



Report on Caura community climate change awareness workshop

Caura Village, Trinidad
29 May, 5 & 12 June 2012



"Community action to build climate change resilience in Trinidad and Tobago"

UNDP GEF SGP Project 2012

June 2012

List of Acronyms and Abbreviations

CANARI	Caribbean Natural Resources Institute
ODPM	Office of Disaster Preparedness and Management
PV	Participatory video
UNDP GEF SGP	United Nations Development Programme Global Environment Facility Small Grants Programme

1 Background

The climate change awareness building workshop in the Caura community was a key activity of the project entitled "*Community action to build climate change resilience in Trinidad and Tobago*". The project is funded through the United Nations Development Programme Global Environment Facility Small Grants Programme (UNDP GEF SGP) and the project was undertaken within CANARI's Climate Change and Disaster Risk Reduction Programme.

The community of Caura was selected for the project after research and consultation with a range of civil society and government stakeholders with interest in community livelihood development and climate change concerns. The selection process considered communities which may face livelihood vulnerability to climate change impacts and which have active community groups that could be mobilised into action on this issue (see meeting notes from stakeholder consultation in Appendix 1).

After selection of the Caura community, a series of briefing and mobilisation meetings were held with various groups within the community in preparation for the workshop. These meetings also yielded agreement for the use of the Caura Activity Centre as the venue for the workshop from the Caura Valley Village Council and secured catering services from the Women's Empowerment Group from the community. At these meetings, contact was also made with additional stakeholders who may be later involved in the follow-up aspects of the project.

The workshop was scheduled to take place over the course of three consecutive Tuesdays in preference to three consecutive days in one week in order to accommodate the livelihood needs of workshop participants, some of whom are active farmers in the Caura community.

2 Workshop sessions

2.1 Day 1: Tuesday 29 May 2012

2.1.1 *Introduction to CANARI and the project*

In the first session of the first day of the workshop, the participants were introduced to CANARI by Celeste and the way in which the organisation works using a PowerPoint presentation (Appendix 2).

After this, the outline of the project was presented, using a project poster (Appendix 3). The project poster was left displayed on the wall of the Activity Centre for reference by the members of the community.

Emphasis was placed on the participatory process through which the project would be executed. The awareness building workshop would both supply general information on climate change but would also facilitate the community's sharing of information



Participants in awareness building workshop included farmers and beekeepers

on impacts observed or possible due to climate change. Specific activities of conducting vulnerability assessments, brainstorming on resilience measures and guidance in participatory video and photo journaling were also outlined as key aspects of the project.

2.1.2 Reflections on the Caura community by participants

Participants were invited to share their descriptions of the Caura community as they would to a tourist visiting the village for the first time. This exercise was undertaken to help the participants pinpoint aspects of the community's key characteristics from their perspective on which they placed greatest importance. The participants gave a mixed bag of responses, which were categorised as uniqueness, issues and opportunities. The findings of this exercise are given in Appendix 4 and key elements were as follows:

- The Caura River - a unique Trinidadian destination
- Location - a central point for hiking and good for outdoor exercise
- "Greenness" - watershed area with forest cover
- "We have a history" - community legends, fragmentation and practices
- Culture - influenced by varied heritage and current environmental interests
- Agriculture - a strong farming community
- Beekeeping - at least three beekeepers in the area
- Handicraft - a growing interest among women for a sustainable livelihood

2.1.3 Introduction to climate change

A presentation was delivered to explain what climate change is and to share information on the causes and impacts. Participants were asked to reflect on changes they have noticed or observed over the past thirty years in the Caura Valley that may be caused by changes in climate. Caution was encouraged in ascribing all changes noticed to climate change, but the need to both observe and document was underscored, as there is still not much known about climate change impacts in the region.



Participants were also informed of the ways in which some effects of man's negative impacts on the environment can be worsened by the impacts of climate change.

They then shared information on some of the issues existing in Caura that fit this scenario, such as deforestation caused by illegal logging, and clogging of the river caused by soil erosion on denuded hillsides.

Traffic congestion in the area on weekends and public holidays was caused by large numbers of visitors to the Caura Recreational Site at the river, and this was also an area of concern in the event of worsening weather conditions and limited evacuation routes from the village.

The participants questioned the policies made by successive governments that encouraged investments that were not environmentally-focussed or friendly and the seemingly limited or

lesser investment made in protecting the environment and asked for CANARI's view. In response, it was explained that some of the issues stemmed from a lack of co-ordination among Government agencies and ministries and so there was much work to be done by community based organisations, civil society groups and non-governmental organisations to advise and influence policy and decision makers.

2.1.4 Introduction to documentation and the value of documentation

Participants were given some ideas on ways in which issues can be documented and used in building awareness, educating others, sharing information and advocacy.

Examples of outlets for sharing video documentation were discussed including the use of television news broadcasts, YouTube and social media networks like Facebook, and in meetings with key stakeholders. A brief introduction to participatory video was given noting that the next workshop day would provide a more detailed and practical introduction.

In the last session of the day, participants were encouraged to look for photographs that depicted change over time during their lifetime and in the Caura Valley. They were encouraged to bring these photographs to the next workshop session to share.

2.1.5 Participant feedback

Participants were encouraged to give verbal feedback on their impression of the first day of the workshop. The following views were expressed:

"Government does not seem interested in climate change; if you do not prepare Earth for your generation, who will prepare it? I appreciate it and appreciate our village can help each other. There is nowhere else like Caura in the world." - Farmer

"Documenting changes. We did not document in any way, we observed changes. In relation to agriculture: changes in fertility in soil, pest and disease; may speculate on changes but we need scientific data and research. But increases may be due to global warming and therefore using natural enemies may present a challenge. Now slugs are seen in crops and they have been feeding on crops while not previously a serious pest. Seeing changes and documenting them is therefore important in passing on the information to authorities that can help decipher changes." - Farmer

"I remember fruits were more plentiful, now from season to season you are not seeing consistent quantities e.g. mangoes have not been plentiful in the Valley for the last 4 years. We should bring these issues to the forefront, to schools; what is climate change and the impact of climate change." - Village Council member

2.2 Day 2: Tuesday 5 June 2012

2.2.1 Rapporteur report and review of information on climate change

Celeste delivered a rapporteur's report on the previous workshop day's sessions and conducted an exercise which helped participants review some basic information on climate change through the use of "Action Cards" (Appendix 5).

The "Action Cards" made up a set of laminated photographs of activities that either depicted people trying to adapt or mitigate to climate change or people undertaking negative actions or exhibiting inaction that worsened the effects of climate change impacts. Pairs of workshop participants studied the photographs for 5 minutes then gave feedback to the plenary on the

types of actions depicted and what these actions would cause. This exercise also helped the participants to think about some actions that the community may undertake in building its own resilience to climate change impacts.

2.2.2 Introduction to participatory video and photojournals

Keisha led this session to introduce participants to the methods of documentation that will be used in this project: participatory video (PV) and photojournaling.

She reviewed why documentation was important, and solicited the views of participants to arrive at various reasons including:

- to raise issues;
- "to remember what we forget";
- the importance for references and record;
- to show how things were and how they are now;
- the importance for planning - collection of evidence to bring awareness; and
- to use history to plan forward.



Keisha explains participatory video to Caura community workshop participants

Participants spoke about the types of video material they have seen: music videos, documentaries, family reunion, movies. Keisha explained how PV is different. In PV, the participants decide who the audience is, the kind of video it should be, they develop the script they want, and decide how and where to distribute the video - e.g. TV station, politician - so participants lead and develop the entire production.

Photojournaling was described as a method of using a series of photographs to tell a story. There is no fixed format for layout of a photojournal, however the example of a photojournal produced by InsightShare was provided for the participants' review. This sample had the photographs laid out like the pages of a comic book, with callout bubbles inserted for speech and narrative blocks to guide the reader through the story.

A photojournal of the PV process used in a prior CANARI project in Blanchisseuse was shown to participants. Keisha explained that the PV was focused on explaining the challenges and problems of fisherfolk, and was used for communication with agencies that could provide solutions. She showed participants the video which was shot by the Blanchisseuse community fisherfolk.

Keisha told participants about the types of outcomes derived from the production and use of this video output. The fishers directed agencies to the YouTube video to let them know what kind of help they needed. They have since received an ice storage room and also sell ice for profit. The landing ramp will be improved and they got a winch and received offers of office equipment. By highlighting their issues via video, they were able to have their issues addressed. PV can therefore be used effectively to highlight issues of climate change in Caura also.

Raynaldo Phillips assisted in facilitation of the session, introducing participants to the cameras that will be used in the project. He indicated the features on the camera on a large-scale drawing on a flip chart: e.g. power button, inserting the battery and memory card.

Afterwards, participants received hands-on training with the cameras, taking turns in switching the camera on, looking at various subjects and switching between video and still shot options.



A workshop participant becomes familiar with camera operation

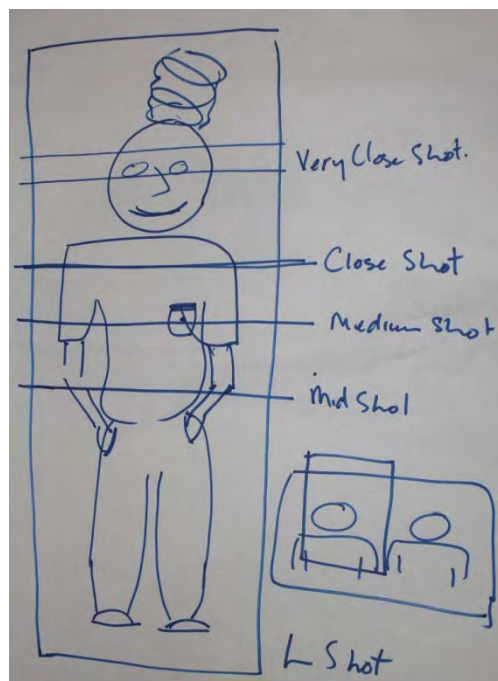


Figure 1. Diagram showing various ways of framing a 'shot'.

Tips were provided on how to frame photographs and the 'shot' using a diagram (Figure 1).

Participants were encouraged to conduct mini interviews with each other and the footage that was collected was downloaded to a laptop and projected to the plenary. This was reviewed to provide additional guidance on collecting footage.

At the end of the workshop day a mini 'manual' was assembled for the participants using photographs from the original manual and the framing tips provided during the workshop. Participants were informed that the project outline provides for additional sessions for development of their PV including training in editing of the video.

2.2.3 The importance of clarity and correctness in communication

A fun activity was inserted into the workshop programme in the post-lunch period which served to remind participants of the need to observe clarity and correctness in their communication.

Using the 'pass the message' format, participants were asked to stand in a line facing south. The person at the northern end of the line was asked to act like a named animal for the person standing next in line. No words or writing was to be used to communicate with the next person. This was repeated between each pair of persons in the line and the last person at the other end of the line then had to say what animal he/she perceived from the previous person's actions. The exercise was repeated, this time with the person at one end whispering a sentence into the ear of his/her neighbour, passing the message on in turn to the person at end of the line.

The exercise noted that an intended message can often get confused when the means of delivery passes through too many filters, areas of interference, or using methods that create ambiguity. Participants were encouraged to use direct methods of communication as far as possible, using clear language in order to minimise opportunities for distortion of their message.

2.2.4 Understanding vulnerability

Celeste delivered a presentation which provided an explanation of the concept of vulnerability.

The presentation underscored that vulnerability is a product of: exposure, sensitivity, and adaptability (Appendix 6). She said the community was being encouraged to look at the existing and possible impacts of climate change to see where livelihoods could be affected by exposure to extreme events such as more intense rainfall or harsh dry seasons and the ability to 'bounce back' or more preferentially 'bounce forward'. She drew attention to relatively recent reports of harsh dry season conditions in 2010 which saw 40 farmers from the Caura Valley abandon farms and encouraged the group to consider what plan of action it may have if these types of events were to occur in the future.

Having gained information on the first day of the workshop on types of livelihood activities in the Valley that are associated with natural resources, she asked the group to consider what aspects of these livelihoods may be vulnerable to these extreme conditions, noting that this type of reflection is undertaken in vulnerability assessment. She emphasised the need for the community to consider options and actions needed to address the identified areas of vulnerability in building a resilience plan.

2.2.5 Assessing vulnerability

Celeste outlined three main methods for undertaking a vulnerability assessment:

- Group discussion
- Interviews with key stakeholders
- Transect walk

She explained that each method attempts to collect both historic and current data on the chance of impact occurring (exposure), the degree of impact if it occurs (sensitivity) and the ability to bounce back from the impact (adaptability). Key stakeholder interviews also would yield information on the type and number of persons and livelihoods that would be affected the impact and also their abilities to deal with the impacts.

Keisha led a plenary discussion to demonstrate the use of group discussion for assessment. She focussed the discussion around the activities of two stakeholder groups in the Caura community - the Caura Northern Range Hiking Group and the Caura Women's Empowerment Group. For each, the following questions were asked:

- How many persons are in the group and/or engage in the group's activities?
- Where does the group carry out its activities?
- Are there alternative locations for group activities?
- Are these currently livelihood or leisure activities?
- Are these activities intended to become livelihood activities?
- What climatic effects impact / may impact on the group's activities?
- What degree of resilience exists for those activities that are climate-sensitive?

These questions yielded healthy discussion among the participants. The hiking group is in the process of registering with the Ministry of Community Development as past 'pro bono' services to visitors to Caura are now being recognised as having livelihood potential. The Women's Empowerment Group gained registration a year ago and continues to grow in membership. There is a growing market for handicraft produced by this group, which utilises raw materials obtained from the forests in Caura.

The second activity undertaken to assess vulnerability was a series of interviews with key stakeholders. For this activity, interviews were conducted with Ms Donna Sylvester, Secretary of the Village Council and Mr. Rajendra Ramcharan, President of the Caura Valley Farmers Association.

The opportunity was also taken to provide participants with more hands-on experience in the use of the camera for collecting footage, and so the interviews were videotaped.

The questions posed during the interviews were similar to those used to lead the group discussion, however the process was very organic and more probing questions were introduced in the course of the interview.

The full report gained from the two assessment exercises is given in Appendix 7.



Recording the interviews

2.2.6 Conducting assessment through transect walks

Having utilized two methods of vulnerability assessment, participants were provided with guidance on conducting transect walks as another means of obtaining information for assessment. Using their newly acquired skills in interviewing and photography, they were asked to walk through the areas in which they conduct their livelihood activities: hiking trail, farms and foraging site for raw materials for handicraft in the week between workshop sessions and collect footage while identifying (on camera as a narrator) the areas of vulnerability to climate effects with consideration to existing conditions that may also exacerbate these effects.

2.3 Day 3: Tuesday 12 June 2012

2.3.1 Rapporteur's report and review of participatory video exercise through photojournal

Celeste delivered the rapporteur's report on the previous workshop day (05 June 2012). She utilised PowerPoint to generate a photojournal as her reporting technique. While highlighting the material and discussions of the previous day she also pointed out how key points can be captured in the photojournal, dialogue and perhaps even some humour (Appendix 8).

2.3.2 Visioning for a resilient community

After the recap of the second day, the next session reviewed vulnerability and was led by Ms Rishma Maharaj, Hazard Mitigation Specialist from the Officer of Disaster Preparedness and Management. This presentation gave very practical tips in recognising vulnerability and assisted in helping participants become more attuned to identifying vulnerability of people, buildings, environment and livelihoods (Appendix 9).

The presentation then addressed building resilience and emphasised why communities need to focus on resilience building as a means of becoming prepared for disasters. The ability of the Japanese people to recover after a tsunami in 2011 was given as an example of being able to 'bounce back' after a disaster strikes. This was juxtaposed with images of Haiti two years after

the 2010 earthquake, and still not fully recovered from this impact and still dependent upon humanitarian aid. Resilience-building was therefore promoted as a means of reducing the impact of disasters, reducing dependence, protecting life and enabling people to 'bounce back' after disasters.

The approach to building resilience was considered to be through four mechanisms:

- awareness and education
- reducing vulnerability
- preparedness, and
- community based planning

It was pointed out that from a very young age, children in Japan are trained in how they should respond to disasters such as earthquakes, and in some other countries a 'take one child and run' approach is adopted to ensure greater survival in disasters. Hurricane preparedness messages in the region usually advise on the quantities of water and food that should be stored in the case of disasters and these tips should be followed to increase chances of survival.

After the presentation, participants reflected on ways in which they could build resilience based on some of the vulnerabilities they had already identified. They also posed questions about the responsiveness of the ODPM, noting that in the past response to flooding events in Caura has been slow. They were advised to ensure their voices were heard when these events occur as the authorities should respond to all disaster-prone areas. The community was however assured that this initial interaction provided a link with the agency and that if their resilience building plan has any need of support from the ODPM that this should be relayed to the agency.

2.3.3 Stakeholder identification

After the morning break, a presentation was delivered on stakeholder identification (Appendix 10). This presentation sought to clarify a definition of stakeholder in order that participants recognise the variety of persons that have rights, responsibilities and interests in Caura. The exercise was eye-opening, as participants became aware that visitors to Caura could be considered stakeholders, just as much as residents, and officers of the National Parks Section, Forestry Division.

With this definition clarified, participants were then guided to be able to identify key stakeholders that should be involved in the execution of their vulnerability reduction and resilience building activities.

2.3.4 Brainstorming for resilience

Having reviewed the concept of vulnerability once again, the areas of vulnerability identified in the community were reiterated, listing four broad areas - the visitor, the river, the water supply and the removal of vegetation - as issues which impacted on the degree of vulnerability of the community to climate change. The group of workshop participants was then broken in to two smaller groups to undertake a brainstorming exercise to consider the types of action that can be undertaken to address these areas of vulnerability.

Each group tackled two of the broad areas, viz:

Group 1: The visitor and the river

Group 2: The water supply and the removal of vegetation

The groups were guided to brainstorm and later report under the following headings:

- i. What are the critical aspects of the broad issues which have to be tackled?
- ii. What are the options that can be pursued as solutions, given the capability of the community?
- iii. What needs are there and what resources have to be in place to pursue these options?
- iv. Who are the key stakeholders that should be involved in order to address these issues?

The groups held lively discussions and then made presentations and further discussion among all participants took place to refine the ideas put forward.

The key output of the brainstorming exercise was a checklist of activities with identified needs/resources and key stakeholders.



Groups of workshop participants brainstorm on climate change resilience

The types of activities which were proposed were broadly grouped into three foci: public awareness and education, information gathering and community action, and advocacy. Some of the key points raised in discussion of this resilience-building plan of action were:

- i. There is a need to build awareness in the wider local and national community on the areas of vulnerability of the Caura Valley to the impact of climate change.
- ii. The issues which are to be addressed in respect of climate change impacts are issues which have been present in the community for a long time already (e.g. lack of pipe-borne potable water supply throughout all areas of the valley) and should be prioritised for action.
- iii. Support for community on-the-ground action should be supported by local stakeholders including groups working on the Fire Guardianship project and the local business community.
- iv. The participatory video which will be developed through this project would be a critical tool to communicate the issues to key stakeholders.

As this awareness building workshop drew to an end, Celeste pointed out that the checklist would now be the roadmap for the rest of the project. The participants agreed to meet a week after the end of the workshop in order to review their ideas and develop a schedule of activities to implement this plan of action. In order to assist this process, a document outlining the discussions and reflections of the community through the course of the workshop was developed after the workshop ended ("Planning the way forward", Appendix 11).

3 Recommendations and lessons learned

3.1 Workshop attendance

The awareness building workshop in Caura was intended to have the participation of 25 persons from the Valley. Instead, an average of 12 persons attended, comprising a mix of housewives, agriculturalists, and labourers. Initial communication with key community organisations indicated that the figure of 25 attendees would be possible, however in the course of the workshop, it was realised that some of the persons that were interested in attending the workshop were unable to sacrifice a day of work in order to do so. This impacted on the catering arrangements, however adjustments were made as the workshop progressed. CANARI has included a small stipend to offset attendance of people in communities at workshops in other projects, and perhaps it is worth investigating whether the UNDP GEF SGP is in support of this type of arrangement, if it can facilitate the turnout of community members.

While the number of persons that attended was less than that expected, those who did take part in the workshop were fairly consistent in their attendance and were representative of those who are engaged in use of the natural resources of the area, so though the turnout was small, it was felt that at least key persons were involved in the workshop.

3.2 Workshop schedule and duration

The workshop was scheduled to begin at 9:00 a.m. and close at 3:00 p.m. however the start of the workshop was often delayed by at least one hour due to late arrival of participants. This caused sessions to run late or to be truncated somewhat in order to cover the activities programmed for the workshop.

In retrospect, the topic of climate change seemed relatively new to participants and the workshop could also have benefited from an additional half-day to accommodate both the late start and total coverage of the material. On a positive note, however, the participants were in agreement to come out for a half-day after the workshop and it was at this session that agreement on and scheduling of post-workshop activities for resilience building occurred.

3.3 Level of participation and workshop facilitation

The workshop content required the use of different facilitators to cover the basic information on climate change, an understanding of vulnerability and also an introduction to the tool of participatory video. The community was very engaged during the three workshop days and there was a good rapport with all facilitators. There was keen interest in the framework of activity provided by CANARI, and the participants filled this framework with their discussions of Caura's climate change concerns highlighting the issues that were of greatest concern to them.

The introduction of a facilitator from the ODPM was appreciated by the community as there was an opportunity to raise concerns and clarify the work of this agency. The ODPM personnel have indicated that the work begun in Caura is useful to the promotion of its work and specifically the mandate of its C.O.R.E. programme (Communities organised and ready for emergencies) and the agency has indicated that it is going to pursue follow-up work in Caura in this vein. It is therefore recommended that whenever possible, key organisations should be encouraged to partner with CANARI in delivery of educational programmes to facilitate this type of interface.



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Climate Change and Disaster Risk Reduction Programme

UNDP-funded Pilot Project 2012

Meeting with Key Stakeholders: Wednesday 15 February 2012

AGENDA

1. Welcome
 2. Introductions
 3. CANARI's Climate Change and Disaster Risk Reduction Programme
 4. Outline of the UNDP project "Community Action To Build Climate Change Resilience In Trinidad And Tobago"
 5. Criteria for community selection
 6. Discussion on potential communities
 7. Analysis of the three top choices of communities
-

MEETING NOTES

Time and Venue:

The meeting of key stakeholders was convened at 10:05 a.m. at the Conference Room, CANARI, Building 7 Fernandes business Centre, Laventille. It was chaired by Celeste Chariandy, Senior Technical Officer CANARI, who is the Manger of CANARI's Climate Change and Disaster Risk Reduction Issue Programme.

Attendees:

Those present at the meeting were:

Jewel Batchasingh - Climate Change Specialist, Ministry of Housing and Environment

Herold Gopaul - Programme Director, Community Development Fund

Lisa James - Veni Apwann

Michelle Lai Fook - Exec. Asst to Programme Director, Community Development Fund

Lori Lee Lum - Institute of Marine Affairs

Nerissa Lucky - Fisheries Division

Recardo Mieux - Fisheries Division

Candice Ramkissoon - Office of Disaster Preparedness and Management

Apologies were received from:

Kishan Kumarsingh - Ministry of Housing and Environment

Stephan Kishore - Trinidad and Tobago Red Cross Society

Representatives from the following agencies were also invited but did not attend the meeting:

The Cropper Foundation

Environmental Management Authority

Forestry Division

Ministry of Local Government

1. Welcome

Attendees were welcomed by Celeste Chariandy, Senior Technical Officer and Manger of CANARI's Climate Change and Disaster Risk Reduction Issue Programme. Ms Chariandy also chaired the meeting.

Ms Chariandy asked attendees to consider themselves as a team that would share resources and tools and generate great value in coming together. She credited Nicole Leotaud, CANARI's Executive Director for the idea of bringing people together at the start of the project so that the project goals can be effectively achieved. A brief activity which demonstrated the value of team effort was conducted to underscore this point.

2. Introductions

Meeting participants each introduced themselves, indicating the organisation to which they belonged and their main duty within their organisations.

3. CANARI's Climate Change and Disaster Risk Reduction Programme

Ms Chariandy pointed meeting participants to the CANARI website and guided them to the webpage which described the organisation's Climate Change and Disaster Risk Reduction Programme.

She emphasised a three-pronged approach in building climate change awareness through communication, helping to build climate resilient livelihoods, and addressing gaps in knowledge through ongoing research. She also indicated that all products (reports) of past CANARI climate change projects inclusive of a communication toolkit could be found on the programme webpage. All attendees to the meeting were provided with a hard copy of the toolkit.

4. Outline of the UNDP project "Community Action To Build Climate Change Resilience In Trinidad And Tobago"

Ms Chariandy gave a brief PowerPoint presentation which outlined the project and the role which she saw other stakeholders playing in support of the project. Nicole Leotaud added that it was important to encourage community level adaptation; she indicated that the Trinidad and Tobago Climate Change Policy speaks of the good work being done at the policy level but at some point this has to be translated to the community level.

5. Criteria for community selection

Ms Chariandy pointed participants to specific considerations CANARI had highlighted for consideration when selecting a community for this project. The rationale for their selection was also outlined as follows:

Criteria	Description	Reason
Vulnerable community	Livelihoods face and experience the impact of climate change	Community will benefit by building resilience; project will make a difference

Group with track record	Community group is vibrant and active	Reduce risk of project not moving forward
Willing	Community is willing to undertake project	Reduce risk of project not achieving results
Prior exposure	To CANARI / other stakeholder <u>or</u> the issue	Familiarity with project protocol <u>or</u> awareness of issue is high
Other?		

These criteria were discussed and the aspect of vulnerability was further defined through full participation by meeting members. The main points were documented on flip chart paper as outlined below:

FLIP CHART 1: Criteria

- Livelihood vulnerability
- No serious conflict
- Sustainability linked with poverty
- Social, environmental and economic vulnerability
- Lack of access to and quality of infrastructure and services
- Previous assessments of the community - information
- Physical vulnerability

FLIP CHART 2: Vulnerability

Physical	Economic	Social	Environmental
Infrastructure Roads Buildings Access to services	High poverty level Few livelihood opportunities Livelihoods impacted upon by climate change	Services Low conflict among groups High human and social capital Built trust with partners	High risk of impact on natural resources important to livelihoods due to climate change Currently experiencing the negative impact Historical hazard information Unsustainable human activities

Other key points which came up as necessary criteria in this discussion were as follows:

- Definition of the boundaries of the community:
 - Candice Ramkissoon mentioned that the ODPM uses the CSO boundary
 - Herold Gopaul said that the community should define the boundaries of the community and the meeting agreed to this point.
- To accommodate the project time frame and to reduce risk, the following are critical:
 - The community group must have built trust and/ or trust
 - The group selected to work with should be an existing community organisation
- Availability of assessments/ information on the community

6. Discussion on potential communities

FLIP CHART 3: Suggested communities

ICACOS (proposed by CDF)

- poverty, natural erosion, livelihoods (few opportunities, impacted upon)
- some work done at youth level by CDF
- community visioning for development (previous initiative)
- high winds and flooding reported (ODPM)
- remote; extremely far; difficult to work in

MATURA (proposed by CANARI)

- involved in previous CDEMA project
- high human capacity
- livelihood risk low
- high built trust

MORUGA (proposed by Fisheries)

- poverty issues (CDF)
- physical infrastructure

CAURA VALLEY (proposed by CANARI)

- environmental issues
- high human capacity

MAYARO-GUAYAGUAYARE (proposed by CANARI)

- model to build climate change resilience tested with Red Cross
- livelihood impacted
- Community Awareness Emergency Response programme done- info from ODPM - in which quantitative risk assessment was done
- conflicts

FISHING POND (proposed by CANARI)

- flooding issues
- conflicts exist

MAMORAL? - ODPM may have info

KERNAHAN

- poverty high
- salt H2O intrusion
- Storm surges
- flooding and drought issues
- impact on livelihoods
- few livelihood opportunities
- area is in focus in other projects (EMA Carbon sequestration project - Cropper Foundation and UWI) and thus community may already be stretched project-wise

The CDF informed the meeting that it has expertise in community mediation if needed

7. Analysis of the three top choices of communities


Meeting participants agreed that it would be best not to proceed with analysis of the communities for selection until the input of key stakeholders that were invited to the meeting was obtained.

Follow-up actions:

- Ms. Chariandy will undertake liaison with these stakeholders: Local Government, Forestry Division, Trinidad and Tobago Red Cross Society.
- Ms. Chariandy will liaise with the various agencies which proposed various communities to obtain more information on the status of the community and work done in these communities.

The meeting was therefore concluded at 12 noon after thanking all persons for attending and contributing to these discussions.


Appendix 2



Pilot project: Community action to build climate change resilience in Trinidad and Tobago

Climate Change Awareness Building Workshop
Caura Community


May 29th, June 5th and 12th 2012



What is CANARI?

The Caribbean Natural Resources Institute is a regional, non-profit organisation.

It has worked throughout the Caribbean islands including the English and Dutch Overseas territories and the French Departments for over 20 years.




CANARI's mission

CANARI's mission:

To promote equitable participation and effective collaboration in managing the natural resources critical to development







CANARI Governance

CANARI is legally managed by a Board under the Companies Act, but in practice operates as a Partnership between Elected Partners (Board members) drawn from all over the region and senior staff.

CANARI has a full-time staff of 9 persons.

CANARI's work

CANARI main Thematic Programmes are:

- Forests and Livelihoods
- Coastal and Marine Governance and Livelihoods

It also carries out work in 4 Issue Programmes:

- Civil Society and Governance
- Climate Change and Disaster Risk Reduction
- Green Economy
- Rural Livelihoods

CANARI's work is carried out using the elements of :
Action Research, Communication, Capacity Building



Linking with Livelihoods

CANARI's has identified gaps in knowledge and policy which impact on growth in rural resilience.

Regarding climate change, there is not enough connection between scientists and policy makers, and policy makers and communities.

This leaves key stakeholders vulnerable to the impacts of climate change.





Taking action

CANARI's ability to work across all sectors and at all levels enables networking, stakeholder engagement and genuine participation

It has assisted in improving communication and increasing stakeholder capacity to facilitate resilience-building



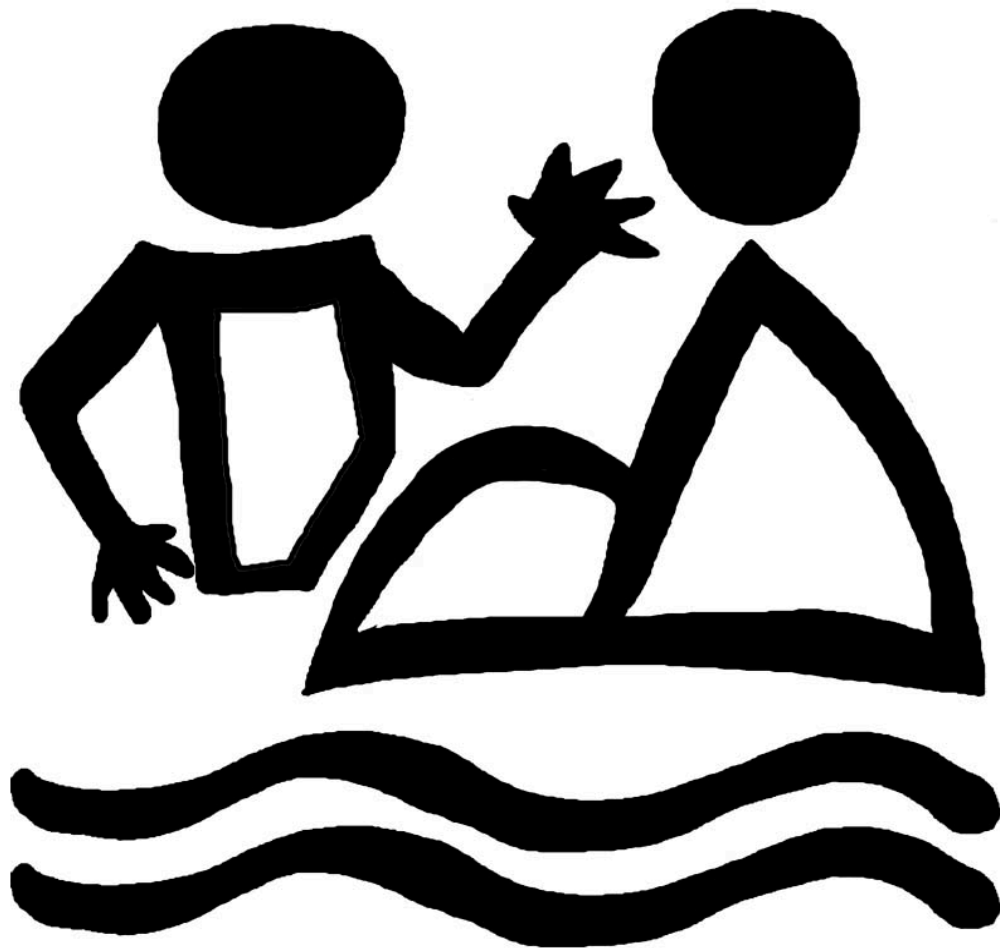
Using tools and sharing lessons

Includes documentation of processes and lessons learned via participatory video and photo journals.

Builds capacity of key stakeholders in tools and methods for participatory ecosystem management and the development of effective response strategies.



Questions?



CANARI

Community Action

To Build

Climate Change Resilience

A pilot project funded by the United Nations Development Programme Global Environment Facility Small Grants Programme (UNDP GEF SGP).

Purpose: To pilot an approach to enhance the capacity of rural communities in Trinidad and Tobago to adapt to the impacts of climate change through increased knowledge and understanding of climate change impacts and facilitating community action to develop and implement resilience-building strategies.

Key Stakeholder¹ Engagement

- ✓ *To introduce the project*
- ✓ *To facilitate networking*
- ✓ *To develop criteria*
- ✓ *To select community*



¹ Stakeholders: The individuals, groups and organisations that are involved in or may be affected by a change in the conditions governing the management and use of a resource, space or sector. Stakeholders include governments, commercial and non-commercial users, interested organisations and community groups.

About CANARI

The Caribbean Natural Resources Institute (CANARI) is a regional technical non-profit organisation which has been working in the islands of the Caribbean for more than 20 years.

Our mission is to promote equitable participation and effective collaboration in managing natural resources critical to development.

Our programmes focus on research, sharing and dissemination of lessons learned, capacity building and fostering regional partnerships.

Visit us on our website: www.canari.org

See our Climate Change tool kit at:

<http://www.canari.org/documents/CommunicatingclimatechangeAtoolboxforlocalorganisationspdf.pdf>

Building Climate Change Awareness

- Causes
- Impacts
- Community vulnerability²
- How to build resilience



² Vulnerability: A product of i) the likely exposure to an impact, ii) the degree to which the impact may cause an effect and iii) the capacity to adapt to or cope with this impact.

Sharing Lessons Learned

- Community actions
- Community engagement
- Participatory video and photo journal
(knowledge sharing and advocacy)



Community Action

- Vulnerability assessment
- Resilience³ building plan
 - Formulation
 - Implementation



³ Resilience: The ability to 'bounce back', recover from or withstand the impact of a change

Livelihoods⁴ and Natural Resources in Caura

- Agriculture
- Handicraft
- Bee keeping
 - Eco Tourism
 - Hikes
 - Kayaking



⁴ Livelihoods: The capabilities, assets (including both material and social resources) and activities required to achieve well being and a good quality of life.

Caura Community reflection on important elements of the community

Elements	Uniqueness	Issues	Opportunities
The Caura River - a unique Trinidadian destination	<ul style="list-style-type: none"> • "De home of curry duck" • The 'song ' of the river 	<ul style="list-style-type: none"> • Drinking alcohol • Abuse of village water supply and the resident community • Traffic congestion, accidents • Noise and crime levels • People do not want to go • Pollution of river and area • Inadequate toilet facilities • Thousands of visitors/year 	<ul style="list-style-type: none"> • A bus shuttle: park and ride • A cottage industry that markets goods produced by community to visitors • Thousands of visitors/year • Invite visitors to be part of solution instead of source of problem
Location	<ul style="list-style-type: none"> • Not too far from highest peak; can hike to many destinations: La Filette Maracas, Las Cuevas, Lopinot (central location) 	<ul style="list-style-type: none"> • Riverbanks devoid of vegetation and can slip into river 	<ul style="list-style-type: none"> • Hiking group is vibrant • Marketable visitor alternative experience
"Greenness"	<ul style="list-style-type: none"> • Fresh air, green forests, song of birds 	<ul style="list-style-type: none"> • Forests under threat of illegal logging, increased housing - increased waste 	<ul style="list-style-type: none"> • Fire guardianship project • Reforestation
"We have a history"	<ul style="list-style-type: none"> • Plantation, estates, school, church, police station all in the past; Dam project impacted on community structure caused relocation of villagers; Curse put on project by priest and Dam never completed; Only some original villagers returned 	<ul style="list-style-type: none"> • Youth less knowledgeable about past e.g. one youth heard about cemetery does not know where it is 	<ul style="list-style-type: none"> • Original villagers visit site of former homes and abandoned cemetery - information can be captured
Culture	<ul style="list-style-type: none"> • Spanish/Carib influence on food; area was rich in produce variety: coffee, cocoa, toncabeau, maniocou, fish, crayfish • Population was knowledgeable about use of herbs • Jewels of Nature band uses materials from forest to make instruments 	<ul style="list-style-type: none"> • Variety of fish has diminished due to water quality and destructive fishing methods (carbide) • Population less knowledgeable about use of herbs 	<ul style="list-style-type: none"> • Upriver sites less polluted; reintroduction of crayfish (?) • Jewels of Nature band promotes value of forests
Agriculture	<ul style="list-style-type: none"> • Several farmers in community • Viable livelihood activity 	<ul style="list-style-type: none"> • Little opportunity for expansion; production is low • Requires sharing of information, injection of technology, insistence on organic approach to farming • Praedial larceny 	<ul style="list-style-type: none"> • Marketable opportunity: sale of seasonings grown in community to visitors
Beekeeping	<ul style="list-style-type: none"> • Three beekeepers in community • Bee foraging activity sustains agricultural production 	<ul style="list-style-type: none"> • Honey production declining - "worst production in 36 years" • Production was at least 4 gallons/year now down to barely 50% (2010-2012) 	<ul style="list-style-type: none"> • Reforestation exercises using species of trees preferred by bees • Honey - marketable product of the valley
Handicraft	<ul style="list-style-type: none"> • Utilises non-wood products: banana leaves, torchon, coconut leaves/flower stalks 	<ul style="list-style-type: none"> • Sustainable harvesting of raw material 	<ul style="list-style-type: none"> • Marketable activity of members of Women's Empowerment Group

Appendix 5



Trees are cut down and are not replanted

What does this cause?



Hillsides that were bare are replanted

What does this cause?



Trash is burnt

What does this cause?



Waste (e.g. Branches, wood chips) is recycled

What does this cause?



Riverbanks are maintained in a natural state

What does this cause?



**Waste is disposed of in rivers and
riverbanks are cleared of vegetation**

What does this cause?



Public awareness of climate change is built

What does this cause?



No action is taken to adapt to climate change

What does this cause?



**Natural resource-based livelihood activities
incorporate adaptation strategies**

What does this cause?



Mangrove forests are removed and not replanted

What does this cause?



The coastal zone is maintained in a natural state


What does this cause?



Beach mining is carried out at coast

What does this cause?


Appendix 6



Pilot project: Community action to build climate change resilience in Trinidad and Tobago

Climate Change Awareness Building Workshop
Caura Community


May 29th, June 5th and 12th 2012



What is vulnerability?




VULNERABILITY is a product of:

- EXPOSURE
– the chance of experiencing an impact
- SENSITIVITY
– the degree to which the effect will be felt
- ADAPTABILITY
– the ability to cope / bounce back



Linking with livelihoods

- Loss of crops due to more intense natural disasters
- Higher food prices due to scarcity
- Lower purchasing power of consumer


Linking with livelihoods

- Worsening of current conditions
- Impact on visitor experience
- Impact on quality of ecosystem
- Impact on downstream areas






Linking with livelihoods

Availability of the natural resource






Linking with livelihoods

Availability of the natural resource







Identifying vulnerability and making a plan




Taking action

Documentation of process

Participatory video

Photo journals



Questions?

Community action to build climate change resilience in Trinidad and Tobago

Caura Community Workshop Day 2 - 5 June 2012

Information gathering for vulnerability assessments

A. Group discussion

Hiking Activities in Caura (Caura Northern Range Hiking Group)

WHO: People from Caura and environs (in group). Community Development staff, other hiking groups, UWI Students, foreigners (other people who take part in the hikes).

LIVELIHOOD: Members are not paid for the service; they see their activities as a way of promoting the community and a healthy lifestyle; They hire transport for return from the hike destination, so they may only collect money for this purpose and to buy equipment when needed (e.g. ropes).
Registration of the group with Community Development is underway.
Driver hired for transport come from Caura (1) and El Dorado (1).

GO TO: The group makes hikes to: Lopinot, Maracas, El Tucuche, La Fillette, Las Cuevas, Maracas–St. Joseph and other areas. The starting point for hikes is mainly from one central point.

PERSONS INVOLVED: The formation of the group came from an interest in exploring trails in abandoned estates. Information on trails was gained from older persons and hunters. There are 3 core persons and approximately 12 others.

POPULATION: 776 persons

CEPEP CONNECTION: The connection came from involvement of CEPEP groups from both Caura and Maracas-St. Joseph for maintenance of trails. The interface with these persons and the hiking group raised awareness of the hiking activity (both in Caura and Maracas-St. Joseph)

The group is interested in expanding the group and expanding its reach, developing the hiking service as a livelihood activity; The group recognises that this will require other inputs including finances.

B. Interviews with key stakeholders

1. Farming activities in Caura Valley

Interview with Mr. Rajendra Ramcharan, President Caura Valley Farmers Association

Who: There are approximately 150 farmers in Caura Valley. A small percentage live in the Valley and about 50% are on marked off areas awaiting regularisation. The others do not have any chance of being regularised.

How much: 250-300 acres are under farming.

Types of crops: There are some tree crops - pommecythere, pawpaw and citrus, but mainly short crops are grown.

Location: The short crops are grown on the flatter parts of the land and are planted in both wet and dry seasons but during the dry season those that would be planted on the hillsides are planted near the river.

Cost of market produce expensive: Climate change has impacted on production; there has been a drop in production of both tree and vegetable crops. The goods cost more in the market because the cost of production is high. Some farmers use practices which rely on chemical input and the cost of these chemicals keeps rising, and the frequency of use is also rising. Chemicals that were once used for the control of pests once a fortnight are now used twice a fortnight. It is hard to reduce these costs except through the use of alternatives, but even the alternatives may be costly as research is needed and this costs money.

Where is the produce sold: Different strategies are used by the farmers to market their produce. Some people come to the field and buy directly from the farmer; more than half the produce is sold to the Macoya market and the rest to Port of Spain market. Some farmers also sell to TTABA (Trinidad and Tobago Agri-Business Association), or sell one-on-one to groceries and vegetable stalls. The main market (Macoya market) is located 6-7 miles from the Valley. Opening time is now on mornings at 9 a.m. where previously it was in the afternoon, which was better.

Other issues: Praedial larceny is a constant problem; right now farmers rely upon the Ministry of Agriculture's ranger squad. The farmers have thought of forming a farmers security group.

2. Women's Group Activities

Interview with Ms Donna Sylvester, Caura Valley Village Council and Caura Women's Empowerment Group

How many persons: The group is registered with the Federation of Women, one year now. There are 17 functioning members.

What do they do: The group originated after some of its members took a Community Development course in dry and fresh flower arrangement. Since then they have been making fresh arrangements for Ministers and for tokens (presentations). The dry arrangements have also been 'a hit'. They also do cooking for events in the community and have taken part in the Prime Minister's Best Village competition (drama, dancing etc).


How they obtain the craft material: Some of the materials are dried plant materials obtained from the area. They get torchon from a site near a 'cliff' at the Caura Hospital. They ask the men to assist them in getting some of these materials. They use materials such as the shandiler flower and dried banana leaves. They want to do some research to find out the names of some of the plants that they use. Some of the banana leaves are given to them by members of the community and some of the women dry them and store the materials at their home.

Future ideas: They would like to have other business ideas develop with the banana, supplying ripe bananas and green fig, apart from making handicraft with the leaves.

Sources of the raw materials for their food catering: Some of the food stuff is donated by farmers but most items they must obtain from outside of the area. Long ago, people in the area used root crops (ground provision) more often and the group would like to see this come back into the community also the use of mortar and pestle (heritage).

Impact of climate change: She believes that global warming can have an effect on the availability of raw materials or livelihoods in the future.


Appendix 8



Pilot project: Community action to build climate change resilience in Trinidad and Tobago

Climate Change Awareness Building Workshop
Caura Community

May 29th, June 5th and 12th 2012



This is a review of Day 2 which gave an introduction to Participatory Video and Photojournals...



Celeste, our facilitator, began with a review of the first day and talked about the importance of Documentation...



Remember to observe and take note of what you see!



Keisha helped us to see that Participatory Video is so useful, in letting our voices be heard.



PV...
It is yours!

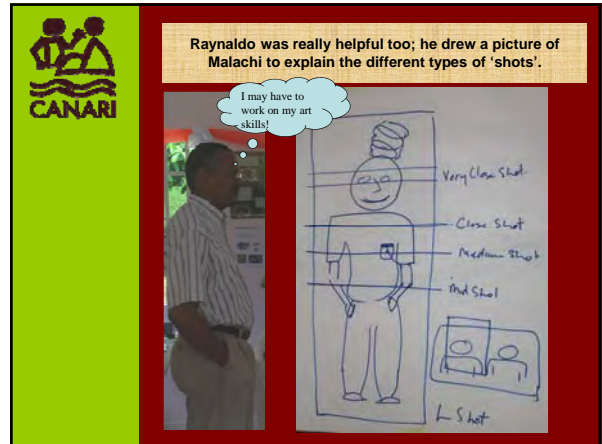
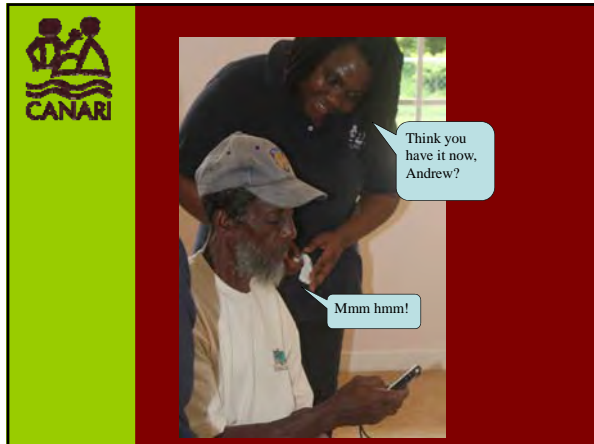


Then the fun got started, when we learned how to use the camera!



Kenny got comfortable with the camera really quickly! We started calling him "De Caura Cameraman!" ©







We conducted interviews with key people from our community to capture livelihood-specific information.

One of the people we interviewed was Ms Sylvester, a member of the Women's Empowerment Group.



Oh! Lots of plants! Coconut, torchon and chandileer to name a few.

What types of plants do you use to make your handcraft items?



We got some useful information when we started asking questions, and also got practice with filming.



All in all, we had a good workshop day!



Appendix 9

Building Resilient Societies

through Community Action



Prepared by:
The Mitigation Planning and
Research Unit
Office of Disaster Preparedness
and Management




Which house do you think is more vulnerable to high winds ?



Which person do you think is more vulnerable to disasters?




So what can you do to reduce vulnerability ?



Resilience

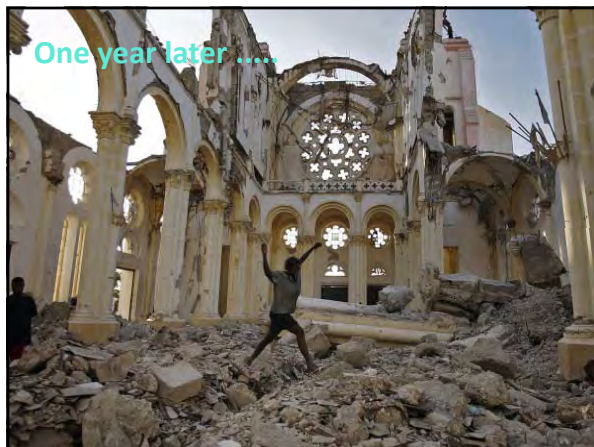
Resilience is the ability to “bounce back” recover from or withstand the impact of a change.

Why do you think Resilience is important ?



[Tsunami Japanese inside a car](#) 津波日本.fiv







So why should we be resilient ?

- To reduce the impacts of disaster
- To maintain or quickly return to a high standard of living
- To reduce our dependency
- To protect our homes, family and livelihood

How can we become resilient ?



1. Awareness and Education

Community members must know what risks they are exposed to before they can deal with them .



2. Reduce Vulnerability

Activities to reduce vulnerability can ensure that the community becomes more resilient , and is less affected by hazards.



3. Preparedness

Being prepared means you have take precautions against any potential threats that you may be faced with. At times this can mean the difference between major and minor losses and in some extreme cases life and death !



4. Community Based Planning

This ensures proper community Response in the event of a disaster .




5. Use your Voice !



Government
LAW'S
Decision makers
NGO'S


Can you think of any other ways to build community resilience ?

Questions?



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Pilot project: Community action to build climate change resilience in Trinidad and Tobago

Climate Change Awareness Building Workshop
Caura Community

May 29th, June 5th and 12th 2012



Defining Stakeholders



Who is a stakeholder?

- Stakeholders are the individuals, groups and organisations that are involved in or may be affected by a change in the conditions governing the management and use of a resource, space or sector.



Who is a stakeholder?


- Stakeholders can also be defined as the people who have rights to, responsibilities for and interests in a resource.



Types of stakeholders

Stakeholders are found at many levels:

- local (e.g. communities groups, forest users, fishermen, tour operators);
- national (e.g. government agencies with responsibility for management of forests, fisheries, water resources, tourism; private sector companies)



Types of stakeholders

- regional (e.g. regional NGOs, regional intergovernmental bodies, regional donors)
- international (e.g. tourists, foreign-based companies, international NGOs, international donors and technical assistance agencies);



Types of stakeholders

- organisations or formal groups as well as individuals, communities and informal networks;
- people with legal rights, responsibilities and interests as well as people undertaking illegal activities



Types of stakeholders

- people directly using or managing a resource as well as people who have an indirect impact on a resource, or people whose activities have an impact on the ecosystem.



Stakeholder rights

Stakeholders have rights to a resource if they:

- have a traditional link to it (e.g. people who traditionally harvest medicinal plants from the forest)
- depend on it for their livelihood (e.g. timber harvesters, fishermen)
- own the resource or have access to it (e.g. a group of craft makers who are allowed to go and harvest materials from the forest)



Stakeholder responsibility

Stakeholders have responsibility for a resource if they:

- undertake actions that change the nature of it (e.g. people who set fires in or near the forest, people helping with reforestation)
- derive economic benefits or well-being from it (e.g. tour guides who make a living from ecotours into beautiful natural areas)



Stakeholder interest

Stakeholders have interest in a resource if they:

- have a cultural attachment to it
- derive some enjoyment from it
- are actively involved in its conservation
- have an intellectual association with it



Stakeholder conflict

- Conflict among stakeholders must be noted
- Attempts to resolve conflicts should be made



Who are the key stakeholders?

- Who are the stakeholders under each area of impact?
- Ensure the list includes not just the stakeholders present, but all stakeholders that have rights, responsibilities, interests and uses.
- Consider the capacity of each stakeholder to deal with /adapt to the outlined impacts.

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