



# COCHRANE

## Community Assessment For Disaster Risk Reduction



Preparation



Prevention



Mitigation



Better be Prepared...

FIGURE 1 - Map indicating the location of Cochrane





**OBJECTIVE:** *To prepare communities for any disaster so that it may act promptly to save lives, protect property and coordinate activities before, during and after a disaster. This is to be carried out in collaboration with NEPO (National Emergency Planning Organisation).*

*Laudat & Cochrane communities have assessed their area to:*

- 1. Identify hazards and vulnerabilities in the surroundings*
- 2. Recognize skills and resources available*
- 3. Identify actions which the community can implement to reduce risk*
- 4. Prepare micro-project proposals.*

*What follows are the results of these assessments undertaken by community members over the period March 10, - April 30, 2010 from the Cochrane Echo mini project.*

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## Community Background

*Cochrane Village previously known as Hope Estate was renamed after Mr. Andrew James Cochrane Johnstone its then owner. Cochrane with a geographical coordinate of latitude 15° 20' north and Longitude 61° 22' west is situated North East of Roseau the capital. It is adjacent to Springfield Estate, east of Roger, boundary with the Morne Trois Piton National Park to the North and Boeri River to the East. It is en route to the start of the northern trail to the Middleham falls. Presently, the Village comprises of four Estates namely: Morne Anthony Estate bought by an English man John Lowndes, Stewart Hall Estate bought by Alexander Stewart, Middle Ham Estate bought by Heskeith Bell then sold to John Archibald (owner of Springfield Estate) and Hope Estate.*

*Though small in size, this is not a deterrent to the potential ability of its people to be resilient in time of adversity. The village has grown from a population of twenty in the early 1920's to 356 with 141 household presently. The village is accessed via two routes, the River Estate route which is the main entrance used and the newly resurfaced Springfield Road used as a secondary access. The topography of the village varies from gentle slope at sections to its east and west and moderate to steep at other sections, providing a suitable balance for a small community as ours. The community is surrounded by the volcanic sites of Morne Trois Piton, Morne Micotrin and Morne Watt. Alike most areas in Dominica there are always risks of landslides and sporadic road blocks when torrential down pour is experienced.*

*Cochrane is served by one hurricane shelter and one health center. A local mental health nurse serves the community in the absence of the district nurse and clinic is held twice a month.*

*Due to the small school population, in 1999 the village school was shut down and the students were enrolled at the nearby Canefield/Massacre Primary School. The average family size is 3-5 persons and 98% of households uses pipe borne water in their homes. The water is monitored by a caretaker from the village but treatment is applied by the Dominica Water & Sewerage Company.*

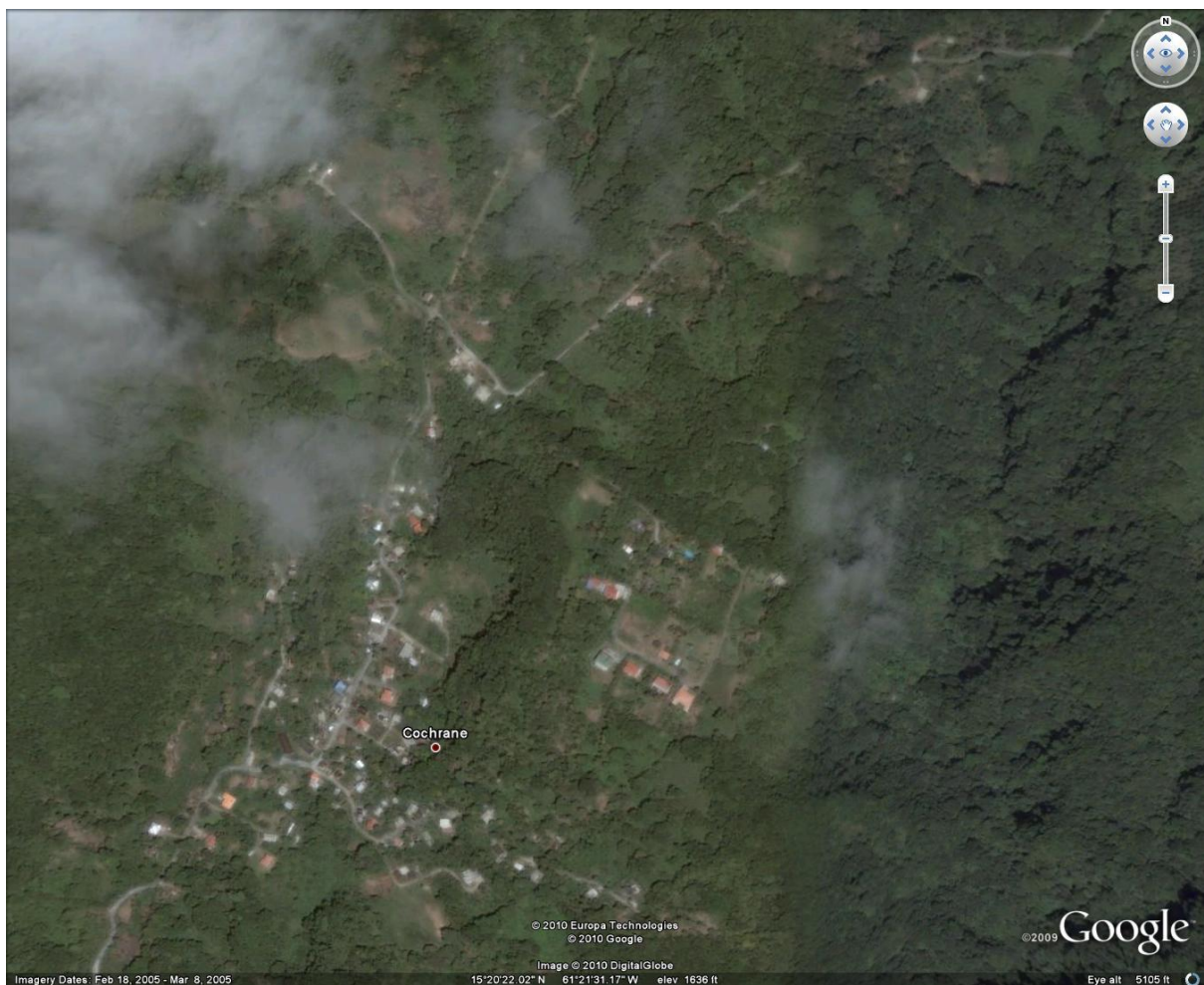
*Although composting is being encouraged, the village is included in the country's overall garbage collection system. The garbage truck serves the community fortnightly. The village is served by the Roseau Fire and Ambulance Service and presently there is no fire hydrant on site.*

## COMMUNITY RISK ASSESSMENT - Vulnerability and Capacity Assessment (VCA)

*Disasters cannot always be prevented but risks can be significantly reduced through the mobilization of people and hazard reduction efforts at the local level.*

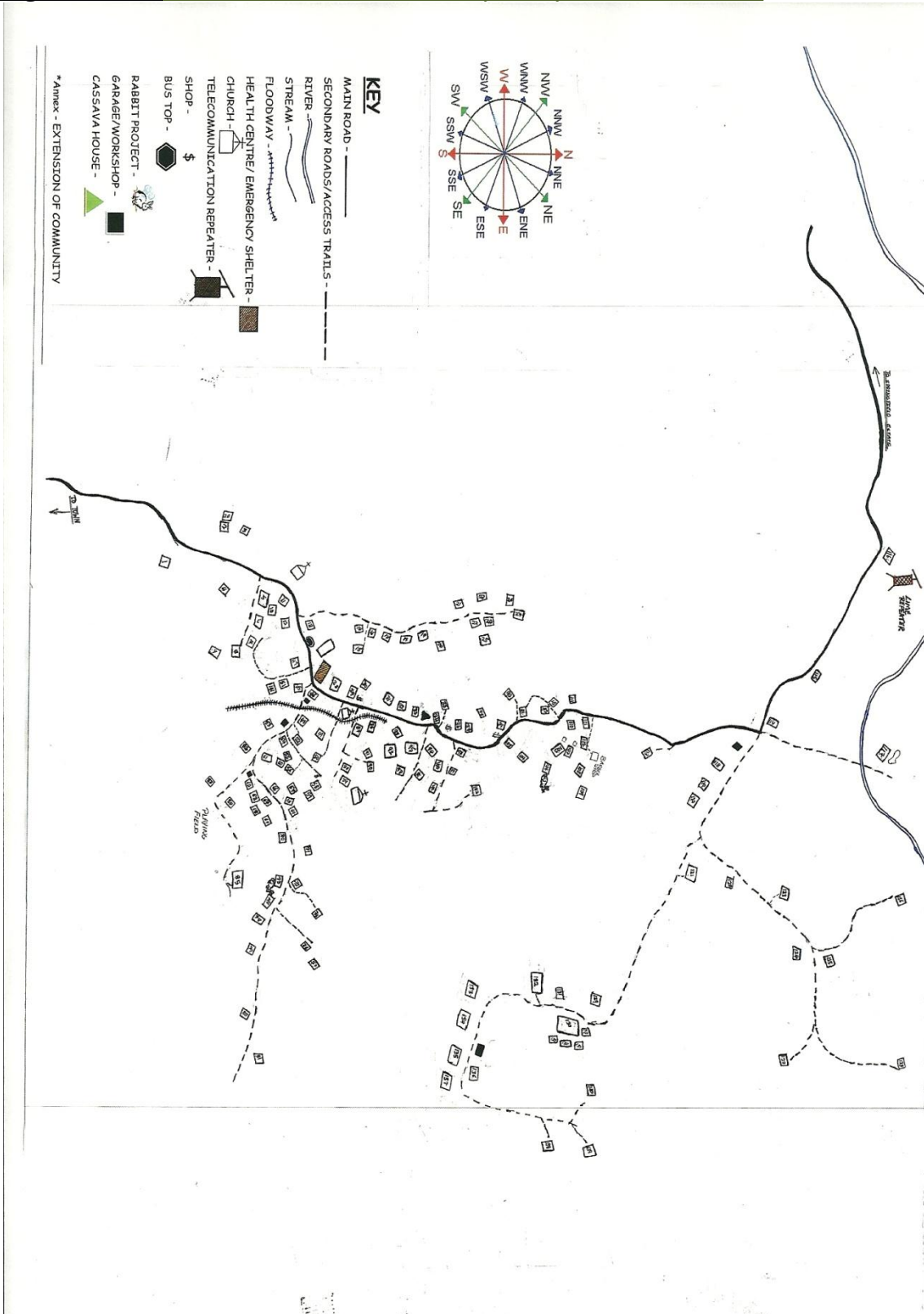
**Figure 2 - Aerial Photograph/ Google earth photo & smaller country map**

### COCHRANE

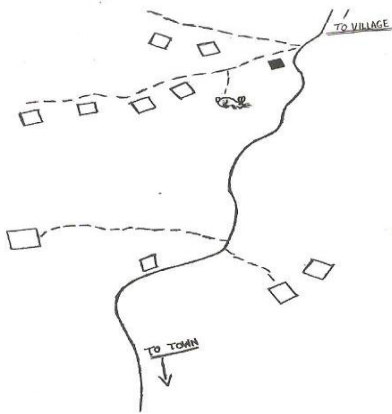




**Figure 3 - Hazard & Vulnerability Map of Cochrane**



**Figure 3 - \*Annex - Extension of Community**



## Analysis

*The main hazards in Cochrane are:*

- *Landslides*
- *Hurricanes*
- *Volcanic Eruption*
- *Fire (house)*



**Location prone to falling trees and landslides**





**Rock Fall along Cochrane Road**

**Other community concerns:**

- The community needs more attention from the Health Care Delivery System
- More attention to the main road to the village (maintenance)
- There is a gradual decline in agricultural practice
- Increase of unemployment of young villagers
- Lack of fire hydrants in the community
- Minimal size of the sole hurricane shelter and lack of access by disabled/handicapped and elderly
- Irregular bus service system

**Resources available in Cochrane**

<b><u>Profession</u></b>	<b><u>Name</u></b>	<b><u>Specialised</u></b>
Nurses	Ivo Jno Baptiste Anthea Rene Durand Marlene Francis	Mental Health Psychiatric Nurse Ward Sister (RN) RN/Midwife
Trained First Aiders	Norman Bonnie Kevin Richards Kelon Richards Shirley Bruney Ivo Jno Baptiste Vignette Bonnie Kennedy Richards Anthenia Laurent Della Parillon Christian Emmanuel Randy Charles Ivon Francis Alvin Peltier Roy Joseph Ronaldson Piper Alphonse Valerie Mattheus Esprit	
Radio Operator	Andy Earl Williams	
Orderlies	Ronaldson Piper Brian Matthew	
Teachers/ Educational Personnel	Bernita Joseph Clementina Liverpool Paul Philomen Emanuel Joan Richards Karen Richards	
Police Officers	Ivon Francis Marcia Gustave Matthew Durand	

Prison Officers	Kennedy Richards Ronnie Gustave	
Electricians	Roy Joseph Kimon Joseph Clem Mathew Earl Williams Johnathon Jno Baptiste	Refrigerator & Air Conditioning Refrigerator & Air Conditioning
Carpenters	Christian Emanuel Emmanuel Royer Oliver Valarie John Joseph	
Masons	Matheus Espirt Jack Magloire Brian Matthew Don Williams Aldrin Sandford Valentine Garraway	
Plumbers	St Claire Cockrane Kelvin David	
Operators (Heavy Machinery)	St. Luce Cockrane Dylan Cockrane Martin Thomas	

**No community is without skilled people and some items to help in an emergency.**

<b><u>ITEM</u></b>	<b><u>QUANTITIY</u></b>	<b><u>CONTACT PERSON</u></b>
Dumper Truck	1	<ul style="list-style-type: none"> <li>• John Laurent</li> </ul>
Mini Van	10	<ul style="list-style-type: none"> <li>• Ronaldson Piper</li> <li>• Kimon Joseph</li> <li>• Roy Joseph</li> <li>• Christian Emmanuel</li> <li>• Allan Bruney</li> <li>• Don Williams</li> <li>• Lennox Parillom</li> <li>• Randolph Paul</li> <li>• Phillip Vital</li> <li>• Nelson Simon</li> </ul>
Chain Saw	4	<ul style="list-style-type: none"> <li>• Village Committee</li> <li>• Alexander St. Luce</li> <li>• Canuit Hector</li> <li>• Heskeith Cockrane</li> </ul>
Wheelbarrows	2	<ul style="list-style-type: none"> <li>• John Joseph</li> <li>• Keith Richards</li> </ul>

## Our Community's History

### Historical Profile

<u>Year</u>	<u>Events</u>
1800's	First families settled in Community
1948	1 <sup>st</sup> Primary School was built
1951	Road from Cochrane to Springfield was built
1952	Swedish Settlement in the community
1960	Stewart Estate was declared a water shade area and was restricted from building
1963	Telephone Introduced
1965	Pipe borne water to Community
1970	Middleham Estate donated to Government to form the National Park
1972 - 1973	Electricity introduced
1974	Road opened from River Estate to Cochrane
1979 - 1980	<b>Hurricane David</b> - Home of Mrs. Christine Bruney was used as the Catholic Church
1981	New School was built
1982	Community Center used as Catholic Church
1983 - 1984	Trail access to Middleham Falls - Tourist Site
1995	Heavy migration of community persons
2006 - 2007	Domestic home fire resulting from electrical mal function
2009	Road from Antrim to Cochrane resurfaced
2010	Newly built Catholic Chapel - presentation of the child Jesus



## Community history through pictures/sketches

<u>YEAR</u>	<u>TREES</u>	<u>HOUSES</u>	<u>PEOPLE</u>	<u>RIVER</u>	<u>LIVESTOCK</u>	<u>DISASTER</u>
1960						
1970						
1980						
1990						
1995						
2010						

*Review of the historical information. From the tables above:*

- *What have we learned about our community?*
  - ✓ *Transportation has changed over the years from donkey to motor vehicle*
  - ✓ *Birth Rate has decreased*
  - ✓ *Standard of living has changed - no longer are villagers exposed to Pit Latrines or collects water from Sous (h2O reservoir) but the greater percentage of villagers have indoor toilets and running water.*
  - ✓ *Food preparation or preservatives has changed instead of depending on smoke or dried meat we now have refrigerators.*
  - ✓ *Building styles has changed, small shanty and untreated wooden building has change to concrete structures.*
  - ✓ *Level of agriculture produce has declined due to the fact that the youth has no interest in farming*
  - ✓ *Home deliveries have given way to hospital deliveries hence a decrease in maternity death*

✓ *Community spirit has declined recreation is no longer popular, could be a result of indoor activities such as television and video games.*

• *When last was the community affected by a severe hazard?*

*In 1999 a major landslide occurred on the main road, Antrim road was also blocked due to another landslide therefore access to and from the village was negotiated on foot.*

• *Are there relationships between the topics or events?*

*This landslide was as a result of deforestation for the purpose of farming, and heavy down pour*

• *How have changes over time placed us at greater risk?*

*Infrastructural practices such as cutting of trees for road development increases the risk of landslides on the village roads.*



**Notes:**

Events throughout the year tell us when to prepare; what are the best times to put on awareness activities and training or implement projects.

**SEASONAL CALENDAR**

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
LANDSLIDES						■	■	■	■	■		
HURRICANES						■	■	■	■	■	■	■
BUSH FIRES				■	■							
MOSQUITOES				■	■	■	■	■				
INFLUENZA	■	■								■	■	■
CROP SEASON	■	■	■	■	■						■	■
COMMUNITY ACTIVITY								■			■	■
TOURIST SEASON	■	■	■	■	■	■				■	■	■
ALCHOL ABUSE		■										
INCREASED SEXUAL ACTIVITY		■						■	■	■		

**Analysis:**

**Relationships between items to each other. Just a few lines on observed relationships and when is the best time for risk reduction activities.**

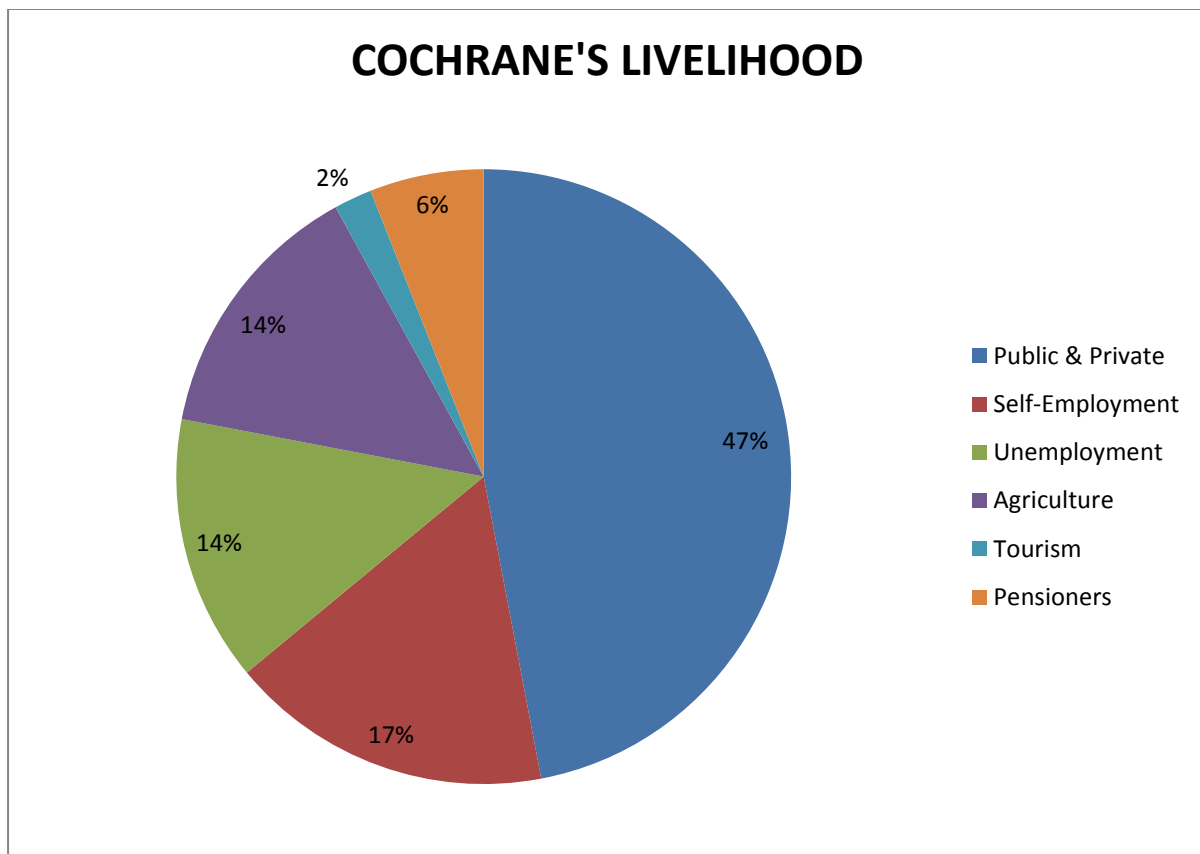
The Seasonal calendar contains a lot of information about seasonal changes and related hazards , diseases, community events and other information related to specific months of the year. During an investigation into the events that occurred during the year in the community of Cochrane, an appraisal method called a 'seasonal calendar' was used to understand local perceptions of seasonal variation.

According to this calendar, it can be noted that the Cochrane community experiences most landslides during the hurricane season, which are the wettest months of the year, June to November. Bush fires are being experienced during the driest months namely April & May. During these dry months the community also has to deal with the increase

in mosquito population, unlike the influenza season which is being experienced during the cold months. Alcohol abuse and increased sexual activities are on the increase during the festive seasons.

## Livelihoods and coping strategies

a) How do people support themselves and their families? This can be expressed as a pie chart or list.



*According to the pie chart above it can be noted that the majority of adults in the community of Cochrane are public & private sector workers. Also, there is an increasing amount of unemployed individuals in the village and as a result violence and theft are on the increase. Just 2% of the adult population is involved in the tourism sector. This shows that the tourism sector in Cochrane has declined and is also a major concern to be addressed given that the village is being promoted as an eco- tourism site, and is*

*considered the gate way to the country's tallest water fall the Middleham Falls and the Stinking Hole. Only 14% of the population are involved in the agricultural sector this shows that the younger generation are not attracted to this sector hence the village in the future may not be able to sustain itself in this field.*

**b) Make a list of how people in the community cope with emergencies and disasters; what strategies are used; what gets reduced first?**

- The community responds to disasters very well. Before a disaster the villagers assist the elderly in protecting their homes and properties.
- Carpenters and men help trim over hanging branches and ensure windows and doors are secured.
- After a disaster - villagers move around to make assessments and help clear debris.
- Risk of losing life is primarily reduced



## Cochrane's Social Networks

	Groups & Institutions	Point of Contact	Telephone numbers
Government	Primary School	No longer in Existence	
	Health Center	Ivo Jno Baptiste	245-6444
	Post Office	Julietta Jerome	449-2228
Business	Rosetta Parillon Shop	Rosetta Parillon	613-3055
	Shop	Anthea Jno Baptiste	449-1798
	Shop	Wilson Cochrane	612-9316
	Shop & Bar	Anora Valarie	295-2598
NGOs	Village Improvement Committee	Chairman - Kennedy Richards	245-8844
	Disaster Committee	Ronaldson Piper	277-3517
	Rabbit Breeders Association	Nelson Simon	225-5515
	Farmers Association	Keith Richards	449-2228
	Football Club	Kimon Joseph	276-1283
Religious	Roman Catholic Church	Father Eustace Thomas	448-2766
	Pentecostal	Bro. Victor Simon	448-2764
	Christian Gathered unto the Lord	Bro. Oscar Francis	449-1525

## Reducing risk and making the community stronger

<b>Hazard - Scenario</b>	<b>Reasons for damage and or injury</b>	<b>Possible actions to reduce or eliminate risk</b>
<b><i>Landslides</i></b>	<ul style="list-style-type: none"> <li>- <i>Building in landslide prone areas</i></li> <li>- <i>Falling rocks &amp; debris</i></li> </ul>	<p><i>Educate and identify areas which are susceptible to landslides; It is necessary therefore to support grading, building and foundation</i></p> <p><i>Design housing density and other land development regulations</i></p>
<b><i>Hurricanes</i></b>	<ul style="list-style-type: none"> <li>- <i>Types of structures built</i></li> <li>- <i>Refusal to clear over hanging branches and trees.</i></li> <li>- <i>Ignoring of hurricane advisories</i></li> <li>- <i>Delayed action</i></li> </ul>	<p><i>Placing storm shutters over exposed glass and installing hurricane straps on roof.</i></p> <p><i>Adopting and enforcing building code for wind and flood resistance.</i></p> <p><i>Planning Department can ensure that structures are not built in high hazard areas.</i></p> <p><i>Providing assistance before during and after event.</i></p> <p><i>Maintenance campaign</i></p> <p><i>Personal precautions campaign awareness programmes</i></p> <p><i>Information services</i></p>
<b><i>Earthquake</i></b>	<ul style="list-style-type: none"> <li>- <i>Population density construction standard (building codes)</i></li> <li>- <i>Emergency preparedness</i></li> <li>- <i>Fire due to power lines that are knocked down</i></li> </ul>	<p><i>Build adjacent to and not across fault zones.</i></p>
<b><i>Fire</i></b>	<ul style="list-style-type: none"> <li>- <i>Smoking and the use of candles that carry high risk.</i></li> <li>- <i>Cigarette butts that are not probably put out.</i></li> <li>- <i>And candle flames to be extinguished after use</i></li> </ul>	<ul style="list-style-type: none"> <li>- <i>Use a fire guard in front of all fires</i></li> <li>- <i>Close doors to reduce the spread of any fire which may break out</i></li> <li>- <i>Fit a smoke detector and check it regularly</i></li> </ul>
<b><i>Volcanic Eruption</i></b>	<ul style="list-style-type: none"> <li>- <i>Construction in unsafe zones</i></li> </ul>	<ul style="list-style-type: none"> <li>- <i>Observe planning recommendations and do not plan new construction in identified unsafe areas</i></li> <li>- <i>In the case of already constructed homes, know your evacuation route in the event of an eruption. Keep Family Disaster Plan updated.</i></li> </ul>

## Change we can carry out now.

Of the “Possible actions to reduce risk” above, pick out the ones we CAN CHANGE and do for ourselves.

- ❖ *Get resource persons to do education sessions*
- ❖ *Trim over hanging branches*
- ❖ *Clear drains, improve drainage*
- ❖ *Ensure the emergency shelter is prepared to support occupants*
- ❖ *Stop deforestation*
- ❖ *Reduce slash and burn*
- ❖ *Simulation exercises*
- ❖ *Working together*
- ❖ *Smokers should smoke outdoor or use a deep wide, sturdy ash tray on a flat surface*
- ❖ *Conduct disaster preparedness training with community members*
- ❖ *Raise community awareness on what to do before, during and after a disaster by promoting the completion of Family Disaster Plans for all hazards to which the community is prone.*
- ❖ *Monitor disaster threats, conduct drills and draw lessons to improve and update the Community Disaster Plan*
- ❖ *Engage in advocacy and lobby work regarding disaster management and development and related issues to support community disaster risk management*
- ❖ *Expand membership and involvement in disaster risk management committee*

## *Methodology*

*The Community Assessment (Vulnerability and Capacity Assessment - VCA) is a participatory investigative process. It is designed to assess the risk that people face in their local areas, as well as the resources and skills the community have to cope and recover from adverse events.*

*The process is a skills-transfer approach. The community is trained to carry out the assessment and develop solutions which will reduce risk. The output is not only an assessment of community risk and capacities, but also micro-project solutions to reduce the frequency and impact of disasters.*

*The results of the VCA are developed through direct observation and interaction with other community members over a period of time. Persons gathering the information in the field record and analyze their:*

- *Direct observations of visits through the community,*
- *Structured and semi-structured interviews with other community members*
- *Focus group meetings with target audiences*
- *Mapping of hazards, vulnerabilities, capacities and resources*
- *Brainstorming as a team and*
- *Quick surveys.*

*The information gathered from the community is cross referenced with secondary statistics, historical records and other materials available.*

*The intention is to understand the community better and have the residents implement solutions to risk reduction developed by themselves.*

## **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  $(H \times V) / C = R$*

**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.*



***Humanity***

*The International Red Cross and Red Crescent Movement, born of a desire to bring assistance without discrimination to the wounded on the battlefield, endeavors, in its international and national capacity, to prevent and alleviate human suffering wherever it may be found. Its purpose is to protect life and health and to ensure respect for the human being. It promotes mutual understanding, friendship, cooperation and lasting peace amongst all peoples.*

***Impartiality***

*It makes no discrimination as to nationality, race, religious beliefs, class or political opinions. It endeavors to relieve the suffering of individuals, being guided solely by their needs, and to give priority to the most urgent cases of distress.*

***Neutrality***

*In order to continue to enjoy the confidence of all, the Movement may not take sides in hostilities or engage at any time in controversies of a political, racial, religious or ideological nature.*

***Independence***

*The Movement is independent. The National Societies, while auxiliaries in the humanitarian services of their governments and subject to the laws of their respective countries, must always maintain their autonomy so that they may be able at all times to act in accordance with the principles of the Movement.*

***Voluntary service***

*It is a voluntary relief movement not prompted in any manner by desire for gain.*

***Unity***

*There can be only one Red Cross or one Red Crescent Society in any one country. It must be open to all. It must carry on its humanitarian work throughout its territory.*

***Universality***

*The International Red Cross and Red Crescent Movement, in which all Societies have equal status and share equal responsibilities and duties in helping each other, is worldwide.*