Final Evaluation Report

Your Details	
Full Name	Cornelius Mulili Kyalo
Project Title	Improving the Conservation Status of African violets in Coastal Kenya: expanding community-centered efforts towards Threats' reduction, Habitat Restoration, & Species Recovery
Application ID	36957-2
Date of this Report	27/6/2023

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
Objective 1: Initiating habitat restoration in the species distribution			■	• Two indigenous tree nurseries were established. • Approx. 3000 indigenous seedlings were propagated in the nurseries. • We trained the landowners of Cha Simba, Mwarakaya and Kachororoni habitats on agroforestry to minimise logging. • A total of 1160 indigenous tree seedlings were transplanted in Cha Simba and Mwarakaya habitats (starting with covering the perimeter of the habitats). • Due to the dry conditions prevailing in Kachororoni, we could not transplant any seedling there. • We mapped degraded patches within the habitats that we plan to target for reforestation during the next phase. • Site protection and more tree planting is required. • There is need to introduce alternative sources of livelihood.
Objective 2: Initiating the species recovery process			■	• A propagation centre was constructed to nurture African violet seedlings and conduct mass propagation. • We have propagated over 1200 African violet seedlings. • We rescued over 700 new African violet recruits from unsuitable areas in the wild and provided nurturing in the propagation centre. • We established the first *in-situ* recovery site and transplanted 100 African violet plants - the seedlings are doing well one year down the line. • We could not take the seedlings back

				into the populations due to poor habitat conditions (we are working on rehabilitating the habitats first). • We have identified other in-situ sites with the potential to host the African violets - we plan to use the seedlings in the propagation centre to create more in-situ recovery sites in the next phase.
Objective 3: Monitoring of recruitment/survival rates in African violets				• We identified 12 observation plots (four in each population) for monitoring the recruitment vs survival. • Monitoring activities were conducted in two seasons: wet (May - July) and dry (Feb - March) for comparison. • The populations exhibited high recruitment of new individuals during the wet seasons (Mbololo - 1485, Mwarakaya - 875, and Cha Simba - 288) • The survival rate of Mbololo was highest (68.3%) possibly due to its official protection (degradation is low), Cha Simba had 11.2%, while Mwarakaya had 7.1%. The low survival rates witnessed in Cha Simba and Mwarakaya highlights the threat facing the continuity of the generations/genetic pools unless urgent follow up is taken. • 70% of the rescued recruits survived in the propagation centre. • Thus, there is need to rescue new recruits and nurture them in the propagation centre until they can withstand harsh conditions *in-situ*.

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

a) We propagated over 1200 African violets seedlings in the propagation centre - one of the challenges affecting the future survival of African violets in the wild is the limited ability of new recruits to survive in the wild during the early stages. Knowing this, we propagated seedlings using leaves and also rescued new recruits that could have died of harsh conditions and nurtured them in the propagation centre.

b) We launched habitat restoration activities - since the African violets are highly hit by loss of ideal ecological conditions (due to degraded habitats, especially loss of vegetation), habitat restoration is one of the key

approaches to reverse this trend. Therefore, we established two tree nurseries, worked with the local communities to collect seeds, propagate them (we now have over 3000 indigenous tree seedlings), and transplanted 1160 seedlings in two habitats (creating a perimeter wall as a baseline for mass tree planting).

c) **We established the first ever in-situ recovery site** - as the extant populations of the African violets continue to face threats from all corners, conservation of this species should encompass diverse approaches. Last year when a limestone project was proposed to dismantle Cha Simba habitat (for cement), it was a wake-up call that one day we could witness harsh reality of losing one of the most iconic plant species in coastal Kenya. Thus, it is wise to preserve the gene pools in diverse habitats that are protected and safe. Here, we established the first *in-situ* recovery site and transplanted 100 individuals in the first batch that are now being monitored. One year down the line, the plants are doing well, and this is a model for more recovery sites we will establish in the next phase.

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

Drought - first, our work was challenged by drought conditions in some populations. Kachororoni population did not receive any rain despite the other sites experiencing substantial rains. Therefore, while we were conducting tree planting activities in Cha Simba and Mwarakaya, we could not plant trees in Kachororoni. However, we decided to focus on protecting the already available trees (we took this opportunity to create community awareness highlighting the dangers of charcoal trade), halting further degradation.

Emerging mining threat - during this project, a threat that could possibly wipe out Cha Simba population came up. Early last year (2022), an investor proposed to mine limestone in Cha Simba rocks, a vital refuge for African violets and more than five other endangered plant species. Unfortunately, the proposed project did not do thorough Environmental Impact Assessment to understand the area, or rather ignored the biodiversity aspect. As a result, we launched an objection campaign (led by conservation NGOs such as Nature Kenya, Cave Exploration Group of East Africa, National Museums of Kenya, among others). Having worked for years in saving the African violets, I submitted my comments/contributions on that course, and we managed to halt the proposed project.

Opposition by some local landowners - despite conducting awareness among the locals, some landowners within the target sites were yet to agree their parcels to be rehabilitated through tree planting, with some demanding for compensation for trees to be planted. However, we involved the local Chiefs who talked to the locals, and organised engagement workshops where all queries were answered/deliberated. Today, 90% of the landowners are at the fore front of restoration activities.

4. Describe the involvement of local communities and how they have benefited from the project.

To ensure a smooth implementation of our project, the local communities were the centre of operations to build their capacity as environmental stewards. First, we briefly introduced our project focus to the communities, touching more on the biodiversity potential of the habitats (highlight on the endemic and threatened species, species of conservation concern, rare species, etc.), and emerging threats facing the habitats (including human-induced threats, majorly expanded maize farms and limestone mining). Afterwards, the locals donated parcels of land for nursery establishment, constructed the nursery structures (guided by the project leader), and are now managing the nursery activities. Thus, through our interaction during this project's implementation, the local communities have benefited highly in the following areas.

- We have built their capacity on environmental conservation - they are aware of how important their environments /lands are, how to minimise degradation, and best agricultural practices.

- We have motivated/supported them to register development groups - during the first round, we registered an environmental Community Based Organization (CBO) and recently, as a way to promote ecotourism, we registered Cha Simba Caves Association to enhance the protection of Cha Simba through comprehensive management.

- Short-term employment - during our project implementation, we worked with local community members (local guides, nursery attendants, seed collector, etc.) for a number of days, earning them some income.

- Nature-based livelihoods - the established nurseries serve as sources of income for the locals through the sale of seedlings. Further, we discussed with them the possibility of starting beekeeping activity and identified suitable areas for implementation whenever more funding is available.

5. Are there any plans to continue this work?

Yes, I am motivated to apply for the next round of funding (1st Booster Grant) to achieve the identified prospects arising from the previous project. During the second Rufford project, the following conclusions /gaps are made/identified.

- Limestone mining is a recurrent threat (need thorough campaign/regulation).
- Forest restoration is urgent.
- There is need for a comprehensive conservation/management plan of the target habitats.
- Direct nature-based incentives are a priority.

To tackle these gaps/prospects, we wish to continue with this work targeting the following approaches; establishment of more *in-situ* recovery sites for the African violets in suitable habitats (the natural habitats are still highly threatened by mining

interests, thus the need to preserve the species in diverse safer areas), expand and intensify restoration efforts focusing more on other endangered plant species (the target habitats host a number of threatened, endemic, and rare plant species that need to be prioritised for conservation), and promote/establish alternative and nature-based sources of livelihoods (to reduce pressure on natural forests). Further, future projects, ought to take into consideration the aspect of African violets seedling recruitment (how to ensure they are rescued and nurtured under protection to be able to withstand wild conditions), and protection /management of the target sites (establishment of Community Forest Associations - CFAs).

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

a) During the project implementation, it was clear that the local communities have a zeal to learn the names of plants found in their localities. Therefore, we plan to produce posters and guidebooks highlighting the photos, local, common and scientific names of the plants and ethno-botanical value. This is expected to enhance conservation of those plants and minimise logging.

b) We will also share the results/technical report of this work with our partners (Dryland Biodiversity Consultants, Nature Kenya, and National Museums of Kenya) for feature in their social media pages for public consumption.

c) I plan to present the work in regular workshops in Nature Kenya and National Museums of Kenya to raise public awareness.

d) Finally, we wish to publish the work in a peer review journal, highlighting the journey so far and our achievements towards the African violet's conservation.

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

In as much as the completed project has contributed greatly to the conservation of the endangered African violets in Kenya, the focus is now shifting in the habitat-based direction that need more efforts. Importantly, we need to move forward prioritizing the following.

- Establish more *in-situ* recovery sites for the African violets in suitable habitats (to preserve the species in diverse safer areas).

- Expand and intensify restoration efforts this time incorporating other endangered plant species (the target habitats host a number of threatened endemic, and rare plant species that need to be prioritised for conservation).

- Promote/establish alternative and nature-based sources of livelihoods such as bee keeping (to reduce pressure on natural forests through income generation).

- Develop a 'rescue-nurturing' program for the African violets (to ensure the new recruits are rescued and nurtured under protection to be able to withstand wild conditions).

- Develop a protection /management plan of the target sites (establishment of Community Forest Associations - CFAs).

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 logo was used in data collection forms, publicity material (t-shirts and banners), and regularly mentioned during the training seminars as a way of acknowledging the foundation for financial support.

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

Dr. Cornelius Mulili Kyalo - the project Principal Investigator/coordinator tasked with coordinating all project activities (permit acquisition, materials preparation, project management, community training, leading field investigations, report writing, financial management, and creating partnerships with relevant stakeholders.

Ms. Cynthia Kinyoe - the project assistant tasked with leading nursery establishment, seedlings propagation, community awareness (training team members), and habitat restoration.

Mr. Kalume Nasoro - A local administrator (Chief) who played a role in creating community rapport, ensured security of the project team, and introduced us to community groups.

Mr. Chilumo Mwangambo - a village elder and a project team member who played a role in mobilizing the locals, training other local members, hosting tree propagation initiative, organizing seminar venues.

Mrs. Agnes Bongo - a project team member, data entry into field sheets, field survey guide, and mobilized local members into seminars (especially women).

Ms. Margaret Mpenzwe - a youth leader, project team member, a trainer on biodiversity conservation, played key role in mobilizing the youth, data collection, team leader, and involved in propagation of the African violets.

10. Any other comments?

On behalf of the entire project team, I would like to thank The Rufford Foundation for their great financial support towards the conservation of African violets. We began this journey with a 1st Rufford Small Grant (laid a foundation for the conservation of African violets), moved to a 2nd Rufford Small Grant (where we have made greater strides in the rescue of the critically endangered species). The conservation journey is now gaining pace and more stakeholders are getting aware and exhibiting interest,

and we wish to continue this partnership with the Rufford Foundation and advance our work towards a comprehensive habitat approach that will benefit more than 10 threatened plant species.

African violet plants growing on rock crevices in Mwarakaya population. © Cornelius M. Kyalo