Establishing a Participatory Landscape Conservation Strategy for *Dendrosenecio cheranganiensis*, *Polyscias kikuyuensis* and *Galega lindblomii* in Cherangani Forest (43988-1)

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Olgah Hellens

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1. Executive Summary

This second progress report documents the substantial progress made toward conserving three endangered and endemic species of the Cherangani Forest: *Dendrosenecio cheranganiensis*, *Polyscias kikuyuensis*, and *Galega lindblomii*.

Since inception, the project has:

- Completed reconnaissance and ecological zonation of the Kipteberr Forest Block.
- Established 10 permanent sampling plots and mapped 63 individuals of the target species.
- Established 6 plots for targeted propagation and assisted natural regeneration.
- Initiated propagation trials in three nursery beds, achieving an average 45% germination rate of *Polyscias kikuyuensis*
- Formed a Local Environmental Action Group Network (LEAGN) of 24 members (50% women, 33% youth).
- Conducted community sensitization workshops and participatory training sessions, embedding gender-responsive and knowledge-sharing approaches.

The project is on track to deliver its intended outcomes, with strong community ownership, institutional support from KFS and KEFRI, and promising ecological results.

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2. Activities Completed

a) *Forest survey and assessment of target species:* The project has successfully demarcated 10 permanent sampling plots (50m × 50m) across diverse microhabitats within the Kipteberr Forest Block. These plots now function as long-term ecological monitoring stations for the targeted species, enabling consistent data collection on population dynamics, habitat conditions, and regeneration trends. From these plots, six priority planting zones were identified using a multi-criteria approach for targeted propagation and assisted natural regeneration.

b) *Nursery establishment and propagation trials*: Three dedicated nursery beds were successfully established at the Cherangani Forest Station, following technical consultations with KFS experts. Early trials have yielded encouraging results for *Polyscias kikuyuensis*, which recorded a germination success rate of 35%, resulting in the production of approximately 200 healthy seedlings to date. However, propagation of *Dendrosenecio cheranganiensis* and *Galega lindblomii* has proven more challenging. The primary constraint has been the limited availability of viable seeds and wildlings, given the species' restricted distribution and low natural reproductive output. Vegetative propagation using stem cuttings was initiated; however, results have been inconclusive so far, with low rooting success and poor survival rates.

c) *Community sensitisation workshops:* The project conducted a series of community sensitisation workshops emphasising the role of these endemic species as indicators of forest health and biodiversity, while also equipping participants with practical skills for restoration.

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3. Preliminary Findings

Habitat Condition: The three target species were found to be confined to fragmented, moist high-altitude microhabitats ranging between 2,600–3,000 meters above sea level. These habitats include swampy meadows, shaded stream banks, and montane grassland fringes, each offering distinct ecological niches. Across the sampling plots, a total of 63 individual trees were identified and geo-tagged:

- *Polyscias kikuyuensis:* 31 individuals
- *Galega lindblomii:* 18 individuals
- *Dendrosenecio cheranganiensis*: 14 individuals

Community Engagement: Local communities demonstrated a strong willingness to participate in restoration activities. Polyscias kikuyuensis, in particular, emerged as a preferred species due to its traditional use in home construction. Community members not only contributed labor and local knowledge but also expressed interest in a long-term stewardship role, positioning restoration as both an ecological and livelihood-enhancing initiative.

Figure 1: Target species identification and tree planting activity

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4. Challenges and Mitigation

While Polyscias kikuyuensis has ultimately shown strong propagation potential, the project's initial trials faced setbacks. The first batch of seeds was collected during the rainy season which reduced the seed viability due to excess moisture and premature fruiting. As a result, germination rates were significantly lower than expected, delaying nursery establishment and disrupting the planting calendar. The team conducted a second round of seed collection during a drier window, targeting mature fruits with higher viability.

The most persistent challenges faced by the project has been the collection of viable seeds and wildlings for Dendrosenecio cheranganiensis and Galega lindblomii. Both species are naturally rare, with fragmented populations confined to inaccessible high-altitude microhabitats. Their limited reproductive cycles and low seed output have made seed collection extremely difficult. Despite support from local guides and KEFRI experts, the team was unable to locate sufficient mature fruits or viable wildlings for propagation. This constraint has directly impacted nursery productivity and slowed the scaling of restoration efforts. The team initiated vegetative propagation trials using stem cuttings, although early results showed low rooting success and poor survival. The team has opted for in-situ conservation by identifying natural populations and demarcating a 35m × 35m area around them to protect the species and enhance natural regeneration.

Figure 3: Second batch of seeds and wilding collected

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5. Lessons Learned

Early propagation trials revealed that seed viability is highly sensitive to ecological timing. The initial failure of *Polyscias kikuyuensis* germination due to seed collection during the rainy season highlighted the importance of aligning seed harvesting with dry-season maturity. Subsequent trials using wildlings and dry-season seed batches showed significantly improved outcomes. Dendrosenecio cheranganiensis and Galega lindblomii require specialized microclimates and have limited seed availability, making them less responsive to conventional propagation methods.

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6. Next Steps

- Continue monitoring natural regeneration and survival in assisted natural regeneration plots.
- Conduct final participatory zonation meeting for restoration.
- Develop and publish Standard Operating Procedures (SOPs) for species propagation.

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7. Strategic Conservation Impact

By focusing on *Dendrosenecio cheranganiensis, Polyscias kikuyuensis, and Galega lindblomii,* the project has elevated the conservation profile of species that are rarely prioritized in mainstream restoration efforts. The project has successfully embedded conservation within local livelihoods by training community members in nursery management, species identification, and monitoring. The integration of community transformed restoration from a technical exercise into a community-owned initiative.

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8. Conclusion

The project is on track toward achieving its conservation and community engagement goals. Field results confirm the ecological importance of the Cherangani ecosystem and the feasibility of community-led restoration. Continued focus on gender inclusion, data validation, and sustainability planning will ensure the project delivers meaningful long-term conservation impact.