

## The Rufford Foundation

### Final Report

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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](mailto:jane@rufford.org).

Thank you for your help.

**Josh Cole, Grants Director**

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Grant Recipient Details	
<b>Your name</b>	Ayihouenou Enangnon Bertrand
<b>Project title</b>	Development and implementation of awareness tools for the conservation and sustainable use of pollinators around Lama forest and Park of Pendjari in Benin.
<b>RSG reference</b>	9821-1
<b>Reporting period</b>	2012 à 2013
<b>Amount of grant</b>	£5,950
<b>Your email address</b>	abettyfr@yahoo.fr
<b>Date of this report</b>	

**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
Documenting pollinators of the cowpea and the shea tree and indigenous wild related plants in agro ecosystems and protected areas around Lama forest and Park of Pendjari			Yes	We documented cowpea and <i>vitellaria paradoxa</i> pollinator. We noted a wide range of pollinators ( <i>Monomorium pharaonis</i> , <i>Apis mellifera</i> , <i>Lepidopteron</i> , <i>Polistes herbraeus</i> , <i>Musa sp.</i> , and bats) in these two species showing their importance for reproduction and food security. These pollinators belong to a diverse family of insects and birds.
Demonstrate through a case study based on plants listed above how important pollination service is for livelihoods of local communities			Yes	<p>We installed 32 plots from which 16 in the reserve and 16 outside the reserve (in farms). The minimum distance between the two kinds of plots was 35 km. Each plot was the property of a farmer or a group of farmers selected during the exploratory field visit. On each of the 16 plots per zone, eight were further covered by nets to avoid pollinator's frequentation and, for the other eight pollination are possible. Plots were followed and insects collected simultaneously. For the monitoring of pollinators, we choose 10 individuals per experimentation site and gather through a 15-minute observation, data related to the number of new flowers, the number of new pods, the insect visiting the flowers and the visiting frequency. The monitoring is still continuing and data are being analysed to have a scientific basis for comparison.</p> <p>Farmers were directly involved in the experimentation and remark a difference between plots covered by nets and those not covered. We explained to them that it was the effect of pollination and the necessity to protect the reserve to be able to have more availability of pollinators. We also shared during a small meetings the main outputs which came from scientific data analysis and their implications for improving agriculture. In fact data gathered during the experimentation allow us to conclude that:</p> <ul style="list-style-type: none"> <li>• In the adjacent lands, insect pests of cowpea are more active than in the core of the Lama</li> </ul>

				<p>reserve. It is then necessary to treat the cowpea fields located in the adjacent lands for a good foliation and flowering.</p> <ul style="list-style-type: none"> <li>• The probability that all the flowers evolve fruit is not equal, although all have pollinated in the same conditions due to the fact that weather conditions (wind, rain, passage of rodents) differs.</li> <li>• Among insects visiting cowpea flowers, the most important were bees (74%) and butterflies (39%).</li> </ul>
Produce stimulating, informational awareness and technical material that will be used as tools to sensitise stakeholders on the conservation and sustainable use of pollinators in Benin given that communication is one of the most important means to promote any conservation project, especially the ones without long-term financial support.			Yes	<p>We developed some important tools to raise awareness such as a spot which highlights the importance of pollinators for biodiversity conservation and food security. The spot have been diffused on three national TV and upload on YouTube site. The link is the following: <a href="http://www.youtube.com/watch?v=DrQP32bN86U">http://www.youtube.com/watch?v=DrQP32bN86U</a></p> <p>The spot has been put on 45 CDs and distributed among NGOs, public administration, university to assure a long term diffusion of the spot for awareness everywhere it is required.</p> <p>We produced 500 posters and factsheets on pollination importance for biodiversity and livelihoods which were disseminated among forestry administration staff, NGOs and school kids around Lama Reserve and Pendjari Biosphere Reserve.</p>
Train a network of selected NGOs and forestry, agronomists and wildlife officers on pollinators' conservation and sustainable use.			Yes	<p>In close collaboration with University of Abomey Calavi lecturers, we organised a workshop where public administration staffs of environment, forests and agriculture departments, NGOs and students were invited. During that workshop lecturers of the Faculty of Agronomy, of National Agriculture Research institute of Agonkanmey and me presented talks on importance of pollinators for biodiversity and agriculture with a focus on bees, bats, etc.</p> <p>Tools produced through this project where explained to a forum of NGOs locally called "Biodiversity Forum". 18 NGOs participated in that restitution workshop.</p>

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

Difficulties were climate and this order in the south especially in Lama Forest. For the first planting cowpea in the appropriate period according to rain calendar, beginning in June 2012, the rains were rare in the first 2 weeks in the area. This first implementation has failed and we wait for the best period and restart the experimentation. The second difficulty was recognition among pollinator insects that visit cowpea plants. However this did not affect the quality of the work.

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

- Local people especially farmers around Lama Forest Reserve and Pendjari Biosphere reserves know the importance of pollinators and the challenge they have to save/protect them to ensure food security. It appears to study the ecosystem services of pollinators that will serve to raise more capital to these agents.
- Many stakeholders at national level know about the important ecosystem services provided by pollinators and start having a great interest on that topic especially NGOs, forest administration staffs and research institutes. This will boost existing data on pollinators and integration of pollinators into economic planning and practical conservations priorities.
- Data available on pollination, shea butter and cowpea around Pendjari Biosphere reserve and Lama Forest Reserve increase.

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

Rural people have participated in the cycle demonstration installed around the Lama Forest reserve and have seen directly in the field the difference in terms of foliation, flowering and harvest. Moreover forestry department staff, 18 NGOs, Universities and National Research institutes was involved in all steps of the project implementation. At least, awareness tools were produced and disseminated through radio shows, TV programs, and internet for the large audience.

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

Yes this work deserves to be continued in other agroforestry areas of Benin and around protected area. It will allow giving more details on cowpea pollinators and shea butter to organise conservation actions targeted towards these pollinators. More, the result of this research might be translate in local language to help these population benefited on these findings. We plan to pursue by integrating more crops species and forest species and use camera traps to follow more scientific parameters on pollinators. We intend to pursue a national survey of pollinators, elaborate and disseminate an atlas of pollinators and a national strategy for their conservation. One of our next steps is to create a school based awareness to incite more students to be involved in pollination research and also conservation.

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

This work has made available technical data needed to further raise public awareness on the importance of pollinators in increasing the yield of cowpea and production of shea butter are both large socio-economic significance for rural people. Two scientific papers are currently under finalization to be published in scientific journals. As tools produced can be re-used we establish a partnership with lecturers to have small seminars on pollination for the benefit of university students.

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

The RSG was used from December 2012 to July 2013. And the final report was submitted April 2014.

**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
Equipment	1,000	1,000	
Expendable supplies	200	200	
Literature, documentation, information	200	200	
Local travel, extra manpower	1,400	1,400	
Development and implementation of awareness tools	3,150	3,150	
<b>Total</b>	<b>5,950</b>	<b>5,950</b>	

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

N/A.

**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?**

We are planning on publishing the results from this study and will clearly acknowledge the financial support from RSGF in the manuscript. We used the RSGF logo in our poster for awareness and also we acknowledge RSGF at the end of the two diffusions of awareness spot on radio organised for pollinator's protection and with awareness in school around Lama Forest and Pendjari Biosphere Reserve. We always acknowledge Rufford Foundation after presenting our results to workshop and plan to continue to do this even outside Benin during international conferences and workshops.