

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. 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. 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	CHETANA, HC						
B 1 4 4 4	Identifying biological constraints in natural regeneration of native						
Project title	tree species in abandoned tea and coffee plantation of the Western						
	Ghats, India.						
RSG reference	48.08.06						
Reporting period	18 months						
Amount of grant	£5000						
Your email address	chetan@atree.org / chetana.hc@gmail.com						
Date of this report	03.01.2009						



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

	Not	Partially	Fully				
Objective	achieved	achieved	achieved	Comments			
Active and abandoned tea plantations							
1) How does perch point play roll			75%	Due to the tea plantations			
in seed input to the plantations				access permission could not			
and how it different from				able to do seasonal sampling			
without perch				at active tea plantations			
2) To identify the plant species			100%				
which colonise tea plantations							
and to identify the agents							
mediating their dispersal.							
3) To study how the factors such			100%				
as proximity to forest, size,							
structure, and species diversity,							
of these forest patches							
determine the diversity of							
colonising plant species and the							
rate of colonisation in							
plantations.							
4) To compare seed germination			50%	It is time consuming because			
of colonising tree species in				for each species seasonal			
plantations and natural forest				fruiting and collection and			
patches and identify the				sowing germination took us			
constraints of germination in				much time. Since we do not			
plantations				have any secondary			
			1				

Abandoned coffee plantation: I have done preliminary survey within PA's but have recorded very small area (less than 1 ha) under coffee. In this patch there is good regeneration and most native species have come up.

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

Project was delayed due to unseasonal rains and renewal of forest permission (1 year) all of which took time. Moreover, two abandoned tea plantations are located in the core of the protected area which can be accessed by a full day's walk and logistically it's difficult to spend more than 10 days at a stretch in such remote places.

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

Animal dispersed seeds dominate the soil seed bank and there were no wind or passively dispersed species in the plantations. Perches for birds and bats play a major role in attracting volant frugivores into the plantation thereby increasing seed input into the plantation.



Distances of abandoned tea plantations from forest edge is important for seed input and species colonisations. Species colonisation was however low and colonised species were having stunted growth.

Native species colonisation is strongly influenced by elevation and rainfall. The drier plantations are colonised by grass and exotic weeds whereas tea grows luxuriantly at higher elevations with abundant rainfall.

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

Local Kanni communities were involved in enumerating species in the forest and collect seeds from plantations.

5. Are there any plans to continue this work?

I am planning to continue this work further to understand species level germination constraints and seed viability. Since I have only 1 year of seasonal information it is essential to get 1 more years data to conclude more definitely on the constrains to germination of dispersed seeds. I also need one more year to monitor the surface soil seed bank, since some of the tree species are supra-annual fruiting species and we need to see if these colonize the plantation during mast fruiting.

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

I plan to write two research articles which will be preferably in open source peer reviewed journals which will help in better sharing.

I have been presenting my research to local, regional and international audience.

I will be submitting a separate report to the forest department who are ultimately responsible for the management of the area.

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

Our proposed project duration was 18 months from Jan 2007 but it took me six more months to achieve most of the target expected. Detail work schedules given below.

Year		Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
2007	Site survey												
2007	Forest permission												
2007	Rains												
2007	Data collection												
	Secondary												
2007	information												
2008	Data collection												
2008	Data entry												
	Analysis & report												
2008	writing												
2009	Report writing						•	•			•		•



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	Actual	Difference	Comments
	Amount £	Amount £	£	
Per diem (£76 per mo X 18mo) + contingency	1368 +500	1868		
Local travel/fuel/hiring charges	625	625		
Accommodation	200	200		
Food	250	250		
Field assistants	567	562	5	
Camping costs	350	350		
Field equipment	724	720	4	
Film/batteries for camera trap photography	175	175		
Publications/output	250	250		
TOTAL	5009	5000	9	

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

- 1. Have tagged seedlings and also removed some tea bushes for monitoring colonisation and survival of native species in tea plantations. These have to be monitored for another 1 or 2 years.
- 2. We need to identify where natural restoration would work and where it won't since the current study has clearly highlighted that elevation, slope and other edaphic factors play a major role in colonization.
- 3. Abandoned plantations come with social issues of employment loss and other labour issues that need to be addressed for the viability of restoration activities.

Based on this preliminary study, site specific information will be monitored for another year, and it will be tested with other parameter such as canopy cover, land cover, slopes and social unrest at large spatial scale in the Western Ghats and try to under stand how to over come such constraints to restore natives species in abandoned tea plantations other than in PA's.

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?

Yes, I have used RSG logo in all my presentations and also when interacting with the local forest department.

11. Any other comments?

I am extremely thankful to Jane Raymond and Josh Cole for accepting my request for extension and giving enough time for making this report.