The Rufford Small Grants Foundation

Final Report

Congratulations on the completion of your project that was supported by The Rufford Small Grants Foundation.

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. 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. Please be as honest as you can in answering the questions – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please complete the form in English and be as clear and concise as you can. We will ask for further information if required. If you have any other materials produced by the project, particularly a few relevant photographs, please send these to us separately.

Please submit your final report to jane@rufford.org.

Thank you for your help.

Josh Cole, Grants Director

Grant Recipient Details	
Your name	Martina Petru
Project title	'ho avy': Grassroots Restoration and Sustainable Development Alternatives for Southwestern Madagascar
RSG reference	
Reporting period	February 2009 - July 2010
Amount of grant	£6,000
Your email address	martina.petru@gmail.com
Date of this report	31 August 2010

Final Report 'ho avy': Grassroots Restoration and Sustainable Development Alternatives for Southwestern Madagascar

First of all, we ('ho avy' o.s.) would like to express sincere gratitude to Rufford Small Grants Foundation to make it possible for ho avy grassroots project to take initial steps towards safeguarding biodiversity and people's livelihoods for future sustainability in southwestern Madagascar.

Over the duration of the RSG support, ho avy has been building local capacity and trust, working closely with a community association FIMPAHARA, dedicated to planting and propagating native trees for reforestation. We have engaged FIMPAHARA in participatory forest research to gather forest regeneration data and identify target species for propagation. FIMPAHARA has independently collected a wide array of native tree seeds. We mapped areas of natural forest regeneration for long-term monitoring. Environmental awareness among FIMPAHARA has been raised. Environmental education has been augmented by collaborating with organizations Sokapila and GTZ on Kit Mad'ere, a tool promoting environmental thinking in schools and communities.

The project established three extensive tree nurseries, in which nearly 10 000 native trees and over 5500 fruit and multi-purpose trees have been nurtured. Through several planting events, including the international 350.org event, over 1200 native and 750 fruit trees have been planted on FIMAHARA land to July 2010: on edges of forest, in agroforestry polycultures and in live fences/hedges. Many tree saplings are still kept in the nursery, overseen mainly by the women members of FIMPAHARA.

Agroforestry and vegetable gardening were part of our multidisciplinary approach to conservation and have been steps to more sustainable income-generating livelihoods in the years to come. Along with a workshop for improved rice growing (rice intensification SRI method), these inspirational approaches have been welcomed and are now individually practiced by the local community.

We've tackled the enormous task offsetting ongoing forest degradation by introduction of wood effective rocket stove that can be built from local materials (mud, sand and straw) by the villagers themselves, use of a solar box oven and construction of two biogas digesters.

In order to generate knowledge about how to conserve biodiversity through research, sustainable development and forest restoration, ho avy has been with the assistance of FIMPAHARA building a home base: reforestation research and outreach center to support activities inspiring towards sustainable future for the forest and the local population.

The center is nearly finished and successfully completes the first phase of the project, launching a second phase for ho avy, focused on knowledge generation, participatory forest conservation and demonstration projects, with which we intend to apply in the second RSG grant.

1. Please 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
Identify tree species most frequently harvested for testing their propagation in nurseries			Fully achieved	Formal and informal interviews and extensive forest observations identified a set of species frequently harvested for lumber and charcoal production. These became priority species raised in our three nurseries. The community gathered 75 species that were tested for propagation in nurseries to increase the diversity of native trees in the reforestation efforts. We have gathered growth data and started developing a database for replication of the approach in other community nurseries. We consider these results a full achievement of our objective.
Native and fruit tree propagation and tree planting			Nearly fully achieved	Extensive number of seeds has been placed in nurseries and considerable number of saplings raised, including fruit trees. Due to limited rain events, our planting capacity has not reached its full potential. Nearly 10,000 native trees and over 5,500 fruit and multi-purpose trees have been nurtured and over 1,200 native and 750 fruit trees have been planted, many are still in nurseries.
Forest restoration and resource extraction under rotational harvest scheme	Not achieved			An attempt to establish a research reserve – no harvest rotational zone allowing natural forest regeneration, not permitting further forest disturbance, has been compromised by lack of time (shortening the project schedule due to political situation in country), by governance in the area and lack of coordination with local and overseeing organizations.
Sustainable energy solution			Nearly fully achieved	Feasibility analyses into making green charcoal has revealed more viable alternatives in sustainable cooking energy options: a) fuel effective rocket stove, and b) methane biogas digester. We have adaptively shifted our focus from making green charcoal on developing the above two options that

				proved to be viable, have been operated by the local community.
Awareness raising, environmental education and training			Nearly fully achieved	Through active engagement in nursery construction, planting and nursery maintenance, replanting and composting, agroforestry and improved rice growing (SRI) workshops, ho avy achieved their objectives in this matter. With the further development of the reforestation research center, we believe in a strong continuation of the awareness programme.

2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

A major difficulty shifting the project start considerably (from anticipated February 2009 to October 2009) and consequently shortening the entire project duration, was the insecurity about the political unrest in Madagascar from January to April 2009. A project visit in January was shortened due to the riots and lack of clarity about the development of the situation, placing the project progress on hold. A brief maintenance and community motivation visit was paid to our project site in May 2009 and our team fully resumed in the field in October 2009, with greater involvement in all project activities. Reassessing the field feasibility of making green charcoal, made us realise the limitations of this method and we adaptively switched to construction of biogas methane digester, which used more effectively available resources on site.

Logistics, field conditions, construction of operational base, supplies organisation and issues with transport and its raising cost have been the problematic issues and often more time-consuming than we had anticipated. With the creation of the reforestation research centre we hope to establish better and more effective working conditions.

3. Briefly describe the three most important outcomes of your project.

1) Native and fruit tree nurseries:
Ho avy and FIMPAHARA's established three tree nurseries on an area of 184 m^2, in which 9,314 native trees and 5,520 fruit and multi-purpose trees have been nurtured. FIMPAHARA collected 75 species of native and 5 non-native species for medicines, non-invasive fast wood propagation and oil-rich seeds. These species were tested and a selection of them was identified for future propagation. To July 2010, 810 native and 750 fruit trees have been planted on 1.35 ha of FIMAHARA land: on edges of forest, in agroforestry polyculture plots and in live fences/hedges. These efforts, i.e. planting target indigenous species on disturbed forest edges and reforesting in belts, aim to assist ecological forest recovery. We are creating 'ecotones' (transitional habitats) favoring wildlife colonisation and assisting seed dispersal.

2) Fuel effective stoves, biogas methane digesters:
After reassessing the feasibility of green charcoal production, ho avy has opted for other improved/alternative energy technologies that seem to be well adopted: the fuel effective stove was in full operation, the biogas digesters have been producing methane used by the ladies for cooking

for several months now. The output of the biogas digesters is an excellent fertiliser and FIMPAHARA used it for their crop fields.

3) Awareness raising, education and training:
The participation of the local community in nursery and planting efforts, even beyond FIMPAHARA's on-going engagement, has been quite enthusiastic. Jointly we achieved to gather and plant an extraordinary high diversity of native and fruit trees, raise large number of tree saplings, plant them out and rapidly replenish the nurseries with fresh seeds throughout the season. The community welcomed and showed genuine support for agroforestry trials with fruit trees and workshop in rice intensification method (SRI).

4. Briefly describe the involvement of local communities and how they have benefitted from the project (if relevant).

The community association FIMPAHARA has been directly involved in the project through collection of seeds of native trees. They made an ample collection of 75 species of native and 5 non-native species for medicines, non-invasive fast wood propagation and oil-rich seeds. With FIMPAHARA's participation new nurseries were constructed, nursery bags filled, seeded and grown in the nursery. To June 2010, 810 native and 750 fruit trees have been planted on 1.35 ha of FIMAHARA land: on edges of forest, in agroforestry polyculture plots and in live fences/hedges.

The broader community has been involved in tree planting, especially during the 350.org event in October 2009. The group of women has taken the lead in compost making, nursery daily watering, and replenishing planted bags with seeds collected through the season. Two training sessions in nursery up-keeping were given by ho avy to the community.

Ho avy has organized a workshop for building fuel effective rocket stove that seemed to inspire FIMPAHARA to build own stoves in their temporary homes in rice fields. We further focused our alternative energy efforts on biogas production rather than the originally proposed green charcoal. Ho avy has invited a Czech engineer to design a biogas digester and together ho avy and FIMPAHARA have built two of these digesters. FIMPAHARA has taken responsibility in regular filling of the digesters, which have been producing methane for c. 4 hours of cooking daily. The FIMPAHARA ladies have taken up the use of biogas enthusiastically, referring to 'new clean flame'.

Indirectly the community greatly benefited from our presence in the village, gaining inspiring knowledge, learning about new technologies and opportunities to be actively working to improve their livelihoods.

FIMPAHARA members have been directly involved and financially compensated for building ho avy reforestation research centre.

We approached our reforestation efforts to benefit the local people by engaging them in planting fruit trees and setting up agroforestry trails. We have been discussing with the community propositions to conserve parts of the forest as rotational no harvest/research zones, and will focus on these efforts in the next phase of our project. Through training of our guides, monitoring persons for reforested areas, patrols in the conserved parts and with eco-tourism, we propose to offer an alternative of financial benefits that would include payment for ecosystem services, which would certainly increase the level of community participation within our programme.

5. Are there any plans to continue this work?

Yes, we are planning to expand our activities and establish a network of partnering organisations working with the broader community in more participatory way.

Our next steps are leading towards expansion of nurseries and number of planted species, selecting the most suitable species and extending our tested pool with new ones. We will concentrate our efforts to reforest gaps in the nature reserve, once established, and link currently fragmented habitats.

We will focus on work with women and youth groups, creating demonstration, education and individual household nurseries. We will further promote tree-preneurship, develop and implement an educational curriculum for nursery, monitoring and reforestation activities. To steadily involve broader community in the region, nursery and reforestation days will be hosted by the reforestation research centre, promoting the value of trees and importance of safeguarding the forest reserve as the no cut/no disturbance/restoration zone.

We continuously search for funding for promoting research work, forest conservation, community capacity building and outreach and education.

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

We have founded a newsletter, *handao!*, which has been a circulating periodical updating about our activities. We also have been writing up updates and providing with photos to our network of contacts and are posted on ho avy web site.

We are preparing a publication about our native tree reforestation experiences that will be due by the end of December 2010. Collaborating with the Art School of the University of Michigan, we have produced an interpretation panel for the native tree nursery and are planning to produce engaging brochures about tree nurseries, study sheets for individual species and posters explaining the new technologies introduced to the village.

We have recently been engaging with local authorities (intercommunal association MITOMAFI, Forest Service, DREFT Ministry, Ministry of Environment, DDR, the regional office and we strive for creating an extensive network of contacts to disseminate our experiences and engage larger community.

7. Timescale: Over what period was the RSG used? How does this compare to the anticipated or actual length of the project?

Due to political problems in Madagascar in the first trimester of 2009, we postponed start of the project (with one short visit was paid to the project in May 2009) until October 2009, condensing phases 1 and 2 as originally outlined into phases 3 and 4. The grant was fully used over the period October 2009-June 2010, which has been more intensive time period as opposed to the original January 2009 to June 2010. Despite the time line change, we were able to focus on all our grant objectives as proposed.

years						2009									2010			
months	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
phases	1	1	1	1	1	1	2	2	2	2	3	3	3	3	3	3	4	4
who/what	all	all	all	all	all	all	M	M	M	M	all	all	all	all	all	all	M	M
	all, M	M	M	M	M, all	M	M	M	M	all	all	all	all	all	all	all	all	all
field research	A	TG		SG		SG		SG		SG		SG	**R**	SG		SG		SG
	A				A								**A, TG**	SG, R	SG, R	SG	SG	SG
nursery	Ig	Ig	gM	gh	hM	g	gM	gh	hM	g	gM	gh	g**R**	g	Ig	Igh	M	g
	Ig									Ig	IgM	Igh	Ig	IgR	IgR	IgR	IgR	IgR
green charcoal	e	e	D	D	T	T	T	T	T	T				e	D	T	T	T
biogas												e	D	T	T	T	T	T
education	C	C	Ce	C	Pe	P						C	C	C	Pe	P		
												C		C	C	C	C	C

In lines below the originally proposed schedule is the actual implementation schedule.
M=Malagasy team
field research: A=assessment, T=tagging plants for monitoring, S=survival, G=growth monitoring, R=replanting of trees from the nursery to the forest
nursery: I=instalment of tree seeds, g=gardening, M=monitoring (measuring trees), h=harvest
green charcoal: e=educational session, D=demonstration, T=trial
education: C=courses, e=examinations, P=presentation

8. Budget: Please provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in £ sterling, indicating the local exchange rate used.

Item	Budgeted Amount	Actual Amount	Difference	Comments
Operation: (base infrastructure, logistics, transportation, local staff wages)	5697	5200	-497	
Specific project costs:				
Field research	121	131	+10	
Nursery	109	340	+231	
Alternative energies	58	300	+242	
Education	15	69	+54	
TOTAL	6000	**6040**	+40	

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

With our project on the ground, we demonstrated that small project can be a good inspirational tool to replicate to the broader community. This has been especially true about trialling various approaches/aspects of issue solving. We are hoping to involve broader community and expand and replicate our successful efforts. The building of reforestation research centre (extended base for which further funding has been received) gave origin to a home base for education, classes and dissemination of information and knowledge, that should inspire people and provide with needed information about forest conservation, reforestation, agroforestry and environmental awareness.

We view the most critical next step leads towards involving broader community to develop a series of conservation 'no harvest' zones, and in a participatory way engage the villagers to patrolling, monitoring and research efforts in a long-term perspective and develop a tool to sustainably secure future for the forest and for their livelihoods. This will involve major stakeholder involvement and systematic, yet pragmatic work with the communities to ensure durability of our efforts.

It will also be important to see through the development of an educative and informational forest trails for visitor. Visitors will prove to the local population that intact ecosystems can generate valuable financial assets. Also in the near future an educational programme will be set up, so that children and adolescents from the nearby town will be able to better grasp the environment and its importance for mankind.

10. Did you use the RSGF logo in any materials produced in relation to this project? Did the RSGF receive any publicity during the course of your work?

Yes. We present the logo on ho avy web site, we have shown it on our handao! Newletter issues.