Summary of risk	Actions
MEDIUM -There are severely damaged mangroves and coral reef as a result of the passage of the 2017 Hurricanes. -Ponds need to be treated (aren't functioning), as raw water flows to the sea.	MEDIUM -JVD Preservation Society are re-planting mangroves. -Support from Government services located on the main island.	The risk is high, there is a high exposure to hurricanes and medium capacities, and the vulnerabilities are medium as well. The mangroves and coral reef being damaged exposes the community to risk if a system passes the Territory. Mangroves are an important flood defence,	-Re-planting of mangroves, and the treating of ponds.
Risk analysis		Total Risk Score	HIGH
The entire population in the Jost Van Dyke community stands to be most affected by hurricanes because of its high exposure to hurricanes and high vulnerability level, this includes the location of businesses and homes on the island, the poor infrastructure from buildings being built with galvanise roofing, wooden material and weak/ out dated structures.			

8.2. HAZARD 2 – FLOODING

FLOODING EXPOSURE – MEDIUM			
<p>The low-lying areas within the community are within the flood plain. The community slopes downhill.</p>			
RISK KNOWLEDGE – HIGH RISK			
Vulnerability aspects	Capacity aspects	Summary of risk	Actions
<p>HIGH -Homes, businesses, the Government building, school, church and other important buildings are all within the flood plain. -The community slopes downhill causing water from higher areas within the community to flow through on its way to the sea. -Within the elevated regions of the community, heavy rainfall causes landslides, rock fall and water flashing into homes.</p>	<p>MEDIUM The community slopes downhill, therefore, there are highlands surrounding the community that provides refuge in case of a rise in sea level. There are sediment traps on the elevated regions of the island.</p>	<p>The risk is high because of the high vulnerability scoring and medium capacities. The community is at risk because all of its important buildings are within the flood plain. All these buildings were destroyed after the 2017 Hurricanes and are now rebuilt, if another system or heavy rainfall was to pass them.</p>	<p>-Regular Ghut and drainage clean-ups. -Awareness raising with community members on preparedness. -Standard building code to be addressed.</p>
HEALTH AND BASIC NEEDS - MEDIUM RISK			
Vulnerability aspects	Capacity aspects	Summary of risk	Actions
<p>MEDIUM Damaged homes, soil erosion, damaged crops, illnesses.</p>	<p>MEDIUM -Ghuts and drainage routes are present, community clinic and a hospital (on the main island) are present and available to treat illnesses.</p>	<p>The risk is medium because vulnerability and capacity levels are medium. Community members often utilize the services from the community clinic, hospital and other</p>	

	-Community members can repair and fix minor home damages.	health services located on the main island.	
SOCIAL COHESION – LOW			
Vulnerability aspects	Capacity aspects	Summary of risk	Actions
LOW There is a known separation between the multilingual community and the English speaking community of differing culture and the language barrier.	MEDIUM Members within the community who do not speak English find togetherness amongst themselves upon initial arrival into the country and community.	The risk is low because social cohesion can be improved after residing in an area for a long period of time.	
CONNECTEDNESS – HIGH RISK			
Vulnerability aspects	Capacity aspects	Summary of risk	Actions
HIGH Some individuals who do not speak English living within the low-lying regions experienced flooding and need assistance, however, they are not connected with other members of the community and often suffer. Also some members living within temporary housing provided by the Government need assistance as well.	MEDIUM Majority of the members within the community are connected and usually help one another. Support from the District Representative and District Officer is given.	It is determined that the risk is high due to the medium exposure to flooding, high vulnerability and moderate capacities. Connectedness between multilingual members and other members within the community needs improvement.	-To engage the Non-English speaking population within community meetings and other community events.

INFRASTRUCTURE & SERVICES – HIGH RISK

Vulnerability aspects	Capacity aspects	Summary of risk	Actions
<p>HIGH Damaged homes/ buildings and damaged roads.</p>	<p>MEDIUM -Construction workers, Government officials and community leaders are within the community. -The community has access to Government services.</p>	<p>There is a high exposure to flooding due to the high vulnerability and medium capacity aspects. Many homes/ buildings need repairing, this highlights that members within the community are vulnerable and do not have the sufficient funds for repairs. Furthermore, the community is at risk and is currently unable to respond or be fully prepared to withstand another system.</p>	<p>-Government services and other organizations to assist in repairing and fixing of homes, also, connecting affected members with individuals who can help with repairs.</p>

ECONOMIC OPPORTUNITIES – HIGH RISK

Vulnerability aspects	Capacity aspects	Summary of risk	Actions
<p>HIGH Loss of income due to loss of livelihoods, minor injuries, property damage and other expenses.</p>	<p>MEDIUM -Community clinic and hospital (on the main island) are present. -Persons have various skillsets that allow them to receive a source income in other ways (if not on the island, there are on the main).</p>	<p>The risk is high because of the high vulnerability and medium capacity aspects. Health services are available and individuals can adapt and find new jobs.</p>	<p>Red Cross has implemented continue cash/voucher programs for most vulnerable residents.</p> <p>Government should implement stimulus packages needed to assist residents who are out of work and not making enough money to provide for themselves and their families.</p>

NATURAL ASSETS – MEDIUM RISK

Vulnerability aspects	Capacity aspects	Summary of risk	Actions
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<p>LOW Micro-farming crops and natural mangrove vegetation were destroyed.</p>	<p>LOW Some members within the community are knowledgeable on plant and agricultural husbandry.</p>	<p>It is determined that the risk is medium as a result of the low capacity and vulnerability aspects. The community consist of members who are knowledgeable in the area, however, it is only a small percent.</p>	
<p>Risk analysis</p>		<p>Total Risk Score</p>	<p>MEDIUM</p>
<p>The community stands to be affected by flooding during the hurricane and rainy seasons, this is due to poor infrastructure of homes, poor management of Ghuts and drains, and the community's location.</p>			

8.3. HAZARD 3 – MOSQUITOS

MOSQUITO BREEDING SITES EXPOSURE- MEDIUM			
<p>The exposure is medium due to the mosquito prevalence within tropical regions. There are many trees/plants, bulk waste, and stagnant water within the community, serving as the perfect conditions for mosquito breeding sites.</p>			
RISK KNOWLEDGE - HIGH RISK			
Vulnerability aspects	Capacity aspects	Summary of risk	Actions
<p>HIGH</p> <ul style="list-style-type: none"> -Poor garbage disposal and waste management has caused an increase in bulk waste/derelict vehicles within the community. -Stagnant water is also common in the low-lying areas of the community creating the required environments for mosquito breeding sites. 	<p>MEDIUM</p> <ul style="list-style-type: none"> -The Environmental Health Division conducts fogging periodically to lower the number of mosquitoes within the area. -Governmental organisations and NGO's can support the community to conduct clean-ups to lower the amount of waste. Community members can lead with support from NGOs to maintain cleanliness within the area. 	<p>The risk is high because the vulnerabilities within the community surrounding this subject is high. Capacities are moderate because they can be improved.</p>	<ul style="list-style-type: none"> -Improvement of waste management, regular clean ups and community awareness to be done by conducting campaigns on dengue (and other mosquito borne diseases) and the importance of fogging, removing stagnant water, and other practices that will help lower the amount of mosquito breeding sites within the community.
HEALTH AND BASIC NEEDS - MEDIUM RISK			

Vulnerability aspects	Capacity aspects	Summary of risk	Actions
<p>MEDIUM Community is at risk of developing mosquito borne diseases.</p>	<p>MEDIUM Preventative measures are present (mosquito nets are available on the main island) there is a community clinic and other health services and hospital on the main island that offer treatment for symptoms of different mosquito borne diseases.</p>	<p>The risk is medium. If community members build on their capacities by practicing prevention then the risk will lower.</p>	
SOCIAL COHESION – MEDIUM			
Vulnerability aspects	Capacity aspects	Summary of risk	Actions
<p>LOW -Community members may avoid socialising and attending social events/activities because of the high number of mosquitoes within the area. -Small businesses (bars, restaurants etc.) may experience economic loss because of less customers using their services.</p>	<p>LOW -Some community members are not concerned with the number of mosquitoes within the area and still support the social events. -Mosquito repellent is available on the island.</p>	<p>The risk is high because the vulnerability can lower the cohesion within the community.</p>	

CONNECTEDNESS – HIGH RISK			
Vulnerability aspects	Capacity aspects	Summary of risk	Actions
<p>HIGH</p> <p>Lack of timely support from Government and other businesses to help with clean-ups and other necessary measures that need to be taken place.</p>	<p>MEDIUM</p> <p>Members within the territory’s Government and other NGO’s are in position to support and fulfil their role within the community.</p>	<p>There is a high risk because of the vulnerability aspects. The community has been experiencing high mosquito prevalence and they feel as though no one is helping. They believe that for anything to be done, they will have to conduct these actions on their own.</p>	<p>-Community members to form a committee to advocate for help, and put actions in place to maintain cleanliness within the area.</p>
INFRASTRUCTURE & SERVICES – MEDIUM RISK			
Vulnerability aspects	Capacity aspects	Summary of risk	Actions
<p>MEDIUM</p> <p>-Many homes are in the vicinity of Ghuts, and stagnant water which causes a risk of persons being affected by mosquitoes. -Some homes do not have screen doors or window screens which allows a lot of mosquitoes to enter freely into their homes.</p>	<p>MEDIUM</p> <p>Some members in the community have screen doors and window screens, and for those who do not have, they can be found in stores on the island.</p>	<p>There is a medium risk because of the medium vulnerability and the medium capacity aspect. There are only a few houses in the community without screen doors or windows and there are only a few houses that are built in a close proximity to open water.</p>	<p>-Consult with Environmental Health division about a schedule time for mosquito fogging on neighbouring islands. -Ensure community members are aware on what measures can be taken place to help lower risk.</p>
Risk analysis		Total Risk Score	MEDIUM
<p>Majority of the community is affected by mosquitoes. Portions of the community where there are Ghuts and stagnant water are more exposed to mosquitoes than other parts of the community.</p>			

9. MITIGATION ACTIVITIES

	Hazard	Project/ Activity	Who will implement?	How will it be implemented?
1	Hurricanes/ landslides and erosion	Hurricane preparedness programs, First Aid and CERT Training, Government implemented Job placement programs, Government Stimulus package, Cash/Voucher Programs	Red Cross and the Government	<p>-Community members to form a committee to advocate for help, and put actions in place to maintain cleanliness within the area</p> <p>- Red Cross trainers to conduct a Basic First Aid training for members of the community that own businesses including restaurants, hotel accommodation etc, the training would include COVID-19 measures the trainees need to take into consideration.</p> <p>- DDM needs to conduct CERT training for members of the community as the island has limited medical capacity on the island and the beaches are not patrolled by lifeguards therefore restaurants and businesses owners need to increase capacity in</p>

				<p>those areas. Inclusive of adult swimming lessons and swift water rescue trainings. Additionally the skills of trained persons must be monitored and regularly practiced to ensure they are not forgotten.</p>
				<p>-Government needs to implement a job placement program for individuals who have lost their jobs to get a new job. Additionally, the implementation of a stimulus package for citizens needs to be implemented as well.</p> <p>- Red Cross can provide assistance in the form of running a cash/voucher program for the most vulnerable citizens.</p>
				<p>-Hazard preparedness courses and activities will be conducted within the community.</p>
2	Hurricanes/ landslides and erosion	Enforce the Standard building code	Government	<p>-Government to enforce standard building code.</p> <p>-Residents to be made aware of the standard building code.</p>

3	Hurricanes/ landslides and erosion	Improving Infrastructure and facilities	Government, NGOs and Community	-More community shelters to be built or provided.
				-Proposed project on the building of public bathrooms.
				-Proposed project on the improvement of facilities at the port of entry, and the cleaning of the roads that were blocked after the 2017 Hurricanes.
				-Replanting of mangroves.
4	Flooding	Installing sediment traps in Ghuts	Government and the Community	-Government services and other organizations to assist in repairing and fixing of homes, also, connecting affected members with individuals who can help with repairs.
		Repair and fixing of homes		Regular clean-up of Ghuts and installing of sediment traps.
		Ghut Clean-up		Community meetings and community events should also cater to individuals who speak a different language.

5	Mosquito Breeding Sites	Community Engagement	Red Cross, Government, and Community	<p>-Regular clean ups and campaigns on dengue (and other mosquito borne diseases) and the importance of fogging, removing stagnant water, and other practices that will help lower the amount of mosquito breeding sites within the community.</p> <p>-Work with Environmental Health division to agree a schedule for mosquito fogging</p>
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10. COMMUNITY SURVEY & BASELINE SURVEY FINDINGS

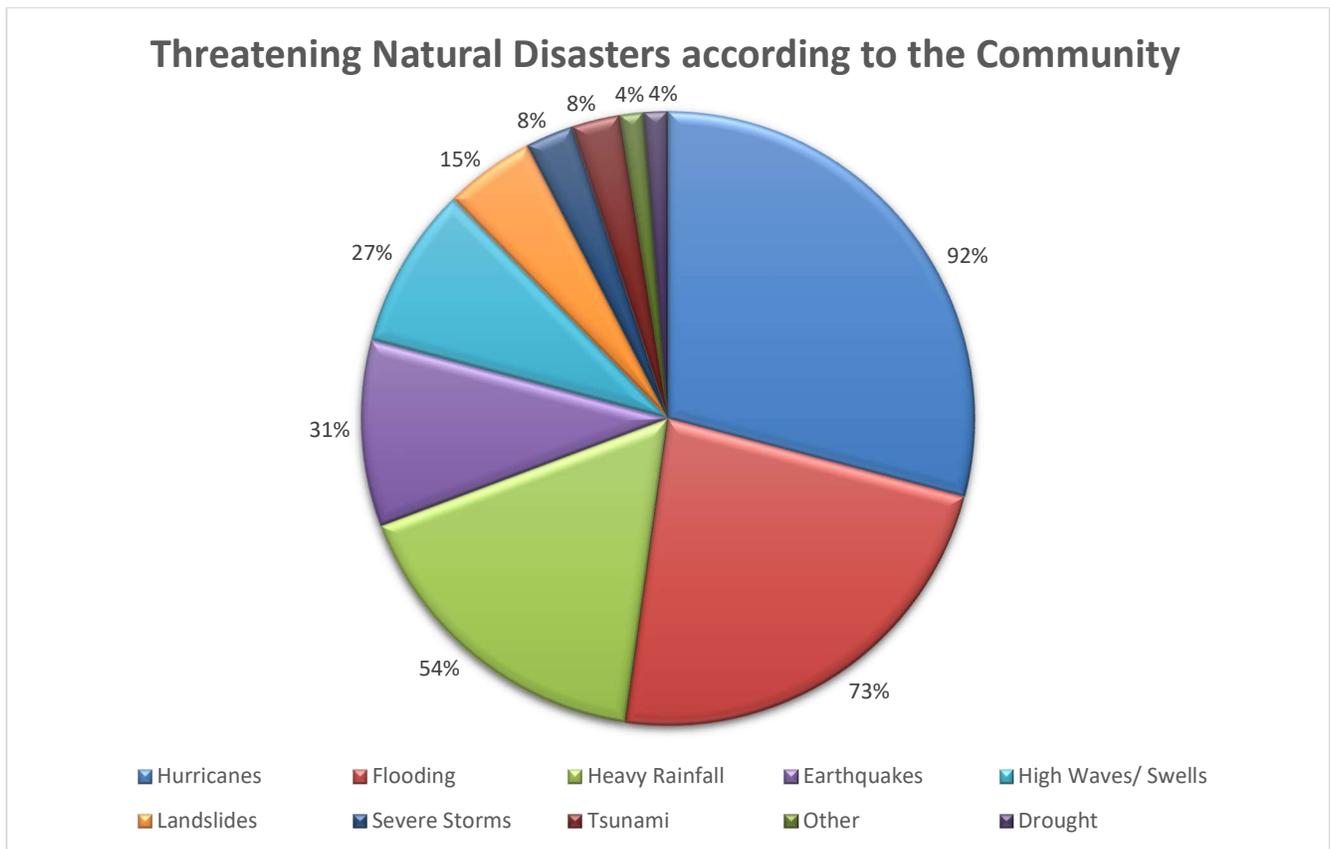
Household surveys were conducted by the EVCA team to collect baseline data on disaster and disaster preparedness within the Jost Van Dyke community. This survey was created and analysed using the Kobo Toolbox; an online toolkit that allows one to collect and manage data in challenging environments, which is widely used in humanitarian contexts.

Fourteen females and twelve males participated in the survey, totalling to 26 participants. 24 more participants will be interviewed a few months after the implementation of the mitigation plans, results will be analysed and compared to see if any improvements within the community were made.

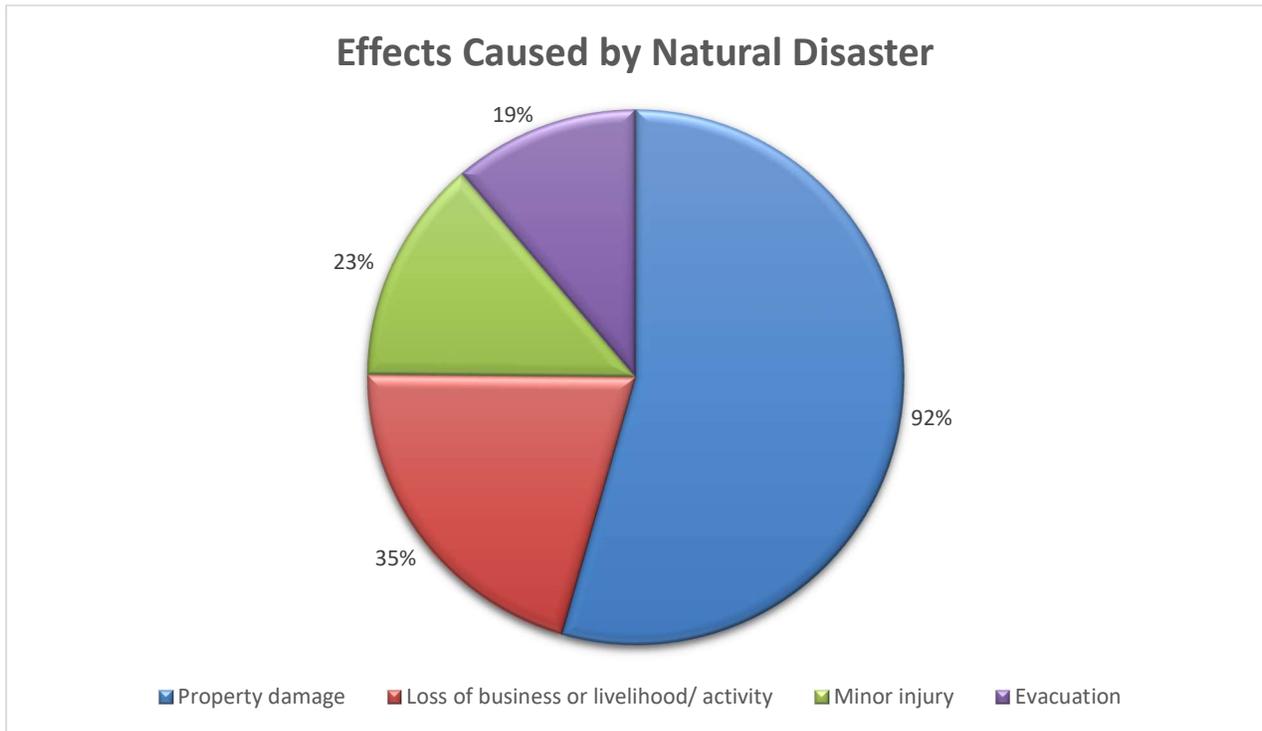
Participants consisted of students, employed persons and the retired. The Non- English speaking population (persons where English is not their first language) and persons with disabilities within the community were represented within the survey.

Majority of the participants (96%) had a great concern on disasters and believed that the community could be affected by a natural disaster within the next five years.

According to the information gathered from the survey, the top four natural disasters that threaten the community are: hurricanes, flooding, earthquakes and heavy rainfall.

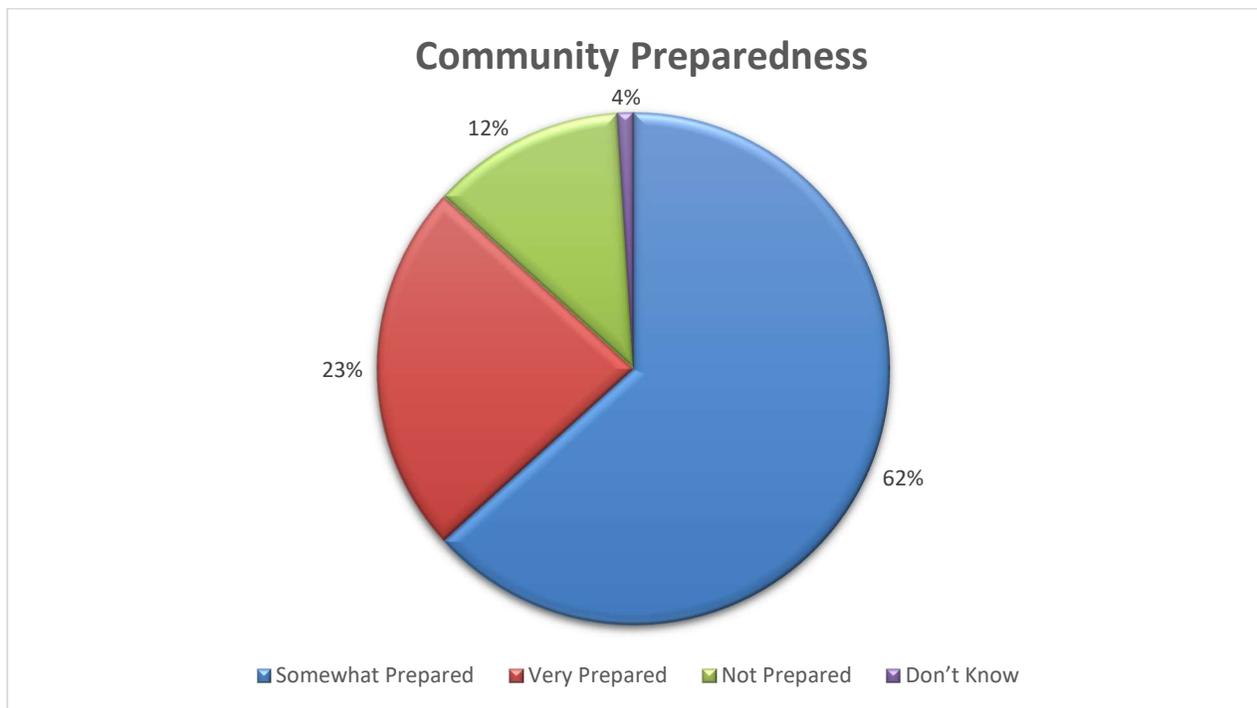


Community members recalled that the community was affected by two natural disasters; these being defined as hurricanes Irma and Maria. During these natural disasters 92% of the participants experienced property damage, 19% had to evacuate from their homes, 23% had a minor injury, and 35% experienced loss of business/livelihood.



Everyone believed that being prepared would help their family in a disaster.

- 62% stated that they were somewhat prepared for a disaster.
- 23% stated that they were very prepared.
- 12% stated that they were not prepared.
- 4% didn't know if they were prepared.
- 92% believed that after experiencing a major disaster they are more able to handle another one.
- 8% stated that they were less able because they are still in recovery and some families are worse financially than before because the cost of living has increased.
- 8% stated that they have not begun preparing for a disaster, but they plan to.
- 42% expressed that they are prepared for a disaster.



Majority of families have supplies at home for a natural disaster, the highest-ranking items being canned/package food, flashlight, and drinking water.

-38% of family members within the community have not spoken about or planned what they would do if a disaster occurred.

-53% said they have spoken with and have a disaster plan.

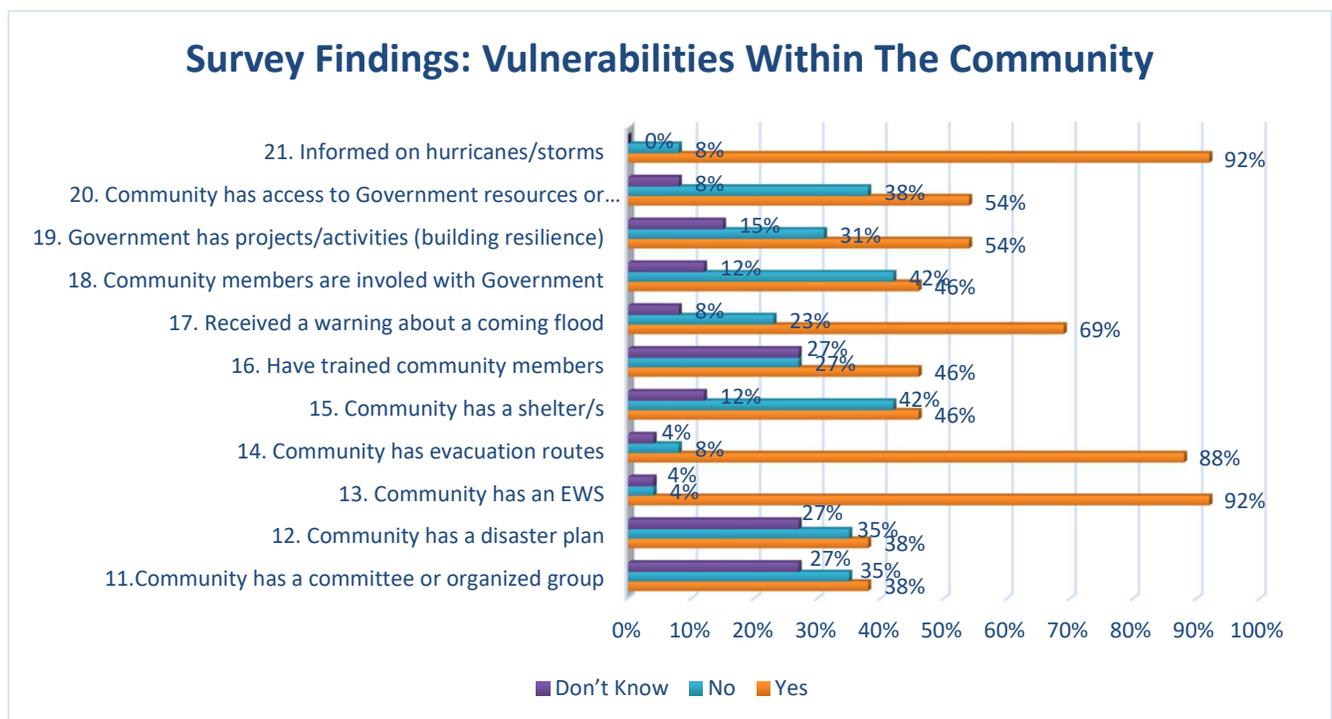
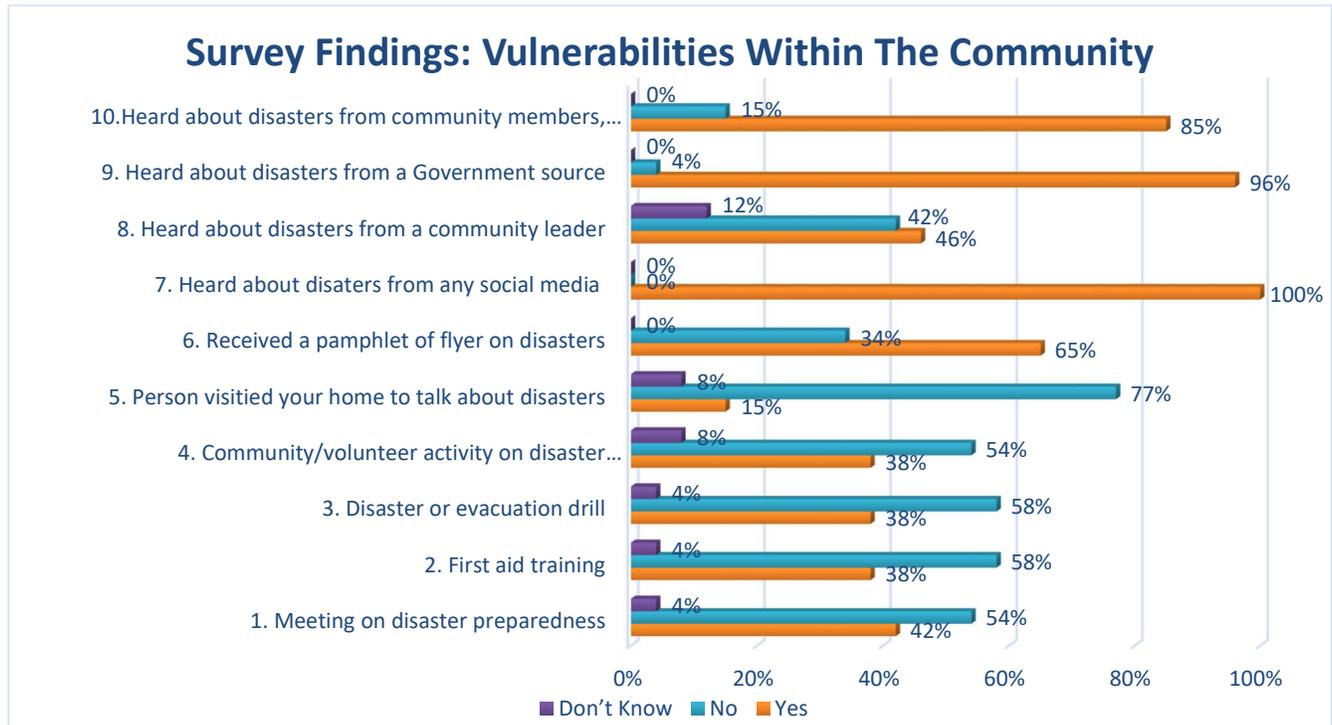
Topics of interest/concern within the families are:

- An evacuation plan
- A Community Shelter
- A list of items to take in case of an emergency
- A meeting place for family members
- Activities to strengthen the home or reduce risk or damage to property

Based on the results it can be outlined that:

- Few members within the community are lacking knowledge on disasters/disaster preparedness.
- Some members are not aware of the hurricane shelter or the community's disaster plan.
- Some members do not know if the community has trained personnel's to help during a disaster.
- It is unknown if the Government has enforced any disaster prepared plans.
- Members have faith in the BVI Red Cross, and their family and members within the community to provide assistance during a disaster

There are vulnerable individuals within the community, these being some of the elder members, children under 5 years, school-aged children, persons with disabilities, and individuals who are still in recovery after the effects from the 2017 Hurricanes. Majority of the members within the community have the basic needs at home, however, some members within the community are in need and houses are poorly structured, lacking shutters, being made from sheet rock and or wood, and are in flooding zones/landslide prone areas.



11. HISTORICAL PROFILE

The chart below provides a graphic diagram of the historical and visual profile of the Jost Van Dyke community. It showcases periods of historical, socio-economic significance which are tied to the evolution of the community as residential space. Importantly, it dates the **hazards** and disasters of significance as well as help with the identification of the elements at risk (exposure).

The community is exposed to hurricanes, the last recorded hurricane was Dorian in 2019, which caused flooding and destroyed/ damaged homes that individuals were using as temporary housing. Additionally, Hurricanes Irma and Maria in 2017 caused severe flooding and property damage, causing members to relocate. Many members within the community are still experiencing the effects of these two major disasters today (loss of homes, livelihoods, mental issues). The community is also exposed to severe weather winds and rains. The residents defined flooding as run off and pond flooding, hence, the low-lying areas flood during the rainy/ hurricane season.

HISTORICAL PROFILE: Jost Van Dyke		
Year	Events	Hazard Category
1789	The first settlement of the Methodist Chapel in Great Harbour was established.	Community Event
1916	Category 3 hurricane caused many deaths and flooding	Major Disaster
1917-1924	Territory experienced multiple hurricanes	Major Disaster
1925	Methodist Chapel was reconstructed after 1923 hurricane	Community Event
1960's	JVD was recognized as a key destination for yachting tourism.	Community Event
	Hurricane Donna (category 2), eye passed to the north of Anegada	Severe Weather
1968	Philiciano "Foxy" Callwood opened the first tourism enterprise; bar and restaurant in Great Harbour.	Community Event
1970	Jost Van Dyke Pre and Primary School was established, Institution doors were opened in 1971.	Community Event
1974-1975	Health Clinic was established and built.	Community Event
1987	Alibaba's was opened.	Community Event
1989	Hurricane Hugo (category 4), hit the main island (Tortola), caused significant damage	Major Disaster
1992	Island received electricity and the roads were paved.	Community Event

1995	Hurricane Marilyn (category 1) & Hurricane Luis (category 2), (nine days apart), caused moderate damage.	Severe Weather
1996	Hurricane Bertha (category 1), eye passed directly over the territory, caused moderate damage	Severe Weather
1998	Hurricane Georges (category 2), eye passed to the south, caused moderate damage	Severe Weather
1999	Hurricane Jose (category 1) and Hurricane Lenny (category 1) caused light damage to the territory	Severe Weather
2003	The Sister Islands Programme was established	Community Event
2003	November Flooding	Severe Weather
2004	Jost Van Dyke Preservation Society was revived.	Community Event
2017	Hurricane Irma eye passed directly over the island. It stripped vegetation from hillsides. Primary school, health clinic, the Methodist church, 2 petrol stations, and most homes were destroyed.	Major Disaster
2019	Hurricane Dorian (category 1) destroyed domes.	Severe Weather
2020	Coronavirus Pandemic	Health

12. SEASONAL CALENDAR

The chart below highlights the months in which various events occur in the community of Jost Van Dyke. The Island has many festivities, as it is a key destination for tourist. The Island is crowded with many visitors and residents for the months of January to May, there is a decrease in visitors during the summer period, and increases for the winter period.

(Key: *Blue* signifies Low Occurrences and *Gold* signifies High Occurrences)

Seasonal Calendar- Jost Van Dyke												
Events/Occurrences	J	F	M	A	M	J	J	A	S	O	N	D
Festival/Holidays												
Hamilton Lavity Stoutt Day			Gold									
Easter				Gold								
Queen's Birthday						Gold						
Territory Day							Gold					
Festival								Gold				
Foxy's Wooden Boat & Moorings Regattas					Gold					Gold		
Labour Day										Gold		
Ole/ New Year's Celebrations	Gold											Gold
Jost van Dyke's Carnival (Ceased 2004)					Gold							
Social												
Low Income (tourism)						Blue	Blue	Blue	Blue			
High Income (tourism)	Gold	Gold	Gold	Gold	Gold						Gold	Gold
Fishing (Hobby - Livelihood)	Blue											
School (Primary)	Gold	Gold	Gold	Gold	Gold	Gold				Gold	Gold	Gold
Sargassum Seaweed	Gold	Gold				Gold						
Health												
Mosquitoes	Blue	Blue	Blue	Blue	Gold	Gold	Gold	Gold	Blue	Blue	Blue	Blue
Hazards/Disasters												
Heavy Rainfall				Gold	Gold	Gold	Gold	Gold	Gold	Blue	Blue	Blue
Drought	Gold	Gold	Gold									
Hurricane Season						Gold						







15. DIRECT OBSERVATIONS

During the transect walk the EVCA team recorded their direct observations found within the community, categorising them under vulnerabilities, hazards, exposures, and capacities. The tables below show the recorded observations highlighted within the community, they coincide with the three identified hazards; hurricanes, flooding and mosquito breeding sites. These place the community at a high risk, however, some of the capacities within the community are also high and once they are utilised, they can lower the community's risk to the different threats.

Level of importance:

1 = Very important

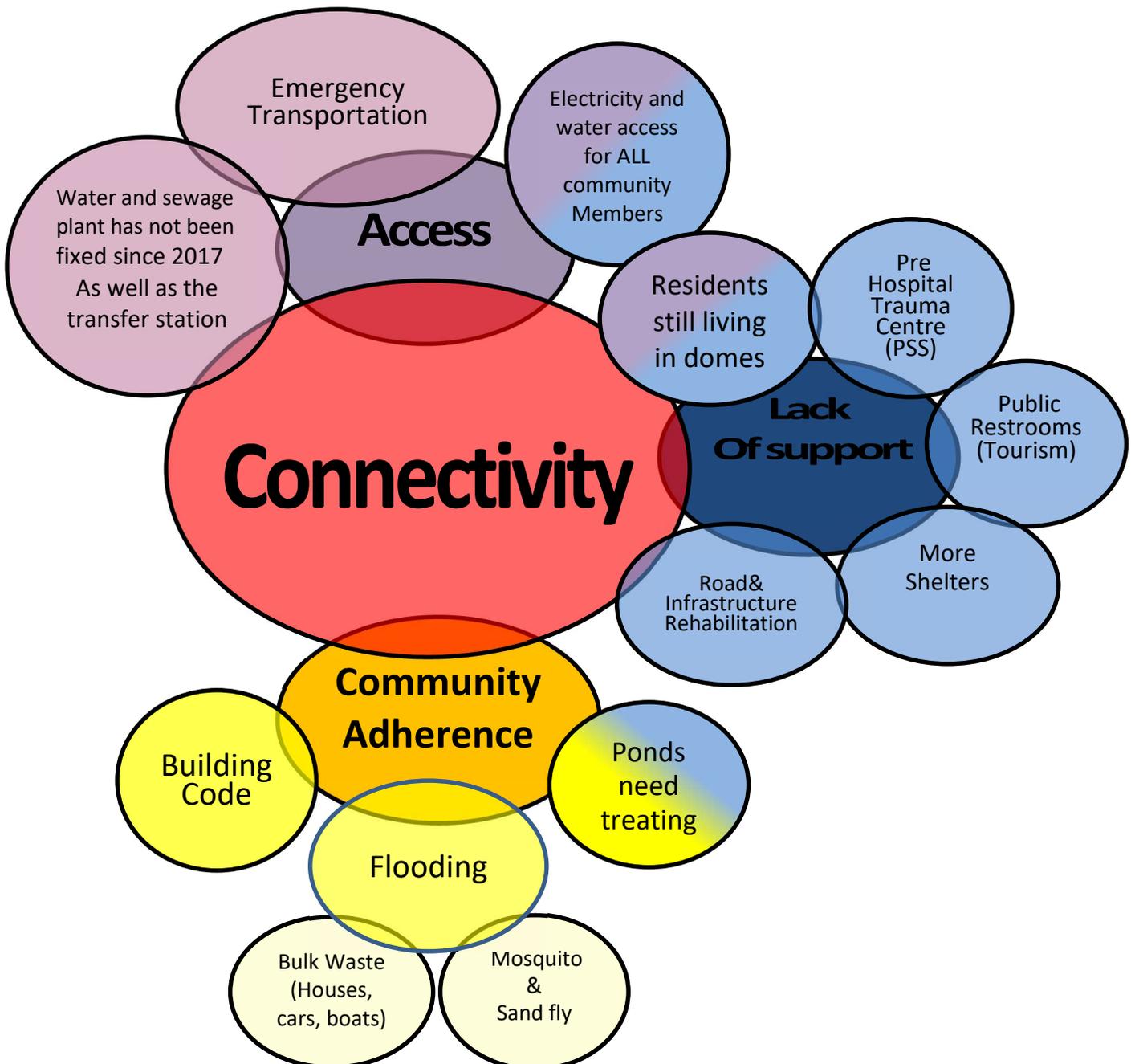
2 = Medium importance

3 = Low importance

Rank	Direct Observations- Vulnerabilities
1	Lack of connectivity
1	Lack of community networking
1	Lack of economic opportunities
1	Persons not able to afford health care
1	Non-appropriate building codes (no hurricane shutters on some houses)
1	Vulnerable people- Pregnant women, some elder persons, Non-English speaking persons, persons with disabilities, unemployed individuals
2	Derelict buildings
2	Galvanise roofs, wooden house structures
Rank	Direct Observations- Hazards
1	Un-clean drainage routes
1	Mosquito breeding sites
1	Bulk waste (derelict vehicles, boats)
1	Flooding
2	Stagnant water
2	Stray animals (dogs, chickens)
Rank	Direct Observations- Exposure
1	Homes and businesses located within the flood plain
1	Tropical region (mosquito prevalence, hurricanes, tsunami, earth quakes)
2	Elevated regions - location and topography (landslides)
Rank	Direct Observations- Capacities
1	School (Primary and Kindergarten level)
1	Public clinic (Nurse, Doctor)
1	Red Cross volunteers
1	Skilled people (carpenters, electricians, truck drivers)
1	Churches
1	Businesses (small)
1	Gas station

15. VENN DIAGRAM

The diagram below highlights the major concerns expressed by members of the community and the district officer Ms. Carmen Blyden. These concerns indicate the exposures, vulnerabilities, and risks within Jost Van Dyke. Although flooding is one of the major hazards and exposure within the community, completed surveys, interviews, and direct observations suggested that the major vulnerability within the community is **connectivity**; that is connectivity to the territory/ Government. Poor connectivity is present within the community because of the lack of support from Government, access to Government facilities (location), also some community members do not adhere to some of the laws; building code (building on low line areas).



16. CONCLUSION

There is an ongoing need for the Red Cross Branch to interact more effectively with vulnerable communities, Government and other key stakeholders in order to create more effective disaster risk reduction and climate change adaptation. The EVCA can provide both a greater understanding of local conditions of life and how effective organizations will be in raising the capacities of at-risk populations to cope with recurring shocks affecting their livelihood.

Having assessed the risks and priority areas, the community will be consulted to expand on the identified prioritized hazards, vulnerabilities and to help develop/improve existing/ new mitigation strategies that were recommended by the BVI Red Cross EVCA team. As connectedness has been identified as the major vulnerability of the community, the BVI Red Cross will continue its ongoing work with supporting public health campaigns with Ministry of Health which seeks to control mosquito breeding sites, while building community resilience for hurricanes and other natural disasters with CERTs from our partners at the Department of Disaster and Management (DDM), while fulfilling the BVI Red Cross mandate to provide First Aid training. Partnerships will continue to be built with other stakeholders, Government entities and interest groups, such as the Jost Van Dyke community group, and Environmental Health Division within the Ministry of Health and Social Development.

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