INTRODUCTION TO PARTICIPATORY 3D MODELLING (P3DM)

Caribbean Natural Resources Institute (CANARI)

March 12, 2018
About CANARI

CANARI is an independent, technical, non-profit organisation. Its geographic focus is the islands of the Caribbean.

Map taken from: http://www.beachbumpparadise.com/maps-jamaica-costarica-caribbean/
Our mission is to promote and facilitate equitable participation and effective collaboration in the management of natural resources critical to development in the Caribbean islands, so that people will have a better quality of life and natural resources will be conserved, through action learning and research, capacity building, communication and fostering partnerships.
People with whom we work

- Resource users in rural communities
- Community-based organisations (CBOs)
- Local, regional and international non-governmental organisations (NGOs)
- Government and intergovernmental agencies
- Media
- Private sector
- Academic institutions
- Donors, technical assistance organisations
Programme areas

- Forests, Livelihoods and Governance
- Coastal and Marine Livelihoods and Governance
- Climate Change and Disaster Risk Reduction
- Green Economy; Rural Livelihoods
- Civil Society and Governance
- Action Research and Learning
- Communication
- Capacity Building
- Internal governance and operational systems
In this webinar the following will be covered:

**Introduction to P3DM**

- What is P3DM?
- P3DM objectives & guiding principles
- P3DM application and examples
- P3DM in practice – key steps, tips and lessons
What is P3DM?

- A participatory mapping method and tool for capturing and sharing of knowledge by a wide range of stakeholders, for e.g. on climate change and other important issues.
- Recognises spatial relationships between a territory and its inhabitants, resources, users and/or customary custodians.
- It integrates local spatial knowledge (i.e. knowledge of where things are located) with elevation data (e.g. height of the land and depth of the sea) to produce a physical (scaled and geo-referenced) 3D models of a specific area.
- Draws on participant knowledge and experiences.
1. & 2. Tobago P3DM

3. Dominica P3DM
Common Objectives of P3DM

Technical Perspective

- Capture/Generate accurate, location based info - scaled and georeferenced

Process Perspective:

- Generate, capture and incorporate local and scientific knowledge
- Multistakeholder engagement and collaboration
- Communication, knowledge sharing
- Education & raising awareness
- Preservation of cultural heritage, identity, traditional knowledge
- Collaborative research
- Advocacy
P3DM Application & Examples

Used in many contexts:

- Natural resources management, Biodiversity conservation, Protected areas management
- Climate change and DRR - (community-based) hazard management and risk reduction
- Physical development, Land use planning, zoning
- Livelihood issues
- Human rights advocacy
- Conflict Management
- Research - Historical / Heritage mapping
P3DM Application & Examples

- Live Map: http://www.p3dm.org/live-map/

- Tobago
  - Climate change vulnerability assessments
  - Assess likelihood of inundation due to sea level rise and support the development of climate change strategies and policies

- Trinidad
  - Record local understanding of history in East Port of Spain; identify various cultural heritage sites
  - Protected areas planning & management – Matura National park

- Dominica – Examine watersheds management issues for adaptation of rural economies and natural resources to climate change

- Anguilla and Montserrat – Assess climate change vulnerability and priorities for adaptation for fisheries sectors (support EAF)
**PRE-P3DM (Preparatory work)**
- Define purpose and objectives
- Stakeholder analysis
- Acquire resources and Mobilise!

**DURING**
- Blank model & legend building
- Model population
- Analysis of model results
- Evaluations
- Handover

**POST**
- Extracting & digitising data
- Storage
- Further use
KEY STEPS:

1. Source appropriate contour base maps
2. Trace contours and cut out cardboard layers
3. Glue layers together
4. Glue crepe paper onto cardboard to smooth out contours, then paint white
5. Create legend of features to show on the model
6. Use different coloured yarn, pins and tacks to place local knowledge on the model
7. Share knowledge with each other and describe places and activities occurring in the communities
8. Once features are agreed by all, paint in and remove pins, tacks and yarn
9. Present the model at a handover ceremony and celebrate!
Size, scale, Generate base maps
Tracing the contour layers unto sheets of cardboard
Cutting of the traced contour layers from the cardboard
Setting up the base table and laying down the base map
Stacking and gluing layers
Contours pasted with crepe paper and painted white to create blank model
Contours pasted with crepe paper and painted white to create blank model
LEGEND BUILDING

- Decide what is important to show
- Come to consensus on how they should be represented and labelled on the model.
- Ensure clarity on what the legend items mean
- Iterative process
Inputting information on the model
Painting the model
Anguilla P3DM, 2018
Montserrat P3DM, 2018
Digitise model and produce GIS map; Can be combined with scientific knowledge & used for planning & analysis
I FELT...

Nostalgic - locating AREAS in the exclusion zone.
Fabulous - Historical reminders of areas I have not been to yet.
Enlightened.

I NOTICED...
- Co-operation amongst persons of all career fields/age groups/general backgrounds.

I LEARNED...

Scale is important.
A LOT ABOUT AREAS THAT I DIDN'T KNOW.
- Importance of the Natural environment/locations/places, biodiversity etc.
- P3DM is time consuming & labour intensive but beneficial.

I WOULD LIKE TO SUGGEST...
- Visits by Geography & Social Studies students.
- Participation of students in building the module.
- Use this model as a pilot project for secondary schools. Help build their awareness of Montessori yesterday, today & future.
Advantages

- **P3DM enables an ecosystem approach** that takes into account biophysical, cultural and socioeconomic factors within ecologically meaningful boundaries e.g. watersheds, ‘ridge to reef’ approaches.

- **Uses simple means of communication** like colours, shapes and dimensions; P3DM process does not require participants to be highly educated or literate to participate.

- **Transparent process and facilitate integration** of traditional and scientific knowledge for decision-making.
Advantages

- Engage wide array of stakeholders e.g. youth, elderly and other marginalised groups, who are not often targeted in planning and decision-making processes.

- Depict invisible features like values, tenure, local names and resource uses not on typical maps, sacred areas, spatially defined rights, cultural boundaries and others.

- Supports further knowledge sharing - the process, and experiences made in the use of P3DM are often documented and shared by a range of means including multimedia, internet, social media.
Some challenges...

- Time and labour intensive
- Can be expensive
- Skills
- Locus of control on the process
- Attitudes and behaviours
- Can disclose sensitive information
- Locus of control on access and use of data (i.e. knowledge is power)
Lessons & Tips

Stakeholder Mobilisation:
- Worth having someone from local community/CSO dedicated to this
- Context matters! Do research on the study area. Meet people where they are
- Schedule appointments where possible
- Visibility – media-radio, tv, press releases, social media

Logistics & resources:
- Availability of materials on location, shipping
- Focal point, community mobiliser, GIS personnel/advisors

Facilitation
- Session plans – key methods of facilitating, questions, orientations/ demos
- Facilitators – knowledge in subject area, GIS knowledge/skills, adaptable, at least 2
- Target audience needs – supervision for children
Lessons & Tips

Timing and Timelines:
- Scheduling – local events, holidays
- Need at least a week
  - 2-3 three days model building
  - 2-3 days to input information unto the model, analyse results
  - ½ day Handover ceremony to showcase final model results, present key recommendations and lessons identified during the process

Storage and Access:
- Model should be publicly accessible (e.g. placed in library, community centre, museum) to allow local communities, CSO and schools to use it, and not just kept in a government office.
- Using the model again
RESOURCES:

CANARI publications:

- Case study on the use of participatory three-dimensional modelling to facilitate effective contribution of civil society in the Caribbean islands in planning for action on climate change

- Participatory three dimensional modelling of the Soufriere-Scotts Head-Gallion area, Dominica: Using the completed model for spatial planning

- Participatory three dimensional modelling of the watershed at the Soufriere-Scotts Head-Gallion area, Dominica: Report of activities

- Documentary video: She becomes more beautiful: Capturing the essence of Tobago for a better tomorrow.
RESOURCES:

- Project Webpages:

- Mobilisation plan template:

- Other useful info sources, websites and online resources:
  - PARTICIPATORY AVENUES: Integrated Approaches to Participatory Development (IAPAD) [http://www.iapad.org/](http://www.iapad.org/)
For more information

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CANARI 2011

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