

## The Rufford Small Grants Foundation

### Final Report

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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](mailto:jane@rufford.org).

Thank you for your help.

**Josh Cole, Grants Director**

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#### Grant Recipient Details

<b>Your name</b>	Foguekem Desire
<b>Project title</b>	Status of human-elephant conflicts in the Campo-Ma'an landscape, southern Cameroon
<b>RSG reference</b>	9242-1
<b>Reporting period</b>	January-December 2011
<b>Amount of grant</b>	£5630
<b>Your email address</b>	<a href="mailto:d_fogke@yahoo.fr">d_fogke@yahoo.fr</a>
<b>Date of this report</b>	December 31st 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
<p>The distribution and habitat requirement of marauding elephant is known</p>			X	<p>The survey was carried at two locations including communities' sites around Nkoelon and Nybissan villages where elephant crop raiding is more prevalent. Desktop work was carried out for survey planning in January 2011 and line transects' sampling implemented in all sites. The sites were divided into geographic grids of 9 km<sup>2</sup>. One 1.5 km transect was surveyed in each grids. Transect route was decided in advance by plotting the course and the distance on the 1:200,000 maps. The starting point of the first transect from accessible zone was randomly generated. Others transect follow under the same latitude (or longitude) and their exact positions were determined in the field using GPS Map 60CX. Dung-counts were conducted along each line transects in February (big dry season), April (small rainy season), August (small dry season), October (big rainy season) 2011. Care was taken during the data collection that dung on or near lines was never missed and that all the measurements of distances were accurately recorded with steel tapes to the nearest cm. The line itself was determined by a 50 m steel tape that was also helping in measuring the length of transects. Each transect was surveyed at a mean speed of 0.5 km/h.</p> <p>The surveys were designed to provide information on elephant density and habitat selection both within and between sites. Within site survey was carried out to provide information on the seasonal effect of weather and between site to compare a range of vegetation types including primary forest, secondary forest, fallows, and plantations. Overall the distribution of marauding elephant varied according to season. Marauding elephant were found at high density in the fallows and plantation in the two sites mainly during the small and big rainy season. A period which coincides with most crop maturity. During the dry season marauding elephants took refuge in the primary and secondary forest mainly found in the park and logging concession where they fed on fruits and</p>

				secondary growth around water points in the nearby park and along the logging road in the logging concession. These observations are currently being exploited by Campo-Ma'an Park Wardens to organise patrols in the community land in anticipation of elephant invasion so as to scare elephant and protect properties.
Human elephant conflict is monitored			X	Human elephant conflict monitoring protocol was implemented for the first time. Affected farmers' households only were included in the survey. A total of 35 households were affected by elephant in both rainy and dry season. However, crop raiding is prevalent mainly in the rainy season when most agriculture is undertaken. Overall the most commonly grown crops in the villages were Cassava, bananas, corn, beans, sweet potato, groundnuts, cocoa, and palm. Plots destroyed by elephant ranged from 0.5 to about 4 ha. Of the properties that were subject to crop-raiding 85% were within less than 50 m to forest edge. Furthermore, the proportion of properties receiving crop-raiding decreased with increasing distance from forest edge. Therefore, the difference between the occurrence of crop-raiding on properties located at 100 m or less from forest edge, and crop-raiding on crop located more than 200 m from the forest edge was significant (Fisher test: $P < 0.05$ ).
Deterrent methods and mitigation strategies are tested			X	13 park staff were trained on short-term mitigation methods that might best be employed to limit human elephant conflict situation. Methods currently used to scare elephants from farms were rudimentary. Most farmers (61%) rely on setting fires around their farm. Other traditional methods recorded were beating drums (6%), shooting firearms (6%), and guarding the fields at night (6%). These methods were chosen by local farmers because they were the only ones known and available to them. Participants explored the current situation of Human–Elephant conflict and discussed the problems of current Problem Animal Control mitigation including farmer's energy, time to apply such PAC methods. The participants were then exposed to the Community Based Problem Animal Control techniques. Methods promoted included using a barrier of string with tin cans to scare elephants and warn farmers. Practical training took place in key area at Ebianemeyong village where CBPAC

				demonstration plots were established for practical demonstration of selected PAC techniques. Participants identified the animals they felt were a problem within the area. They then detailed the specific problems for each animal in turn, and finally ranked the animals according to the severity of their problems. This exercise was designed to focus everyone upon human-wildlife conflict, and to consider the process of ranking problem animals objectively. Concrete project to assist farmer from wildlife depredation/depravation was layout.
Capacity of wildlife staff in using relevant protocol in monitoring human elephant conflict trends is build.			X	Out of the 13 park staff which were trained on short-term mitigation methods that might best be employed to limit human elephant conflict events, the conservator of Campo-Ma'an NP designated five game guards as a human elephant conflict monitoring unit. Later on, on-site training was organised in the use of standardised data collection and analysis protocols developed by the AfESG to capture primary data from the field and fill in the data forms. Each of the enumerator was refreshed to use a GPS unit to record incident locations accurately. Data captured included location, farmers' names, crops damaged, extent of damage, elephant group composition (sex, age and number). Copies of the datasheets were then multiplied and kept in the park headquarter for conflict monitoring.

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

Communities were expecting compensation for crop damage as they felt this was the purpose of the project and were trying to cooperate with the project team for that to happen. Two months after the beginning of the project, we had to organise two meetings with relevant communities to explain its purpose and expectations. During these meetings we tried as much as possible to ensure that common understanding has been share and each community member adheres to. These unforeseen situations have caused some delay in the smooth execution of the project.

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

- The study permitted to the establish factors affecting the distribution of marauding elephant at the site. This information is currently for conservation of elephant and management of the conflict arising from crop raiding. Patrols in the community land are planned accordingly in anticipation of elephant invasion so as to scare elephant away and protect properties.
- 13 park staff were trained on short-term mitigation methods that might best be employed to limit human elephant conflict situation. At the same time, traditional methods used by local farmers were evaluated as well as promotion of successful mitigation methods such as

barrier of string with tin cans to scare elephants and warn farmers. It is simple, cheap system made from locally available materials yet seems to have some level of success in disturbing elephants trying to enter fields. It worked particularly well if combined with the creation of a buffer zone around the protected area in which human activity is limited close to the park.

- Human elephant conflict monitoring protocol was implemented to gather baseline data necessary for assessing future change. It appears that, farmers with field close to the forest are at greater risk from crop-raiding than those situated far from the park. This observation is being used by the park conservation service to improve conservation management of elephant and humans through sensitisation and information dissemination.

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

Local communities participated in the establishment of problem animal control plots, identification of elephant migratory corridors and HEC mitigation activities. They were also involved in establishment of Village Forest Reserves and by-laws, management plans. Local assistants involved in the survey progressively understood the importance of the study while generating little income and assisted in developing awareness of nationals in human-elephant conflict. Locals from all villages around the study site were temporally used as field guides when conducting line transect survey. Individuals involved in the survey progressively understood the importance of the study while generating little income from the daily salaries pay for guides and porters.

**5. Are there any plans to continue this work?**

This work is planned to continue as it is the only one in Cameroon, which attempted to improve the level of coexistence elephant and local farmers. Where HEC occurs, a simple alarm system using string and tin cans can act as a successful mitigation method. These techniques will be replicated in neighbouring areas when resources are available for training. In future, land-use plans should also be considered to improve further the system of buffer zones around the park and reduce the prevalence of agriculture near to elephant refuges. Chilli-based deterrents will also be considered to avoid any potential habituation of the elephants to the tin-can system.

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

This work helps me to collect complementary data for my PhD at the University of Yaoundé. After the examination, copies of the document will be deposited at various libraries including University, research institutions and NGOs both nationals and internationals. Two papers are presently being prepared for peer review journals. Also the results of the findings will be disseminated to all interested parties (NGOs), working around the site including the Ministry of Forestry and Wildlife (MINFOF), park conservation service and local community.

**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 for a period of one year from the fall of January 2011 to the fall of December 2011. An extension of the project for a week was due to reporting purpose (Final report preparation).

**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
Salaries/field staff & assistants	£2700	£2700	0	
Equipment	0	£2000	-£2000	It was necessary to match the RSG
Supplies & materials	0	£1200	-£1200	Match
Food/per diems	£1512	£1512	0	
Communications	£250	£250	0	
Travel-local (day)	£540	£540	0	
Overnights	£360	£360	0	
Workshop expenses	0	£270	-£270 Match	
Miscellaneous	£268.10	£268.10	0	

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

Crop vulnerability to elephants is related to both spatial and temporal conditions. Fields located adjacent to the game reserve, forests and in elephant corridors and/or migratory routes are frequently raided by elephants. Shifting cultivation and scattered farms are a hindrance to collaborative efforts in driving away crop-raiding elephants. The use of single, traditional mitigation methods to scare elephants becomes ineffective when elephants habituate to them. However, a combination of mitigation measures, especially those involving chilli-based deterrents, can be much more effective if properly implemented. Therefore evidence of reduced HEC and improved community attitudes toward elephants need to be assessed. This shall entail monitoring the impacts of HEC mitigation through regular, precise measurements of HEC and of local livelihoods around project sites to draw lessons. However, effective long-term monitoring is not always easy to undertake. It is complicated by factors such as:

- The need to employ enumerators for several years to measure HEC.
- The difficulty in tracking the number of villages and villagers using HEC mitigation methods; projects encourage people to take up the new ideas and continue them unaided, but their success or failure is then hard to track.
- The urgency of addressing the problem of HEC often means project staff are under pressure to test and implement mitigation measures without necessarily putting in place sustainable long-term monitoring systems to track progress and identify lessons.

In future, projects need to address these issues and ensure that adequate data is collected to allow scientifically-based assessments of the success of HEC mitigation methods over time. Where indicators of impact (such as numbers of elephants killed, trends in farmers income, etc) cannot be measured regularly, proxy indicators should be identified that can provide an idea of trends in conflict and the status and welfare of the elephants and people involved.

**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 the Logo was use mainly during training/workshop. Also, the logo will be used in my PhD document among donors as a result of funding.

**11. Any other comments?**

I sincerely thank RSG for supporting this study, which increase my expertise in the area of HEC as such capacity is always lacking among Cameroon nationals. This will have a positive impact in my carrier development in the domain of conservation.