

## Final Evaluation Report

Your Details	
<b>Full Name</b>	Agbatan Marc KOUTCHORO
<b>Project Title</b>	Development of agropastoral alternatives to promote the propagation of <i>Azelia africana</i> in Benin, a species threatened with extinction
<b>Application ID</b>	46195-2
<b>Date of this Report</b>	12/02/2026

**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
Train local communities on advanced nursery production and planting techniques for <i>A. africana</i>				Training sessions were successfully delivered to all targeted communities, with strong attendance and active participation. Demonstrations on nursery production, seedling management, and planting techniques were completed, and post-training evaluations showed that participants gained the expected skills and knowledge.
Develop biomass production techniques in nurseries using <i>A. africana</i>				The biomass production techniques were successfully designed, tested, and implemented in the project nurseries. There are now established nursery-based methods for producing fodder biomass using <i>A. africana</i> . The next step will be to share the results of this innovation with livestock farmers.
Implement awareness and environmental education programs focused on the conservation of <i>A. africana</i> and its habitats				Education sessions were effectively delivered through schools, community meetings, and radio programs, leading to strong local engagement and increased awareness.
Carry out reforestation actions in favorable habitats to increase the density of <i>A. africana</i> and ensure its				Reforestation activities were successfully carried out in favorable habitats. Transplanting was conducted in the Baka Biodiversity Conservation Sites

sustainability			(BBCS) of the University of Parakou, and monitoring of the seedlings is ongoing and will continue until Phase 2 of the project in order to evaluate the effect of developmental stage on the survival of <i>A. africana</i> seedlings in a natural environment.
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## 2. Describe the three most important outcomes of your project.

### a). Awareness and training of local communities

We organized five awareness sessions in five villages (Boko, Bétérou, Oubérou, Sinaou (1 et 2), Kika (1 et 2)), bringing together a large number of participants from different stakeholder groups, with an average participation of 30 people per village. Educational activities conducted in schools reached all students in the targeted establishments, and more than 1,500 schoolchildren were sensitized to the conservation of endangered species and their habitats. The use of appropriate communication materials, such as posters and message bearing T-shirts, strengthened the understanding of conservation messages, with an adoption rate estimated at more than eighty percent during participatory evaluations conducted at the end of the sessions.

The inclusive approach adopted to involve nomadic and transhumant herders helped reduce tensions related to access to natural resources. At least one group of mobile pastoralists per village was reached through itinerant awareness activities and radio broadcasts in local languages, which increased the outreach of the project.

The creation of volunteer groups in each village resulted in the training of at least ten members per locality in seedling production techniques, planting of threatened species, and assisted natural regeneration. These groups established secure sites where more than 5,100 seedlings of *A. africana* and *Khaya senegalensis* were produced and planted.

### b). Development of biomass production techniques in nurseries using *A. africana*

The harvesting technique had no significant effect on fodder biomass production in nurseries using *A. africana* ( $\beta = 0.05 \pm 0.01$ ;  $p = 0.69$ ). However, standing harvest while preserving terminal buds produced slightly higher biomass than clear-cutting after the first three leaves, with mean values of 0.70 t DM/ha and 0.65 t DM/ha, respectively.

Regardless of treatment, a gradual decrease in RGRh (relative height growth rate) was observed over time. However, the pattern varied between techniques. Under T2 (standing harvest while preserving terminal buds), RGRh remained close to zero and showed only a slight decline as the time interval between measurements (dt) increased. In contrast, under T1 (clear-cutting after the first three leaves), RGRh declined more sharply with increasing dt. These trends were confirmed by Student's t-test, which showed a significant effect of harvesting technique on RGRh in *A. africana* seedlings ( $t = 4.859$ ;  $p < 0.001$ ). For RGRd (relative diameter growth rate), no significant differences were detected between T1 and T2 ( $t = 1.186$ ;  $p = 0.236$ ). Both treatments

followed very similar trends, with a slight decrease in RGRd as dt increased but with minimal variation between treatments.

Harvesting frequency influenced leaf regeneration only when combined with technique T2 ( $\beta = 0.176 \pm 0.041$ ;  $p < 0.001$ ). On average, biweekly harvesting resulted in higher leaf regeneration in *A. africana*. In contrast, under technique T1, harvesting frequency had no significant effect on leaf regeneration ( $\beta = 0.073 \pm 0.041$ ;  $p = 0.072$ ). These findings highlight that standing harvest while preserving terminal buds, especially when performed every two months, is the most promising technique for optimizing nursery-based biomass production in *A. africana*.

### **c). Reforestation and Transplanting**

In partnership with OSGF (Ouémé Supérieur Gazetted Forest) managers and local communities, 1,800 seedlings of *A. africana* and *K. senegalensis* were planted in mixed stands in degraded habitats. Additionally, more than 3,200 seedlings of both species were planted in the fields of farmers surrounding the forest. 100 seedlings were also planted in schools and in the yards of nearby households. Follow up and maintenance of these seedlings are currently ensured by the NGOs *Numérique, Education et Développement Durable* (NEDD NGO), *SOS Svane*, the *Centre d'Études et de Recherches pour la Promotion des Initiatives Communautaires* (CERPIC NGO), and the Forest Office of Borgou. The transplanting of 360 seedlings of *A. africana* was also carried out in the biodiversity conservation sites of the University of Parakou.

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

No unforeseen difficulties arose during the implementation of the project. All planned activities proceeded as scheduled, and the project objectives were achieved without requiring major adjustments or corrective measures.

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

Local communities were actively involved in various stages of the project, including training on advanced nursery techniques, participating in reforestation activities, and attending awareness and environmental education sessions focused on the conservation of *A. africana* and its habitats. In addition, local community members served as guides for seed collection in the forests. Local authorities facilitated field access and helped organize the different project activities. Community members benefitted through the acquisition of practical skills in tree propagation and sustainable planting practices, increased environmental awareness, and opportunities to contribute directly to the restoration and management of local ecosystems. These activities also strengthened community engagement and ownership of conservation efforts, helping to ensure the long-term sustainability of *A. africana* in their area.

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

Yes, several measures have been developed to ensure the continuity of this project's activities. Additional funding will be sought to expand our agricultural innovations, particularly the production of forage biomass in nurseries using *A. africana*, in order to

make them accessible to local communities. Training participants received all the necessary knowledge and techniques to continue producing and planting seedlings of endangered species each year. Partnerships were established with conservation stakeholders, such as forestry officers and NGOs, to support cooperatives in producing seedlings and selling them during National Tree Day or reforestation campaigns, thereby generating income and promoting the sustainability of these practices. The long-term maintenance and monitoring of the planted seedlings have been entrusted to the Benin Forestry Office, which already manages the trees planted under our previous project. Monitoring is also continuing at the BCS of the University of Parakou to assess the effect of developmental stage on the survival of *A. africana* seedlings in a natural environment with limited anthropogenic pressure.

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

The results of this project will be shared widely with both the scientific community and biodiversity conservation stakeholders. A peer-reviewed open-access scientific article will be prepared and published to ensure that the project's findings are freely accessible to researchers and practitioners. The results will also be presented at national and international workshops and conferences to reach a broader professional audience. The final project report will be submitted to the Benin Forestry Office and partner NGOs, who will disseminate it through their information platforms to increase public awareness of *A. africana* conservation. The report will also be deposited in the library of the University of Parakou, where it can be consulted and used by students involved in biodiversity conservation projects. At the community level, key messages have been shared through posters and school activities. Visual materials, including photo reports and short videos, have also been produced and distributed via local digital platforms such as WhatsApp and LinkedIn (<https://www.linkedin.com/in/agbatan-marc-koutchoro-ba5713195/recent-activity/all/>) to further strengthen awareness and extend the project's outreach.

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

Moving forward, several strategic actions are required to consolidate and expand the impact of this project. Continued long-term monitoring of the transplanted *A. africana* seedlings is necessary to further evaluate the influence of developmental stage on survival under natural conditions. Scaling up the nursery-based biomass production techniques and integrating them into the activities of additional cooperatives will enhance both community livelihoods and conservation outcomes. Strengthening collaborations with the Benin Forestry Office, NGOs, and local communities remains crucial to ensuring sustained seedling maintenance and the broader implementation of best practices. Additionally, securing new funding opportunities and amplifying the dissemination of scientific and outreach outputs will contribute to the wider replication of the project's approaches and reinforce the conservation of *A. africana* across the region.

#### **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?**

Yes, the Rufford Foundation logo was used on all materials produced during the project, including posters, t-shirts, and other outreach tools. The Foundation was acknowledged as the main sponsor during all awareness and environmental education sessions, as well as during meetings with local authorities and project

partners. Its support was also highlighted in social media posts (<https://www.linkedin.com/in/agbatan-marc-koutchoro-ba5713195/recent-activity/all/>) and in local radio broadcasts covering the progress of the project, which helped increase the Foundation's visibility and promote its role in supporting biodiversity conservation efforts in Benin. In addition, the support of the Rufford Foundation will be acknowledged in the scientific article currently being prepared for publication in a peer-reviewed open-access journal.

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

**Agbatan Marc KOUTCHORO, MSc**

Project Coordinator. He supervised all project activities, ensured the timeline was respected, and managed the budget limits.

**Laurent G. HOUSSOU, PhD**, Associate Professor

His expertise made a significant contribution to the research protocol, as well as to the processes of restoring degraded habitats.

**Basile FAGNINOU and El-Amin LANIGNAN, BScs**

Data Collection Assistants. They participated in the collection of seeds and organic manure, as well as the installation and experimental monitoring.

**Jacques AGON, MSc**

Statistician-Biometrician. He contributed his experience to setting up the experimental design, as well as to data processing and analysis.

**Noël YAROU, MSc**

Nurseryman, President of the Sirarou Management Unit (co-management structure of the OSGF). He contributed to organizing awareness and training sessions for local communities, as well as to reforestation efforts.

**Boukari DOUDE**

UCOPER Focal Point (Communal Union of Professional Ruminant Breeders' Organizations), Sirarou. He was responsible for mobilizing herders (both settled and nomadic) for awareness sessions, leading workshops in the local language, and serving as the focal point for all project activities related to herders.

**10. Any other comments?**

We would like to sincerely thank all project partners for their invaluable support throughout the project. This includes the Rufford Foundation for financial support, the LEB Laboratory of the University of Parakou as the hosting research laboratory, local authorities, NGOs, and community cooperatives. Their collaboration was essential to the successful implementation of project activities and the achievement of the project's objectives.

**ANNEX – Financial Report**  
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