

**Final Report**

**Seeds for ChangeProject**

**Part of Feedback Madagascar and Ny Tanintsika's Treemad Programme**

**in the Amoron i'Mania region of Madagascar**

**April 2014 to September 2014**

**Funded by The Jo Walters Trust**



## **To start with the conclusion.....**

We consider the project a great success.

It achieved significant outputs as per the targets set. It made a notable contribution to the overall Treemad outcomes of rural development and forest conservation. It added critical value to the concurrent Treemad projects with neighbouring and more distant populations. Useful lessons were learned that have informed the next stage of programme development, replication and up-scaling. It has helped inspire a wider local population, government departments and other NGOs to progress the Treemad objectives.

## **Context Reminder**

This project was an integral part of FBM/NT's Treemad programme whose overall objectives are to promote integrated, sustainable development and biodiversity conservation via increases in production, income, enhanced land management and forest restoration. Agroforestry, the planting of crops and trees together, is a principle activity towards these ends. The target communities for this project were members of community forest management associations (CFMs) who have been granted the right and responsibility to manage 15,0000 hectares of Madagascar's last temperate forest. This is only possible with the assistance of outside stakeholders such as NGOs. With FBM/NT assistance CFMs have already developed a successful wild silk industry depending on the healthy Tapia forest where the silk moths live, and they have spent a year researching and developing agroforestry. This involves the establishment and running of village tree nurseries and the initial planting of trees and crops. The motivation to practice agroforestry has been great but it was soon realised that the availability and quality of seeds for both crops and seeds was very poor. In recent years times have been so hard that all local stocks have either been eaten or sold, contrary to what was reported (out of embarrassment) at the Treemad programme conception.

Wonderfully the Jo Walters Trust funded this project, to acquire seeds, very quickly, thus enabling the beneficiaries to get the maximum return from their already considerable efforts and enabling FBM/NT to take advantage of the heightened enthusiasm and motivation of beneficiaries. Without this intervention overall Treemad results and momentum would have been smaller and slower. Seeds for Change has been a kingpin.

## **Project Activities and Results**

As per the proposal the project focused on the introduction of seeds and seedlings for food production and income generation, and training in seed/crop management, marketing and agroforestry.

## Expected results with actual results in Red

- 650 households procuring crop seeds to benefit from agroforestry schemes.
  - 713 households
- 650 households with access to productive land
  - 713 households
- 162 hectares of land cultivated with agroforestry techniques
  - 85 hectares
- 650 households with increased and diversified seed stock for next season
  - 709 households
- Increased knowledge and skills in sustainable agroforestry production techniques across 650 households and 21 communities
  - 713 households
- 13,000 seedlings in community nurseries for agroforestry rootstock/ for grafting  
5976 agroforestry rootstock, 159,873 Eucalyptus, 32,850 indigenous Tapia
- 200 kms of fire barriers cleared
  - 202kms

## Beneficiaries

Training and seed distribution was issued in two waves. The first by way of a trial with the keenest participants and the second open to all. By the end a total of 713 households benefited. The table below is a record of participants. It illustrates how all CFMs were well represented, bar one, Vinanay.

CFM	District	Common	VOI	Number beneficiary households
1	Ambatofinandrahana	Ambatofinandrahana	Ambatomenaloha	34
2	Ambatofinandrahana	Ambatofinandrahana	Vinany	4
3	Ambatofinandrahana	Ambatofinandrahana	Mahavanona	45
4	Ambatofinandrahana	Ambatofinandrahana	Ambatoharanana	32
5	Ambatofinandrahana	Ambatofinandrahana	Riandapona	34
6	Ambatofinandrahana	Ambatofinandrahana	Marovoalavo	34
7	Ambatofinandrahana	Ambatofinandrahana	Ambohimanandriana	34
8	Ambatofinandrahana	Ambatofinandrahana	Andraikita	24
9	Ambatofinandrahana	Ambatofinandrahana	Ivary	51
10	Ambatofinandrahana	Ambatofinandrahana	Andrahalana	36
11	Ambatofinandrahana	And Itremo	Ambalamarina	35
12	Ambatofinandrahana	And Itremo	Ifasina	23
13	Ambatofinandrahana	And Itremo	And Itremo	34
14	Ambositra	Ambohimanjaka	Sahatsiho	46
15	Ambositra	Ambohimanjaka	Ambohipo Minor Seminary	38
16	Ambositra	Ilaka local Police Office	Isandra	39
17	Ambositra	Ilaka local Police Office	Fandrainjato	49
18	Manandriana	Ambohimahazo	Analanapela	28
19	Manandriana	Ambohimahazo	Antapia	25
20	Manandriana	Ambohimahazo	Antanifotsy	34
21	Manandriana	Anjoman'Ankona	Faliarivo	34
			TOTAL	713

For the first wave 4 households from each CFM were selected giving a total of 84 households. They were chosen by each CFM against criteria of enthusiasm, motivation, available resources of time, labour and land and importantly as considerate community members who might encourage others. The plots of these participants became agroforestry-demonstration plots for the wider community to observe.

The tables below list the seeds distributed in the first wave.

Seeds	Unit	Quantity
Green Beans	Sachet	160
Peas	Sachet	125
Melon	Sachet	27
Cabbage	Sachet	44
Cauliflower	Sachet	46
Courgette	Sachet	29
Cucumber	Sachet	27
Tomato	Sachet	36
Beetroot	Sachet	29
Salad	Sachet	28
Spinach	Sachet	29
Aubergine	Sachet	17
Potato	Kilo	260



Seeds were distributed on the condition households would attend training sessions and would commit to the community activities around treeplanting managed by the CFMs, ie digging holes, transporting and transplanting tree seedlings, watering, clearing fire breaks. There is little knowledge, amongst beneficiaries, of the nutritional value of various crops nor of how to maximise productivity of land. By delivering training in nutrition as « nutrition for children » it was most diligently recieved, particularly by women members. The great majority of trainees succeeded in creating impressive agroforestry plots and adapted a variety of new techniques which peaked the curiosity and interest of others. Techniques included, species associations between trees and crops, leguminous ground cover, composting, potash preparation and alley cropping. Many of the first participants were CFM association officers and village elders who had the most influence on others via their diligence and responsibility. FBM/NT technicians enjoy fueling freindly competition. Jokes about monster brassicas in the next village abound - or peas the size of a man's fist ! These elders were also able to influence the allocation (by loan) of land to those who were without.

Only one CFM, Vinany, neglected their responsibilities thanks to the highjacking by a dominant and self interested association president. These four households, under the president's influence, did not respect the new training or contract and instead of planting in agroforestry plots simply used the seeds to plant in fallow rice paddy. This is a traditional method. Consequently Vinany have not received further training or assistance and will likely not do so until they reorganise and commit to the community activities, as they have done previously when establishing the nurseries.



For the second wave a further 629 households enrolled. The tables below list the distribution of the remaining seeds and tree seedlings. It was possible to distribute seeds and/or tree seedlings and to deliver training and monitoring support to all those taking part.

Seeds	Unit	Ilaka	Ambohimanjaka	Anjoman'Ankona	Ambohimahazo	Ambatofinandrahana	TOTAL
Potato	Kg	325	325	140	320	1690	2800
Peas	Bags	840	320	560	840	1600	4160
Green beans	Bags		320			260	580
Onion	Bags	80			84	180	344
Tomato	Bags		160		80	364	604
Beans	Kg	105	84	39	93	212	533
Rainfed rice	Kg		57			273	330
Lettuce	Bags					175	175
Spinach	Bags					460	460
Chard	Sachets	108			104	469	681
Chives	Bags					90	90

LOCALITY	CITRUS	COFFEE ARABICA	TOTAL
AMBATOFNANDRAHANA	330	500	830
MANANDRIANA	138	200	338
AMBOSITRA	132	200	332
TOTAL =	600	900	1500



In total 34 hectares of land were planted up with new agroforestry techniques and a further 51 hectares with trees grown from this project. This is short of the 162 hectare target we set. We believe the error was in the optimism of ourselves and the beneficiaries at the outset and we now have a more realistic idea of what is achievable. That said we presume that productivity will increase over the years as these new techniques become familiar to practitioners. We hope to analyse more closely the results of the project following the last harvests in March to see where time and labour savings can be made. 72 households benefiting from this project had not been producing any of their own food until now.

### **Compost**

A variety of compost techniques were taught, adapted to what biomass (grass, leaves, cow manure) and transport (human or ox cart) is available. Each household made compost either individually or with others.



In total 218.4 tons (728 ox cart loads) of compost were produced. That is an average of 306 kg per household. For the extent of planting more was required but this is a very encouraging start and has been whole-heartedly embraced by all farmers and perceived as a major benefit.

Two CFMs, Maitsovalo and Faliarivo, made a significant community effort producing more than enough high quality animal manure compost for their community agroforestry nurseries and demonstration plots. This is an objective for all CFMs.



Crops harvested by households so far have been mainly consumed by producers, significantly improving nutritional intake, and for seed retention for replanting next season. But households have also been able to increase income through market sales, ranging from £10 to £20. This may seem a small amount but for the poorest this might be a 50% increase in their annual cash income. It is obvious to producers the potential for market sales and each community has a better idea of which crops offer the best return in their local markets or further afield. . A full analysis of final production (final harvests in March 2015) and beneficiary income/ costs is yet to be carried out.

## **COMMUNITY WORK**

All beneficiaries committed to and carried out the community activities focused on forest management.

**Fire barriers** – These are essential to protect existing forest, replanted forest and agroforestry fields. They require a huge amount of work and can only be efficiently planned and carried out at the community level. Each CFM organises their own community work management plan (tasks, timing, lunch arrangements etc). Fire barriers are generally maintained on a dedicated day each week. People are particularly motivated to protect their own new agroforestry plots and benefit from the

community approach which gives better protection than the sum of many individual efforts. Following the distribution of seeds and establishment of agroforestry plots we have recorded a great increase in the participation of members particularly women. And inspiring « fire barrier » songs have been written to sing while working. This might be considered a sign of the activity embedding itself culturally.



To date, 202 kms of fire barrier have been put in place by the 21 CFMs



**Community nurseries for trees** – In total 24 community nurseries were created by the 21 CFMs. This is done collectively without reward for individuals. Each CFM organised the construction and management of the nurseries themselves, following training of village nurserymen. Community tasks included, digging, construction, transporting materials, composting potting, weeding and more. 2 nurserymen for each nursery receive payment and benefits in kind (produce) from the CFM for daily maintenance of the nurseries, Eg watering and weeding, for at least 5 months depending on the needs of the young plants. They receive approximately £10 per month but not automatically. The amount depends on the success rates of the young seedlings. Each nursery experimented with fruit tree production including coffee arabica, citrus, plum, apple and litchi which have already been transplanted to household plots. 25,000 ecalyptus seedlings have also been transplanted for future fuel and timber and 13,000 indigenous Tapia trees planted out to restore natural forest.



The table below lists what remains in the nurseries for planting by March 2015 during the rainy season. The Other column is made up of mainly coffee arabica and inga, both key species for agroforestry

CFM	District	Common	VOI	Tapia	Eucalyptus	Other
1	Ambatofinandrahana	Ambatofinandrahana	Ambatomenaloha	856	7,000	319
2	Ambatofinandrahana	Ambatofinandrahana	Vinany	1,500	7,000	
3	Ambatofinandrahana	Ambatofinandrahana	Mahavanona	800	7,000	
4	Ambatofinandrahana	Ambatofinandrahana	Ambatoharanana	1,868	7,000	
5	Ambatofinandrahana	Ambatofinandrahana	Riandapona	4,300	7,000	
6	Ambatofinandrahana	Ambatofinandrahana	Marovoalavo	2,530	7,000	
7	Ambatofinandrahana	Ambatofinandrahana	Ambohimanandriana	1,100	7,000	
8	Ambatofinandrahana	Ambatofinandrahana	Andraikita	1,725	7,000	120
9	Ambatofinandrahana	Ambatofinandrahana	Ivary	3,090	7,000	1,380
10	Ambatofinandrahana	Ambatofinandrahana	Andrahalana	100	7,000	
11	Ambatofinandrahana	And Itremo	Ambalamarina	2,580	7,000	
12	Ambatofinandrahana	And Itremo	Ifasina	314	7,000	1548
13	Ambatofinandrahana	And Itremo	And Itremo	3200	7,000	1895
14	Ambositra	Ambohimanjaka	Sahatsiho	1,344	8,854	
15	Ambositra	Ambohimanjaka	Ambohipo Minor Seminary	800	7,000	
16	Ambositra	Ilaka local Police Office	Isandra	800	7,000	
17	Ambositra	Ilaka local Police Office	Fandrainjato	800	7,310	
18	Manandriana	Ambohimahazo	Analanapela	1,821	7,000	
19	Manandriana	Ambohimahazo	Antapia	1,164	7,000	314
20	Manandriana	Ambohimahazo	Antanifotsy	1,220	7,000	400
21	Manandriana	Anjoman'Ankona	Faliarivo	938	17,709	
<b>TOTAL</b>				<b>32,850</b>	<b>159,873</b>	<b>5,976</b>

## Lessons Learned

Whilst it is obvious seeds play a central part in a subsistence, agrarian society and in forest management, it is not so evident how to improve and extend their sustainable beneficial influence. We have learned in this project how to introduce seeds to communities in a way that not only improves short term nutrition and income but also sets communities up for long-term prosperity and well-being and empowers them to manage the forest and land which they depend upon. By issuing crop seeds within the framework of agroforestry trials and treeplanting they have been a catalyst for farmers to ;

- research and develop crop's quality, quantity and diversity,
- attend and benefit from training in new advantageous farming techniques
- come together and work as an organised collective to realise major schemes, like forest management and restoration, with long-term benefits
- disseminate useful knowledge and skills to a wider community

- work towards independent sustainability maximising opportunities from available resources, mainly land and improvements in production

The « formula » seems to work and will form the basis of the next stage of the Treemad programme. There are many many opportunities identified by the farmers and FBM/NT to improve activities.

The first is to consolidate the seed project and work towards expert seed management and sustainable seed banks. A dedicated analysis of the results of the Seeds for Change project will greatly inform developments. This analysis will look at as many indicators as possible such as production results, planting environment and techniques, income generation, farmer time and labour management.

Secondly beneficiaries are looking at new ways to harness the potential of community work such as the construction of irrigation channels, alongside soil improvement and tree planting, to revitalise « dead » land.

Thirdly to design and deliver a « marketing » project to disseminate the techniques and benefits to more farmers. This should be done using all media available, word of mouth, flyers, posters, radio, video and demonstration plots. FBM/NT is seeking to install a dedicated demonstration site, the « Treemad Forest Centre » (working title) on the side of Route Nationale 7, the main road down the spine of Madagascar.

Royal Botanical Gardens Kew (our partners in a neighbouring agro-forestry project), and Missouri Botanical Gardens have admired the progress of this project and are inviting us to develop a national forest restoration network with FBM/NT as the community motivation experts. Local government departments (eg Direction Regionale de Development Rurale) are also impressed by activities and offering partnership and rare resources to progress the nursery network.