



**REPUBLIC OF BENIN**

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**UNIVERSITY OF PARAKOU**

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**LABORATORY OF APPLIED ECOLOGY**



**RUFFORD SMALL GRANTS FOR NATURE CONSERVATION  
APPLICATION**

**2nd Midterm-Report**

**Conservation of mushrooms through the establishment  
of edible mushroom value chain and the optimization of  
sensitizations**

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## INTRODUCTION

The life will be practically impossible for the local population without the availability of non-timber forest products (NTFPs) such as leaves, fruits, mushrooms, medicinal plants which are picked in the environment (Malaisse 2010). Indeed, the NTFPs like the mushroom play an important role for the local population of tropical Africa like source of food, of drugs and of incomes (Kamou *et al.* 2015; Koné *et al.* 2013; Yorou *et al.* 2014). Yorou *et al.* (2002) demonstrated that the annual economic value of Wild Edible Fungi (WEF) accumulated over 15-20 years is higher than the one-time harvest of timber from native partner trees. As WEF represent a renewable resource that are yet under-utilised, there is a great potential to expand their use as a forest resource which can help promote the economy of local societies.

Our first project Rufford allowed us to know that mushrooms are very consumed in the region of Bassila. Also, the surveys in the forests during this same project and during the activities of this second project shown us that certain species are more and more rare and that the production of mushrooms is falling. These problems are related to the destruction of species' habitats by selective cutting of the partner trees of EcM fungi, overgrazing, extensive agriculture and bush fires.

Faced with these issues and considering the importance of mushrooms for the rural population, we decided:

- to teach rural populations about the cultivation of mushrooms: to reduce their dependence on natural resources and to provide them an alternative source of income;
- inform the populations about the mushroom flow markets produced;
- to reforest the degraded facies of forests in EcM trees;

The current report gives some details about these activities and comes at the continuation of part report previously sent.

## METHODOLOGY

The first activity carried out was by mutual agreement with a group of women from the village of "Baka Baka" to produce plants of *Afzelia africana*. This activity was launched in May 2019 and it is finally in September 2019 that we proceed to the reforestation of degraded forest facies. In the initial project, we planned to reforest facies of degraded forests in June to allow the plant to benefit of 4 months of rainy season to grow well. Unfortunately, the failures at the nursery allowed us to have seedlings in September. We therefore favour the degraded facies of gallery forests, which are wetter and cooler than other facies for reforestation.

At the same time, we started the construction of five mushroom bed in "bar land" in five different villages namely "Frignon", "Baka Baka", "Aoro", Adjiro, "Barikini" in March 2019. Unfortunately, the rainy season this year brought down two buildings that could not be rebuilt because of the limited funds. The seeds of the mushrooms (*Pleurotus ostreatus*) used during the training were bought at the Faculty of Agricultural Sciences of the

University of Abomey-Calavi. The training lasted 3 days and the substrate used was sawdust and rice straw. The training on sawdust substrates took place in June 2019. Fructifications of mushrooms were observed in July. The formations on rice straw took place in October because of the scarcity of this substrate in June and took place only in the village of Baka Baka. A total of 50 people were trained namely 15 in Frignon, 15 in Aoro and 20 in Baka Baka.

## RESULTS

The production of *Afzelia africa* seedlings allowed us to obtain 1,000 seedlings that we reforested in the Baka Baka forest gallery.

The training on mushroom production showed us that the production with the rice straw substrate gave more production than with the sawdust. In addition, the production with rice straw gave fruiting from 28 days whereas with rice straw, it is after 90 days. It would be more beneficial for local people to master the production of mushrooms from rice straw, which is easier, less exacting and more productive.

The following images highlight the activities made during the trainings and reforestation.



Team member during the pasteurization of the substrates; seeding sawdust & sawdust seeded





Rural population building mushroom bed & mushroom bed with fructification



Mushroom bed with fructification



Seedlings of *Afzelia Africana* produced



Team members doing the planting





Team member with the nursery & team member doing the planting.

### **Acknowledgement**

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