

Planning the way forward:

Caura community's climate change  
vulnerability assessment and  
resilience-building ideas



June 2012

## This is Caura

Caura Village is well-known for the river limes at the Caura River - "the home of curry duck". It is a place for other types of recreation, such as hiking, and the resident Caura Northern Range Hiking Group says it is a central location for hikes to La Fillette, Las Cuevas, Maracas-St. Joseph and Lopinot among other destinations. Caura looks 'green' and the forest cover in this upland location is a critical watershed area.



Caura is also a place with 'a history' including a legend of a curse made by a Catholic priest, which halted the fragmentation of the community that began with the proposed construction of a dam in the valley. Caura has a heritage and culture enriched by Amerindian forefathers, Spanish settlers and current estate owners. Traditional uses of the plants of the area including medicinal herbs were passed along generations of residents.

Caura is an agricultural community, with over 150 farmers, many belonging to the Caura Valley Farmers Association, who produce food for the nation on over 250 acres of fertile land.



The crops are patronised and benefit from the bees that are resident in hives maintained by beekeepers in the Valley and which produce 'liquid gold' in the form of honey.

Caura is also home to the entrepreneurial spirit of its people, who use their creativity to fashion beautiful pieces of handicraft from raw materials obtained from the forest in a sustainable manner.

From coconut, torchon, banana, moss and Honduras pine, dry arrangements are made which are used in the décor of social functions. Fresh flower arrangements are also produced from the plants of Caura.



## Issues within Caura

Though Caura is still green, the people of Caura recognise that much needs to be done to ensure that the place remains green and that the forests can continue to act as a watershed and that the services provided by its forest cover are maintained.

There are several issues however which threaten this; some of these issues are the result of negative attitudes, behaviours and practices and a lack of awareness. When the community began to discuss these issues, they were easily summarised under four main headings:

- The Visitor
- The River
- The Water Supply
- The Removal of Vegetation

### ***The Visitor: Coming to 'the home of curry duck'***

Caura has a population of just over 700 persons, but on weekends and on public holidays, the population more than doubles, with the influx of visitors coming to enjoy a river lime at the Caura River. Their main destination is the Recreational Site which is managed by the National Parks Department of the Forestry Division.

Unfortunately, the area cannot hold the volume of persons that come, so the visitors keep moving further and further up-river to try to find a less crowded site. This takes them into the areas that border the farmers' lands, and crops are damaged, produce is stolen as there is no security for the farmers' crops.



### ***The River: The river runs through it***

At all the areas occupied along the river bank, visitors take a dip in the water, clean and cook their ducks, wash their wares, and even make use of the river as a toilet area, as the recreational site has no toilet facilities. At some points along the river, religious groups carry out their rituals, some involving shaving of heads with razors. The hair and razor blades are often disposed of in the river too.



The roadways are clogged with vehicles, the visitors have a good time, often drinking alcoholic beverages and blasting music from their cars. When they are ready to leave, some drivers are drunk and they drive off the sides of the winding Caura Royal Road. Some of them relieve themselves near the homes of residents. Some of them help themselves to the water in



community communal water tanks, the only source of water for some residents which is pumped from the river and containing the blood, duck guts, hair, razor blades...

### ***The Water Supply: Water courses and sources***

The river is a source of water for farmers and for some households in Caura. Farmers are aware that pesticides used leach into the water; and unfortunately, pesticide use has increased as farmers noticed that there are more pests in recent years. They do not drink the water from the Caura River but they use water for drinking from a ravine. Householders that obtain water from the river through a pump system receive untreated water, and treat it themselves with chlorine tablets; of course this does not remove all contaminants: they often encounter all the debris that enters the river from the recreational site.

Both farmers and householders have noticed that in the dry season the quantity and flow of water declines. Householders recognise that the water tank fills more slowly than in the wet season. Farmers plant certain crops nearer to the river at that time of year. Farmers generally use overhead sprinkler systems for their crops as the drip irrigation system - a better alternative - is considered to be more expensive.

Other households receive a treated water supply that is sourced from a spring. The quantity of water received varies from season to season, declining in the dry season. This supply is free from the contaminants faced by the householders who gain their supply from the river.



### ***The removal of Vegetation: Not everything that is green is serene***

Residents have also noted that behind the green facade of Caura, illegal removal of vegetation from the hills is impacting on the valley. Persons, often from outside of Caura, have been carrying out logging, and removal of trees to set up campsites, buildings, to practice agriculture and other activities. This situation is apparently not being monitored or halted by the authorities. The practice has caused a loss of forest cover, increased runoff, river siltation and an increased chance of landslips in the area and flooding in farms lower down in the valley.

Along the riverbanks, removal of vegetation including bamboo, has caused erosion of the riverbanks. There are some farmers who recognise the need for a buffer zone along the river, but others overlook this and plant their crops right alongside. Even if the plants can hold the soil together, after reaping, the banks are left bare and susceptible to erosion.



Deforestation also impacts upon the bee population, which is critical to food production. Beekeepers note that certain species of trees preferred by bees for foraging are now disappearing in the valley and this has lowered honey production.

## Caura and climate change

Members of the community of Caura Village have increased their knowledge and understanding of climate change and its current and possible impacts on the community's livelihood activities through a workshop hosted by the Caribbean Natural Resources Institute (CANARI) in a project funded through the United Nations Development Programme Global Environment Facility Small Grants Programme (UNDP GEF SGP).



This knowledge has added a new lens when looking at Caura. Against the backdrop of suspected intense climatic events including stronger hurricanes and more severe dry seasons, the community of Caura has decided that existing issues need to be addressed with urgency, as the impact of climate change can be worsen because of the present state of affairs.

The Caura community believes that when the issues are addressed, the community will be in a better position to deal with the effects of climate change and become more resilient to its impact.

### Identifying Vulnerability

With expected extreme weather events, the community of Caura has identified the following areas of community vulnerability:

- Blocked roads mean limited access out of Caura in a disaster
- Visitor abuse of community water supply impacts on availability
- Increased sedimentation of rivers in the wet season pollutes the water supply
- In extreme dry seasons, water supply will be scarce
- Crop viability is vulnerable in conditions of water scarcity and is further impacted by damage and praedial larceny at the riverbank
- Deforestation is leaving the valley susceptible to landslips, soil erosion and flooding which is impacting on water supply and quality and agriculture;
- Deforestation also impacts on bee foraging
- Deforestation impacts on the supply of raw materials for persons engaged in handicraft
- Floods also impact on homeowners and visitor safety and access to health services

## Building resilience

Understanding the old adage "take in front, before in front take you" the Caura community has brainstormed on ways in which the identified areas of vulnerability can be tackled. Having recognised that knowledge, attitudes, behaviours and awareness are critical elements of this thrust, the following ideas were proposed for action.



### Awareness building

- Build awareness of residents to community vulnerability and the need to monitor actions in the community that increase vulnerability
- Build awareness of the visitor to negative actions that increase vulnerability
- Build awareness of the authorities to the areas of community vulnerability

### Attitudes and behaviours

- Encourage actions and participation in practices that reduce vulnerability
- Instil in the younger generation the right attitude towards the environment and specifically the environment of Caura
- Encourage a participatory approach among all stakeholders in managing the environment of Caura

### Knowledge

- Enhance the knowledge of the Caura community - in 'winning water', managing the watershed, in proper farming techniques
- Enhance the knowledge of the national population on climate change through positive action in Caura.

The approach suggested is composed of the following actions and will involve the following stakeholders:

**Community Brainstorming for Resilience Building**

Focus	Issues	Ideas	Needs/ Resources	Stakeholders
The Visitor / The River	Pollution and wastewater  Congestion at river  Lack of car park space       Religious activity waste	Printing flyers, info and distributing garbage bags  Capture of wastewater?  Place signage  Park and ride for 'bachelors'  Legislation re: numbers in Caura   Have car parks to control numbers and control parking  Fee to cover security of cars  Extend recreation area to create a campsite space to deal with congestion in one area as alternative to upstream areas  Establish a particular site for religious activities downstream of recreational site	Groceries and business places for sponsorships  Concrete benches and food preparation areas  Research on wastewater treatment (Corporation)  Clearing of access roads and trails for other access in and out to deal with congestion and incidence of a disaster (CEPEP/Fire Guardians) collaborative?  Litter wardens on site  Caura Valley Authority being proposed by the Village Council  Community proposals to provide alternatives with participatory management for extended recreational area alternatives - dam: caiman and boating activities	Groups in community  Regional Corporation  Office of the MP  Local Councillor  Litter wardens  The Caura community

Focus	Issues	Ideas	Needs/ Resources	Stakeholders
The Water Supply	Lack of reliable supply Lack of fire hydrants	Pipe-borne supply or new water treatment plant  Water supply for farming, facilities for harvesting and storage of rainwater  Workshop for development of comprehensive plan for the Caura Valley	What is the best system? Rainwater harvesting?  Need to research initiative at Toco Foundation, Alternative to Min of Agric pond incentive: creation of underground tanks? Subsidise drip irrigation system?  Town and Country Plan - workshop as a means of updating on the Land Use Plan for Caura	Ministry of Agriculture Water Resources Agency Member of Parliament WASA IMA EMA GWP-Caribbean/ Toco Foundation Fire Services Security agencies CBOs andNGOs Funding agencies
Removal of Vegetation	Illegal logging  Slash and burn agriculture, flooding, bamboo removal  Vegetation removal by visitors for building sites, preparing campsites	"Undercover policing" to identify and report on illegal logging  Management of buffer zone  Highlight issues and create public awareness  Enforcement of laws Keep waterways clear of debris	Report to authorities Signs, enforcement  Signs showing the dos and don'ts; recommendation of placement of signs; Restriction of people beyond park  Highlight : newspapers, video  Town and Country Division enforcement  Replanting of fruit trees at riverbank; explore Forestry Agroforestry Incentive Programme	Forestry Division  EMA  Corporate T&T  Media  Town and Country Planning Division  Ministry of Agriculture  Forestry Division