Final Project Evaluation Report

Your Details	
Full Name	Deyatima Ghosh
Project Title	Ecosystem Service Provision by Herpetofauna as Natural Pest Control Agent: Assessment and Awareness Building
Application ID	22263-2
Grant Amount	£5000
Email Address	meetdeyatima@yahoo.com
Date of this Report	15.10.2018

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
Construction of experimental set up and maintenance				It was done form March to July 2018 and till harvest , mid-December
Herpetofaunal sampling to procure specimen for experiment				We set a permanent drift fence arrangement for 4 months for passive trapping. The availability of specimens was not sufficient enough and we had to conduct active searching from May-July 2018 from 6.00pm to 9.00pm every night
Seed bed preparation				Initially we had not kept this as our objective as the farm was supposed to provide plots with paddy planted in them but for some reason we had to prepare the soil for both seed bed and preparing soil for transplantation by ourselves
Transplantation				We did transplantation on 27.7.2018, 28.7.2018, 29.7.2018 in plots 1, 2 and 3
Pesticide load measurement				We could not fulfil this objective for lack of time and also for lack of financial support. We expect to achieve this by next year
Awareness Campaign				We have successfully conducted an awareness campaign in the experimental farm but not in Odisha for field constrains and not only did this campaign raised awareness among farmers around the area but has also made the farm workers restrain form killing snakes which was previously a habit rather than a necessity
Control Experiment				We have collected data for the vegetative phase. We will continue sampling from the panicle stage till harvest. The panicle stage will be starting in another one month.
Disseminating results				Awaiting the data from the

				experiment
Data analysis				Awaiting

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

The major problem we suffered was the least concern of the people in and around the locality, their negligence for the animals and their unnecessary killing of animals. But slow and gradual persuasion and awareness did help a lot. There has been a drastic change in the reaction of people towards reptiles and amphibians.

We ourselves had to prepare the soil for the experimental setup as well as the soil for seed bed and prepare the seed bed. Which took a lot of extra time and effort that was initially not foreseen. This delayed our experiment to some extent.

Rainfall was another problem that procrastinated out fieldwork. It was an important aspect for both soil preparation and seed bed as well.

Passive trap that we have installed was not sufficient enough to procure the number of specimen we needed so we had to conduct active search which further increased the effort for the field work. The plan that we proposed was large keeping in account the unavailability of labour. This hindered our fieldwork. It therefore took a bit longer to meet the objectives of the project.

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

a) One outcome of the project is the awareness among farmers in and around the area. The work has seen slow and steady progress and this has aroused a lot of interest for people and farmers with time.

b) Our project has been filling the huge gap that existed about pest control efficiency of herpetofauna in agricultural landscape. Very meagre amount of work is available and probably our work will be the pioneering attempt in studying pest control efficiency by herpetofauna by replicating field realistic herpetofaunal density.

c) Not only has it raised awareness and interest but has also restrained farmers and workers form killing of reptiles. There has been relentless killing of reptiles but the project has succeeded in preventing them from killing these animals rather they have taken measures to void the animal and even practice it among themselves.

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

Initially the involvement was nil. Because of the huge lack of knowledge and their ignorance about these animals the local people had a huge apathy among them for these taxa. As the work started off, the gradual but slow involvement of people

piqued their interest and they have started with identifying reptiles and releasing them at places where they have lesser threat. This is one of the major achievement that our project could give us. Day one of the project started with a brutal killing of a Russell's viper and at present time they know how to avoid the snake and save their lives rather than killing them.

There has been certain restrictions also to an extent of putting our project to halt but we could go through it by proper convincing and proper knowledge transfer.

5. Are there any plans to continue this work?

Yes this work has not yet seen its completion. We are left with sampling for the next two phases of paddy growth- panicle to flowering and flowering to fruiting.

Apart from that we have planned to do another add on work with this. Studying the functional response of amphibians and reptiles is another area that warrants study especially in relation to pest control efficiency- an area that probably has needs more attention at present.

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

We are awaiting the data collection for the next two subsequent phases. We have plans to communicate the results in peer reviewed journals nationally and internationally. We will definitely disseminate the results and the convey the threats and

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

The project was funded for one year from 2017- 2018. The date of grant release was 18.9.2017. We proposed to start the project from September 2017 but for some unavoidable circumstances the work got delayed by three months. But we did abide by the major objectives that we proposed to be done.

TIME LINE AS PROPOSED		TIME LINE AS FOLLOWED	
Collecting specimen for pesticide load assessment	July-Sep2017	Could not be achieved	
Sampling herpetofauna	Sep-Dec 2017	Awareness Camp	Jan-Feb 2018
Experiment	Sep-Dec 2017	Experimental setup construction	Mar-Jun 2018
Data Analysis	Mar-Aug 2018	Herpetofauna sampling	May-Jul 2018
Disseminating Result	Jul-Sep 2018	Sowing	June 2018

Campaign for raising awareness about herpetofauna	Feb-Mar 2018	Transplantation	July 2018
		Sampling	Aug -Dec 2018 (to be continued)

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
Drift Fences	150	200	(-)50	It required certain trials before we could finally decide on the material that was needed for constructing the plots as they are made permanent for 6 months
Pitfall Traps	150	15	(+)135	
Materials for Experimental Setup and Maintaining Crops	800	900	(-)100	We needed certain equipment that was not listed for before
Vacuum Suction And Animal Handling Tools	200	150	(+)50	We did not use vacuum suction as our sampling method
Pest Sampling Equipment	100	100	0	
Pesticide Residue Measurement	2000	0	(+)2000	Could not be done for monetary and for time constrain
Vehicle (Car Rent & Fuel)	500	500	0	
Wages	1000	1800	(-)800	We have employed one permanent labour but the effort the work demanded, it was not possible to pull it up by me and my field assistant. There has been a continuous expense for hiring temporary labours during the months of experimental set up preparation. Since the work also required night sampling it required an extra remuneration to be paid on a regular basis

Contingency	100	100	0	
Land Preparation for Seed Bed and Seed Bed Preparation		120	(-)120	Not initially budgeted
Transplantation		80	(-)80	Not initially budgeted
House Rent		1000	(-)1000	Initially it was not budgeted for but it was necessary due to the long hours of my field and the night sampling
Paddy Seeds and Paddy Plant Maintenance		50	(-)50	Not initially budgeted
Totals	**5000**	**5015**	**(+)15**	1 £ = 83.58 INR

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

We would definitely disseminate the results among the farming community that would be the most important part of all these works to make them aware of the real scenario and what might be done to save the little that still sustains. We have a next project in plans for studying the functional response for reptiles and amphibians.

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?

Yes we used Rufford logo in pamphlets and in posters that we used for farmer's awareness camp.

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

Deyatima Ghosh - PhD student

Arnab Chatterjee – Lab member (student)

Raja Sekh – permanent field assistant (a temporary worker in farm)

Mannan - daily basis

Ashish – daily basis

And some other members of the farm who has been hired form time to time during the tenure.

12. Any other comments?

I would like to thank The Rufford Foundation for funding my project and allowing me to take up such a relatively new research area in regions were no previous work

has been done. I am grateful to Rufford for helping me out in every step. It has given me experience and knowledge of handling unfavourable situations and reaching a solution. It has increased my interacting skills and has taught me how to plan and lead a research team through many unforeseen situations.