

## Final Evaluation Report

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Your Details	
Full Name	Fotang Chefor
Project Title	Human-chimpanzee interaction and habitat suitability of the Nigeria-Cameroon chimpanzee ( <i>Pan troglodytes ellioti</i> ) in Kom-Wum Forest Reserve, Cameroon
Application ID	28868-2
Grant Amount	£4,958
Email Address	fortangchefor@gmail.com
Date of this Report	April 02, 2020

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
Identify typology and causes of human-chimpanzee interactions				The typology and causes of human-chimpanzee interactions have been identified.
Produce the vegetation cover map of the forest reserve				The vegetation cover map of the forest reserve has been produced.
Map suitable chimpanzee habitat and assess biophysical factors contributing to the suitability				We are still processing the habitat suitability maps.
Investigate the determinants of nest-site selection by a chimpanzee and complete nest decay time assessment				The most important determinants of nest-site selection by chimpanzees in the study area are known. The nest decay rate in the dry season is incomplete as a few nests have not yet disappeared.

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

The roads leading to and from the study site were blocked most of the times due to the political unrest in the northwest region of Cameroon. To tackle this challenge, we reduced our visits to the research institute in Bamenda and invested more time in data collection.

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

### 3.1. Human chimpanzee interactions

#### 3.1.1. Typology of human-chimpanzee interaction

The killing of hunting dogs by chimpanzees and crop damage (mostly maize) by monkeys, birds and rodents were the main types of human-wildlife interactions reported in Kom-Wum Forest Reserve and surrounding forests during interviews. Though most respondents said that chimpanzees are not hunted in the study area during interviews, results from field visits revealed evidence of chimpanzee predation by humans in the area. Crop guarding, the use of scarecrows and trapping are the most preventive strategies applied by farmers against crop-raiding by wild animals. Maize is the most forage crop by wildlife (especially monkeys). However, maize

remains the main crop for the livelihood for communities living around the forest reserve.

### 3.1.2. Animal species involved in conflicts and the most destructive animals

A few respondents, 11 (7 %) reported the killing of hunting dogs by chimpanzees (*Pan troglodytes ellioti*) and olive baboon (*Papio anubis*). Two hunters said that chimpanzees are aggressive when they see dogs and will attack humans if they get very close. No respondent classified chimpanzees among the most destructive animals, and a majority of respondents 141 (93 %) reported that chimpanzees did not raid crops. Farmers argued during focus group discussions, that chimpanzees were calm and will scared other crop foraging monkeys away around their crop fields. Notwithstanding, we did not encounter or see any signs of chimpanzee around crop fields during field visits. A majority of respondents 141 (93 %) reported crop foraging by the cane rat (*Thryonomys gregorius*), baboon (*Papio anubis*), patas monkey (*Erythrocebus patas*), mona monkey (*Cercopithecus mona*), tantalus monkeys (*Chlorocebus aethiops tantalus*), putty-nosed monkey (*Cercopithecus nictitans ludio*), bush fowl (*Scally francolin*), duikers (*Cephalophus spp*), bushbuck (*Tragelaphus spp*), rat mole (*Cricetomys emini*) and squirrel (*Paraxerus cooperi*). The four most destructive wildlife reported in descending order were cane rat (*Thryonomys gregorius*), baboon (*Papio anubis*), patas monkey (*Erythrocebus patas*) and tantalus monkey (*Chlorocebus aethiops tantalus*).

### 3.1.3. Crops cultivated and crop damage by wild animals

Respondents reported the cultivation of maize (*Zea mays*), rice (*Oryza spp*), sweet potatoes (*Ipomoea batatas*), beans (*Phaseolus spp*), okra (*Abelmoschus esculentus*), cacao (*Theobroma cacao*), peanuts (*Arachis hypogaea*), garden huckleberry (*Solanum melanocerasum*), coffee (*Coffea arabica*), pineapple (*Ananas comosus*), sugar cane (*Saccharum officinarum*), pepper (*Capsicum spp*), cocoyams (*Colocasia esculenta*), cassava (*Manihot esculenta*), banana (*Musa spp*), yams (*Dioscorea spp*), mangoes (*Mangifera spp*), pumpkin (*Cucurbita spp*) and avocado (*Persea americana*) in their localities. Maize was reported as the most crop forage by all wild animals and also the important food crop cultivated. The cane rats were reported to forage, mainly on maize, rice, potatoes, cassava, sugar cane, groundnuts at all stages of the plant life cycle. Baboon, patas monkey and tantalus monkey and mona monkey destroyed cacao, plantains and maize especially at the fruiting phase of their life cycle. Bush fowl frequently foraged on maize, pepper, pumpkins, huckleberry, cocoyams, yams, groundnuts, and pineapple. The rat mole foraged mostly on maize, cassava, cacao and peanuts.

### 3.1.4. Preventive measures employed by farmers

Crop guarding/noisemaking/fire/scarecrow 83 (54%), Hunting/trapping 42 (28%) fencing/clearing 16 (10%) and poisoning 11 (8%) were the most preventive measures reported by respondents during interviews and focus group discussions. Crop guarding, scarecrow and trapping was the most preventive strategies encountered during participatory farm inventory.

### 3.1.5. Perception of respondents to chimpanzee numbers

A predominant proportion of respondents 91 (60%) perceived that chimpanzee numbers are increasing in Kom-Wum Forest Reserve and surrounding forests, while 61

(40%) reported that chimpanzee numbers are decreasing. The responses varied across villages depending on how frequently chimpanzees are encountered. Most respondents in villages with high encounter rates of chimpanzees (Baiso, Mbongkissu, and Mbengkas) reported that chimpanzee numbers are increasing compared to communities with very low encounter rates of chimpanzees (Bu and Mentang).

### **3.2. Vegetation map of the forest reserve**

Primary forest, secondary forest and grassland were the main vegetation types identified through satellite imagery. Of the 92 km<sup>2</sup> area sampled during our survey, 46 km<sup>2</sup> (50%) was covered by primary forest, 40 km<sup>2</sup> (43%) by mature secondary forest and 6 km<sup>2</sup> (11%) by grassland. On the field, the primary forest was vegetation dominated by young to mature trees with an understorey more or less dense. Secondary forests were areas with large trees but showing indicators of past disturbance by humans such as old foundations with old palm tree and mango trees but without food crop. Grassland was grazing land characterized by short grass juxtaposed with farmlands and cattle paths.

### **3.3. Determinants of chimpanzee distribution**

Elevation and forest type are the most important determinants of nest-site selection by chimpanzees in the study area.

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

The local population were employed in the socio-economic and ecological survey data collection phases of this project.

### **4.1. Socioeconomic survey**

In November 2019, focus group meetings and discussions were organised in six communities around Kom-Wum Forest Reserve. In these meetings, the purpose of this project was adequately explained to the village head and the village council members. In each meeting, the village head selected two village elders who have lived in the community in the last 10 years, and they assisted in choosing household to administer semi-structural interview and structural questionnaires. They also helped in organising other focus group discussions with community eco-guards, former hunters and farmers in each village. We collected information about people reaction vis a vis chimpanzee and monkeys and also provided them with information that could help reduce conflicts with chimpanzees. The benefits of conserving chimpanzee and other endangered species were explained to villagers in these meeting.

### **4.2. Ecological surveys**

In December 2019, two community eco-guards, Soh Clotilde and Chai Cosmas were employed during field visits to determine the factors affecting chimpanzee

occurrence in reserve (December 2019 to March 2020). Former field guides Akou Emmanuel Mbeng and Achai Genesis Kam, were directly employed during field surveys. Two newly recruited field assistants Mbeng Godwill Akou and Kum Evaristus benefitted training on camera trapping and use of other devices like the hypsometer, compass, altimeter and the GPS device.

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

Yes. Since the killing of hunting dogs by chimpanzees and crop damage by monkeys were the causes of conflict identified in the study area, it is crucial to provide alternative income generation activities for hunters to reduce the conflict between hunters and chimpanzees and to enhance the livelihood of the local people in the area.

Secondly, to develop a community-based crop damage compensation scheme in communities where the maximum cases of maize damage were recorded.

Lastly, to study the phenology and map the distribution of the essential chimpanzee food trees identified in our previous surveys (May to September 2018) and the current survey (November 2019 to March 2020).

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

A manuscript was submitted to the International Journal of Primatology (title: "Human activity and forest fragmentation threaten populations of the Nigeria-Cameroon Chimpanzee (*Pan troglodytes ellioti*) in Western Cameroon"). We have been asked to revise this manuscript before it is accepted for publication. An abstract (title "effects of environmental conditions and human activity on nest site distribution of the Nigeria-Cameroon chimpanzee (*Pan troglodytes ellioti*) in Kom-Wum Forest Reserve, Cameroon") has been accepted for an oral presentation at the 43rd meeting of the American Society of Primatologists in Denver, Colorado, September 24-27, 2020. An abstract has also been submitted to participate in the International Primatological Society conference in Quito, Ecuador, on August 16 - August 22, 2020. I am also preparing to share my results in the 50<sup>th</sup> Annual Meeting of the Ecological Society of Germany, Austria and Switzerland, which will be held on September 14-18, 2020 at the Technische Universität Braunschweig in Germany. The results of this research will also be shared at the 21<sup>st</sup> Gesellschaft für Primatologie conference in Utrecht, the Netherlands in 2021.

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

The grant was used between November 11, 2019, and March 27, 2020. Data was collected throughout the actual length of the project.

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
Internet and calls	175	175		
Local travel for survey team members	720	558	-162	We spent less than the amount budgeted because the roads leading to the study area were blocked due to the ongoing anglophone crises in the region. For this reason, we invested this time in data collected
Field assistant's food	598	598		
Field assistants' wages	3465	3627	+162	Two new adult youths (Mbeng Godwill Akou and Kum Evaristus) from Bu village were trained and recruited into our survey team field visits as porters since the road linking communities around the reserve were block during this period due to the anglophone crisis in the region. For this reason, the newly recruited porters were paid (£162) throughout the survey period causing us to spend more than we budgeted for this activity.
Total	4958	4958		<b>*Exchange rate: 1 Pound Sterling = 708.18 XAF9.</b>

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

The next important step is:

Firstly, to revise and resubmit the first research manuscript which was submitted to the International Journal of Primatology (title: " Human activity and forest fragmentation threaten populations of the Nigeria-Cameroon Chimpanzee (*Pan troglodytes ellioti*) in Western Cameroon") by mid-May 2020.

Secondly, to write up three publications with the titles 1) human-chimpanzee interactions, 2) nesting ecology and 3) suitable habitat of chimpanzee in Kom-Wum Forest Reserve that at the same time will build up the core of my PhD dissertation which I expect to defend by April 2021.

After defending my PhD, I will continue monitoring the chimpanzee population of Kom-Wum in collaboration with locals from the surrounding communities, engaging partnership with Cameroonian universities and deepening cooperation with international research institution provided the funding is available.

To develop an antipoaching patrol for the next 5 years to ensure the survival of chimpanzee in the study area. This will involve the removal of hunting snares and hunting camps in the reserve and surrounding forest.

**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?**

The Rufford Foundation logo has been in conference presentations and seminars. The Rufford logo was used during my presentation in the African Primatological Society conference in Entebbe, Uganda, from September 2-5, 2019. The Rufford logo was used in the doctorate seminar at the Brandenburg University of Technology, Cottbus.

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

Members	Role
Soh Clotilde	Community eco-guard, field assistant
Chai Cosmas	Community eco-guard, field assistant
Akou Emmanuel Mbeng	Local field guide
Achai Genesis Kam	Local field guide
Mbeng Godwill Akou	Porter and cook
Kum Evaristus	Porter
Tacham Walter Ndam	Botanist
Ejike Richard Ugba	Consultant (data analysis)
Evidence Chinedu Enoguanbhor	GIS specialists
Christain Ross	primate geneticist,
Peter Schierack	Biotechnologist
Paul Dutton	External supervisor
Ekwoke Enang Abwe	External supervisor
Tsi Evaristus Angwafo.	Field supervisor
Klaus Birkhofer	Academic supervisor
Udo Bröring	Academic supervisor
Liyong Emmanuel Sama	Head of the research institution in Cameroon



## 12. Any other comments?

I have now received a second grant from the Rufford Foundation, the primary funding source of my PhD research project in Cameroon. So far, I have successfully conducted two field campaigns with funding from the Rufford Foundation. I wish to express my deep-hearted thanks for the immense support since 2018.



Figure 1 The principal investigator a) conducting a focus group discussion at Baiso chief palace b) with focus community eco-guards after a group discussion c) characterising chimpanzee habitat in Kom-Wum Forest Reserve ©(Mbeng Godwill Akou), and d) curious chimpanzee attempts to remove a camera trap installed in Kom-Wum Forest Reserve. © Chefor Fotang.