

The Rufford Foundation Final Report

Congratulations on the completion of your project that was supported by The Rufford 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	Chiara Pisapia
Project title	Understanding recovery potential of Maldivian reefs
RSG reference	18224-1
Reporting period	Nov 2015-Nov 2016
Amount of grant	£5000
Your email address	Chiara.pisapia.1@gmail.com
Date of this report	15/10/2016

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
Identify reefs with greater recovery capacity in order to enhance their conservation.			X	We investigated coral cover and composition in the same exact sites from 1997 to 2016, and we compared and described all the sites in a paper. Also temporal data from 1997 to 2016 for each site are available online.
Investigate whether recovery potential vary spatially among reefs			X	The data were collected in the central Maldivian archipelago and results are available in the paper published in Scientific Reports. Coral cover profiles varied among sites, with some sites never returning to pre-bleaching state and some showing lower cover than others.
Build capacity and improve local awareness			X	We involved students (mainly female) at the Maldivian National University and high profile resorts in the country

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

The main challenge of our study was a major bleaching event that occurred in April 2016. This mass bleaching event reduced live coral cover dramatically. Most of our sites were affected and coral died. However, we managed to survey all the sites in the central Maldives archipelago before the bleaching and these data provide invaluable information to quantify the severity of the stress.

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

- 1) A field-trip for Maldivian undergraduate students from the Maldivian National University (NMU). Students and teachers learned the most important sampling techniques for coral reef ecosystems. Importantly, most of the students were female.
- 2) We collected data on coral communities before the 2016 mass bleaching event, which provide an important baseline to quantify the severity of the event.
- 3) We did generate data on coral reef resilience that are of immediate relevance to the conservation and management of Maldivian reefs. We also shared data on long-term changes in coral cover in Maldives since 1998, with the scientific community and the public with a publication in the high profile open access journal Scientific Reports.
 - Two Maldivian scientists were co-authors in the peer review paper in the Nature publishing group.
 - Several resorts (including One and Only Reethy Rah, Gili Lankanfushi, Velidhoo and Big W) were involved in the work we did in the country.

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

This project put the basis for long-term monitoring of coral cover and composition and increased environmental awareness in the Maldives by involving students from the NMU, local marine biologists working in high profile resorts and Maldivian scientists. Two Maldivian scientists were also involved in the publication of the results from this study. Marine biologists from resorts were involved in the collection of data, we also organized meetings with resort managers and we gave a talk in the Four Season resort to increase reef awareness.

5. Are there any plans to continue this work?

Yes definitely. The project in Maldives was truly a great experience. Rufford grant allowed us to collect critical data on pre-bleaching. Revisiting the same sites in 2017 will be critical to quantify changes in coral cover and hence quantify the severity of the 2016 bleaching event.

We increased local awareness by collaborating with the University in Male (MNU) and with different high profile resorts in North Ari and North Male atolls. It will be critical for us to strengthen these relationships with the University and resorts. We are also building upon a relationship with IUCN Maldives to increase environmental awareness in the Maldives by involving citizen scientists.

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

We already summarised all our findings in a peer review papers. We chose a very high profile paper, which is also open-access so everyone can access it. Data will also be presented in a public seminar in Maldives next year and in the ASLO scientific conference in Hawaii in February 2017. All data are already online. We uploaded all our data in the journal website so local managers and policy makers can easily access them. And we already used the social media page for local marine biologists in the country to share our results.

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

We used the grant from January 2016 to October 2016.

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. 1 £ sterling = 4.44 Nuevo SoIs

All price are in Sterling to avoid any confusion

Item	Budgeted Amount	Actual Amount	Difference	Comments
Field work course MNU	370	900	530	We organised a field based course on the reef instead of at the University, consequently we had to cover for students transfer to/from Male, field consumable and for food.
Boat	3500	3500		
Field consumable	600	600		
Underwater camera	500	0		We did not purchase any new camera. We used

				Chiara's personal camera to reduce costs.
Total	4970	5000	30	

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

From a scientific standpoint the most important steps are to continue monitoring the long-term sites in the central archipelago to investigate changes in coral cover and community structure following the 2016 mass bleaching event and investigate their recovery potential. Future surveys will be used to define the risks coral reef ecosystems face from increasing anthropogenic influences in a changing climate. The other critical steps is to strengthen all the relationships we developed during the study with the university, with the Maldivian students, the Maldivian researchers, local marine biologists and resorts. It is very important to continue our work in the country to continue increasing environmental awareness by involving, local marine biologists, students and governmental agencies in the collection of information and maintenance of reef monitoring practices.

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

We will be using the Rufford Foundation logo in the presentation of our results during the ASLO conference in Hawaii in February 2017 and in the seminar in Maldives in early 2017. RSGF received great publicity with the publication in Nature Scientific Reports and we are also in the process of uploading a YouTube video showing some underwater work we did in April

11. Any other comments?

Thank you very much again for supporting our work in Maldives.