

"EFFECTIVE COMMUNITY ENGAGEMENT
THROUGH THE USE OF GIS-PARTICIPATORY 3DIMENSIONAL MODEL AS A COMMUNITY
PLANNING TOOL"













Presentation Outline

- I.What is P3DM?
- Background information
- 2. Process of P3DM
- 3. Multipurpose tool
- 4. Case Study: Samoa
- Communities P3D and
- Water resources
- conservation
- 5. P3DM in the Pacific
- 6. Conclusion & Way forward

What is P3DM?

Participatory Three Dimensional Model



- P3DM is a community engagement tool which integrates spatial data with local "traditional knowledge" to produce a stand alone scaled relief model which has proved to be a planning and management tool. It is used widely for spacial planning, climate change adaptation, natural resources conservation and management (water, forest, marine etc.), Disaster Risk Reduction etc.
- P3DM is a product of GIS data, it uses GIS technology to build model from series of contour lines and important source of information to enter into GIS for participatory planning and implementation.

- These relief models are excellent visual aids capturing the landscape/ruggedness and details of catchment areas or territory.
- Local people can see and feel the contours of every mountain range (water towers), river channels, valleys etc
- P3DM enormously facilitates the interpretation, assimilation and understanding of cartographic information.
- Critical areas/pressure points/hot spots are painted and highlighted (water sources, intakes, forest cover, degraded areas etc) making them visible and to every one.

History of P3DM in Samoa

- P3DM was introduced into the Environment Sector (Forestry Division) by CTA in the year 2013 where Water Resources was invited as part of the workshop.
- In 2014, Water resources conducted its very first Modelling workshop for the Vaisigano Catchment conservation planning under the Water Sector – EU funding support
- Up until now, there are 10 models constructed under the Water sector and are sustainably utilized for watershed areas conservation and management.
- With the assistance of Water staffs, there are 9 P3D constructed for the Tourism sector, 15 for the Environment Sector (resources conservation)
- Tonga 2015
- Nauru 2015
- Cook Island 2016
- Niue 2016

Process of P3DM

Consulting
Target community

Defining the area

Choosing the scale

Sourcing for spatial data (contours)

Preparing the base map

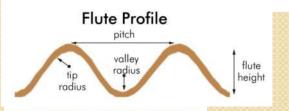
Procuring materials

2-3 days for the actual construction

SCOPING MISSION

Materials for the Model

Carton board





Expanded EVA/PE closed-cell foam



Materials to reproduce contour intervals

Push and map pins for points

- Examples of point features:
 - Water point
 - Household
 - School
 - Health centre



Yarns for linear data

- Examples of line features:
 - Road
 - Foot trail
 - Water course
- Examples of areas:
 - Flood-prone area



Paint for polygons

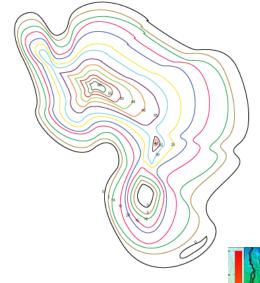
- Examples of point features:
 - Grassland
 - Water body (lake)
 - Paddy field
 - Orchard
 - Dark forest
 - Bamboo forest
 - Landslide



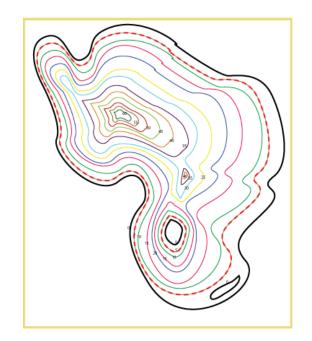
Maps (GIS information (LiDar/Drone images)



1. DISPLAY MAP



2. CONTOUR MAP

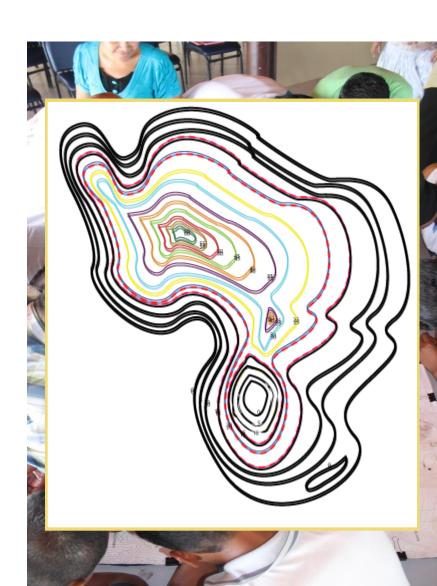


3. BASE MAP

3 Working Groups

Group: I - Tracing Team

- First, Fasten tracing map with card board using binder clips
- Select one corner of map as a reference point
- Start identifying and tracing the lowest contour with solid/plain liner
- Use a dotted line to trace the next contour (identify the higher elevation)
- Write contour elevation number and the arrow pointing north on the card board sheet.
- First contour serves as a guide for cutting but the second contour serves as a reference for pasting.



3 Working Groups

• Group:2 – Cutting Team

Cut the card board following the solid line by using cutters



3 Working Groups

Group:2 – Pasting Team

- Glue the first layer on the base maps
- Follow outline on map.
- Continue pasting layers one by one.



3 main groups for Manufacturing Model

Tracing Group







2) Cutting 3) Pasting







Transposing of Land informations and discussion of conservation measures



There is a cattle farm near the intake there, paint it...





P3D model for Fagali'i Watershed launched

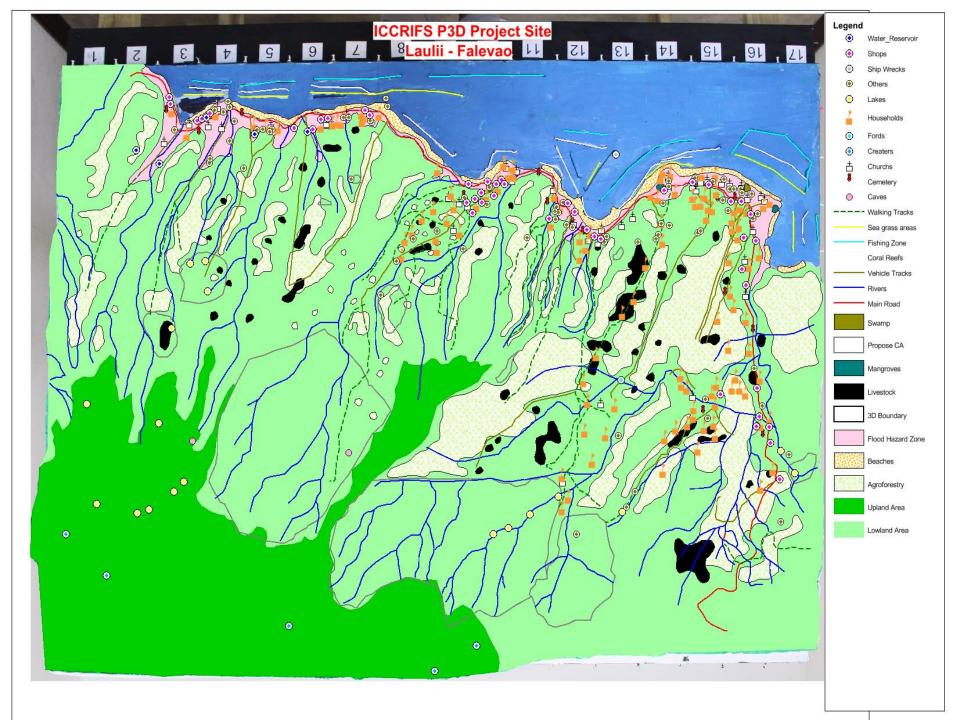
By Deidre Fanene, 01 November 2016

1360 Hits



Participatory 3D Model for Fagalii Watershed was launched during the opening of the National Environment Week. (Photo: Misiona Simo)





Legend - Key



A Multipurpose tool

- For collaborative planning
- For awareness raising and education
- For collaborative research
- For increasing local communications capacity
- For protected area management
- For participatory monitoring and evaluation
- For conflict resolution

Watershed Management Plans











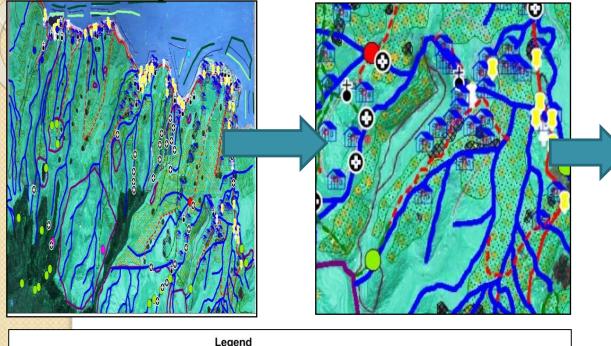
Community Plans

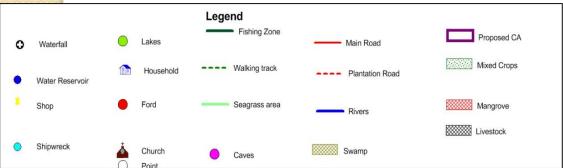






P3DM – Community Implementation











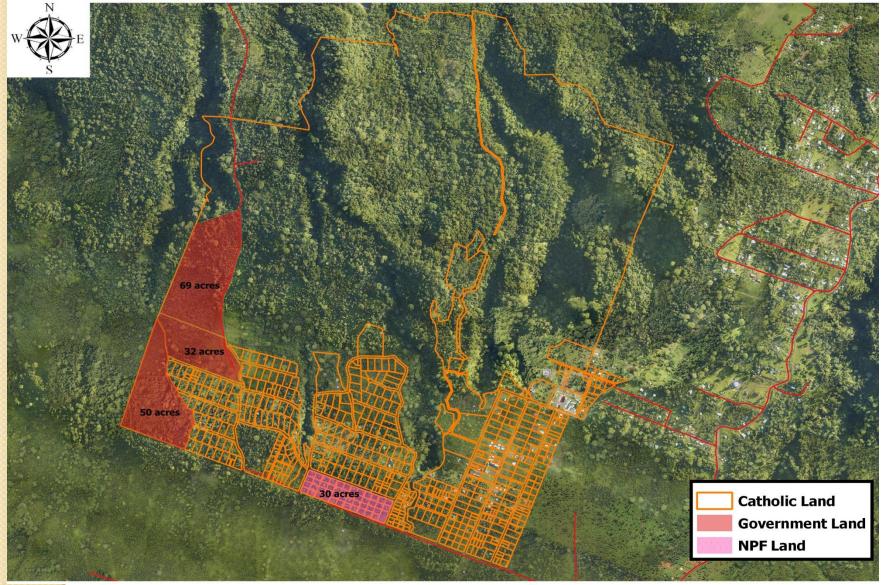
Community tree planting along the river (degraded areas)



Fencing off of Water reserves and critical areas



Land compensation for water conservation (Catholic lands located upland)



SWA Intake at Afiamalu (Vaisigano Catchment)



VASIGANO CATCHMENT P3DM



Fencing off of the intake area to stop cattles access in the area



SAMOA INTRODUCES THETOOLTO OTHER PACIFIC ISLANDS

P3DM VAVAU TONGA





P3DM NAURU ISLAND





IIB project site: Rarotonga Cook Island



P3DM NIUE ISLAND



Conclusion / Way Forward

- P3DM is an important tool that can provide a bridge/platform for local people communities to talk with and engage with Government/Policy Makers at the national, regional and international level.
- P3DM has many applications as useful planning tool for natural resource management, climate change adaptation & Mitigation and Disaster Risk reduction.
- The P3DM enables us to reflect on the past, look at the present and propose new perspectives for future sustainable management of resources.
- Sustaining the tool for community engagement and its utilization for water resources/catchments conservation and management.
- Upgrade materials for construction

