

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	Chathurika Subhashini Munasinghe
Project title	Conservation of locally endangered Dugong (Dugong dugon) through community based seagrass restoration project in the bay of Mannar, Sri Lanka
RSG reference	18977 - 1
Reporting period	26.01.2016 to 26.05.2017
Amount of grant	£4956
Your email address	chathu8810@gmail.com
Date of this report	03.07.2017



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
Restore/Transplant four species of seagrasses: Halodule uninervis, Halophila ovalis, Enhalus acoroides and Thalassia hemprichii to a 0.25 acres (1012 m ²) area				Restored an area of 800 m ² with Halodule uninervis, Halophila ovalis and Cymodocea rotundata. Enhalus acoroides and Thalassia hemprichii were not commonly found in this area therefore, donor plugs were not available. However, we could successfully transplant Cymodocea sp. which is also a dugong preferred food in mixed seagrass habitats.
Ensuring the long-term survival of seagrasses through local community support and by educating the local community				We managed to talk to several small groups of fishermen regarding the restoration of seagrass and conservation of dugongs and they agreed to protect the restoration sites and the dugongs.
Raising awareness among school children and youth				Conducted a school children awareness programme (70 children from Kalpitiya area) and a programme to university students on marine pollution along with the beach clean-up in Silavaturai area.
Disseminating knowledge				Presented the findings at the Rufford in-country conference. Abstract on this project, submitted to the International Seagrass Biology Workshop held in Wales, UK got accepted. Donated herbarium sheets made from the seagrass specimens collected during the project to University of Peradeniya
Conducting applied research on seagrass restoration				Data on physical parameters, predators, seagrass associated species on donor and restoration sites, survival of transplants,



		methods used for transplantation were collected.
Regular monitoring of the transplanted plugs		Monitoring was done per every 2 months from January to May 2016 and November 2016 – May 2017 (other months were not favourable due to rough seas to conduct transplanting or monitoring).
Conduct a beach clean- up and marine pollution awareness programme		A beach clean-up along with an awareness programme to youth and navy personnel was conducted in Silavaturai, Mannar in collaboration with Sri Lanka Navy
Encouraging relative authorities to declare a Marine protected area in Mannar		Emphasised the importance of seagrass beds and dugongs in Mannar at 'National Stakeholder Consultation on SDG 14, UNDP' and voluntary commitments were prepared for ocean conference to declare an MPA in Mannar.

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

Transplantation was done with Halodule uninervis, Halophila ovalis and Cymodocea rotundata. Although we have stated that Enhalus sp. and Thalassia sp. would be transplanted, Enhalus acoroides is usually found in estuarine habitats and the site we selected was not very much suitable for Enhalus sp.. Thalassia hemprichii was not commonly found in this area therefore, donor plugs were not available. Therefore, we changed some of the species to be transplanted and we could successfully transplant Halodule sp. Halophila ovalis and Cymodocea sp. which are dugong preferred food. Also, we do not wish to restore Enhalus and Thalassia sp in the future as we realised they are not much preferred by dugongs as food.

"Peat pot" method could not be used since we could not find a stock of peat pots available for reasonable price in Sri Lanka and the company who has agreed to provide/sponsor them was unable to do so. Therefore, after the first 2 months of the projects, we did a slight change in the principal method of restoration where we used Hessian cloths and threads to wrap fertilizers around the roots of the extracted seagrass plants and planted them. This method ('hessian wrap' method as we named it so far) does not affect the growth of roots and since hessian cloth and thread are degradable and they do not harm the habitat. We also noticed that the cost for one unit (one transplant) is lower when using this method compared to using peat pots and it was easier to handle hessian wrapped transplants underwater. We wish to carry out research on this new method and improve it to transplant several species of seagrass.



During our beach clan up, we noted that the Silavaturai area gains lots of artificial debris from the 'Malwathu oya' which is a stream carrying these pollutants to the ocean and the seagrass habitats. Our volunteers and the Navy personnel could not collect all the trash that were accumulated within the 6 km stretch we cleaned because the amount was very intense. However, we managed to collect 250 kg of trash in a 6 km stretch in Silavaturai, Mannar beach. We were able to convince the Navy to continue this beach clean-up every month as a small 2 or 3 hour project and they agreed to do so. Even though we got a 100% positive feedback from the participants for this beach clean-up programme, we think it is better to conduct our next clean-up programs in two sessions (morning and evening) to collect more trash and educate more people on marine pollution.

We could not conduct local fishermen community awareness programme as planned due to a small conflict between the two local communities. However, we managed to meet small groups (about five to seven) of fishermen after 3 months of the conflict and educate them on seagrasses, seagrass restoration and dugongs. They agreed to protect the donor and restored seagrass beds and to protect the dugongs if they come across any, during their fishing activities. However, we realised that signing a MoU and providing incentives would be a better way of helping the local community to protect the habitats and dugongs.

Monitoring is a crucial stage of restoration. We believe that further monitoring is needed even though the transplantation is by far a success (because many restoration projects succeed during 1st year of restoration and fail after 2 years due to the lack of monitoring and post treatments). However, we conducted continuous monitoring during the project with the carefully managed funds.

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

- 1. Restoration Three species of seagrasses (Halophila ovalis, Halodule uninervis and Cymodocea rotundata) were successfully transplanted in an area of 800 m².
- 2. Awareness Beach clean-up programme and awareness on marine pollution in Silavaturai, Mannar in collaboration with Sri Lanka Navy. 94 volunteers participated and collected 250 kg of trash in 6 km beach area. Navy promised to continue the beach clean-up every 2 months. Children awareness programme for 70 school children in Kalpitiya
- 3. National Development Emphasised the importance of protecting Mannar area for the conservation of dugongs and seagrasses at the 'national stakeholder consultation meeting on sustainable oceans, seas and marine resources' held on 25th May 2017. There, we prepared the voluntary commitments for the ocean conference held on 5-9th June 2017 in New York and we (Sri Lanka) pledged to declare part of the Gulf of Mannar in the Northern Province (area of 18,990 ha) as a marine protected area by 2018.



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

We introduced the project to the fishing communities in Silavaturai, Mannar and discussed with them about their opinions, about dugong sightings in the past, about the extent of the seagrass in the area, etc. A questionnaire was filled from the information for future use on dugong conservation. Since they haven't had any awareness before, they actively participated in our questionnaire survey and asked many questions from us also, for clarifications. They also voluntarily offered us their boats, boat rides, their huts to prepare the fertiliser mixtures and hessian wrap for the restoration programme.

Most importantly, we were able to conduct awareness on dugongs, seagrasses, marine regulations and laws in Sri Lanka, fisheries and marine pollution to several small groups of fishermen during the project which we suppose was very much essential to them. The school children awareness programme conducted for their children was also very successful, since children are the next generation to protect these seagrass and dugongs in the future.

5. Are there any plans to continue this work?

We will restore the same species of seagrasses that were successful in transplanting using the 'hessian wrap' method and do research to introduce it to the seagrass restoration projects in the future. Since *Halophila ovalis* and *Halodule* sp. are the dugongs' favourite food, we believe that the research findings would be useful to all the seagrass restoration practitioners and dugong conservationists.

We have realised that, more educational programmes are needed to protect the marine habitats and animals in Sri Lanka including the dugongs and the seagrass habitats. More youth should be educated and inspired since they have the capacity to do more and initiate more activities to protect marine environment in the future.

We did an effective coastal clean-up programme with the grants from Rufford Foundation this year and we wish to continue it every year. We also noticed that the marine ecosystem (especially seagrass) is largely influenced by the coastal ecosystem. Therefore, we would like to conserve and protect the coastal ecosystem (especially the mangroves that help to retain the sand and the pollutants preventing them to go to the sea). Therefore, we hope to organise a mangrove clean-up by the end of this year rather than a beach clean-up. We will collaborate with other local organisations/ Navy or institutes in the future and conduct the clean ups annually.

Although Sri Lanka is an island surrounded by ocean, there are only a few research projects carried out on marine/seagrass/coral habitats. Therefore, we wish to conduct basic research on the seagrass habitats around Sri Lanka so that these will help the scientists to carry out applied research in the future.



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

We have already put up a temporary website (<u>www.oceasl.org</u>) to publish and promote our work. This website carries the events we conducted during the project. Few local and international have already collaborated with us during our next projects.

We have gathered a young group of people to work on seagrass and marine restoration/conservation work. We are training them on marine and coastal ecosystem conservation; research and field work so that they can be the next leaders to protect the marine ecosystems.

We also presented our project work at the Rufford in-country conference held from 14th – 16th November 2016 in Kandy. Abstract submitted on this project to ISBW 2016 (International Seagrass Biology Workshop) got accepted. Also, I hope to share my work, with the recent updates and outcomes, in coming conferences in the future.

I also believe that every material we produced during the project including the small stickers printed for school children will be a good method of sharing knowledge and we hope to produce more material like a seagrass poster and a book (which are not available for Sri Lanka) in the future.

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

We applied Rufford grants for a period of 16 months and completed the project within 16 months (From 26.01.2016 to 26.05.2017). The reason we asked for a 16 month project was that we cannot conduct restoration or monitoring during June – October due to rough seas in Mananr. Although there was a small local conflict between two communities for 3 months, that did not affect our project because those were the time period that rough seas occurred and we conducted our awareness programmes in Kalpitiya (a coastal District adjacent to Mannar) during that time.

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
Coconut peat pots	797	231	566	We changed the method from 'peat pot' method to a 'Hessian wrap' method after the first two months as the new method is cost effective and efficient.



Trays, sod pluggers, slates, planting devices, snorkels, face masks and fins	364	365	1	These will be used for the future projects as they are in good condition.	
Fertilizer	18	20	2		
SCUBA Divers payment (3)	1260	1844	584	We hired a SCUBA diver from the local community in addition to the two divers. So there were three divers involved in transplanting and monitoring process.	
Diving equipment rental (refilled tanks, backpacks) and boat hires	684	702	18	Because three divers were involved and there was a slight increase in equipment rentals as this was a remote area.	
Three workshops	252	267	15	We could only carry out two workshops (one for school children and one for the youth). Local community was educated only through discussions.	
Ocean day special Program (Beach clean-up and awareness program)	208	311	103	Originally we planned to have a small programme, but there were many volunteers and we spent some more for this event and it was successful	
travelling (Non-A/C)	279	278	1		
accommodation	1094	871	223	Sri Lanka Naval institute in Mannar provided us accommodation during some of the field visits	
New costs involved during the project					
Hessian cloths, threads	0	67	67	The new method involved hessian cloths and threads	
Total	4956	4956	0		

(One Sri Lanka Rupee equals 0.00515 GBP)

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

- To select sites to conduct experimental research on the new method (hessian wrap method) that we practised during this pilot project.
- Conduct a mangrove clean-up this year, instead of a beach clean-up.
- Conduct two other workshops for already selected youth group on marine field techniques and coastal/marine conservation so that they can lead other projects in the future.
- Prepare herbarium sheets for all the seagrass species found in Sri Lanka and prepare a booklet with the help from IUCN country office. Sri Lanka does not even have a field guide for the seagrass species. Therefore, documenting their distribution around the country, photographing and preparing a field guide are essential. However, this cannot be achieved in the near future as this will require lots of work. We wish to prepare three or four herbarium sheets



from each species to donate them to the Royal botanical garden, SL, Department of Botany and Zoology, University of Peradeniya and for our organization to display in the research centre.

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?

All the documents printed (even the small cards given to the volunteers, leaflets,) had the Rufford Foundation logo. A t-shirt was given to every participant volunteered for the beach clean-up programme printed with Rufford Foundation logo. A banner with the logo was displayed at the beach clean-up event. The video made up after the beach clean-up activity is available in YouTube (<u>https://www.youtube.com/watch?v=eiZQfdjHmmM</u>). A small cloth bag was given to every child participated in the awareness programme with a prominent print 'save our marine life' with Rufford Foundation logo. We donated school books to every participant of the children awareness programme and the stickers were printed with Rufford Foundation logo. Our temporary website also (<u>www.oceasl.org</u>) carries the Rufford Foundation logo as the sponsor for this project

11. Any other comments?

Halodule uninervis, Halophila ovalis and Cymodocea rotundata are slow growing seagrass species. Therefore, restored seagrass beds may become self-sustaining in appropriate time frames and that many functional attributes return within a few years. However, we need enhanced investment in both improving restoration practices and large scale restoration.

Any department in the University of Peradeniya did not have herbarium specimens of seagrasses, although the two departments carry out lectures, practical's and research on marine ecosystems. We were able to make herbarium sheets from the four seagrass species that we work on this project, and donate them to the department of Zoology, University of Peradeniya to use them at the practical classes on marine and coastal ecosystems. Thus, we are thankful to the Rufford Foundation for this support to educate more undergraduates in the future. We hope to make herbarium for all the seagrass species found in Sri Lanka in the future.

This restoration project or establishing an organization would not have been possible without the funds from the Rufford Foundation and we are very much grateful for the support given to us. Thanks again for inspiring young conservationists like us via funding.