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	TCHASSEM FOKOUA Arnaud Marius
Project title	Influence of anthropogenic activities on the distribution and conservation status of Amphibians of the Bamenda highlands.
RSG reference	14042-1
Reporting period	July 2015
Amount of grant	£ 5,479
Your email address	**arnaudtchassem@yahoo.fr**
Date of this report	July 31st 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
Update and document the composition, distribution, and status of amphibians with respect to altitude and various anthropogenic activities				The survey permitted us to document 437 amphibians in total. We recorded 169 amphibians on Mt Bamboutos, 109 amphibians on Mt Oku and 159 on Mt Mbam. The surveyed habitat types varied in size, in altitude with the sub-montane area covering a larger surface area followed by the lowland area and montane habitats. *Leptodactylodon perreti* is recorded on any of our field site mainly on mount Bamboutos with high population concentration around 2200 and 2400m a.s.l. and they had been collected during all the season of the year. *Phrynobatrachus cf. cornutus Leptodactylodon perreti, Trichobatrachus robustus, Leptopelis nordequatorialis, Astylosternus reophilus, Xenopus cf. fraseri* have been recorded only in small patches of forest, along of small streams that run on the mountains. *Hyperolius viridistratus, Hyperolius cf. concolor, Afrixalus.,*have been collected in lowland areas at around 1400 m a.s.l. on Mount Mbam. *Xenopus longipes* is recorded only on Mount Oku. We, however, could not find the endangered targeted species in the field surveys certainly due to the extent of different anthropogenic activities, but other researchers reported their presence claiming they sighted it the previous year. These species seem extremely sensible on the least disturbance of their habitat
Record the GPS coordinates of breeding sites, migrating corridors, highly degraded habitat of target species in the study area.				GPS records of the breeding areas, the migration paths and the highly degraded habitats have been recorded on each our site. Breeding sites are along the small streams all over mountains at different periods of the year and especially at the beginning of the rainy season for species like *Astylosternus cf. reophilus, Astylosternus ranoides.* On mount Bamboutos and Mbam,

				migrating corridors usually founded on the adjacent slopes are unfortunately destroyed by pasture and fire bush. *Hyperolius cf. Viridistratus, Leptodactylodon perreti, Xenopus longipes* and *Cardioglossa pulchra* have been found also during the dry season.
Based on the information recorded, develop conservation measures that could be implemented to conserve threatened species in the area.				Observations on each of our study site reveal a profound modification of the environment. For example, on Mount Bamboutos, added to agriculture and livestock, a new infrastructure has been implemented; many of the small streams from the mountain are canalised to the water tower under construction which will serve in providing water for the people communities. To protect these species already endangered, some conservation measures are proposed: * Increase environmental education programmes in human communities. * Reduce impact on gallery forests and especially on the small streams in these forests would be primordial for the conservation and the health of the community of amphibians living there. * Creation of a local reglementation will contribute to reduce intense exploitation on Mts Bamboutos and Mbam respectively above 1500 m and 1300 m a.s.l. * We also recommend a particular attention about the forests, particularly rich in amphibian diversity and endemism.

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

N/A

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

a) Many mountains' amphibian communities have been identified on each of our study site. Some among them are common to Mounts Bamboutos, Mbam and Oku. This is the case of *Leptodactylodon perreti* recorded between 2000 and 2955 m a.s.l., *Astylosternus cf. reophilus* present between 2100 and 2350 m a.s.l. *Xenopus cf. fraseri* collected at around 2200 m a.s.l. on Mount Oku; from 1200 m to 1650m a.s.l. on mount Mbam and between 1700 m and 2500m a.s.l. on mount Bamboutos. *Hyperolius marmoratus, Afrixalus dorsalis, Hyperolius viridistratus, Hyperolius cf. concolor* have populations founded only on Mount Mbam around 1400m a.s.l. and *Xenopus cf. fraseri* at 1500m a.s.l. On mount Bamboutos, *Leptopelis nordequatorilis* has been recorded between around 2220 and 2640 m a.s.l.

b) Migrating corridors, highly degraded habitat and GPS coordinates of breeding sites have been recorded on all our study sites. This information will help to review the status of endemic target species.

c) The most important habitats of amphibians are along the valley bottoms and plantations on the adjacent slopes and the small forest patches along the small streams. These two points host the breeding sites of endemic species of amphibians. Migrating corridors are generally identified on slopes between two small forest patches. These slopes are also scattered of stones which constitute are important shelters for species such as *Astylosternus cf. reophilus* and *Astylosternus cf. ranoides*. Unfortunately, they are strongly degraded by livestock, agriculture and pesticides. Mounts Bamboutos and Mbam are those where human activities are most marked.

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

Since the beginning of the project we contacted and worked very closely with local people. This was the case on our three study sites. Apart from the immediate cash that these local persons received from the project, it is clear that either us or other researchers will find them useful and employ them to assist on other similar projects. During my field work I appointed three people from the communities with me who had good knowledge about the study area. In preserving their environment, local populations will gain more due to several researches that would be done in future in their various localities, which would provide periodic employments for a longer period of time for the youths. Added to that it will be an opportunity for them to get in contact with some other cultures and at the same time share their own cultures with foreign.

5. Are there any plans to continue this work?

We intend to continue survey on the most endangered amphibians, the existence of these very rare animals will be significant to enhance forest status and promoting Bamenda highlands' endemic species of amphibians.

To continue this work particularly with reference to climate change adaptation, mitigation and the difficulty to access certain hilly slopes of the mountain forest. *Leptodactyledon axillaris, Werneria bambutensis* and *Wolterstorffina mirei,* were our target species but none of these species have not been recorded during intensive field expeditions.

Ecological studies have to be intensified on each of these mountains so that to update the information and review the status of endemic species.

Added to that we need to illuminate the particulars of species' geographic distributions, and a much-improved view of strategies for biodiversity conservation to face of human disturbance.

At the end, we intend strongly in future to go back on these sites and probably to see if the recommendations we brought up were followed.

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

I am preparing two manuscript based on my project's findings to publish it in refereed scientific journal. These papers will be deposited in libraries at university campuses in Cameroon. They will also be made available to the Rufford Foundation. We would like to invite other researcher to conduct collaboration research and conservation activities. The results of our research will also made available during national scientific meetings the local meetings with local levels administrators, social leaders, local NGOs and other representatives from communities surrounding my study areas will be organised to inform them about the results of our study. Beyond this project, additional information about our work will always be provided to all stakeholders and interested students.

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

The time plan of my project was from September 2013 to August 2014. Our field work really began during January 2014 and later interrupted during August 2014 due to an accident which stopped me from any activity for 6 months. That is why my final report has been produced with some delay. My RSG was used for about 18 months instead of the anticipated 12 months period.

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
Travel-local (day):	£480	£576	-£96	Urban and inter-urban transport in Cameroon saw an increase in prices at a point in time. We spend £12/day/pers instead of £10 as budgeted
Communications	£250	£215	+£35	During our work, communication was limited only to emails and telephone calls.
Salaries/field staff & assistants	£2520	£2610	-£90	The money initially needed to pay the members of the team has been completely spend and we even had a small deficit. We therefore needed extra funds to pay for the salaries of our team members which we got from "overnight" and miscellaneous"
Food/per diems:	£1440	£1520	-£80	We planned to spend 2£/ person for nutrition. Due to price inflation we rather spend 2.12£/person.
Overnight	£288	£220	+£68	I used the rest of money to cover Food cost and paying some of our guides and porters.

Supplies	£240	£280	-£40	I provided this amount from the item "communications". Due to inflation of prices we witnessed in Cameroon, we found ourselves spending more money than expected.
Miscellaneous	£261	£261	0	We have spent money for administrative fees money transfer and charges in exchange rates of various currencies. This also helps us to cover the increase in transportation fare, Supplies and Foods.

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

We also realised that the community knows almost nothing about amphibians and conservation problems they are facing, so a key step is to increase the awareness and the conscience of the community and institutions for the conservation of the threatened amphibians.

We intend to develop a small-scale captive breeding programme for *Leptodactylodon axillaris, Werneria bambutensis* and *Wolterstorffina mirei* to release from the wild some specimens of species in critical danger of extinction. The chytrid fungus is present in Cameroon, this step is more critical if we want to protect some species that can disappear in very short time because their very restricted distribution.

We plan to contact some researchers, local communities, conservationist, and institutions because we want to continue our project. These partners could help in our initiative. We also intend to apply for the second RSG that will allow having a long-term action in conservation of Cameroonian amphibians.

Another step will be to focus our future works on the mountains of Cameroon where the majority of endemic and threatened species are present and where the pressure of threats due to the anthropogenic activities is becoming stronger.

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?

I have not yet used the RSGF logo at this time.

11. Any other comments?

I hereby thank and appreciate this initiative of Rufford Foundation for helping researchers realise their project and providing the funds needed to make their project happen. I am especially grateful to Jane Raymond and for her great patience she showed and her indulgence in giving me more time so that I could finalise my final report. However, we have collected preliminary data on this study to be continued and as baseline in the next project.