



St. Kitts & Nevis Red Cross Society

DIEPPE BAY

St. Kitts

Community Assessment

For

Disaster Reduction

April 2010

The International Federation's Global Agenda (2006–2010)

Over the next two years, the collective focus of the Federation will be on achieving the following goals and priorities:

Our goals

Goal 1: Reduce the number of deaths, injuries and impact from disasters.

Goal 2: Reduce the number of deaths, illnesses and impact from diseases and public health emergencies.

Goal 3: Increase local community, civil society and Red Cross Red Crescent capacity to address the most urgent situations of vulnerability.

Goal 4: Promote respect for diversity and human dignity, and reduce intolerance, discrimination and social exclusion.

Our priorities

Improving our local, regional and international capacity to respond to disasters and public health emergencies.

Scaling up our actions with vulnerable communities in health promotion, disease prevention and disaster risk reduction.

Increasing significantly our HIV/AIDS programming and advocacy.

Renewing our advocacy on priority humanitarian issues, especially fighting intolerance, stigma and discrimination, and promoting disaster risk reduction

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Cover photo: International Federation

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Introduction

From a consultation stakeholders meeting November 27, 2009 with the NEMA management, District committees of NEMA, Office of Sustainable Development, Red Cross executive and branch leaders and USAID OFDA consultant. Based on the criteria below, seven areas were originally prioritized for attention including Dieppe Bay.

Criteria for selecting communities:



- Communities located in areas at high disaster risk (high winds, flooding, landslides, volcanoes, earthquakes, technological accidents);
- Communities with greatest exposure to risk associated with climate change
- Communities with high levels of vulnerability
- Vulnerability due to poverty
- Environmental degradation
- History of disasters
- Community interest and ownership¹.

A baseline study of knowledge attitude and practice was carried out December 29th 2009. While most persons had been previously impacted by a disaster and knew where their nearest shelter was there was a very low awareness of community risk and protective actions.

The Dieppe Bay community members took part in the community assessment for disaster risk reduction on multiple evenings of April 2010 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 date from the community training/implementation location.

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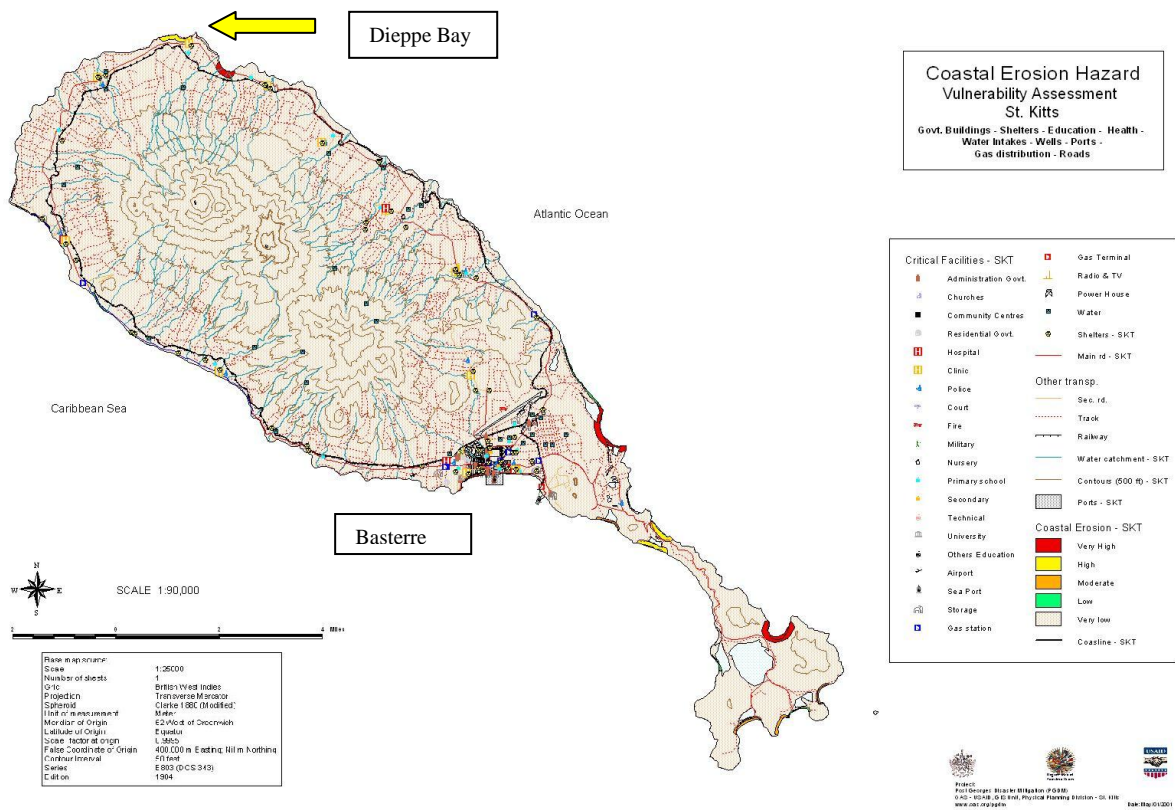
¹ Based on discussions with community members the National Society will gauge the interest and motivation of the community to participate in the project. In cases where communities are apathetic and unwilling to participate in the project activities such as first aid training will take place to raise interest. If these efforts fail to raise interest of the community the NS will consider working in another community.

Module 1 Better Be Prepared

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. The risk and hazard assignment caused the residence of Dieppe Bay to widen their horizon and change their state of thinking when it comes to safety and security measures to be used in the environment and the surrounding that they are living in. They took into consideration the impact that a disaster would have on the community whether great or small due to of their unawareness.



Source - http://www.oas.org/pgdm/hazmap/cstlersn/stk_nev/kn_rept.htm

Spatial view of Dieppe Bay



Figure 1 Aerial Photograph/ Google earth photo & smaller country map

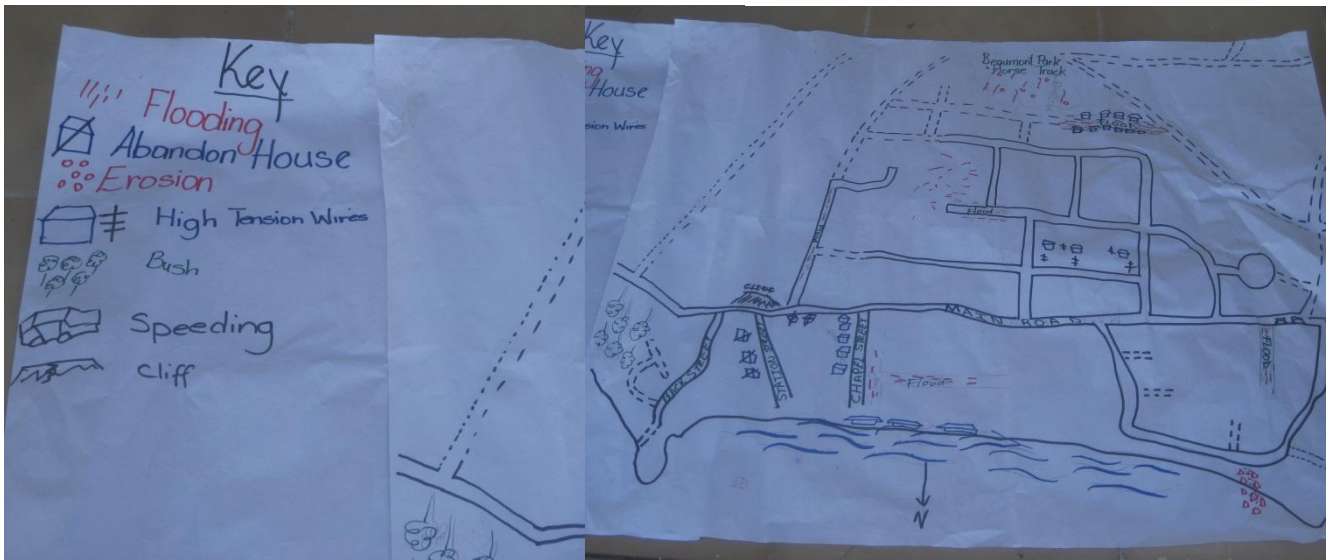
Hazard & Vulnerability of Dieppe Bay



Figure 2 Coastal Erosion Dieppe Bay

Dieppe bay experiences street **flooding** off Chaple Street, around the Beaumont horse track and homes in this area. The older north Dieppe Bay settlements began **flooding** in the 70's about the time that the sugar industry went into decline. Drainage systems were not as well maintained. In the newer Dieppe Bay projects housing development **floods** can reach knee high. Most of the cane field area that was near the village has been removed and are now transformed into project housing developments.

The newer residences towards the south central part of the town as well as those long established in the NW section nearer the coast also **flood**. Over 20 families have been impacted from flooding in these areas.

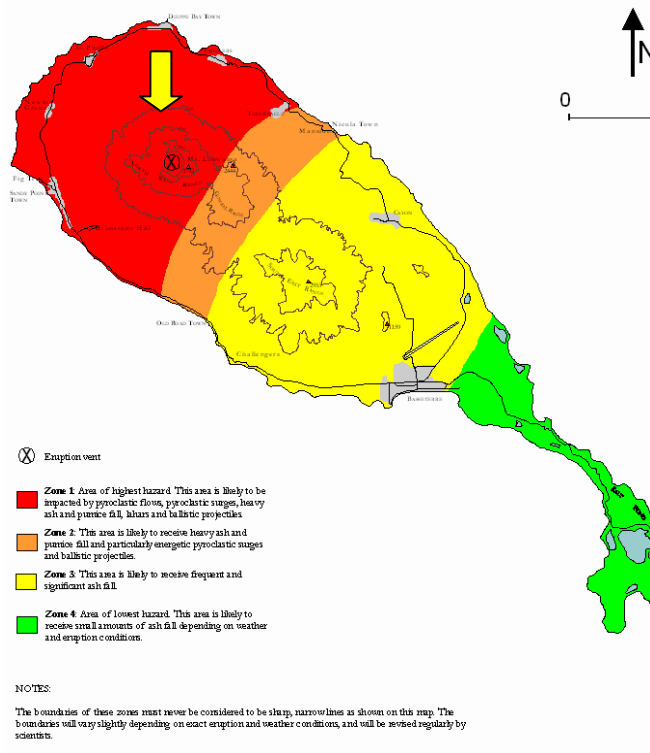


Dieppe bay suffers from severe **coastal erosion**. Hydraulic action has gotten the best of the coastal shore line over the years as it tends get smaller. A UNESCO Study² shows the Dieppe Bay Spit has been eroding at about 1.5 meters per year. Most of the spit is now gone.

At the headland to the west of the bay, erosion is also occurring. Hurricane impact such as Georges, Lennie and Luis make this worse. This has already left some homes at risk and will cause other houses, now meters from the sea, exposed to flooding. Moreover the loss of the spit creates greater exposure for the fishing boats anchored in the more sheltered eastern beach.

The main **emergency shelter** for the coastal community, the Fishing Corp., is in disrepair.

Figure 4: Preliminary Volcanic Hazard Map for an explosive magmatic eruption from Mt. Liamuiga



There are about 5 abandoned houses along station street and near road just west of Station street which could encourage rats and use of these properties **for illegal activities**. Similarly overgrown lots in the east of the town could provide breeding grounds **for mosquitoes**. There is indiscriminate dumping of garbage. The community is vulnerable to **vector borne diseases**. A small **roadside landslip** exposure at the junction of Station Street and the Main Road could disrupt traffic.

In addition to these local hazards, St. Kitts has been badly affected by hurricanes and earthquakes for centuries. The historical profile below demonstrates the frequency with which the these hazards impact the island. Mount Liamuiga is the **volcano** which dominates the island it is currently dormant but will threaten Dieppe Bay

² Wise Practices for coping with Beach Erosion St. Kitts 2004 UNESCO, CDB and St. Kitts Government Agencies

residents if it becomes active³.

Our Community's History

Historical Profile of St. Kitts and Dieppe Bay

Year	Events
	Volcanically active 0.98 million years since the last eruption
00	pre-ceramic Indians called Sibonay
	Arawak Indians who originated from the Orinoco River area in Venezuela
	Carib indians
about 600 AD	height of the Indian population, 2,500 -6,000 Indians on Nevis
November 11, 1493	Europeans arrive - Columbus
1640's	Sugar introduces- the rise of plantation economy
10 April 1690	Earthquake off Antigua Magnitude 8.
Feb 1843	Earthquake.
1854	Cholera epidemic estimated 1/6 th of the population died 3,920 in St. Kitts and 891 in Nevis ⁴
26 Sept 1932	Hurricane (no name) Cat 3
Sept 1, 1950	Hurricane Dog Cat 3
Sept 5 1960	Hurricane Donna Cat 4
1960's	Federation of St. Kitts, Nevis, and Anguilla was formed by Britain.
60-70's	Decline of sugar industry continues. More estates close and maintenance of fields and sluice gates decline
1971	Anguilla secedes
October 8, 1974	Earthquake Magnitude 7.5. On St. Kitts, the tower of the church of St. Thomas fell through the roof of the church causing serious damage,
1970's	Flooding in Dieppe Bay
Sept 19, 1983	Independance
Sept 17 1989	Hurricane Hugo Cat 4
Sept 21 1998	Hurricane Georges Cat 3
1991	UNESCO Beach monitoring in St. Kitts 35 beaches ⁵
Sept 5 & 15 1995	Hurricane Luis Cat 4 Dieppe Bay west and east lost 8m and 9m in width respectively but the north gained 13 m.
18 Nov 1999	Hurricane Lenny Cat 4
1999 onward	The projects - government housing area was developed
2005	Due to plummeting profits, the Government closed both the cane fields and sugar factory ⁶
October 2008	Hurricane Omar
August 2010	Hurricane Earl

Dieppe floods regularly each year with the intense rainfall in the wet season.

³ K. Simpson and John.B. Shephard 2001 Volcanic-hazard assessment for St. Kitts, Lesser Antilles

⁴ http://nevisdm.com/past_disasters.html

⁵ <http://www.unesco.org/csi/act/cosalc/hur9b.htm> <http://www.unesco.org/csi/act/cosalc/hur20.htm>

⁶ http://www.stkittstourism.kn/sugar_industry.html

Community resources and skills map

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

Dieppe Bay has many resources and capacities. Its large fishing fleet can provide alternate transport should road access be blocked. The facilities at the fishing cooperative can provide some storage. Similarly the scenic rail road and a number of taxi drivers live in the community for mass transport.

At least 4 nurses live in the town and there is the health center for care. There are at least 4 shops serving the community and a bakery. Emergency shelter is available at the large school and nearby smaller church. Both of which are set back from the eroding beach and surge in a hurricane.

The community has many tradesmen such as carpenters, mechanics and painters with tools available.

Dieppe Bay is a small community that is commonly referred to as a fishing village due to past practices. The resource and capacity map helped the residents to realize the capability of the community to act on its own in any disaster before outside assistance arrive.

Persons were able to identify other community members who they could call upon to assist in a particular crisis or to help with their daily livelihood as well as other buildings usable for shelter. In the end villagers were a bit surprised of how many resources they had in the community.

Community Baseline and secondary data:

Official Community Name: Dieppe Bay

Location of Community:


Brief description: North east tip of Saint Kitts

No. of persons in Dieppe Bay/Parsons	975	(male 507, female 468)
No. of households (estimated)	250	

Reducing risk and make the community stronger

We can transform our community by reducing how much harm a hazard can cause.

Hazard – Scenario	Reasons for damage and or injury	Possible actions to reduce or eliminate risk	Can Influence Accept/ Transform
Sea surge and coastal erosion	Hurricanes, no setback from coast	Construct groynes or coastal barrier wall Retreat in hurricane threat	Accept / Transform
Dengue fever	Mosquitoes Indiscriminate dumping of garbage, overgrown lots. Abandoned homes	Clean up area Spray for mosquitoes Regular collection and disposal system – education and culture change	Can Influence / accept
Hurricane	c. 15% of homes Poor construction and maintenance of houses.	Retrofitting – roofing straps and minor reinforcement of walls (wood) – project proposal	Influence
Flooding	Poor drainage system. North of race track. Off Chaple Street. In new housing developments	Clear /develop channel in the housing project. From the houses to the main road est. from Works XCD \$100K Divert water flow Small entrance barriers on homes Near race track flash flood –poor drainage, reforestation, flood barriers in doorways.	Influence
Earthquake	Seismic / poor construction practice	Retrofit where possible	
Volcanic eruption	seismic & location	Early warning system and Evacuation plan to south of island	Can engage Seismic Unit

The vulnerable persons			
	Source	Option	C I A/T
Community shelter – Fisherman’s Corp	Windows need repairing, Roof is leaking Louvered windows need repairing	Repair roof. Sheets to replace and some roof boards	
Gov’t primary school – not an official shelter	Roof needs repairing		Accept

Handicapped teenager at Gibbons	Family Disaster Plan, CDRT to check before storm	Can
3 blind persons in Gibbons also. All over 50 yrs	Family Disaster Plan, CDRT to check before storm	Can
Approximately 25 older persons some who live alone. Even those who live with their family they must fend for themselves.	Family Disaster Plan, CDRT to check before storm	Can

Estimates

Flood Mitigation – New housing area Dieppe Bay – Source Public Works Department

Storm water drainage beginning at the point where the existing drainage terminates, carrying it through the main road, Chapple Street with a fall out in Dieppe Bay.

		XCD
24" pipe – 1500 feet		25,000
Backhoe rental	XCD150/hr @ 100 hrs	15,000
Engineering survey	In kind Works Dept	35,000
Placing of Asphalt		40,000
Labour	In kind community	23,000
	Sub-total	138,000
Contingency 10%		13,800
		151,800
Direct expenditure		XCD 88,000 USD32,836

Timeline to completion 2.5 weeks.

Repairing the Emergency Shelter – Fisherman’s Cooperative

Repairs to the roof and windows of the cooperative.

	Item	Unit costs	XCD
78	Galv sheets 25G-20’	\$220 each	17,160
60	T1-11 5/8” 4’ x 8’	\$195 each	11,700
8	Capping Galv. 14’x10’	\$100 each	800
30	Galv nail 2-1/2	\$7.7	231
25	Galv. Nail 4”	\$7.7	192.5
7	PP D4S TD 1 x 10 16’	\$82	574
1500	Wood grip screws 14x2-1/2 “ zinc	1	1500
Est 150	Hurricane straps	Est. \$4	600
8	Window Miami 24x48”	\$233	1864
		Sub-total	34,622
		Vat	5886
		XCD Total	40,508
labour	In kind. Remove old items & replace		
		US	USD6,442

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.

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VCA Toolbox with Reference Sheets. International Federation of the Red Cross and Red Crescent Societies 2007

The seven Fundamental Principles of the International Red Cross and Red Crescent Movement

Humanity

The International Red Cross and Red Crescent Movement, born of a desire to bring assistance without discrimination to the wounded on the battlefield, endeavours, 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 endeavours 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.