

IDIN Summer Research Fellowship Final Report



Community Based Coastal Resource Management in Indonesia and Malaysia
September 27, 2015
Kelly Heber Dunning

PART 1: Summary of Research Conducted

In this section of the report, briefly summarize the research you conducted this summer, focusing on the following three aspects (research objectives, research approach, and key findings) in particular. This section should be approximately 1.5-2 pages; feel free to delete the section headings and prompts from your final report; they are included to serve as a guide and prompt.

Research Focus and Objectives:

I was comparing community based resource management to top down management using coral reefs and mangroves. I compared Malaysian coral reef management (top down) to Indonesian reef management (community-based) by conducting stakeholder interviews and surveys as well as ecological assessments of coral reefs and mangroves.

Research Activities:

I used a participatory approach that allowed stakeholders to define questions and concepts important to them, and then surveyed stakeholders according to these initial interviews regarding their institutions for coral reef and mangrove management. I used surveys and interviews. I used percent living cover coral estimates for the coral ecological surveys and biomass and community structure assessments for the mangrove ecological research.

Research Findings:

Community-based natural resource management affords communities with more opportunities to innovate for ecological interventions in the environment that lead to sustainable resource management. These interventions, such as building artificial reefs or crab restaurants in the mangroves, led other locals to realize the importance of the resources because the links between ecology and economy become clearer.

Next Steps:

I would include seagrass ecosystems to conclude the focus on the tropical coastal seascape. I am going to continue this research as a post doc and as (hopefully) first year faculty.

PART 2: Findings Related to Local Innovation

In addition to your overall findings, we are particularly interested in your findings specifically related to certain aspects of local innovation, even if these may not have been the primary focus of your overall research project. Please answer the following questions to the extent that they are applicable to the project you conducted and to the extent you feel that you have relevant data, observations, and findings to share. This section should ideally be

Understanding Local Innovation:

I focused on the ability of local communities to innovate linking resource management and livelihoods. For example, the ability to build artificial reefs to attract tourists is possible in Indonesian community based management, and it is not possible in Malaysian top-down management. Locals were able to intervene in meaningful ways in the environment in contexts with devolved resource management in a way that those living in top-down resource management contexts were not. For example, in areas where reefs were previously destroyed

by dynamite fishing, certain stakeholders decided to build artificial reefs where the dead reef stood. This brought in tourists and more fish for artisanal fisheries.

Local Innovators:

Several people building artificial reefs, or starting community outreach programs. For example, Made Sumasa and Agus Diana of the Tuban Fisherman association in Bali. Their work saving the mangroves was innovative because they created several programs (conservation, nursery, arts and culture) around the mangroves that led to conservation among the fisherman over time through their Kampoeng Kepiting program.

Enabling Ecosystem and Stakeholders:

Civil society in Indonesia and Malaysia played a large role in local innovation. For example, the top down Marine Parks service in Malaysia has no scientists working for it, so they depend on NGOs such as Reef Check Malaysia to ad this support. Unfortunately in the top down setting, their actions are often hindered by bureaucracy and red tape.

Other data related to local innovation:

If there is other data you collected or observations you recorded related to local innovation, please briefly describe here and attach any supporting documentation you wish to share as an Appendix.

n/a

PART 3: Lessons Learned and Recommendations

Please share any challenges you encountered in implementing your research as planned, either from a practical standpoint or a standpoint of research methods.

In order to do this type of research, others would definitely need to speak the language. I speak Bahasa, but found that even after 2 years of training, I needed additional language training to work in the community.

If another student were to conduct a similar project, what would be several key recommendations you would make, based on your experience this summer?

They need to understand language, culture, and offer something to the communities they're working in. The fishermen had wanted biomass assessments done on their mangroves for a while, which was why I was invited to perform the assessments with them. Again, speaking Bahasa is a must.

Appendix: Background Information on Attached Video

In summer of 2015, IDIN funding allowed me to visit 3 separate communities working on coastal natural resource management of coral reef and mangrove ecosystems in Indonesia and Malaysia. Two of these communities were implementing community-based strategies for natural resource management. The video attached highlights one of these communities, by showcasing the work of the Tuban fisherman community in Tuban Bali who are working to combine livelihoods, conservation, and culture into a program for long term mangrove and community sustainability. Mr. Made (pronounced Madé) Sumasa, a member of the Tuban Fishermen's Association, a cooperative of fishermen who engage in fishing and crabbing, is himself an informal scientist. He tried many different ways to sustainably farm crabs before figuring out a method involving bamboo fences in the mangroves themselves. He used his success in aquaculture to grow a sustainable tourism operation located at Kampoeng Kepiting Kuliner and Ekowisata right next to the toll road to the airport in Denpasar, Bali. This ekowisata, or ecotourism program, combines cooking locally caught food and farmed crabs, with eco-tours through the mangroves, as well as handicrafts and products from the mangroves made by the fishermen's wives, in addition to arts and culture, and a mangrove restoration and nursery program among others.

The program secretary, Mr. Agus Diana as well as Mr. Sumasa see a major part of their work as partnering with youth and educational institutions all over the world to bring in people to study their mangroves and help with conservation. The work of Earth Hour Bali is one such example, consisting of dozens of local, social-media savvy youth responsible for campaigns such as #mangroveforlove. This campaign sees weekly mangrove cleanups and maintenance of the nursery.

The Tuban Fishermen Association invited me to train several fishermen in biomass and community structure measurements on three plots of mangrove forest along several points in the estuary. These measurements are preliminary studies that will inform an in-depth study in spring of this coming year. The fishermen, Mr. Kelik and Mr. Ketut Suada, collected data over several days, and their efforts in this monitoring program, as well as the decades long efforts of Mr. Sumasa and Mr. Diana are featured in this ten-minute film.