

## Final Evaluation Report

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Your Details	
<b>Full Name</b>	Emmanuel Opoku Acheampong
<b>Project Title</b>	Livelihood security of landless farmers after canopy closure: Introduction of non-timber forest products (NTFPs) in restored forests in Ghana
<b>Application ID</b>	32848-C
<b>Date of this Report</b>	19/10/2022

**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
Interplant 10 ha of the restored forest with NTFPs and 10 ha of a new area with assorted tree species and NTFPs.				About 6 ha of the restored forest were planted with NTFPs. However, the NTFPs planted in the fully canopied area did not survive due probably to the shade. 10 ha of new area have been planted with assorted tree species and about 3 ha have been interplanted with NTFPs.
Train farmers in NTFPs seedling production and transplanting.				Farmers were trained in the production of NTFPs – treating seeds, nursing seeds, maintaining nursery, etc.
Train farmers in nurturing NTFPs to maturity				Farmers are trained in the nurturing of NTFPs in their farms. The commitment of the farmers in the maintenance of their farms with the trees and NTFPs is promising.
Compare the survival rates of young NTFPs grown in the major raining season and that grown in the minor raining season				A small portion of land was used for this comparison. Minor season proved unreliable for growing NTFPs on the land.
Examine the survival and growth of NTFPs grown under canopied forest and in young trees for the purpose of extending the idea to other farmers				The survival and growth of NTFPs under canopied forest and amidst young trees were observed. Canopied forest is not ideal for the growth of NTFPs as most NTFPs will not survive under shaded area.

**2. Describe the three most important outcomes of your project.**

**a).** 10 ha of degraded area full of elephant grass have been planted with assorted tree species, including Emeri (*Terminalia ivorensis*), Mansonia (*Mansonia altissima*), Ofram (*Terminalia superba*), African mahogany (*Khaya grandifoliola*), Cedrela (*Cedrela odrata*), and teak (*Tectona grandis*). This has been a significant addition to the already reforested area.

**b).** For the first time since the deforestation and degradation of the area, non-timber forest products (NTFPs) have been introduced into the land. The farmers have learnt

and are still learning how to incorporate NTFPs into their farming practices for future benefits.

**c).** Landless farmers have benefitted from the newly planted 10 ha land. These farmers are now using the newly fertile land for their food crops while nurturing the young seedlings. Some of these farmers farmed on the already restored area for about five years and now enjoying the fertility of the new land due to canopy closer of their old land.

### **3. Explain any unforeseen difficulties that arose during the project and how these were tackled.**

- The rainfall pattern changed and disrupted flow and progress of work. The original plan was to start the plantings at the beginning of the major rainy season (phase 1 – 2021). The rains were however delayed and also inadequate. The planting schedule for the minor season (phase 2 - 2021) was therefore cancelled to avoid incurring more losses. The minor season was used to maintain the young seedlings.
- The germination rate of the NTFP seeds used to produce the seedlings was low. The seed bank of the Forestry Research Institute of Ghana (FORIG) and the Crop Research Institute of Ghana (CRIG) were out of stock for grains of paradise (*Aframomum melegueta*), black pepper (*Piper nigrum*), Aidan fruit (*Tetrapleura tetraptera*), and cloves (*Syzygium aromaticum*). Alternative sources (private merchants) were sought for these seeds. Due to the low germination rate, we resorted to purchasing seedlings for the planting instead. Seedlings of aidan fruit (*Tetrapleura tetraptera*), cloves (*Syzygium aromaticum*), coconuts (*Cocos nucifera*), mango (*Mangifera indica*), and pawpaw (*Carica papaya*) were purchased for planting to achieve the goal of the project.
- The project started amid galloping inflation in Ghana. Prices of items we used almost doubled but we managed to ensure that the project was carried out with a significant level of success.

### **4. Describe the involvement of local communities and how they have benefitted from the project.**

The project started with about 20 farmers in 2017. Over 30 farmers have so far benefitted directly and indirectly from the project. The newly planted 10 ha are being cultivated by both old and new farmers while some other old farmers are still farming in the previous areas that have not yet formed canopies. The farmers are reaping bumper harvests of maize, cassava, yam, cocoyam, plantain, and vegetables. Some of the farmers are already 5 years old on the land and are going to benefit from the land for at least another 5 years. This is a significant contribution to the livelihood improvement and development of the farmers.

Some of the farmers have been able to use the proceeds from the land to engage in other small-scale businesses to support their household wellbeing. So far, farmers

from four fringe communities are benefiting from the project in terms of education and training in best farming practices and harvesting proceeds from the land and generating significant amount of income.

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

I have plans to continue the project. I still have about 10 ha of the land allotted to me yet to be restored, and the remaining degraded land not allotted to me is more than 100 ha. I will use 2023 for maintenance and replanting the seedlings that did not survive. The subsequent years will be used for planting the remaining land but in bits in collaboration with the existing and new farmers.

Soon, if funds become available, I will extend the restoration project into the areas beyond my project land. My vision is to restore the entire degraded land in collaboration with the farmers in the local communities.

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

I have already published some manuscripts about my work through my PhD research. I have also been sharing updates about the work on social media. Through this, interested people and researchers have been contacting me for ideas about restoration projects, grant opportunities for projects, and the possibility of visiting my project site.

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

- Maintenance of the young seedlings is paramount to the success of the project. 2023 will be used mainly for maintenance and replanting of seedlings that did not survive.
- Different species of fauna have started inhabiting in the fully canopied area. Due to pollination and fauna movements carrying seeds of various plants, other native plant species have started growing in the restored forest. I will carry out future research to showcase the significance of restoration projects to biodiversity enrichment regardless of the extent of the restored land.
- I will be collaborating with other NGOs and funding organisations interested in restoration projects to continue this important project and also share my experience and ideas with young conservationists who will want to go into restoration projects.

**8. 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?**

- The Rufford Foundation was cited as the main funder of the project in my PhD thesis. James Cook University is aware of the financial contribution of The Rufford Foundation to my PhD research and development project.

- The Rufford Foundation was acknowledged as the main funder of the research related to this project in the manuscripts I have published. Not only this, but I also cited The Rufford Foundation as the main funder in all five manuscripts I published during my PhD research journey.
- The Rufford Foundation was acknowledged on my social media updates as the main funder of the project.
- The Rufford Foundation is listed as the main funder of the project at Environmental Conservation and Management Foundation website [www.ecomafghana.org](http://www.ecomafghana.org).
- Through this publicity, some environmentalists and conservationists have started engaging with The Rufford Foundation on environmental and conservation projects.

#### **9. Provide a full list of all the members of your team and their role in the project.**

**Mr. Donkor Tweneboa** – (Forest Manager, the then District Manager, Forest Services Division, Mampong-Ashanti): He oversaw all activities that were carried out on the project land, from the idea inception to date. Although he has been transferred to the capital city, he was still providing us with technical and professional advice due to his experience in restoration ecology.

**Mr. David Agyei** – (Forest Guard, Forest Services Division, Mampong-Ashanti): He is one of the forest rangers responsible for the Ongwam II Forest Reserve. He visits the farm and monitors the progress of the project anytime he is on a patrol mission.

**Mr. Samuel Agyei Sarpong** – (Field manager, local community member and personal assistant): He runs all the daily activities with me. He acts as the project implementer in my absence. He has been a farmer for over 15 years and skilled in the growing of various crops and been part of reforestation projects before. He has been very instrumental to the success of this project.

**Mr. Kudjoe & Mr. Gaaman** - Assistant field managers: These two assistants are part of the registered famers and assist the field manager in most of his activities. They are highly skilled farmers and always available on site. They organize the rest of the farmers for any communal work and report any incident to the field manager in his absence. They are very reliable and have been helpful in all aspects towards the success of the project.

The participating farmers. Over 30 farmers have participated in the project. Some participated for only one year, others have been part of the project since the beginning. All these farmers have contributed to the success of the project and have also had their livelihoods improved through their participation in the project.

## **10. Any other comments?**

The goal of the project for 2020-2022 did not include the maintenance of the previously planted area. However due to the commitment of the farmers, during their free days some organised themselves and carried out maintenance in areas of need.

My overarching ambition is to restore the entire 50 ha of degraded land allotted to me and extend the restoration work to the other degraded areas. I am fortunate to receive financial support from The Rufford Foundation to completely restore more than half of this land with additional restoration activities ongoing.

This project has already demonstrated to the Forestry Commission of Ghana that small-scale restoration activities in collaboration with local communities is highly effective. I hope to engage more environmentalists, conservationists, and nature-based organisations to carry out more of these restoration projects for the betterment of our environment and the organisms living in it.

This project has gained so much recognition and all thanks to the Rufford Foundation for making my idea a reality. Due to my experience and engagement with The Rufford Foundation through this project, engaging or collaborating with other organisations in carrying out similar projects will not be difficult due to the successes I have achieved.

I am very fortunate to have an effective and committed team to work tirelessly towards the project's implementation, even in my absence, and I strongly believe that the financial support from the Rufford Foundation has contributed largely to this success. THANK YOU TO THE RUFFORD FOUNDATION FOR YOUR KIND SUPPORT.

**Pictures below.**



Assorted trees.



Farmer nurturing seedlings.



Assorted trees & farmer nurturing young seedlings.



Fully restored forests.



Mix of trees and crops.



Native tree species.



Native tree species.



CNTFP young trees in farm.



CNTFP pawpaw in farm.



CNTFP Mango in farm.



NTFP Coconut in farm.



CNTFP Aidan fruit in farm.