

GIS/Mapping

Case Study: CANARI

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for the OSI Information Program*



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OSI – GIS/Mapping Project

Case Study: [Canari](#) – The Caribbean Natural Resources Institute

Person Contacted: Allan Smith

ISSUE: A participatory resource management group in the Caribbean is effective but shies away from advanced technologies, believing them more exclusive than inclusive, and thus counter to its efforts.

SOLUTION: One of the group's trainers becomes an "accidental techie" when he begins to recognize community knowledge and input as key elements of Participatory GIS.

(Adapted from an interview with Allan Smith, CANARI Research Associate, and from "Participatory coastal resource mapping in Saint Lucia: local applications and regional implications," by Smith.)

The Caribbean Natural Resources Institute (CANARI) is an independent technical and research organization based in Trinidad and Tobago. It "analyzes and promotes participatory management of natural resources in the islands of the Caribbean," and has been operating for more than twenty years. CANARI focuses on three elements: research, analysis and advocacy as integral to the overarching goal of participatory management. I spoke with Allan Smith, an associate of the organization who runs a small research facility for them on St. Lucia. Although Smith's original area of expertise is seaweed management, he has become the de facto GIS manager for the organization, attending the PGIS conference in Nairobi in September 2005.

Smith first came across digital mapping and GIS programs in 1997, while discussing participatory forestry projects with a British Government advisor working in the Caribbean. Smith had been predominantly focusing on research that integrates community knowledge, government expertise and scientific data, but finding little use for the GIS systems that were currently being promoted. The UK advisor mentioned a program called Map Maker, which had been used for similar management projects in Zimbabwe. Smith contacted MapMaker at their headquarters in Scotland, via their website, and has continued to use the product through the present date.

Smith agrees that the problem with the employment of GIS is often the "appropriate technology" issue, noting that most frequently, the technology appears before the need arises. "My presentation in Kenya was one of the few where the project was developed within a community - many of the others described external researchers "going into the community". Although MapMaker is a lower-cost GIS program, Smith cites its robustness, and its compatibility with other tools as a selling point. ESRI (founded as the Environmental Systems Research Institute), and the producers of the most well-known GIS software, ArcView, ArcGIS and others was deemed too expensive, too centralized, and Smith has been pleased to avoid the "hegemony of ESRI." Most importantly, he notes, any GIS program is meaningless without maps over which to lay specific data through layers and vectors. Most NGOs are not aware, Smith adds, that in most cases GIS is not only beyond people's technical and financial capacity, but it is superfluous without a simple mapping capability.

CANARI, with its ability to interact with, educate and learn from diverse communities around the Caribbean, has quickly become known for its training expertise in participatory resource mapping and GIS. Most of its trainings involve a basic awareness of the tools involved in digital mapping, and Smith usually encourages villages to create their own development and

participatory management-oriented projects and plans, and then to use these tools to present these plans in a manner relevant to the village itself.

Smith's PGIS presentation focused on a three-year CANARI project conducted in Laborie, on the south coast of St. Lucia, funded by the UK Department for International Development (DFID), in which community knowledge and scientific surveys were combined to develop the first maps of the reefs and their uses in Laborie Bay. With support from the US National Fish and Wildlife Foundation and UNDP, CANARI and a community development foundation conducted training for high school students in basic mapping, GIS and water quality monitoring. Smith employed Map Maker's Gratis version and tried to encourage the use of the tools for community development and empowerment. Documenting locals concerns and issues, allowing them to see that community knowledge can be used to create what would become official documents was "tremendously important and empowering."

CANARI and community members worked together to develop a project based on the relationship between the status of the reefs, people's livelihoods and their involvement in management and control over resources. Once the initiative had been developed within the community itself, CANARI partnered with the Institute of Development Studies at the University of Sussex in England, and then presented the request for funding to DFID. This coincided with his initial realization that he "needed to get into technology [for mapping]."

Participatory Mapping, to Smith, is not solely about the end product, but the process by which the maps are created. Integrating popular knowledge with research and monitoring data can then support collaborative efforts in resource management, ensuring not only that local knowledge of bays, coral reefs and other previously un-mapped resources is put to use, but that "community concerns are adequately addressed and represented in environmental impact assessments."

Smith describes most community meetings as an LCD projector with aerial photos of the bay or feature in question, combined with Fishery Department data, divers' data and others'. The group then annotates the aerial photograph, which then provides the basis of negotiation. "Combining different sources of data has been a key part," says Smith. "Even teachers couldn't orient themselves on line-drawn maps. It wasn't until we brought in aerial photographs, with identifiable features, that we brought about a different level of interaction with the community." Subsequently, annotating images with GIS software becomes its own useful tool to share with the community. "The employment of different sources of information, complementing each other, has been very rewarding. It then provides the basis of negotiation." Smith adds that government officials also see this as a set of tools they can employ, and CANARI has been contracted to train representatives from the Department of Fisheries on how to use MapMaker and other mapping elements.

Participatory Mapping and GIS are just two of the tools that support community involvement on resource management, and as such Smith and CANARI have used them on a variety of projects, for example, strengthening input for EIA (Environmental Investigation Agency) studies. Yet as the only Caribbean representative out of the 160+ participant PGIS conference, Smith believes that the Caribbean NGO community has largely been sheltered from advancements in technology that may be used to support their aims. As the Trinidadian and St. Lucian governments have adopted more participatory approaches to resource management issues, Smith hopes that the widespread employment of community and participatory mapping techniques aren't far behind.

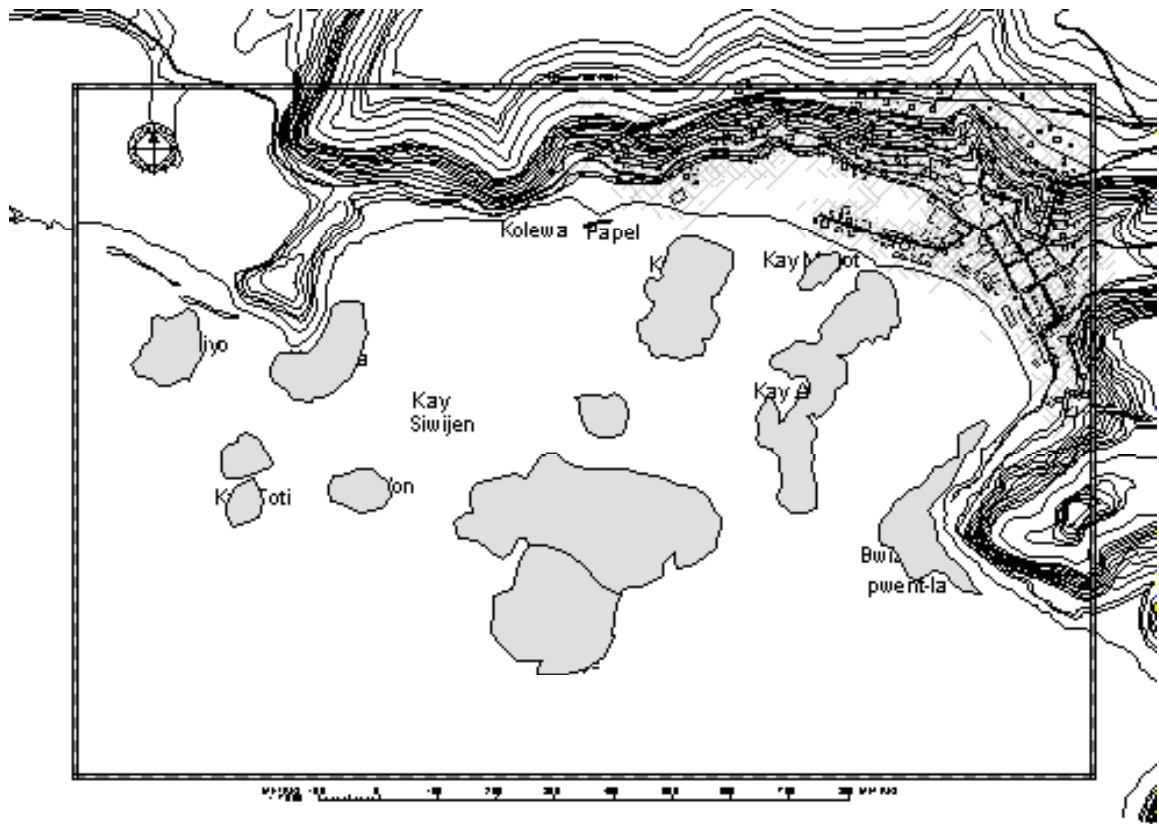


Figure 1. Distribution and names of reefs in Laborie Bay.

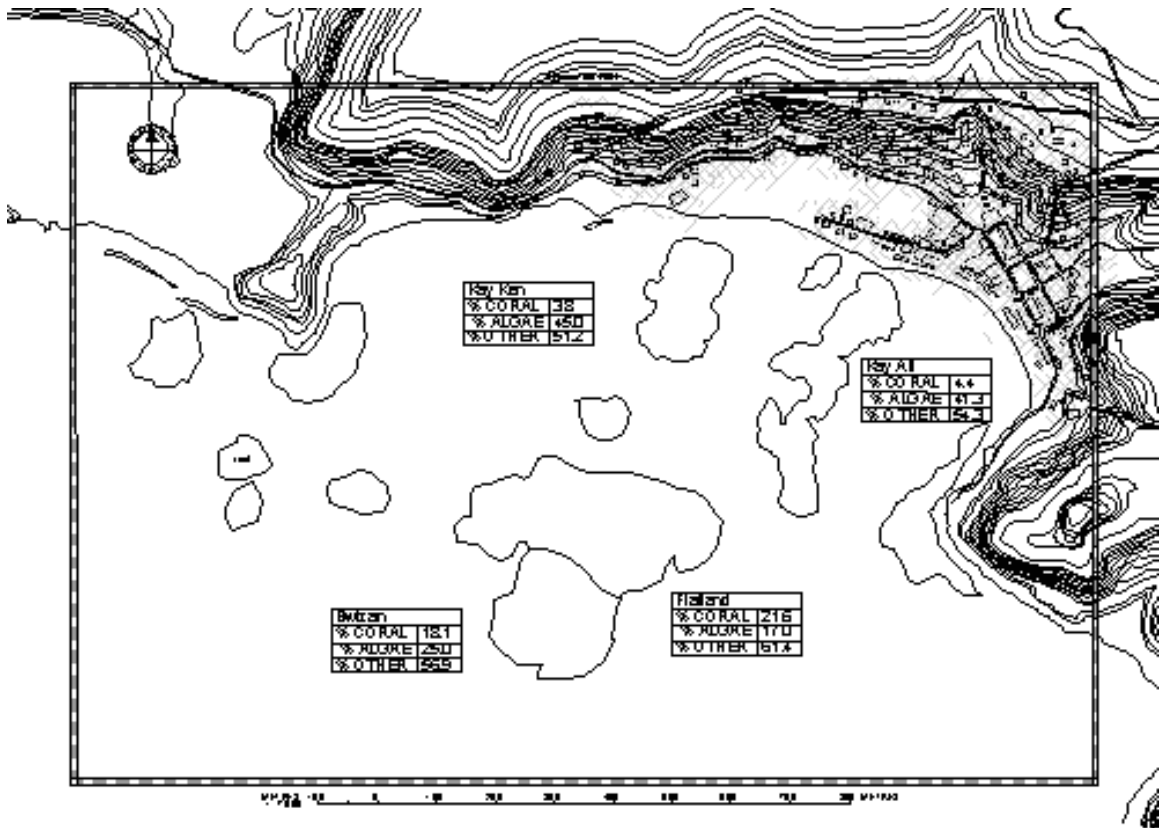


Figure 2. Cover of live coral and macroalgae on two inshore and two offshore reefs in Laborie Bay.