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	Dassou Gbèwonmèdéa Hospice
Project title	Reproductive ecology and the persistence of *Ipomoea beninensis*, an endemic plant species in Benin
RSG reference	25115-2
Reporting period	March 2018 - December 2019
Amount of grant	£5000
Your email address	daspice2@gmail.com
Date of this report	27 December 2019

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
Understand the reproductive biology of *Ipomoea beninensis* across its distributional area.				We have conducted all our observations on 150 individuals at adult stage in 30 populations and five localities across its distributional area of *Ipomoea beninensis*. Unfortunately, conditions weren't possible in all localities. Indeed, in some land areas, there were not enough individuals of reproductive age. Thus, our sample was reduced to 60 individuals at adult stage, 12 populations, two land uses and three localities.
Assess the pollination pattern of the species and the major pollinators in its natural populations				After collection of the pollinators, their identification took more time due to unavailability of the entomologist.
Test for the best regeneration practice for the species.				Samples (seeds and segments of stems and roots) were done in each selected locality. We used several techniques including amendments and pre-treatments with water, sulphuric acid, manual scarification, soaking in water, etc.

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

The major difficulty was finding enough individuals of reproductive age in certain land areas to conduct the study on reproductive biology. Consequently, our study efforts of reproductive biology were concentrated on those land uses that had a sufficient number of reproductive individuals.

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

The three most important outcomes of the project:

- *Ipomoea beninensis* flowers twice a year; firstly, between February and April, and secondly in October. Flowering entry displayed variation among land

uses. The number of flowers varies between one and two per individual. In each fruit, the number of seeds varies between two and four.

- During the study period, six pollinators were found: *Liotrigona bottegoi* (Magretti) (Hym.: Apidae), *Hypotrigona squamuligera* (Benoist) (Hym.: Apidae), *Lasioglossum (Ipomalictus) bowkeri* (Cockerell 1920) (Hym.: Halictidae), *Mylabris vestita* Reiche (Col.: Meloidae), *Apis mellifera adansonii* Latreille (Hym.: Apidae), *Coryna hermanniae* (Fabricius) (Col.: Meloidae). Among these pollinators, *Lasioglossum (Ipomalictus) bowkeri* and *Mylabris vestita* were the most frequent observed which visit the species during the whole day.

- The duration of the experiment was 30 days. Results revealed significant variation in germination rate depending on the treatment ($P < 0.001$). The highest germination rate was obtained with manual scarification with a rate of 95 ± 7.07%. We also noted the shortest germination duration was 3 ± 1 days; this being obtained for manual scarification. As regards the regeneration trials, the breaking rate of the root segments is higher than that of the stems. This rate does not exceed 50% for all segments. Only the root segments remained viable beyond 60 days.

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

Local people/communities have been fully involved in the project at all stages. First, they were the ones to help with fieldwork as guides during the implementation of objective number 1 where they helped in identifying localities where we could find effectively enough individuals with reproductive age. Second, they were associates or investigation partners during data collection of the objectives two and three. Then, they assisted us in collection of pollinator species and the topsoil from the types of land uses. Finally, they also helped prepare the different pots for the germination and regeneration trials.

5. Are there any plans to continue this work?

We plan to continue this work. During fieldwork, we noticed about 75% of seeds found around individuals of reproductive age were empty and insect infested. This suggests the environment isn't favourable to facilitate the persistence of the species. Thus, it is interesting to early collect seeds in order to assist the reproduction of the species.

In addition, we will inform local people/communities concerning results obtained on pollinators, germination and regeneration trials in order to change tendency concerning its conservation status in the project area.

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

We plan to share the results through participation to workshops, conferences, and trainings section. A paper will also be prepared on biology reproductive of the species. The results will be also shared with local people.

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

Activities begun in March 2018 and plan to be finished in March 2019, but we preferred to collect additional data (following year) in order to confirm results obtained during the first year of project implementation. Data collection was finalised in November 2019.

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 Description	Budgeted Amount	Actual Amount	Difference	Comments
Sheets for data collection and their multiplication	90	90		
Travel to and from the field	350	350		
Motorbike hiring	500	500		
Petrol for the motorbike	1008	1008		
Acquisition and confection of insect trap	300		-300	We used insect trap of colleague.
Pollinator collection and identification	400	400		
On field lodging and food	1080	1080		
Forfeit for guides	540	540		
Pots acquisition for germination test	200	200		
Setting up and follow-up of the experiment	532	932	+400	We used amount of insect trap for follow-up of the experiments for two years.
Totals	**5000**	**5400**	**+100**	

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

We think it would be very important to:

- Continue public education and awareness creation towards conservation of the species and share new results on germination and regeneration trials.
- Continue studies on viability of seeds and create a seed bank for the species and other threatened species in Benin
- Monitor efficiently the existing and newly established population of the species.

10. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did The Rufford Foundation receive any publicity during the course of your work?

Yes, the Rufford logo was used on slips used during fieldwork. In addition, the Rufford logo will be used during oral presentation of results. We will be acknowledged The Rufford Foundation in the factsheets, publications and presentations to come soon.

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

The project was implemented by:

DASSOU Gbèwonmèdéa Hospice, Ph.D in Botany is the principal investigator. He helped in writing the report and manuscript.

GOERGEN Georg, Ph.D. He is the West African expert in entomology. He helped to identify the main pollinators of the species.

Mathieu ZOUNTAGNI, MSc in Plant Biology. He helped in pollinator collection, and he was involved in reproductive traits data and seed collection.

GUEZODJE Giscard, MSc in Plant Biology with special mention on propagation test. He will be involved in the germination tests and regeneration trials.

9 farmers (3 per locality) at Toucountouna, Tanguieta and Kouandé.

12. Any other comments?

Here, we would like to repeat loss problem of important part of seed of *Ipomoea beninensis* failed due to insect damage. As the species is threatened, we will shortly create a seed bank for contributing to maintain their viability. Other species with the same problem could be integrated. For this, it will be useful to conduct studies on their viability. We would also be happy if we were accompanied in the continuation of this new stage.

We thank The Rufford Foundation for providing research funding. We would like to extend our gratitude to Jane Raymond and Josh Cole.