



COMMUNITY-BASED LANDSCAPE RESTORATION PROJECT

Seeding Change: Strengthening Resilience through Agroforestry

Organization: Conservation through Poverty Alleviation, International (CPALI)
EIN: 87-0713649
Project Name: Seeding Change: Strengthening Resilience through Agroforestry
Project Start: September 2024
Estimated Project Duration: 2 years
Fundraising Target: 50,000 USD
Location: Madagascar
Project Director: Rachel Kramer, CPALI Executive Director
Project Leader: Mamy Ratsimbazafy, SEPALI Madagascar Director

About Conservation through Poverty Alleviation, International (CPALI): CPALI is a 501(c)3 non-profit organization that connects people and nature in a mutually beneficial way. Our mission is to advance local nature-based innovations that strengthen the resilience of communities and ecosystems bordering Madagascar's largest remaining rainforest. Our work centers on three goals: enhancing livelihoods, advancing landscape restoration, and elevating Malagasy arts and culture with global audiences.

How We Work: More than 1% of the world's biodiversity is represented within an isolated region of northeastern Madagascar. Here, farmers and artisans are engaging in a new kind of conservation initiative: wild silk production. We work together to restore degraded lands with native trees and understory plants. These become the host plants for seven species of endemic silkworm, whose cocoons are harvested and used to create unique, wild silk textiles. Raffia and natural plant dyes are also harvested by participating farmers for sale. This unique enterprise gives both farmers and artisans the opportunity to earn a living wage in one of the world's ten poorest countries.

Project Goal: Under this project, CPALI's local sister organization, SEPALI Madagascar, will work with local farmers in four rainforest-bordering communities to restore up to 400 hectares of land with 15 species of native tree and understory plant that provide biodiversity benefits while helping to lift families out of poverty. The goal for this project is to establish four local tree nurseries and plant 40,000 native trees in mixed-use agroforestry systems.

Background: From 2010-2014, our initiative worked with 360 farmers to plant 45,000 native trees in local rainforest-bordering agroforestry systems. In that period, reforestation efforts focused on a single native tree species whose local name is *Talandoha* (*Polyscias bakeriana*). This tree is a native host plant for the endemic Suraka silk moth (*Antherina suraka*) that lives nowhere else on earth. By collecting



and selling silk from wild Suraka moths in a process developed by CPALI's founders (a US evolutionary biologist and Malagasy entomologist), the moths are able to fly free and continue their life cycle while farmers earn essential supplemental income to support their families.

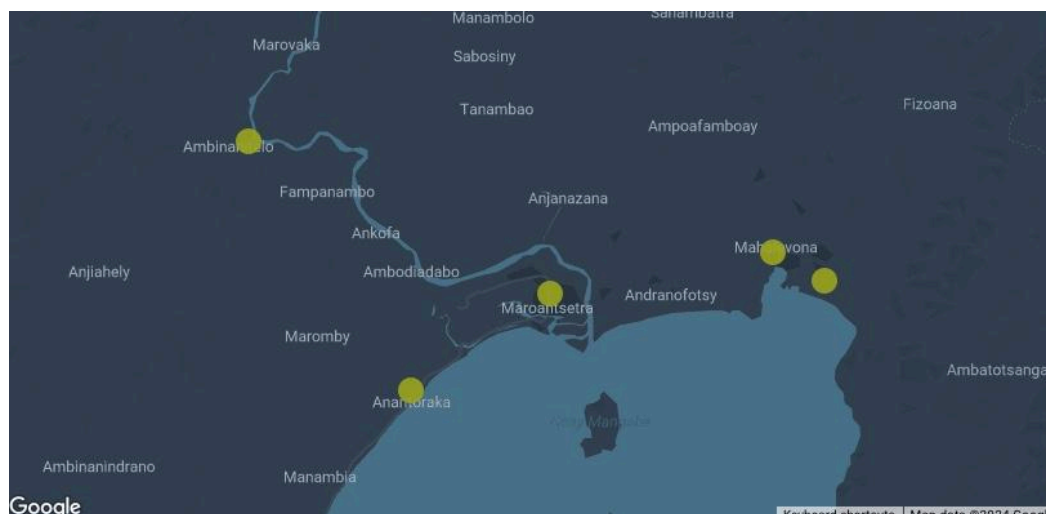
After integrating this native host tree into participating local agroforestry systems, enough supply of wild silk cocoons has been available to support the growth of a new local art form by area artisans. These stunning wild silk textiles are beginning to be valued far beyond the island of Madagascar.

Project Description: Having tested and proven this concept, our initiative is ready to expand to support rearing additional species of wild silk moths and restoration with other native host plants, at a larger scale. In our next phase of activity beginning in September 2024, we seek resources to cultivate 15 species of native tree and understory plant that are host for seven species of wild silk moth, in addition to a range of native plants used for natural dyes and fibers. As well as providing important economic benefits to farmers, many report that the native species in our next planned phase of restoration play important roles in the local ecosystem. These include fruit production for local birds, canopy connectivity that helps lemurs and other wildlife to move through farmers' agroforestry plots, and other environmental co-benefits.

Project Location: The team will work in forest-bordering communities on the edges of Makira Natural Park and Masoala National Park in northeastern Madagascar (see Figure 1) that have been engaged in silk rearing programs since 2010. This new agroforestry effort will initiate in 2024 with the establishment of tree nurseries and farmer enrollment in two communities, scaling to two more in 2025, as outlined in Table 1, below.

Table 1 / Figure 1. Local communities with planned tree nurseries and map

Year	Community	Location
2024	Mahalevona	Border of Masoala National Park
	Masindrano	Border of Masoala National Park
2025	Ambinanitelo	Border of Makira Natural Park
	Anatoraka	Border of Makira Natural Park



Focal Native Species in the Agroforestry Program:

Malagasy Name	Scientific Name and Family	Priority	Type of Native Plant	More Information about the Species
Talandoha	<i>Polyscias bakeriana</i> , ARALIACEAE	Host plant of the Suraka silkworm	Fast growing tree	This species improves the soil quality. It is a good species to intercrop with vanilla farming. The fruit also provides food for native birds.
Vandrobanga	<i>Plactaneaia elastic</i> , APOCYNACEAE	Host plant of the <i>Ceranchia</i> silkworm	Vine	This species is characteristic of primary forest and supports connectivity between forest patches, helping wildlife move through the landscape.
Rotro	<i>Eugenie</i> , MYRTACEAE	Host plant of the comet moth, <i>Argema mittrei</i>	Hardwood tree	This tree is near threatened. Local people rely on the tree for home and furniture production.
Lalona	<i>Weinmannia</i> , CUNONIACEAE	Another host plant of the Comet moth, <i>Argema mittrei</i>	Hardwood tree	This tree is near threatened. Local people rely on the tree for home and furniture production.
Hintsina	<i>Intsia bijuga</i> , FABACEAE	Host plant of the <i>Deborrea</i> silkworm	Hardwood tree	Conservation status: Near Threatened (IUCN Red List). Local people rely on



				the tree for home and furniture production. The leaves of this tree are harvested for a natural pigment that dyes silk textiles dark brown.
Lombiro	<i>Rhopalocarpus</i> , <i>SPHAEROPALAC EAE</i>	Host plant of the <i>Hypsoides singularis</i> silkworm	Hardwood tree	The fruit of this tree species feeds lemurs and birds. It also has local uses for house construction and furniture.
Gavy be	<i>Psidium gayave</i> , <i>MYRTACEAE</i>	Host plant of the <i>Boroceras</i> silkworm	Edible fruit tree	Local people eat the fruits of this tree.
Arongana	<i>Harungana madagascariensis</i> , <i>HYPERICACEAE</i>	Natural dye	Hardwood tree	This tree is used locally as a medicinal plant as well harvested for a natural black dye for silk textiles.
Hazovola or “palissandre”	<i>Dalbergia</i> , <i>FABACEAE</i>	Natural dye	Hardwood tree	Conservation status: Endangered (IUCN Red List). The tree can be used for natural brown dye for silk textiles.
Nanto	<i>Mimusops</i> , <i>SAPOTACEAE</i>	Natural dye	Hardwood tree	This tree can be used for a pink to red natural dye for silk textiles.
Raffia	<i>Raffia fariniera</i> , <i>ARECACEA</i>	Plant fiber	Palm tree	The fiber of this tree is useful for artisanal purposes such as weaving. The leaves are used widely for house construction.
Rambo	<i>Pandanus conatus</i> , <i>PANDANACEAE</i>	Plant fiber	Palm tree	This species is useful for a variety of local artisanal products.
Vontro		Endemic forest species	Palm tree	This palm is useful for artisanal and leaf-roof construction.
Ravenala	<i>Ravenala madagascariensis</i> , <i>STRELITZIACEAE</i>	Plant fiber	Palm tree	Useful species for house construction, water cleaning, preventing soil erosion.
Bamboo (multiple)	<i>Bambousa vulgaris</i> ,	Construction	Local bamboo that only	Used to substitute for wood in local house construction. Good for



species native to Madagascar)	<i>Cathariostachys, Valiha diffusa</i>		exists in the Makira forest	combating soil erosion. The young shoots of certain species are edible.
-------------------------------	--	--	-----------------------------	---

Project Logframe:

Outcome	Outputs	Activities and methodology
OUTCOME 1: 200 - 400 hectares of community land restored (depending on funding and local participation)	Output 1.1: Spread awareness and organize local farmers to participate	Field missions to spread awareness and register interested farmers in the program.
	Output 1.2: Establish a demonstration site in each village (up to 4)	Set up plant nursery sites that consist of 10,000 seedlings per site (40,000 total) in biodegradable bamboo containers (Figure 2); seed collect and germination.
	Output 1.3: Train in native species agroforestry techniques	Edit a manual training guide on the nursery program and agroforestry initiative.

Expected Project Timeline:

Activity	Month (2024-2025)											
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Register up to 400 interested farmers												
Set up demonstration site in each village (4); 10,000 nursery plants per village												
Tree plantation												

Project Sustainability:

The goal is to produce different species of seedlings to restore degraded areas along the borders of the Makira and Masoala protected forests. To do so, all registered farmers that contribute to setting up the program nurseries will receive free seedlings. Non-registered farmers will purchase the seedlings at reasonable price.



The revenues of these seedling sales will support unseen nursery costs.

Delivery Team:

Local SEPALI team members involved in the project:

- 1- Program lead
- 2- Newly-recruited employee for awareness-raising with farmers
- 3- Nursery worker and natural dye expert
- 4- Nursery maintenance
- 5- One local demonstration site manager in each village (4)
- 6- Seed collector

Budget:

The 50,000 USD fundraising target for this project will facilitate purchase of the materials listed below, fund local salaries, project direction, and wider costs associated with delivering CPALI's mission.

Project-specific materials and costs (adapted to total number of participating farmers):

Activity	Supplies	Quantity
Materials	Camping supplies	4 tents 4 sleeping mats
	Farming tools	5Machettes per village 5 watering cans per village Shovels
Farmer registration	Field mission to each village (transportation of 4 team members)	3 times in the 4 villages
Setting up demonstration sites	Renting each demonstration site	1 site per village/12 months
	Renting each SEPALI village house/office	1 office per village/12 months
	Bamboo seedling containers	40,000 handmade nursery pots
	Bamboo and roof leaves	10 bamboo and 5 packages of ravinala leaves
	Compost	10 cubic meters per village nursery in 4 villages
Tree plantation	Transportation of seedlings to farmers' lands, including hiring local porters	400 sites served



	Field mission to collect data during plantation	2 field missions per village (4 villages)
Seed collection (where needed. seed purchase from local villagers)	Field missions	4 collection missions

Figure 2. Preparations for project launch: Hand making biodegradable bamboo tree nursery pots (August 2024)



Measuring Impact and Success:

- Each farmer's land will be visited by the SEPALI local team, GPS mapped, and photographed before and after restoration.
- A survey of the evolution of the planted sites will be performed every two years.
- The economic impact of this project is expected to be seen a few years after the agroforestry activities are completed.
- Success will be measured by the number of farmers earning supplemental income from selling sustainably-harvested wild silk, natural plant dyes, and fibers. Qualitative data on transformative impact will be collected through discussions with farmers.