Promoting participatory ICTs for adding value to traditional knowledge in climate change adaptation, advocacy and policy processes in the Caribbean

Report on the Participatory three-dimensional (P3DM) modelling exercise in Tobago

Blenheim Sheep Multiplication and Research Project,
Windward Road, Mt. St. George, Tobago
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1. Introduction

A range of initiatives have been implemented at the global level to assist African, Caribbean, Pacific countries to adapt to climate change for example the National Adaptation Programmes of Action (NAPAs) provide a process for Least Developed Countries (LDCs). In addition, the value of grassroots involvement in climate-related decision-making has received attention in several other official climate policy documents starting from Art. 6 of the United Nations Framework Convention on Climate Change (UNFCCC) (UN, 1992, p. 17). Nonetheless, minority groups including indigenous peoples in many developing countries, whose livelihoods are tied to the sustainability of natural resources, are still largely excluded from climate-related decision-making.

Impacts of climate change in the Caribbean are projected to include sea level rise, ocean warming, and changing rainfall patterns. These impacts are expected to have a significant economic and social impact. These events have caused the diversion of limited resources from other development priorities towards relief, rehabilitation and reconstruction activities.

The Caribbean Natural Resources Institute (CANARI), the Technical Centre for Agricultural and Rural Cooperation (CTA) and the University of the West Indies (UWI), St. Augustine are implementing a project to use participatory three dimensional modelling (P3DM) as a tool to incorporate and recognize local and traditional knowledge and values into decision making about climate change adaptation. The project is receiving additional support from the United Nations Development Programme Global Environment Facility Small Grants Programme (UNDP GEF SGP) and The Nature Conservancy (TNC). It is being implemented in partnership with the Tobago House of Assembly (THA). The full project concept is available in Appendix 1.

This P3DM activity took place in Tobago from 28th September to 12th October 2012. It was designed to serve as a pilot for similar exercises in the Caribbean region. The approach was to build capacity in using P3DM by facilitating a training of trainers workshop in participatory approaches concurrently with the building of the P3D model of Tobago.

2. Participants

Participants included:

- *22 trainee facilitators from the Caribbean islands:* government, inter-governmental organisations, civil society, and academia participated in this training of trainers conducted as part of the pilot in order to catalyse dissemination and use of the tool across the Caribbean islands agencies (Participant list and Who's Who directory are available in Appendix 2);
- *19 secondary school students and teachers* from secondary schools in Tobago;
- *13 observers:* government agencies, academia, NGOs and CBOs from Trinidad; regional inter-governmental secretariats and technical agencies; regional NGOs, international technical agencies (listing available in Appendix 3).
- *106 informants from Tobago*: community leaders, fisherfolk, farmers, tourism entrepreneurs, NGOs and CBOs, policy makers and resource managers in government agencies, and students.

3.Objectives

Objectives of the activities were to:

- Explain key concepts in participatory approaches
- Apply key tools in facilitating participatory three-dimensional modelling and participatory video
- Demonstrate effective facilitation techniques
- Identify key issues in natural resource management which can be addressed through participatory three-dimensional modelling and participatory video in the Caribbean
- Build a three dimensional model of Tobago and use it to analyse and plan for adapting to the impacts of climate change

4. Method

The building of the three dimensional model, the training of trainers, and facilitating a participatory video process to conduct an evaluation of P3DM and the activities, were run in parallel sessions. The implementation schedule for the activity and the workshop agenda are in Appendix 4.

Model building

During the first 5 days the blank model was constructed with the assistance of students from secondary schools in Tobago and the trainees. Residents of Tobago populated the model from the sixth to the fourteenth day. A team of residents attended a session on the fourteenth day of the model building to analyse lessons learned from the activity and prepare statements on the impact of climate change on their livelihoods, their approaches to coping with the impacts and their recommendations to policy makers on decision making about planning for climate change. The outputs of this session were presented at the Handover Ceremony before the unveiling of the model on the following day.

Training of Trainers workshop

Day 1 to 5 were dedicated to the introduction of basic concepts on participatory approaches, facilitation, geographical information systems (GIS) and P3DM. Trainees were exposed to range of interactive and creative facilitation methods, including visual representation, brainstorming, round robin, small group work, plenary discussion, individual reflection, role play, peer coaching, video, games, energiser, individual reflection and questioning. Trainees also had lectures on GIS and P3DM building. Training on evaluation and participatory video was done on Day 5. Power point presentations are in Appendix 5 and handouts are in Appendix 6.

Day 6 to11 were allocated to action learning. The trainees co-facilitated the three dimensional model making with the residents of Tobago, assisted with the building of the model and shot clips for inclusion in the participatory video. Each daily session began with debrief of lessons learned from the previous day and ended with viewing of video footage captured on that day. Participants were involved in chairing each day's sessions, rapporteuring, reporting on the general mood, capturing footage for the participatory video and preparing and posting Facebook updates.

Day 11 and 12 were used to demonstrate to trainees how to capture and digitise the information accumulated on the model, edit the participatory video footage and prepare for the Handover Ceremony.

5. Findings on lessons for P3DM in the Caribbean

5.1 Mobilisation and logistics

- Site model building venue needs to be in an a location frequently traversed by informants.
- Encourage participation of informants by sourcing, as much as is possible, food and supplies for the activity from the informants to increase their interest and commitment.
- Promote the event to policy makers and give them frequent updates to maintaining interest on the event.
- Work through key informants such as Extension Officers and prominent non government organizations to mobilise informants and publicise the event.
- Continue mobilisation efforts through model building to increase opportunities to cover gaps.
- Visit local media and identify a person to liaise with and update on model building activities.
- Schedule informants attending the model building exercise for three to four hours per day instead of two consecutive days as this arrangement allows them the opportunity to continue earning a livelihood while contributing to the creation of the model.

5.2 Model building

- Review base maps carefully to ensure that data is accurate. Ensure contours on all sheets are at the required intervals, and units of measure are consistent and outer islands are present.
- Orientation of the informants to the project and model building is useful in providing informants with a context for their work.
- Orientation should not be overly lengthy so that it significantly shortens the informants' time available to populate the model.
- In instances where the model has to be formulated in segments it is best to present the model as a single unit to participants initially to assist them with orientation then move the segments apart to work.
- Using the correct pins, yards and twines are not an essential first step when working with the informants; the emphasis should be on facilitating their contribution to the building of the model.
- Include as a culminating activity in model building a session to facilitate analysis with the informants so that the information assimilated can be used to advise action.

5.3 Training of trainers

- The lead facilitator should include in a daily debrief a review of facilitation skills to strengthen trainee capacity in facilitation.
- Rotate facilitators during model building to allow time to rest and refresh.

- Give trainees the opportunity to trace, cut, glue and paint as this improves their understanding of what is required by the informants.
- When building models in segments assign facilitators to each table to contribute to and maximise coverage of informants.
- While facilitating the building of the model, facilitators should document and report on information from informants on the impacts of climate change on their livelihoods, their approaches to coping with the impacts and their recommendations to policy makers on decision making about planning for climate change.
- Facilitators should be assigned into groups with specific roles and responsibilities (e.g. model, participatory video, blogging).

6. Evaluation

6.1 Summary of Training of Trainers evaluations

Workshop evaluation forms were given to all trainees on the final day of the workshop. Fourteen trainees completed and returned the evaluation forms. All respondents indicated that they found the workshop useful in learning about facilitating participatory processes for the management of natural resources in the Caribbean. Most appreciated the hands-on approach but some disliked the intensity and duration of the workshop. Most respondents evaluated the workshop as very good or good in terms of clarity of objectives, content, materials, facilitation, practical session and relevance to their needs. All indicated that they built their capacity for facilitating participatory processes and P3DM. A compilation of responses is available in Appendix 7.

6.2 Summary of wrap up and closure forms

An additional document was emailed to all trainees to capture lessons and recommendations in lieu of the cancelled wrap up and closure session on the final day of the workshop. Five trainees responded. A compilation of responses is available in Appendix 8. Most indicated a preference that all trainees be housed in one location. All indicated concerns about the effectiveness of mobilisation efforts of informants and suggested recommendations to improve the approach in the future. Some trainees thought that the legend making process needed improvement. Trainees pointed out inadequacies with materials and felt that informants could have spent more time working on the model. There were mixed reviews about the effectiveness of the Handover Ceremony, but most seemed satisfied with the result. Trainees found the training on participatory approaches valuable and one identified the challenge of focusing on a single task in the often busy atmosphere at the site. All identified avenues for follow up action.

6.3 Summary of contributions on the democracy wall

All participants in the P3DM exercise were invited to contribute to the democracy wall. Contributions included positive feedback on the atmosphere at the activity, recommendations on information to be included on the model and revelations about local information on Tobago. Compilation of contributions is in Appendix 9.

7. Conclusion

The exercise in Tobago built the capacity of the trainees to facilitate participatory processes and in particular improved their understanding of and appreciation for the value of traditional knowledge in decision making about climate change.
However, the multiple activities taking place at the same time with various outputs - namely model building, participatory video, training of trainers, blogging, and documentary production - made concentration on analysis of the knowledge gained for input into decision making challenging for the facilitators. The next step is testing the use of P3DM in focused facilitated processes, without the complexity of additional activities occurring concurrently.

Sustained assistance is needed to support the use of this tool in the Caribbean, including through strategies such as exchange visits among facilitators in the region. Action learning, analysis and documentation are needed to further refine the P3DM process for the Caribbean region to maximise the outcomes for sustainable natural resource management.

The impact of the model building for the people of Tobago needs to be evaluated and lessons learned documented and shared.

Appendix 1- Project Concept note

Promoting participatory ICTs for adding value to traditional knowledge in climate change adaptation, advocacy and policy processes in the Caribbean

Concept note

July 2012

1. Project background

a. The global context

National adaptation programmes of action (NAPAs) provide a process for Least Developed Countries (LDCs) to identify priority activities that respond to their urgent and immediate needs to adapt to climate change – those for which further delay would increase vulnerability and/or costs at a later stage. The submission of a NAPA to the United Nations Framework Convention on Climate Change (UNFCCC) entitles the country to access funding from the Least Developed Countries Fund (LDCF) for the implementation of projects related to climate change adaptation. The LDCF was established to support a work programme to assist LDCs to carry out, inter alia, the preparation and implementation of NAPAs. The Global Environment Facility (GEF) is the entity that operates the financial mechanism.
As of February 2012, 47 LDCs prepared their NAPA according to the UNFCCC database. Among non-African ACP countries the following have prepared their NAPA: Kiribati, Samoa, Solomon Islands, Tuvalu, Vanuatu, and Haiti.

The 7th Conference of the Parties (COP7) placed at the highest priority capacity building and identified among others the following needs: '*developing and enhancing technical capacities and skills to carry out and effectively integrate vulnerability and adaptation assessment into sustainable development programmes and develop national adaptation programmes of action'*, '*strengthening existing and, where needed, establishing national research and training institutions in order to ensure the sustainability of the capacity-building programmes',* and *'enhancing public awareness (level of understanding and human capacity development)*' (FCCC/CP/2001/ 13/Add.1, Decision 2/CP.7, paragraph 17).

In December 2010, Parties to the UNFCCC adopted the Cancun Adaptation Framework (CAF). CAF is intended to accelerate policy making and interventions that reduce human vulnerability to climate change, and build resilience - both biological ecosystem resilience and socio-ecological resilience. The CAF is founded on a number of principles including the recognition of the need to involve holders of different knowledge systems - traditional, indigenous and scientific.

The value of grassroots involvement in climate-related decision-making has received attention in several other official climate policy documents starting from Art. 6 of the United Nations Framework Convention on Climate Change (UNFCCC) (UN, 1992, p. 17). The Intergovernmental Panel on Climate Change (IPCC) recognizes the importance of traditional knowledge (TK) and the IPCC Third Assessment Report refers to '*active participation by concerned parties*' (IPCC, 2001, p. 899) and draws attention to local problems and solutions. The UNDP guidelines for adaptation strategies foster grassroots stakeholders' participation. Moreover the International Indigenous Peoples Forum on Climate Change (IIPFCC) is a recognised constituency in the UNFCCC COP. Nonetheless, minority groups including indigenous peoples in many developing countries which prepared NAPAs are still largely excluded from climate-related decision-making. This contrasts with the values upon which the NAPA process was founded in 2001. This was supposed to be action-oriented and country-driven and to encourage multi-stakeholders' endorsement (FCCC/CP/2001/13/Add.4, Decision 28CP/7, paragraph 6, 7). NAPAs were meant to recognise the diverse biomes within national states, and involve participation of those whose livelihoods are tied to the sustainability of each of these biomes.

b. The regional context

Similar to other small island developing states (SIDS), communities in Tobago and the Caribbean are susceptible to the impacts of climate change and extreme climatic events.

Historically, hurricanes and floods have had the most disastrous impacts in the Caribbean islands. In the last half century, several storms and hurricanes have resulted in the loss of life and property. These events have caused the diversion of limited resources from other development priorities towards relief, rehabilitation and reconstruction activities.

Impacts of climate change in the Caribbean are projected to include sea level rise, ocean warming, and changing rainfall patterns. These are expected to have a significant economic and social impact.

Threats from climate change and extreme climatic events are exacerbated by the ongoing problems caused by human development, including inappropriate land use and poorly planned physical development, inappropriate agricultural practices on slopes, point and non-point source pollution including from improper disposal of solid wastes. These result in deforestation, land degradation, pollution and clogging of watercourses across the limited land space and degradation of coastal and marine ecosystems.

The vulnerability of Caribbean SIDS to climate change and extreme climatic events is especially high as there is very limited land space and much of the development occurs along coastal areas with very rugged topography where economic and social resilience are also generally very low.

Responses in the Caribbean have largely been at the general policy level, in response to international commitments, with few specific policies or plans yet developed to address priorities on the ground at the landscape or site level. Policy development has also been largely without the effective engagement of local communities, where much of the action will need to be taken. Public understanding of the issues and responses required is low. Although policy development recognises the importance of engaging sectors, "climate proofing" action still needs to be taken for key sectors, especially tourism and agriculture as the two main economic sectors. A coordinated and collaborative approach that

effectively engages stakeholders across sectors and communities to take action to build resilience is still needed.

There are some important initiatives to address these challenges in the Caribbean islands, including using innovative methods to raise public awareness and capture the voice of local communities and traditional knowledge (for example work by CANARI, Panos Caribbean and Buccoo Reef Trust), facilitating participatory policy development (for example CANARI's facilitation of the development of a Civil Society Climate Change Agenda for Saint Lucia), and facilitating development and implementation of climate change resilience-building plans by local communities (being piloted by CANARI).

However, despite these efforts, there is generally weak appreciation of or capacity to facilitate participatory approaches to building resilience to climate change and extreme climatic events.This project will aim to address these needs by piloting participatory Information Communication Technologies (ICTs) as a new tool 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 the impacts of climate change and extreme climatic events. This tool will allow inclusion of relevant knowledge (including traditional / indigenous 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.

This project will facilitate the use of participatory three dimensional modelling (P3DM) in the island of Tobago to document, share and combine traditional and other forms of knowledge to identify the risks from climate change and extreme climate events and to recommend the adaptation policies and actions required.

The P3DM process will be complimented by the use of other ICTs (participatory video, Web 2.0 social media), to facilitate sharing of knowledge at various levels and contribute to building the capacity of stakeholders to contribute to the development of island-wide policies for Tobago as a pilot case.

This project will serve as a pilot for similar exercises in the Caribbean region. It will build capacity in using P3DM by using a training of trainers (ToT) approach coupled with targeted dissemination of lessons learnt at specific regional fora. A cadre of technical experts from across the region (government, inter-governmental organisations, civil society, and academia) will participate in this training of trainers conducted as part of the pilot in order to catalyse dissemination and use of the tool across the Caribbean islands.

2. Problem statement

The core problem the project will address is that development and implementation of policy to address the impacts of climate change and extreme climatic events has been largely without the effective engagement of local communities, from which useful traditional knowledge exists and among whom much of the adaptation action will need to be taken.

The effect is that policy responses in the Caribbean have largely been at the general policy level, with few specific policies or plans developed to address priorities at the landscape or site level. Sectoral considerations or traditional knowledge have not been adequately considered, stakeholders are not effectively engaged, and there has been little on the ground action to build resilience or to "climate proof" key sectors such as tourism and agriculture.

There are several root problems that are contributing to this including that:

- Land use and development planning do not effectively involve or integrate the concerns of government, private sector/developers and local communities into decision making.
- Development and risk management efforts are fragmented and uncoordinated across sectors.
- The impacts of climate change and extreme climatic events and responses needed are poorly understood by stakeholders.
- Communities are not aware of the need for and do not feel empowered to participate in community-based planning to respond to the impacts of climate change and extreme climatic events.
- Policy makers and technocrats do not have a culture of, knowledge of relevant tools, capacity for, and experience in facilitating community-based planning to respond to the impacts of climate change and extreme climatic events.

3. Overall Objective

Increased engagement of stakeholders to adopt Information and Communication Technologies (ICT) to influence climate change adaptation policy processes.

4. Project purpose

Local and traditional knowledge and values are recognized and made more authoritative in decision making about climate change adaptation in the Caribbean region.

5. Target countries

The countries in the Caribbean region.

6. Intended beneficiaries

Direct Beneficiaries:

- *Tobago:* Community leaders, fisherfolk, farmers, tourism entrepreneurs, NGOs and CBOs, policy makers and resource managers in government agencies, and students.
- *Facilitators to be trained from the other Caribbean islands:* academia, regional and national NGOs, government agencies, inter-governmental technical agencies.
- *Observers:* Government agencies, academia, NGOs and CBOs from Trinidad; regional inter-governmental secretariats and technical agencies; regional NGOs, international technical agencies.

Indirect Beneficiaries:

Residents of Tobago, residents of other Caribbean SIDS where P3DM will be applied.

7. Project implementation

The project will be implemented by the Caribbean Natural Resources Institute (CANARI) in partnership with the University of the West Indies, the Tobago House of Assembly, Division of Agriculture, Marine Affairs, Marketing and the Environment and the Partners with Melanesians (PwM).

8. Project timeframe

The project will be implemented over a 17 month period from July 2012.

9. Project funding

Funding is provided by the Technical Centre for Agricultural and Rural Co-operation (CTA).

10. Project results and associated activities

Result 1*: P3DM model of Tobago is completed and handed over to national stakeholders for use in policy development and decision making to build resilience to climate change and extreme climatic events in Tobago*

Activities

i. Identify Tobago's stakeholders and develop a participation plan to mobilise communities.

ii. In collaboration with UWI, organise and run a **one-day P3DM/PV introductory and planning workshop** in Tobago attended by approximately 30 delegates from local stakeholders.

iii. In collaboration with UWI and 2 facilitators deployed by CTA, organise and run a two-week long P3DM exercise which will result in a relief model of the entire island of Tobago at a 1:10,000 scale, and involve approximately 120 community representatives, 40 youth (students) from local schools, 5 local government officials and representatives from local NGOs and CBOs.

Result 2*: A total of 49 people are trained in complementary disciplines as follows:*

- *12 representatives from national and regional organisations are competent in using PGIS/P3DM to facilitate participatory planning for climate change adaptation.*
- *6 residents of Tobago are capable of facilitating Participatory video processes.*
- *6 practitioners and GIS technicians are in the position to contribute to the P3DM process, export and safeguard data within the confines of good practice. (Complementary result attained by UWI using GEF-SGP funding).*
- *25 representatives from Tobago stakeholders are skilled in the use of Web 2.0 and Social Media for communication and advocacy purposes (Complementary result attained via related CTA capacity building project).*

Activities

(i) In collaboration with UWI and 2 trainers deployed by CTA, train 12 delegates from organisations in the region and running of the P3DM exercise listed under Result 1. This will include an orientation on the topic and role playing during the map making process in the following phases: legend making, tracing, cutting, pasting, consolidating, transfer of mental maps by knowledge holders, data capturing and extraction, and handing over. Special attention will be paid to the ethics in the practice.

(ii) Train 6 participants resident in Tobago in the facilitation of participatory video processes. This will include use of a video camera, recording systems, development of a story board, interviewing, video capturing and collaborative editing.

(iii) Further train 6 participants in their respective countries in the use of opensource GIS (QGIS) for capturing, analysing data extracted from a P3DM and cross-validating these with the knowledge holders and against other data sets obtained from formal scientific sources. This activity will be carried out by UWI using GEF-SGP funding.

(iv) 25 delegates from Tobago stakeholders involved in the P3DM exercise are trained in the use of Web 2.0 and Social Media for communication and advocacy purposes. This activity is carried out directly by CTA or via UNITAR/FAO/CTA e-learning schemes.

Result 3*: At least 300 persons from communities and decision-makers from key sectors in Tobago have increased understanding, capacity and motivation to take joint action to build resilience to climate change and extreme climatic events.*

Activities

(i) Ensure a well-balanced selection of participants in the P3DM exercise.
(ii) Discuss and agree with concerned stakeholders on which entity will safe keep the completed 3D model and receive it at the handing over ceremony.
(iii) Facilitate media engagement and media coverage.
(iv) Invite and facilitate the participation of observers from national, regional and international entities.

Result 4*: The process, and experiences made, in the use of PGIS / P3DM (and related ICTs) to value traditional knowledge in decision making about climate change adaptation, are documented and shared by a range of means including multimedia, Web 2.0 and social media.*

Activities

(i) Produce PV and – provided Free Prior Informed Consent (FPIC) is obtained from the knowledge holders – disseminate it widely via various means (Funded by GEF-SGP via UWI).
(ii) Produce a professional 15-20 min video documentary on the process and – provided Free Prior Informed Consent (FPIC) is obtained from the knowledge holders – disseminate it widely via various means.
(iii) Produce and publish at least 14 daily blog posts about the PGIS/P3DM process.

Result 5*: Report, papers and policy briefs are produced and disseminated to climate change focal points, key government agencies in at least 15 countries in the* Caribbean and at high level regional fora.

Activities

(i) Document and analyse the processes, their outcomes and impacts.
(ii) Organise and run a **one-day feedback and reflection workshop** attended by 40 participants.
(iii) Produce a report (e-version) including the lessons learned while implementing the P3DM process and the outcomes of the one-day feedback and reflection workshop.
(iv) Elaborate, translate and print a policy brief(s) in English, French and Spanish, and other papers.
(v) Attend high level events to share lessons learned and recommendations.
(vi) Disseminate report, papers and policy brief(s) to selected target audiences.

Appendix 2- Participant list and Who's who directory

#	Salutation	First Name	Last Name	Organisation	Job Title	Address	State/ Province	Country	Tel (W)	Tel (M)	Fax	Email 1
1	Ms.	Terri-Ann	Campbell	Forestry Department, Forest Science and Technology	GIS and Mapping Officer	173 Constant Spring Road	Kingston 8	Jamaica	876 924 2667-8	876 473 3237	878 924 2626	Terriann.campbell@gmail.com
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29	Ms.	Patricia	Franco	Caribbean Natural Resources Institute	Admin Officer	Fernandes Industrial Centre Eastern Main Road	Laventille	Trinidad & Tobago	868 626 6062	868 798 8331	868 626 1788	info@canari.org

30	Mr.	Kenn	Mondial	Partners with Melanesians Inc. (PWM)	Executive Director	1st floor, Suite 1 Monnian House, Nita Street	Boroko, NCD	Papua New Guinea	00675 323 6344	00675 7113179 1		kmondiai@pwmpng.org .pg
31	Ms.	Kail	Zingapan		Participatory GIS Specialist	71 Malakas Street Central District, Diliman	Quezon City	Philippines				-
32	Mr.	Giacomo	Rambaldi	CTA	Senior Programme Coordinator	P.O. Box 380	6700AJ Wageningen	The Netherlands	+31 (0) 317 467174		+31 (0) 317 460067	Rambaldi@cta.int

Promoting participatory ICTs for adding value to traditional knowledge in climate change adaptation, advocacy and policy processes in the Caribbean

Participatory 3D Modelling and Participatory Video in Tobago

29 Sep. - 11 Oct., 2012, Tobago, Trinidad and Tobago

Who-is-Who Directory

Empowered lives.
Resilient nations.

Participatory Three-Dimensional Modelling (P3DM) of the Island of Tobago

29 September – 11 October 2012, Tobago

Participatory Three-Dimensional Modelling (P3DM) of the Island of Tobago

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Who is Who Directory

This Who-is-Who Directory includes only those participants who agreed that their contact details be made public within the confines of the event.

Participants

Participatory Three-Dimensional Modelling (P3DM) of the Island of Tobago

29 September – 11 October 2012, Tobago

Name	**Jacinthe Amyot**
Gender	Female
Position	Integrated Coastal Area Management (ICAM) Assistant
Affiliation	IOC-UNESCO/ Marine Affairs Program, Dalhousie University/ Canadian International Development Agency IYIP
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Email address 1	jacinthe.amyot@dal.ca
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Skype ID	JacintheAmyot
Professional background	Jacinthe is a wildlife biologist who recently graduated with a Master of Marine Management degree (MMM) from the Marine Affairs Program at Dalhousie University, where she focused on coastal resources management and biodiversity conservation. Her research revolved around the development of a Environmental Function Analysis (EFA) framework to increase the effectiveness of sandy beach conservation and sustainable development in Nova Scotia, Canada. This decision support tool has helped to guide new planning approach to provincial parks and provides assistance to the Provincial Ocean Network in their effort to draft appropriate measures for the Nova Scotia Coastal Strategy. Recently, Jacinthe has been working at IOCARIBE-UNESCO in Colombia where she supports the development of the Information Management System - Regional Ecosystem Monitoring Program (IMS - REMP) component of the Caribbean Large Marine Ecosystem (CLME) project. She is also leading an Integrated Coastal Area Management (ICAM) pilot project in collaboration with the Coastal Zone Management Unit in Barbados. This ICAM pilot will assess the core information needed for effective ICAM initiatives in the Caribbean region, and addresses information gaps and future research needs.
Interest in the workshop	In order to take appropriate actions to adapt to climate change and to reach sustainable development of our coasts, we must include local knowledge and enhance communities participation in the decision-making process. Participatory mapping is a innovative approach which supports these principles and underlines the importance of community

empowerment. It is our wish that participatory mapping exercises like this one, be increasingly used in the Caribbean region, and included in the policy cycle of the CLME. The information acquired through participatory mapping could then be included in the IMS - REMP component of the CLME, and support the governance of shared marine resources at the regional level. This workshop also supports a learning by doing approach and offer a great opportunity to share experiences and connect with other members of the coastal management community. I am eager to learn from others and enrich my skills set as a coastal manager.

Corporate website www.clmeproject.org

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Name	**Martin Barriteau**
Gender	Male
Position	Director
Affiliation	Sustainable Grenadines Inc. (SusGren)
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Skype ID	baliusbarriteau
Professional background	Martin Barriteau is the Executive Director of the Sustainable Grenadines Inc. (SusGren), a trans-boundary non-governmental organization (NGO) between Grenada and St Vincent and the Grenadines. For the last eight years he has worked on the biodiversity conservation and sustainable integrated development of the Grenadine Islands to include the establishment of the Sandy/Oyster Bed Marine Protected Area in Carriacou. He has a master's degree in participatory forestry management and extension from University of Reading, United Kingdom and has over ten years of working experience as a Forestry Officer within the Government of Grenada, specializing in mangrove wetlands ecosystem, policy and institutional change. Martin has a personal interest in individual and organization changes and facilitates sessions in these areas..
Interest in the workshop	To get as much hands on experience and skills in constructing a P3DM in order to build the next P3DM in the Caribbean within St. Vincent and the Grenadines in the next six months.
Corporate website	www. susgren.com (under construction) / http://www.facebook.com/pages/SusGren-Grenadines-NGO/156754771045707

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Name	**Neila Bobb-Prescott**
Gender	Female
Position	Senior Technical Officer
Affiliation	Caribbean Natural Resources Institute (CANARI)
Work address	Building 7, Unit 8 Fernandes Industrial Centre, Eastern Main Road Laventille, Port of Spain Trinidad and Tobago
Mobile phone	+1 868 302 3739
Alternative phone	+1 868 789 9917
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Email address 2	neilalbobb@yahoo.com
Skype ID	neilab1
Professional background	Facilitating participatory processes for natural resource governance, including: policy development; strategic project and programme planning. Facilitating capacity building and training for government and civil society stakeholders in participatory natural resource management, organisational development, project management, and proposal development. Researching and analysing biodiversity management and sustainable development issues in the Caribbean. Relevant work experience as: Senior Technical Officer, Caribbean Natural Resources Institute (CANARI), Laventille, Trinidad, May (2009 – present); Director Tobago House of Assembly, Department of Natural Resources and the Environment, Scarborough, Tobago, (2007-2009); Environmental Officer II, Tobago House of Assembly, Department of Natural Resources and the Environment, Scarborough, Tobago (2005-2007); Tobago House of Assembly representative, Minerals Advisory Committee to formulate standardized mechanisms for the quarrying sector (2005-2007); Tobago House of Assembly representative, Trinidad and Tobago Biodiversity and Advisory Council, to formulate and operationalise the national Biodiversity Strategy and Action Plan 2004-2008. Education & key training: Master of Science in Environmental Management, University of London, 2003; Bachelor of Science in Biology & Environmental Science, University of the Wisconsin, 1996; Certificate B & C, NEBOSH-National Diploma in Occupational Health and Safety, 2009. Relevant Publications: (2004) Co-authored The Coral Reefs of Tobago: Status and Management , Proceedings of the Gulf and Caribbean Fisheries Institute [Proc. Gulf

	Caribb. Fish. Inst.]. no. 55, pp. 765-776; (1995) Co-authored County Distribution Maps of Iowa Butterflies and Skippers.
Interest in the workshop	My interest in attending is to gain experience in using participatory mapping, planning and communication to improve the response of people in the Caribbean region to the impacts of climate change.
Corporate website	www.canari.org

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Name	**Natalie Boodram**
Gender	Female
Position	Senior Programme Officer
Affiliation	Caribbean Environmental Health Institute
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Professional background	Natalie Boodram is an Ecologist specializing in River and Forest Ecology. Her Ph.D. research was on river systems and watersheds in Trinidad and her M.Phil. research was on dry forest ecosystems in Tobago. She is currently the Senior Programme Officer at the Caribbean Environmental Health Institute where she provides technical advice and assistance to CARICOM Member States in the areas of watershed, land and water resources management.
Interest in the workshop	My organisation CEHI works across the region in programme areas such as Water, Land and Coastal Resources Management. Our work in these programme areas recognizes Climate change as an underlying factor that must be addressed. We also strongly advocate stakeholder involvement and consultation within our various projects and programmes and believe that participatory three dimensional modelling (P3DM) would be an extremely useful tool to enhance our stakeholders consultation processes.
Corporate website	www.cehi.org.lc

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Name	**Terri-Ann Campbell**
Gender	Female
Position	GIS Mapping Officer
Affiliation	The National Forestry Agency
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Email address 1	terriann.campbell@gmail.com
Email address 2	tcampbell@forestry.gov.jm
Professional background	I am Terri-Ann Campbell a GIS professional actively in the field for the last 5 years. I have a passion for the Geographic sciences and data management and have such maintained a Bachelor of Arts in Geography and a Master of Science in Demography. My tenure of study along with my work experience continues to equip me with the knowledge and expertise to chart my way to becoming a GIS entrepreneur.
Interest in the workshop	Having worked in the field of GIS and data management, I fully understand the importance of comprehensive, accurate and complete data for informed decision making. The P3DM course will assist in the general objectives of the National Forestry Agency and allow for a more participatory and community driven sustainable management of our forest in a bid to combat the effects of climate change. It is hoped that the knowledge gathered from this train of the trainers workshop will better enable the agency to involve the local forest committees and other stakeholders as they asses and better manage the resources.
Corporate website	www.forestry.gov.jm

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Name	**Juliana Castaño Isaza**
Gender	Female
Position	Conservation Planner Eastern Caribbean
Affiliation	The Nature Conservancy
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Professional background	Practical and analytical experience working on climate change adaptation and mitigation and disaster risk reduction strategies for coastal areas in Latin America and the Caribbean. Strong background on payments for ecosystem services projects in the field, providing ecosystem services valuation. Extensive practice on policy making integrating social, economic and environmental issues.
Interest in the workshop	The Nature Conservancy Eastern Caribbean Program is currently implementing At the Water's Edge (AWE) Project, which aims to demonstrate that governments and communities of small island states can enhance their resilience to climate change by protecting, restoring and effectively managing their marine and coastal ecosystems and strengthening local capacity for adaptation. By visualizing the socio-economic and ecological vulnerability, people will be able to understand the potential impacts and the capacity to adapt to climate change events. The P3DM workshop will provide the specific knowledge and skills to communicate the vulnerability assessment to the local stakeholders, in order to develop Ecosystem-Based Adaptation (EBA) to Climate Change.
Corporate website	www.nature.org

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Name	**Celeste Chariandy**
Gender	Female
Position	Senior Technical Officer
Affiliation	Caribbean Natural Resources Institute (CANARI)
Work address	Building 7, Unit 8 Fernandes Industrial Centre, Eastern Main Road Laventille, Port of Spain Trinidad and Tobago
Alternative phone	+1 868 626 6062
Email address 1	celeste@canari.org
Professional background	I presently work at CANARI managing two Programmes: (1) Communication and (2) Climate Change and Disaster Risk Reduction. Prior to this, I worked in a state institution where I contributed to programmes in science popularization which included community outreach, hands-on science activities and evaluation of science popularization programmes.
Interest in the workshop	The workshop will enable my exposure to a tool that will facilitate a range of different stakeholders to understand climate change and contribute their personal experience of its current and potential impacts.
Corporate website	www.canari.org

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Name	**Katrina Collins**
Gender	Female
Position	President
Affiliation	Union Island Environmental Attackers
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Alternative phone	+1 784 526 7457
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Skype ID	alovehild
Professional background	As a strong mobilizer and communicator I have spare headed many campaigns and has a success record to rallying the natives and visitors of the Island in the campaigns. As the founder and president of the UIEA my greatest strength is to bring people together in one place to get the work done. I was able to start with my group turtle monitoring, birding watching, community patrols, litter rallies, environmental talks in schools and Radio programs. I wrote two environmental songs and one of them is called leaders live on that you can listen to on YouTube, another song by the name of she can't do it all alone (that's about mother earth). I work with and network with SCSCB, SusGren, GEF, CWSA/Solid Waste, Union Island Development Council, Union Island HIV/AIDS Awareness Committee, Ministry of the Environment, Forestry Division, etc.
Interest in the workshop	My reason for attending this workshop is to take my Island to the next level in what ever am about to learn. Bringing back the information to my community is a joy for me. I remember when I was doing a survey on climate change, some of the responses were crazy and I realize I have a great task ahead of me. So doing this would make it more interesting in getting out to the entire public.
Corporate website	environmentalattackers.org

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Name	**Darren Daly**
Gender	Male
Position	Environmental Officer
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Email address 1	ddaly8862@gmail.com
Professional background	I have worked with the Department of Natural Resources and the Environment for 1 year and a half in the capacity of an Environmental Officer.
Interest in the workshop	My interest in this workshop lies in viewing and actively participating in the process of data collection for creating a GIS map of Tobago. I am particularly intrigued about becoming more knowledgeable of any major coastal changes that may have occurred by interacting with the various stakeholders.

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Name	**Axelle Fidelin**
Gender	Female
Position	Project coordinator
Affiliation	Groupe d'Action Francophone pour l'Environnement (GAFE)
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Professional background	As a student, I was enrolled in the French-Caribbean Joint-Degree Master's Program launched in 2007 by the Bordeaux Institute of Political Studies in France, the University of West Indies in Jamaica and the University of the Antilles and Guyane in Martinique. Through this program's coursework, I was able to better understand the local specificities of Caribbean territories in terms of political system and human development issues. Spending a year in Jamaica allowed me to acquaint myself with the challenges that Caribbean countries are facing as small states vulnerable to natural disasters. Furthermore, my various training courses and internships strengthened my knowledge in design-management projects and capacity-building. Thanks to my professional experience in the Caribbean, I was able to improve my knowledge in a multitude of fields such as international cooperation and institutional support. I also worked on a cooperation project established between Haiti and Martinique which aimed to create an association of local authorities in the area of Palmes, Haiti. Additionally, I carried out a study on the process of decentralization in Senegal. This study, for the local authority was a significant tool in fostering grassroots stakeholders' participation.
Interest in the workshop	Through my internship at the General Council of Martinique, I was able to better understand how the Geographical Information System was a significant tool in addressing natural disasters that Caribbean islands are facing. Being involved in training about the usage of a participatory 3D model will enhance my knowledge on participatory mapping in the domain of climate change adaptation. The P3DM should be well known by local communities in Haiti so they can be able to better address the natural disasters' impacts on the ground. Given the vulnerability of local communities, sharing my experience in P3DM will be in my opinion, a good step to enhance economic and social resilience. As the CANARI has emphasized, in the Caribbean and above all in Haiti, we need to take joint

	action to build resilience to climate change and extreme climatic events. Haitian stakeholders should be involved in the process whether it is from the political, social and economical areas. The P3DM training will be a good step to include local and traditional knowledge and values into decision making about natural disasters' impacts and climate change adaptation.
Corporate website	http://www.gafe-haiti.org/

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Name	**Patricia Franco**
Gender	Female
Position	Administrative Officer
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Email address 1	info@canari.org
Professional background	Patricia Franco is one of two Administrative officers at the CANARI. Patricia is the "face" of CANARI. Her friendly, welcoming voice often greets you when you reach us by phone and her warming smile and charming personality welcomes you when you come to our office. Patricia participated in an Event Management course and has over 30 years experience in reception and office administration. Patricia is compassionate and hospitable and is a team player. She, as a member of the Towers of Strength Community, spends her leisure time engaged in outreaches to the less fortunate. She is also a member of the Association of Female Executives of Trinidad & Tobago (AFETT) which mentors the children of secondary schools on Saturdays to have a vision. Patricia occasionally finds the time to journey to the village of her birth, Mayaro, to enjoy the sun, beach and sand with family and friends.
Interest in the workshop	Attending as the Logistics person
Corporate website	www.canari.org

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Name	**Melanie Harris**
Gender	Female
Position	Graduate research assistant
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Skype ID	melanie.harris13
Professional background	In addition to facilitating GIS and Remote Sensing training within the Caribbean and lecturing at the university level, I have worked on a variety of GIS projects ranging from hazard and risk assessments to Web-GIS based information systems.
Interest in the workshop	Having had some experience in facilitating participatory mapping for hazard mapping using 2D paper maps I was interested in learning how adding the 3rd dimension could enhance the mapping experience. I am interested in finding how local knowledge can assist in determining climate change adaptation strategies.

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Name	**Adam Jehu**
Gender	Male
Position	Research Officer - Remote Sensing Section, Geomatics Unit
Affiliation	Institute of Marine Affairs
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Email address 1	ajehu@ima.gov.tt
Professional background	Adam Jehu attained a Master of Science degree in Geoinformatics from the University of the West Indies. He also graduated with a Bachelor of Science degree with majors in Environmental and Natural Resources Management and Zoology from the same institution. Adam has worked at the Department of Geomatics Engineering and Land Management, U.W.I. as a teaching assistant – specializing in satellite remote sensing, photogrammetry and the application of geostatistical analyses and modelling. His past research areas encompass both land and marine resources with particular emphasis on data extraction from remotely sensed satellite imagery. Currently, Adam holds the post of Research Officer - Remote Sensing Section, Geomatics Unit - with a focus on shoreline vulnerability and climate change impacts on the marine and coastal environment. His service also includes participation on the Trinidad and Tobago National Physical Development Plan, Integrated Coastal Zone Management Workgroup and the National Hydrocarbon and Chemical Spill Contingency Plan.
Interest in the workshop	The primary focus of attending this workshop is to be introduced to new technologies and methodological approaches to climate change adaptation with specific attention to the application of mapping and planning in the modelling of impacts on the coastal and marine environment. Given my current professional direction and capacity to assist in the development of national policy, information attained from your workshop will greatly enhance my capability to inform government through sound scientific research.
Corporate website	http://www.ima.gov.tt

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Name	**Orisha Joseph**
Gender	Female
Position	Programme Administration Officer
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Skype ID	orisha.joseph
Professional background	Presently employed with Sustainable Grenadines Incorporated (SusGrenInc.) as the Programme Administration Officer (started in May of this year). Previously employed as a Broadcast Journalist at the Grenada Broadcasting Network for over three years. Also worked at Icon Distributors (Grenada) Limited for more than four years and held the positions of Accounts Receivable Clerk, Inventory Clerk, Administrative Assistant and Assistant Supervisor.
Interest in the workshop	I am particularly interested in attending this workshop as I believe it ties in to my job and our main objective which is to build local community capacity. Being part of this workshop I hope would enable me to transfer what I would have learned and experience back to my community to share this information. Especially with participatory mapping because what we find at times is that there are a lot of local knowledge but sometimes very difficult to incorporate that with scientific data or other information. I also believe this empowers communities to decide what is best for them and I believe acquiring that training to pass would be essential. With this we can plan more effectively and communicate what we want which would assist in this whole process of climate change adaptation.
Corporate website	www.susgren.com (under construction)

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Name	**Nicole Leotaud**
Gender	Female
Position	Executive Director
Affiliation	Caribbean Natural Resources Institute (CANARI)
Work address	Building 7, Unit 8 Fernandes Industrial Centre, Eastern Main Road Laventille, Port of Spain Trinidad and Tobago
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Email address 1	nicole@canari.org
Skype ID	nleotaud
Professional background	Nicole has twenty years of experience working in natural resource management across the Caribbean. She is a conservation biologist by training and a believer in people by nature. She is a skilled facilitator, and specialises in using creative techniques to engage all types of stakeholders of all literacy levels in a fun experience where they feel empowered to share their ideas. She has successfully facilitated many multi-stakeholder processes in CANARI, including managing conflict between stakeholders with very different interests and perspectives. She has trained stakeholders from across the Caribbean in skills for facilitating participatory processes and managing civil society organisations. She has successfully written proposals for and managed several large multi-country projects in the Caribbean. Most recently she is building her skills and experience in using participatory video as a facilitation tool and in innovative approaches to participatory monitoring and evaluation.
Interest in the workshop	I have extensive experience facilitating participatory natural resource management processes in the Caribbean islands and would like to add P3DM as a new tool that I can use.
Corporate website	www.canari.org

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Name	**Damika Marshall**
Gender	Female
Position	Environmental Officer
Affiliation	Department of Natural Resources and the Environment, Tobago House of Assembly
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Skype ID	damika.marshall
Professional background	My journey within the field of environment began at the University of the West Indies St. Augustine as an undergraduate student in September 2005. Three excruciating, but quite rewarding years later I graduated with a B.Sc. in Environmental and Natural Resource Management, and Geography (Double Major). It was during my first two years of school that I had the honour of internship at the Department of Natural Resources and the Environment. This gave me a first class seat to observe the operations of a government organization, and whether it'll be worth my while to work for the state, after years of insomnia and heart palpitations from this wonderful experience known as university. Some mosquito bites later (wildlife data collection), mixed with a darker shade of skin (beach profiling, water quality testing) I decided that this is indeed a great place to start building one's career. Where research efforts and campaigns are not for selfish financial gains, good publicity, and avoidance of possible law suits, but only for the people, and your only gain is the satisfaction of the public that you are managing their space effectively. Upon graduation in 2008 I began training within the Department of Natural Resources and the Environment. I have continued my journey within the organization to date as an environmental officer, which includes: ensuring compliance of developers/individuals with the laws under the Environmental Management Act 2000- Noise Pollution Control Rules, Water Pollution Rules and Certificate of Environmental Clearance Rules, development/conducting of public educational campaigns/activities, investigation and management of environmentally related complaints, carrying out of research projects (i.e. water quality). Many benefits were along the way, which allowed for networking and partnerships with NGOs and other institutions, training and awareness on matters such as health

	and safety, waste management, operation of relevant equipments, public communication skills, to name a few all of which have built me professionally. I am for today a life book as relates to Tobago's development, its sustainable status, its environment, and future implications for it, which has many more pages to be written, as the book is still in its initial phase. I hope to be one that pens the success of Tobago, and by extension our nation as a positive, and futuristic environmental model.
Interest in the workshop	Climate change is an issue pertinent to island states, especially small island developing states, as they are most likely to be affected by impacts associated with this phenomenon. It is therefore imperative that the stakeholders involved pay particular attention to impacts, proactive measures to mitigate against same, and practices in adaptation to those impacts which may be irreversible. This workshop is an opportunity for myself, as a representative of the state whose vested interest is the people, to gain knowledge that will be beneficial in implementing initiatives geared towards a sustainable economic and environmental future, as the model will give further insight into understanding the layout and physical attributes of the island, which is crucial for spatial planning, decision making in implementing policies and programs that affect the geography (specifically humans and our interaction with the environment) of Tobago.

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Participatory Three-Dimensional Modelling (P3DM) of the Island of Tobago

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Name	**Wellington Martinez Inoa**
Gender	Male
Position	Executive Director
Affiliation	Coordinadora de Animacion Socio Cultural, CASCO/ Member of Consorcio Ambiental Dominicano
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Professional background	Degree in Psychologist and Business Administration, post degree in Civil Society and Public Policy, Masters in Political Studies. He has developed and implemented several projects for young people in the areas of health, environment and political participation. He has consulted for the World Bank, USAID and the Dominican government for youth projects. He has conducted research on health, environment, political participation, etc. Currently driving the Youth Network to Defend Scientific Reserve Quita Espuela in Dominican Republic.
Interest in the workshop	This training is an opportunity to strengthen the work of organizations that are part of "Consorcio Ambiental Dominicano, CAD" and to develop better mechanisms to conserve and restore natural resources and have better tools to develop a more effective political action.
Personal blog	cartasdeunrebeldeconcausa.blogspot.com

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Name	**Camille McEachnie**
Gender	Female
Position	Consultant
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Professional background	I am presently a consultant, writer and television producer at Camcha Communications. We have produced entire media campaigns (television, radio and newspaper) for Tobago Emergency Management Agency and Program for Adolescent Mothers. We also supervised the production of 'TEMA on the GO' – a magazine for the Tobago House of Assembly-Disaster Management Unit. I also contribute articles to 'Contact'- the Trinidad and Tobago Chamber of Industry and Commerce magazine. Prior to 2008 I worked at the Office of the Chief Secretary – Information Department as a television producer and at Tobago Channel 5 as Head of News and Host of a social program. I am the holder of a Master's Degree in Mass Communications from the University of Leicester.
Interest in the workshop	I understand the importance of disseminating information on the work being done in this type of exercise. It impacts the lives of all the people in the region. Also, the number of people who actually contribute to the exercise are taking a historical step and their efforts must be recorded and applauded. As Tobago is the kick-off point for the Caribbean, the workshop takes on a whole different dimension.

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Name	**Casandra Mitchell**
Gender	Female
Position	Founder/Executive Director
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Professional background	My vision for all young people is for them to have ambition for themselves, to be confident individuals, effective contributors, successful learners and responsible citizens; and to be nurtured, safe, active, healthy, achieving, being respected and responsible. I believe that youth work has a significant role to play in realising this vision for young people. Though still a youth myself I have been graced with opportunities to interact with my peers as a Teacher, Peer Counsellor and most noted as the Founder/Executive Director of Caribbean Association for Youth Development. Giving up my spare time to give back to communities as Chairperson of St. John Ambulance Grenada's Steering Committee, a Youth Parliamentarian and a Domestic Violence Counsellor.
Interest in the workshop	Addressing and adjusting to the challenge of climate change is a defining feature of today's youth. It is therefore critical that young people educate themselves-ourselves-and become more actively involved in combating this threat. My involvement with young people as the Executive Director/Founder of a youth-focused organization makes me an asset to the program because I am ideally placed to transfer knowledge learnt to others around me. Our Organization by its nature and mission is an ideal institutional framework needed in advocating for the involvement of youth in climate change forums and activities. This initiative would provide me with the ideal opportunity to assist my organization and to expand my skills in forging innovative ways to get young persons in Grenada actively involved in climate change adaptation activities.

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Participatory Three-Dimensional Modelling (P3DM) of the Island of Tobago

29 September – 11 October, 2012 Tobago

Name	**Kenn Mondiai**
Gender	Male
Position	Executive Director
Affiliation	Partners with Melanesians Inc. (PWM)
Work address	1st floor, Suite 1 Monian Hous Nita Street Boroko, Papua New Guinea
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Alternative phone	+675 323 6344
Email address 1	kmondiai@pwmpng.org.pg
Email address 2	chiefmondiai@gmail.com
Skype ID	kennmondiai1
Professional background	Mr. Kenn Norae Mondiai is a Forestry Officer by training and is currently the Executive Director of Partners With Melanesians Inc. (PwM), a Papua New Guinean national NGO focused on conservation and rural/community development. He is responsible for managing 3 large proposed conservation areas (Totalling 770,000 Hectares) in PNG working with many rural communities implementing conservation, literacy, livelihood and capacity building programmes with the support of the Norwegian Rainforest Foundation (RFN) since 1996. He is one of the founder and former Chair of the Board of the PNG Ecoforestry Forum Inc. from 2002 till 2012. The Forum is the umbrella body for all NGOs/CBOs in Papua New Guinea working on conservation, human rights, sustainable ecoforestry and more recently Climate Change and REDD programmes and advocating and lobbying at National and International level with Governments and international agencies for immediate reforms in the public and private sector. He has worked with other international NGOs and agencies like TNC, WWF, Greenpeace, AUSAID, SPC, and UNDP on Climate Resilience Projects to help rural coastal communities in the Pacific (Solomon's Islands, Manus in PNG). Kenn was also a participants in the P3DM Training conducted in the Pacific in Fiji in 2005 by CTA and from that training has taken on Participatory 3 Dimensional Models (P3DM) as a tool to work with rural communities for natural resource management planning and also local actions in the addressing issues of sea-level raise for adaptation and mitigation of climate changes issues. Kenn has facilitated and trained local communities in the development of models in the Pacific on Managalas plateau and Manus Island in PNG and Mboemboe in Solomon Islands. Mr Mondiai began his life as a forestry officer in the private sector

	as a forestry resource and planning officer conducting forestry inventories and resources assessment and planning surveys from 1989 – 1995. He has also worked with donor funded aid projects with the EU, primarily in conservation, sustainable forestry and livelihood community development programs and later with both local and international NGOs; as a former staff of WWF South Pacific in Gulf, Central Province and Sepik provinces of PNG on the Eaglewood and sustainable forestry projects. Mr Mondiai holds a Bachelor of Science degree in Forestry from the Papua New Guinea University of Technology (UoT), and a Postgraduate Certificate in People, Forestry and Participation in Rural development from the Centre for Rural Development and Training (CRDT) University of Wolverhampton in the United Kingdom.
Interest in the workshop	I am eager to share my experience in participatory mapping and contribute to this event as a trainer and facilitator.

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Participatory Three-Dimensional Modelling (P3DM) of the Island of Tobago

29 September – 11 October, 2012 Tobago

Name	**Ingrid Parchment**
Gender	Female
Position	Executive Director
Affiliation	Caribbean Coastal Area Management Foundation
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Alternative phone	+1 876 986 3344
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Email address 2	ccamfngo@gmail.com
Skype ID	ingridkpw
Professional background	Studied Economics & Management at UWI, Mona. Executive Director of Caribbean Coastal Area Management (C-CAM) Foundation since 2008. I worked in the area of community development and finance at C-CAM prior to becoming Executive Director. C-CAM is an environmental & development NGO working with community, private sector & Government stakeholders to conserve the resources & improve quality of life within the Portland Bight Protected Area (PBPA) in Jamaica. I also do project writing & project management.
Interest in the workshop	The PBPA is feeling the impacts of Climate Change & we have been working with stakeholders to look at adaptation methodologies. One of the tools that is useful planning tools is community mapping and this knowledge will help me to be able to improve on what I know as well as learn more & share with others.
Corporate website	ccam.org.jm

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Participatory Three-Dimensional Modelling (P3DM) of the Island of Tobago

29 September – 11 October, 2012 Tobago

Name	**Shawnaly Pascal**
Gender	Female
Position	Community Local Representative Leader
Affiliation	Woburn
Work address	The Carenage St. George's Grenada
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Email address 1	Shawnaly25@hotmail.com
Email address 2	Shawnaly25@yahoo.com
Skype ID	shawnaly.pascal
Professional background	I graduated from Universidad Autonoma del Estado de Morelos(Mexico). I possess a Bachelor's Degree in Economics. I have work experience with the Government in the Statistical Department, in the areas of Balance of Payments, GNP, Consumer Price Index among others. As part of my background I have done various projects and surveys on Adaptive Management, Climate Change, Good Governance Forum and Communication.
Interest in the workshop	I express interest in this workshop since I enjoy working within the community, planning activities and interacting with the users of the new monitoring site WCCBMPA (Woburn Clarke's Court Bay Marine Protected Area). I have being actively involved in surveys within the community for CERMES,TNC and local fisheries I have attended workshops on Adaptive Management, Communication, Good Governance, Climate Change. As a result, I express great interest in that field of work.

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Participatory Three-Dimensional Modelling (P3DM) of the Island of Tobago

29 September – 11 October, 2012 Tobago

Name	**Adanna Piggott**
Gender	Female
Position	Agricultural Scientist (Consultant)
Affiliation	CARDI, Tobago
Work address	CARDI Tobago Blenheim Research Station Mount St. George Trinidad & Tobago
Mobile phone	+1 868 770 9377
Email address 1	apiggott@cardi.org
Email address 2	anpiggott@gmail.com
Skype ID	adanna.piggott
Professional background	I completed a Bachelor of Science degree in General Agriculture and a Masters of Science degree in Crop Protection, both at the University of the West Indies, St. Augustine Campus. My work experience includes Extension, Produce Inspection and Teaching. I currently manage CARDI's activities in Tobago.
Interest in the workshop	The access to traditional knowledge in a given geographical area will enable me to have a better understanding of why some agricultural activities which worked in the past may no longer work (due to changing weather patterns), and allow me to contribute to a feasible solution.
Corporate website	www.cardi.org

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Participatory Three-Dimensional Modelling (P3DM) of the Island of Tobago

29 September – 11 October, 2012 Tobago

Name	**Giacomo Rambaldi**
Gender	Male
Position	Sr. Programme Coordinator
Affiliation	CTA
Work address	P.O. Box 380 6700 AJ Wageningen, The Netherlands
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Email address 1	rambaldi@cta.int
Skype ID	giacomo4411
Professional background	Giacomo is Sr. Programme Coordinator at the Technical Centre for Agricultural and Rural Cooperation (CTA) in the Netherlands. He has 30 years professional experience in Africa, Latin America, South-East Asia, the Pacific and Caribbean where he worked for a number of international organizations including FAO, Italian Aid to Development, the ASEAN Centre for Biodiversity Conservation and the Asian Development Bank. He holds a degree in agricultural sciences from the State University of Milan, and is currently conducting a PhD Communication Science at the WUR in the Netherlands. Giacomo holds Fellow status in the US-based Society for Applied Anthropology (SfAA). His first involvement in participatory mapping dates back to the 80's. He developed and promoted Participatory 3D Modelling (P3DM), a community-based mapping method fully integrated with GIS, now widely used around the world. In yr 2000 he launched Participatory Avenues http://www.iapad.org, a web site dedicated to sharing knowledge on participatory mapping. Giacomo is the author of a number of publications on these subjects, developer of http://www.ppgis.net and administrator of the [ppgis] DGroups.
Interest in the workshop	I am representing CTA on the project. I am interested in meeting like-minded professionals and share experiences. The event represents a milestone for the introduction of participatory 3D modelling in the Caribbean Region and I look forward to the many initiatives which will follow.
Corporate website	http://www.cta.int
Personal web site	http://www.iapad.org
Personal blog	http://participatorygis.blogspot.com

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Participatory Three-Dimensional Modelling (P3DM) of the Island of Tobago

29 September – 11 October, 2012 Tobago

Name	**Candice Ramkissoon**
Gender	Female
Position	GIS Officer
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Skype ID	candice.ramkissoon1
Professional background	Candice Ramkissoon is currently the GIS officer at the Office of Disaster Preparedness and Management (ODPM) in Trinidad and Tobago. She is responsible for provision of GIS services as well as support for Hazard, Vulnerability and Risk Assessment services to the national disaster office. Major activities include hazard/disaster related data collection, spatial analyses and mapping in support of activities related to Comprehensive Disaster Management (CDM), GIS support resource for preparedness and mitigation planning and public information and outreach initiatives, Research, identification and application of relevant tools and solutions towards mainstreaming GIS technology within CDM. Candice holds a MSc. in Geoinformatics (distinction) (2011) from the University of the West Indies (UWI), St Augustine. Her thesis research focused on developing a Mobile GIS-Based Solution for Evacuation Planning and Management in Trinidad. She also holds a BSc. in Environmental & Natural Resource Management and Entrepreneurship (first class honours)(2006) from the UWI. Candice has completed several courses and received certification under ESRI Virtual Campus and the FEMA Independent Study Programme. Professional experience includes GIS application in areas of Disaster Risk Reduction and Management and Environmental Management; work in Health Safety & Environment field at national petroleum company - involved in core HSE projects including Environmental Impact Assessments, development of Community Awareness & Emergency Response (C.A.E.R.) programmes for fenceline communities and HSE education drives; demonstrating experience at the University of the West Indies, St Augustine and lecturing at secondary school level and previous experience in other industry and environmental research institutions. Core interests include GIS for Disaster Risk Reduction,

	Participatory GIS for community resilience building, promoting awareness of environment-disaster link and ecosystem approach to Disaster Risk Reduction and management.
Interest in the workshop	I believe Participatory mapping is an excellent tool for capturing and incorporating traditional/indigenous knowledge especially as it relates to climate change issues and therefore it provides an opportunity for community resilience building via the awareness and sense of ownership it creates within communities and the information it provides from the ground level for policy makers and the government. This bottom up approach is significant in my area of work i.e. disaster risk reduction and management to ensure buy in of communities.
Corporate website	www.odpm.gov.tt

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Participatory Three-Dimensional Modelling (P3DM) of the Island of Tobago

29 September – 11 October, 2012 Tobago

Name	**Bheshem Ramlal**
Gender	Male
Position	Head of Department and Senior Lecturer
Affiliation	The University of the West Indies
Work address	Department of Geomatics Engineering and Land Management, UWI St. Augustine, Trinidad and Tobago
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Alternative phone	+1 868 662 2002 ext 82108
Email address 1	bheshem.ramlal@sta.uwi.edu
Professional background	I have been attached to the University of the West Indies for the past 24 years as a lecturer in Geomatics Engineering. In addition, I have worked as a land surveyor, cartographer, and GIS Consultant for the past 20 years. I completed a BSc. Land Surveying at the UWI, a MSc in Geoinformatics at the ITC, Netherlands and a PH.D. in Spatial Information Engineering at the University of Maine, USA.

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Participatory Three-Dimensional Modelling (P3DM) of the Island of Tobago

29 September – 11 October, 2012 Tobago

Name	**Lamon Rutten**
Gender	Male
Position	Manager, Policies, Markets and ICT
Affiliation	CTA
Work address	Agro Business Park 2 6708 PW Wageningen The Netherlands
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Email address 1	rutten@cta.int
Email address 2	lamonrutten@gmail.com
Professional background	Lamon Rutten is Programme Manager, Policies, Markets & ICT at CTA. Prior to joining CTA in July 2012, he was the Managing Director and CEO of the Multi Commodity Exchange of India (MCX) – the world's second largest commodity exchange, with trading volume of 2.9 trillion US$ in 2011. From 1990 to 2006 (except for a year with the World Bank), he was with the United Nations Conference on Trade and Development, responsible for the work on commodity marketing, risk management, finance and information. He has also been Member of the Board or Advisory Board of organizations in Africa, Asia, Europe and North America; taught for five years a course in commodity marketing and risk management at the Institute of Banking and Financial Management of the HEC Lausanne; and in 2010, was elected among 'The World's Most Influential People in International Financial Centres'.
Interest in the workshop	Learning on the effectiveness of and scope for the method.
Corporate website	www.cta.int

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Participatory Three-Dimensional Modelling (P3DM) of the Island of Tobago

29 September – 11 October, 2012 Tobago

Name	**Keisha Sandy**
Gender	Female
Position	Programme Manager Coastal and Marine Livelihoods and Governance; Programme Manager Rural Livelihoods
Affiliation	Caribbean Natural Resources Institute (CANARI)
Work address	Building 7, Unit 8 Fernandes Industrial Centre, Eastern Main Road Laventille, Port of Spain Trinidad and Tobago
Alternative phone	+1 868 626 6062
Email address 1	keisha@canari.org
Skype ID	keisha.sandy2
Professional background	Keisha Sandy is a native Tobagonian and currently serves as a Programme Manager for the Coastal and Marine Livelihoods Programme in the Caribbean Natural Resources Institute. She previously worked for eight years in the Tobago House of Assembly assisting in sustainable development of the marine and coastal environment and is an avid swimmer and diver. Keisha Sandy is also responsible for the Rural Livelihoods Programme. Since joining CANARI in 2010, she has worked with rural communities in Trinidad and Tobago to help them to identify and develop small businesses based on the sustainable use of natural resources. She has a MSc. in Natural Resource Management specialising in climate change.
Interest in the workshop	My interest is in understanding participatory mapping as tool for involving stakeholders in policy decisions.
Corporate website	www.canari.org

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Participatory Three-Dimensional Modelling (P3DM) of the Island of Tobago

29 September – 11 October, 2012 Tobago

Name	**Kail Zingapan**
Gender	Female
Position	Research Associate
Affiliation	PAFID
Work address	71 Malakas Street Quezon City 1100 Philippines
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Email address 2	pafid@skybroadband.com.ph
Professional background	I'm a research associate and GIS specialist for an NGO in the Philippines which works with indigenous people to secure their rights to their territories. I trained as an applied physicist so I learned GIS and participatory mapping while working with communities to document their claims for legal title over their territories. I spent the better part of my 20's surveying the far reaches of mountain territories and now have the knees to prove it. My start in development work was as a volunteer and then executive director of an NGO focusing on biodiversity conservation in a sacred mountain. This year I've been engaged with training encounters for other institutions, planners, and young people to make their own maps and be excited about GIS.
Interest in the workshop	I work with indigenous communities who are engaged with preparing land use and conservation plans for their territories. Some of these communities are managing marine territories as well and face serious challenges to livelihood, protecting their environment, and the sustainability of their natural resources. I'm always very interested to learn how other communities approach these problems. I find it interesting that varied groups use participatory mapping techniques in surprising ways.

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Appendix 3- Listing of observers

#	Name	Organisation	Address	Telephone numbers	e-mail contact
1	Elaine Francois-Phillip	Brasso Seco Paria Tourism Action Committee	Brasso Seco Paria, Trinidad	(868) 715 5953	junglequeenxena@live.com
2	Dennis Sammy	Nature Seekers	Toco Main Road, Matura, Trinidad	(868) 727 3933	dennissammy@natureseekers.org
3	Amit Seeram	Student of UWI	Cunupia, Trinidad	(868) 727 8984	amitseeram@hotmail.com
4	Kathleen Belcon	Forestry Division	Long circular, Trinidad	(868) 460 0023	
5	Job Sterling	UWI open campus	#174 Coral Gardens, Buccoo, Tobago	(868) 715 7747	job.sterling@gmail.com
6	Sarah Hosein	UWI			
7	Glen Joseph	Caura community		(868) 375 0230	
8	Anne Marie James	Caura community		(868) 708 8345	
9	Maria Ramcharan	Caura community		(868) 306 9268	
10	Yolande Yuksee	Caura community		(868) 361 4288	
11	Donna Sylvester	Caura community		(868) 306 7483	
12	Melanie Harris	UWI			
13	Dr. Scott	Tobago Land Owners Association		(868) 767 4393	

Appendix 4 - Training of Trainers agenda and implementation plan

Training of Trainers on the Facilitation of Participatory three-dimensional modeling (P3DM)
Blenheim Sheep Multiplication and Research Project,
Windward Road, Mt. St. George, Tobago
Saturday 29th September to Friday 12th October, 2012

OBJECTIVES

The **workshop objectives** are to:

- Explain key concepts in participatory approaches;
- Apply key tools in facilitating participatory three-dimensional modelling and participatory video;
- Demonstrate effective facilitation techniques; and
- Identify key issues in natural resource management which can be addressed through participatory three-dimensional modelling and participatory video in the Caribbean.

By the end of the workshop the trainees will be able to:

- explain key concepts in participatory natural resource management approaches;
- use effective facilitation techniques to facilitate a P3DM process through:
    - explaining the steps involved in a P3DM process;
    - discussing and addressing ethical issues surrounding stakeholder participation;
    - co-facilitating sessions in a P3DM process;
    - demonstrating use of facilitation tools to engage diverse audiences;
- use participatory video as a tool to conduct a participatory evaluation;
- identify opportunities to use P3DM as a tool to facilitate stakeholder participation in natural resource management.
- describe how P3DM can be used to document, geo-reference and visualise local knowledge and how Geographic Information Systems (GIS) can add authority to it in an open, hands-on and accessible way; and
- plan the organisation of a P3DM exercise in the context of climate change adaptation or for other purposes.

DRAFT AGENDA

Saturday 29th September, 2012

8:00 – 9:00	Welcome, introductions and expectations	Neila
9:00 – 10:00	Objectives and overview of workshop	Neila

	Overview of the project Assignment of roles Establishing ground rules	
10:00 – 10:30	Introduction to participatory approaches in natural resource management • What is participation • What are the benefits and challenges	Neila
10:30 - 11:00	Break	
11:00 – 12:30	Introduction to Participatory GIS (inclusive of an overview on phases in implementation and video) PGIS development in the Philippines PGIS development in Papua New Guinea	**Bheshem**/ Ken/Kail
12:30 – 1:30	Lunch	
1:30 – 4:00	Phase 1 - Preparatory Phase: Planning a Participatory P3DM process • Identification of the project area, problem analysis, stakeholder identification and analysis, participation strategy and role of participants, identification of resource persons and developing a project plan.	Neila
4:00 – 4:15	Wrap up and close	Neila

Sunday 30th September, 2012

8:00 – 8:30	Review of day 1	Rapporteur
8:30 – 9:30	Phase 1 -Preparatory Phase • Sourcing of data and preparation of the base map • Choosing the mapping scales (vertical and horizontal) • Procurement of supplies and services	**Bheshem (Caribbean context)**/ Ken/Kail (insight from their experiences)
9:30 – 10:30	Phase 1 -Preparatory Phase • Mobilisation, Outreach (inclusive of media coverage) • Logistics	Neila/ Pat
10:30 - 11:00	Break	
11:00 – 11:30	Phase 1 -Preparatory Phase • Preparation of the draft legend	**Ken, Kail,** Bheshem
11:30 12:30	Phase 1 -Preparatory Phase: Planning facilitation • Qualities of a good facilitator • Identifying facilitation tools and techniques	Neila
12:30 – 1:30	Lunch	
1:30 – 4:15	Phase II - Community Mapping Phase	Neila

	• Tools and techniques to facilitate participation during mapping (introductions and ice breakers, assessing expectations using the democracy wall, asking the right questions, negotiating conflict, dealing with challenging participants, evaluation techniques) • Practical ethics of PGIS practitioners, facilitators, technology intermediaries and researchers - Localisation, Participation and Communication: an Introduction to Good PGIS Practice (movie 27. min)	
4:15 – 4:30	Wrap up and close	Neila

Monday 1st October 2012

8:00 – 8:30	Review of day 3	Rapporteur
8:30 – 9:00	Phase II - Community Mapping Phase • Assembling the blank model	**Ken** (Kail)
9:00 – 9:30	Allocation of participants into teams to observe and evaluate model building process	Neila
9:30 – 10:30	Viewing of model construction by students	Trainees (Neila, Ken, Kail)
10:30 – 11:00	Break	
11:00 – 12:30	Presentation of challenges observed Analysis of lessons and recommendations	Neila
12:30 – 1:30	Lunch	
1:30 – 4:00	Phase II - Community Mapping Phase • Drafting and fine-tuning the map legend • Extracting data using digital photography • Manipulation of data • Transposing cognitive maps • Transferring data from and to the 3D model • Extracting data using digital photography • Closing ceremony and handing over ceremony • Manipulation of data	**Kail,** Neila
4:00 – 4:15	Wrap up and close	Neila

Tuesday 2nd October 2012

10:30 – 11:00	Review of day 4	Rapporteur
11:00 – 11:30	Introduction to Monitoring and Evaluation	Nicole
11:30 – 12:30	Identifying results: outputs, outcomes and impacts	Nicole
12:30 – 1:30	Lunch	
1:30 – 3:00	Measuring results	Nicole
3:00 – 4:00	Introduction to using participatory video as a tool for	Nicole

	monitoring and evaluation	
4:00 – 5:15	Doing a participatory video to evaluate the experiences and outcomes of building the three-dimensional model: • Drafting the storyboard	Nicole
5:15 – 5:30	Wrap up and close	Nicole

Wednesday 3rd October 2012

8:00 – 8:30	Review of day 4	Rapporteur
8:30 – 10:30	Practicing using the cameras: Filming model construction	Desiree
10:30 – 11:00	Break	
11:00 – 12:30	Planning to facilitate: • Allocation of participants to teams – 4 teams to facilitate and 1 team to do PV each day • Introduction to session planning for facilitation	Neila
12:30 – 1:30	Lunch	
1:30 – 4:00	Team planning of facilitation	Neila
4:00 – 4:15	Wrap up and close	Neila

Thursday 4th – Wednesday 10th October 2012

8:00 am – 4:00 pm	Co-facilitate 3D model	Trainees (Neila / Celeste / Anna – see above)
4:00 – 5:00	Viewing PV footage	Neila
5:00 – 6:00	Debrief of day and adjustments to facilitation plan	(Neila / Celeste / Anna – see above) UWI Kail or Ken (to facilitate model)

Thursday 11th October 2012

8:00 – 9:00	Review of model building	Rapporteur
8:30 – 12:30	Data capturing and digitisation	**Bheshem** (Kail), Giacomo (capturing using camera)
	Analysis on the building of the model by the community Evaluation by the participants	**Nicole/** Neila
12:30 – 1:30	Lunch	

1:30 – 4:00	Final viewing and editing PV footage	Nicole, Desiree
3:00 – 4:00	Transfer of model in location for handing over ceremony	
4:00 – 5:00	Evaluation and close of training of trainers	Nicole, Neila

Friday 12th October 2012

9:00	Handover ceremony	Neila (Nicole)

Implementation plan

Date			Model building	Facilitator	Students	Tobagonian knowledge holders	Training of Trainers	Facilitator	Expected outcomes	PV Trainees	Notes
Tuesday	25-Sep-12	AM	Introduction and planning workshop: introduce concept of PGIS, project objectives, prepare the draft legend.	Neila + Bheshem	Schools / students representatives attend the workshop	Representatives of communities, government agencies, NGOs attend the workshop			All stakeholders are ready to mobilise and are aware of schedule and logistical arrangements Draft legend prepared Materials and equipment on site		Kail will be there to provide support.
		PM	as above	Neila + Bheshem	as above	as above					Arrival of Ken
Thursday	27-Sep-12	AM	Meeting CANARI, UWI and trainers (Kenn and Kail) to check on preparations and fine-tune follow-up, assignment of roles, etc.	Neila					Detailed plan of action Individual responsibilities allocated and agreed upon Available materials and equipment checked		
Friday AM	28-Sep-12	AM	Introduction of students to the task of model building		Attend orientation	Bhesham, Ken, Kalli					
		PM	Students start the construction of the blank model		Construct blank model	Bhesham, Ken, Kalli (Neila observe)					
Saturday	29-Sep-12	AM	Construction of blank model	Bhesham + Ken/Kalli	Construct blank model		Introduction to PNRM, PGIS, Phase 1: Preparation	Neila + Ken/Kalli			
		PM		Bhesham + Ken/Kalli	Construct blank model		cont'd	Neila + Ken/Kalli			
Sunday	30-Sep-12	AM	Introduction of trainees to P3DM process including legend making/construction of blank model		Construct blank model		Introduction to Phase 1: Preparation (cont'd), Phase 2: Community mapping	Neila + Ken/Kalli	After the completion of the workshop, trainees will be able to: • describe how P3DM can be used to document, geo-reference and visualise local knowledge and how Geographic Information Systems (GIS) can add authority to it in an open, hands-on and accessible way; and • plan the organisation of a P3DM exercise in the context of climate change adaptation or for other purposes; • facilitate a process in which informants visualise their spatial knowledge on a scaled, physical three-dimensional model; • organise multidisciplinary facilitation of the process; • list priority actions and critical steps in the facilitation process.		
		PM	as above		Construct blank model		cont'd				

Monday	01-Oct-12	AM	Construction of blank model		May assist		Introduction to Phase 2: Community mapping		Regular feedback from informants elicited Process analysed by trainees Adjustment to process done by facilitators based on participants' feedback		To provide a medium for participants to express themselves in a free, focused and concise manner; to generate a written, shared pool of reflections which can be used for further participatory analysis; and to obtain on-the-spot feedback during an event and be in a position to rapidly adjust facilitation to emerging realities and changing circumstances
		PM	as above		as above		cont'd				
Tuesday	02-Oct-12	AM	Construction of blank model		Construct blank model		Using participatory video as an evaluation tool	Keisha/Nicole		Trainees attend orientation on PV	**Unit M14U04** – Fundamentals of Participatory Video
		PM					cont'd	Keisha/Nicole		Trainees attend orientation on PV	
Wednesday	03-Oct-12	AM	Construction of blank model		Construct blank model		Planning to co-facilitate	Neila + Ken/Kalli			
		PM					cont'd				
Thursday	04-Oct-12	AM	Introduction of **Group 1** to the process **by facilitators** Revisiting and finalisation of draft legend Facilitation data entry on the 3D model		Trainees (support from CANARI, UWI, Ken and Kalli)	Group 1 - informants working on the model	Implementation of (adapted) Unit M10U03 - Hands-on Participatory 3D Modelling Including Exercise No. 3: Learning by Doing - Facilitation, Observation and Reflection on the P3DM Process		After the completion of the Unit the trainee will be able to: • facilitate a process in which informants visualise their spatial knowledge on a scaled, physical three-dimensional model; • organise multidisciplinary facilitation of the process; • list priority actions and critical steps in the facilitation process.		To expose trainees to a process by which informants visualise their spatial knowledge on a scaled, physical three-dimensional model; to allow trainees to play the roles of process facilitator, observer and documenter and to do a self-assessment of their performance in the roles; and to allow trainees to learn by doing and observing.
		PM	Facilitation data entry on the 3D model		Trainees (support from CANARI, UWI, Ken and Kalli)	Group 1 - informants working on the model	as above		as above		
Friday	05-Oct-12	AM	Facilitation data entry on the 3D model			Group 1 - informants working on the model	as above		as above		
		PM	Introduction of **Group 2** to the process by representatives from **Group 1**			Group 2 - informants working on the model	as above		as above		

			Revisiting the map legend								
Saturday	06-Oct-12	AM	Facilitation data entry on the 3D model			Group 2 - informants working on the model	as above		as above		
		PM	Facilitation data entry on the 3D model			Group 2 - informants working on the model	as above		as above		
Sunday	07-Oct-12	AM									
		PM									
Monday	08-Oct-12	AM	Introduction of **Group 3** to the process by representatives from **Group 2** Revisiting the map legend			Group 3 - informants working on the model	as above		as above		
		PM	Facilitation data entry on the 3D model			Group 3 - informants working on the model	as above		as above		
Tuesday	09-Oct-12	AM	Facilitation data entry on the 3D model			Group 3 - informants working on the model	as above		as above		
		PM	Introduction of **Group 4** to the process by representatives from **Group 3** Revisiting the map legend			Group 4 - informants working on the model	as above		as above		
Wednesday	10-Oct-12	AM	Facilitation data entry on the 3D model			Group 4 - informants working on the model	as above		as above		
		PM	Facilitation data entry on the 3D model			Group 4 - informants working on the model	as above		as above		
Thursday	11-Oct-12	AM					Orientation on data capturing and digitisation and transfer of model in location for handing over ceremony	UWI/Ken/Kalli	After the completion of the Unit the trainee will be able to describe how to: • extract data from a 3D model using digital photography; • georeference photographs.		
		PM					PV editing	CANARI			
Friday	12-Oct-12	AM	Handing over ceremony	CANARI	Attend ceremony	Present their output to authorities			as above		
		PM									

Appendix 5- Power point presentations

Promoting participatory ICTs for adding value to traditional knowledge in climate change adaptation, advocacy and policy processes in the Caribbean

Blenheim Sheep Multiplication and Research Project

Tuesday 25th September, 2012

Welcome

- The Project team
- Participants

The question web …….

We are going to create a 'question' web. Please stand in a circle. You are going to hold on to the end of the wool and throw the ball/spool to one of the other participants to catch.

The question web …….

- The participant then gives their:
  - Name;
  - Job title,
  - Short description of what they do;
  - Organization; and
  - Expectations of the workshop.

The question web …….

- Holding the string they then throw it to another member of the group.
- Eventually this creates a web as well as learning some interesting things about each other

The question web …….

- Debrief
  - Similarities ?
  - Perspective
  - Skills, training and experience
  - One participant let go. What happens

The Project

The Background

- Global context
  - Participatory development of climate change decision making recognised @
    - UNFCC convention on climate change Art. 6
    - COP 7 UNFCC
    - Cancun Adaptation Framework
    - IPCC third assessment report

Regional context

- Climate change impacts on SIDS
- Exacerbate ongoing problems associated with human development
- Responses in the region

Problem Statement

- core problem
- effect

Core problem

Development and implementation of policy to address the impacts of climate change and extreme climatic events has been largely without the effective engagement of local communities, from which useful traditional knowledge exists and among whom much of the adaptation action will need to be taken

Effect

- policy responses in the Caribbean have largely been at the general policy level, with few specific policies or plans developed to address priorities at the landscape or site level.

Effect

- Sectoral considerations or traditional knowledge have not been adequately considered, stakeholders are not effectively engaged, and there has been little on the ground action to build resilience or to “climate proof” key sectors such as tourism and agriculture.

Root problems

- Land use and development planning do not effectively involve or integrate the concerns of government, private sector/developers and local communities into decision making.

- Development and risk management efforts are fragmented and uncoordinated across sectors.
- The impacts of climate change and extreme climatic events and responses needed are poorly understood by stakeholders.

- Communities are not aware of the need for and do not feel empowered to participate in community-based planning to respond to the impacts of climate change and extreme climatic events.

- Policy makers and technocrats do not have a culture of, knowledge of relevant tools, capacity for, and experience in facilitating community-based planning to respond to the impacts of climate change and extreme climatic events.

Overall Objective

Increased engagement of stakeholders to adopt Information and Communication Technologies (ICT) to influence climate change adaptation policy processes.

Project purpose

Local and traditional knowledge and values are recognized and made more authoritative in decision making about climate change adaptation in the Caribbean region

Project Partners

- CTA
- CANARI
- UWI (with funding from UNDP GEF SGF)
- THA DAMME
- PwM

Project activities

- Building of P3DM model of Tobago

- Training of Trainers on facilitating participatory processes inclusive of participatory video
- Training in Web 2.0

Desired results

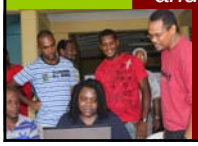
P3DM model of Tobago is completed and handed over to national stakeholders for use in policy development and decision making to build resilience to climate change and extreme climatic events in Tobago

Over 50 people are trained in complementary disciplines as follows:

- 22 trainees
- *6 practitioners and GIS technicians*
- *25 representatives from Tobago stakeholders (Web 2.0 training)*

At least 300 persons from communities and decision-makers from key sectors in Tobago have increased understanding, capacity and motivation to take joint action to build resilience to climate change and extreme climatic events

The process, and experiences made, in the use of PGIS / P3DM (and related ICTs) to value traditional knowledge in decision making about climate change adaptation, are documented and shared by a range o means including multimedia, Web 2.0 and social media.



Report, papers and policy briefs are produced and disseminated to climate change focal points, key government agencies in at least 15 countries in the Caribbean and at high level regional fora.

Sharing lessons learned and experiences

- Daily blogs
- 10 min participatory video
- 15-20 min videos documentary
- Policy brief
- Attend high level meetings

Any questions??

Overview of the workshop

- Workshop objectives
- Agenda
- Manuals
- Ground rules

Allocation of roles

- Chair person
- Rapporteur
- Mood Interpreter
- Facebooker

Chairperson

- Keep on the topic
- Keep order
- Keep to schedule

Rapporteur

- Takes notes on the day's proceedings
- Gives a report on the day's proceedings to trainees the following day at the debrief
- Submits notes to workshop coordinators

Mood interpreter

- Highlights key points covered during the day;
- Highlights key lessons;
- Consults/ observes fellow participants to give feedback on logistics (+/-), overall feedback (+/-).

Facebooker

- **H**elps build the momentum for post meeting discussions hosted on Facebook encourages use of social media during the meeting.

- May include:
  - A quote from a participant
  - A photo of an activity
  - The summary of an interesting discussion
  - Your feelings about what we were doing
  - Can be posted by you or by CANARI on CANARI's Facebook project page

Capacity assessment

- Purpose
- Table

Participatory approaches to natural resource management

What is “participation”?

- Participation in the context of natural resource management can be described as a process that:
  - facilitates dialogue among all actors;
  - mobilises and validates popular knowledge and skills;
  - encourages communities and their institutions to manage and control resources;

  - seeks to achieve sustainability, economic equity and social justice; and
  - maintains cultural integrity (Renard and Valdés-Pizzini 1994).

A process is participatory when…

- have active, informed and equitable participation of all interested stakeholders throughout the process;
- provide opportunities for the diverse views and opinions of stakeholders to be presented and listened to;

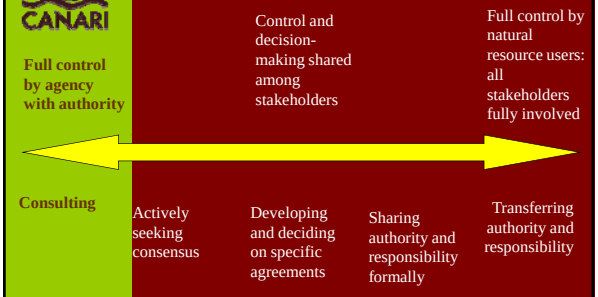
- seek to negotiate between stakeholders to manage conflicts and build consensus;
- effectively communicate information to stakeholders so that they can understand the issues, form opinions, and make decisions;

- recognise the inequities among stakeholders and seek to find approaches that facilitate the equitable engagement of those with the least power and voice and ensure that the more powerful stakeholders do not dominate or manipulate the process;

- adapt the process to respond to emerging needs; and
- respect the process and the decisions reached.

An important focus in facilitating participatory processes is giving voice to stakeholders who are less powerful and may otherwise be marginalised form the process.

Spectrum of participation



Types of participation

1. Manipulative
2. Passive
3. Participation by consultation
4. Participation for material incentives
5. Functional
6. Interactive
7. Self-mobilisation

Source: Bass et al (1995)

What are factors that determine type of participation?

- Purpose of initiative
- Complexity
- Urgency
- Capacity
  - Philosophy of leaders of process
  - Skills and knowledge
  - Available time
  - Available human and financial resources

Challenges of participation

1. Costly in terms of time & resources for all (including stakeholders)
2. Raises stakeholder expectations & can lead to disillusionment if realistic expectations not defined
3. Where capacity lacking, can be counterproductive and result in backlash
4. Danger of consultation burnout

Values of participation

RESULTS IN IMPROVED MANAGEMENT

- Incorporates a wide range of perspectives and ideas and sources of knowledge
- Improves the knowledge and skills of all stakeholders
- Increases the likelihood of stakeholder support through involvement in decision-making
- Can provide a forum for identifying conflicts between users and negotiating solutions
- Can contribute to stakeholder empowerment and local institutional development, especially when sharing of management responsibility in involved

Planning participatory P3DM approaches

Participation strategy

A plan for facilitating stakeholder participation in a process of decision-making or management

- What is the decision or management process requiring stakeholder participation? What is current situation?
- Who are the key stakeholders that need to be involved? What are their interests, rights, roles and responsibilities?

- What is the overall type/level of participation that will be facilitated? For each of the different stakeholders, what is the type/level?

- What is the capacity of stakeholders to participate and what are the capacity needs? What capacity building will be conducted?
- What are the existing and potential conflicts? How will these be managed?

- How will stakeholders be mobilised to participate?
- What processes will be facilitated?
- How will the decisions be communicated to stakeholders?

For each stakeholder:

1. Identify the interests / rights / roles / responsibilities
2. Analyse the capacity to participate and identify capacity needs:
    1. World view / values
    2. Skills and knowledge
    3. Resources
    4. Structures
    5. Relationships
    6. Adaptive strategies
3. Identify existing and potential conflicts with other stakeholders

What is the type of participation that is desired?

1. What is the context?
2. What is the willingness?
3. What type is possible?
4. What are the costs and benefits?

What capacities need to be built and for who?

1. World view / values
2. Skills and knowledge
3. Resources
4. Structures
5. Relationships
6. Adaptive strategies

What are the conflicts and how will we manage them?

What strategies will be used to mobilise and facilitate?

1. Structures?
2. Processes?

1. What is the decision or management process requiring stakeholder participation?
2. Who are the key stakeholders that need to be involved? What are their interests, rights, roles and responsibilities?
3. What is the overall type/level of participation that will be facilitated? For each of the different stakeholders, what is the type/level?
4. What is the capacity of stakeholders to participate and what are the capacity needs? What capacity building will be conducted?
5. What are the existing and potential conflicts? How will these be managed?
6. How will stakeholders be mobilised to participate? What processes will be facilitated?
7. How will the decisions be communicated to stakeholders?

Comments? Questions?

Mobilisation and logistics

Mobilisation

- What is mobilisation?
- What is the purpose?

Mobilisation

act of marshaling and organizing and making ready for use or action

Source- wordnetweb.princeton.edu/perl/webwn

The purpose of such mobilisation is to assure that all potential participants in the process are informed of what is happening, are aware of the factors that prompted the process, recognise the legitimacy of the people and organisations that have taken the initiative, and are encouraged to become involved (Geoghegan *et al.* 2004).

Procedure

1. Understand and prepare for the target group(s) that needs to be mobilised**.**
2. Develop a mobilisation strategy to identify communication products and channels best suited to the specific audiences.

3. Implement the mobilisation plan, assess what works, and adapt the plan as needed.

4. Evaluate the effectiveness of the mobilisation and document and communicate lessons learnt for future mobilisation activities

Understand and prepare for the target group(s) that needs to be mobilised.

The style and timing of stakeholder mobilisation will vary according to the target audience, so you need to:

- Identify the target audience;
- Choose desired mix of stakeholders for the activity and select date, time, venue;
- Choose a venue;

Develop a mobilisation strategy to identify communication products and channels best suited to the specific audiences.

Methods for communicating

- Email, faxes, mailed invitations, personal phone calls

Wider population

- Fliers, newspaper advertisements, press releases, media appearances, use of popular champions, announcements at places of worships

- Working through local organizations
- Develop materials
  - Must be accessible
  - Clearly provide information

Implement the mobilisation plan, assess what works, and adapt the plan as needed

- Invite target audience(s) giving adequate notice via methods identified previously.
- Record responses to invitations and adapt approach if necessary.
- Send reminders a day or two beforehand through a personal call, email or text message.

Evaluate the effectiveness of the mobilisation and document and communicate lessons learnt for future mobilisation activities

- Ask those who attended:
  - how they learned about the event;
  - what motivated them to attend, why they think other stakeholders are not there; and
  - what would be effective strategies to mobilise them in future.
- Call one or two of those who did not attend to find out why they did not attend

- Document lessons learnt about how to most effectively mobilise the target audience(s) and share with the team to inform future mobilisation activities.
- Determine whether you have had sufficient representation /input at the event or whether you need to conduct additional mobilisation efforts or one-on-one engagement with key groups or individuals.

Logistics

The detailed coordination of a complex operation involving many people, facilities, or supplies.

Important considerations

- Time (year, day)
- Budget
- Personnel
- Data storage
  - Tools
- Dissemination of information
  - Means

Training of trainers in the facilitation of P3DM:

Planning to facilitate

Some tools and methods

- Brainstorming
- Plenary discussion
- Small group / pair work
- Individual reflection
- Nominal group technique
- Games
- Visual activities
- Music, dance
- Drama / role play
- Photos / video
- Tactile
- Mapping
- Storytelling
- Round robin

Planning to facilitate

- What do you want to achieve?
- Who is your audience?
- What are their capacities and needs and interests?
- What tools/methods will you use?
- What resources do you need?
- How do you create the right environment?
- How will you get people to come?

Session planning

Time	Topics	Activity	Method	Materials
15	What is facilitation?	• Introduce the session by noting facilitation is the approach used in participatory processes. • Use round robin technique to ask each participant in turn to say the first word that comes into their mind when they hear "facilitation" record on flip chart. • Identify key points / ask questions to identify key elements of facilitation. Craft a rough definition and write on flip chart. Compare with slide. • Ask participants what are the differences between facilitation and presenting and training. Show slide with facilitraining rainbow and discuss.	Round robin Questioning Defining Plenary discussion Slides to validate / add	Flip chart paper Slide with definitions of facilitation Slide with facilitraining rainbow

8:00 – 8:15 am	Welcome and introductions	CANARI facilitator
8:15 – 9:00 am	Orientation: • About the project – the P3DM process and what will be achieved • Introduction to projected climate change impacts for Tobago • Introduction to strategies for building resilience to climate change • Introduction to the model: o explaining the legend o work so far o process for groups to work on model construction o ground rules	Facilitator teams
9:00 am – 4:00 pm	Four groups work on model construction	Facilitator teams
12:30 – 1:30 pm	Lunch	
1:30 – 4:00 pm	Four groups work on model construction (cont'd)	Facilitator teams
4:00 – 5:00 pm	Community screening: • Viewing PV footage shot for the day • Discussion • Selection of best clips for the day • Wrap-up and thanks	CANARI facilitator
5:00 – 6:00 pm	Debrief of day and adjustments to facilitation plan Agreement on priorities for filming for next day	CANARI facilitator

Participatory 3D Modelling

- A methodology
- Combines people's knowledge with spatial information
- Produces stand alone relief models that are user friendly and true to scale
- Used for data storage, analysis and collaborative spatial learning
- Excellent communication media

Preparation

- Identify the extent of the resource management area or territory
  - Sketch mapping
  - Consensus building
  - GPS surveys

Construction

- A blank relief model is assembled
  - Contours are layered and glued to form the terrain

Coding

- People's knowledge of the landscape is transposed on the model
  - Landmarks familiar to local people are identified on model
  - Current and past land uses are coded on the model

Spatial Analysis

- Model is used in collaborative spatial learning workshops
  - Tool to facilitate boundary delineation and peace negotiations
  - Data analysis and interpretation for formulating conservation and land use plans

Data Extraction

- GIS tools and data are used to spatialize data from 3D models
  - Models are georeferenced and digitized
  - Maps are produced from data generated from the 3D model

Validation

- Process of editing and validating spatial data
  - Maps and other spatial data are presented to the community for validation and editing
  - Correct errors and distortions

Validation

- Select what data can be released for publication
- May be a repeated process
- Validation tests
  - Sample of GPS points to measure how much the model predicts actual location

Communication

- Models are used as communication tools
  - Planning
  - Advocacy
  - Research
  - Negotiations

Principles

- Employs local or indigenous knowledge systems
- Reflects local perspectives in natural resources management
- Built on the participation of local people in managing their resources
- Uses participatory tools that are appropriate to the community
- Free, prior and informed consent

Characteristics

- Problem driven, leads to action
- Geared to solving specific, bounded problems with specific users in mind
- Emphasizes geographic analysis over data storage and retrieval functions
- Integrates different types of technologies:
  - People's knowledge
  - Traditional spatial information
  - Others

Constraints

- Requires intensive planning and time
- Difficult logistics in distant or rough terrain
- Labor intensive
- Can be prone to distortion
- Requires involvement of technical support

Opportunities

- Can be replicated due to a simple methodology and extensive documentation
- Has a core of practitioners
- In line with on-going trend toward open data and open source technology
- More available tools for fine-tuning accuracy of transposed data
- Results of spatial analysis are relevant in many current issues

Philippines

- 7,100 islands
- 85 Million people
  - 12% or 10 Million are Indigenous People
- Half of land area are uplands
  - 2.8 Million has. have been legally recognized as Ancestral Domains or Indigenous Territory
  - Estimated 5-7 Million has. more shall be claimed

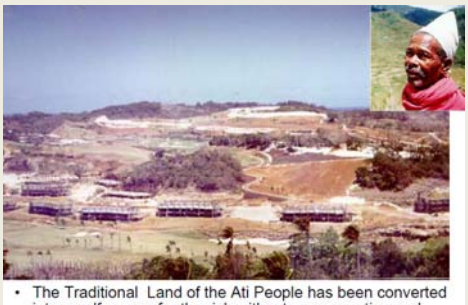
Issues

- Stiff competition for constrained natural resources
- Access to land and natural resources are controlled by elite
- Lack of security of tenure for majority of Indigenous People

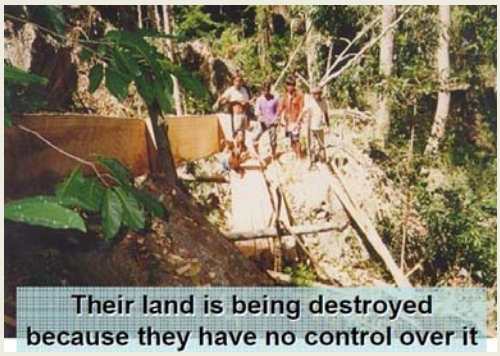
Problems

Mines, timber concessions, dams, military camps and other projects enter indigenous ethnic areas

- Migrants and rich people have bought lands at very low prices from Indigenous Communities
- Not aware of their rights, IPs have no choice but to sell
- Those who resisted paid with their lives



- The Traditional Land of the Ati People has been converted into a golf course for the rich without compensation and approval from the people



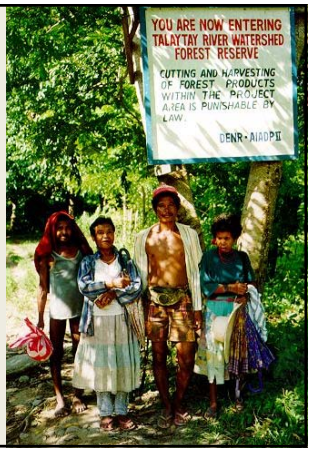
They are losing their land because they do not have titles

The Government sees
Indigenous Peoples' land as…..

- State property;
- Intact or roadless areas under threat by human habitation
- open access areas
- Has no existing management regime
- Needs to be provided with a scientific management plan and a Government regulatory structure
- Underdeveloped and do not produce revenue

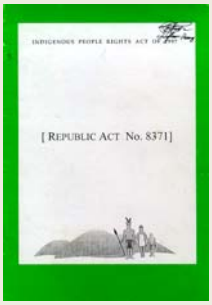
The Result:

- Inaccurate data/information on IP resource mgt./land-use patterns.
- Laws & and land-use policies do not consider traditional rights & skewed towards commercial exploitation



Indigenous Peoples Rights Act of 1997

- Recognizes the rights of ownership of IP communities over their ancestral lands/domains;
- Follows the principle of "Self-Delineation" in the identification of ancestral domains;
- Respects the traditional Resource Mgt. Practices of the IP communities;



Objectives of Community Mapping / PGIS

- Documentation of customary/traditional lands
- Used as a tool to secure "legal" recognition
- Used as a strategy to advocate against impacts development aggression

Objectives of Community Mapping / PGIS

- To generate local data for community planning and management
- To facilitate negotiations and conflict resolution
- To build the capacity of IPs to conduct mapping

Methodologies Used in PGIS

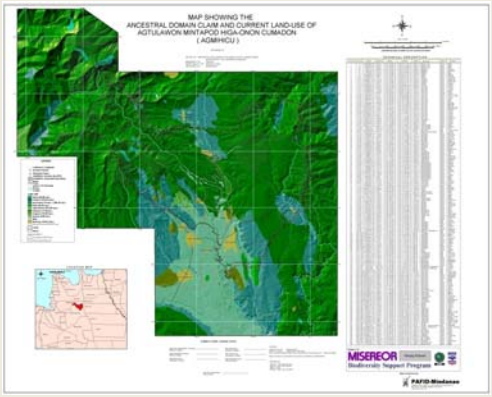

Sketch Mapping

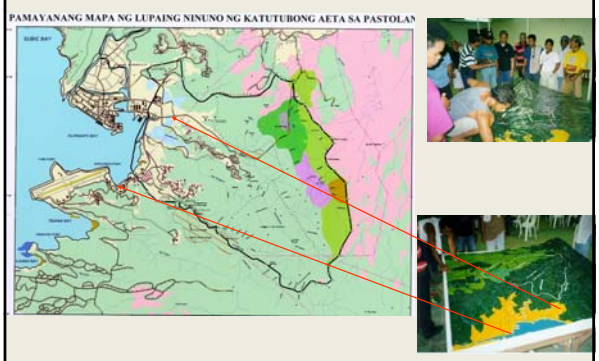
3D Modelling

GPS Surveys


Survey-grade GPS surveys used for the mapping of ancestral domain

Geographic Information Systems





P3DM : The Process

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  - Research
  - Negotiations

Applications

Boundary Map

Villagers have many meetings to agree on boundaries. Sketch maps are used to locate the area on standard maps.

GPS Survey

Villagers learn to use GPS receivers to survey their own area

Titling : Land and Sea

Map

Title

Military Base

Elders and leaders use the model to convince government to recognize their legal rights

Resolve Conflicts

Villagers use the model to make boundary agreements and lessen conflicts in their area

Community Forest

- The 3D model shows traditional resource management and the people's knowledge of the forest
- Villagers use the model to explain the community forest to miners, loggers, government and others

Management Area

Villagers use the model to demarcate the boundary of their management area

Principles

- Employs local or indigenous knowledge systems
- Reflects local perspectives in natural resources management
- Built on the participation of local people in managing their resources
- Uses participatory tools that are appropriate to the community
- Free, prior and informed consent

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- Requires involvement of technical support

Opportunities

- Can be replicated due to a simple methodology and extensive documentation
- Has a core of practitioners
- In line with on-going trend toward open data and open source technology
- More available tools for fine-tuning accuracy of transposed data
- Results of spatial analysis are relevant in many current issues

Factors that create a Disabling environment for PGIS

- Limited access to critical secondary data (topographic maps/aerial photography)
- Lack funding to train community mappers and to have community mapping project
- Cost of GIS limits participation of the community, software and hardware expensive
- Legitimacy of community maps as evidence in light of Land Surveyors Ord (Malaysia)/RA 8560 (Phils).
- Required High Accuracy as the minimum standard for acceptance. (Phlipines)
- Very high cost of Survey Grade GPS. (Philipines)

Strategies undertaken to enhance a positive and enabling environment for PGIS

- Consistently/regularly enhancing skills to gain the respect of PGIS methodologies by Government counterparts.
- Being Pro-active by engaging the National Government through "Partnership Agreements" where Government secures the assistance of an NGO through a Memorandum of Agreement (MAO) in the conduct of boundary delineation, mapping of traditional land uses and conflict resolution.

Strategies undertaken to enhance a positive and enabling environment for PGIS

- Engaging the Local Government in a "MOA" where the NGO is a consultant to the Town/Municipality in the conduct of a P3DM to facilitate local land-use planning.
- Conducting Capacity Building training for the Government in Resource Mgt. and delineation, PGIS is advocated in the design and conduct of these trainings.
- Taking the initiative in defining the gaps and gray areas in existing policies pertaining to resource mgt. and mapping of traditional lands. (establishment of mapping study group)
- Building on other Government policies/programs that are consistent with or promote PGIS

Memorandum Circular 2002-01, signed by the Secretary of the DENR; Recommending the use of P3DM as a strategy for Parks Mgt.

DENR MEMORANDUM CIRCULAR
NO. 2001- 01

SUBJECT: Participatory 3-Dimensional Modeling as a Strategy in Protected Area Planning and Sustainable Natural Resource Management

ANTONIO H. CERILLES
Secretary

Strategies undertaken to enhance a positive and enabling environment for PGIS

- Partnering with INGOs to secure required skills, ex. LEO Project for Aerial Photography
- Partnering with SCGIS, ESRI and Clark Labs. to enhance GIS skill and secure GIS software.
- Convincing new and/or Non-Traditional donors such as the Catholic Church and Human Rights groups to donate Survey Grade Mapping Equipment.

Other factors that create an enabling environment for PGIS

- Development of Technology
  - Has become easier and cheaper (ex. GPS) thus has no longer remained in the domain of the haves and the elite.

Other factors that create an enabling environment for PGIS

- **Relevance of PGIS**
  - Addresses a live and existing issue that affects the very existence of the community
  - Local participation and self-determination is assured

Preparatory Phase

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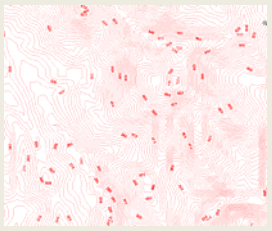
Data Sources

- Contour Maps feature an area's elevation profile
  - Topographic maps feature terrestrial contours
  - Bathymetric maps, hydrographic charts feature marine contours

Contours

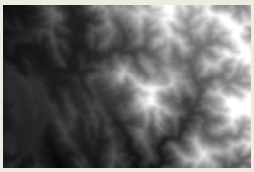
- Contour lines are needed to build the model
  - Places along a contour line are of the same elevation
  - Spaced in equal intervals: moving between 10-meter contour lines means an elevation change of 10 meters



Data Sources

Digital Elevation Models – elevation profiles derived from satellite data

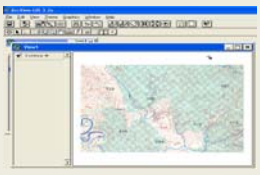
- Marine
  - Scripps Institute SRTM30 PLUS
  - GEBCO, European Union
- Terrestrial
  - Shuttle Radar Tomography Mission
  - German EOWEB : SRTM 30 m X band
  - ASTER



Preparing the Base Map

Graphic Tools

- 'No GIS' option to build 3D models
- Popular graphic software able to crop, enlarge, merge multiple pictures and resize
- Measures to minimize errors from scanning, edge matching and printing



GIS Tools

- Mapping software with utilities for georeferencing and rectification
  - ArcGIS
  - QGIS
  - gvSIG
  - ILWIS

Base Map

- Data
  - Contours
  - Bathymetry
  - Rivers in flat terrain
  - Major roads
- Contour labels
  - Repeated every 4-5 inches along contours and sections where contours are closely spaced
- Grid marks
  - Labeled and extended to the length of the plywood

Map Scales

P3DM Scale

- 1:5,000
  - Village or community level
  - 4 mm layers for 20 meter contours
- 1:10,000
  - Regional level
  - 2 mm layers for 20 meter contours
- Availability of materials may constrain the choice of scale
  - Skip elevation or use alternate intervals to avoid a vertical scale greater than 1.5-1.7 times
  - Leads to loss of detail, must compensate by adding final contours or peaks

Materials

Crepe rubber sole

4 mm sheets for 1:5,000 scale

Carton

- Corrugated carton boards

Deliver all materials and logistics to the community

Delivery of Materials to the Area by any means…..

Atop a horse... a jeep.. pick-up truck... bus or... above your head.

Facilitation of Data Entry :
Coding Participatory 3D Models

Philippine Association for Intercultural Development

Data Generation and Analysis

Is land-use planning still possible?

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Planning

- Concerns and Priorities for mapping:
  - Why do we want to make a map?
  - What do we want to map? (boundaries, trails, farms, settlements?)
  - Where do we want to map? (What area of land?)

Planning

- Who will plan the map?
- Who will gather the data for the map?
- Who will draw/make the map?
- Who will see the map when it is finished?
- What do you want to do with map/data?

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Identifying Current Land-use/Cover Patterns

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The Process

- Get a consensus and define the information/data that the community wants to put in the model;
- Identify the key resource persons/groups that shall provide the information;

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The Process

- Gather/collate all available documents/info such as previously done sketch maps;
- Review all current information with the community.

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Drafting the Legend

Process…

- Agree on terms, symbols and colors that shall be used in the model;
- Facilitate the generation of a "legend" from the community;

Features		Display/Symbol	Data generated
Points	•Village School/Office. Flagpole •Human settlements •Houses •day care centers •Cultural Places (Burial Grounds, sacred sites, caves, •Conservation interest areas •nesting sites • boundary markers.	Pushpins, Pen marks.	Lat/Long; location, frequency.

Photo by: G. Rambaldi

Lines	Watercourses road networks, trails Infrastructure (pipe-layout) Land-use classifications, extents of boundaries; movement patterns; migration; etc.	Yarn, string, pen marks	Distance, direction
Polygon	Water bodies Land-use Kaingin, plaza Cultural places; Reforestation area; Orchards; swidden; land cover; landslides; critical zones; etc.	Yarn, acrylic paint, pen marks	Area, extents

Photo by: G. Rambaldi

The Process

Process..

- Let the participants study the "blank" model and orient themselves to local directions/features.
  - Ask questions like, "where does the sun rise?"
  - Where is the ocean?"

Process..

- Start the coding by asking the community to identify known geographical features:
  - Rivers, creeks & other water bodies
  - Top peaks and ridges
  - Roads and trails

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Remember!!

- It is important that at the onset, the community has the opportunity to locate and identify the natural features that define the extents or bounds of their territory or area of influence.
- This allows them to establish their sense of control of the area and the recognition of their existence as a community.

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Process..

- Continue coding the model with the resource persons for the CURRENT land uses;
- Utilize all agreed symbols, colors, materials.

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Process..

- Allow the participants to cross-validate and critique the information that has been put onto the model;
- Facilitate a consensus for the data on the current land uses.

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Process

- Facilitate the idenfification of the boundaries/extents other management regimes outside of the community present in the area.
- This could include Protected Areas, Mining Tenements, including conflicting claims of other communities.
- Initial work to identify boundary markers could be done at the office preior to the 3D-modelling exercise

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Process

- The boundary markers of various managment regimes and tenurial instruments can be placed on the Base map that will be used for the 3D-model.
- This will facilitate the smooth identification of the extents and coverages as mentioned earlier.

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Process..

- Trace/copy all data (line, points, polygons) on the model

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- All information generated by the community in the process shall be the **baseline data** as it represents the CURRENT land-use/cover pattern of the areas covered by the 3D-model.

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Mapping the PAST

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Process..

- Identify appropriate resource persons from the community;
- Using the same process/steps as described earlier, proceed with the coding for the land-uses for the PAST;
- Let the community define the period/time from w/c they shall provide information on land-uses.

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Process..

- W/ the same steps the data should be traced and recorded;

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Community Data Analysis

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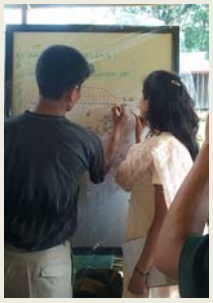
Recording the data

- Facilitate the creation of a group that shall gather and compute information that has been recorded for the PAST and CURRENT land uses;



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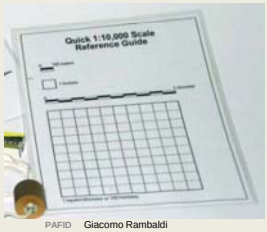
Recording the data

- Create a transparent grid to be used to compute the area of polygons, and length & distance of lines; a length of string can be used to measure distances.



PAFID Giacomo Rambaldi

PAFID

Recording the data

- Lay the grid over lines or polygons and trace an outline of the intended data source.
- Along with the community compute for the area or distance of the lines and polygons.
  - @ 1:5,000 = $2cm^2$
  - @ 1:10,000 = $1cm^2$

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Recording the data

- Example
  - Whole box = 725 x 1 725
  - ¾ box = 96 x ¾ 72
  - ½ box = 52 x ½ 26
  - ¼ box = 77 x ¼ 19.25
  - +(-) 842.25

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Community Data Analysis

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Process..

- Organize workshop groups to study and analyze the data;
- Create a time-line to refer important events in the community history to the spatial data of the past and present;

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Movement of Resources through Time (MRT)

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Past

Category	Use	Stakeholders/ Users	Location	Area
Forest	Hunting Grounds, source of Medicinals, Source of Wood for housing and firewood	15 Indigenous Families	From the foot of Mt. X all the way to the ridge beside River Y in covering villages ABC	14,000 has.
Grasslands	Source of Roofing Materials; Grazing area for Cattle	15 families 3 w/ own cattle	Between Village C & D	500 has.
Mangrove	Source of Mud Crabs; Source of shrimps for table consumption	10 families	Beside village B	1,300 hectares

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Current/Present

Category	Use	Stakeholders/ Users	Location	Area
Forest	Hunting Grounds, source of Medicinals, Source of Wood for housing, firewood and commercial timber	75 Indigenous Families ACME logging concession; 440 Employees of ACME	Near the foot of Mt. X	2,000 Hec.
Grasslands	Source of Roofing Materials; Grazing area for Cattle, bamboo Grass, Pasture Area,	30 families 3 w/ own cattle 114 Migrant families	Between Village C & D all the way to F	1000 has.
Mangrove	Source of Mud Crabs; Source of shrimps for table consumption and fingerlings to sold to fishpond operators; source of tan bark for dyeing	120 families	Beside village B	240 Hec.

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Data Analysis

- Facilitate discussions on the variances of data through time;
- Let the community identify key events, issues that have played a role in the utilization, exploitation, management of resources through time..

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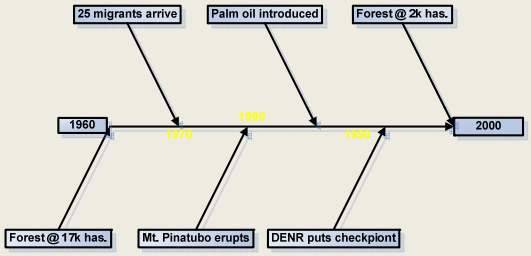
Analyze the workshop outputs and generate a time-line for significant events in the community



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Data Analysis

- Along with the community, discuss the loss of forest cover;
- Study the changes in land–uses;
- Look at the impact of the increase in population;
- Relate the changes in resource utilization/management rules and policies

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Data Analysis

- Along with the community, discuss the loss of forest cover;
- Study the changes in land –uses;
- Look at the impact of the increase in population;
- Relate the changes in resource utilization/management rules and policies

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Data Analysis

- Compute the changes in forest cover. Ex:
  - *17,000 has. – 2,000 has = 15,000/47 yrs*
  - *Loss of **319.4 has/year***
- Analyze family/forest cover ratio through the years, Ex:
  - *(yr1960) 112 families/17,000 has. =**152 has/family;***
  - *(yr2000) 795 families/2,000 has. **=2.5has/family***

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Data Analysis

- Compute for the coverages of the various management regimes/tenurial instruments present in the area.
- With the results, compute and analyze the coverage overlaps.
- Determine if these cause conflicts or raise issues in the community.
- Discuss if the participants are aware of the implications of other management regimes.

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Analysis

- Facilitate a discussion on the strategies to address the conflicts borne out of the overlaps.
- Identify opportunities for Advocacy for self-determination, Further Research, partnership and possibilities for collaborative management in the areas w/ varying modalities of tenure and management.

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Planning for the future

- With the learning from the workshops and discussions;
  - Initiate the conduct of a future/proposed land-use planning workshop w/ shall go through the same process.

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Some Uses of the Model

- Identification of Forest blocks for Carbon Stock monitoring
- Designation of sites of Representative plots for Forest Resource Inventory
- Initial design of Spring Water Development Systems
- Identification of boundaries of Traditional Territories
- Identification of direction and extents migration patterns

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The 3D model is a dynamic tool that can be used for a multitude of tasks where spatial information (Area, length, distance, direction) is critical.

The Community along with development workers and Government extension workers can utilize the model as a tool to generate information that is crucial in community development as well as to strengthen and renew social bonds and relationships among rural people.

The development of new methodologies and uses for the 3D-model will continue depending on the innovativeness and versatility of the development worker working hand in hand with the people.

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Padayon ang pakig-bisog sa yutang kabilin!!

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Geographic Information Systems

Philippine Association for Intercultural Development

System

Goodchild and Kemp, 1990 and Cowen, 1990

- a system of software, hardware and procedures designed to capture, store, manage, manipulate, analyze, perform spatial operations, model, visualize and display spatial data and used for solving complex planning and management problems

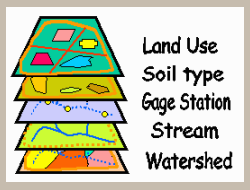
Connections

Goodchild and Kemp, 1990 and Cowen, 1990

- an integrating technology that provides a platform for studying spatial relationships
- makes connections between activities based on geographic proximity that had often been unrecognized
- offers new insights and explanations that are vital to understanding and managing resources

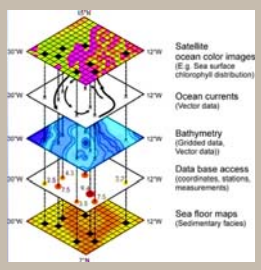
Common Platform

- uses databases linked to a spatial coordinate system
- integrates various disciplines and technologies onto a common spatial reference system
- a process for making decisions



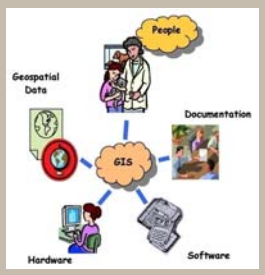
Stacked Maps

- Data on same area are represented as layers
- Layers are overlaid so that locations line up
- Common reference enables analysis of thematic and spatial characteristics



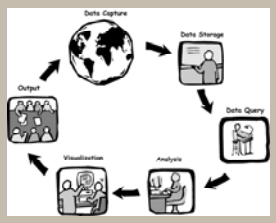
Components

- Hardware
- Software
- Geospatial data
- Documentation of procedures
- People, organizations and institutional arrangements



Functions

- Data capture
- Data management
- Data query – database operations
- Analysis – perform spatial operations
- Visualization – display
- Outputs – reports



GIS Inquiries

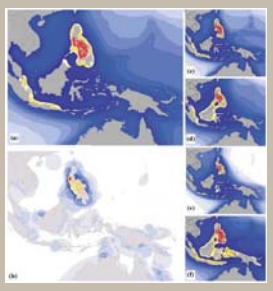
- Locations – "where", overlaps
- Quantities – "what", lengths and areas, most and least
- Distances – scoping, proximity
- Distributions or densities – clustering, hotspots
- Patterns – correlation, causality, random
- Trends – monitoring change or behavior through time, movement
- Models – "what if", scenarios, decision support systems

Applications

- Medicine – origin case of GIS analysis
- Navigation – airplanes, cars, shipping
- Hazards – risk, vulnerability
- Networks – streets, electricity, transport
- Land-use planning and land management
- Conservation
- Natural resources management – one of the first applications and driver of the development of modern GIS

Biodiversity

- Philippine Islands are center of the center of global marine shore biodiversity
- GIS analysis of large multiple datasets over time



Wildlife Habitat

- GPS tracking of radio collars on Bohol tarsiers
- Analyze animal movement
- Locate the tarsier home range and extent of habitat use

Land Use Zones

- Participatory GIS to identify the Traditional Conservation Area in Papua
- Use of overlays to perform gap analysis

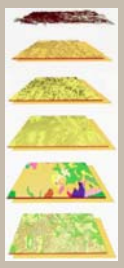
Ancestral Domain

- Indigenous communities secure titles to customary land and sea territories

GIS Data

Geospatial

- GIS data are spatially-referenced
- Each entity is information paired with coordinates from a spatial reference system



Characteristics

- Spatial – the location based on a coordinate system such as longitude and latitude, and its topological relationships or spatial characteristics such as shape and contiguity
- Thematic – an attribute or variable such as land cover, temperature, etc.

Geospatial Data

- GIS data are spatially-referenced data or information linked to a coordinate reference system
- Spatial – the location based on a coordinate system and its topological relationships such shape or contiguity
- Thematic – an attribute or variable such as land cover, temperature, etc.

Relational

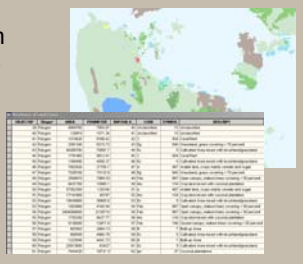
- GIS use relational databases to store, manage and analyze large amounts of data.
- Relational databases are able to store data in several tables or “flat files” which allow for fast computer processing

Relational Database

- Rows – each entry is an entity or object
- Columns – contain the thematic attributes
- Key – every entry has a unique identifier or key that allows the database to form relations or connections between tables

Geospatial Database

- Spatial index – each record has a unique ID
- Geometry – point, line or polygon
- Coordinates
- Attributes

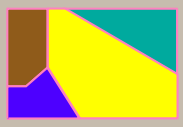


Representations

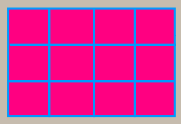
- Point – a location
- Line – direction
- Polygon – an area
- Surfaces – a continuous field
- Volumes – true 3D

Storage Formats

Vector



Raster



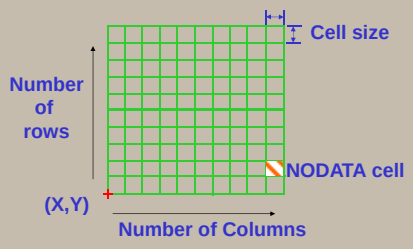
Data Storage

	Vector	Raster
Point		
Line		
Polygon		

Raster

- Uses a matrix or grid of cells where each cell or pixel is assigned a unique reference coordinate and discrete attribute data
- Location is implicit in the ordering of pixels in the grid. The raster resolution is the size of a single pixel or cell
- Suited for data with values taken over a continuous extent such as satellite data like elevation, land cover, temperature, etc.

Grid

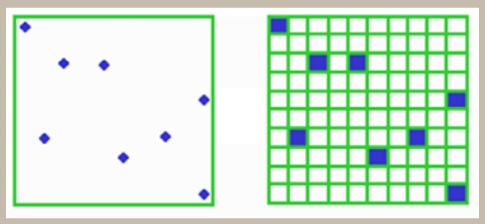


Vector

- Pegs attributes to coordinates
- Suited for data with discrete boundaries and where precision remains intact like GPS data
- Stores data in shapes or geometries and uses points to build more complex features
  - Point – coordinates define a location, each point is independent of every other point
  - Line or Arc – a collection of start and end points define a length
  - Polygon – arcs that close define an area

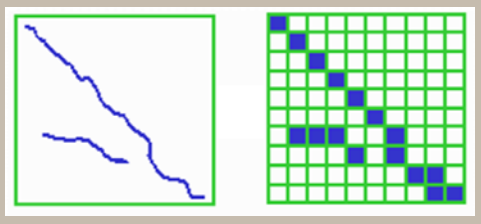
Points

Vector Raster



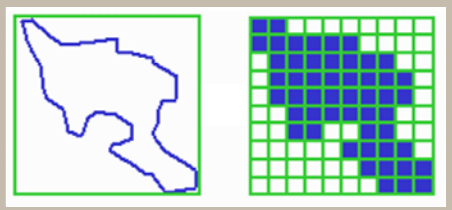
Lines

Vector Raster



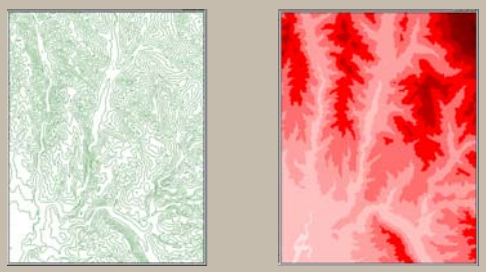
Polygon

Vector Raster



Surfaces

Vector Raster

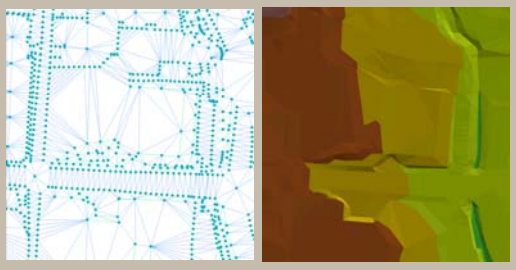


Hybrid Format

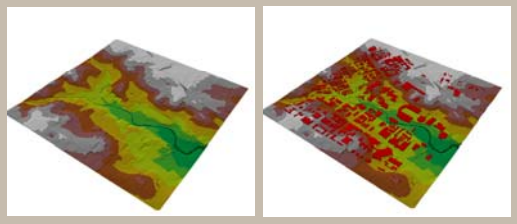
Incorporate both raster and vector files

- Triangulated irregular network (TIN) surfaces – defines a space with a set of contiguous, non-overlapping triangles
- Terrain data

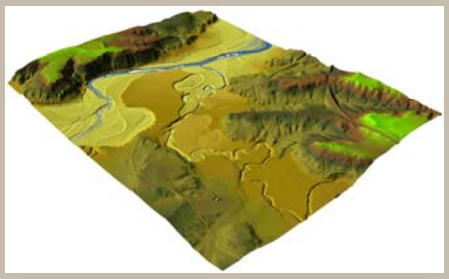
TIN



Terrain Data



Lidar Terrain



Factors in the Development of GIS

Tools

Information Technology

- Lowering cost of hardware and exponential increase in computing speed
- Better software functionality and more user-friendly graphical user interfaces (GUI)
- Enabled the collation, relation and analysis of large amounts of data, such as climate change

Remote Sensing

- Innovations in successive generations of sensors and satellites
- New types of data and new data sources are part of routine research methods

GPS

- Access to higher accuracy band of the GPS constellation
- GPS constellations from Europe and Japan

Communications

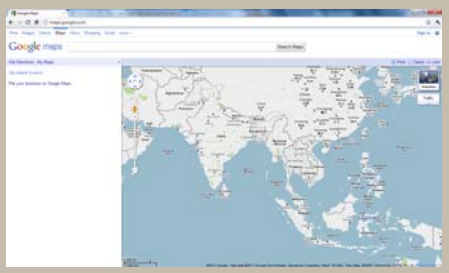
- Lowering cost of sophisticated mapping services in cellphones and other mobile devices
- Assisted-GPS and Wifi-GPS uses cellphone towers and internet routers to improve positioning services for mobile devices

Internet

- Access to and delivery of spatial data, GIS software and hardware
- Publish reports worldwide or through social networks

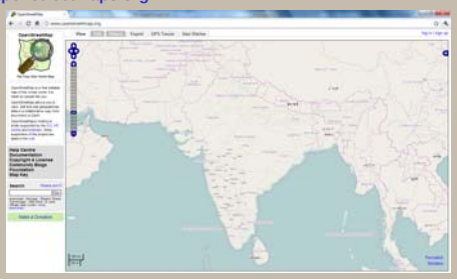
Google Maps

www.maps.google.com



Open Street Maps

www.openstreetmaps.org

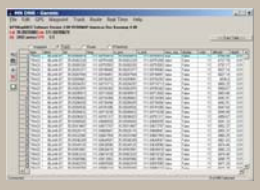


Open Source

- Free use of satellite data, high accuracy data and sophisticated GIS software
- GIS has transitioned from the domain of specialists into a collaborative enterprise

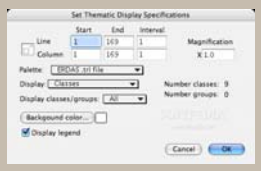
DNR Garmin

- Free GPS utility for Garmin receivers
- www.dnr.state.mn.us/mis/gis/tools/arcview/extensions/DNRGarmin/DNRGarmin.html



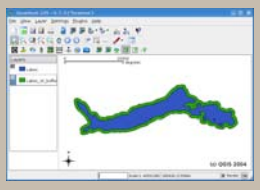
MultiSpec

- Free image processing and raster analysis software developed by Purdue University
- www.engineering.purdue.edu/~biehl/MultiSpec



Quantum GIS

- Free full featured desktop GIS
- www.qgis.org

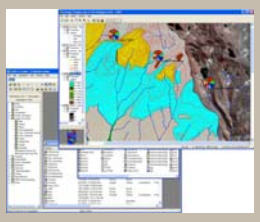


GRASS GIS

- Pioneering free, open source analysis and image processing software
- www.grass.itc.it

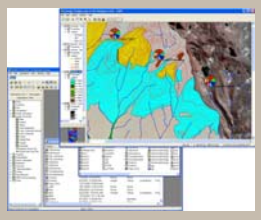
ILWIS

- Free full-featured desktop GIS developed by University of Twente
- 52north.org/communities/ilwis/overview



gvSIG

- Java-based free, open source full featured desktop GIS
- www.gvsig.org



DIVA GIS

- Free GIS designed for mapping and studying biodiversity
- www.diva-gis.org

Elevation 90 meter

CGIAR Consortium for Spatial Information
http://srtm.csi.cgiar.org/

Elevation 30 meters

ASTER
http://www.jspacesystems.or.jp/ersdac/GDEM/E/index.html

Elevation 30 meters

SRTM X Band
http://eoweb.dlr.de:8080/servlets/template/welcome/entryPage.vm

- Native SRTM data capture for global data set is 30 meters
- 30 meter data available only for the US
- Data was downgraded to 90 meters for the rest of the world
- Some strips of 30 meter data is made available on German space agency site

Administrative Boundaries

Global Administrative Areas
www.gadm.org

Land Cover

Global Land Cover Facility
www.glcf.umiacs.umd.edu

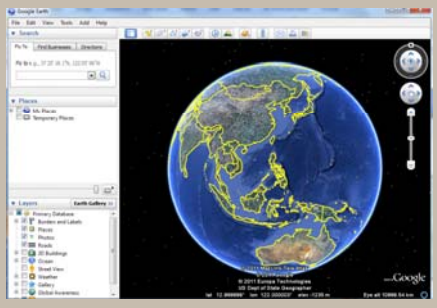
LANDSAT

USGS GLOVIS
www.glovis.usgs.gov

Protected Areas

World Database on Protected Areas
www.protectedplanet.net

Google Earth



Free GIS Software

- SAGA GIS
  - vector, DEM and geographic data processing

http://www.saga-gis.uni-goettingen.de/html/index.php

- JGRASS
  - GRASS GIS implemented in Java

http://www.hydrologis.com/html/jgrass/jgrass_en.html

- Terragen
  - terrain renderer

http://www.planetside.co.uk/terragen/

Free GIS Software

- Fragstats – tool for evaluating landscaspe metrics such as fragementation, etc.; used on rasters

http://www.umass.edu/landeco/research/fragstats/fragstats.html

- Image Georeferencing Tool – tool for georeferencing images

http://happysquirrel.com/index.php?feature=georef

- MicroDEM or Terrabase II – good for overlays and rendering, analyzing DEMS

http://www.usna.edu/Users/oceano/pguth/website/microdem.htm

Free GIS Data

- CGIAR-CSI - global digital elevation data
http://srtm.csi.cgiar.org/

- Global Land Cover Facility - free downloads of Landsat ETM, TM
http://glcf.umiacs.umd.edu/index.shtml

- Protected Areas - global database on protected areas
http://www.unep-wcmc.org/wdpa/

- ESRI World Basemap Data – global coverage
http://www.esri.com/data/download/basemap/index.html

61

Developing Maps : Capturing Spatial Data from Participatory 3D Models

Philippine Association for Intercultural Development

Plastic

- Clear plastic sheets are draped and fixed onto the model
- Known registration points are marked on the plastic with colored pens
- Features of interest are traced onto the plastic
- The plastic is processed

PAFID

Digital Photography

- A good resolution image of the model is taken with a digital camera

PAFID

CTA: Sequence

- Camera is placed as close to perpendicular to the plane of the base as possible
- Lines are marked off in equal intervals at 4 meters from the model
- Sequential photos are taken
- Plumb bob is used to place camera center at intervals

Image courtesy Giacomo Rambaldi/CTA

PAFID

Single Shot

- Model is placed in good lighting conditions
- Camera is placed at distance where the entire model can be fit into a single image
- Single image is processed
- Sequential images are taken for editing and documentation purposes but not processed
- Camera is placed at half the distance or distance where individual labels are legible in image

PAFID

Georeferencing

- Attaching location information to pictures
- Tool to spatialize imagery or raster data

PAFID

Grid Marks

- Locate the grid marks on the model
- Drape a 10 cm interval grid
- Select 4 points with known coordinates on base map
- Locate the 4 points on the model
- Assign the coordinates of the known points to the points on the model

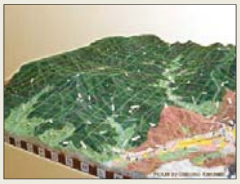


Image courtesy Giacomo Rambaldi/ARCBC

PAFID

Coordinates

- Select 4 points with known coordinates on the base map
- Locate the 4 points on the model
- Assign the coordinates of the known points to the points on the model

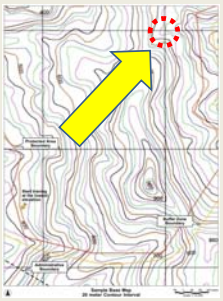
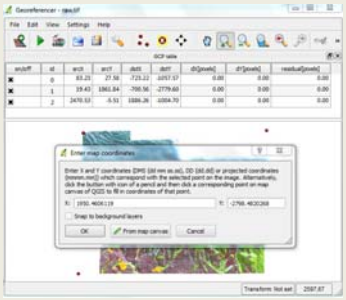


Image courtesy Giacomo Rambaldi/ARCBC

PAFID

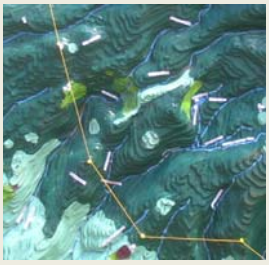
QGIS: Georeferencer



PAFID

Registration Points

- Locate known registration points on the model
- Boundary corners, mountain peaks, river crossings
- Conduct GPS surveys
- Geometric correction
- Suitable transformation algorithms for local deformations



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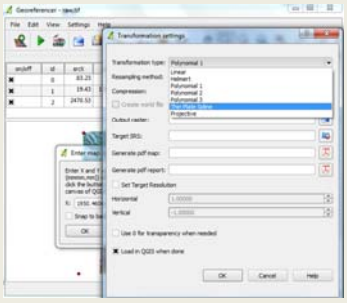
QGIS: Transformation Algorithms



PAFID

Transformations

- Linear – attach coordinates to a referenced surface
- Helmert – scale and rotoation
- Polynomial
  - First : scaling, translation and rotation
  - Second : some curvature
  - Third
- Thin plate spline – local deformations
- Projective – rotation and translation

PAFID

Digitizing

- Editing tools allow tracing of points, lines and polygons on the georeferenced image

PAFID

Spatial Analysis

- GIS allows overlay of other relevant data sets
- Perform analysis functions such as overlaps, hotspots, and others

PAFID

Democracy Wall

- To provide a space where participants can freely and concisely express their ideas and opinion
- To provide written reflections on the participatory process
- Obtain feedback during the event for facilitators to adapt to changing circumstances

Democracy Wall

- Print 5 headings and glue to top left corner of craft paper
  - Write in different languages if in multilingual setting

Guide phrases

- I discovered that ...
- I noticed that ...
- I felt that ...
- I learnt that ...
- I would like to suggest that ...

Democracy Wall

- Fix the 5 craft papers in sequence on one part of venue
- Distribute metacards and pens to participants. Make small pieces of masking tape available so participants can stick their metacards to the Democracy Wall

Democracy Wall

- During orientation, explain that the Democracy Wall is an open space where they can post ideas and opinions
- Invite participants at scheduled breaks to put metacards under the 5 headings
- Each card must express 1 statement, written in large type

Reflection

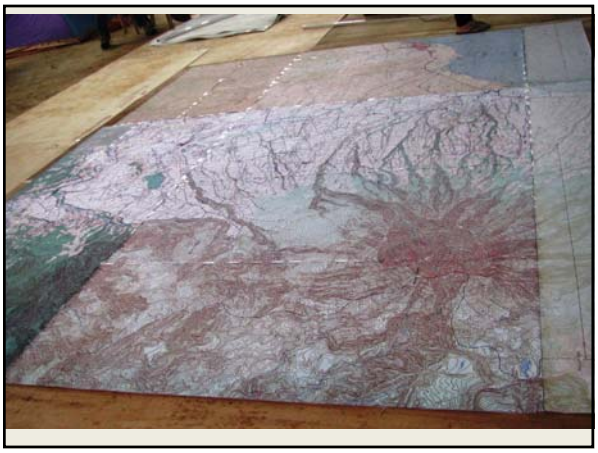
- Group or rank the metacards
- Facilitate a discussion around the reflections
- The reflections serve as a guide for improvements to the process and for future activities

Construction: Steps in Building a Participatory 3D Model

Philippine Association for Intercultural Development

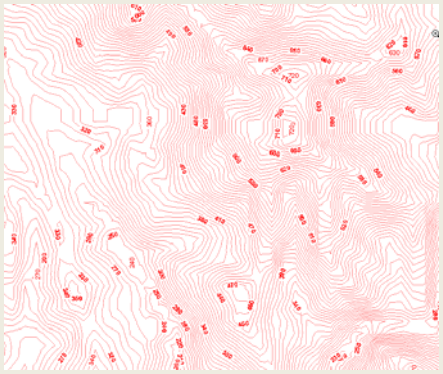
Building the Base

Lay Out the Base Map



Marking Contours

- Mark contour numbering of the enlarged map (Base Map) based on the 20 meters interval
- Be sure to number small contour of peaks and number should be inside the contour



Number all contour lines for guidance and consistency

Lamination of the Base map

- Plastic lamination of the enlarged map using wide scotch tape (3" width) to prevent scratch or peeling of and preserve the map during tracing

Carbon paper is pasted at the back of the laminated Base Map to prepare it for the next step of TRACING the contour lines.

Tracing of Contour Lines

Begin tracing the contour lines at 20m. intervals

Tracing Contours

- Contour lines are traced starting from the lowest elevation

  Example:

  Lowest elevation:
  Straight line – to be cut
  Second elevation:
  Broken line – reference of the next layer

- The rubber (straight line) is cut using surgical blade (no. 3)or box cutter.

Cutting of Contour Layers

Cut the selected material per contour line

Assembling the Contour layers

The contour layers are assembled and glued together from the lowest elevation going up.

Smoothening of Contour layers

- Check untraced contours especially small peaks
- Cut and polish protruding rubber at sides and between contours of the 3-D map

Smoothen the terracing of the contour slope

- Epoxy or plaster mixture s should be applied to eliminate terracing between layers and contours .

Allow the model to dry and paint with white enamel

The Model is finished!

Participatory Three-Dimensional Modelling (P3DM): Tobago

Prepared by
Dr. Bheshem Ramlal
Department of Geomatics Engineering and Land Management
UWI, St. Augustine

Introduction*

- P3DM is a relatively new method developed to support collaborative processes to facilitate grassroots participation in problem analysis and decision-making
- P3DM integrates people's knowledge and geographic information to produce relief models that are user-friendly.
- These models are relatively accurate data storage and are useful as analysis devices and for communicating information.

* This presentation is based on material obtained from: http://www.iapad.org/participatory_p3dm.htm

Overview of Process

1. Preparatory Phase
2. Acquiring P3DM Supplies
3. Assembling the Blank Model
4. Depicting the information
5. Transferring the information
6. Digital Photography
7. On-screen digitizing
8. GIS Processing
9. Map Production
10. Data Validation
11. Hand Over of Model
12. Continued Use by Community

Preparatory Phase

- It is extremely important to have a very good understanding of the cultural and socio-economic setting of the area in which the P3DM exercise is to be done
- Need to identify of all stakeholder groups
- Must secure agreements from them to participate in the process
- Identify venue for exercise
- Secure funding to support exercise
- Compile Legend for Map in collaboration with stakeholder
- Identify supplies needed

Legend making

- All legend items need to be sorted into:
  - areas
  - lines
  - points
  - toponyms

Acquiring P3DM Supplies

- Items include but not limited to:
  - Tables for Model
  - Cardboard
  - Base Maps
  - Strings – Various colours
  - Carbon Paper
  - Pins –Various colours
  - Thumb tacks –Various colours
  - Paint – Various colours
  - Glue
  - Scissors
  - Coping Saw
  - Markers
  - Nails
  - Crepe Paper

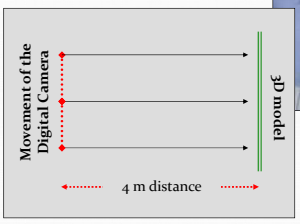
Tools for Scaling and referencing

Assembling the Blank Model

Depicting the Map Information

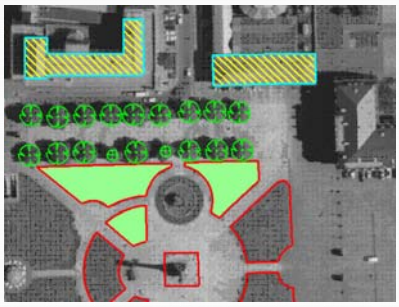
Transferring the information

Digital Photography



Sample Images

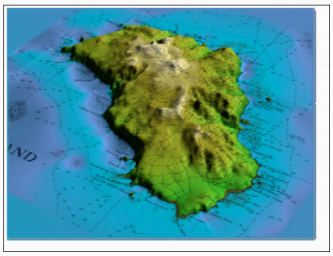
On-screen digitizing



GIS Processing

- Preparing the Data for Analysis and Map production purposes:
  - Single Map coordinate system
  - Separating into different layers
  - Ensuring that all attribute data is added

Map Production



Data Validation

- Finished Map is verified by informants and other stakeholders in the community
- Error and omissions are fixed
- Final Map produced

Hand Over of Model

- Finished Model and Maps handed over to the Community in a formal handing over ceremony
- Provides an opportunity for the press, policy makers and informants to meet and to hold discussions using the model as centerpiece for these discussions
- The model becomes part of the Community

Continued Use by Community

- Follow up data collection and updates of model need to done on a scheduled basis so that the model is sustainably used by the community.
- As a result, stakeholders will continue to benefit from the P3DM exercise in the long term.

Concluding Remarks

- The 3D modelling process is long but a very simple one
- Significant participation and learning takes place during the exercise
- It is by far the most cost effective method to gain significant information for use by communities to influence policy makers
- This exercise is expected to provide significant opportunity for the people of Tobago

Sourcing GIS Data in Trinidad and Tobago

Bheshem Ramlal, Ph.D
Department of Geomatics Engineering and Land Management,
The University of the West Indies
St. Augustine

Outline of Presentation

- Introduction
- GIS Development in Trinidad and Tobago
- Sourcing Data
- Conclusions

Introduction

- Many agencies are independently moving into GIS development to generate these spatial data products.
- A quick review will help us to understand who has what data and how we can gain access to these data sets

Status of GIS Development In Trinidad and Tobago

- **Central Statistical Office**
  - GIS Developed since 1992, operational
- **Town and Country Planning Division**
  - Started 1990, Recently improved and now functional
- **Surveying and Mapping Division**
  - Extensive Digital mapping, limited GIS capacity, developing a Geo-Portal
- **Land Management Division**
  - SALIS, New development planned
- **Land Registry**
  - Database of deeds and certificate of titles stored in Oracle database
- **Valuation Division**
  - Initiated a Property Taxation Information System using MS Access. Attempts being made to initiate GIS

Status of GIS Development in T&T

- **Environmental Management Agency**
  - Completed a GIS Needs assessment, completing data acquisition
- **HDC, LSA and Ministry of Housing**
  - Developed Website using GIS software but limited GIS development
- **Ministry of Health**
  - Limited GIS applications for Projects
- **National Gas Company**
  - Pipeline GIS developed but not being used fully
- **TTEC**
  - **Rolling out enterprise GIS**

Status of GIS Development in Trinidad and Tobago

- **PETROTRIN – Exploration, PSAEL, HSE**
  - Three separate GIS being developed in each of the above sections
- **Ministry of Energy**
  - Working on Enterprise GIS
- **Ministry of National Security**
  - SAUTT – closed off
  - Police – significant training but no real GIS development achieved
  - Fire – project initiated but no progress made
  - SSA – training in GIS, minimal progress
  - Defence Force – training in mapping and GIS, minimal progress
  - ODPM – Enterprise GIS being rolled out
  - Command Centre, St. James Barracks – Vehicle tracking system based on GIS
  - NEMA Tobago – training done, Minimal development in GIS
  - CAPA – Using GIS for crime analysis

Status of GIS Development in Trinidad and Tobago

- **Ministry of Education**
  - Consultant hired to develop GIS for Educational Planning Unit
- **Ministry of Local Government**
  - Consultant hired to develop GIS for Ministry
  - Port of Spain City Corporation has developed their own GIS
- **Ministry of Agriculture – Land and Water Resources Division**
  - GIS Developed and operational
- **Ministry of Sports and Youth Affairs**
  - Enterprise GIS being developed
- **Forestry Division**
  - GIS training, GIS data acquisition, GIS in initial development

Status of GIS Development in Trinidad and Tobago

- **Ministry of Works and Infrastructure**
  - Several personnel trained. GIS to be implemented in Drainage Division
- **Ministry of Public Administration**
  - Initial attempts being made to introduce GIS
- **WASA**
  - ***Earliest and most comprehensive and successful design and implementation of GIS***
- **THA**
  - Received training but GIS not introduced to date

Sources of GIS Data

- Socio-economic Data – CSO
- Aerial Photographs – SMD
- Topographic Data – SMD, WASA
- Cadastral data – SMD
- Rainfall – WRA
- Meteorological data – Met Office
- ESA – EMA
- Geological Data – Min of Energy
- Soils Data – Soils Unit
- Pipeline Data – NGC, Petrotrin
- Housing Data - HDC

Conclusions

- Extensive spatial data is available for Trinidad and Tobago
- Knowing where to access these data set from is important to ensure that you can complete your project on time.

Training of trainers in the facilitation of P3DM:

Evaluation using participatory video

SESSION 1: INTRODUCTION TO MONITORING AND EVALUATION

Think about...

- What is the first word that comes into your mind when you hear the words “monitoring and evaluation”?

Monitoring - outputs	Evaluation - outcomes
• Conducted throughout the activity	• Conducted at discrete points or completion of activity
• A continuous process	• A defined single process
• Gives information on if following the plan, what assumptions change, what steps not achieved, etc.	• Gives information on whether the activity was successful, had negative impacts, suggests improvements, identifies gaps & new avenues, etc.
• Inputs into constant revision of plan	• Inputs into designing new projects
• Urgency – need to take action	• Encourages broader reflection
KEEPING ON TRACK	BEING STRATEGIC

What are you asking in monitoring?

- What progress is being made?
- Are activities/programmes are being carried out as planned?
- What is being learned to improve effectiveness and efficiency?

Effectiveness: achievement of results

Efficiency: optimal use of resources

What are you asking in evaluation?

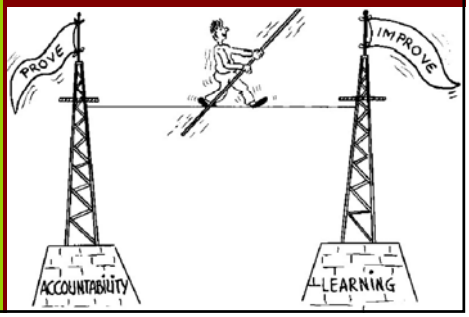
- Are you having desired (positive) results?
- Are you having unanticipated negative or positive results?

Purpose of M&E

1. Accountability
   - Upward, horizontal, downward
2. Learning
   - informed decision-making
   - enhanced knowledge and skills
   - providing information for communication and advocacy

- enhanced collaboration among partners
- built support, energy and enthusiasm

Accountability & learning: a balancing act



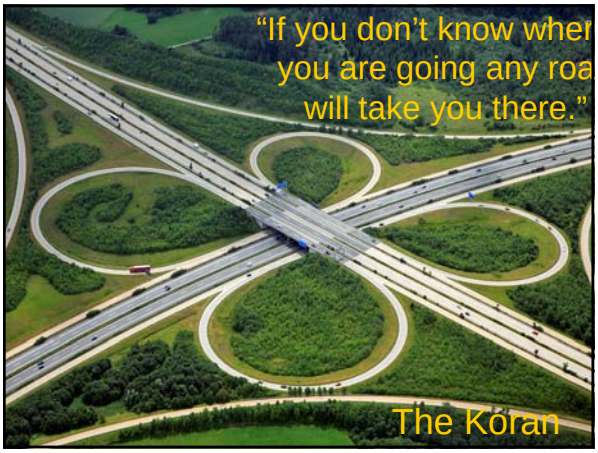
Sourced from Terry Smutylo

SESSION 2: IDENTIFYING RESULTS – OUTPUTS, OUTCOMES AND IMPACTS

Is P3DM a valuable tool for the Caribbean?


Is P3DM a valuable tool for the Caribbean?

- **Results:** How can we "show/prove" that we are doing good work? How are we making a difference?
- **Process**: What are we learning about how we work? Is the approach we are using the best approach? How can we make it better?



Small group activity

- Draw a picture of what **results** the P3DM process in Tobago wants to achieve

What are outputs?

- Observable short-term and medium-term tangible products as a direct result of your action
- You control the outputs
- Examples?

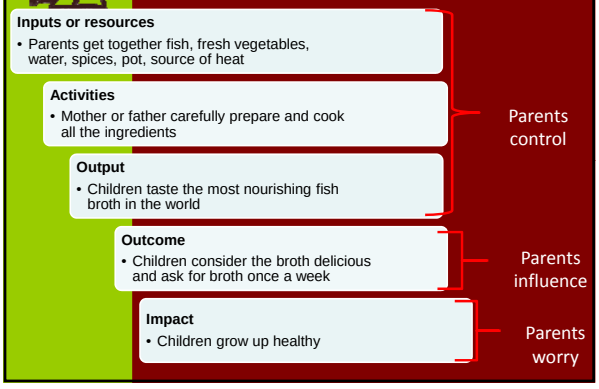
What are outcomes?

- Observable changes in actions of people that potentially contribute to the long-term, sustainable improvement in people's lives or the state of the environment.
- Your action contributes to these changes
- Examples?

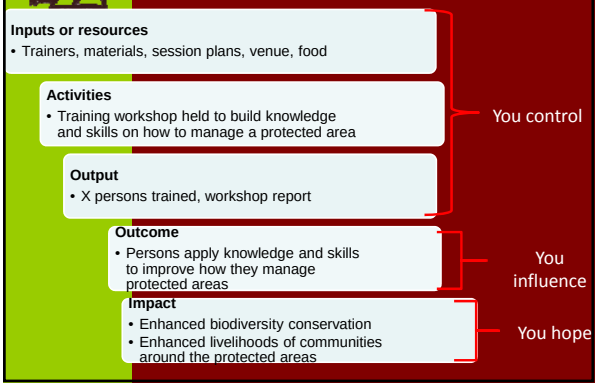
What are impacts?

- Long-term observable changes
- Your action contributes to these changes
- Examples?

The fish broth development story



A training workshop story



SESSION 3: MEASURING RESULTS

Indicators to measure results

SMART

- **Specific** to the result
- **Measurable** either quantitatively or qualitatively
- **Available** at an acceptable cost
- **Relevant** to the information needs of decision-makers
- **Time-bound** so that users know when to expect the objective or target to be achieved

PEOPLE make results happen!

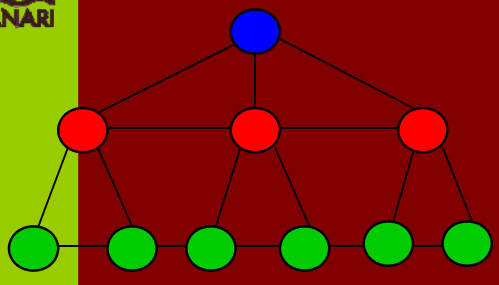
Outcome Mapping

- Focuses on one type of result / outcome = changes in behaviours, relationships, actions, and/or activities of the people and organizations with whom you work directly.

Who are the people we need to influence to achieve the desired results?

- ***Boundary partners:*** Individuals, groups, and organizations with whom the programme / project interacts directly to effect change and with whom the programme / project can anticipate some opportunities for influence.

Credit: IDS



Who are the main boundary partners (target groups) in the P3DM process?

- (Remember your stakeholder identification)

P3DM outcome challenge statement

- "We intend to see [boundary partner] who [description of behaviours in the active present tense]."
  - Behaviours
  - Relationships
  - Activities
  - Actions
  - Interactions

Indicators of change – progress markers

Credit: IDS

Examples of progress markers

Expect to See local communities:

1. Participating in meetings
2. Applying new skills and knowledge
4. Contributing resources
5. More motivated
6. More members participating in community activities

Examples of progress markers

Like to See local communities:

1. Developing partnerships
2. Calling upon external experts when necessary
3. Requesting new opportunities for training
4. Initiating activities on their own – taking initiative

Examples of progress markers

Love to See local communities:

1. Helping other groups establish themselves
2. Sharing lessons learned internationally
3. Influencing national policy debates & formulation on resource use and management
4. Identifying and managing their conflict with other groups

SESSION 4: PARTICIPATORY VIDEO

What is PV?

- A facilitation tool that stakeholders use to tell their story.
- Stakeholders are fully involved from conception to production of the video and have control.
- The process is as (or more) important than the product.

Process used

- Introductions to explain the process and ensure interest in participating
- Building capacity to do the filming
- Facilitating the process of planning the story through story boarding.
- Guiding the process of identifying the target audiences and message development
- Continuous open screening of footage to facilitate reflection, analysis and consensus building
- Ensuring participation in editing so that the film accurately reflects what the group or community wants to say
- Ensuring that the stakeholders have use and ownership of the final product

Uses

- Advocacy
- Exchange of ideas and experiences
- Participatory research and action learning
- Participatory monitoring and evaluation
- Facilitating dialogue
- Building consensus

PV for advocacy

- "Fish for "Gas"
- Fisherfolk in Blanchisseuse, north coast of Trinidad
- CANARI YouTube

THE PV PROCESS IN BLANCHISSEUSE

Deciding the challenges in fishing in Blanchisseuse

Participants were divided in groups to draw the challenges facing fishing in the community

Also helps to start think of how to visually present ideas

Everybody got involved!

Participants used a variety of material to document their challenges- markers, crayons, play-doh, wire, strings, bendaroos, etc.

Presenting the challenges to the entire group

After drawing the challenges, the participants presented those challenges to everyone. The facilitators wrote the information on flip chart and coloured sheets

Each group came up with different challenges

Many of the challenges were the same but some were unique to the groups.

Trying to understand challenges

The facilitators used a problem tree to understand the real challenges.

Lots of thinking to understand the root causes of the problems

Democracy in action: Voting for the challenges they wanted to document

Understanding the possible solutions and identifying the target audience

The participants worked out the solutions, identified the target audience and the best places to show the video (including YouTube).

Understanding the cameras on the phones

UWI mFisheries helped the participants to understand the use of the videos on the smartphones.

Learning of different types of shots

Mid shots, head shots, long range shots !!! Different types of shots are used to convey different messages.

Practicing to use the camera

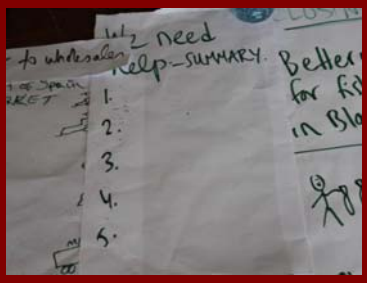
Participants used their Motorolla Defy smartphones to create the videos. They had to understand framing the shots and capturing quality audio with the phones.

Tips from an expert!!!

Participants viewed the practice shots and got tips from an experienced videographer

Creating storyboard

You decide what you want each scene to portray. Lots of drawing!!



Deciding the order of the scenes

Iconic shots of Blanchisseuse

Known images of the community were included at various points in the video

Shooting the video

Participants decided the interviews

Shooting the video

Participants interviewed members of the fishing community in Blanchisseuse

Editing the video

Participants led the process of editing the video with technical assistance from the UWI mFisheries team

Re-shooting videos as needed

Participants reviewed the videos in the field

Final editing

Participants re-ordered the shots as necessary and decided the music for the video

Participants used the video share the challenges with agencies that can assist them

Results – lots of help!

- Gas pump
- Ice storage room
- Upgraded fishing facility (indirect benefit)
- Winch donated
- Offer of office equipment for the Association

Benefits

- Easy and accessible for all literacy levels
- Immediate and powerful communication medium
- Engages people to tell their own stories
- Builds community and consensus
- Catalyses analysing problems and identifying solutions
- Amplifies voices
- Empowers

Creating the story

Interviews

Scenes

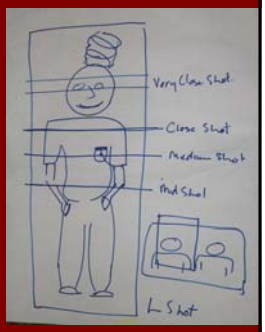
- What do we need to give as introduction?
- What results do we need to measure?
- What did we learn about the process?
- What conclusions and recommendations will we identify?

Tips on your camera

- Make sure the battery is in and the camera has power
- Make sure the memory card is in
- Turn the power on
- Check the setting (normal – daytime)
- Practice zooming
- Take a test shot and check to see if it saved
- Take a test shot to check for audio and playback to see if it is loud enough

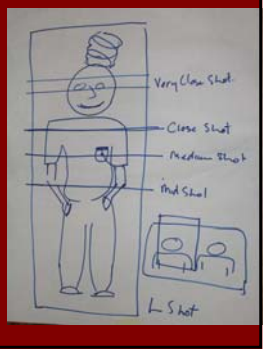
Framing an entire person

- Whole/long shot = head to toe
- Ensure you do not cut their joints e.g. head, ankle



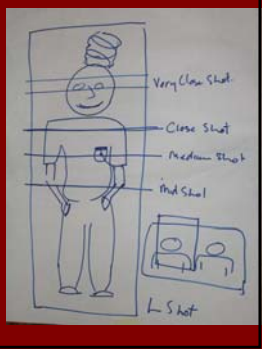
Framing mid-shot

- Mid-shot = framed just above the waist (or sometimes just below the waist)



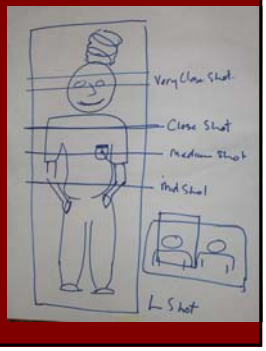
Framing medium shot

- Medium shot = half way between waist and shoulders



Framing close shot

- Close shot = take just below the shoulder level



Framing very close shot

- Close-up shot = helps to capture emotion - can focus on the eyes, frowns, hands etc.

Other tips

- Balance the head room: frame the photo so that you have less space above the shot
- In video, if capturing one person speaking to another, you can cut between persons, but ensure the space between the two is appropriate (not too large or too small).

Other tips

- Do not zoom during shooting
- Do not pan during shooting
- Use tripod or steady surface (table, books, chair, fence, your body)
- Do not cut away from somebody speaking to scenery or what they are pointing to – you can capture that shot later and edit it in
- Check where the microphone is in relation to your voice and the person you are interviewing

Appendix 6- Handouts

Concept sheet: Identifying who is a stakeholder

This concept sheet provides a definition of a stakeholder; expands on this by examining who might be considered a stakeholder in natural resource management based on identifying their rights to, responsibilities for and interests in a resource; and defines who is a key stakeholder.

DEFINITION

Stakeholders in natural resource management 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" (Geoghegan *et al*. 2004, p.3).

WHO HAS RIGHTS, RESPONSBILITIES AND INTERESTS?

Stakeholders can also be defined as the people who have rights to, responsibilities for, and interests in a resource as illustrated in the analysis in Table 2 below.

Table 1: Analysis of rights, responsibilities and interests of stakeholders in a resource

Stakeholders have <u>rights</u> to a resource if they:	***Stakeholders have <u>responsibility</u> for a resource if they:***	***Stakeholders have <u>interest</u> in 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) • own the land or access to it (e.g. a group of craft makers who are allowed to go and harvest materials from the forest) • have been conferred rights via some legal mandate (e.g. forestry departments, private landowners)	• undertake actions that change the nature of it (e.g. marijuana farmers, 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 scenic natural areas) • are formally or informally managing it (e.g. forestry departments are formal managers but timber harvesters also informally manage their extraction) • have a statutory responsibility (e.g. state land and planning agencies)	• have a cultural attachment to it (e.g. Rastafarians) • derive some enjoyment from it (e.g. local and foreign hikers and birdwatchers) • are actively involved in its conservation (e.g. environmental NGOs) • have an intellectual association with it (e.g. researchers)

Typical stakeholders in natural resource management therefore include:

- government agencies, the private sector, CBOs, NGOs, academic institutions, the media, intergovernmental bodies, technical assistance agencies and donors;
- stakeholders found at many levels:
    - local (e.g. communities living adjacent to a forest, forest users);
    - national (e.g. government agencies with responsibility for forest management, private sector companies)
    - regional (e.g. regional NGOs, regional intergovernmental bodies)
    - international (e.g. tourists, foreign-based companies, international NGOs, regional or international donors and technical assistance agencies);
- 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 (e.g. illegal hunting, illegal occupation of land); and
- people directly using or managing a resource as well as people who have an indirect impact on a resource, for example, people benefiting from the ecological services (e.g. watershed functions) or people whose activities have an impact on the ecosystem (e.g. residents in an upper watershed impact on coastal and marine ecosystems downstream).

KEY STAKEHOLDERS

It is not always possible (given limitations in time, money, etc.) to fully involve every stakeholder in a participatory process. It is therefore important to identify the key stakeholders, that is, the ones most likely to affect and be affected by (positively or negatively) the outcomes.

In determining who the key stakeholders are, it is useful to ask the following questions:

- Are their purpose, focus, interests and mission particularly relevant to management of the resource?
- Do they have a high level of power, authority and influence?
- Do they have a low level of power, authority and influence, and are therefore at risk of being marginalised?
- Do they have a large stake in the outcomes (for example, are they the management agency or do their livelihoods depend on the resource)?
- Is the scope of their involvement high (for example, this is or should be a key area of work for them)?
- Do they have the capacity to contribute (for example, can they participate in meetings with other stakeholders and effectively express their ideas)? Can they provide special or unique skills or knowledge (for example, a university has high technical capacity to contribute to management)?

Activity sheet: Stakeholder analysis

Once the main stakeholders have been identified, the next step in the participatory process is to analyse their interests. By understanding stakeholders' rights, responsibilities, interests, perspectives, and power relationships and, which are the key stakeholders, you can better facilitate their involvement in a participatory process.

OBJECTIVE

The objective of the stakeholder analysis activity is to better understand stakeholder roles, responsibilities, interests and perspectives as well as power relationships among them. This will help in identifying how they should be engaged in management, what are the potential areas of conflict, and the capacities and capacity gaps that might support or hinder resource management. It also enables you to identify the key stakeholders.

BACKGROUND AND RATIONALE

Conducting a stakeholder analysis involves:

1. identifying the relevant questions to ask about stakeholders in relation to the management context, including:
    - What are the stakeholder interests, roles, responsibility and power relationships?
    - How do they use the resource?
    - How are they involved in management now and in the past?
    - What will be the impact on them of a change in management?
2. determining how the stakeholder analysis will be conducted, key questions include:
    - Who will be involved?
    - What is the level of participation?
    - How will information be collected?
    - What are the potential sources of information?
3. collecting and validating the information for each stakeholder;
4. organising and sharing the information in a format that is clear and understandable by all stakeholders; and
5. constantly revising the stakeholder analysis as the situation changes.

A well-facilitated participatory stakeholder analyses allows each stakeholder to state their own needs and expectations and hear and understand those of others.

Stakeholder analysis can also help to identify underlying needs as well as hidden agendas by providing a framework for inquiry into the different ways that people relate to natural resources and to each other.

The process can also serves as a forum for negotiation. When a conflict has flared, a stakeholder analysis can be used to identify where alliances can be built and which interests might be negotiable.

RESOURCES

Box 1: Resources needed for facilitating stakeholder analysis

Materials	Requirements
• Concept sheets o ***Concept sheet 3: What is Participation?*** o ***Concept sheet 4: Identifying who is a stakeholder?*** • Flip chart paper, pens and markers • Letter-sized coloured paper • Masking tape • PowerPoint presentation or handouts or flipcharts of the outputs of the stakeholder identification activity as detailed in ***Activity sheet 1: Stakeholder identification*** • Probing questions as a handout or on a flipchart or on a slide	• Meeting room large enough for the entire group and with wall space for putting up the work from whole and small group exercises. • Break out rooms or enough space for smaller group work. • PowerPoint software, a projector and screen (or white wall) if using slides.

METHOD

STEP 1: Recap or define key concepts.

- Review who are stakeholders and the importance of identifying them using ***Concept Sheet 4: Identifying who is a stakeholder?*** along with ***Concept Sheet 5: What is an institution?***

STEP 2: Assign stakeholders into the most important and relevant categories[1] (whole group exercise).

- Provide a list of the stakeholders identified from the stakeholder identification process on a flipchart, slide or handout. It may be useful to organise stakeholders into different categories based on their primary area(s) of interest. Discuss with participants which category or categories each stakeholder should be assigned to.
  Examples of categories can include:
  - o biodiversity and cultural resources (for tourism and recreation)
  - o land resources
  - o water resources

[1] This step is only applicable if you are examining different categories of resources.

  - mineral resources
- Under each category further subdivide stakeholders by sector and/or type (e.g. government (public sector), civil society, private sector, donors and technical support agencies, inter-governmental agencies, communities, etc).

Table 1: Subdividing stakeholders by sector and type

	Government	Civil society	Private sector
Biodiversity	Ministry of Environment Ministry of Agriculture Ministry of Tourism Community Development Agency	CANARI Save Our Birds Hunters Together	Tourguides Inc.
Land	Ministry of Transport	Against Development	Big Trucks
Mineral	Ministry of Energy and Mines	Village of Beauty	Sand Limited

STEP 3: Determine which are the key stakeholders[2] (can be done as a whole group small group exercise).

- Explain that it is not always possible (given limitations in time, money, etc.) to fully involve every stakeholder in a participatory process or the management arrangements, so it is useful to identify those who are most likely to positively or negatively affect the outcomes. Use the factors outlined in ***Concept Sheet 4: Identifying who is a stakeholder?*** to have participants (in plenary or small groups) analyse which of the stakeholders identified are key by asking:
  - are their purpose, focus, interests and mission highly relevant to management of the resource?
  - do they have a high level of power, authority and influence?
  - do they have a low level of power, authority and influence, and are therefore at risk of being marginalised?
  - do they have a large stake in the outcomes (for example, they are the management agency or their livelihoods depend on the resource)?
  - Is the scope of their involvement high (for example, this is or should be a key area of work for them)?
  - do they have the capacity to contribute (for example, they can participate in meetings with other stakeholders and effectively express their ideas)? Can they provide special or unique skills or knowledge (for example, a university has high technical capacity to contribute to management)?
- Record which stakeholders are identified as key.

[2] This can be done before or after Step 3.

STEP 4: Refining the analysis (whole or small group exercise).

You may want to expand on the analysis of stakeholder roles, responsibilities and interests by natural resource or natural resource goods and services that you conducted earlier.

What you decide to analyse will depend on what you need to know to implement your participatory process and design effective management arrangements.

The following are examples of the type of question you can ask about each stakeholder or stakeholder group:

- **Interests:** what are the current and future interests of stakeholders in the use and management of the resources? What do they need and want? What benefits do they currently or potentially derive?
- **Power:** does the stakeholder have formal rights and responsibilities? Legal power? Political influence? Economic power? Or a combination of these?
- **Relationships:** what are the relationships between stakeholders? Are there formal structures and/or informal networks and mechanisms?
- **Impacts on the resource:** what impacts are stakeholders having on the resource, both positive and negative?
- **Conflict:** what are the areas of existing or potential conflict? What are the areas of agreement and shared interest upon which consensus and collaboration can be negotiated?
- **Capacity*:*** are stakeholders willing to participate in planning or management? What capacities do they have to contribute? What capacities do they need to be able to effectively contribute (and are there resources to build these)?

STEP 5: Documenting the analysis (may be done during or after the workshop).

- Record the analysis in a format that gives you easy access to the information you need, for example in table format as shown in Table 6 below, where the key stakeholders are identified in bold.

Table 2: Compilation of the results of a stakeholder analysis

BIODIVERSITY RESOURCES		
Stakeholders	**Rights, power, responsibilities, use, interests**	**How will they be affected by a change in management? What are the existing and potential sources of conflict?**
	GOVERNMENT	
Ministry of Environment	Legal responsibility for management of biodiversity resources	Conflict with other government agencies where there are conflicting land uses
Community Development	Interested in promoting rural livelihoods based on the sustainable use of natural resources	Conflict with stakeholders promoting conservation as there is a perception that they are against people and use of natural resources

CIVIL SOCIETY and PRIVATE SECTOR

Save the Birds	Interested in bird conservation	Conflict with hunters as there is a perception that hunting is currently unsustainable
Hunters together	Interested in recreational hunting	Conflict with stakeholders promoting conservation as there is a perception that they are against people and use of natural resources

TIPS FOR THE FACILITATOR

- The process of stakeholder analysis can help to build trust and respect between different stakeholders.
- Participatory stakeholder analysis is likely to work best with independent facilitation, especially if there is conflict.
- If you are from the agency with formal management responsibility, you are probably coordinating the participatory process. But it is also important to participate actively in the analysis process and to recognise that you are just one stakeholder, albeit a key one, and that your interests may be different from others.
- Stakeholder analysis is a valuable change management tool as when you regularly re-examine who are your stakeholders and subsequently re-analyse them throughout the life of a management intervention, changes in power relations and social dynamics can be re-assessed and new entrants into the natural resource management system identified.

Appendix 7- Complied Training of Trainers evaluations

Training of Trainers on the Facilitation of Participatory three-dimensional modeling (P3DM)
Blenheim Sheep Multiplication and Research Project,
Windward Road, Mt. St. George, Tobago
Saturday 29th September to Friday 12th October, 2012

Workshop evaluation form

1. Did you find the meeting useful in learning about facilitating participatory processes for the management of natural resources in the Caribbean?
   Yes: 14 □No

Please explain:

1. It can be a good tool if done properly, using guidelines given by Ken and Kail.
2. Yes, practical application in a real scenario whereby participants identified location of recourses, resource usage impacts of climate change etc. and the model was useful.
3. Absolutely! The harnessing of traditional local knowledge is a feat in itself. I am happy that this workshop acted as an outlet to developing these ideas.
4. The work process of facilitation was new to me.
5. Was very educative and now I have and my organisation new tools to develop participatory process in Dominican Republic
6. Prior to this meeting I had no formal training in facilitation, yet I normally facilitate workshops at the workplace.
7. I really appreciated when CANARI facilitator shared their experiences on how to facilitate successfully (answering difficult questions/addressing conflict btw users etc).
8. Learned attributes of good facilitator.
9. Learned different evaluation processes.
10. Learnt view ice breaker techniques.
11. I found it beneficial because I was able to understand the concepts and present it in a way that community members and the general audience can understand to assist them in managing their own resources.
12. It has changed my viewpoint on the methods to be used for educating and empowering communities.

2. What is the most important thing that you learned / understood / felt from this meeting?
   1. We need community involvement for the process to be valid.
   2. Bottom up approaches are important in building community reliance
   3. Traditional/ Indigenous knowledge is just as important as Technical knowhow.
   4. P3DM working with local communities is an initiative process sometimes.
   5. I learned about when participating you respect each other views.
   6. I also learn that when facilitation you have to shut up sometimes and listen more.

Activity sheet : Stakeholder identification

Stakeholder identification is an incremental (step-by-step) process. It is best done as a group exercise–and that is the focus of this activity sheet–as every stakeholder will have a different perspective and be familiar with a different set of stakeholders. But obviously some initial stakeholder identification is necessary to determine who takes part in the group exercise. This is usually done by the project team or the resource management organisation.

This activity sheet can then be used by the facilitator to guide a group through the process of identifying stakeholders based on thinking about the different types of natural resources at the site or the site to be managed.

There are other approaches to identifying stakeholders but this is one of the most effective in ensuring that no one is overlooked.

It is also important to recognise that stakeholder identification is not a one-off process. It needs to be done on a continuous basis as changes in the external environment or the management regime may alter who is affected and, new resource users may emerge.

OBJECTIVE

The objective of this stakeholder identification activity is to name all the individuals, groups and organisations that have a stake in the management of the natural resources under consideration.

BACKGROUND AND RATIONALE

Stakeholder identification is a prerequisite for, and should be the first step in any participatory planning or management process as it is essential in identifying who should be involved. It then continues throughout the process and beyond as new information or interests are identified.

It is important to focus on identifying both the less powerful stakeholders, who may otherwise be marginalised in the process, as well as the most powerful stakeholders who may not feel a need to engage in the participatory process if they feel they can influence high-level decision-makers directly. An effective stakeholder identification process helps resource managers to:

- understand the different ways in which people interact with the natural resources and the management regime;
- identify the stakeholders that are key to successful implementation of management strategies; and
- identify areas of potential conflict.

RESOURCES

Box 1: Resources needed for facilitating stakeholder identification

Materials	Requirements
• Concept sheets: o ***Concept sheet : Identifying who is a stakeholder?*** o ***Concept sheet : What is participation?*** • Handouts: o Table 2 from ***Concept sheet: Identifying who is a stakeholder?*** *(*as a handout or on a PowerPoint slide • Probing questions as listed below (optional) • Flip chart paper, pens and markers • Masking tape • PowerPoint presentation summarising points from the concept sheets and with examples of goods and services from natural resources	• Meeting room large enough for the entire group and with wall space for putting up the work from whole and small group exercises. • Break out rooms or enough space for smaller group work. • PowerPoint software, a projector and screen (or white wall) if using slides.

METHOD

STEP 1: Recap or define key concepts:

- Review the definition of stakeholders and the value of identifying them to the entire participatory process

STEP 2: Introduce the idea of who is a stakeholder using information presented in Concept sheet (whole group exercise):

- Emphasise that stakeholders can be:
  - individuals, informal groups, or formal organisations;
  - legal or illegal users; and
  - formal or informal managers.

STEP 3: Identify the natural resources within the site to be managed[1] (whole group exercise).

[1] This step is not needed if there is only one resource e.g. it is all mangrove.

- Ask the participants to identify what types of natural resources exist at the site (e.g. forest, savanna, mangrove, coral reef) and list each of them on flip chart paper.

STEP 4: Identify the goods and services provided by different natural resources (small group exercise).

- Explain that in this exercise, they will work in small groups to identify the goods and services provided by each of the natural resources identified in Step 2.[2]
- Provide one or two examples of natural resource goods and services (see Table 4 below).
- Divide the participants into small groups. Groups should normally be between four and eight people to ensure that everyone participates.
- Allocate each group one or more natural resources, depending on the number identified and how many small groups there are. The allocation should also take account of who is in the group, i.e. who has good knowledge of a particular resource.
- Encourage groups to select a coordinator or chair and a presenter.
- Ask the groups to report back on a) the goods and b) services provided by each natural resource and provide them with flip chart paper and markers.
- Give the groups adequate time to identify the goods and services which will depend on the number of resources, for example 15-20 minutes. Bring the groups back into plenary session and give each group 5-10 minutes to present their identified goods and services to the rest of the group.
- Ask for comments, validation and additions from other participants, adding your own inputs if necessary. This should take at least 5-10 minutes per group.

Table 1: Example of a natural resource and the goods and services it provides

Natural resources present on the site to be managed	Good and services produced by each resource
Forests	**Goods** 1. Timber 2. Food 3. Craft materials **Services** 1. Carbon sequestration 2. Protection of water resources 3. Landscape beauty/aesthetics

[2] If there is only one resource then do this activity in plenary with the whole group.

STEP 5: Analyse rights, responsibilities and interests[3] (small group exercise).

- Note that for the process of stakeholder identification, it is important to think of all of the different types of stakeholders with differing rights, responsibilities and interests.
- Present Table 2 from ***Concept sheet 3: Identifying who is a stakeholder?*** (as a handout or on a PowerPoint slide) and clarify what is meant by 'rights', 'responsibilities' and 'interests' using the examples provided.
- Emphasise that it is not necessary to distinguish among these for any one stakeholder, but it might help to stimulate thinking about the different types of stakeholders from each of these three perspectives. For example, you can think about all of the different types of interests (e.g. economic, conservation, spiritual), or responsibilities (e.g. formal legal management, having a voice in decision-making), or rights (e.g. traditional use rights).
- Ask participants to re-form into their small groups.
- Using Table 2 to guide them, ask each group to identify the stakeholders with rights, responsibilities and interests in the natural resource(s) they identified before. Emphasise that they need to be as specific as possible For example, listing *local communities* or *government agencies* is too vague; instead, they should identify the names of specific villages and agencies.
- To help with their analysis, you may want to provide a list of probing questions on a handout or flip chart, for example:
    - Who has responsibilities to manage the resource?
    - Who uses the resource?
    - Who benefits (or potentially benefits) from the use of the resource?
    - Who wishes to benefit from the resource but is unable to do so?
    - Who impacts on the resource positively or negatively?
    - Who would be affected by a change in management status?
    - Who makes decisions that affect the use and status of the resource?
    - Who is interested in how the resource is managed, even if they are not directly using or managing it?
- Remind them that they need to have a coordinator or chair and a presenter.
- Give the groups adequate time to list the stakeholders under the three categories, for example 15-20 minutes.
- Bring the groups back into plenary session and give each group at least 5-10 minutes to present followed by discussion. Reassure them that it does not have to be a complete list at this point as the stakeholder identification process will continue. Ask for validation and additions.

[3] This step could also be considered as a method of stakeholder analysis but it is useful to conduct it at this stage to help you identify those who are the key stakeholders.

STEP 6: Keep asking – who else?

- Note that the list may still be incomplete but that the process of getting stakeholders to identify other stakeholders becomes a mechanism for progressively adding stakeholders and widening the circle of participation to make it truly inclusive.
- Wrap up by explaining that stakeholder identification is an ongoing activity since additional stakeholders may emerge as conditions or resource use or interests change. Consequently the list needs to be constantly updated. It is useful to keep asking 'who have we forgotten?' and 'who else is there?' and to find mechanisms to include new stakeholders into the process at any time.

TIPS FOR THE FACILITATOR

- This activity works best if you can invite a diverse set of participants who have different knowledge and experience to participate in the session. If this is not possible, interview different knowledgeable individuals or groups before or after the session to help to develop the list of who are stakeholders.
- You may want to validate and add to the work carried out by the group by reviewing relevant literature, through field observations, by conducting interviews or focus groups using the probing questions, or through informal discussions with key informants.
- Doing comprehensive and systematic stakeholder identification is critical for any participatory process. It is worth investing the time to do this thoroughly. Failing to identify and involve a stakeholder or stakeholder group can compromise the desired management outcomes and may be much more time-consuming in the long run.
- Involving the people that you will be working with in the stakeholder identification process can set an important foundation for further engagement. An effective process can make participants feel involved from the outset and help foster commitment.
- In addition to the formal outputs of the activity, pay attention to and record any additional information that participants provide about stakeholders, such as what they are doing, how the resource is affected, and what are the areas of conflict. You can get a lot of information that will help later in the participatory process.

7. The facilitation process was quite challenging. However my basic background in this exercise allowed me to appreciate this part at the P3DM activity a lot more. I have learnt how to interact with persons in the community and I am better equipped to handle the challenges I may face while being engaged with them.
8. I learned that the persons on the ground has a wealth of knowledge that is often overlooked.
9. We can develop public policy through P3DM.
10. We can … willingness to embrace environment with P3DM process.
11. The facilitation process
12. Usefulness of the P3DM process
13. That people want to tell their story "lead" them with probing questions and then let go. People will take you where you need to go. The process is organic.
14. Participatory Video Process
15. I felt that the meeting was very informative and interactive and it catered to the needs of participants and explained the process in a simple form.
16. The importance of stakeholder involvement at some point of a decision/.policy making process
17. The most important thing that I learned from this meeting is how the P3DM methodology can be applied to advocacy, not only for climate change but other issues.
18. Local communities need to be really involved in the process, form the tracing to the painting.
19. Any policy, program to be implemented that will affect persons / communities, must be decided upon by the affected persons as their participation level determines the output.

3. What did you like about this workshop?
    1. Meeting Ken and Kail as well as the trainees and especially the community members.
    2. Hands-on approach was excellent for helping participants really understand the process and be more confident in applying it in their own countries.
    3. Meeting the different participant so we all can share different role and by being a part of the model.
    4. I liked the hands approach to every aspect of the workshop e.g. creating the plan for facilitation, the body map, facebooking exercises, being chair; it was a very interactive process.
    5. It brought together a wealth of knowledge of our peers from throughout the Caribbean and further
    6. The great works mode by CANARI In logistic.
    7. To have theoretical training in P3DM and to have the opportunity of implement all learned in the workshop.
    8. Building the model, interacting with the persons form the community.
    9. I got to <u>practice</u> P3DM. Not just theoretical approach. Having people from every corner of the Caribbean was also great to share experience.
    10. Getting and opportunity to try different things.
    11. I mostly enjoyed the hands -on-experience that we gained in working with the model.
    12. That it was the right balance between theoretical and practical learning and teaching techniques
    13. It involved actual work, and gave practical training that can be applied subsequently.

4. What did you dislike about this workshop?
    1. Work load was too much, participants need time to unwind.
    2. Time and time breakfast was late at the guesthouse, making participants late.
    3. I find the time of the session on some of the days was very long.
    4. The workshop was very intensive. Participants needed a day to unwind and see "Tobago" as a group.
    5. I disliked the fact that more time was not … or the more technical aspects of GIS
    6. All was good from my perspective.
    7. Too intensive. Everyone is tired and they are losing interest because people NEED to relax. Weekends of work is not ok
    8. Trainee did the model that is not P3DM process.
    9. I thought the facilitation process was a bit too long and ore time could/ should have been spent on actually working on the model.
    10. Long hours and weekend sessions.
    11. Though it's a lesson learnt; the mobilization strategy was poor.
    12. The project wasn't driven by local communities
    13. Overall had no dislike

5. Which sessions did you find particularly useful:
    1. Learning to step back and let community members take charge of their mapping.
    2. All sessions on facilitations as well as the PV process
    3. Building the model and the orientation.
    4. The "body map" session was particularly delightful. It really corroborated my understanding of being a effective facilitator.
    5. The practical experience gained in helping to actually build the model.
    6. All the process building the model.
    7. The team work (tracers, cutters, gluers, etc.)
    8. PV jobs.
    9. Facilitation exercises.
    10. Doing the facilitating with the local communities.
    11. Too long, not enough breaks, did not seem altogether participatory.
    12. I taught that the practical sessions about the model was useful and the training in PGIS
    13. The first one when local communities were there to identify the areas on the map.
    14. Facilitation training

6. How could the workshop have been improved?
    1. Have direct transport organized time and date to get community members to and from venue.
    2. More coordination between facilitators (CANARI)
    3. Make sure that the information is being reached out to all participants.
    4. Ideally, I would have liked the climate change aspect of the P3DM to be further during the initial phases of the workshop
    5. A bit more emphasis could have been placed on the model as it relates to climate change adaptation.
    6. First is necessary identifying specific situation in environment, I think that the scope of P3DM is more big yet. I will be studying the other application for P3DM.
    7. Listen to your trainees and adapt. I found that some CANARI facilitators got defensive when trainees provided constructive criticism.
    8. PV.
    9. Body mapping.

10. I think it would have been nice to have more session on the actual building of the model and not too much theory.
11. Better publicity or promotion of the workshop to target stakeholders.
12. The living conditions were terrible to say the least. To have such intense sessions, persons should have been properly accommodated.
13. It could have been improved by listening to the trainees and place the model within the community.
14. Allowing about 2 rest days for intense sessions.

7. How would you rate the following areas of the workshop structure and delivery? Please tick one for each area.

	Very Good	Good	Fair	Poor
Clarity of objectives	4	9	1	
Content	5	9		
Materials	3	9	1	
Facilitation	5	6	3	
Practical sessions	8	6		
Relevance to your needs	8	5	1	

Any additional comments on the above:

1. Objective very clear however the actual mobilization was not effective.
2. I have no regret in being part of this workshop and I am excited to go back home and start our own process in my country.
3. I like a lot the methodology of: Rapporteurs, Mood interpreters, facebookers, chief.

8. Describe the effect this workshop had on your skills for facilitating community processes?
    1. I think my skills in interacting with communities have improved. I am more confident in this type of interaction.
    2. It made me understand when reaching out to communities who have to know who you are dealing with and how to get the message to them at their level.
    3. I will be better able to handle situation which require conflict resolution skills as this workshop facilitated expanding my knowledge of the skills and tools needed to rectify these situations.
    4. The workshop has basically given me an understanding of what facilitating community process is all about.
    5. Now I have new skills and tools, for facilitate process in Dominican Republic, example …… P.V.
    6. The workshop improved my facilitation skills for community process
    7. Reinforcing some skills I already had (probing) further developed my ability to <u>listen.</u>
    8. I learnt new skills. I think I have moved up from average but not yet advanced.
    9. I think I am defiantly in a better position to facilitate in this process.
    10. Helped a great deal.
    11. It had a positive effect; in that I now feel better equipped at facilitating these processes.

9. Describe the effect this workshop had on skills and knowledge in analysing climate change impacts on the landscape and doing adaptation planning at the local level?
    1. Scope was very wide maybe it needs to be more direct

2. I think my skills and knowledge in this area has expanded increasing the ability to draw this information out at the community level.
3. From the local level stand point I see the word Climate Change seem like a very big word to people and I need to bring it to the simplest terms.
4. It enhanced the way I approach initiating discussions with community level individuals according to the issue of climate change. I have realized that as a technocrat, I must be able to change the way I speak with them i.e. “not being so technical”
5. The workshop shows clearly that any knowledge of climate change impact should start at the community level.
6. Too much, more in the use of GIS, I only had knowledge of GIS with Google earth, and now, I have more than this.
7. There was not much change in my skills and knowledge in analyzing climate change impacts at the local level.
8. Very little. I feel my knowledge was already pretty advance.
9. Highlighted and underlined what we have already recognized.
10. I believe it was an eye opener and helped me more understand climate change and how to present it in its simplest form.
11. Enhanced my knowledge.
12. The interactive gave insight into how climate change impacts and adaptation relates to development especially at the local level.
13. It was generally good in that most of the knowledge taught was information already acquired. However, in terms of adaptation planning, it was very effective, as my approach will now be more about heavy participation at the local level.

10. Describe the effect this workshop had on skills and knowledge about using GIS mapping processes in analysis and planning.

1. I believe it’s good to know about it however there needs to be a specialist attached to each project.
2. I have learnt how to move effectively integrate traditional and indigenous knowledge in more technical GIS applications.
3. With the GIS I didn’t understand it because I am a baby to this idea. But will do my research and learn as much as I can about GIS process.
4. Not sure as yet. However, I am contented with the fact I have been exposed to the GIS process through the presentations during the workshop.
5. It has caused me to look at the whole GIS analysis and planning in a different context.
6. I talked about up. But the first thing that I pretend to do in Dominican Republic is identify the topographies maps in my country for the hazard areas.
7. Support for key roles within my organisation. Capacity for the organisation.
8. This is an issue. GIS is very difficult and now I am convinced that an expert is necessary when entering the P3DM process.
9. Not much.
10. I taught that I needed more training in that area; however I have a better understanding about that area.
11. Gave me a basic knowledge.
12. It was somewhat effective, in that I have learnt how digital photography is incorporated into GIS.

11. What would prevent you from applying the ideas discussed in this meeting?

1. I think these skills can be applied to other community based/outreach projects in my organisation apart from P3DM at a higher level/bigger projects – funding.

2. Only sickness
3. Nothing. I am ready to see how I can apply this information to my line of work.
4. The fact that I think I need more exposure to the actual process.
5. I will have a meeting with “Consorcio Ambiental Dominicano” to present a complete report about the workshop in Tobago and I think we can improve it in Dominican Republic.
6. Funding, finding the right partners.
7. Nothing.
8. I don’t think I would have much things preventing me completing this task.
9. Necessary policies not in place in my country to begin to address issues.
10. The pre-most challenge in applying the ideas discussed here is the lack of / limited funds available.
11. Lack for support from authorized personnel.

12. Do you or your organisation have any additional training needs (that you have not identified already)?

1. Yes
2. More exposure to process.
3. More about GIS and P.V.
4. None at this time
5. Project/event management. Developing or building community cooperative.
6. GIS training.
7. Yes about the GIS

13. Any other comments:

1. Facilitators need to learn to step back and let community members have their say.
2. Please make sure next time when choosing guest house for participants, double check to make sure it ready for such a long period.
3. No.
4. I think that those persons experienced in the process should call our trainees in this Tobago process for help by way of invitation when they are facilitating the process in their respective countries.
5. The P3DM will be good to do in each one of the Caribbean islands.
6. Wonderful job.
7. The community should have been a lot more involved in building the model. Trainees should of only be there as support. Not responsible to deliver a finished model.
8. Intend to apply the concept of facilitation to all areas of environmental management.

Thank you!

Appendix 8- Compiled wrap up and closure responses

Training of Trainers on the Facilitation of Participatory three-dimensional modeling (P3DM)
Blenheim Sheep Multiplication and Research Project,
Windward Road, Mt. St. George, Tobago
Saturday 29th September to Friday 12th October, 2012

Wrap up and closure items

1. **Evaluation of lessons by trainers:** In view of the fact that this was the first time this process has been attempted in the Caribbean region, please review the experience and from your perspective evaluate what worked well, what did not work well and suggest recommendations. We intend to summarise the responses and share them in the region.

We have organized the responses under the various project components. Please complete the table below, using as much space as you need to. We would like to receive all responses by **2nd November 2012**, so that we can complete and share with all participants while the experience is still fresh in your minds.

**Two respondents used symbols in the middle columns. These contributions were added as submitted.*

Step in process	Worked well	Did not work well	Recommendations
Logistics arrangements for trainers	• The accommodations were good – clean and comfortable • Bringing my own transport allowed me a bit more flexibility • Meals were good • This arrangement worked well for me. I was comfortable where I stayed and liked that I was walking distance away from convenience stores. The taxi was always on time on the days I needed him.	• The arrangements in terms of accommodation was a bit uncomfortable for two weeks (in terms of facilities available) • Despite informing the landlord the night before of the workshop start time each day breakfast was late quite a few mornings– this made us late for the workshop several Mobilization needs to be	• My suggestion would be probably the next when a workshop as long as this one is to be held (if it's possible) everyone can be at a central place where you don't have all the mix up with the taxis and available commodities are available like a place to wash etc. • I enjoyed staying with others from Trinidad however I wouldn't have minded opportunities for

		sustained throughout; many persons came closer to the end and some input was lost as we approached the cut off point for putting info on the model times • Needs improvement • Well although arrangements were made with Kenny for breakfast at a certain time, he was late every day. However, I now believe that this was a general laid back behavior.	more interaction with those from the other islands outside of the workshop environment • Place trainers in a faith neutral establishment. • If all trainers stayed within one community then planning after work activities would have been easier. However, I understand that some persons needed to be closer to where the model was being housed.
Logistics arrangements for trainers		√	Persons should know they would be sharing, working 2 full weekends should not happen (even if that is on schedule before), issues raised need to be addressed satisfactorily.
Logistics arrangements for trainers	**X**		
Mobilisation of Tobagonian participants	• I am not sure how much work went into it, but I take it that CANARI did what needs to be done and the end of the it all we had a well completed model • Visiting the communities; radio interviews helped increase awareness	• Mobilization needs to be sustained throughout; many persons came closer to the end and some input was lost as we approached the cut off point for putting info on	• Engage trainee facilitators to assist in this process from early on to give them the experience needed when implementing their own projects and also to sustain the

	and participation later in the process • Based on the information received on how the mobilization took place, it sounds like CANARI covered everything (writing to NGOs and CBOs, Media updates, etc.). From experience I know it is difficult to get communities involved in an activity when the community does not understand the objective of the activity, so I think that having more than 100 persons participate in the activity was still a good turnout.	the model • Needs improvement • The location of the project was may be selected to encourage community representatives to easier access the model, but I am not sure if this was really the case. If persons had a vehicle then access to the model may not have been a problem, but for persons who had to utilize public transportation, accessing the model may have been more difficult since some did mention having to leave at a certain time because they had to travel to their community.	mobilization activities throughout • Should have been much more participant form all regions • Instead of inviting community representatives to one location over 8 days, maybe you can consider inviting them to one location for 4 days and another location (preferably on the opposite end of the island) for the next 4 days). Also, at this point you can stress that persons from any community can visit and give feedback on the model on any day and at any of the locations.
Mobilisation of Tobagonian participants	√		Flyers at rum shops, in churches, shopping centers might. *Turnout was good any way.*
Mobilisation of Tobagonian participants		**X**	I assume according to what Neila said that the mobilization has been done. However, if the model was placed in another area close to where people work or live (fishermen), they would have

			more interested in alimenting the model.
Production of base maps	• I think that went well and we had the right maps to work with I believe • The problems encountered with the base maps were handled well with the GIS expertise on the team • I have no comment here.	• n/a • The switch from meters to feet, in my opinion, skewed the topographical representation on the physical map. I know that was something that we just had to accept as it was given and just move on.	• Learnings from this exercise could be used to create a checklist for the next project • Some more practical insight into the basemap preparation may be useful for non-GIS persons • Did not witness this. • Please ensure than the same units are used throughout this phase.
Production of base maps		√	Double check
Production of base maps	**X**		
Preparation of legend	• Comprehensive • There were enough materials and colours to be used for the various representations on the legend.	• I did not think the legend process was well executed • Some challenges with updating of colours on the legend – this created confusion for others trying to figure out which colours to use • Needs improvement • This process may have been rushed during the first day or two. I felt that facilitators made more of these decisions than	• I would recommend probably that we take just a day or so and have key stakeholders decided on a legend and present that to the people which would be what we would be working with. Because, what we saw was that the process took a long time and was almost at the last minute. • Someone could have been assigned per day/per team to ensure the

		community representatives.	legend colours reflected what was being put on the model or vice versa and that when a new colour was assigned or changed that the legend was updated in a timely manner • Should have been created and completed as a first task. • A 45-minute sit-down session with the community representatives may have solved this problem. Simply inform and show them of all of the different materials and colours which were available to be used, give them an idea of what would be represented on the legend, ask them to brainstorm for any other item they would want to be represented on the model and then guide them through the process of selecting which material or colour they would prefer to use for each item. I believe that if this process was not

			rushed, a lot of the confusion later on may have been prevented.
Preparation of legend	√		It would be good to have key reps from all groups one day to finalize Legend (only activity that day)
Preparation of legend	**X**		
Model building - blank model	• I think it went very well, everyone was excited and willing to participated • This was a good hands-on learning experience; better understanding of the methodology and materials, time, resources and capacities needed and the challenges in creating the blank model • The materials used were easy enough to work with.	• Poor participation of local stakeholders in creation of blank model • Needs improvement • When the facilitators took over the building of the model, we did have to redo an entire section because it was not done accurately by the students. This was not a problem for the facilitators, but having to re-do something that others may have spend days working on represents time that was wasted.	• Timing of model building was a constraint for some stakeholders – perhaps this can be done on a weekend • Blank model should be created by the local communities. Local communities should "own" the entire process. • Students assisting should have been monitored closely at first to ensure that they knew exactly what to do in an effort to avoid duplication of work or waste of resources.
Model building - blank model	√		Better cutting implements
Model building - blank model	**X**		
Model building - populating the model	• I believe the process was well executed the facilitators and community people where interested and a	• Some facilitators initially tried to control the process which intimidated some	Clearly define the roles of the facilitator and the community representative. If even this was done,

	lot of information was placed on the model • Again a good hands on learning experience; really getting to practice the traits of a good facilitator and improve interactions with community people • Community representatives provided a lot of information. They were excited and very much involved in the process.	participants • In the presentation that Kail made, she indicated that community representatives suppose to be populating and painting the model. There were some persons who wanted to paint but were not given the opportunity because the painting was being done mostly by facilitators. Some facilitators did allow the representatives to paint when asked but others did not saying that they wanted to complete a particular section or item first. I felt that this should not have been the case.	maybe daily repetition would have worked.
Model building - populating the model	√		It would be good if model table were taller or chairs lower so we could get under table to center better & not hurt backs or climb up.
Model building - populating the model	**X**		
Handover ceremony	• I liked the idea that the community was given the opportunity to present their experience and	• Needs improvements • Minor hiccups / delays but this would have been	• Very short, no closure for the trainees or the local communities.

	concerns to other community members and the minister and other dignitaries who were present • Community participation and ownership of material was good • I do not know about the planning process but the actual ceremony went well in my opinion	expected. Getting soaked in the rain afterwards with our certificates was not cool but that could not have been prevented :D	Many local groups were absent. What does that mean for the process legitimacy? • I have no comment here.
Handover ceremony	.	√	More stakeholders needed to be present, not sure if persons understand what they can do now.
Handover ceremony	**X**		
Training of trainers in facilitation	• I learned a lot from that process although at times it was pretty intense. But it showed us different communications methods to bring our message across and how we can become better facilitators. • I thought this was excellent overall. As a GIS professional this takes my work to the next level so that I can now make GIS more relatable to people and garner more of their input in creating GIS products • Learned many valuable techniques. Great job from CANARI • I enjoyed the sessions in facilitation the most, but this may be because I knew from	• Every facilitator had something valuable to contribute to the team exercises but in almost every group there was at least one person who said that they did not want to do the presentation or contribute to the presentation while it was being done for the whole group. Maybe a fear of public speaking played a role here.	• More participation or listening to participants needed. Maybe overall too many things at once even though they were all useful. • More team exercises, if possible. I know we did have a lot.

	before that I was more interested in learning about facilitation since I have no formal training in the area.		
Training of trainers in facilitation	**X**		
Participatory Video to evaluate the process	• This was a great and also fun tool to learn about and use. In my experience particularly in my work, people like visuals hence the interest in pictures, maps and now video • Desiree's presentation was well done and it was well-received since many of the videos did reflect her advice. Having Orisha there however worked very very very well and to our advantage. Katrina as well.	• I thought the idea of the PV was good. However, I was a bit confused cause I thought we were going to be trained to show the community people how to do PV (probably I could be wrong) • This could have been a more cooperative effort and a little more organized in terms of the participants sorting their clips. • It was really difficult to get everyone to be interested in the PV process. I think the model was of major importance to most facilitators and the PV process was taking away from the model populating process.	• Once decided upon and agreed by all, having a single repository with pre-defined folders for each day would have been useful in expediting the process • If the intention is to have all facilitators partake in the PV process then maybe a day should be put aside solely for this process and not a half-day. This way facilitators know that they are committed to this process for the entire day and may be less likely to start working on something else. Once they start working on the model, they would be less likely to want to participate in the PV process which they deem as less important.
Participatory Video to evaluate the process		**X**	As I understood the P3DM process, the population should have been the one doing the

			participatory video. Anyways it is a good tool to assess the lacks and the success.
Participatory Video to evaluate the process	√	• Needs improvement	• More participatory process – let trainers have more say in setting storyboard, teaching more about editing • Exclude it from the P3DM process. It is too time consuming and scatters resources too thin.

2. **Your immediate plans to implement:** If you have identified any potential concrete opportunities to implement P3DM in your organisation or country, alone or in collaboration with others, we would like to hear about it so please let us know:

What do I plan to do?	Where?	When?	With which partners?
I plan to share my experience with people there. I have already drafted a communication plan for the process	Union Island and Grenada	In the early part of next year (February /March)	The Nature Conservancy and the Grenada Fund for Conservation
(Projects from ODPM stance will centre on readiness and building community resilience to disaster) P3DM for Disaster Risk Reduction: Participatory assessment of (1)Hazard prone areas (2)Vulnerabilities -Special Needs populations -Critical Facilities and Key Infrastructure	Diego Martin Regional Corporation	2013	Local Government – Disaster Management Unit (DMU), CDEMA, Red Cross, CANARI, UWI, TCPD, IMA, Fondes Amandes

1) Recommended P3DM process to become an integral part of the IMS-REMP component of the CLME Project (clmeproject.org). 2) Connecting CLME National Focal points to all trainees to develop a partnership to support trainee's P3DM initiatives. 3) Recommend for immediate support to TNC and Sustainable Grenadine in their upcoming P3DM efforts.	Caribbean Large Marine Ecosystem (CLME) and adjacent regions	From now on	UNDP, IOC-UNESCO, TNC, Sustainable Grenadines, CLME Project, and much more.
I already spoke with the DG of the TTRCS about implementing P3DM in a project. I was given the go ahead to complete a written proposal for this and I am working on this currently.	NW peninsula of Trinidad and maybe this can grow pending feedback.	No date was suggested. After the proposal is completed, suggested partners will be invited to a brainstorm session to determine the feasibility of the project.	I have suggested the following partners be involved: UNDP Gef (already expressed interest), ODPM (already expressed interest), CANARI, UWI, Diego Martin Regional Corporation, POS Regional Corporation, CDA. More partners and stakeholders may be identified later on.
As a first time in the Caribbean region the assessment of the process in Tobago is more than positive. I learnt from the experience what can or cannot work and look forward to replicate the P3DM in Haiti. For now, my director and I are analyzing in which way the P3DM could be useful in Haiti. When they will be ready and that a plan schedule will be decided we will get in touch with CANARI.			

3. **Evaluation of the process:** CANARI is planning to conduct an evaluation early next year using the outcome mapping method, at which time we will evaluate any behavior changes observed so far in the key target audiences (boundary partners). Could you all please submit the copies of the behaviour changes you developed for the different target groups in the small group session on Tuesday 2nd October with Nicole. We would greatly appreciate this.

4. **Participatory Video:** We are working with a small team and Desiree to add some final clips from the handover ceremony and will share with you as soon as it is done.

5. **Other products and activities:** The professional documentary of the process is still in production and we will share with you as soon as it is done. CANARI is also facilitating focus groups and workshops with key civil society target groups to refine and build on the analysis of climate change impacts and adaptation priorities for Tobago. This will result on a policy document, a "Civil Society Agenda on Climate Change in Tobago" which we will share with you. These and other products of the project will be uploaded on the project page at http://www.canari.org/ccddr6.asp.

Thank you all in advance for taking the time to send us back your thoughts and please keep in touch.

Neila and Nicole

Appendix 9 - Compiled comments from democracy walls

I FELT...

- My area (Rummende) is not fully represented.
- The Process is Authentic.
- Like the seriousness of the People here.
- Did not come to stay so long but the atmosphere is great.
- Things like old oil wells should be marked out.
- Not happy with pins being moved because People put it in the wrong place.
- Surprise about turnout (positive) good turnout.
- More Local Information needed on Map.
- Felt it's a good initiative benefits NGO & Tourism.
- Some Labels were placed incorrectly.
- Wider cross section of Local Population should be there.
- Coastal Caves should be identified on the Map (Crown Point Area).
- If People know the trails then they will know where the landslides/ flooding (is).
- Total Teamwork.
- Tobago Map is complicated.
- Primary School Children transfer information best give them notes for their Parents.

I DISCOVERED…

- Open back Old Spring Eye (King's Bay – 2 persons died).

I LEARNED…

- De Farmers say "Fig does walk but it eh moving!" – Anse Fromage, Fri 5th Oct. 2012.
- That the start of the river in King's Bay is called Jumade.
- Where to locate Big Bay.
- Cottage was once a Governor's Mansion but is now a Scouts' Camp - Camp Leader.
- That Les Coteaux Road goes into Mason Hall.
- Government Structure of T&T to the village level and good & bad about political boundary on mold is BAD, leave out!
- Farmer: "When I was growing up it used to rain for three days straight. I don't know where the rain gone".
- The place where Slaves were baked and hang is still there!
- That Tobago look like a Snake

I WOULD LIKE TO SUGGEST…

- More Landslides needs to Depicted.
- Two flags should be used to highlight the widest points in island Goodwood to Castara.
- Cut the unused parts of the table to allow better movement.
- Remember to Encourage Input.
- More Information needed for Little Tobago.
- Remember to Consult.
- Remember to Contribute.

I NOTICED…

- On this small model Tobago grows "LARGER".
- The last 5 Caribs were found on Little Tobago prior to the hurricane and earthquake in Sept. 1841. The entire island was devastated. The Caribs took canoes and migrated to St. Vincent.
- Location of Little Tobago is off.

- One Village will help next one to solve issues find points on map.
- Not seeing Trails on Map.
- Tobagonians less open to things like this.
- Expected more people as more people were @ the mobilization.