

The Rufford Foundation

Final Report

Congratulations on the completion of your project that was supported by The Rufford 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	Tesfay Gidey Bezabeh
Project title	Prioritizing the factors affecting conservation of the endangered <i>Boswellia papyrifera</i> tree species, and developing its community-based solutions in Ethiopia
RSG reference	21680-1
Reporting period	March, 2017- March, 2018
Amount of grant	£ 4950
Your email address	tglove.gidey@gmail.com or tesfaygidey26@yahoo.com
Date of this report	16 March, 2018

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
Determine the current population structures of the endangered <i>Boswellia papyrifera</i> tree species				This objective was not included in the project at first but after discussion with the stakeholders (experts in the study areas) before commencement of the project, we believe that it must be included in the project as it clearly gives us current data on population status of the tree species (diameter vs age distribution and regeneration). To study the population structures of the tree, in each study districts (we have two districts), 20 sample (20 x 20 m) plots were used. From these sample plots, we measured the tree's diameter at breast height (DBH), height and regeneration. All results of these measurements and their interpretations are discussed in question 3.
Prioritize the factors that diminish populations <i>Boswellia papyrifera</i> tree species by involving the local communities and other stakeholders				To achieve this objective of the project, 50 local community members from each study district were interviewed. In addition, experts in the study districts were also interviewed to give their opinions on the factors that affecting populations of the trees species. From these interviews, a list of factors that affecting conservation of the tree species was identified and prioritised according their importance.
Prioritize and identify community based				Form each of the study district, 50 local community members and

<p>conservation solutions for <i>Boswellia papyrifera</i> tree species</p>			<p>relevant experts were interviewed to collect and prioritise the possible conservation solutions for the tree species. These lists of community-based conservation solutions for the tree have been discussed in detail in question 3.</p>
<p>Train the local community, natural resources managers and extension workers about the factors that diminish population of <i>Boswellia papyrifera</i> tree species and its community-based conservation solutions</p>			<p>To improve the awareness of the key stakeholders (local community and extension workers) on the factors that currently diminishing populations of the tree species and their community-based conservation solutions, training was given for 5 days. During the training, we first presented the factors that affecting conservation of the tree species and their possible solutions. Then, the stakeholder gave their own opinions on the factors and solutions for detail discussions. Finally, the stakeholders consented on the list of prioritised factors that diminish population of the tree and possible conservation solutions.</p>
<p>Share results of this project with relevant stakeholders to improve their awareness on current population status of the tree and its future conservation actions</p>			<p>A 1-day workshop was prepared to share findings of the project with relevant stakeholder (experts, researchers and students) in order to give current data about the tree's population status, the factors that diminish its populations and its community-based conservation solutions. During the workshop, more than 90 stakeholders participated. The stakeholders discussed in detail about the factors that affecting conservation of the tree species and on how to implantation the community-based conservation actions in the future.</p>

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

- We proposed to interview 340 local community members (170 in each study district) but we only interviewed 100 local community members. This because of homogeneous knowledge of the local community about the use, utilisation and conservation of the tree species. That was way only 100 respondents were interviewed than the proposed (340) as we obtained similar answers for our questions.
- Some of the local community members' showed unwillingness to answer for our questions until they were well informed by the local experts about the aims of the project.

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

- a. Our plot survey study revealed that *Boswellia papyrifera* tree species is with zero regeneration and absence of its small size trees (DBH<15cm) in both of the study districts (Figure 1 and 2). This shows us the tree is at high risk of extinction in Ethiopia and due to this livelihoods and food security of many smallholder farmers will be affected in the future if conservation actions will not be implemented.

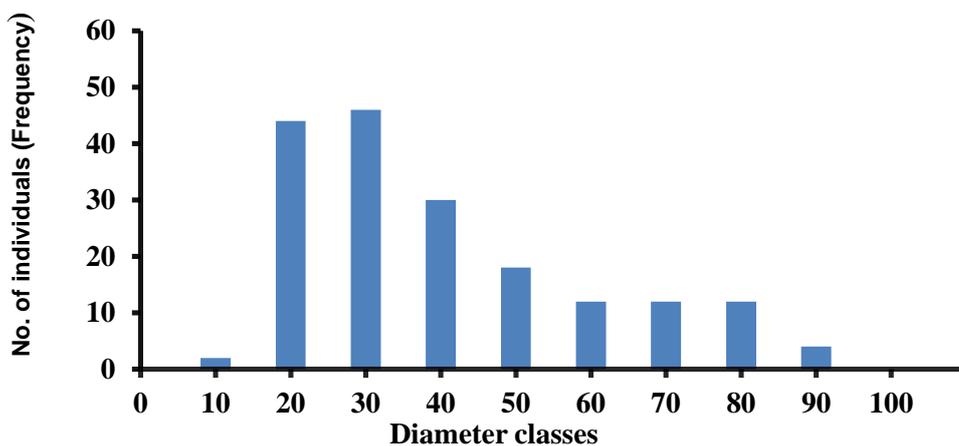


Figure1. Population status of the endangered *Boswellia* tree in Western Tigray, Ethiopia

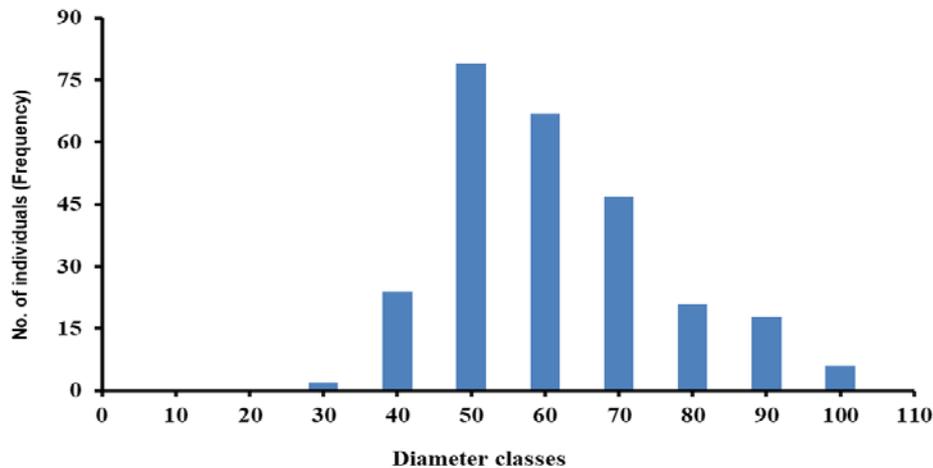


Figure 2. Population status of the endangered *Boswellia* tree in Central Tigray, Ethiopia

- b. To prioritise the current factors that declining populations of the tree species and their conservation solutions, we interviewed local community members and experts. From our interview results, the stakeholder prioritised the main factors that diminish populations of the tree species as: i) lack of regeneration (germination) of the tree; ii) free animal grazing; iii) agriculture expansion and iv) lack of training to locals on conservation of the tree species. The stakeholders also prioritized the conservation solutions for the tree as: i) assist natural regeneration of the tree using different treatments; ii) introducing area enclosures and iii) introducing soil and water conservation activities
- c. Relevant stakeholders (local community members and extension workers) were informed, trained and educated about the factors that currently diminish populations of the tree species and its conservation solutions. Results of the project were also shared with experts, researchers and student in order to improve their awareness on current status of the tree species for its future conservation.

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

The project involved local community in its various stages:

- Four local community members (paid on daily basis) were participated during data collection from the field.
- Three local community members (paid on daily basis) were participated during data collection from stakeholders using interviews.

- Two local community members (paid on daily basis) who participated to mobilise the local community and guidance for the principal researcher
- Local community were also invited to participate in the training that gave to improve awareness of the local community on conservation of the tree species

5. Are there any plans to continue this work?

Yes, the project already prioritized the factors that diminish populations of the tree species and their conservation solutions in the study districts by involving local community. Lack of natural regeneration (due to different factors e.g. free animal grazing, insects, drought and others) is the number one reason for declining populations of the tree species. Therefore, the next project will be study effects of different treatments (e.g. cultural, chemical and biotechnological techniques) on regeneration of the tree species.

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

- Results of the project were already shared with stakeholders like local community, extension workers, experts and students through training and workshop.
- Results of the project will also be presented in national and international conferences.
- Manuscript from the project with title of "Population status of the endangered *Boswellia papyrifera* tree, and prioritising its population declining factors by involving communities" is under preparation for publication in reputable journal. Through this way, results of the project will be widely shared with academic community.

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

The grant was used from April, 2017 to March, 2018. We expected to accomplish the project within 13 months but it finalised within 12 months as we obtained all the necessary data for the project on time.

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
Accommodation and food for the principal researcher and two team members	1200	1200	0	
Per diem for three data collectors (data collection through interview)	1350	950	+400	
Per diem for four data collectors (data collection from field)	0	600	-600	This objective was not included at first in the project but after discussion with key stakeholders (experts), we decided to add it as it is very important to give us information on current population status of the tree species in the study districts
Per diem for the local community members who participated in the training	720	720	0	
Per diem for two local leaders who mobilize the local communities and guidance during field works	200	200	0	
Car rent	600	600	0	
Duplication, printing and stationery materials	180	180	0	
Training materials such as pictures and printed t-shirts	400	250	+150	The price of pictures and printed t-shirts was lower than that of budgeted (expected)
Refreshment during trainings and workshop	300	300	0	
Total	4950	5000	-50	

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

Lack of regeneration (germination) of the tree species due to different factors is the main reason for declining populations of the tree in the study districts. Therefore, the next step and research agenda should be focus on identify of best treatment (e.g. cultural, chemical and biotechnological techniques) for a better regeneration of the tree species. Through this study it could be possible to enhance populations of the endangered tree species.

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

Yes,

- The logo was used during train, educate and share results of the project with stakeholders such as local community, extension workers, experts and students.
- The logo was also publicized during the course of data collection.

11. Please provide a full list of all the members of your team and briefly what was their role in the project.

The overall activities of the project were led by me. But during the course of data collection and train for stakeholders, I was assisted by the following experts:

Abrham Reda, from Institute of biodiversity conservation (Ethiopia) - he assisted me during data collection from the field

Gebrelibanos Geberemariam, from University of Adigrat (Ethiopia) - He assisted me during train and educate stakeholders about conservation of the tree species

12. Any other comments?

I would like to thank the Rufford Foundation so much for granting me to carry out this project on the most important endangered tree species of Ethiopia. I also hope that to get the next grant to study and identify the best seed treatments for a better regeneration (germination) of the tree species for its future conservation.