Grenada
Red Cross Society

VULNERABILITY AND CAPACITY ASSESSMENT
River Sallee

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May 2010

Acknowledgements

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Multi-hazards approach for a sustainable disaster preparedness and emergency response in Grenada

Due to its geographical location, Grenada is prone to various types of natural disasters, including hurricanes, earthquakes, floods, landslides and tsunamis. It has been shown around the world over the past decades that preparedness for and response to natural disasters should not only be the concern of central administrations, but also be thought, managed and designed at the community level. Help vulnerable communities better cope with threats induced by their natural environment has thus become a crucial dimension of mitigation policies.

In order to strengthen disaster management capacities of vulnerable communities and help them better protect their livelihoods, a Disaster Risk Reduction programme funded by the EUROPEAN COMMISSION is implemented by the GRENADA RED CROSS with the support of the FRENCH RED CROSS from January to December 2010. By targeting 8 vulnerable communities, the programme aims to increase their disaster management capacity. This community based programme also involves others disaster management key stakeholders in order to participate to the regional and national efforts towards a better preparedness and response system.

As part of this project, Community Disaster Response Teams are identified, trained and equipped with disaster supplies. Residents are trained in first aid, psychosocial support, fire safety, construction and retrofitting, disaster preparedness and many other areas. Community and Family Disaster Plans are developed. Awareness campaigns are organized in the communities. Mitigation micro project will be implemented thanks to the support of the community residents. These micro project aims at reducing the risk of a disaster or the vulnerability of the community. They are identified, designed and implemented through a participatory approach in which community members are asked to think about their strengths and weaknesses, and propose solutions to reduce their vulnerability. The present Vulnerability and Capacity Assessment is a critical part of this process.

Foreword

The present VCA study was carried out through a series of community meetings in May 2010 with the residents of River Sallee and the Steering Committee they appointed for the project.
This study is part of the International Federation of Red Cross and Red Crescent Societies (IFRC) regional project "Caribbean Red Cross Societies: Building Safer, More Resilient Communities". This program, implemented in 2009-2010, covers the National Societies of Antigua and Barbuda, Bahamas, Barbados, Belize, Cuba, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname and Trinidad and Tobago through the support of the European Commission Office for Humanitarian Aid (ECHO).

Acronyms

CIA	Change / Influence / Accept
DRM	Disaster Risk Management
ECHO	European Commission Office for Humanitarian Aid
FRC	French Red Cross
GOG	Government of Grenada
GRCS	Grenada Red Cross Society
IFRC	International Federation of Red Cross and Red Crescent Societies
MOA	Ministry of Agriculture
NaDMA	National Disaster Management Agency
VCA	Vulnerability and Capacity Assessment

Introduction

In May 2010, the community of River Sallee embarked on a journey of self-analysis, examining its strengths and weaknesses, the external and internal threats and the resources it has to cope with these threats. Heads of households, local leaders of religious and sports groups, workers of all trades discussed the history of their community and the problems they encounter. They shared their experiences and their tips for overcoming daily difficulties. As a group, they identified the main problems ahead and discussed the future of their common home.

The process was organized by volunteers and staff of the Grenada Red Cross Society, as part of a region-wide project, funded by ECHO through the International Federation of Red Cross and Red Crescent Societies, and that aims at improving community-based disaster preparedness. Implemented in Grenada under the title of "*Multi-hazards approach for a sustainable disaster management in Grenada*" this project objective is to support strategies that enable local communities and institutions to prepare to, mitigate and respond to natural disasters by enhancing their capacities to cope, increasing resilience and decreasing vulnerability.

The community work was based on the methodology known as "Vulnerability and Capacity Assessment", or VCA. The purpose of this assessment is to identify and understand the most pressing issues and threats in the community (vulnerabilities) while simultaneously identifying the local and external resources available to minimize the risks to the villagers (capacity).

Before the Vulnerability and Capacity Assessment, a baseline survey was undertaken to analyze the current state of disaster preparedness and awareness in the Community of River Sallee; 15% of the residents, among which 18 women and 17 men of any age above 15 were interviewed by Red Cross Volunteers. Results of both studies are presented in this report.

The VCA approach is composed of a series of tools for community-based participatory consultations to ensure a better understanding of how the community functions. Behind this process lies the assumption that a community more aware of its own limitations can organize itself better to overcome them. In the context of the Grenada and French Red Cross project, the stated objective was to improve the capacity of the community to cope with the disaster-related risks in its environment.

To this end, the first section summarizes the results from the VCA process, as carried out in River Sallee. It presents the history, the local dynamics and the coming challenges, as perceived by the people who live in River Sallee. Although this program explicitly focuses on natural disasters and hazard mitigation strategies, the results presented in this first section provide guidelines for a broader approach towards sustainable community development.

The second section focuses on the output from the community focus groups in relation to the risks faced by the community: Which are the main risks? Can they be mitigated? By whom? Using the results presented in the proposed Action Plan, the community members – supported by GRENADA RED CROSS teams – will identify and implement strategies to mitigate these risks. The information gathered here will also provide the necessary baseline information for monitoring and evaluation the progress of the community.

Part 1: Vulnerability and Capacity Assessment of River Sallee

What is VCA?

Vulnerability and Capacity Assessment (VCA) is a participatory investigative process designed to assess the risks that people face in their locality, their vulnerability to those risks, and the capacities they possess to cope with a hazard and recover from it when it strikes. Through VCA, National Societies can work with vulnerable communities to identify the risks and take steps to reduce them by drawing on their own skills, knowledge and initiative. **In sum, VCA helps people to prepare for hazards, to prevent them from turning into disasters and to mitigate their effects**.[1]

> **V ulnerability** *can be defined as:*
> *The characteristics of a person or group in terms of their capacity to anticipate, cope with, resist and recover from the impact of natural or man-made hazards*.

The definition of vulnerability suggests that it cannot be described without reference to a specific hazard or shock. So, the question that must always be asked is, "Vulnerability to what?" People living along coastal areas or rivers may be vulnerable to seasonal storms and flooding, while the inhabitants of countries with social, political and economic problems may face difficulties in achieving a satisfactory and sustainable quality of life.

> *The reverse of vulnerability is* **capacity**, *which can be described as:*
> *The resources of individuals, households, communities, institutions and nations to resist the impact of a hazard.*

The coping strategies of people in response to various hazards will differ from one society to another and will often change over time. People in chronically-prone countries facing multiple hazards, such as drought, locust infestation and civil unrest, find their capacity levels weakening, reducing their ability to mitigate the effects of the next crisis. [2]

[1] Quoted from *VCA toolbox with reference sheets*, IFRC, Geneva, 2007, page 6.
[2] Quote and definitions from *Vulnerability and capacity assessment, An International Federation Guide,* IFRC, Geneva, 1999, page 11-12.

How is the VCA carried out?

The VCA process relies on a few key principles:

Data collection: Preliminary data can be collected through the use of questionnaires, developed specifically for each community or for each type of hazard. However, as information is not always immediately available on the ground – because of time constraints, security issues or financial resources – the VCA process also relies on the gathering of secondary data. Precious information about the community can be gathered from research by government bodies, the United Nations and other development- and research-based organizations.
Community participation: The goal of the VCA process is to empower the community to allow it to respond on its own to the risks to which it is subjected – or allow it to identify those who can help it to respond. For this reason, community members constitute the core of the process. The main criterion for a successful VCA is the receptiveness of the local community and its willingness to be an active part of the process. Only if all vulnerable groups are included, can they find collective answers to the threats they face.
Sharing information: The VCA process helps the community understand its relation to its environment. Through discussions among neighbors and the collection of data, the community members will be better able to understand – and therefore reduce – the threats to which it is subjected. The final VCA document also offers an opportunity to share information beyond the community, by bringing up issues to the relevant authorities, partner organizations or local leaders.

The VCA is mainly used ***to identify in advance, and change where possible, the conditions that create or contribute to the state of vulnerability of at-risk populations***.[3] As such, the main usefulness of VCA comes from an improved understanding of the risks and of measures to mitigate that risk. To gather all information relevant to a better understanding of the community, the following steps have been followed:
Review of secondary sources: this first, crucial, step consists in collecting information that already exists, to avoid duplicating efforts already carried out. Most of this phase consists in collecting written material, or identifying all resources relating to a better understanding of the community;
Direct observation: A summary presentation of the community, by someone external, often allows to get a first impression of the local dynamics and main issues;
Focus group discussions: The heart of the VCA process lies in this phase of community interaction, using tools for the involvement of all stakeholders.

Based on these three steps (presented hereafter in points 1, 2 and 3), disaster-related information has been gathered and is presented in part 2.

[3] Idem, page 12, emphasis added.

1. *Data from secondary sources*

Location of the community

River Sallee is a small community in the parish of St. Marks, located on the western coast of Grenada (see map 1). It lies between the community of Waltham and the town of Victoria (half a mile away). The community is accessible via the main western road. Public and Private transportation are easily available throughout the community.

Most institutions, such as the Health Center, are located outside the community in the neighboring city of Victoria. In case of any serious incident, the residents would have to journey about 16 miles to get to the General Hospital.

The neighboring town has the following services and businesses:

- A Guest house
- A bank
- A Service Station,
- Government offices
- A Post Office
- Police and Fire Stations
- Churches
- Schools (Victoria School for special education, Father Maligan Home for Boys)
- Groceries and shops
- Museum.

Since most houses are located on a flat area about 100 feet from the shoreline, the community appears to be particularly vulnerable to climate change possible impacts such as Sea-level rise or increased frequency of storm surges.

Population of the village

According to the latest National Population Census conducted in 2001, the community had forty (40) households, with an average of one hundred and fifty four (154) persons (see table below). According to the results of the baseline survey, 70% of the households have between 2 and 5 members while 25% have more than 5.

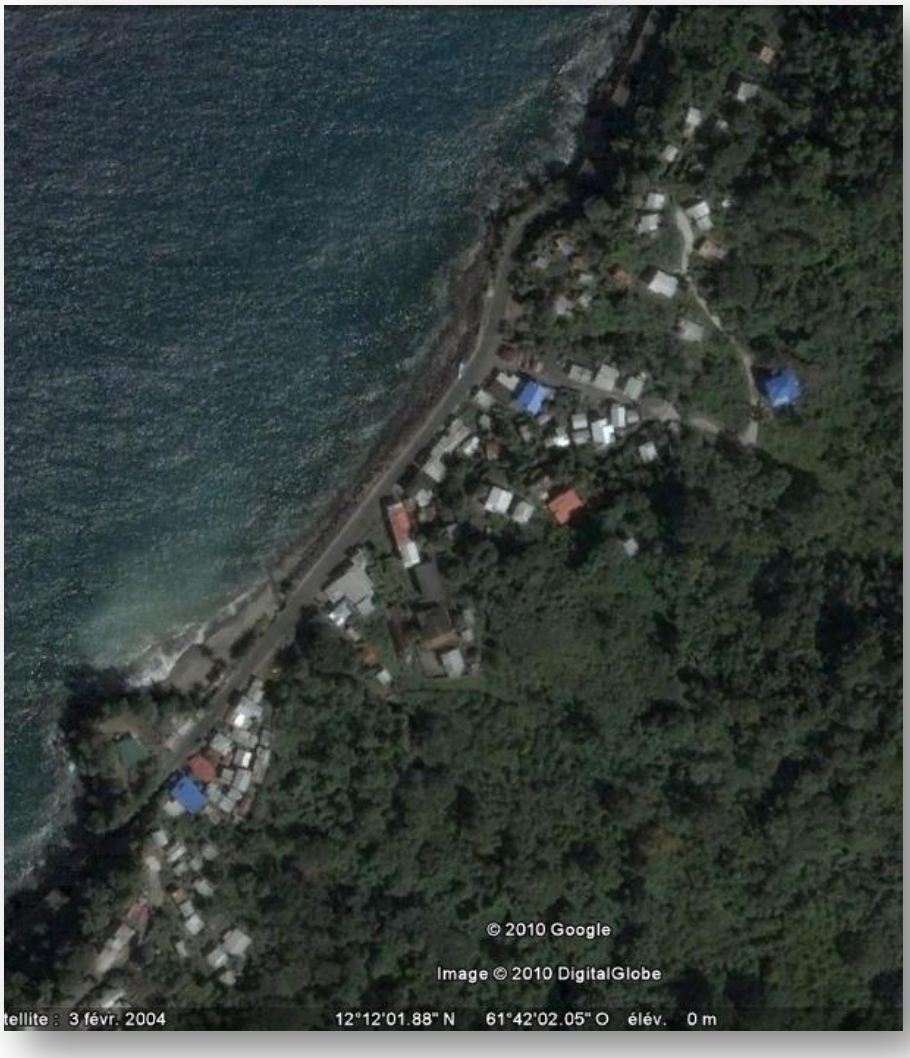
POPULATION	MALE	FEMALE	PERSONS > 60	CHILDREN < 5	HOUSEHOLD
154	67	87	22	23	40

This unique and closely knitted community shows signs of living under adverse poverty conditions as evident in the level of unemployment (29.4%) and the structure of the houses. Indeed, 85% of the houses are of a wooden structure, and most of them are still incomplete. Generally, bathroom facilities are located on the near outside of the houses, consisting of pit latrines and outside showers. Some houses simply don't have any. Moreover, most families within the village are single parent households.

The following are some of the socio economic challenges faced by community members:

- Unemployment;
- Poor housing conditions with overcrowding;
- Relatively high use of pit latrines;
- Limited access to potable water;
- High incidence of poverty in female-headed households.

Community map



2. Direct observation

The following list shows the immediate impressions, observation, things that stood out after the transect walk throughout the community of River Sallee. A transect walk involves walking through a community to observe the surroundings, people, land use and resources. The route taken was determined by drawing a line on a map of the locality that goes through or "transects" all primary and secondary entrance, in order to gain a representative view of the community. A transect walk is usually carried out early in the research process because it gives an overall view of the community and helps observing things that may require further investigation later on during interviews or group meetings. The tool is even more effective when carried out in the company of community members.

Participants systematically observed objects, people, events, relationships, interactions, and record these observations. This gives a better picture of the disaster/hazard situation, especially elements

that may be difficult to verbalize. It is a good way of cross-checking verbal information. The transect walk has shown:

Abandoned boat to the side of the road.
Old vehicle
Old abandoned houses
Houses close to the river and sea
Fish houses
Plenty boats in the bay
Coconut trees
Dust bins
Carib stone
Average amount of shops
Bus stop
Abandoned concrete structure
The structure which used to be the estate/boucan
Old steel/ equipment
Stand pipe
Rivers
Drains
Branches hanging over the road
Gravel by the roadside
Kites stuck on the electric lines
Humps in the road
Hardware store
Public toilet and bathroom
Stray animals
Building under construction
Loose galvanize
Numerous amount of poles
Loose wires hanging from poles
Bridges

3. Focus group discussions

A focus group discussion is a qualitative information-gathering tool whereby a group of selected individuals, guided by a facilitator, are invited to give their thoughts and views on a specific issue.[4] To facilitate the process of interaction with key community stakeholders, the International Federation has developed a series of tools for participatory appraisals. These include, but are not limited to:

a) Historical profile;
b) Historical visualization;
c) Seasonal calendar;
d) Institutional and social network analysis;
e) Livelihoods and coping strategies analysis;
f) Mapping;
g) Transect walk;
h) Household/neighborhood vulnerability assessment;
i) Assessing the capacity of people's organizations;
j) Venn diagram.

Not all tools are used every time, nor are these tools the only ones used to encourage community mobilization. More than the tools, the success of the VCA is measured by the mobilization it induces within the targeted community.

Tools 'a' through 'f' were used during the Vulnerability and Capability Assessment of River Sallee and are presented here.

[4] From *VCA toolbox with reference sheets*, IFRC, Geneva, 2007, page 66.

a. Historical profile

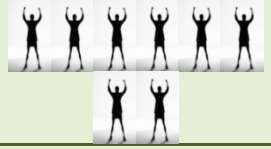
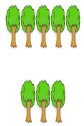
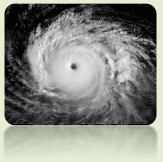
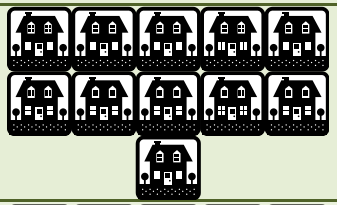
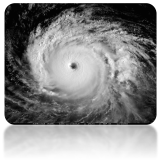
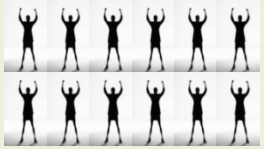
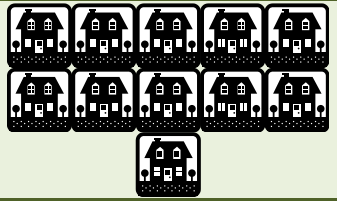
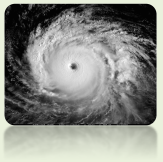
YEAR	EVENTS
1600's	Caribs settled in the community.
1800's	Waltham Estate established. Boucan was built
1900's	Estazy Nedd and the Fredericks were the first families to settle in the community. Maximare cut the hill to form road between the rocks.
1939	Long bridge was built.
1940	First public toilet and bath was constructed.
1950	Ogiste built the first concrete house.
1951	First house phone installed.
1955	Hurricane Janet struck the community destroying infrastructure, lands and crops etc.
1959	Installation of stand and house pipes. Ogiste bought a board. Electricity was introduced to the community. First shop built in the community (O'Neal's shop).
1970's	Mr. Forde built the second public toilet and bath. A man got shot in the community. Mr. Modest was found dead in the river after closing his shop.
2000's	Bus stop was constructed. Long bridge was refurbished by Jennings Company. Flooding by rain in the community. (Impact from hurricane Lene)
2002	Kyron Bud constructed a drain in River Sallee to avoid flooding. (Ministry of Works)
2004	Ivan devastated the community's infrastructure, land, crops etc.
2005	Hurricane Emily struck the community and left it flooded.
2009	Removal of stones and rocks from the hillside and applying wire mesh to hold it in place.
2010	One Turtle came up on the shore to lay

The community of River Sallee was an estate in the 1800's. At that time, Cocoa was one of the main productions. The Boucan was also built in the 1800's as a place to house the cocoa produced. The workers would prepare the cocoa for the market. In the years 1900 to 1940, government realized that the village was underdeveloped and decided to assist in upgrading the area. In the 1940's, access to River Sallee was via another community called Coast Guard, and the villagers would journey on tracks through the mountain. It was decided then that a section of the mountain should be broken down allowing an access road between the mountains. This road became the first major road in the community to be graded, making it easier for commuting into and out of the community. The access to the village, where most of the community members live is very narrow and can be considered as a track or foot path.

A bridge was built as a boundary from the sea and the road and the first public toilet and bath was constructed to upgrade the lifestyle of the village occupants. From 1950 to 1959, some villagers started climbing the status ladder and moved from poverty to a level at which they started to build their own houses, afford house phones, house pipes, electricity, constructed community shops and bought vehicles. In the years 1959 to present a higher standard of living was in place for the community members as they saw the installation of stand pipes, the building of the second public toilet and bath, construction of a bus stop, long bridge was refurbished, the construction of a drain between some of the houses that is located on a slope for proper drainage and disposal of water and mitigation work was done on the rocks as it were tied down with wire mesh to prevent collapsing for the villagers safety and protection.

River Sallee has witnessed disasters (hurricane and excessive rains) striking the community in the years 1955, 2004 and 2005, causing damages on the infrastructure, houses, lands and crops. In addition, there is a history of flooding in this community, which is caused by debris and garbage that blocks the drains.

b. Historical visualization

Topic / Year or Decade	*Population*	*Trees/forest*	*Rivers*	*Animals*	*Houses*	*Disasters*
1700						
1850						
1900						
1955						
2004						
2005						

a. Seasonal calendar

TOPIC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Fisherman's birthday												
Common cold												
Easter												
School (o) (h)	x	X	X x	X x	X	X	x	x	x	x	x	X x
Alcohol consumption												
Flooding												
Income												
Bush fire												
The bushing program												
Clean up campaign												
Harvest												
St. Mark's day												
Fishing												
Carnival												
Harvest (celebration)												
Food fest												
Christmas												

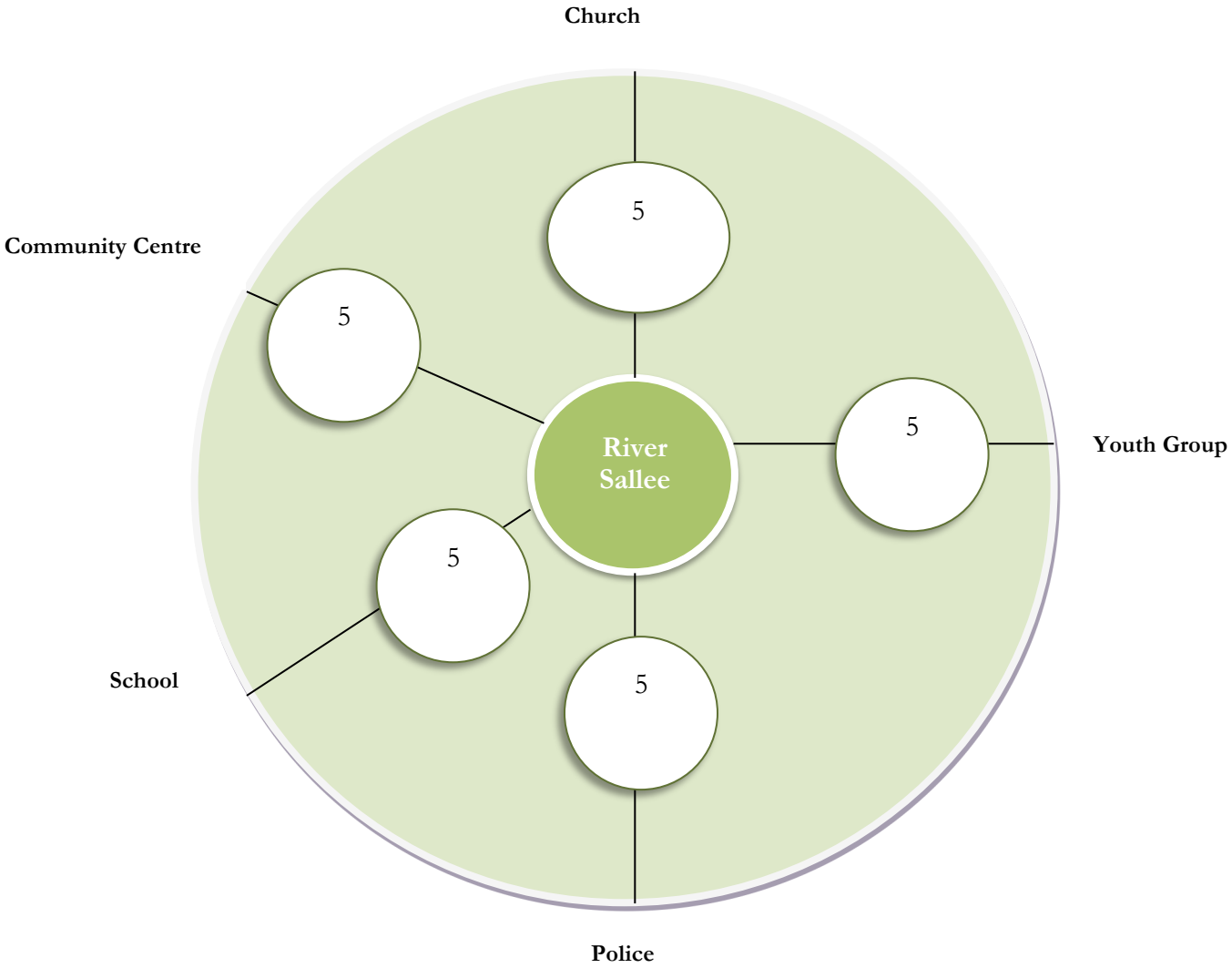
On the 29th June, each year fishermen throughout the island celebrate the famous fisherman's birthday. River Sallee, which is known as a fishing community, partakes in this festive activity. Apart from Easter, Carnival and Christmas this is the time of year where the consumption of alcohol is high.

Intensive agriculture, the major activity on the island, has changed the environment in some areas from forests to numerous fields of cocoa, nutmeg, bananas, various spices, fruits, and vegetables. The tropical climate is characterized by a distinct dry season from January through May and a wet season from June through December. Flooding would normally take place during the wet season

The best time of the year that activities normally take place in terms of workshops and training would be in the months of May to September

b. Institutional and social network analysis

Organizations & Institutions	Important to the community	Total	Ave	Functional useful	Total	Ave
Church	5+5+4+5+5	**25**	**5**	4+5+3+4+4	**20**	**4**
Youth Group	5+5+5+5+5	**25**	**5**	2+2+1+3+2	**10**	**2**
Police	5+5+4+5+5	**25**	**5**	3+2+3+3+4	**15**	**3**
School	+4+4+5+5	**24**	**5**	5+5+3+3+4	**19**	**4**
Community Centre	5+5+5+5+5	**25**	**5**	1+1+2+1+1	**6**	**1**

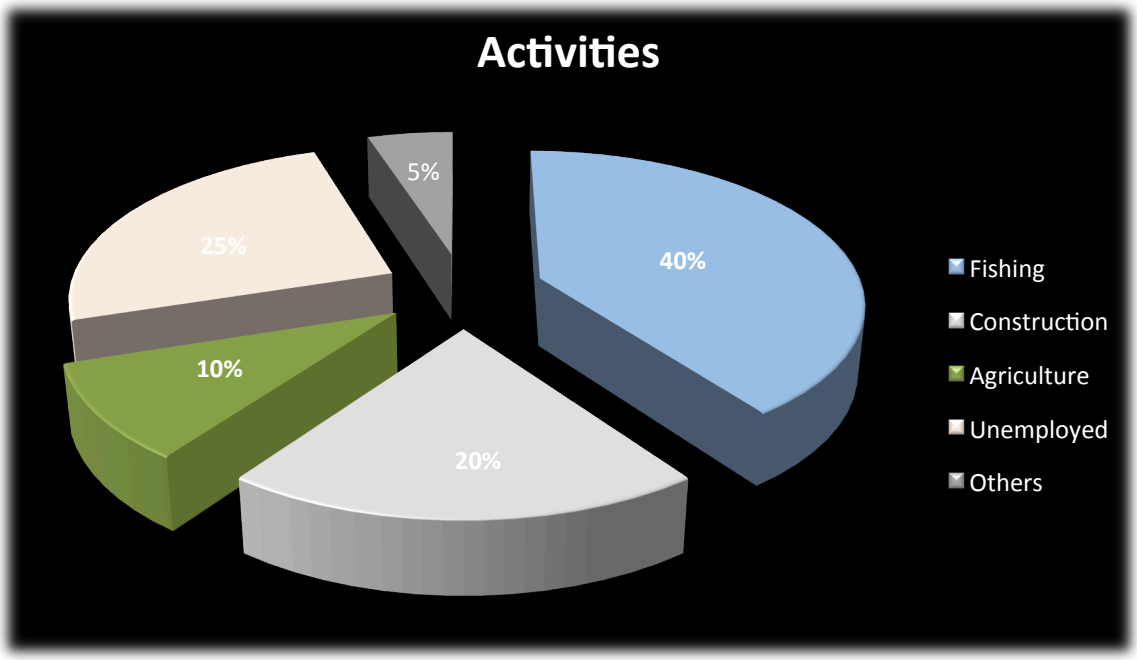


Through a focus group discussion with residents, institutional and social network were analyzed in order to identify the key organizations, groups and individuals in the community, the nature of the relationships between them and the perceptions that people have of their importance.

The focus group highlighted that five organizations, groups or institutions have a central role in the life of the residents: the school, police, youth group, church and the community center. The discussions also emphasized that most of other institutions are not present in the locality, which makes some residents feel they are neglected.

c. Livelihoods and coping strategies analysis

The following pie chart expresses the livelihoods of the people of River Sallee, which depend largely upon coastal resources (e.g., Coastal fisheries). For residents working in other sectors, such as construction or small business, most of them must seek opportunities outside the community. Some residents also sell fresh products from their garden in the market of the neighboring town of Victoria.



Coping strategies:
Increasing disaster impacts, sharp deficit in supply of public goods and support system stress the need for coping mechanisms in River Sallee. Significant attention should be paid to support this vulnerable community strengthening its coping strategies.

Before a disaster

The community of River Sallee attempts to prevent the disaster from happening or reduce its impact through mitigation measures and actions. Below are listed some of the strategies normally used:

- People repair their houses. Members of the community would seek assistance and as best as possible involve themselves in renovation and retrofitting their houses.
- Ensure that there is enough drinking water during floods.
- Many families stock food etc. especially those that live closer to the flood prone areas. (Along the sea coast).
- Identification of land well advance in case of storm surge, erosion and shifting of houses before erosion starts.
- They were part of financial institutional, credit firm or a group in order to secure assistance during disasters, also to get loan when they need it.
- Maintenance of good relations with local government to receive relief is an important political coping strategy that they use.
- Many families keep important document safely before flooding
- Plant more food crop

During a disaster

- Reduction of consumption is a common coping strategy in disasters, particularly for the poor section of the vulnerable families. They try as much as possible to make their food stock last longer.
- Change in food habit is also a strategy widely adopted by the community members in case of a shortfall in regular food stock. These may include substitution of a lower quality items.
- Live in hurricane shelters

As a result of a focus group discussion, it appeared that if for some reason, community members are unable to cope with a disaster, the following options takes precedence:

Migration

From the experience of Hurricanes Ivan and Emily, numbers of people were forced to relocate as a result of environmental disasters and other issues. Migration in various forms is seen as major coping strategy after a disaster. When members cannot cope with the stress of life they migrate to other parts of the country or some even cross the boarders. Some resident left temporary in order to gain an income in the labor market.

Selling of Livestock

Most community members of River Sallee were forced to sell their animals and agriculture produce for fair of death and possible spoilage. They also needed finance and this was their only means of acquiring some desperately needed cash.

Financial Acquisition

Borrowing money from family, friends, neighbors, NGOs and moneylenders are also way in which the coped.

d. Mapping

This was elaborated through the mobilization of community members as they placed themselves at strategic positions which allowed them to observe the area. They made drawings of the community on the basis of their observation (housing, roads, medical stations, businesses, vegetation, recreational areas, rivers and so on) and design a symbol for each one. After, there was a general analysis of what is happening in the community, on the basis of observations highlighting aspects relating to the environment, public places, services, access roads and so forth.

Community Hazard Map

This hazard map drawn by the River Sallee residents show that there are six mains areas prone to flooding, while most of the village is vulnerable to tsunamis and storm surges because of its proximity to the sea and its low altitude.

This resources map shows that there are 6 shops in the community. There is also a public washroom, a stand pipe and some garbage bins. A large part of the water front has been covered with big rocks to protect houses from storm surges. The village is crossed by two rivers.

Part 2: Risk assessment in River Sallee

The VCA process made it possible for the Grenada Red Cross Society to get to know River Sallee, while allowing the community members to share their knowledge, their fears and their ideas. At the same time, the project has offered a unique opportunity to go from theory to practice.

The Grenada Red Cross– in collaboration with partner agencies and local community stakeholders – has used the VCA method to identify and solve problems within their capability. In particular, as the following pages will show, the implementation of the VCA tools improves understanding of:

- ✓ the nature and level of risks that vulnerable people face;
- ✓ where these risks come from;
- ✓ who will be the worst affected;
- ✓ what is available at all levels to reduce the risks; and
- ✓ what initiatives can be undertaken to strengthen the impact of programs to raise the capacity of people at risk.

Methodology for a Risk assessment

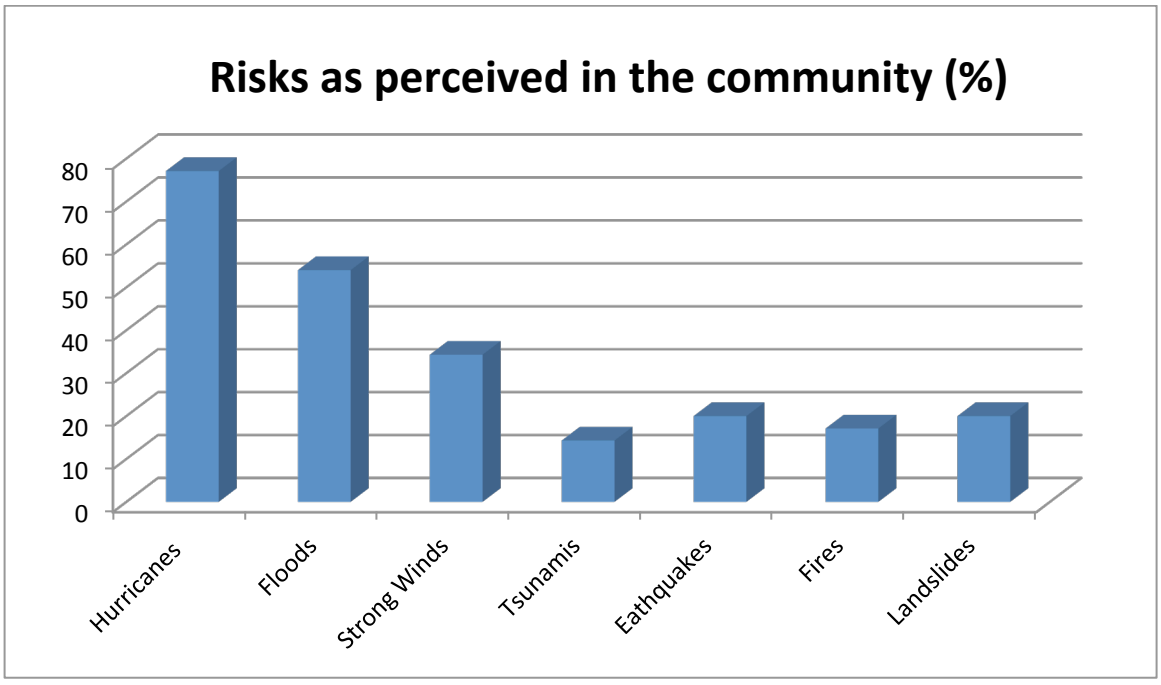
The following five-step approach was used with the River Sallee community members:

1. The first step meant identifying for each hazard the **Potential Risks to the community**; the areas of vulnerability and capacity that exists within the community.
2. The second step required identifying for each Hazard **Actions that could be undertaken** to transform vulnerabilities identified into capacities.
3. The third step consisted in differentiating the types of measures, whether they related to prevention, mitigation or preparation for response.
4. The fourth step involves a CIA Analysis, in which participants considered each and every action to transform vulnerability into a capacity and decide whether such changes were realistic.
5. The fifth and final step involved identifying a Plan of Action that could be implemented by the community. While a number of actions were identified, this final step identified realistic actions. It should be noted that the information gathered and the specific actions identified below while not reflected in the final plan of action are still relevant and needed and could be utilized by other agencies.

The results of these five steps are presented hereafter (points 1 through 5 below).

1. Identifying hazards and their potential impact on the community

Hazards considered under the VCA included natural hazards such as floods, bushfires, hurricanes, landslides, coastal disasters (surge, wave and erosion), tsunami and earthquakes. Hurricanes have had the most devastating effect on River Sallee. The community members have experienced damage due to high winds, storm surges and landslides. River Sallee is very close to the coastal area and is extremely exposed. According to the baseline study conducted by Red Cross volunteers, 91% of the interviewed have been directly affected by disasters (mostly hurricanes and floods). Most of them are aware of their community to hazards and disasters. The three major risks identified during the survey were hurricanes, floods and strong winds. Concerns about earthquakes, tsunamis, drought and bushfires were also raised.



Floods:

Flooding manifests itself during hurricane or heavy rainfalls. This risk of flooding is intensified by blocked drains which are filled with debris and garbage. While most of frequently, it is flash floods, the area can stay under water for two or three days.

Six main flooding areas have been identified with the help of the residents. In the past, floods have induced soil erosion, undermining the bridge structures and weakening some buildings foundations. Water entering buildings (houses and businesses) have caused damages such as floors and walls weakened and furniture ruined.

In addition, floods have led to loss of crops, damaged vehicles, injuries, and concentration of garbage and debris.

Landslides:

Being located on a slope, some houses are prone to landslides. Although River Sallee has never experienced a major landslide, smaller events may lead to trees falling on houses, roads or people, to the loss of crops and to soil erosion. It is also dangerous for the security of residents living in vulnerable houses.

Bushfires:

Like the rest of the island, River Sallee has witnessed a high amount of bushfires. Apart from destroying plantations and wild life, these fires are a threat for the security of the residents and their belongings. They are mainly caused by dry weather conditions and human activities.

Hurricanes:

River Sallee is tremendously vulnerable to hurricanes because of its location. Its closeness to the sea makes it prone to storm surges, while the surrounding topography (presence of both slopes and rivers) induces high risks of flooding and landslides in case of heavy rains. Moreover, the vulnerability of some households is increased due to the high proportion of poorly constructed houses.

Tsunami and storm surges:

No major tsunami was ever recorded in Grenada as yet. Although a sea wall has been built all along the road, residents have witnessed waves passing over in several occasions. Due to its location on the coastline and the low elevation of the area in which most houses were built, River Sallee is vulnerable to storm surges and tsunamis. In case of a major tsunami, most houses would be affected. The road, the bridges, the crops and the numerous boats in the bay would be heavily damaged. In case of high storm surges, which are a lot more frequent, some houses may be flooded, while the road and the boats would be damaged. In **2000**, a sea surge (about 20 feet high) affected the main road, making it difficult for vehicles to pass.

Earthquakes:

Because of the low construction standards, a large amount of houses might be heavily damaged In case of a high magnitude earthquake. However, since most houses are one-story-wooden-houses, we can expect the amount of victims to be lower and the search and rescue operations to be easier than in other parts of the country.

Diseases:

To date the main illness that affects the resident is the common cold which is mostly diagnosed among children. The older folks suffer from hypertension, cancer and diabetes. There have not been any serious outbreaks of diseases. Careful consideration must be given to the blocked drains and river, where the water is stagnant, thus giving rise to diseases and a breathing ground for mosquitoes. The community members noted that these mosquitoes are most prevalent late in the evenings and at nights.

Although there is a proper public rubbish collection, one can observe a problem with the dumping of garbage, which contaminates the rivers and ocean. As the neighboring communities are so closely linked to each other the waste and pollution from the surrounding affects the community.

Climate change:

The baseline survey showed that 51% interviewed have heard about climate change. Among those, 98% think that their community is affected. Drought, sea level rise and food shortage were raised as potential impact. None of them mentioned the increased frequency of extreme events.

HAZARD VULNERABILITY AND CAPACITY

The table below shows the potential impact, the source of vulnerability and the capacities available in the community for each type of hazard identified.

Hazard	Potential Risk	Vulnerability	Capacity
Floods	Damages to infrastructures and livelihoods Loss of life	Two rivers Topography Blocked drains Constructions in the flooding areas	Availability of tools Accessibility (roads and sea)
Landslides	Damages to infrastructures and livelihoods Loss of life	Erosion Deforestation Location of houses	Availability of tools Accessibility (roads and sea)
Bushfires	Damages to infrastructures and livelihoods Injuries/ deaths	Wooden houses Drought Proximity between houses	

Hurricanes	Floods Storm surges High winds Loss of boats Loss of livelihoods Destruction of infrastructures	Poorly constructed houses Topography Overhanging trees Lack of information	
Tsunami and storm surges	Destruction of houses Loss of life Destruction of boats Damages to the main road	Proximity of most houses to the sea front Low elevation Livelihoods depending on fisheries and coastal resources	Sea Wall
Earthquakes	Damages to buildings Injuries/deaths	Poor constructions Lack of information	Availability of tools and vehicles

As shown above, the population of River Sallee is prone to a broad variety of disasters. The vulnerability of the residents is increased by the lack of means, the poor constructions, the topography, and the proximity to the sea. When asked "Do you feel your community is ready in the event of a disaster, 77% interviewed during the baseline survey answered "not ready at all" while 5% answered "yes". Neither Community Disaster Plan nor Community Disaster Committee is available. No awareness campaigns were conducted in River Sallee in the past years. The lack of preparedness is also felt at the household level. None of the interviewed has developed a disaster plan for his/her family.

However, the VCA assessment has shown that although vulnerability is high, the community members also have resources to prepare and respond to disasters. These resources are both material (tools, power generators, vehicles) and human (people trained in first aid, policeman, nurses, and mechanics). The table below shows a list of equipment and skills available in River Sallee.

NAMES	PROFESSION	EQUIPMENT
Dave Charles		Chain saw, generator
Oneale Ogiste		Generator, spade, fork, van, truck, cutlasses
Lena Charles		Van, boat and communication
Luther Noel		Boat and communication
Johnson		Boat and communication
Glen Charles		Boat and communication
Nigel Charles		Boat and communication
Joan Roberts Julien		Vans, car
Kashawn Roberts	Mechanic (all rounder)	
Angus George	Trade man	
Jefferson Modest	Police	
Keron Charles	Poilce	
Quan Budd	Teacher (trained in first aid)	
Carrie Budd	Nurse	
Rian Fraser	Nurse	
Lex Mc Bain		van

2. Local capacity to respond to hazards

The table below shows actions that could be undertaken to transform vulnerabilities into capacities, based on the resources available in the community.

HAZARD	Vulnerabilities identified	Actions to transform vulnerabilities into capacities
Floods	Poor constructed drains Stagnant water Pollution of drinking water	Unblock drains Clean up campaigns Boil drinking water
Landslides	Location of houses	Building retaining walls Building houses away from dangerous areas

Hurricanes	Location of houses and buildings/poor construction Overhanging trees Lack of information No shelter for the boats	Construct houses meeting the safety standards Strengthen vulnerable houses (hurricane straps, etc) Equip the community with chain saws Print brochures, leaflets, post signs. Awareness campaigns Find a safe areas for the boats
Bushfires	Destruction of plantations and wild life Destruction of houses	Training if fire safety Equip the community with fire extinguishers
Tsunamis/ Storm Surges	House too close to the coastline Vulnerability of boats Contamination of drinking water Loss of vital infrastructure in neighboring town	Build houses in safer areas Simulation and evacuation drills Store a disaster supply kit Follow flood preparedness precautions Have an engineer check your home and advise about ways to make it more resistant to tsunami water. Periodically inform the community of local public warning systems Have regular bulletins on watch, warning, advisory and information Develop a community and family disaster plan
Earthquake	Poor construction	Build stronger houses Strengthen existing houses

3. Type of measures to mitigate disasters

The third step consisted in differentiating the types of measures, along three categories:

- Prevention actions: action which tries to reduce to probability of a disaster in the community;

- Mitigation actions: action that attempts to protect, strengthen, rehabilitate or reconstruct;
- Preparation actions: action that aims to strengthen the capacity of the community of River Sallee to respond in an effective and efficient manner

Actions to transform vulnerabilities to capacities	Prevention	Mitigation	Preparation
Unblock drains			
Clean up campaigns			
Building retaining walls			
Building houses in safer areas			
Construct houses meeting the safety standards			
Strengthen vulnerable houses (hurricane straps, etc)			
Equip the community with chain saws			
Print brochures, leaflets, post signs.			
Awareness campaigns			
Find a safe areas for the boats			
Training if fire safety			
Equip the community with fire extinguishers			
Simulation and evacuation drills			
Store a disaster supply kit			
Have an engineer check your home and advise about ways to make it more resistant to tsunami water.			
Early Warning Systems			
Develop a community and family disaster plan			
Change Building policies (restrict construction on flood prone areas)			

Make sure emergency shelter are suitable			

4. Ability to act on hazards (CIA analysis)

The fourth step involves a CIA Analysis[5], in which participants considered each and every action to transform vulnerability into a capacity and decide whether such changes were realistic. Each problematic situation had to be categorized according to the three possible options:

- the situation can be **changed** with the participation of the people at risk;
- the situation cannot be changed directly, but could be **influenced** by the people at risk so that third parties can offer a solution to the identified need; or
- the situation cannot be changed or influenced and the community needs to **accept** the threat as it is.

Actions to transform vulnerabilities into capacities	Prevent-ion	CIA	Mitigation	CIA	Preparation	CIA
Unblock drains		Change				
Clean up campaigns		Change				
Building retaining walls		Influence				
Building houses in safer areas		Accept				
Construct houses meeting the safety standards				Influence		
Strengthen vulnerable houses (hurricane straps, etc)				Change		
Equip the community with chain saws		Change				Change
Print brochures, leaflets, post signs.						Change
Awareness campaigns						Change
Find a safe areas for the boats				Influence		
Training if fire safety						Change
Equip the community with fire extinguishers						Change
Simulation and evacuation drills						Change

[5] CIA: C = change, I = influence, A = accept.

Store a disaster supply kit						Influence
Have an engineer check your home and advise about ways to make it more resistant to tsunami water.				Change		
Early Warning Systems				Influence/ Accept		Influence/ Accept
Develop a community and family disaster plan						Change
Change Building policies (restrict construction on flood prone areas)		Accept				
Make sure emergency shelter are suitable				Influence		

Plan of action

Plan of action:

Concept	Activities	Time Frame	Indicators Achievement	Assumptions
Clean up campaign of the main river.	- Clean up the River - Awareness Campaign	August-December	At least 40% of the households have participated in the awareness events Debris and Garbage have been taken out of the river	Community members are involved in the campaign
Build a concrete pathway to the public washrooms	- Dig - Concrete	August-November	The pathway is built	Community Members are involved in the building
Build a storage room for disaster response kit	Build the storage room next to the public washroom	November-December 2010	The storage room is built and safe	Community Members are involved in the building

Disaster Preparedness activities and measures

The community members can undertake various activities in order to be better prepared in the event of a disaster. These activities could include (but are not limited to):

- *Cleaning campaigns*

Organize a cleaning campaign to ensure drains and rivers are not blocked. Cut down overhanging trees

- *Disaster preparedness monthly meeting*

Organize Community Disaster Committee monthly meetings to keep the level of awareness and sensitization high. Update of the community disaster plan can be undertaken, and yearly simulation exercise scheduled and organized.

- *Organize awareness campaigns*

Organize disaster awareness campaigns. Distribute flyers, schedule disaster fun days, etc

- *Develop Community Work plan*

Develop a community work plan, based on weaknesses and resources identified during the VCA process. Submit it to local authorities and develop project proposals to improve the community.

Conclusion: The next steps

Mrs. Lu-Ann Mc Guire (Disaster Preparedness Field Facilitator along with three (3) hard working volunteers were faced with the tasks of sensitizing, informing and mobilizing community members of River Sallee (St. Mark's) and gaining their acceptance, to assist in conducting this VCA Survey. Several approaches and strategies were used. Among these were: contacting community leaders and existing community groups, house to house visits, phone calls, announcements in schools and on the radio, as well as churches. There was a very good participation in scheduled group meetings. Few problems were experienced in attempting to carry out these tasks. The most pressing of these were insufficient time in which to do effective mobilization, and the fact that most of the community members had commitments during the day (working in the land, looking after their grandchildren and could only work on this project after working hours. Initially we were faced with and suspicion and later with requests from community members of whom wanted to know what they would get from participating.

Some held personal talk with the facilitator about the possibility of getting some kind of help especially a job. Many said that they were fed up with all the talk, with people coming to ask those questions and no action being taken to help them or to improve their situation.

In spite of these constraints the team succeeded in carrying out all of the activities in this community. However in some cases not all of the Focus Group Discussions were conducted. After about two weeks in the field the Facilitator participated in an evaluation session designed to get their reactions and feedback, to evaluate the progress of the field-work and to make plans for completing the VCA. The most revealing fact is the experience gained from conducting this VCA it was evident that the experience gained was not a challenging one but the Facilitators became more aware of the extent of poverty and of the deplorable conditions under which some people were living. On completion of the fieldwork (VCA) the team again participated in an evaluation exercise. This took the form of a wall presentation in which they reflected on and shared their experiences and verified the data collected. Semi-structured interview schedules were used to conduct interviews with community leaders and with some of the poorest households in this community

The community of River Sallee was very supportive.

Glossary

Brainstorming: The gathering of as many ideas as possible in a short period of time, usually to solve problems.

Capacity (C): Combination of all the strengths and resources available within a community, society or organization which may reduce the level of risk, or the effects of an event or disaster.

Coping Strategies: The ways in which people manage and reduce the impact of a hazard

Disaster: Serious interruption of the functioning of a community or society which causes loss of human life and/or important material, economic or environmental losses which exceed the capacity of the affected community or society to manage the situation using their own resources.

Direct Observation: A process of observing objects, people, events and relationships.

Emergency: A situation of a threat or actual hazard which requires an almost immediate response, to prevent or reduce harm. Often the affected community has the capacity to respond using their own resources.

Hazard (H): A potentially damaging physical event, phenomenon or human activity, that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation.

Historical Profile and Historical Visualization: Tools for gathering information of what has happened in the past to tell how past events has had an effect on the community. These are represented as lists and a table of sketches respectively.

Livelihoods: The way people use the resources they have available to support their lives. For most people this means the method of earning cash income.

Mitigation: Structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards.

Mapping: A visual form to get an overview of the main features of an area in relation to its surroundings (Spatial map). It can also show dangers and exposed homes, services and infrastructure (Hazard and Vulnerability map); or resources and skills available in the community (Capacity Resource Map)

Risk: Probability of harmful consequences or expected losses (deaths, injuries, property, livelihoods, interruption of economic activity or environmental deterioration) as a result of interactions between natural or anthropological disasters and conditions of vulnerability. It is sometimes expressed as (HxV)/C =R

Seasonal Calendar: Visualization over the course of the year of weather patterns, social and economic conditions, festivals and other seasonal activities.

Social Network: The community's key groups and individuals, the nature of their relationship with the community and the perceptions residents have of their importance.

Transect Walk: A walk through the community to observe the people, relief of the land, surroundings and resources. It is represented as a cross-section diagram beneath which are descriptive topics. It helps to understand inter-relationships in a selected section of the community.

Vulnerability (V): The conditions determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards.