

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. The Final Report must be sent in **word format** and not PDF format or any other format. 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. Please note that the information may be edited for clarity. 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	Haile Yineger Tariku
Project title	Habitat fragmentation in NW Ethiopia: Effects on population connectivity of an endangered medicinal tree species, <i>Prunus africana</i>
RSG reference	10917-1
Reporting period	17 January 2012 to 16 January 2013
Amount of grant	£6000
Your email address	h.tariku@griffith.edu.au;haile_mulu@yahoo.com
Date of this report	17/01/2013

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
Evaluate the effects of forest fragmentation on the genetic diversity and population structure of the endangered medicinal plant species, <i>Prunus africana</i> , in NW Ethiopia			√	Field and laboratory works as well as statistical analysis of data relevant for this objective are successfully accomplished. However the write-up of the manuscript is still in progress and upon completion of this task, we hope to submit it to a reputed international journal in January 2013.
Evaluate fragmentation effects on seed dispersal of <i>Prunus africana</i> in NW Ethiopia		√		We originally planned to use both seed and seedling samples for the assessment of forest fragmentation on seed dispersal. Accordingly, we effectively sampled fruiting adults, seeds and seedlings (up to 2 years old). However, due to the expensive laboratory analyses and financial constraints, we decided to address this objective only using the seedling and adult samples. At this stage, we have got adequate genotype data for the seedling and adult data sets but these are still awaiting us for the statistical analyses and manuscript drafting. We wish to submit this work to a high impact journal between April and early May 2013.
Evaluate forest fragmentation effects on pollen-mediated gene flow of <i>Prunus africana</i> in NW Ethiopia		√		We already sampled seed and fruiting adults for the pollen dispersal aspect of this project. All collected adult samples and a few seed samples are successfully genotyped. However, more funding is required to finish laboratory analyses for these and to process the remaining samples.
Conduct conservation training workshop for the local community		√		A conservation awareness creation workshop was successfully conducted on 10 April 2012. Please see more details and some photos in the December 2012 update for this project. However, we strongly suggest to conduct several training workshops at various levels on this theme as well as to involve more target participants such as decision makers and lawyers.
Develop conservation strategies and management plan for the remnant forest patches of Awi Zone, NW Ethiopia		√		We are planning to draft the management plan after finishing all intended laboratory analyses for this project.

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

- We were taking photo and video pictures showing the current deforestation activities in the remnant forest patches of the study region. We shared these pictures and our concerns to authorities in charge of protecting these forest remnants. Following this, the local administrator at one of our study sites blindly prohibited us from accessing the remnant forest patches. Obviously, this was very sensitive issue but we managed to resolve it after intensive and genuine discussion with them as well as telephone communication with the next higher authorities.
- It was very devastating to encounter a huge forest fire in the middle of one of the largest forest patches. We found this when we were collecting our data. We were only three persons (Haile Y. Tariku, Worku Fetene and Solomon Beyene) and we could not stop the fire by ourselves given the wide area coverage. As a result, we had to seek for assistance from the local inhabitants but no one was interested to lend a hand. That response was very strange and annoying. Then we had to immediately report to the local administrators but again these ones were not willing to take action. The next step was to report the fire case to Guangua Wereda authorities, who send an emergency crew within 30 minutes of our report. When the crew came, the local administrators were a bit frustrated and had to fill them with false information that they already sent groups of farmers to rescue the fire. This action was even more devastating. The crew simply trusted the local administrators and returned from the edge of the forest without going to the actual fire site but the forest was still burning. We also reported about that fake and gave a reminder to the top officials so that they can take immediate action. By the next day, we had to travel to another study site to continue our data collection but we returned to the fire site after 4 days to check whether the fire was indeed stopped. Sadly, the fire was still there though at the ground and understorey strata. We did not give up and we continued our report about this back to the Guangua Wereda authorities who then promised to take very strict measures on it. This issue was raised during the conservation awareness creation training workshop and deeply discussed among all participants.
- I was invited to attend the RSG grant recipients' conference, which was held in Armenia from September 27-30, 2012. I was very enthusiastic to communicate our research outcomes at this conference and of course was lucky to get about \$3000 travel grant from the Australian Rivers Institute. Unfortunately, I missed this golden opportunity just because the Armenian consulate refused to grant me a visa. The conference organiser on behalf of YBA, Sargis Aghayan, knows all details about my efforts.

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

- The first outcome of this project was data on the genetic diversity and population structure of *Prunus africana* to assess fragmentation effects. We analysed the data and are drafting manuscript based on this data set.
- We also obtained genotype data that will be used to assess fragmentation effects on seed dispersal of *Prunus africana* in NW Ethiopia.
- A conservation awareness creation workshop that involved active and hot discussion among participants (almost all forest guards and a few conservation practitioners, development experts and representative elderly farmers) was successfully conducted. We believed we

ignited something good in their heart about the protection and sustainable use of forest resources.

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

This project would have not been accomplished without the active involvement of the local community in particular, field assistants which were mostly recruited from the local forest guards and an assistant from the Guangua Wereda Department of Agriculture and Rural Development.

Participants of the workshop gained baseline awareness about conserving their forest remnants and we hope they will spread the words to the rest of the community.

5. Are there any plans to continue this work?

Yes, we have plans to continue this work. At this stage we have adequate information about the effects of fragmentation on the genetic diversity and seed dispersal of *Prunus africana*. However, we still have no sufficient data for assessment of fragmentation effects on the pollen-mediated gene flow of *Prunus africana*. As a result, we are planning to apply for the required funding to continue the laboratory analyses for the pollen samples. This would show us the complete status of fragmentation effects on population connectivity of *Prunus africana* in the study region.

We will also start restoration activities in that region in collaboration with the local community, higher authorities, interested non-governmental organisations and international researchers. This however requires complete inventory and information about the status of plant and wild animal species of conservation concern in the remnant forest patches.

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

We will share our results by presenting at scientific conferences, publishing scientific articles and communicating to mass media.

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

We used our RSG grant for one year (between 17 January 2012 and 16 January 2013) more or less as per the original plan.

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
Binoculars	212	-186*	-212	Budget used to cover part of the quarantine inspection and import permits costs
Digital Camera	230	-408*	-230	Budget used to cover part of the quarantine inspection

				and import permits costs
Garmin GPS	152	0	-152	We managed to borrow this item from colleagues and used the allocated budget to cover part of the consumables and quarantine inspection costs
Per diem for 2 field assistants during field work	2000	1313.28	-686.72	Remaining amount used to cover part of the consumables additional cost.
Per diem for the researcher during field work	1300	800.28	-499.72	Remaining amount used to cover part of the consumables additional cost.
Per diem for workshop participants	706	218.88	-487.12	Remaining amount used to cover part of the consumables additional cost.
Car Hire, taxi or bus fares	750	403.56	-346.44	Remaining amount used to cover part of the consumables additional cost.
Aerial photographs of the study sites	243	0	-243	Budget used to cover extra cost of consumables.
Satellite (landsat) images of the study sites	121	0	-121	Budget used to cover extra cost of consumables.
Quarantine inspection and import permits	0	478.8	478.8	This was covered by shifting budgets from the binoculars, camera and GPS
Consumables	286	2785.2	2499.2	This was covered by partially shifting some budgets from the GPS, per diems, transportation, aerial photographs and satellite images. Please note that Griffith University covered the return flight costs and additional laboratory expenditures beyond the amount indicated for this section.
Total	6000	6000	0	As Planned

* Items were purchased using the researcher's own money due to budget constraints
Exchange rate: 0.684 £ sterling = 1 AUD = 18 ETB

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

After further detailed identification of causal factors and completion of the management plan, we will immediately start media advocacy for the protection of remnant forest patches and associated biota of that fragile ecosystem. We will also initiate the most challenging task (at least in the context of Ethiopia), restoration of the natural forests, which involves active engagement of the local community, conservation practitioners, development experts and decision makers.

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?

We have used the RSGF logo during the conservation awareness creation workshop. We also advertised RSGF on our websites as the sole sponsor of our research. We will continue publicizing RSGF in our forthcoming presentations at international scientific conferences.

11. Any other comments?

This project would have not achieved planned activities had it not been financially supported by the Rufford Small Grants Foundation. So, we highly appreciated and are very grateful to RSGF for the generous financial support and ultimate contribution for the conservation of those fragile and fragmented landscapes.