



**Participatory 3D Modelling for
Resource Use, Development
Planning and Safeguarding
Intangible Cultural Heritage
in Fiji**



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Presentation Overview

- Background
- Project Objectives
- Organisations and People Involved
- Implementation of Model
- Ovalau Resource Management Plan
- Lessons learned and conclusions



Partners in the initiative

- Fiji Locally-Managed Marine Area ([FLMMA](#)) Network
- Lomaiviti Provincial Council
- National Trust of Fiji
- Native Lands Trust Board ([NLTB](#))
- Secretariat of the Pacific Community ([SPC](#))
- Technical Centre for Agricultural and Rural Cooperation ([CTA](#))
- WWF South Pacific Programme ([WWF-SPP](#))



What is PGIS?

- PGIS is the result of a spontaneous merger of Participatory Learning and Action (PLA) methods with Geographic Information Technologies (GIT) to compose peoples' spatial knowledge in the forms of virtual or physical, 2 or 3 dimensional maps
- PGIS practice is geared towards community empowerment through measured, demand-driven, user-friendly and integrated applications of GIT, where maps are a major conduit in the process
- PGIS makes GIT available to disadvantaged groups in society in order to enhance their capacity in generating, managing, analyzing and communicating spatial information

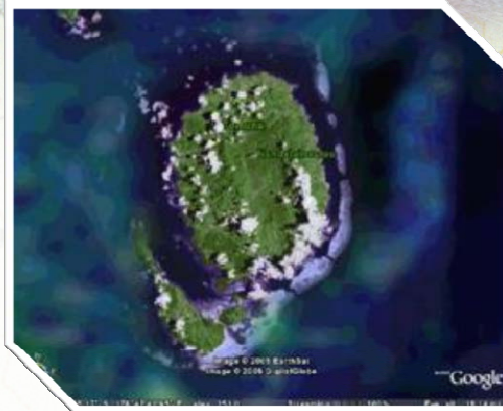


What is P3DM?

- Participatory 3D modelling (P3DM) is a method which is part of the PGIS toolbox.
- P3DM integrates people's knowledge and spatial information (contour lines) to produce stand-alone scale relief models that have proved to be user-friendly and relatively accurate data storage and analysis devices and at the same time excellent communication media.
- P3DM works best when used jointly with Global Positioning Systems (GPS) and Geographic Information Systems (GIS).

Project Background

- **Ovalau Island**
 - Area – 109 km²
 - Population: 8,625 people
 - 28 villages



Source: (GoogleEarth)

Project Objective

- To support the participatory visualization and analysis of cultural and biological diversity as the basis for safeguarding intangible cultural heritage and local livelihoods.
- To introduce, showcase and document PGIS practices and to improve community-mapping skills among practitioners in the South Pacific Region and share lessons learned.



Organisations and people Involved



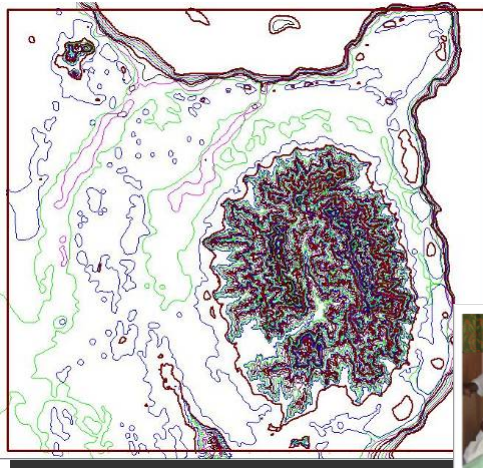
- 36 students from the Levuka Public and Delana Methodist Schools

- 82 elders from 28 villages on Ovalau Island



- Co-facilitators and trainees from Solomon Islands, PNG, Australia and Fiji (NLTB, SPC, SOPAC, WWF, USP, FLMMA)
- Lead facilitator & trainer from the Technical Centre for Agricultural and Rural Cooperation (CTA)

Construction of the 3D model



- 4 months planning
- 1 month community organizing
- 11 days map making

1:10,000 scale
528 km²



Construction of the 3D model



Preparation of the map legend



Communities decide in the items they would like to feature on the map legend. The legend is the map vocabulary.

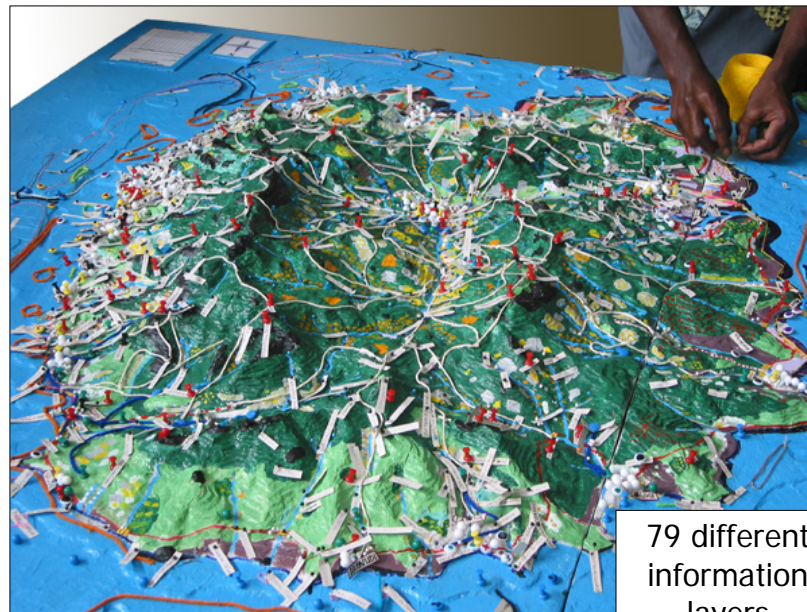


Elders transfer their mental maps

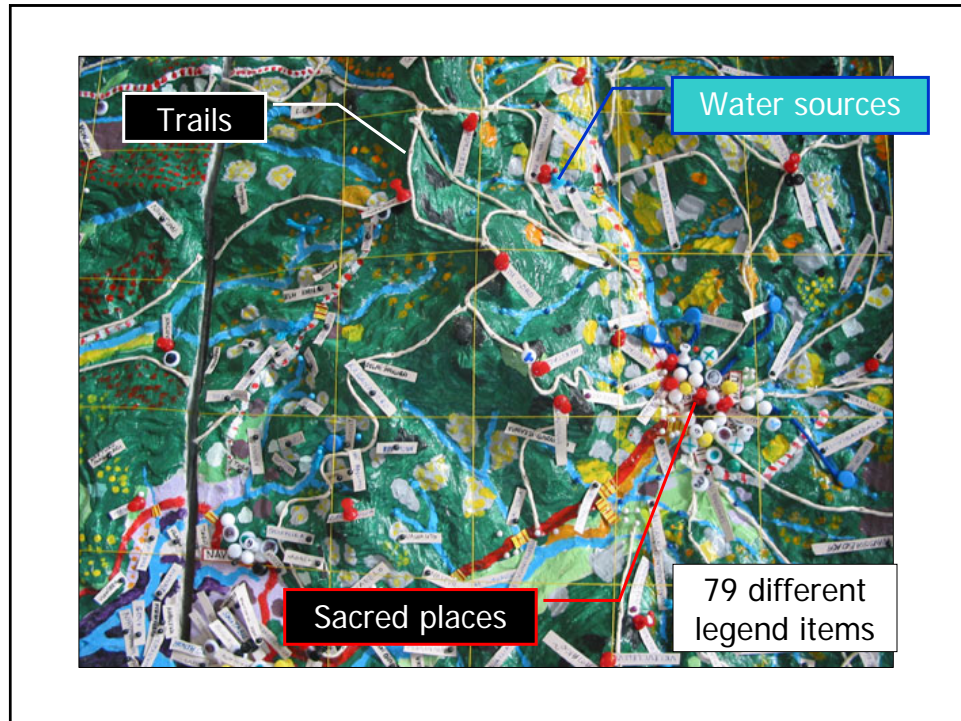


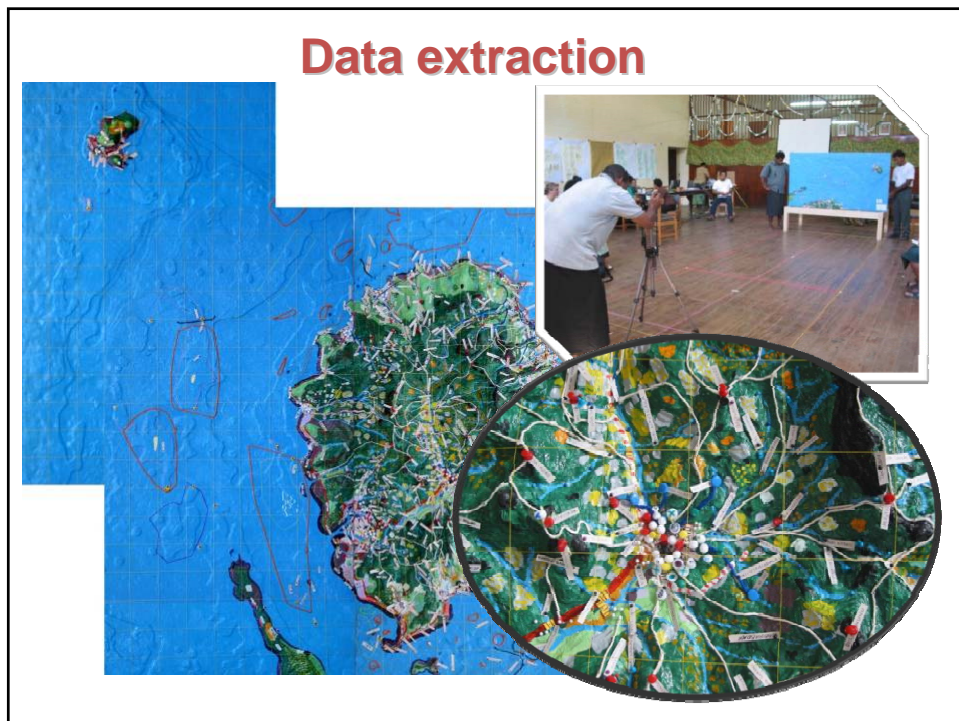
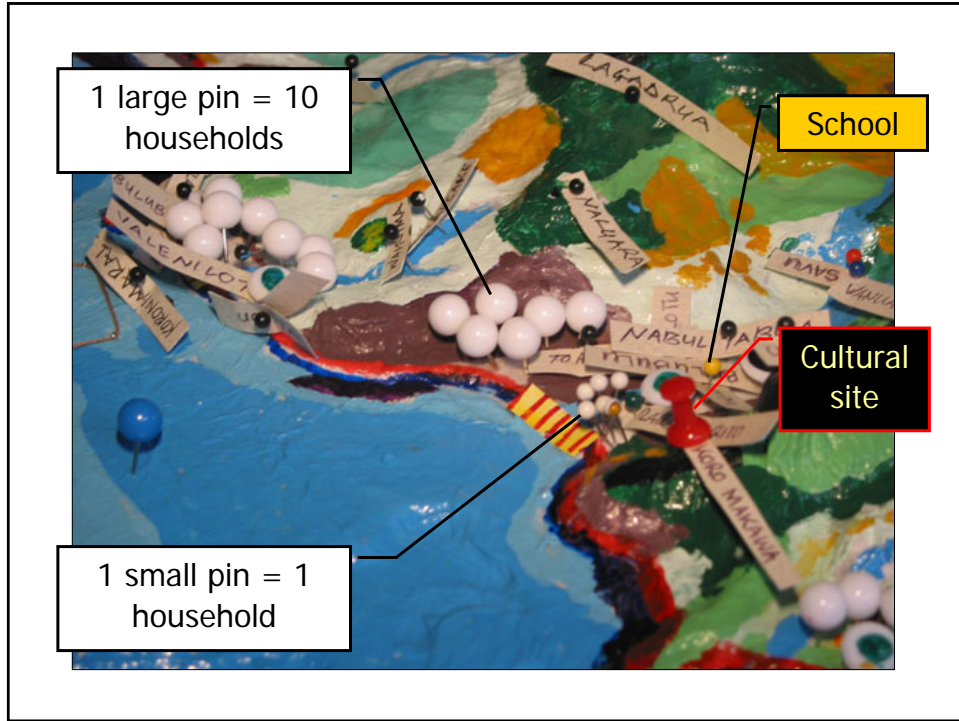
Spatial knowledge otherwise orally transmitted across generations is shared, discussed, located, visualized and named or described on the 3D model



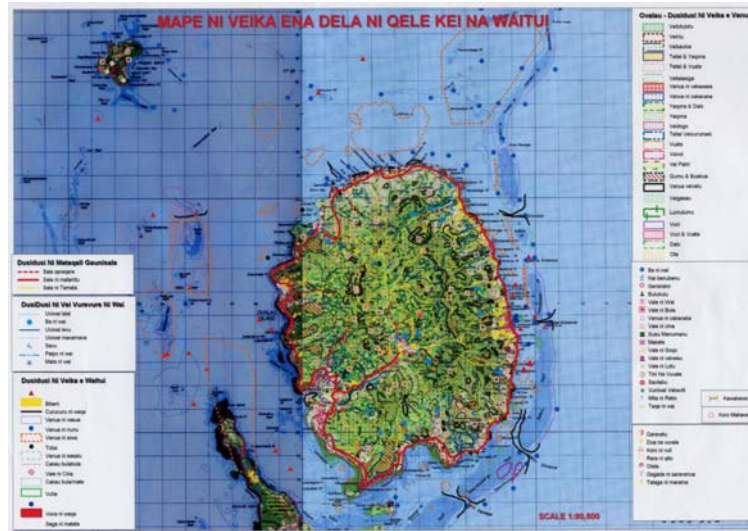


79 different
information
layers





and digitalisation



Planning and visioning



Conduct of virtual
(mental) transect walks

Facilitators
consolidated data from
the transect diagrams
and notes, as well as
visions, dreams and
recommendations



Two years later

- Ovalau Island-wide management plan completed
- Three (out of four) district management plans completed
- Taboo (protected) areas established within the fishing grounds of three districts comprising 16 villages. Additional taboo areas set up by 10 villages on a nearby island partially included on the 3D model
- The July 2007 visit of UNESCO's director for World Heritage Sites (WHS) in Levuka and to the 3D model, resulted in reconsidering the initial submission done by the Gov. of Fiji (re: inclusion of Levuka City on the tentative WHS list) to include the entire Ovalau Island and its surrounding waters



Lessons learned and conclusions

- The adoption of P3DM in Fiji has been an example of how to bridge the digital divide
- Building on the existence and use of the 3D model and derived maps, the voice of the community has been more authoritative in negotiation processes
- Model making and related follow-up activities have cemented relationships among different districts and sparked an island-wide collective vision for safeguarding biological and cultural diversities

