

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	Samya Basu
Project title	Elephant Habitat Restoration Programme and Human-Elephant Conflict Mitigation in Mayurjharna Elephant Reserve, West Bengal, India
RSG reference	46.11.09
Reporting period	15 months (May 2010 – July 2011)
Amount of grant	£5930
Your email address	samyabasu@hotmail.com
Date of this report	25 th July 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
Enumerating the elephant population in Mayurjharna Elephant Reserve		<input checked="" type="checkbox"/>		<p>01. The elephant population enumerating process needs more time and manpower. We only able to count the population which follows the earlier route. At least two small herds entered via new route. We have recorded total 102 numbers of elephant from August – September 2010 (according to forest department it is 118 in 2010 census).</p> <p>02. The migratory herds reside majority of their stay period in influence zones (outside elephant reserve). Thus, we need to expand our study in those areas also in later stage.</p>
Habitat study (water availability, salt licks, vehicle pressure etc.)			<input checked="" type="checkbox"/>	<p>01. The data helped us to develop a better management and habitat improvement programme. On the basis of the data collected we intend to develop a Landscape Management Plan in next phase.</p>
Human-Elephant Conflict intensity (crop raiding, domestic animal and human casualties) study in Mayurjharna Elephant Reserve			<input checked="" type="checkbox"/>	<p>01. The study helped us to know the type of elephant depredation. We found that the problem elephants are chiefly the residential bull elephants, not the migratory elephant herd. We also found two types of crop raiding patterns i.e. opportunistic raiding and obligate raiding. The crop raiding pattern study report will help to develop a crop calendar and cultivation of unpalatable crops, cash crop according to that calendar.</p>
Review of fodder status in the pre-identified elephant migration route			<input checked="" type="checkbox"/>	<p>01. The fodder status was reviewed in pre-identified elephant migratory routes. We found that the crop diversity in core area is quite better in comparison to fringe areas. The fodder diversity and quantity are decreasing in fringe areas due to landscape alteration and monoculture of <i>Shorea robusta</i>. It also intensifies the conflict between the man and elephant.</p>
Survey on dependency of villages on elephant habitat and fodder (anthropogenic pressure, logging and lopping pressure, NTFPs collection,			<input checked="" type="checkbox"/>	<p>01. The study reveals that there is a competition for forest resources between man and elephant. The villagers collect dry leafs and twigs from forest as fuelwood. They also poach old trees to sell or use it to make house. The villagers also</p>

grazing signs, villages).				collect a large number of elephant fodder plant which have medicinal values in market. We need to review our policies to cease collection at least 1 month before and during elephant stay period. More attention is needed to develop a better alternate livelihood for the forest-dwellers.
Interactive community awareness programme			7	01. This was the most interesting part of the project. During the discussion with the farmers and villagers we received lots of grievance from them. These points were noted and also discussed the probable solution according to their ideas. We received lots of ideas from them and a part of these ideas are really appreciable (e.g. seed against seed as crop compensation). We feel that the villagers are not against elephant conservation. The problem arises due to lack of coordination among government departments, late payment of ex-gratia payment, inadequate ex-gratia payment for crop damage etc.
Implementation of scientific and traditional methods to mitigate human-elephant conflict.			7	01. The gathering on scientific knowledge and also the traditional knowledge under a single umbrella is quite a lengthy process. We tried to introduce long-awned rice varieties in villages within Mayurjharna Elephant Reserve but were not successful due to low rainfall. 02. The technical knowhow of RCC bin for crop storage and underground crop storage system was discussed with the farmers. They were not able to spend money for that and also need training for that. We have discussed it with the CRRI, and they can help us to arrange the training programme. We are keeping it in mind for future work. 03. The other knowledge was gathered and need to verify before recommendation.
Circulation of study report with comments and recommendation to policy makers, government offices, institutions and NGOs.			7	Only interim report has been circulated. The final publication will be circulated in August / September 2011.

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

We have faced two unforeseen difficulties during project –

The first one was extreme low rainfall in this year in study area which made unsuccessful the process to introduce long-awned rice varieties in villages within Mayurjharna Elephant Reserve. These unpalatable rice varieties need medium to high rainfall for cultivation. The effort was not successful in first instance, but we have some seeds which we can use for further experiment. The Central Rice Research Institute, Cuttack, Orissa of Government of India agreed to arrange a training programme for the farmers in future.

The second one was uncertain strike. As the project site is disturbed due to terrorist activities and paramilitary movement since RSG I, we were forced to alter some of our programme date due to strikes etc. But this did not create any problem as we always had an alternate day in mind and some contingency time too for the programme.

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

The three most important outcomes of the project:

i) The number of elephants in Mayurjharna Elephant Reserve was 45 in 1987 and 96 in 2005. That means it took 18 years to increase the number by 51 i.e. 2.83 individual/year. But, according to 2010 census the number of elephants in same area is 118, which means it took 5 years to increase the population by 22 individuals i.e. 4.4 individual/year. We feel this increase in population growth rate indicated the favourable environment towards elephant conservation.

ii) One of the most important outcomes of the project is the knowledge sharing for the implementation of modern scientific methods to mitigate Human-Elephant Conflict. We have visited The Central Rice Research Institute (CRRRI), Indian Council of Agricultural Research, Cuttack, Orissa, India and had a long discussion with Dr T.K. Adhya, Director regarding the genetically modified long-awned rice varieties developed for elephant depredation areas. We met Dr. Bhaskar Patra, Principal Scientist, Crop Improvement Division for collection of those seeds and to know the qualities and drawbacks of genetically modified paddy. There we also got the seeds of long-awned rice varieties to cultivate in elephant depredation areas in west Bengal. The underground or mud-made granaries are the traditional crop storage system in our study areas. In CRRRI, we also met Dr. Purnanda Mishra, Principal Scientist, Engineering Division who developed RCC ring bin for safe storage of paddy. The technical knowhow had been discussed with the farmers, but due to financial constrain and lack of technical knowledge the farmers were not able to make it. We have discussed the problem with CRRRI, and they will give the technical help regarding the implementation of the ideas through training in future.

The viability of electric fencing in the study area was also discussed with *FENZGARD INDIA PRIVATE LIMITED*.

iii) We got much more help and welcome from the ground level staff of forest department and also from villagers. We are happy to feel that they have accepted us to share their grievance, ideas with us. During the project period we have done several interactive sessions with the different stakeholders regarding their ideas on ex-gratia payment due to elephant depredation and Human-Elephant Coexistence. The major participants were farmers whose crop fields falls under the elephant migration route. The others were members of 'Hoola Dol' (the elephant drivers' group) and government officials. The discussions have quite useful outputs towards

elephant conservation. We received lots of ideas among which the following is really appreciable:

- At least the forest department should meet them before elephant comes in their areas to give adequate fuel for fire torches and crackers.
- They also demand a forealarm system to get a minimum time for crop protection.
- Increase the crop compensation rate (i.e. at present Rs.7500/- per hectare) and also consider the seed price, labour cost etc. Otherwise give 'Crop against Crop' as compensation.
- Increase the ex-gratia relief for loss of life (i.e. at present Rs.1,00,000/-).

During the personal communication with ground level forest staff they show some grievance from which we are mentioning only two here:

- As they are engaged in so many works like office management, forest protection, Forest Protection Committee dealing, tree felling and auction etc., it is too hard for them to tackle elephant problem always instantly. Thus 'Elephant Depredation Squad' is very much required in those areas who will only engage to protect human and domestic animals' life, crops from elephant.
- The ground level staffs of forest department need at least some modern equipments like walky-talky (as the mobile network is not available throughout elephant range) to communicate during driving and a high power long durable torches during elephant driving.

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

The response of the local people is better than RSG I. They feel that we can work as liaison between the affected people and government. We got much more help and welcome from the ground level staff of forest department also who are appointed from local villages. During interactive sessions with them they demand a forealarm system to get a minimum time for crop protection, adequate fuel for fire torches and crackers, increase of the crop compensation rate etc. They took us to show the elephant depredation (both crop damage and human casualties), elephant habitat, migration route. They became very much part of the project.

The project helped them to know the 'YES' and 'NO' to save life and property from elephant depredation. The project also helped them to know about the true market value of NTFPs through forest department. The project team encouraged them to change the traditional crop with cash crop and also unpalatable crops like chilli, sunflower etc.

5. Are there any plans to continue this work?

We intend to apply for the Booster Grant of RSGF to continue the elephant conservation work at larger scale by inclusion of 1436 sq.km. of 'influence zone' to study the migration route, human-elephant conflict pattern and initiate the community sensitisation programme there and continue the awareness programme, training on mitigation techniques, habitat conservation in Mayurjharna Elephant Reserve area (414.06 sq.km). We intend to establish an 'Elephant Reserve Research Station' to implement the elephants and their habitat conservation initiatives. The station will also develop a database and coordinate with other concerned authorities. We also intend to spread the

awareness programme in Kolkata, two new districts along with the earlier three districts which fall under Mayurjharna elephant population range. The districts are West Medinipur, Bankura, Puruliya, Birbhum and Burdwan. Apart from awareness we will petition signature to send it to the West Bengal government, Project Elephant authority etc. to create their more attention on Mayurjharna elephant population. We will set up elephant tracking team for regular monitoring of elephants in those study areas. The elephant migration route will be documented using GPS to develop a map. The project team will also do a status survey of the fodder plants and do a study on resource competition between man and elephant.

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

During the project period the update of the project was informed to the government officials. A discussion was made with the former Director of 'Project Elephant', Govt of India and also forest department.

We have organised slide illustrated talk for the undergraduate and postgraduate department of Zoology in different colleges for knowledge sharing. The awareness materials (CDs, leaflets etc.) are already been distributed among stakeholders.

A detail report on Mayurjharna Elephant Reserve will be published in August / September 2011 and will be circulated to: i) Principal Chief Conservation of Forests, Directorate of Forests, West Bengal; ii) Principal Chief Conservation of Forests, Wildlife and Biodiversity & Chief Wildlife Warden, Wildlife Wing, Directorate of Forests, West Bengal and all forest offices related to Mayurjharna Elephant Reserve. Apart from them the report will be circulated to the 'Project Elephant' and other Institutions, NGOs related to elephant conservation.

The project report (mainly findings and recommendations) will be presented in the meeting of State Wildlife Advisory Board, West Bengal for discussion and implementation.

We have formed EleFriend, a common platform for all elephant researchers, scholars, stakeholders, conservationist, NGOs and institutions to share the knowledge and experience elephant conservation.

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

The RSG was used from May 2010 to 2nd week of July 2011 i.e. 14½ months.

Comparison between the anticipated or actual length of the project:

Anticipated length of the project	Actual length of the project	Comment
Initiation: April 2010 Completion: May 2011 Anticipated length:14 months	Initiation: May 2010 Completion: 2 nd week of July 2011 Actual length:14½	The RSG was received on 1 st May 2010 and the project was initiated in May 2010 instead of proposed month i.e. April 2010. The West Bengal State Assembly Election was held in May 2011 and thus

	months	since April we could not able to meet the government officials in study area and the project delayed by another 2 weeks.
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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
<u>Project Personnel</u>				
Principal Investigator / PI	£ 800	£ 800	No	01. The total budgeted amount for PI and CI is same as actual amount. 02. Though we have appointed three field assistants, one was dropped due to personal reasons. 03. The Consultant hire cost was less than the budgeted amount as we required 36 consultations instead of 40 consultations.
Co-Investigator / CI	£ 350	£ 350	No	
Field Assistant / FA (2 heads)	£ 720	£ 480	£ 240	
Consultant	£ 400	£ 360	£ 40	
<u>Food & Lodging</u> for 70 days	£ 700	£ 630	£ 70	The Directorate of Forests, Govt of West Bengal provides accommodation at a concessional rate.
<u>Travel</u>				
Train fare	£ 60	£ 60	No	01. The car hire cost increased due fuel price hike. 02. The TA for the field assistant was not included in the budget. But their travelling expenses were reimbursed.
Car hire (including fuel)	£ 1500	£ 1612	- £ 112	
Travel allowance to FA	No	£ 74	- £ 74	
<u>Equipments purchase</u>				
One Digital Camera & Two film cameras for FAs	£ 350	£ 325	£ 25	-
<u>Equipments hire</u>				
Power Generator and LCD Projector, Screen, Laptop	£ 600	£ 690	- £ 90	During mid-project the hiring cost of the LCD Projector itself became higher.
<u>Books and Journals</u>				
Purchase of books	£ 50	£ 29	£ 21	Few required books were downloaded from the internet and printed (e.g. The Report of Elephant Task Force, Ministry of Environment and Forests, date August 31, 2010). Two activity books were gifted by Mr. V.K.Yadav, (IFS), Conservator of Forests,

				Western Circle. West Bengal.
Awareness materials & Publicity material AV show, Banner, Leaflets, Posters, Awareness advertisement.	£ 250	£ 325	- £ 75	The actual cost became higher than the anticipated cost due to increased printing cost and AV material production charge. We did not redesign the awareness leaflet, it was reprinted.
Miscellaneous expenses like CDs, pages, printer cartridge, postage, telephones etc.	£ 150	£ 115	£ 35	We did not require to purchase the printer cartridge.
TOTAL	£ 5930	£ 5850	£ 80	We are using this £80 for publication purpose. We are going to publish a detailed study report on the Mayurjharna Elephant Reserve.

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

First of all, we are preparing a detail report on Mayurjharna Elephant Reserve and circulate it to the Wildlife Advisory Board of West Bengal, forest department, policy makers, government offices, Institutions and NGOs. We intend to apply for Booster Grant to do the following activities:

- i) We intend to establish an 'Elephant Reserve Research Station' to implement the elephants and their habitat conservation initiatives. The station will maintain a 'Elephant Register' to develop a database and coordinate and communicate with other concerned authorities.
- ii) Continuation of the awareness programme, training on mitigation techniques, habitat conservation in Mayurjharna Elephant Reserve area (414.06 sq.km) and expansion of study area in the declared 'influence zone' of 1436 sq.km. area to know the migration route, human-elephant conflict pattern and initiate the community sensitization programme. The elephant herd stays in this influence zone for maximum time as it dominated by agricultural land.
- iii) We also intend to spread the awareness programme in Kolkata, two new districts along with the earlier three districts which fall under Mayurjharna elephant population range. The districts are West Medinipur, Bankura, Puruliya, Birbhum and Burdwan.
- iv) As part of awareness programme, we will celebrate the 'Elephant Day' along with previous activities like sit and draw, slide-illustrated interactive talk, film show etc. We will involve students by above said activities. As part of mass awareness, we will collect petition signature to send it to the West Bengal government, Project Elephant authority etc.
- v) We will set up elephant tracking team for regular monitoring of elephants in those study areas. The elephant migration route will be documented using GPS to develop a map. The project team will also do a status survey of the fodder plants and do a study on resource competition between man and elephant.

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?

All materials like banner, posters, leaflets, AV show, slide-illustrated presentations, introductory slide before film show, business cards, letterhead contains RSG logo and webpage address.

The RSGF got publicity through the resource materials, awareness leaflets and AV shows during the project work. All the materials including banner, car-sticker, business cards, information booklet, letterheads have printed logo and RSG webpage address on those. Apart from that during interaction among UG and PG students of Zoology, PG student of Social Work and Law graduates we encouraged them to work with us as team or apply for RSG independently.

The project detail with RSG name was sent to the '24 Ghanta' (a Bengali news channel of ZEE TV) for publicity.

Always an update was sent to Dr. Rosemary Trevelyan, Director, Tropical Biology Association, Department of Zoology, Cambridge University and Prof Phyllis Lee, Professor, Head of Psychology, Behavioural and Evolution Research Group, Psychology, University of Stirling, Scotland. The update was mentioned with RSG name and project id too.

11. Any other comments?

The Asian Elephant (*Elephas maximus*) has been declared as National Heritage Animal in India in October 2010. But the 'Elephant Reserve' is not designated as 'Protected Area or PA' as per 'Indian Wildlife Protection Act', the management of these reserves is quite harder. The Elephant Reserve should be designated as PA or atleast notified as 'Ecologically Sensitive Area' under 'Environment Protection Act'.

The government should influence the insurance agencies for inclusion of crop depredation by wild elephants in crop insurance.

The Chief Wildlife Warden Mr. S.B. Mondal declared in April 2010 that the forest department will setup a rescue centre for rogue elephants in Bankura. We request the department to implement the noble idea with urgency.