

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	HOUESSO G. Laurent
Project title	Implementing effective low-cost strategies and environmental education to mitigate the human - elephant conflict around "W" Biosphere Reserve in Benin
RSG reference	15971-1
Reporting period	September 2014 – September 2015
Amount of grant	£ 4847
Your email address	houessoulaurent@gmail.com
Date of this report	23th December 2015

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
Assessing the effectiveness of chilli pepper and beehive fence as deterrent methods from croplands on elephant populations in Benin			X	<p>- Beehive fences were installed in the villages of Ginbagou and the village of Bontè (district of Banikoara in Benin). At Bontè, I installed a fence 300 m long (beehives were installed at an interval of 5 m) and at Ginbagou a fence 400 m long (beehives were installed at an interval of 6 m).</p> <p>- A band of 10 m of large of chilli pepper were installed in the village of Kaoubagou. This band was installed in August contrary to the planning of the project submitted. This is due to the rain season which starts in the area in July.</p>
Improving local populations' awareness for elephant conservation through environmental education			X	This activity was successfully implemented in the villages surrounding the W Park
Strengthening reserve's managers and local NGOs capacities in alleviating human-elephant conflicts			X	This activity were carried out toward park managers who recognise the importance of these activities and the new tools which I test around the park for elephant repellent from croplands
Establishing groups of stakeholders for elephant-human conflict prevention and resolution in villages around the reserve			X	Groups of stakeholders were set up in the villages where the human-elephant conflict occurrence was high around the park. Groups of stakeholder were established at Alfakoara, Ginbagou, Bontè and Kaoubagou for elephant-human prevention. These groups were composed of farmers and the members of local wildlife conservation (AVIGREF).

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

One important difficulty during the implementation of this project was the lower layer colonisation of the hives. To overcome this situation I used the expertise of someone who works on beekeeping in the area. We caught a colony of bees in the park and use this colony to colonise the hives in the experimental design. At the end, the level of beehives colonisation was about 85%.

Moreover, I noticed that bees are not highly offensive during the night time where elephant attacks in the field are higher. This represents a limit to the approach of beehive use for elephant repellent. Then, I suggest for the same site a combination of approach and not beehives use alone. It is also important to develop techniques to make bees active in the night time when the fence will be attack be elephant.

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

- Beehive fence of 700 m was installed. By comparing the elephant footprints passage at the site where beehive fence was installed to the place where there wasn't beehive, I noticed that there was no elephant passage through the beehives while the elephant passage to field was reported at the place where there was no beehives fence. This output may suggest the effectiveness of the beehives in repelling elephant. However as previously raised the low activities of bees during the night represent a limit to the success of this method since elephant can come out from the park during the night. Regarding chilli pepper the cultivation I noticed no elephant passage nor in the area which received the trial nor in the control area. This may due to the low activities of the elephant in the region until this period. So I am still collecting data on elephant passage on chilli pepper effectiveness to repel elephant in the W Park.
- More than 500 villagers were sensitised on the methods of elephant-human repelling from farmland based on beehives fence and chilli pepper use. Farmers understood and committed themselves to the use of these methods since there are less cost and generated income (by selling honey and pepper).
- Four communities of human-elephant conflict prevention were installed respectively in the villages of Alfakoara, Kaoubagou, Bontè, Ginbagou with the implication of park managers

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

Local communities were involved in the project management. They worked for the design installation: beehive/fence construction and pepper cultivation. Human elephant community

were committed to replicate the project techniques for elephant repelling in other villages since it is income generating.

5. Are there any plans to continue this work?

I intend to pursue the experimentation in other surrounding villages of the park in collaboration with the managers and local communities. Human-elephant conflict communities and some villagers in Kaobagou and Ginbagou who participated to the experimentation will be used to replicate the experience in other villages around the park. In addition to this, I plan to experiment other methods based on “pepper rope” or “pepper brick”.

- Pepper rope technique consists to mix the pepper flour with the shea butter. The mixture is used for treating rope which will be strung around the fields’ crops. The rope therefore emits the capsaicin which repels elephant.
- Pepper brick technique consists to moisten cattle dung and mix it with pepper flour. The obtained mixture will be compacted to forge brick of different size and dried. When the brick is burnt, it emits smoke which contains the capsaicin for elephant repelling.

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

The technical report of this project is already shared with the park managers. In addition, I plan to communicate the outputs of the project at the Biodiversity forum seminar in Benin and at the next University workshop in Parakou University or Abomey-Calavi University. I also plan to distribute the project flyers and technical report in many conservation agencies in Benin. In addition a scientific paper is planned to be written for a large diffusion.

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

The project is planned to last from September 2014 to September 2015. However, I continued the experimentation till December 2015 since elephant’s attacks in the field start at the crop maturity/crop harvesting. This period goes from October to December 2015. So I waited for that period to collect data on elephant attacks in the villages hosting the experimentation.

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
Return trip to field	123	123	0	Approximately estimated
Motorbike renting for assistance during field trip	518	518	0	Approximately estimated
Assistants for environmental education	740	740	0	Approximately estimated
Motorbike filling with fuel	296	296	0	Approximately estimated
Wire purchasing for fence building	372	372	0	Approximately estimated
Manpower for fence installation	741	660	+81	Manpower was less expensive as planned. Since communities understood the project relevance they were motivated to be engaged in the project activities without being expensive
Beehives confection	741	802.75	61.75	Some material for beehives confection was expensive than what I planned
Nail purchasing	123	123	0	Approximately estimated
Hammer purchasing	12	12	0	Approximately estimated
Machete purchasing	9	9	0	Approximately estimated
Pepper seeds fence installation	185	175.5	+9.5	Approximately estimated
Poster and pamphlet printing for environmental education	247	309	-62	I printed more poster than what I planned before
Tee Shirt confection	309	309	0	Approximately estimated
Field visited into villages which hold the trial	123	123	0	Approximately estimated
Camera for picture reporting	123	130	-7	Approximately estimated
Communication fees	62	60	+2	Approximately estimated
Consumable for reporting	123	110	+13	The purchase was expensive than what I planned
Total	4847		-25.25	

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

- Experiment pepper rope and paper brick for elephant repellent.
- Pursue the beekeeping fence installation in other village around the park.
- Develop techniques to make bees active even in the night times when elephant will attempt to go through the beehive fence.

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?

I use Rufford logo for:

- T-Shirt confection.
- Pamphlet confection.
- Poster confection.

11. Any other comments?

I am grateful to RSGF for providing me with this financial assistance for my project. This project helps me to tackle an important issue for wildlife conservation and protected area management.