Thursday, September 27, 2012

ICTs for Climate Change Adaptation: Introduction of innovative technologies in the Caribbean

Starting at the end of this week Tobago will host a very interesting event. Close to 200 residents of the island will come together in a two-week workshop to build a physical three-dimensional model of Tobago. The process will contribute to formulating responses and develop action plans addressing the impacts of climate change and extreme climatic events.

The 3D model will cover a total area of 1,188 km^2 at a 1:10,000 scale. Once completed, the model will display a wide range of terrestrial and marine features and landmarks which will help communities articulate their concerns, needs and aspirations in terms of development and disaster risk reduction. In the process, facilitators will use methods known as Participatory 3D Modelling (P3DM) and Participatory Video (PV) which will help in documenting and adding value to the input of local and traditional knowledge from communities.

The workshop will take place at the Blenheim Sheep Multiplication & Research Center in Tobago (29 September - 11 October, 2011).

The activities will culminate in the presentation of an impressive relief model (measuring 4.9 m x 2.4 m) and a participatory video by representatives of the local communities and project facilitators at a handing over ceremony which will take place on Friday 12th October 2012 at the auditorium of the Trinidad and Tobago Hospitality and Tourism Institute - Tobago campus (by invitation only).

The project will pilot, for the first time in the region, the use of P3DM. P3DM is a participatory mapping method that can be used across the Caribbean islands to facilitate effective participation by local communities and other stakeholders in the identification of general policy priorities, as well as specific policies and actions needed on the ground at the landscape and site level to address land management issues, including the impacts of climate change and extreme climatic events. This method will allow inclusion of relevant local and traditional knowledge, increase capacity, facilitate coordination and collaboration across sectors, and build buy-in for implementation of plans for resilience to climate change and extreme climatic events.

Twenty-two trainees from the region (including five from Tobago) will be trained to facilitate P3DM and PV processes in this project, and nearly fifty observers from the region will visit during the construction of the model.

The process is facilitated by the Caribbean Natural Resources Institute (CANARI), the University of the West Indies (UWI), the Tobago House of Assembly (THA), Division of Agriculture, Marine Affairs, Marketing and the Environment (DAME) and the Partners with Melanesians (PwM). Funding and expertise is provided by the Technical Centre for Agricultural and Rural Cooperation ACP-EU (CTA) and the United Nations Development Programme and the Global Environment Facility (GEF) Small Grants Programme (SGP).

In the forthcoming months, CTA will support capacity building in the domain of Web 2.0 and social media. In addition, CANARI has secured funding from the Federal Republic of Germany to facilitate the production of a civil society agenda addressing climate change issues in the island as a follow-up activity to this project.

If you are interested in having a look at "work in progress" please contact Mrs. Neila Bobb-Prescott (e-mail: neila@canari.org; phone: 001-868-789-9917 or 001-868-302-3739to get more information.

P3DM exercise kicks off with much *gusto* in Tobago

Trinidad and Tobago nationals and their Caribbean counterparts converge for workshop

SCARBOROUGH, 30 September, 2012. Sixth form students and their teachers from secondary schools across Tobago, members of civil society from Trinidad and Tobago and the Caribbean, along with representatives from the Tobago House of Assembly (THA), Caribbean Natural Resources Institute (CANARI), and the University of the West Indies (UWI) have been merging their skills to construct a 3 dimensional (3D) model of Tobago. The 3D model being constructed will cover an area of approximately 1,152 km² and consist of a 1:10,000-scale version of the island and its waters up to a depth of -100 metres, says CANARI's Senior Technical Officer, Neila Bobb-Prescott.

The process of building this model involves a varied mix of actively involved people and so it is termed participatory 3D modelling or P3DM. The P3DM of Tobago is taking place during a workshop held over the period September 28th to October 12th 2012 at the Blenheim Sheep Multiplication and Research Project station in Tobago.

The workshop is facilitated by CANARI and the UWI, with financial and technical assistance from the Technical Centre for Agricultural and Rural Cooperation ACP-EU (CTA) and the United Nations Development Programme, Global Environment Facility - Small Grants Programme (UNDP GEF-SGP). The model building exercise is coached by a team of facilitators which includes specialists from as far as the Philippines and Papua New Guinea.

Kail Zingapan leads a session to explain the application of GIS technology to the model building exercise

The 2-week activity is based on a participatory approach which acknowledges the importance of traditional knowledge and builds on it in making decisions about how to cope with climate change, says Dr. Bheshem Ramlal of the UWI. He adds that the information generated in the mapping exercise can be used for advocacy and informing policy. The participatory approach focuses on learning by doing, exchange of knowledge and collegial data analysis and verification. Data storage and retrieval "must be done by local people or not at all" notes Geographic Information System (GIS) expert Ms. Kail Zingapan from the Philippines.

Student Participation

On their first day, the students attended an orientation session at which they were briefed on various aspects of the P3DM process. For the next couple of days, they will trace contours and cut cardboard to represent the elevation of the land and the depths of the sea. The contours will be traced using carbon paper on carton board sheets. These will be cut out and glued on the top of each other paying special attention to their correct geo-location.

Sorting through the kit of materials needed for the model construction

Jhon-Pierre of the Signal Hill Senior Comprehensive School and Jaidon Lalla of University of the West Indies Open Campus, both teenage students, are eager to begin construction of the model. They both agree that creating the 3D model of Tobago is an event of historical significance and would help them to appreciate the natural resources of the island. They also see the model being used as a means of helping all stakeholders shape future uses of the resources of Tobago.

The boys were selected by their peers to be interviewed here after the girls in the groups cheerfully chorus “men must rule again”. The boys' response -“yea, yea” - to this show of encouragement was not very enthusiastic, but they showed that they quite understood the significance of the project in which they were all engaged.

Facilitator training

A crucial element of the workshop consisted in an initial phase of training of professionals from different areas of the Caribbean to become P3DM facilitators; these persons will return to their countries each equipped with knowledge and necessary skills for replicating the activity in their respective countries

Neila Bobb -Prescott from CANARI preparing for her presentation on facilitation

During one of CANARI’s training sessions, Neila introduced the trainees to key concepts in participatory approaches to natural resource management; she identified the role of stakeholders and the challenges and benefits of their involvement in the process.

Additionally, Bheshem, Kenn Mondiai of Partners with Melanesians (PwM), an NGO based in Papua New Guinea and Kail shared information on the development of the Participatory GIS (PGIS). “PGIS is a method used to compose peoples’ spatial knowledge of their landscape with the use of GIS tools”, said Kail.

Caribbean flavour

Katrina Collins and Shawnaly Pascal from St. Vincent and Grenada, respectively, are happy to be in Tobago at the workshop. They point out the similarities of the physical landscape of the three islands. Their interests include Tobago’s gourmet cuisine.

Enjoying the Tobago cuisine!

Katrina calls for buss-up shot and roti, cocoa tea and coconut bake. Shawnaly smiles and adds, “Any food I don’t get at home, I want to eat” (sic). Neila politely smiles and indicates she will try her best to please. In keeping with the spirit of camaraderie permeating the workshop, the women were advised, by Tobago participant, Adanna Piggott-Henry, of the need to consume fresh cuisine or face dire gastronomical consequences!

Naming the activity in Tobago

The theme, ‘She becomes more beautiful: Capturing the essence of Tobago today for a better tomorrow’, emerged as the winning title to the P3DM activity after a brainstorming session among workshop participants during the introduction and planning workshop. The first part of the theme, ‘She becomes more beautiful’ is particularly relevant to Tobago as it is the motto for the island’s annual Heritage Festival, and depicts a naked pregnant woman of African descent. The P3DM exercise will certainly capture where Tobago’s development is taking place and will provide an effective platform on which to plan community actions and policy development in the future.

Caribbean nationals eager to develop P3DM in their countries

" P3DM a unique, totally new experience"

SCARBOROUGH, 1 October, 2012. Trainers and facilitators took up tools on Monday to begin work on a participatory 3D model of Tobago. Base maps were prepared by a team from the Engineering Faculty of the University of the West Indies (UWI). The base map must be precisely done, warns Kail Zingapan, a Participatory GIS expert from PAFID an NGO based in the Philippines, otherwise creating the model will incur some serious delays and the model itself will not be an accurate P3DM.

The process of creating the model involves tracing single contour lines visible on the base map onto cardboard sheets, cutting these precisely along these lines, *and thereby* creating layers that represent different elevations. Each cardboard layer is then glued onto the one representing the lower elevation contour. Kail likens the layering process to that of stacking pancakes. Each contour layer is “every point of equal elevation”, she explains. The elevation model of the island and surrounding waters was developed beforehand by Dr. Bheshem Ramlal of the UWI. Posters listing the layers to be traced were stuck onto the walls of the workshop area to guide the process.

Adanna Pigot-Henry from CARDI, Tobago is hard at work tracing the map contour onto the cardboard

After a number of layers are glued on top of each other, crêpe paper and glue are used to smooth the edges of the single layers so the blank model "looks like a terrain", Kail tells participants at the workshop. She tells them too, that this part of the exercise must be completed by Wednesday evening to allow the paper to dry so that informants’ data can be added to the model, beginning on Thursday. The informants are community members - for example, elders, fisherfolk, farmers, hunters, environmentalists and other resource users - who are "traditional custodians of spatial knowledge" and who provide information about their neighbourhood and knowledge of its use to be transferred to the map.

Kenn Mondiai glues a layer onto the model

During the planning and introduction workshop last Saturday (September 29), participants developed the legend for the map - symbols (points, lines and areas) - to use during the coding process to locate and depict man-made and natural

features on the model. Members of civil society organizations and experts from the Department of Natural Resources and the Environment-Tobago House of Assembly, CANARI and the UWI attended that introductory workshop.

Caribbean participants at the workshop are especially keen to be part of the P3DM project. Ingrid Parchment of the Caribbean Coastal Area Management Foundation, which is based in Jamaica, is eager to get community members involved in producing a P3DM of Portland Bight. She works at Portland Blight which is a protected area. Ingrid says she is learning a lot from the workshop, as she noted a very helpful video which showed the process of producing a P3DM, step-by-step.

A papier-mâché of Portland Bight has already been created and Ingrid feels the P3DM would be a step up. However, she is mindful of the need to have experts involved in the activity. "*Especially* a GIS expert", she emphasizes, with a wink and a smile.

Orisha Joseph (Grenada), Natalie Boodram (Saint Lucia) and Jacinthe Amyot (Colombia) working on base map

Likewise, Dr. Natalie Boodram who works at the Caribbean Environmental Health Institute (CEHI) - a CARICOM agency with an environmental mandate that is based in Saint Lucia - says that the concept of working with communities to do individual P3DMs is "unique" and a "totally new experience". She says that the workshop is helping her appreciate the value of community input in creating a 3D model of a given space.

Lessons in facilitation

While precision and attention to detail are crucial to the creation of the P3DM, there are also moments for fun and laughter. One such moment of lightheartedness was the 'train the trainers' session, last Sunday afternoon. As part of a group exercise, one person laid on a large piece of white paper on the floor and her shape was traced onto the paper. Her group then 'mapped' on different parts of the drawing, the characteristics of a good facilitator. 'Body mapping', as the exercise is called, drew on the lessons the participants learned with the guidance of CANARI's Senior Technical Officer

Farzaana Baksh explains good facilitator skills on the"Body map" produced by her group

and workshop coordinator, Neila Bobb-Prescott.

Neila's sessions helped participants understand the attributes of a good facilitator. She called the attention to fundamental issues such as "how we dress" and "how we pose" (i.e. body language) and the impact of these issues on how the facilitator is perceived at community level. She outlined various ways in which good facilitators make every effort to get individuals to express their views.

Lessons in logistics

Another valuable lesson was taught by CANARI's Administrative Officer, Patricia Franco. In introducing Patricia, Neila referred to her as an expert who does detailed coordination and management of information for workshops. Logistics assist in ensuring the smooth running of an event and therefore every facilitator should have a working knowledge and develop the skill of good logistical planning Neila says.

Patricia Franco, Administrative Officer at CANARI shares some insight on logistical planning with workshop participants

Pat, as Patricia is fondly called, explained the importance of every component in planning an event. Using the workshop as an example, she pointed to the many individual activities she had to organize. These ranged from coordinating participants' flight plans to housing and catering. The workshop completed, Patricia will have arranged the serving of approximately 1000 meals.

Members of the workshop - trainers, students, teachers and experts - are certainly gaining all-round knowledge and skills while working diligently get the process moving forward.

P3DM blank model of Tobago ready for accommodating community's knowledge
Facilitators relieved as the first phase of the workshop is successfully completed

SCARBOROUGH, 3 October, 2012. Facilitators working on the blank model for the P3DM of Tobago all agreed that... "it's hard work!"

Looking at an example of a model during the orientation, they thought that building a model would have been an easy task, but reality turned out to be quite different. Expressions of relief echo around the workshop area as the blank model is finally complete on day three of the project. Yet, in the same breath, they also give heartfelt thanks for being among the 'chosen few' selected to be part of the workshop**.** Facilitators are from regional and national non-governmental organizations, government agencies, inter-governmental technical agencies and members of academia.

The P3DM of Tobago undergoes the smoothing process using crêpe paper pieces

Held in Tobago at the Mt. St George Blenheim Sheep Multiplication and Research Project, the workshop is being conducted by experts from the Caribbean Natural Resources Institute (CANARI) and the University of the West Indies (UWI) with financial and technical assistance from the Technical Centre for Agricultural and Rural Cooperation ACP-EU (CTA) and the UNDP Small Grants Programme of the Global Environmental Facility (GEF-SGP).
CANARI's project concept note of July 2012 states that the workshop's aim is to get members of the community involved in "climate -related decision making" through a process involving the manufacture and use of Participatory 3D Models.

Confidence soars as the hands-on experience continues

Addana Pigott-Henry, an agricultural scientist working at CARDI, Tobago, says the experience for her was different from expectations, since she had envisaged a more formal lecture-style approach to the workshop. After the hands-on experiences of the last couple of days though, she says she now feels empowered to assist in conducting a P3DM exercise with the help of experts. She has learnt a lot from the interactive method and the lessons are invaluable, she says. Addana, is of course happy that the workshop is being held in Tobago so that the regional and international participants can get a chance to experience the hospitality of Tobagonians and its rich and varied cuisine.

Meteorologist Anthony Moore of Barbados says that he is also fairly confident that if he was to build a P3DM, he would be able to do so as he is now equipped with adequate knowledge and experience. Representing the Caribbean Institute for Meteorology and Hydrology (CIMH),

Anthony says that at the beginning of the workshop he was lost and thought that building the model was a 'huge undertaking'. His experience with maps and drawing, cutting and layering contours on a daily basis did little to allay his fears. "A lot has been cleared up because of the hands-on experience," he admits.

Anthony acknowledges the value of a facilitation lesson shared by CANARI's Neila Bobb-Prescott and lists it as a highpoint of the workshop. As a stakeholder in water resource management, he says the lesson is valuable and will help him to get information from farmers for an impact assessment study. "Interaction with them would be easier," he says.

Not unlike Adanna and Anthony, Adam Jehu of the Institute of Marine Affairs in Trinidad (IMA), also feels he now has the ability to construct a P3DM of an area and acknowledges that this approach to mapping is a "very novel way of capturing spatial data from the members of the community, the people who have the knowledge." Adam is also grateful for the lesson on how to facilitate a P3DM exercise, since although he did know how to use GIS technology, he did not know how to build on community's knowledge of the landscape.

Community insights

In the middle of one group orientation, a few residents popped in. They stood around the model, and immediately without prompting, they started pointing out places in the island, the river, the forest and many other things, and recognized features on the blank model. And almost as quickly, they pointed out features that were lacking on the model: Little Tobago, the reefs, the rocks, the islets. They began to improve on this omission by contributing the names of the rocks and the islets that lie successively along a chain around the north-eastern tip of Tobago.

"*This doesn't cease to amaze me when I see it happen. Local people can immediately spot errors or omissions on GIS maps and correct them*" noted Kail Zingapan.

Crucial lessons

Facilitators learned the components of two more aspects of the P3DM exercise on Wednesday. The first was about monitoring and evaluation of the process. CANARI's Executive Director, Nicole Leotaud brought some clarity to the concepts and introduced the tool of participatory video (PV) which will be used in the evaluation process. Desiree Sampson, videographer, gave tips on the shooting of videos. This session featured a mix of hands-on training and feedback from trainees.

Participants create the storyboard using yarn, Playdoh and other materials

The facilitators created images of the results they want to achieve from the P3DM process in

Tobago with Playdoh, yarn and pins. They then created a storyboard for the video which will be developed to evaluate the effectiveness of P3DM in realizing these desired outputs. The storyboard that was developed is a sequence of drawings which depict the shots planned for the video production.

Cassandra Mitchell of Grenada practices using one of the PV cameras.

As part of the hands-on training, the participants took the cameras outside the building and took turns in learning how to operate them.

On Thursday 4th October, the facilitators will get ready to capture the workshop action on camera as community informants are expected to arrive in droves to 'transpose their mental maps' onto the blank model.

On a lighter note...

Though the trainers and experts themselves have been 'on the go' since the beginning of the workshop, they have found time for lighter moments, such as celebrating the birthday of Wellington Martinez from the Dominican Environmental Consortium. Wellington had the joyful experience of having "Happy Birthday" sung to him in his native language, Spanish. ¡Cumpleaños feliz, Wellington!"

Blank model receives first set of information
Informants express pleasure at being part of exercise

SCARBOROUGH, 04 October 2012 Bubbling with excitement, informants who came from far and wide to help fill in the blank model of the P3DM of Tobago could barely contain themselves as they realize the importance of their information. The room is buzzing with activity as the informants try to locate places on the map. Four groups of trainee facilitators explain the process of transposing the information under the watchful eye of facilitators from the Caribbean Natural Resources Institute (CANARI), GIS expert Kail Zingapan from the Phillipines and Kenn Mondiai of Partners with Melanesians (PwM).

The island of Tobago, for which the participatory 3D model is being developed, is an island nation and part of the Republic of Trinidad and Tobago. Tobago is the smaller of the two islands and has a land size of approximately 300 km². The P3D model is a 1:10,000 scale model of the island. It is home to the largest brain coral in the world and the oldest Forest Reserve in the Western Hemisphere - the Main Ridge Forest Reserve.

Kail Zingapan, GIS expert being interviewed by Clyde McNeil of Tobago Channel 5

Democracy Wall
Not only are informants transferring their personal knowledge of Tobago, and its surrounding waters up to a depth of -100 meters to the model, but they are also writing their feelings about the project on a "Democracy Wall" in a specially marked off area on the wall of the workshop area. The "Democracy Wall" provides another outlet for participants to express themselves. To contribute to the Wall, the informants write their notes on small pieces of paper which they then post onto the Wall with tape. Open ended headings such as 'I believe …' and 'I feel …' encourage participation.

Teenager Zenniethe Balfour of the Anse Fromage Ecological Environmental Protection Organisation - Golden Lane attaches her contribution to the Wall: "I did not know Tobago is shaped like a snake". She says that listening to the contributions of others as they transfer images from their mental maps is a learning experience. In fact, she says she is learning many new things about her community although she has been living there for the past eighteen years.

Teenager Zenniethe Balfour (in blue shirt) transposes mental images to the model

Asked to convey her feelings about contributing to the blank model, Zenniethe smiles broadly

and says she feels “important”. In terms of the value of the entire exercise, she says there is value in knowing the natural resources in one’s community. “As you become aware you will instinctively protect”, she says.

Selecting data for the model

Prior to sticking pins and attaching yarn to the model, informants first had to agree on color codes for particular features such as forests, reefs and other points of importance to them that would be mapped onto the model. This information was then inserted into the chart developed as the legend for the model, with the chosen color of yarn or pin being assigned to each mapped feature.

Goldberg Job of Belle Garden shares his views during the orientation session prior to engaging with the 3D model

Throughout the session, informants sought clarification on what types of information could be placed on the model. A fisherman asks why he is seeing government offices, seaports and airports but no banks on the chart. CANARI’s facilitator Neila Bobb-Prescott responds by asking him to what extent the position of a bank is impacted by climate change. He scratches his head, pinches his chin, nods and moves on to another question.

Before engaging with the model, informants take part in short orientation sessions with trainee facilitators. These sessions include mutual introductions, sharing information on the 3D modelling, climate change and what participatory means. The orientation sessions also sought to learn about the informants understanding of these concepts and their views on what value they felt the development of this model has for them and would have for Tobagonians.

Laura Williams from the Anse Fromage Ecological Environmental Protection Organisation is busy at work on the model, identifying areas in her village of Golden Lane. Golden Lane is a rural village on the north eastern end of Tobago.

Laura Williams from Anse Fromage adds detail to the model

The Great Courland is one of a few beaches worldwide where the endangered leatherback turtle returns every year to lay its eggs. She says she is devoted to ensuring that Golden Lane is well represented; she wants it to be known that the Courland Watershed, the Great Courland, is not so great anymore as it is being heavily impacted by climate change. Noting that deforestation is a big problem in the area, she says man is helping in this destruction. Laura says the P3D model will make people of

the community more aware of the impact their actions are having on the environment. People outside of the area will also be aware of the problems, she says.

With a wealth of information being shared and mapped by the informants, the workshop facilitators are looking forward to welcoming more and more members of the communities across Tobago who are expected to arrive over the coming week.

Knowledge holders add value to the 3D model of Tobago

Historical and cultural knowledge emerges along with awareness on environmental change

SCARBOROUGH, 06 October, 2012. Excitement is growing as the blank 3D model is populated with data. What is astonishing is that nobody uses satellite images or existing maps where to source information. All data comes from memory, and one added piece of information offers new cues to memory, hence everybody is discovering and learning by doing.

Day by day, more information is added to the once blank model. The second group of informants arrives to transpose their information. And still, members from the first group of informants are returning to the workshop because, according to them, they went off, did some research and have returned to "add more value to the model".

A team from Golden Lane add their data to the model

The residents of Tobago, the actual custodians of local and traditional knowledge are eager to put their stamp on the model. As the updating of the map legend continues, some of them are resolute in their view that present as well as past names of map features, like points, areas and lines must be included.

The participatory 3D model exercise is being facilitated by the Caribbean Natural Resources Institute (CANARI) and the University of the West Indies (UWI) with financial and technical assistance from The Technical Centre for Agricultural and Rural Cooperation ACP-EU (CTA) and the United Nations Development Programme, Global Environment Facility - Small Grants Programme (UNDP GEF-SGP).

Historical perspective

The excitement of the participants echoes around the Island and the P3DM initiative is attracting keen interest from Tobagonians from all walks of life. Laura Williams of Golden Lane returns to the workshop with Lyris Walker and Veslin Alleyne in tow; they have information for the model.

Lyris says she is glad to be a part of the project because it is "for the people by the people". Pointing to places she had forgotten about, she says the project is successful because it is "very educational". She jogs her memory for details while consulting *The changing society of Tobago, 1838-1900: Vol I and II* a historical publication written by Susan E. Craig-James. This historical publication should inform the P3DM, says Lyris.

Gang Gang immortalised on the model!

Lyris, Laura and Veslin are excited to see the point on the model which identifies Gang Gang Hill in Golden Lane. They tell of the legend that gave the

hill its name: Gang Gang Sarah was a witch who flew from Africa to meet members of her family who were captured and brought to Tobago after being sold into slavery. In Tobago, Gang Gang Sarah met and married Long Tom. After her husband died, she attempted to fly back to Africa, but fell to her death from the top of the silk cotton tree which she had climbed to begin her journey. She could no longer take off because she had eaten salt and salt makes it impossible for witches to fly!

Tobago has a rich cultural history, but the legends are heard less frequently as the years go by. To preserve the island's past, a Heritage festival is held annually to celebrate all aspects of the island's history.

Climate change adaptation

Contributing to the participatory 3D model overwhelms Bryan Bain of Belle Garden. He understands the importance of the exercise because he has seen the effects of unsustainable harvesting practices and climate change in his community. He talks of crab catchers harvesting thousands of crabs weekly.

He admits that he also harvested over two hundred crabs per week, in 2005. Back then, he says, crabs walked "by the hundreds in the wetlands", while at present only four or five perch above their holes.

As a result of the dwindling crab population, Bryan says he has stopped catching crabs and is now assisting in encouraging hunters to leave the young crabs to thrive. He adds that he joined the Belle Garden Wetlands Association and Environment Tobago to meet like-minded people to preserve the environment.

Bryan also points to deforestation as a major problem in his area. This, he observes, has lead to the shortage of wildlife in the forest, among other things. He feels that the P3D model will make members of the community more aware of the damage they are causing. Increased awareness, he notes, should bring about enough change in people's attitudes and trigger changes in the way they act. He plans to build a P3D model of his village to enhance tourism.

A fisherman from Castara is oriented to the model by one of the trainee facilitators

Similarly, Goldberg Job, informant from Belle Garden, says people have to be encouraged to adapt to climate change by changing their lifestyles. He says people must be told to tie the roofs to their houses to prevent these from being blown away during adverse weather conditions. Additionally, he notes that fishermen should build bigger boats and invest in technology in order to continue fishing further afar from the coastline. He wonders whether architects are part of the P3D model-making. He is told that he is the architect, as well as the other informants.

The work on the participatory 3D model of Tobago continues apace. Another group of informants is expected on Sunday. If the trend continues, the same group of informants that came on Saturday and Friday will return to further contribute data on the model.

Participatory 3D model of Tobago seen as time capsule

West Indies cricket team's victory lightens workload

SCARBOROUGH, 07 October 2012. On the morning of Sunday 7 October, the air in the room where the participatory 3D model is being built, is tense but hopeful. Trainees, facilitators and informants work at a steady pace, but there is animated discussion on the ICC Twenty 20 Cricket World Cup game between the West Indies and Sri Lanka, being played halfway across the world. Later in the day, after much anxiety, the West Indies is declared the winner of the cricket match and there is a brief pause to celebrate!

More than anything else, the screams of joy reverberating around the room remind the trainee-facilitators, facilitators and informants of their common heritage and shared geographical space. The reflection on the impacts climate change is having on natural resources and on the actions being taken to deal with these changes takes on a new dimension.

A facilitator assists one of the informants in putting detail onto the model

Jacinthe Amyot of IOC-UNESCO/Marine Affairs Program, Dalhousie University/Canadian International Development Agency IYIP says that after hearing fishermen talk about the effects of the Orinoco river on the Tobago shrimp fishing industry, she has developed a keen appreciation for its effects. She says this information will inform her actions in the future.

Jacinthe is one of a number of persons participating in this capacity building event, representing different government, inter-governmental, civil society and academia from across the Greater Caribbean. These persons have been in Tobago since September 29th to participate in this training which is meant to introduce a participatory mapping method which could be adopted across the Caribbean region as it previously happened in Africa and the Pacific.

Cocoa farmers discuss their additions to the model

Meantime, a steady stream of informants continues to trickle in. They had stayed at home in the earlier part of the day to watch the World Cup cricket match while others had gone to church, as is the local tradition. Members of the Cocoa Farmers Association of Tobago (TCFA) and various fisherfolk associations throughout the island transpose their spatial knowledge on the model with the guidance of the facilitators. The farmers talk about the climatic changes they have observed

and they also identify areas where cocoa farms exist and verify other bits of information on the model. The farmers share how changes in climate have affected the cocoa crop cycles and caused a high level of unpredictability over the years.

Clement Bobb, President of the Cocoa Farmers Association, says the "sporadic rainfall - short burst of intense rain followed by hot sun – means that there is a longer bearing season". This kind of weather is causing the trees to flower all year round, he says. Mr. Bobb adds, "we do not know when to plant".

Mr. Bobb does not own a cocoa farm but manufactures dark chocolates under the 'House of Orlando' brand. Talking about the value of the P3DM workshop, the chocolate entrepreneur says its value will last for generations as it is a time capsule documenting the *status quo* of the island.

A fisherman adds information to the model

Similarly, informant Andre Greene, a fisherman from Parlatuvier, says the P3DM exercise is generating "vibrant information for the coming generations". He thinks that segments of the model would have to be updated as changes occur due to the impact of climate change. On the issue of fish stock, Andre says it is "getting harder to find fishes in the sea, all year long". He has to go further out to the sea and stay further away from other fishing vessels. He mentions that while he appreciates the value to the country of natural gas exploration taking place at Block 22 just off the north coast of Tobago, he has concerns that this activity may be a contributory factor to the low level of fish stock.

Continuous Evaluation

The first act of the day, as trainees and facilitators gather, is the assessment of the previous day's activities and agreement on the agenda for the day. Today, Nicole Leotaud, CANARI's Executive Director and conservation biologist, takes the debriefing session a little further and does an assessment of the entire workshop. She looks at the areas on the model that have been mapped and examines the information added about Tobago's resources and the effects of climate change. How locals adapt to the changes is also a part of the assessment, to the extent to which the information is being captured on the model.

Two sections of the model are put together as the Main Ridge takes shape

In the meantime, as informants come and go, they transpose their mental maps on the model and check existing ones. It is a process of constant cross-checking and verification marked by recurrent negotiations. There is discussion, sometimes heated, on where lines, areas and

points should be located. When there is no consensus, CANARI facilitators and GIS experts Kenn Mondiai from Papua New Guinea and Kail Zingapan from the Philippines come in to assist.

The workshop is soon drawing to a close, with only four more days to go. In that time, the facilitators look forward to welcome new teams of informants coming from the south western end of the island.

Tobagonians hand over the Participatory 3D model to the Tobago House of Assembly

Model referred to as "visual conversation" tool

SCARBOROUGH, 12 October 2012. Tobagonians, today, handed over the participatory 3D model of Tobago to the Tobago House of Assembly's (THA's) Secretary of Agriculture, Marine Affairs, Marketing and the Environment, the Honorable Gary Melville. The hand-over ceremony, which took place at the auditorium of the Tobago Hospitality and Training Institute at Mount St. George (close to where the model was built at Blenheim), was attended by students, informants, trainees from across the Caribbean, THA officials and facilitators from the Caribbean Natural Resources Institute (CANARI), the University of the West Indies (UWI) and Partners with Melanesians (PwM) - the NGO deployed by the Technical Centre for Agricultural and Rural Cooperation ACP-EU (CTA) to provide technical inputs into the manufacture of the model and delivery of P3DM / PGIS training. Officials from CTA and United Nations Development Programme - Global Environment Facility Small Grants Programme (UNDP GEF-SGP) attended the ceremony; these two organizations provided technical and financial support to the P3DM and Participatory Video (PV) processes.

The participatory 3D model of Tobago produced by Tobagonians in the two-week workshop held at Blenheim, Tobago

The ceremony marked the end of a 14-day workshop which was hosted by CANARI and the UWI in conjunction with the THA to pilot the building of the P3DM in the Caribbean. The workshop, which was coordinated by CANARI's, Senior Technical Officer and Manager of Forest, Livelihoods and Governance Programme, Mrs. Neila Bobb-Prescott, was held to train facilitators from around the Caribbean, in the use of participatory processes for communicating

information relating to climate change and its impact on communities. Part of the training also included using PV to evaluate the effectiveness of the P3DM process.

On October 11, CANARI's Executive Director, Ms Nicole Leotaud, facilitated a session with stakeholders from Tobago to prepare a summary of the impacts of climate change in Tobago, outline how climate change is affecting them and the steps they are taking to adapt to these impacts. On October 12, the stakeholders of Tobago presented the summary to the THA and called on the THA to use the information on the model to design policies to lessen the impact of climate change on their livelihood activities and the island of Tobago as a whole.

When listing the effects of climate change Tobagonians highlighted the following: decreased and erratic rainfall, dead areas of coral reefs, blurred dry and wet seasons, less fishes in the sea and increased coastal erosion. Additionally, the group of stakeholders also spoke of the prevalence of bush fires on the island.

Anthony Cordner shares the Tobago 'story' of climate change during the handover ceremony at the Tobago Hospitality and Training Institute

Fisherfolk reported that they have adapted to the changes by sailing further offshore to fish. Some farmers indicated that they had switched from farming to fishing and others reported that they were digging wells closer to rivers to water their crops. Laura Williams of the group Anse Fromager from the village of Golden Lane called on the THA to partner with communities to deal with the impacts of climate change.

Another informant, Clement Bobb, President of the Tobago Cocoa Farmers Association, told the audience that it was only through the workshop that he learnt that members of the association are noting springs drying up and are moving to alternative locations. Mr. Bobb also said it was the sharing of information by all, including trainees from around the Caribbean, which led him to deem the 3D model a means for "visual conversation".

Meantime, in receiving the model, Secretary for Agriculture, Marine Affairs, Marketing and the Environment, the Honorable Gary Melville expressed the THA and Executive Council's "deepest appreciation" for the efforts of facilitators, funding agencies and all others who had a hand in creating the "visual conversation" tool.

The Secretary promised to increase the use of the participatory approach to deal with climate change. He said the model was an example of the level of output that could be achieved when many organizations and people join forces for a common purpose.

Meantime, in an interview conducted after the ceremony, Mr. Lamon Rutten, Manager of Policy, Market and ICT at CTA, said he was happy with the level of enthusiasm displayed at the ceremony from all the participants and found the results coming out of the workshop "amazing", since he knew the amount of effort that had gone into producing the model. He pointed out that the use of conventional tools to gather information would have taken much longer and may not have yielded the same results.

He also pointed to the sense of urgency, that Tobagonians expressed in their presentation, to do something to mitigate the impacts of climate change. He expressed his hope that the same level of urgency stated by citizens would be felt by the politicians.

The CTA manager thanked CANARI for the "tremendous" work done in facilitating the workshop and noted that without CANARI, the CTA would not have been able to achieve its goal of working within the Caribbean.

In addressing the ceremony, Giacomo Rambaldi, Senior Programme Coordinator at the CTA said he, like everyone else, was pleased with the model and glad to witness what had taken place. Mr. Rambaldi, who has extensive experience in creating participatory 3D models, attended the last two days of the workshop.

Likewise, Sasha Jattansingh, Programme Assistant of the UNDP GEF Small Grants programme, said she appreciated the great work undertaken by CANARI, UWI, THA and participants in the workshop.

By and large, the ceremony was well represented by members from all the sectors that had taken part in the workshop. Everyone who participated – students, informants and trainee facilitators – were awarded certificates.

Facilitators, trainees and informants pose with Bheshem Ramlal (UWI) (on far left, stooping) and Mr. Giacomo Rambaldi, Senior Programme Coordinator at CTA (on far right, stooping) after the handover ceremony.

Note: the following organizations were represented at the training and / or closing ceremony

Barbados:

Caribbean Disaster Emergency Management Agency (CDEMA)

Caribbean Institute for Meteorology & Hydrology (CIMH)

Dominican Republic:

Consorcio Ambiental Dominicano (CAD)

Grenada:

Caribbean Association for Youth Development (CAYD)

Woburn Community

Haïti:

Groupe de Action Francophone pour l'Environnement (GAFE)

Jamaica:

Forestry Department, Forest Science and Technology

Caribbean Coastal Area Management Foundation (C-CAM)

St. Lucia:

Caribbean Environmental Health Institute (CEHI)

St. Vincent and the Grenadines:

Sustainable Grenadines Inc (SusGreen)

Union Island Environmental Attackers

Trinidad and Tobago:

Caribbean Natural Resources Institute (CANARI)

Caribbean Agricultural Research & Development Institute (CARDI)

Institute of Marine Affairs Trinidad and Tobago (IMA)

Trinidad and Tobago Red Cross Society

Office of Disaster Preparedness and Management (ODPM)

Department of Natural Resources and Environment (DNRE), Tobago

Fondes Amandes Community Reforestation Project (FACRP)

US Virgin Islands:

The Nature Conservancy (TNC)

Greater Caribbean:

Caribbean Large Marine Ecosystem (CLME), IOCARIBE - UNESCO

Papua New Guinea

Partners with Melanesians (PwM)

International

Technical Centre for Agricultural and Rural Cooperation ACP-EU (CTA)

The UNDO GEF Small Grants Programme (GEF-SGP)

First Participatory 3D Model built in the Caribbean

Nationals from the region now ready and eager to introduce P3DM in their countries

SCARBOROUGH, 13 October 2012. One hundred and six Tobagonians participated in transposing their mental recollections of the impact of climate change on their natural resources and how they are adapting to climate change on the participatory 3D model of Tobago. Informant, Lyris Walker called it a piece of work “for the people, by the people and of the people”.

Indeed, the importance of facilitating data collation from local communities was underscored by Philippines GIS expert, Kail Zingapan, when she stated that without inputs from the residents of Tobago, the model could not be built. The model covers an area of 1,152 km² and consists of a 1:10,000-scale version of the island and its surrounding waters up to a depth of -100 meters.

Under the theme: *"She becomes more beautiful: Capturing the essence of Tobago today for a better tomorrow"*, the title of the event and the legend for the model were agreed upon by residents of Tobago during an introductory and planning workshop which was coordinated by CANARI’s Senior Technical Officer and Manager of Forest, Livelihoods and Governance Programme, Neila Bobb-Prescott on September 25 2012.

The organizers - CANARI and technical and financial sponsors, CTA and UNDP GEF Small Grants Programme - invited many Caribbean nationals, from NGOs, CBOs, government agencies, intergovernmental technical agencies and academia as well as their Tobago counterparts, to the 14-day workshop where they gained skills in building the model and in documenting and assessing the process through the use of participatory video (PV). Two participatory mapping experts from the Philippines and Papua New Guinea facilitated the model-building process in which students from secondary schools across Tobago were also involved.

Making the model

Trainees and students noted that building the model turned out not to be as easy as it looked, as the base map, which was prepared by a team from the UWI, had to be traced onto cardboard and then carefully cut into individual elevation layers.

These layers of cardboard were carefully placed and glued on top of each other and consolidated and smoothened using crêpe paper. White paint was subsequently applied to the cardboard model.

Trainees are guided on contour tracing by Kail Zingapan, GIS expert from the Philippines

At that stage, the model was ready for accommodating data all originating from mental recollections of residents of Tobago. These came from many sectors of the society - fishermen, farmers, reef tour operators, hunters, environmental groups, and academia. Natural resources were identified, areas affected by climate change were pointed out and measures used to adapt to the changes were described. All these contributions generated a total of 87 layers of information all displayed on the model.

Quality assurance

At every stage of building the model, there were checks and balances as facilitators ensured code consistency and stimulated community cross-verification of input data. Additionally, the information transposed on the model was also checked by technocrats from different departments of the THA.

A trainee adds elevation layers to the model

At the early stages of model making, residents pointed out that Little Tobago, a small island off the coast of Tobago, and other islets and rock outcrops were missing from the model. All these being important landmarks for fisherfolk and sailors. The facilitators acknowledged their absence.

Adam, one of the workshop participants who used to work at the UWI, rose to the challenge of preparing the needed contour map, far from his GIS lab and using a locally available ink-jet printer to plot the islets. Kail obtained elevation data from the Internet, and one of the UWI graduate students helped Adam obtain the data concerning the depth of the sea. And … *magic* …by the end the day, Little Tobago and other missing islets were placed onto the model and smoothed with crepe paper.

The progress of the activities was constantly under review by CANARI's facilitators, Nicole Leotaud - Executive Director and Neila Bobb-Prescott - workshop coordinator. Morning debriefing sessions evaluated the previous day's work and set an agenda for the day's activity.

Handing over

At the end of the workshop, the people of Tobago handed over the model to the Tobago House of Assembly. It was received by Hon. Gary Melville, Secretary for Agriculture, Marine Affairs, Marketing and the Environment.

The informants used a series of photographs on PowerPoint slides to explain what they felt was happening to the natural resources in Tobago and called on the authorities to take urgent action to address the impact of climate change.

A brief synopsis of the workshop was delivered by CANARI, and the representatives from sponsoring agencies - CTA and UNDP GEF Small Grants Programme - applauded all the stakeholders for their efforts.

CTA's , Senior Programme Coordinator, Mr. Giacomo Rambaldi, said he was happy to see the outcome of the programme and UNDP's Programme Assistant, Ms Sasha Jattansingh, extended sincere appreciation to all the stakeholders who had built the model.

One informant, Ms Laura Williams of Golden Lane, besieged policy makers not to allow the model to become a "dust enhancer" and added that the purpose for which the model will be used will determine the future of the island's resources and its peoples.

Left to right: Neila Bobb-Prescott, CANARI (in green shirt), Giacomo Rambaldi, CTA, Hon. Gary Melville, THA and Lamon Rutten, CTA, examine the P3DM model of Tobago

Participatory video - an effective evaluation tool

Trainees appraise the P3DM process using "PV"

SCARBOROUGH, 14 October 2012 The volume of information to be collected from informants on their natural resources, climate change impacts and the measures they use to cope or adapt to these impacts, is best dealt with using a video camera, said Kathrina Collins, President of the Union Island Environmental Attackers from St. Vincent and the Grenadines.

Katrina recalled that learning how to use the video camera supplied by CANARI for the participatory video (PV) exercise was a lot of fun, but she was more comfortable while working on the participatory 3D model of Tobago. Katrina was one of the regional trainees who participated in the 14-day workshop which led to the manufacture of the first participatory 3D model (P3DM) to be created in the Caribbean.

Wellington Martinez practices filming while Juliana Castaño Isaza looks on

Damika Marshall, Environmental Officer from the Tobago House of Assembly (THA) who was another trainee, said that PV was used to highlight the lessons learnt from the P3DM process and ways to make it better. She agreed that learning to use the video equipment was enjoyable and added another dimension to the workshop.

Similar sentiments were shared by their counterparts who were divided into groups to work on the video project. Their task was to evaluate the P3DM process using video.

The team captured footage highlighting Tobago's natural resources, peoples' dependence and relation to the resource base, the process of making the 3D model, and the views and opinions of stakeholders involved in the process.

Desiree Sampson, a professional videographer, briefed the trainees on the concept of "five W's and one H" otherwise known as "the six helpers". Each letter representing a question that has to be answered for the story to be considered complete: who, what, where, when, why and how. This approach is used as the basis for gathering information when doing research and gathering news.

The trainees interviewed stakeholders to find out their experiences on climate change impacts, exploring exactly what happened, when it happened, where it took place and why it happened. They also conducted interviews among the group of trainees to capture their feedback on the model building process.

Katrina Collins, Candice Ramkissoon, and Shawnaly Pascal download and view footage collected during the workshop

The trainees were also shown how to develop and use a storyboard to guide production. A storyboard is a set of graphic images laid out in particular sequence to tell a story. Each participant contributed ideas to create the storyboard.

As with each activity at the workshop, there was a daily review of the daily achievements. Damika said that every evening the footage shot during the day was viewed by the trainees and facilitators. The team assessed its visual quality and content value for selection and incorporation in the final video production. In some cases, the team decided that some interviews had to be redone and footage captured again to improve the quality.

Lessons learnt

All the trainees said that using the video equipment to capture the stories was a great idea. Damika felt that using a video to tell a story is quite an effective way for sharing ideas and experiences with the community since “not everyone can read or understand a lengthy written report or has the time or inclination to do so”. She however added that policy makers would need more than a video to make decisions regarding climate change and to understand the ramifications of their policies.

Kemba Jaramogi captures footage of an informant adding details to the model, while Kenn Mondiai, GIS expert looks on.

Kemba Jaramogi from Trinidad said the video cameras used were small and as a result, not intimidating to interviewees. She also said that the equipment was relatively inexpensive.

Kemba however noted that cost should not be the only consideration before purchasing this type of equipment. “The quality [of footage] it produces is an important factor”, she said.

In summary, the trainees from across the Caribbean found the PV activity quite interesting. They said that the production of a video for evaluation purposes was an interesting learning experience and at the same time, videography was an effective way for capturing and documenting the impact of climate change on communities through the eyes of the grassroots.