Final Project Evaluation Report

Your Details	
Full Name	Aignon Lougbégnon Hyppolite
Project Title	Investigating the spatial distribution of fungal diversity: a step toward the global conservation action of fungi in Benin (West Africa)
Application ID	25978-1
Grant Amount	£4,974
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Date of this Report	27/07/2019

1. 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
1) Establish a database for the monitoring of fungi in Benin				A local fungi database is currently available. This database contains approximately 1870 fungi collections and more than 30 collection sites in Benin.
2) Analyse the distribution of mushrooms				The mycodiversity data set (2003 to 2017) was compiled to facilitate the protection and monitoring of endangered species and to predict new endangered species. More than 1870 specimens were collected, and stored in the mycological herbarium of the University of Parakou
3) Detect rare species and hotspots of fungal diversity				Four species of fungi are currently critically endangered. These are *Lactifluus luteopus* (Verbeken) Verbeken, *Amanita xanthogala* Bottom, *Cantharellus solidus* De Kesel, Yorou & Buyck and *Russula pellucida* (Gooss.-Font. & R. Heim) Buyck. These species are more associated with the vegetation dominated by *Uapaca guineensis Müll. Arg., Isoberlinia doka Craib & Stapf, Berlinia grandiflora (Vahl) Hutch.*, and *Uapaca togoensis Pax*. These different trees are well exploited by the forestry operators and also farmers. Two hotspots of fungal diversity are more threatened. Kota gallery forest is threatened by tourism activities and cuts of fungi partner trees and Bassila gallery forest is threatened by forest management activities and the replacement of fungal trees partners by exotic trees such as of *Tectona grandis* L.f. or *Gmelina arborea Roxb.*
4) Produce and reforest symbiotic trees to strengthen the habitat of the five most				A nursery of two symbiotic tree species identified as having potential for restoration these endangered fungi species have been established.

endangered species of fungi in Benin				These species (*Isoberlinia doka* and *Berlinia grandiflora*) have been identified in terms of their relationship with the endangered fungi species listed above. The seeds were harvested and nursed for five months before the reforestation in natural forest.
5) Sensitize local populations for the conservation of mushrooms.				We organised the educational public events.

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

The main difficulty is related to obtaining seeds of partner trees (*Isoberlinia doka* and *Berlinia grandiflora*). Seeds are not available in the forest administration.

We had to wait for natural production to harvest them. In addition to break the dormancy of seeds of these plants represented another challenge.

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

1) Development of a local base for the protection and monitoring of wild mushrooms.

2) Detection of four endangered fungi species.

3) Improvement of our knowledge on the production and inoculation of fungal partner trees.

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

Local people depend of non-timber forest products including wild edible mushrooms. In the long run, their wellbeing depends of it. They are involved in nursery activities, reforestation and have benefited of new knowledge on wild mushrooms.

As they are close to the forests, many of them work in co-forest management and the tourism sector. So the preservation of forests preserve their job.

5. Are there any plans to continue this work?

Yes.

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

As part of this project, one article are being written on the four critically endangered fungi species. This article will be published in the scientific journal and also in the conferences.

The summary of project is also sent to be presented to the third international scientific symposium of the University of Kara (Togo) from 23rd to 27th September 2019.

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

August 2018 -July 2019. Project activities will continue until the end of 2019, as publication of articles in peer-reviewed journals may take a little longer time.

8. Budget: 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. It is important that you retain the management accounts and all paid invoices relating to the project for at least 2 years as these may be required for inspection at our discretion.

Item	Budgeted Amount £	Actual Amount £	Difference £	Comments
Internet connexion	202	300	+98	The price of the price of access to the connection has been increased in the country by telecommunication networks
Office and informatics automation (ink, Floppy disk/CD, Rams)	650	650		
Brochure print	504	504		
Poster print	67	67		
Reforestation costs	538	562	+24	Obtaining the seeds have been difficult
Nursery following cost	269	269		
Bags filling costs	67	67		
Bags of tree nursery	13	20	+7	Purchase Additional bag than expected
Food	645	672	+27	We recorded additional costs for awareness and reforestation
Accommodation	54	54		
Fuel	532	400	-132	The price of fuel was cheaper

				during the period
Local travel	926	800	-126	We rented the bike cheaper than expected
Digital camera	507	507		
Reagents and supplies for DNA extraction (CTAB)		50	+50	Purchase of CTAB for Specimen preservation for molecular analysis
Publishing an open access paper		100	+100	Postponed
Total	**4974**	**5022**	**+48**	

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

In the first time, we need more time to complete the work already planned. We must finalise and publish the results of this project. After that, we plan to organise the activities to protect better endangered species.

We will increase the conservation actions on fungal species and increase awareness of the local population to reduce the threats on fungi and theirs habitats.

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

Yes, we used The Rufford Foundation logo on brochures and also in our presentation expected in November in Kara (Togo). We also used it during educational public events.

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

Tchan Kassim: He played a key role in awareness raising activities

Boni Souleymane: Brought us his expertise in the choice of vegetations explored in the context of mushroom harvesting and the characterization of different influences on fungal communities.

DRAMANI Ramdan and BOUKARI Azize: Provided us their expertise in the implementation of the database on species diversity and distribution

12. Any other comments?

We are really grateful to The Rufford Foundation for the opportunity to realise our project.