

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	Alfred Hounnon
Project title	Propagation of Native Trees by Local Communities to Provide Food for Primates in the Forests of Ketou: A New Challenge for Habitat Restoration in Benin Republic
RSG reference	17306-2
Reporting period	April 2015 - April 2016
Amount of grant	£ 4997
Your email address	alfred.hounnon@gmail.com
Date of this report	20 th April 2016

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
Assessment of primate food resources in forests of Ketou, Dogo and Ewè and Adapklame village (District of Ketou)			x	Tree species providing food for primates were well represented in the chosen areas. However, we had not been able to correctly identify the non-human primates due to the investigation period which covers the rainy season. It was the moment when the vegetation stay thick.
Map the distribution of the tree species identified by local communities as being useful for primates in forests of Ketou.	x			There were 21 native tree species of which 6 were cited by more than 25% of respondents. The suitability and effectiveness of the distribution map of these native tree species was not adequately updated due to high number of species, the big size of the three forests and the vegetation complexity. The reporting period was too short and also there were no sufficient qualified operators given to the sensitivity of data to cover all forests in record time. It was not possible to commandeer other stakeholders to strengthen the field team, yet this was not budgeted for.
Propagation tests during 'season 1' (Rainy season)		x		Only two additional species in complementation to our first Rufford project were tested for their aptitude to be vegetatively propagated. This was possible only in the dry season and not in the rainy season (season 1) than we anticipated. Because investigations lasted longer than expected and have ended after the rainy season.
Strengthen the relationship with local people by using Farmer Field Schools as being education and outreach tools for			x	Two FFS and 4 local workshops were conducted to better empowering local communities in conservation effort through capacity building in forest management and degraded habitat rehabilitation.

conservation activities such as seed collecting and planting.				
---	--	--	--	--

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

The project implementation was difficult from the start due to the active involvement of local community. We took one month more to assign again the tasks and readapt the objectives. This has delayed the project schedule but the main objectives have been met and the quality of the work was not affected.

In addition, to assess the level of local community's participation, we planned to use the free version of the social software RepGrid IV. Except we did not have free access to the social software in order to assess the level of participation and satisfaction of local people during Farmers Field Schools. Because RepGrid IV which was previously free of charge and could be used directly on field study while discussing and sharing knowledge with participants was no longer available during the project implementation.

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

- Plant species providing food for primate were assessed in Ketou District. In total, 27 tree species belonging to 16 families were identified and listed. Among them, 21 native tree species seen as biomass of arboreal folivorous for non-human primates are often under pressure from land clearing, house extension and forest degradation.
- Aptitude to be vegetatively propagated of three most important native tree species known by local people to forage non-human primates (*Triplochiton scleroxylon*, *Englerophytum oblancoelatum*, *Dialium guineense*) is preliminary investigated in Ketou District. Seed were collected for nursery from the monkey-bread tree (*Adansonia digitata*) seen as the native tree most resorted by Non-human primates.
- Capacity building in forest management, degraded habitat rehabilitation, seed collecting from native tree and *in situ* conservation is strengthened for 40 local leaders through Farmer Field School.

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

This project outline and activities budgeting were collectively drafted with active participation of 40 locals at the closure of the first rufford project. The Farmers Field School (FFS) strategy adopted during the first project aroused an amazing engagement of the local leaders toward research activities. With FFS component, local people were involved as participants so that they get opportunity to learn how to harvest wild seed (tree), design map, handle vegetative propagation techniques, establish and manage village nursery and conservation site. Local participants have

become real actors and stakeholders as well they can identify themselves to the project as being their own initiative.

It is also important to support local knowledge for facing the major challenges in conserving local biodiversity. The activities carried out on promoting native trees (wild seed collecting, vegetative propagation handling and nursery establishment) during this 2nd RSG project are among practical and needed initiatives to meet these challenges in Republic of Benin. For instance at present, the majority of tree planting in Republic of Benin focuses on non-native species. While it would be better to take adequate measures to conserve biodiversity locally by sustaining life everywhere and allowing locals to make the most benefit from any conservation activities. These sharing knowledge developed since the 1st RSG followed by the present project will be exerted and implemented by local's participants in order to respond and supply demand in Planting campaign, agroforestry, and forestry coming projects. As consequently the implementation of this project is beneficial for locals and should improve their substantial incomes in the long term.

More, such projects are vital for Republic of Benin and especially for the Southern part belonging to the Dahomey Gap, which is defined as the climatically dry corridor separating the West African rain forest into the Upper and Lower Guinean forest blocks. Due to the phenomenon of the Dahomey Gap and extensive deforestation, the landscape is completely devoid of evergreen rain forest and is largely dominated by farms, fallows and grasslands intermingled with small islands of semi-deciduous forest. Since, this make the natural flora of Republic of Benin relatively poor in comparison with neighbouring countries such as Nigeria, Ghana and Ivory Coast, although being a part of the West African rain forest belt.

Furthermore, the multiplicity of meetings, mobilization strategy for local workshops, sharing of experiences and meals and how locals felt concerned; generated amazing moments and a new local dynamics. Some allowances were especially paid to others who contributed in school trip for discovering target species forest. All this helped in improving local living standard within the area study.

I believe that this 2nd RSG project will assist in giving local leaders and participants a global and spatial view of the conservation need in Ketou District and allow them to make more effort regarding communal forests conservation.

5. Are there any plans to continue this work?

The continuation of this project is obvious. Firstly for avoiding to cool local community enthusiasm. This proof of their engagement is a key factor to achieve sustainable conservation objectives at the village scale to the whole District level. On the other hand, the ultimate goal I aim is to develop botanical and vibrant village, on some of community areas around forests with high conservation priorities. The established community conservation areas as the case at Ewè Adapklame villages will serve as green belt or dynamic resilient systems that can preserve forest from threats by helping them to withstand stresses of climate change, habitat fragmentation, and other anthropogenic effects. This kind of landscape management complies with

system of 'Sharing land' that allow local peoples to benefit from conservation after developing ecotourism and promoting of Non-timber forest products (honey, medicinal plants, native tree, and wild seed for agroforestry and forestry).

This project and the previous one are part of the effort to document the conservation status of some useful species regarding community interest and conservation priorities. We now have the list of native trees that provide food to primates and results propagating *Englerophytum oblanceolatum* which is restricted to Ewe and Adapklame remnant semi-deciduous forest (EARSF) in Republic of Benin as other restrictive taxon such as *Mansonina altissima*.

I plan to submit other project:

a) to assess the degree to which humans settled and modified the landscape by prehistoric burning and agricultural activities from around 2500 years ago. This paleoecological study will give the opportunity to combine ambitious EARSF restoration with sustainable rural livelihoods and community participation.

b) to cover other species of EARSF in order to provide a complete list of the vascular plants and their description (diversity, structure, conservation status and domestication potential). The record of many Upper Guinean endemic species in Ewe - Adapklame semi-deciduous forest island provides strong evidence for its past floristic connections with the West African rain forest zone. Knowledge on vascular plant community structure, species composition and their diversity is vital for the process of palaeo-vegetation reconstruction.

c) to pursue building capacities on community based projects with 'sharing land', conservation of native tree, ecotourism and promoting of Non-timber forest products (honey, medicinal plants, native tree, and wild seed for agroforestry and forestry) to face food insecurity and deforestation..

For the coming steps, 2 undergraduates and 1 graduate students will be involved in the project with the locals, specifically in the data collection and analysis phase and will conduct their thesis and write term paper on these topics.

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

Some of the project findings have already been shared with community through four workshops. These final achievements of the project will also be shared on local radio. I am about to write a detail report that will be followed by a manuscript to be published in a peer reviewed journal. These final results will be shared in scientific forums at University of Parakou, Republic of Benin.

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 from April 2015 to April 2016 and this period was almost as anticipated.

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
Stationery and consumables	32	27	5	This was because price in retailing store was less than price on local market.
Camping equipment (tent (£60 x 2), sleeping bag (£20 x 5), sleeping mat (£7 x 5))	255	255	0	NA
1 aluminium ladder for field	110	100	10	This was because price in retailing store was less than price on local market.
GIS training course and GPS handling techniques for 2 team members	350	350	0	NA
Travel and local transportation (fuel) (transportation to fieldwork sites – 50 litres of fuel per trips at £1 per litre for 10 trips)	500	500	0	NA
Accommodation for team members during conservation education in communities and surveys coordination (£5/person per day for 5 people during 20 days)	500	500	0	NA
Food for surveys investigators and local guides (meals - £5/day per people for 10 peoples (5 investigators + 5 guides) for 10 days)	500	500	0	NA
Farmer Field School for field data collecting and vegetative propagation (transport of participants £30/day for 10 people x 6 days, Food for participants (£60/day for 10 people x 6 days))	540	540	0	NA
Farmer Field School for	850	850	0	NA

planting (transport of participants £1.5/day x 30 people x 10 days, Food for participants (£40/day x 10))				
Maintenance and monitoring of nurseries (£60/month for 12 months)	720	625	95	This remaining amount is due to maintenance and monitoring of the nursery for 1 month half (removal of weed, water carrying if there is no rain, collecting of growth parameters)
School trip for identification of forest seeds, primate food biomass and smells	100	100	0	NA
Outreach/education activities and materials (printing of final report, posters, pamphlets and local media: pamphlets (£0.5 x 100), posters (£3 x 50) and media (£20 x 2))	240	240	0	NA
Workshops (venue hire - £40/day x 3 days, projector hire x 3 days - £30 and food for participants - £150)	300	300	0	NA
Total	4997	4887	110	NA

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

I plan to study archaeological charcoal particles known as bio-indicators of the past vegetation. These particles are an appropriate tool to provide evidence of past human disturbances and document temporal trends of intensity of disturbance around the EARSF. The technique consist in charcoal recovery from soils using sediment core. After treatments and analysis, data will be confronted with the history of the two village in the perspective to understand the long-term evolutionary process of the landscape.

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?

The RSGF logos were printed with different sizes and pasted on all materials provided by Rufford for the implementation of this project. The logos were widely use during ICCB, 27th International Congress for Conservation Biology and 4th European Congress for Conservation Biology held Montpellier France from 2-6th August 2015 and also during the National Workshops at Benin in Cotonou and Parakou since 2015.

We created facebook page "**AGIR au Bénin**" (<https://web.facebook.com/EWE.FOREST/>) on our activities using RSGF logo mentioning that these studies were supported by RSGF.

11. Any other comments?

Through RSGF support I'm trying to build my professional career and express my view points on the conservation of plant biodiversity in my country. The works have made a huge impact on my true passion to lead independent research but also contribute to positive behaviour change among local peoples toward local biodiversity.



Root suckers induction of *Englerophytum oblancoelatum* (16 months, 11 leaves in mean \pm 4.6) success rate: 94%



Air layering of *Englerophytum oblancoelatum* (16 months, 6 leaves in mean \pm 2.9) success rate: 81%



Root cutting of *Englerophytum oblancoelatum* (16 months, 3.2 leaves in mean \pm 2.8) success rate: 67%



Seedling of *Mansonia altissima* (13 months, 9 leaves in mean); Seedling of *Triplochiton scleroxylon* (16 month, 17 leaves in mean)



Root cuttings of *Englerophytum oblancoelatum* (16 months, dead)



Conservation field for native threatened tree of Ewe Forest (Ketou, Benin)



Farmers field schools (Ketou, Benin) practices of Air layering on *Triplochiton scleroxylon*



Farmers field schools (Ketou, Benin) practices of Air layering on *Mansonia altissima*



Air layering on vertical stem of *Mansonia altissima* (November 2015); Foothills of *Ceiba pentadra* in Ewe Forest at Ketou, Benin (November 2015).