

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	Sainge Nsanyi Moses
Project title	Patterns of distribution and endemism of plants in the Cameroon Mountains
RSG reference	16712-B
Reporting period	February 2015 – January 2016
Amount of grant	£9994
Your email address	tropeg.cam@gmail.com , sainge2001@yahoo.com
Date of this report	December 4, 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
Fill key data gaps in knowledge of plant diversity across the Cameroon Mountains region.		X		Botanical report available only for Rumpi Hills and Kimbi-Fungom
Understand patterns of plant species distribution, richness, endemism, threats and forest structure across the region		X		Distributional patterns available only for Rumpi Hills and Kimbi-Fungom
Translate distributional patterns into conservation strategies, taking into account both present-day distribution and diversity and likely future shifts.			X	
Part of a PhD Thesis			X	Draft of three papers available

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

Due to the enclave nature of these two sites (Rumpi Hills and Kimbi-Fungom), it was difficult to access the different vegetation types. However, this let us spend more time and money accessing most of the vegetation types. Field assistances at these localities are not used to biodiversity data collection of this kind, this took us longer time training field team before the actual data collection. Due to the less experienced staff at these sites, we were forced to transport experienced staff from Korup National Park area in Mundemba to Rumpi Hills and Kimbi-Fungom during field trips. All these actually affects our field cost to more than doubled, as more money was spent on transportation, hotel bills, food etc, which were not preview in the original budget. Due to the outstanding data that we collected, more specimens were recorded that took much time arranging and identifying at the National herbarium of Cameroon in Yaounde. For example, 2 months were used in identifying all the specimens instead of 2 weeks as plan. All these aspects were the setbacks of sampling 42 ha instead of the 50 ha as plan.

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

- A comprehensive, state-of-knowledge database of plant species distributional patterns across the Cameroon Mountains region that will be made openly available to the broader scientific and conservation communities.
- New biodiversity data that fill data gaps in knowledge of the biodiversity of the Cameroon Mountains region.
- Model projections that anticipate and forecast species' potential distributions across the region and under future climate conditions

- Explicit conservation strategies that consider both current patterns of diversity and endemism and likely future shifts.

A broad scale data on plant diversity have been collected in the Rumpi Hills Forest Reserve and Kimbi-Fungom National Park for the first time. All data entered in MS excel to be exported to the Botanical Research and Herbarium Management Systems (BRAHMS) software for further analysis. In the months ahead, papers on the structure, composition, diversity and vegetation patterns of these two sites will be out for peer review. A technical report will be send to the Rufford Foundation in the weeks ahead.

This data set will go a long way to fill data gaps on the Rumpi Hills and Kimbi-Fungom area and is the beginning of a consolidated and build-up database across the Cameroon Mountains.

Different data layers and monitoring data will enable us into the future to predict the effects of climate change across this ecoregion. Hence, this study in the future will help governments, and decision makers to take better decisions on the biodiversity of mountain ecosystems.

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

Local communities' members were fully involved during this study. At Rumpi Hills, I had a meeting with the Divisional Officer of Ekondo titi subdivision where I explain the project mission and funding source. Three different meetings sections were held at Munyange in the south, Dikome Balue in the east and Matamani in the northwest. These meetings brought together Chiefs of the above mentioned villages and their villagers. During these meetings, the objective, outcome, and funding source were disclosed to community members. Eight, 5 and 12 ha respectively were sampled at different sites. At the Kimbi-Fungom National Park, I had a meeting with the Regional Delegate of Forestry and Wildlife for the Northwest Regional in Bamenda, a meeting with the conservators, forestry post and the Chief of Wildlife and protected area in the Northwest Region. This meeting was held in Esu, during a Task force meeting. Before the start of field work in this park, the Divisional officer was informed, I had a meeting with the fon's of Esu, Tunka-Esu and Kpep.

At each meeting session, TroPEG mission was explain to the village head and villagers, outcome of the research, funding source and a photocopy of our research permit from the Ministry of Forestry and Wildlife (MINFOF), and the Ministry of scientific Research and Innovation (MINRESI) handed to each village head. At all level, staff and community field assistants were giving their remuneration.

Government officials directly or indirectly involved in this Study

Ngweana Edwin, Divisional Officer of Ekondo titi

Edward Egbe Forxah, Divisional Officer of Fungom

Mbah Grace, Regional Delegate of Forestry and Wildlife (MINFOF) Northwest Region, Bamenda

Fomimyam Christopher Njoh, Conservator, Kimbi-Fungom National Park

Mpouop Ulrich, Chief of Forestry Post, Fungom subdivision

Community Officials involved in this Study

Chief Jonas Maliki Etongwe, Chief of Munyange village

Chief Sakwe Cyril, Chief of Dikome Balue village

Chief Okanyene Christopher Itoe, Chief of Matamani village

His Majesty Fon Kum-a-Ghuo II, Fon of Esu Fondom
Chief Omah Jama Lucas, Chief of Kpep (Benzeen) village
Mr. Kum Olivier Ngah, Chief council of Tunka-Esu

TroPEG Members and Field Staff

Sainge Nsanyi Moses, Principal Investigator of the Project/Botanist
Mambo Peter Ekole, Herbarium Manager/Botanist
Motto Moses Nekena, Field Assistant/Enumeration team
Momene Manfred Mero, Field Assistant/Survey team
Osang Nkwelle Anamani, Field Assistant/Enumeration team
Ekpoh Innocent Mottia, Field Assistant/Survey team
Joseph Mulango Nwese, Field Assistant/Survey Team
Nwese Rueben Ituka, Field Assistant/Botany team
Ngoe Monclaire Meriki, Field Assistant/Enumeration team
Notto Elangwe Hanns, Field cook
Okele Frederick Eleli, Assistant field cook

Community Field Assistants

Nasako Samuel Bonyeki, Munyange village
Andu Dickson Motinaseh, Munyange village
Mapong Lovett Gamua, Buea
Abel Etongwe Barori, Munyange village
Moni Collins Okpa, Munyange village
Mbongi Joseph, Dikome village
Mabia Kenneth, Dikome village
Sakwe Festus, Dikome village
Esoe Peter, Dikome village
Meboka William, Matamani village
Obassi Christopher, Matamani village
Itoe Joannes, Matamani village
Ndelle Stanley Osim, Matamani village
Ojong Daniel, Matamani village
Chawanu Clovis Itua, Matamani village
Ngundue Clovis Ngundue, Matamani village
Obri Saviour Njong, Matamani village
Motia Wilson Bekundaka, Matamani village
Iwatt Jong Arong, Matamani village
Mbamene Boris Ekwena, Matamani village
Besingi Innocent Edube, Matamani village
Bepuaka Ekuka, Matamani village
Itoe Philip, Porter, Matamani village
Ituka John, Porter, Matamani village
Nwese Johnson Meboka, Porter, Matamani village
Motale George, Porter, Matamani
Ekpoh Jacob, Porter, Matamani
Ojong Collins, Porter, Matamani village
Ernest Efamba, Porter Matamani village
Itoe Benjamin, Porter, Dikome Balue

Inyang Damian, Porter, Dikome Balue
Nidfor David, Porter, Dikome Balue
Kang Isabella Ngiy, Assistant Field cook, Kpep
Bako Michael Che, Kpep village
Aegah Polycarp Kaku, Kpep village
Kum George Bong, Esu village
Muh David, Kpep village
Akeba Jonathan, Kpep village
Galem Garvey, Kpep village
Kitema Michael, Kpep village
Elizabeth Ogah, Kpep village
Francis Chu Kenah, Esu village
Geh Meh, Esu village
Mungwa Hanns Azeh, Data entry Technician, Buea

Drivers

Geraud Ngala, Matamani trip
Ngala Jackson, Matamani
Tah Christopher, Wum
Tandi Emmanuel, Kumba
Gildas Tetuh, Kumba
Kometa Raymond, Dikome Balue
Etongwe Donathus, Dikome Balue
Itoe Peter, Kumba
Amidou Hassan, Kumba

Identification of Plant Specimens at the National Herbarium of Cameroon, Yaounde

Sainge Nsanyi Moses, Botanist
Paul Mezili, Botanist
Ngoh Michael Lyonga, Botanist

Instructors of this study

Prof. Townsend A. Peterson. Biodiversity Institute. University of Kansas, USA
Dr. Felix Nchu, Cape Peninsula University of Technology, Cape Town, South Africa
Dr. David Kenfack, Center for Tropical Forest Sciences, Smithsonian Tropical Research Institution, USA.
Dr. Peguy Tchouto, Programme for the Sustainable Management of Natural Resources-South West Region (PSMNR-SWR), Cameroon

5. Are there any plans to continue this work?

Yes, we plan to extend survey on different mountain masses on the continental part of the Cameroon Mountains viz: Mt Cameroon, Mt Etinde, Mt Nlonako, Kupe, Manenguemba, Bamboutoes, Bali-Ngemba, Bafut Ngemba, Kagwene Wildlife Sanctuary, and Mt Oku to Tchabal Mbabo. If funds permit, we'll study the entire range of the Cameroon Mountains from São Tomé and Príncipe, Bioko, Western Cameroon and south-eastern Nigeria which is a data gap for diversity till date.

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

Our results are usually shared through reports to government officials, and local NGOs, websites, newsletters, conferences, seminars, and peer review publications. Results are always well disseminated.

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

This project was planned to be implemented in a year, February 2015 to January 2016, but finally we took 10 months February to November 2015 to complete the project.

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
Field Workers	3795	4580	785	Increase in living standards, workers demanding higher wages. Increase in numbers of workers than preview.
Field Medications	119	180	61	Increase number of field staff
Communication	215	251	36	More meetings than preview
Transportation	1,790	2,065.28	275.28	Preparatory meetings were organised which were necessary but not budgeted. Enclave and poor state of the roads also lead to high cost of transportation to sampling sites.
Food	2148	2,188	40	More field assistants hired
Field Equipment	1,557	2,611	1054	Plots were made more permanent, by producing tags. In the initial proposal plots were not supposed to be permanent, but for us to understand the dynamics of our plots we made them permanent.
Data entry	0	477	477	TroPEG
Studying of plant specimens	251	1,432	1181	More time was spent studying specimens.
Shipping of specimens to MO.	119	0	0	Not Yet
Hotel bills to arrange for meetings with villagers	0	78	78	TroPEG
Total	9994	13,862.28	3,987.28	

NB: TroPEG contribution for this study amounted to £3,987.28 (28.76%).

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

Develop a technical report and send to Rufford Small Grant Foundation.

Develop at least three scientific papers to be published in peer review journals.

Look for more funds to organise seminars that will bring together scientist, government authorities, and environmental NGOs.

We strongly recommend that the other mountain masses on the continental part of western Cameroon and south-eastern Nigeria should be sampled using the same methods, data entered on a unique database so that diversity on the different mountain masses can be compared on the same platform. This should be extended to the oceanic part in the Gulf of Guinea. This will enable us to have a unique regional database on the plants of the Cameroon Mountains which at the moment is lacking.

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?

Yes, Rufford logo was posted on the communiqués announcing meetings with the villagers, and community members up to a point that in all the communities that we work indigenes are aware of an ongoing project sponsor by Rufford Foundation. Communities' members were made to understand that Rufford is the main funder for this project working in collaboration with TroPEG. We promised that the logo will be posted on our newsletters, reports, presentations and will be acknowledge in all our peer review papers generated under this funding scheme. Government officials that work closely with us actually appreciated the work TroPEG is doing through the RSGF.

11. Any other comments?

Rumpi Hills Forest Reserve (wet forest) and Kimbi-Fungom National Park (dry forest) are two contrasting protected areas in Western Cameroon that are linked to two different ecoregions.

1. The Guinean Forest of West African Biodiversity Hotspot that extends from Senegal in Upper Guinea to Western Cameroon in lower Guinea.
2. The Cameroon Mountains that cut across five countries: Pagalu, São Tomé and Príncipe, Bioko in the Gulf of Guinea, Western Cameroon, and south-eastern Nigeria.

These areas remain important biodiversity hotspots where incessant methodical dataset and database of its biodiversity is lacking.