Final Evaluation Report

We ask all grant recipients to complete a project evaluation that helps us to gauge the success of your project. This must be sent in **MS Word and not PDF format**. We understand that projects often do not follow the predicted course but knowledge of your experiences is valuable to us and others who may be undertaking similar work – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please DO NOT fill in and submit this form until the project has been completed.

Complete the form in English. Note that the information may be edited before posting on our website.

Please email this report to jane@rufford.org.

Your Details	
Full Name	Nora Gavin-Smyth
Project Title	Ex situ conservation nursery for Tanzania's Eastern Arc Impatiens
Application ID	38059-1
Date of this Report	Dec 4, 2025

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
Establish conservation germplasm reserves of at least 3 endangered Impatiens species			X	We have established germplasm reserves of seven *Impatiens* taxa. All collections were made as tissue cuttings and were established by planting directly in the soil. For each species, at least 3 individuals were collected from different localities. Plants were collected by 4 members of TAFORI staff, the TFS officer, and Nora. One collection was made by the TFS officer alone and he brought it to the shade house for TAFORI to plant and accession. 1) *I. engleri subsp.* engleri (near threatened) *2) I. sp. aff nana* *3) I. mazumbaiensis* (Endangered) *4) I. pseudoviola* *5) I. raphidothrix* *6) I. sodenii* *7) I. usambarensis* (Endangered) There has been no attrition of any collections, except for *I. sodenii* which we have had to repropogate a few times (probably had been watering it too much, care has since been adjusted). We were not able to locate a local population of *I. teitensis*
Improve understanding of Eastern Arc Impatiens biology		X		We have established ex situ collections of *Impatiens* and we now have the plant resources to begin research on seeds, reproductive biology, etc. As of

				yet, we do not have a student to work on the research, or a staff member to work on this. This is probably due to lack of specific funding for a student to do research. Nora has written this activity into several postdoc proposals (waiting for funding decisions) to carry out this research with TAFORI staff.
Outreach in local communities		X		We have established the shadehouse and have constructed a stone pathway for visitors to walk around the space. We have installed attractive slate signage for each collection. Visitors have included government employees, visiting researchers, and classes from the local university. Visitors are given tours and TAFORI staff share the ex situ conservation goals of the shade house.
Building local conservation capacity		X		Six members of TAFORI staff attended two days of training, workshop, and 2 field trips covering Impatiens biology and ecology, ex situ conservation, live collection recordkeeping and curation. They then managed the shadehouse curation and maintenance nearly entirely independently.

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

a) Seven *Impatiens* species from the West Usambara mountains are established in ex situ cultivation

b) TAFORI staff are trained and have demonstrated capacity to maintain ex situ collections, and to accession new collections.

c) We established a top quality shade house with galvanized steel frame, which is beautiful and well equipped for visitors and for growing rare plants.

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

Setting up irrigation has been a challenge. The water supply is unpredictable, and we have to set up a permanent connection to fill a reserve water tank. We also wanted to set up misters that can be automated to improve the moist environment in the shadehouse. The fixtures for the irrigation are in place, however it was not possible to get enough pressure with the current system to have the misters operate. In response to this challenge, the TAFORI staff has committed to a hand watering schedule.

Once the plants were established, the TAFORI team met a challenge in transplanting and spreading the plants out within the shade house space. In response to this challenge, I (Nora) visited the shadehouse again to deliver additional training for this next step.

An additional challenge has been slug infestations, which TAFORI staff have taken care of with slug treatment and by installing a zipper to the door to keep pests out.

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

The TAFORI staff has demonstrated capacity to manage ex situ conservation collections. They have problem solved on their own, and they have trained new staff members in the shadehouse upkeep and daily maintenance. They have shown dedication and careful attention to these rare plants. They have also learned about *Impatiens* and now know how to identify these plants, even by vegetative characters, and have demonstrated this in the field.

5. Are there any plans to continue this work?

We plan to continue this work indefinitely, and we hope to grow the project. Now that I have earned my Ph.D. I am looking for opportunities to continue this research and my proposals all include extending the Lushoto shadehouse project.

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

I have shared the results of this work in public presentations including presentations at Chicago Botanic Garden, the Botany conference in Boise Idaho July 2023, International Botanical Congress Madrid July 2024. I plan to continue sharing this in any public presentation I give.

I am currently searching for a permanent research position, after completing my PhD in November 2024, and I have applied for postdoctoral fellowships that would include a focus on reproductive biology and seed biology of the *Impatiens* in the shadehouse as part of my research program. Additional funding and resources (including my time in Tanzania) will be necessary to complete the research aspect

of this project, but once we are able to study reproductive biology and seed germination with the collections the results will be submitted for publication in a journal and data submitted to the Millenium Seed Bank Partnership.

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

The next steps should include improving irrigation, with the use of a pressure pump. We should also continue to add collections to the shadehouse. I recently learned of a new record of *Impatiens keilii* in the West Usambara. We should target and accession this 8th *Impatiens* species. We should also introduce new *Impatiens* shadehouses to other locations in the Eastern Arc to get different species into local ex situ conservation, and to involve more local conservation professionals. We are currently pursuing more funding to do research with the collections.

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?

During every presentation in which I (Nora) talked about the shadehouse, I named Rufford Foundation as the funder of the project, and the Rufford Foundation logo was featured in the slides.

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

- Nora Gavin-Smyth, manages grant resources, manages training, provides Impatiens expertise.
- Franklin Bomani, manages research center and staff. Mr. Bomani has been promoted to Dr. John Mwambo's position of Centre Director. Dr. Mwambo was promoted to a position at TAFORI headquarters in Morogoro, Tanzania in 2023, and he has now left TAFORI to work at Tanzania Forest Fund.
- Josephina Kajembe, project manager for shadehouse. Monitors shadehouse, manages recordkeeping, accessioning, and staff members who work in maintenance and upkeep.
- Agness Kyssima, facilitates some project management and logistics.
- Amina Athumani, daily shadehouse upkeep and maintenance.
- Dr. Henry Ndangalasi, research advisor.

10. Any other comments?

TAFORI staff has shown exceptional commitment and care to this project.

ANNEX – Financial Report

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