

The Rufford Small Grants Foundation

Final Report

Congratulations on the completion of your project that was supported by The Rufford Small Grants Foundation.

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. The Final Report must be sent in **word format** and not PDF format or any other format. We understand that projects often do not follow the predicted course but knowledge of your experiences is valuable to us and others who may be undertaking similar work. Please be as honest as you can in answering the questions – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please complete the form in English and be as clear and concise as you can. Please note that the information may be edited for clarity. We will ask for further information if required. If you have any other materials produced by the project, particularly a few relevant photographs, please send these to us separately.

Please submit your final report to jane@rufford.org.

Thank you for your help.

Josh Cole, Grants Director

Grant Recipient Details	
Your name	Vardhan Patankar
Project title	Traditional management and change: studying the effectiveness of marine resource management systems post-tsunami in the Nicobar Islands, India
RSG reference	60.09.09
Reporting period	01/01/2010- 01/01/2011
Amount of grant	£5968
Your email address	vardhan@ncf-india.org
Date of this report	31 st March 2011

1. Please 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
To identify/document traditional management systems, fishers' knowledge in relation to marine resource offtake			√	This objective has been achieved to an extent where I have been able to document practices/customs/superstitions, etc. associated with fish and other marine resource extraction. I have developed a GIS based map of the islands and the surrounding waters with an overlay of the different management systems – classified based on their spatial or temporal or spatio-temporal extent. The map also contains finer classifications of sites based on gear restrictions, species restrictions, size-class restrictions, etc.
To identify nature of changes in these systems/practices post-tsunami.			√	The changes caused post-tsunami were in fishing practices, fishing rights, customary tenure etc. It was difficult to distinguish changes that were caused specifically due to the tsunami, as these changes are happening over a period of time and due to access to external resources.
To evaluate current effectiveness of different traditional management systems in protecting marine resources and habitats		√		This was done by measuring biological 'status' of exploited fish and other resources inside and outside spatially or spatio-temporally managed areas. We were unable to access a few areas that are categorised as restricted areas.

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

We made three extended visits to Nicobar archipelago during the period of the project. During the first visit, while camping on one of the remote islands, I was bitten by a venomous snake (pit viper) my field assistants administered first-aid and treated me locally which helped in recovery. Due to this incident, field work had to be stopped for two months. However, the loss of time was compensated during the next field visits to the Nicobars.

Another difficulty that I was faced with was the inability to access some of the important managed areas to evaluate biological efficacy. This was because the villagers had certain myths associated with these sites and denied access to these areas on the grounds of personal safety and cultural sensitivity. These sites were therefore not visited.

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

a. An identification of managed/restricted areas and traditional marine resource-use practices in the Nicobar Islands

We documented/ identified 20 sites where different marine customary regimes exist. Restricted entry, seasonal closure, total closure, species restrictions and gear restrictions are some of the practices that are followed. Of the 20 sites, only one site was a closed area, six sites had seasonal restrictions for the utilisation of marine resources, two sites had species restrictions and eleven sites had gear and spatio-temporal restrictions. All respondents were aware of these resource-use practices; however, reasons for these restrictions were unclear. Social taboos were associated with fishing in restricted areas and belief of the local people in these taboos appeared to be strong.

Limited entry, marine protected areas, closed seasons, closed areas, and restrictions on certain type of species and fishing methods are some of the practices that are being used. Out of 20 sites, only one site was a closed area, six sites had seasonal restriction in terms of utilization of marine resources, two sites have species restriction and 11 sites have gear and spatio-temporal restriction. All the respondents were aware of the traditional resource-use practices; however, reasons for restrictions were unclear. Social taboos were associated in terms of fishing in restricted areas and belief of local people about social taboos appeared to be strong.

b. A documentation of patterns of marine resource use in the Nicobar group islands.

Fishing is an important activity at different villages in central and southern Nicobar group of islands and approximately 70% of people fish to meet their daily dietary requirements. This is mainly for subsistence, with a few exceptions, where individuals sell fish within the village, to government employees and other villages in the Nancowry group of islands. The preferred fishing method of the Nicobaris is hook and line followed by cast net, harpoon and spear fishing and the preferred fishing vessel is the traditional dugout boat called *Hodi* followed by the motorised *Dunghi*. Fishers target mainly Piscivorous fish, Carangidae, Lethrinidae, Serranidae, Balistidae using hooks and lines, Muraenidae, Scaridae and Acanthuridae, Dasytidae, Carcharhinidae are caught mostly by nets and spears and mollusks—octopus, squids and giant clams are fished with harpoons. There are important differences in fishing methods based on gender. Men use all type of gears that are listed about, while women prefer hooks and lines. Fishing practices and catch composition appeared to be constant in all the seasons, except monsoons, during which shell fisheries and the collection of sea cucumbers was preferred.

c. An understanding of changes in traditional management practices post-tsunami in the Nicobar Islands.

Seventy percent respondents interviewed perceived a change in fishers' numbers over time, and 20% of people responded that they don't know if change has occurred. All the fishers who perceived a change responded that the fish numbers and availability of resources had decreased and 30% of fishers responded changes in fishing zones post-tsunami. Some fishers had increased, or decreased time spent fishing correspondingly perceived an increase or decrease in the number of fish caught, which may be due to those who fish less, catch less and vice versa and not the impact of tsunami. Only 10% of people responded of not following the traditional resource-use practices. These

practices are more active in some areas than others and individual perceptions about these systems varied between different islands. Changes in the fishing practices have been gradual over a period of time and not precisely due to the impact of the tsunami.

4. Briefly describe the involvement of local communities and how they have benefited from the project (if relevant).

Our field assistants were from the local Nicobari communities. They acted as interpreters during our discussions, thus forming a link between the project team and the local people. Many of our discussions extended for hours as people were keen to know about the probable impact of the tsunami on marine resources, failure of fisheries management, importance of management etc. Some of them have also requested that we share the findings of our study on completion of the project.

5. Are there any plans to continue this work?

While the reefs of the Nicobar Islands were yet recovering after the tsunami of 2004, they were faced with another catastrophe, a bleaching event in the summer of 2010. This bleaching event is reported to be severe and has affected reefs in many parts of the world.

As the next phase of the project, I plan to assess reefs within a framework of ecosystem resilience by assessing the relative buffer capacity of representative reefs along the island chain, and determining which set of parameters best describes the resilience of these reefs. Later I plan to evaluate whether the current customary regimes are effective in supporting recovery of target fish species following repeated disturbances.

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

The initial findings of the project were discussed with authorities at the State Forest Department in the month of January. The output of the project will be presented to the Chief Wildlife Warden of the State while submitting the final report. The result of the project will also be shared among with the scientific community through publication in a peer-reviewed journal. Besides this, I will be presenting this work at the 2011 International Marine Conservation Congress at Canada in the month of May.

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

Anticipated period: February 2010 to February 2010 (8 months)

Actual period: February 2010 to February 2010 (8 months)

8. Budget: Please 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.

Item	Budgeted Amount	Actual Amount	Difference	Comments
Fuel for breathing air compressor	£107	106	1	--

Fuel for boat	£477	476	1	--
Field ration	£620	620	0	--
Medical kit	£82	82	0	--
Literature documentation information				
Report production and result dissemination	£89	87	2	--
Local travel				
Air travel	£895	894	1	
Inter-island travel	£298	297	1	--
Boat Hire	£597	596	1	--
Customs and Port duties	£238	238		--
Accommodation	656	656		--
Extra manpower				
Field assistants@ £ 60 per month	£1432	1432	0	1432
Other Costs				
Communication	£298	298	0	--
Miscellaneous	£179	176	3	--
Total requested	£5968	5957	11	This was at actual and less than anticipated was used.

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

The important next steps are:

- To assess coral reefs of the Nicobar archipelago within the framework of reef resilience and evaluate the impact of the recent bleaching event on these reefs.
- To identify resilient areas and areas susceptible to future catastrophes.
- To identify indicators that best describes reef resilience across the island chain.
- To evaluate the biological efficacy of the current marine resource-use practices in terms of recovery of reef resources following disturbances.

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

I have used the RSGF logo on a poster presented at the International Congress of Conservation Biology at Edmonton, Canada in 2010. Besides this the logo was used during PowerPoint presentations of the work in progress so far, at the Department of Environment and Forests, Andaman Islands. The logo will also be used in peer reviewed publications and the project report once the work is complete.

11. Any other comments?

This was the first project that I carried out in the social science background and I am grateful to the the Rufford and Maurice Lang foundation, Rufford Small Grant Program for providing timely funds and an opportunity to carry out this project. This has been a wonderful experience and helped me in many ways in terms of personal learning. I thank my field assistants and all friends who helped me in

the project activities, Dr. Rohan Arthur, Manish Chandi and all at Nature Conservation Foundation for advice and continuous support. My special thanks are to the people of Nicobar Islands for allowing me to live with them and share their daily experiences. This project would have not been possible without their assistance, time, friendship and kindness.