**Community Reforestation in the Ranobe spiny forest region SW Madagascar**

# Restoring biodiversity while improving local livelihoods

**2011 progress report April 2011**

Report compiled by project lead and management team

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## Introduction

We are in the middle of the second year of the Ho Avy – Naturefund partnership, working jointly towards safeguarding and restoring the unique biodiversity of the spiny forest ecosystem in southwest Madagascar and people' livelihoods for sustainable future. The success and progress of these efforts would not have been possible without Naturefund's support, for which Ho Avy wishes to express our sincere gratitude.

Ho Avy has been working in southwest Madagascar since 2007 on a range of local interventions to assess and address the needs of the rural community in the Ranobe village, to find ways to conserve biodiversity and combat climate change in the threatened Ranobe spiny forest.

Southwest Madagascar is one of the 200 most important, unique and biologically diverse ecological regions in the world of significant conservation concern. The Ranobe forest is formed by semi-deciduous hardwood and spiny vegetation of by far the most unique plant assemblages on the island, with the highest level of plant endemism in Madagascar. 48% of the genera and 95% of the known species in the forest are endemic to southwest Madagascar; 60% are known to have medicinal properties.

Ranobe translates as 'Great Lakes' due to the emergence of a chain of shallow lakes, set in a low valley between the Mozambique Channel and a limestone plateau. The lakes around Ranobe create a distinct micro-climate flourishing with unmatched heterogeneity of insects, plants, amphibians and reptiles, within the 6.6 million hectare forest. Consequently the lakes have attracted people for generations, who have cultivated the alluvial soils, until recently at sustainable levels.

The Ranobe forest has been since December 2008 promoted by WWF as a community protected area, however, significant pressures on the forest continue. Forest keeps being cleared for agriculture. Charcoal production, timber harvest and an ilmenite mining project are the major threats. Deforestation continues at an alarming rate affecting species survival that can lead to significant biodiversity losses. At the same time, the Ranobe forest harbors unprecedented diversity and suggests a high potential for future species discoveries.

Ho Avy has begun to harness the tremendous potential of this spectacular region, developing our base into a reforestation center and diverse agroforestry permaculture demonstration site. Ho Avy closely collaborates with the community association FIMPAHARA dedicated to propagating trees. At the end of 2010, Ho Avy together with FIMPAHARA, the community of Ranobe and WWF have delineated 500 ha of the most unique patch of high canopy baobab forest, as a community managed Ho Avy-FIMPAHRA no-harvest forest reserve. We aim to directly conserve biodiversity with incentives opportunities to the local people, i.e., research and ecotourism guides, forest guardians, tree preneurs, and set-up ecological reforestation and agroforestry integrated with education and sustainable community development.

The later has been the most prominent components of our interventions with the local population. Together we have grown close to 12,000 trees in the last two years. Three hectares of forest have been reforested in 2009-10 as a trial site, in 2011 two existing nurseries have been replenished, a new nursery built and another two hectares of land have been in process of foresting with diverse agroforestry polycultures.

## Achievements

### 1. seed collection competition

FIMPAHARA members were involved in the competition, which proved to be a successful tool incentivizing the villagers in direct tree planting interventions in an encouraging way. Seven participating members of FIMPAHARA gathered 35 native species (see appendix attached), that have been referenced in Ho Avy's seed collection (see activity 2). Seeds have been planted in nurseries (see activity 3.) and directly in forest gaps (see activity 5.)

### 2. establishing a reference seed collection for educational purposes

Seed collections of 35 species (Fig. 1, excel sheet), have been made for nursery workshops, educational purposes and further involvement of new villagers to expand the pool of our seed collectors. The collection prioritizes species that establish well in nursery and grow fast as well as rare and endemic species.

### 3. nursery replenishment, nursery workshops and new nursery building

The site of the first Ho Avy-FIMPAHARA nursery has been reforested (image visible from Google Earth), but the nursery construction recently has blown down from cyclonic weather. Two existing nurseries have been recently been replenished, accounting to over 4000 pots (Fig. 2) and 5000 pots (Fig. 3), respectively. The new nursery is placed close to the Ho Avy reforestation center, in the proximity of the village and uses a new technique of sunken nursery pots (conserving moisture) and soil enriched with residual charcoal, that we collected in the forest after charcoal mounds has been harvested by the villagers. Pots are further mulched with these residual charcoal pieces soaked in biogas outputs (Fig. 4; project ideas granted by Rufford Small Grants).

### 4. home gardens/nurseries competition

While replenishing the nurseries, FIMPAHARA women have been given several potted tree seedlings and seeds to start up their own home nurseries combined with vegetable gardens in the proximity of their homes, where they can utilize the kitchen waste water. Announced as competition, there has been 2 months of time for them to develop the gardens/nurseries. 6 families participated and were evaluated at the end of April. The women took the lead and have done a very nice job (Fig. 5). The competition has entered now a second phase. Ho Avy already noticed several new fences have been built and land secured for the garden/nursery expansion in the upcoming winter time.

### 5. reforestation by direct seeding to the forest and planting trees from the nursery

Augmenting planting of seedlings that were raised in a nursery, Ho Avy has been testing up to 15 species for their establishment in the forest from direct sowing to the forest clearings/harvested charcoal pits (Fig. 6). Germination has been good in the first half of the season, however due to lack of subsequent rain in the last two months, survival has been compromised.

Ho Avy and FIMPAHARA have focused on tree planting from nurseries in the first half of the rainy season (December to February), following generous rain storms. With the prime participation of the FIMPAHRA

women and youth, we have planted out the original nursery on the pilot reforestation site, utilizing the existing sizeable canopy of trees planted on the site in 2008 (with the majority of them reaching by now up to 2 m in height (visible from Google Earth). This canopy has provided nursing shade, protecting the new saplings. Over 1000 plants have been planted in first planting session. Another 500 trees have been planted in the following planting session continuing foresting the forest edge/agricultural land.

## Implementation schedule

| Month | Activity | Community Involvement |
|---|---|---|
| December | seed collection competition | 7 families |
| | reference seed collection | Ho Avy, instructional workshops |
| January-February | tree planting | 50, 40% youth |
| January-February | nursery replenishment; workshops | 50, 70% youth |
| March-April | new nursery set-up | 30, 80% youth |
| | home gardens/nursery competition | 6 families |

## Next steps

For the next 3-6 months, Ho Avy will carry on with nursery work and tree planting; we have introduced an experienced gardener to Ranobe in the last couple weeks, who will be 'animating' and mobilizing the community. Ho Avy aims to develop our agroforestry-native trees reforestation gradient and extend the reforested area to several more hectares. The exact hectare number will be the result of community consultations in the coming weeks as fields are cleared. Much effort will be invested in youth tree preneurs and planting, working consistently towards our goal to plant a million trees by 2013. Ho Avy plans to establish 1-2 new nurseries. One will be on the interface between the Ho Avy's base and the village and another at the Ranobe school, opening a perspective collaboration to near future involvement of the school to Ho Avy's reforestation efforts. Collaborating with environmental educational organizations Sokapila and Roots and Shoots of the Jane Goodall Institute will greatly facilitate educational aspects of Ho Avy's efforts in Ranobe. We are aiming to jointly organize nursery days and planting events and work towards community nursery network and local cooperative for tree planting and agroforestry in Ranobe, planting trees to enhance biodiversity and produce trees for greening the region. Community Resource Center will be built as a source of educational ground and our recent visit from solar experts from USA company Sun Power and the California Academy of Sciences opens an appealing collaboration perspective to finding alternative sources of energy that would reduce deforestation in the region. Ho Avy continues researching and setting experimental trials to narrow down the selection of species, assuring substantial care, monitoring and measurement of seedlings planted to the natural forest.

## Challenges

Ho Avy was planning to organize more reforestation events, however due to two months of drought during the second half of the rainy-vegetation season, planting events have been postponed and seedlings kept in the nursery until substantial seasonal rain comes, to increase survival chances of the

planted trees. Unpredictable rain supply has been a major challenge to our efforts. Solutions to this challenge is careful planning and set-up of water access points that would assure adequate supply of water to seedlings in the nursery and in reforested site at least for the first few months after planting.

Ho Avy has set a goal to develop a network of nurseries in the villages close to Ranobe and have FIMPAHARA training the new communities. Considering Ho Avy's other sustainable development activities and program during the rainy season, new villages have not been fully engaged, however other parts of the Ranobe and the Ranobe School expressed interest in setting up nurseries. Ho Avy has been engaging youth, but has not fully reached out yet. Ho Avy planned a nursery day with the participation of the educational organization Sokapila, however the event was canceled twice by Sokapila due to cyclonic weather conditions and transportation difficulties. We have however, partnered with Sokapila in the city of Toliara and together we established a nursery of 350 plants (as part of the 350.org event) in one primary school. The trees have been by now planted on the school grounds. Ho Avy has been serving as advisor to Sokapila's demonstration nursery in Toliara.

The method of direct seeding for forest restoration needs to be refined and more research and experimentation with new techniques and experiences from other projects needs to take place.

Shortage of Ho Avy's personnel and recruitment of competent and dynamic leading Malagasy staff have been on-going challenges for Ho Avy's work along with funding to support broader community in tree planting sessions. Ho Avy continuously searches for competent personnel and funding.

## Funding Expenditure

(Detail on items and their expenditure in Appendix 2 Excel sheet)

| Installments | Date | Item | Expenditure MGA | Expenditure Euro |
|---|---|---|---|---|
| First: 1,500 Euro | December 2010 | Personnel | 540,000 | 200 |
| | | Material and Equipment | 3.245,500 | 1,165 |
| | | Ho Avy Organization and Office (10%) | 364,500 | 135 |
| | | **Total:** | **4.050,000** | **1,500** |
| Second: 2,500 Euro | January 2011 | Personnel | 3.083,400 | 1,142 |
| | | Material and Equipment | 3.059,100 | 1,133 |
| | | Ho Avy Organization and Office (10%) | 364,500 | 135 |
| | | **Total:** | **6.750,000** | **2,500** |

Ho Avy declares the project has used the funds to the best of our ability, making the project effectively proceed in the field.

## Activity photos:

**Figure 1:** Reference seed collection and catalog sheet

**Figure 2:** Replenishing last year's nursery involving youth

**Figure 3:** Pot filling in a new nursery

**Figure 4:** Nursery pots mulched with residual charcoal

**Figure 5:** Home garden/nursery competition

**Figure 6:** Germination from seeding in forest gaps/old charcoal pits