Final Project Evaluation Report

Your Details	
Full Name	Andrés Alegría
Project Title	Assessment of management scenarios for the marine ecosystems of Guanaja Island (Honduras) based on trophic models and simulations
Application ID	23801-1
Grant Amount	£4,855
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Date of this Report	November 26, 2018

1. Indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.

Objective	Not achieved	Partially achieved	Fully achieved	Comments
Construct a model that describes the ecological structure, the trophic dynamics, and the economic value of the marine resource surrounding Guanaja				This was the core objective.

2. Please explain any unforeseen difficulties that arose during the project and how these were tackled.

During the planning phase, the local liaisons in the municipality who kindly supported the project with a boat and a captain had initially referred to the availability of a small boat and a 40 hp offshore engine, which is the regular deal in Guanaja. Based on this, I had foreseen that movement during the expected bad weather (mostly windy) days could be overcome often, when the wind is just a little strong. Once on the field, the boat that was effectively available for most of the days ended up being a much smaller vessel and with a faulty 15 hp engine which made every trip extremely slow (what would normally take 30 minutes, would take 2 hours), and not suitable for a large portion of the intended study sites that were located up to 20-30 km offshore. Moreover, the heavy winds persisted longer than average. For this reasons, underwater monitoring work was only possible in near-shore habitats that were safely accessible with the small boat. The constraints to access the farther monitoring sites resulted in the under-sampling of habitats.

Although I was not able to achieve all the underwater monitoring work that I had planned for, I made the best of each day. So, when a trip had to be unexpectedly cancelled early in the morning, I was still able to move around the island itself and work on an extended number of interviews with fishermen and other stakeholders. This situation led me to interview and talk with a larger amount of persons. All in all, the limitations on underwater sampling favoured an enhanced understanding and data enrichment based on the local knowledge that was shared with me.

Difficulties with underwater photo equipment were also significant. I had initially planned to sample habitats that were deeper than those accessed by regular SCUBA diving. However, the gear that I allocated for this came with factory defects that were too significant to repair on-site. Although I was unable to access these deeper habitats, I did have a backup plan that allowed me to make the underwater transects at the shallow sites - so everything was not lost.

Lastly, while the core objective of my project as presented to The Rufford Foundation was effectively achieved (see answer to question 1), I must to state that

I was not able to use the model to the full extent as described in the application. During the application process I shared with you that one of the main drivers for me to conduct this project was to use the model to explore options of reducing the damaging and dangerous SCUBA fishery in which a part of the fishers in Guanaja are involved in. However, this aspect proved to be very difficult to develop because for this the model needs data on different life stages of the lobster populations, taken during at least full year. The timeframe implications of this where not clear for me until the very end of my preparation for fieldwork.

3. Briefly describe the three most important outcomes of your project.

a). A locally relevant policy brief. The results of this project form the basis of a policy brief about fisheries management focused on Guanaja. For example, the trophic model outputs show how a set of key management actions that adjust the pressure on small piscivorous fish by the artisanal fleet, could lead to an increase in abundance of large piscivores and highly charismatic fish, favouring the long-term vision of the local municipality in terms of developing the island as a tourist destination.

b). Feedback on existing conservation initiatives. I was able to gauge fishermen´s perception of the locally controversial use of marine protected areas. While most fishers agree with the concept, scepticism is rising and support has been eroding since these initiatives started 6 years ago. The project results included pragmatic recommendations that managers could easily resolve several issues with small adjustments in their management programs. These set of recommendations are a significant outcome of my project.

c). Research thesis and master's degree. This project was designed as part of the research needed to fulfil the requirements to earn my M.Sc. in Aquatic Tropical Marine Ecology (ISATEC) from the University of Bremen in Germany and successfully acquired on September 27th, 2018.

4. Briefly describe the involvement of local communities and how they have benefitted from the project.

Interviews with local fishermen were a significant component of my project. Aside from the structured data that constitute the measurable input for the project, I managed to have many significant unstructured conversations too. This added dimension of interaction allowed me to gain genuine insight on the perspective of the island community, and ultimately to frame the policy brief in a manner intended to benefit them directly.

5. Are there any plans to continue this work?

Yes. The underwater photo equipment that came faulty from the factory has already been replaced thanks to the guarantee. The availability of this equipment represents an extended opportunity to explore yet unassessed habitats and unreported biodiversity that are located throughout the Honduran Caribbean down

to 100 m depth, much deeper than feasible by traditional SCUBA gear. I´m already coordinating with colleagues in Honduras to start an exploration campaign after the current stormy season is over, sometime between March and May 2019. Beyond this, the underwater photo equipment will be continuing to be used in a regular basis, mostly in including biological monitoring surveys. A particular spin-off project foreseen for November 2019 is to document putative fish spawning aggregations occurring annually off the shores of Guanaja. For all of these works, the equipment is super valuable in terms of facilitating safe accessibility to hard-to-reach deep waters. This work in particular would deliver interesting information valuable in itself, but also valuable as input for subsequent refinements of the model work I did for the thesis project.

6. How do you plan to share the results of your work with others?

- A presentation of the results was given to the in-country partner organisation Centro de Estudios Marinos (CEM).
- A presentation of the results was given in the Ecosystem Network Analysis workshop held in Bremen, organized by the Leibniz Center for Tropical Marine Ecology (ZMT) and attended by various ecological modelers from around the globe.
- Now that the thesis has been completed and undergone an academic evaluation, I'm preparing a policy brief about fisheries management focused on Guanaja, scheduled to be presented in January 2019.

7. Timescale: Over what period was the grant used? How does this compare to the anticipated or actual length of the project?

The grant period was 1 year, as anticipated.

8. Budget: Provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in £ sterling, indicating the local exchange rate used. It is important that you retain the management accounts and all paid invoices relating to the project for at least 2 years as these may be required for inspection at our discretion.

Item	Budgeted Amount	Actual Amount	Difference	Comments
Other materials (printed interviews, ropes, underwater paper, etc.)	0	29	+29	
Underwater exploration equipment	1,404	2,465	+1,061	Because of the additional support from the DAAD (see below), I was able to upgrade on exploration equipment

Boat rental and fuel	660	275	-385	
Housing and food	930	1,890	+9603	* see below.
Salary for research collaborator	0	121	+121	
Domestic air travel	465	104	-361	
International air travel	1,396	0	-1,396	Support on international travel was provided by the as able to confirm The German Academic Exchange Service (DAAD).
Total	**4,855**	**4,855**	**0**	Local currency in Honduras is Lempira (1 Lempira = 0.032 £ sterling)

***** *On arrival to Guanaja, I spent one night on the accommodation that a local liaison was able to find for me – this was a mistake – the place was cheap but ended up being a hazard itself in many ways and not least unsanitary conditions. I was traveling with my wife and our two-year-old son; this place should not have been an option to start with. Quick enough we were able to find an alternative place to rent for the following months. This elevated the estimated cost for housing, which was fortunately available from the funds initially allocated for international travel.*

9. Looking ahead, what do you feel are the important next steps?

The most important step is to deliver the policy brief to the municipal authorities in Guanaja. Second to this, is to conduct a mission for underwater exploration, which will include deeper waters off Guanaja, and further off the Caribbean Coast.

10. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the Foundation receive any publicity during the course of your work?

So far I have offered in a couple of occasions a PowerPoint presentations (attached), including my Thesis defence. Here, the support from The Rufford Foundation was properly acknowledged and the corresponding logo placed in the last slide. This logo was also placed in the underwater equipment I used during the Thesis fieldwork (photos attached).

11. Please provide a full list of all the members of your team and briefly what was their role in the project.

Jarol Reyes – Local fisherman in his early 20's. He accompanied me during the initial rounds of interviews, introducing me to many fishermen.

Laura Zaldivar – Local environmental activist in her early 20's. She also accompanied me during many interviews, mostly at the end of the fieldwork period, and introduced me to many fishermen

Hilroy Peca – He is a local fisherman, and more recently the Environmental Patrol Officer from the Municipality. He was the Captain assigned to accompany during the whole fieldtrip.

Diana Vásquez – She is the Executive director of the CEM. She facilitated contact with the local Municipality in Guanaja.

Prof. Dr. Matthias Wolff – From Universität Bremen. Main academic advisor for the Thesis project.

Sebastian Ferse - From Universität Bremen. Second academic advisor for the Thesis project.

12. Any other comments?

On the week prior to the submission report, my thesis work has been nominated for the "Campus Award: Research for a sustainable future" which is an annual award for researchers from the University of Bremen who push forward sustainable research by their special approaches, methods, results and practical relevance.

I'm incredibly grateful for the trust and support from The Rufford Foundation. It is not an understatement that your support allowed be to take this Thesis project beyond the academic milestone. The support of The Rufford Foundation gave me the opportunity of an immersive experience in the field of fisheries, enhancing my understanding of the link between the concepts environmental conservation and livelihoods.