

Final Evaluation Report

| Your Details | |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Full Name | Anuja Anil Date |
| Project Title | Understanding trade-offs in conservation-oriented management of Tendu (<i>Diospyros melanoxylon</i>) in Community Forest Rights areas of Gadchiroli District, India |
| Application ID | 30735-1 |
| Date of this Report | 10th July 2021 |

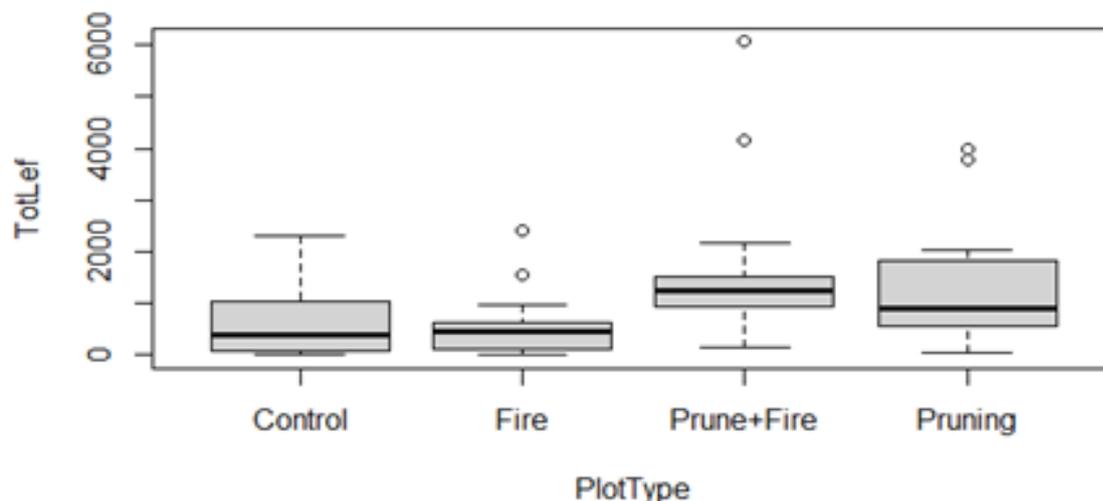
1. Indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.

| Objective | Not achieved | Partially achieved | Fully achieved | Comments |
|------------------------------------------------------------------------|--------------|--------------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Study of Tendu leaf production across different management practices | | | Fully achieved | Leaf production in Tendu was assessed across four management practices in 64 plots. The study was conducted in the period April to May 2020, as per plan. |
| Study of auction process of Tendu leaves | | | Fully achieved | The study was conducted in March 2020. |
| Focus group discussions on management of practices for leaf production | | | Fully achieved | Discussions and interviews with villagers were put on hold after the Covid pandemic began and lockdown was initiated at the end of March 2020. The interviews were restarted in September 2021-October 2021 after the pandemic-led restrictions were eased. |

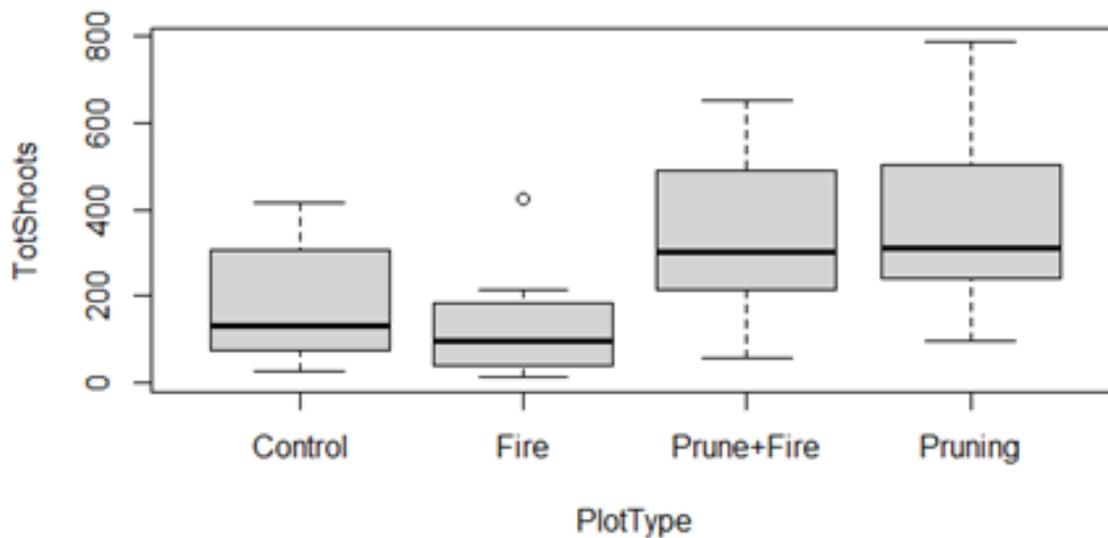
2. Describe the three most important outcomes of your project.

The current project was focused on identifying the livelihood impacts of conservation-oriented bush cutting over fire as a management practice for inducing leaf production in Tendu, a commercially important forest product.

From this project I found that,



a). Bush-cutting leads to a higher leaf production from tendu bushes than tendu managed with fire.



b). This higher leaf production is an outcome of increased number of root sprouts that result from the process of bush cutting.

c). This study therefore finds that there are advantages in terms of increased incomes by choosing conservation-oriented bush cutting.

d). Use of fire, arguably a detrimental management practice in forest areas, can therefore be reduced considerably by local communities without fear of losing livelihood from Tendu.

Findings of these studies were shared with local communities in September 2021 and interviews were conducted on dimensions (social, ecological and economic) which drive the choice of practices for tendu management. We found that:

- Communities believe that some form of tendu management (burning or bush cutting) is essential for ease of leaf collection. If no management is conducted, then leaves will slowly become inaccessible to harvest as tendu is a fast growing tree.
- When I shared that bush cutting is more a productive practice than use of fire, communities were in agreement. However, they suggested that for wider adoption of tendu bush cutting fair compensation for conducting bush cutting must either be given by the tendu leaf traders or the price of tendu leaves must be increased to absorb the costs of labour in bush cutting. In the current market, there is limited scope for either unless the state mandates or assists in the payments for bush cutting.
- Communities did not agree with my findings on the detrimental impacts of fire on tendu leaf production. They recommended conducting a larger scale study for assessing impact of fire on tendu production as well as for the other forest species.

3. Explain any unforeseen difficulties that arose during the project and how these were tackled.

I began my field work in February 2020 and continued to work on my field site until May 2020. However, the Covid pandemic and the lockdown of all activities hit in March 2020. By this time, I was only able to conduct vegetation surveys and observe the auction of tendu leaves. During the lockdown, a complete break on all movements was imposed for almost 20 days. It seemed as if I would lose the leaf harvest season. But, as the district in which the study was being conducted did not report any cases in April 2020, lockdown restrictions were partially lifted. Taking advantage of this, I took relevant permissions from local state authorities to conduct only the plot surveys for leaf production. Similarly, I assured the villagers on my field sites that I would not conduct any interviews or meetings ensuring that social distancing norms were not broken. I limited my study to the forest areas with my small team.

I restarted my work in September 2021 after a large population in the study area was vaccinated. I conducted interviews with local communities on tendu leaf management and marketing. I was also able to share my findings from the surveys conducted in 2020. It was interesting that communities were very welcoming despite the new kind of anxieties associated with persons/researchers visiting from outside of their state. I could spend a month in the study site and conducted interviews of over 50 tendu leaf collectors.

4. Describe the involvement of local communities and how they have benefitted from the project.

The project aimed to train local youth in basic ecological monitoring of forests. However, as the project field work coincided with Covid pandemic only four local youth were engaged in the Tendu leaf surveys.



Figure 1 Conducting leaf production surveys with local youth.

Project findings were distributed and discussed among the 90 villages involved in Tendu trade in the project field site. A larger engagement on issues of fire use, fire restrictions, and long-term impacts of tendu bush cutting is ongoing with the federation of tendu collectors in the field site.



Figure 2 Tendu leaf collectors' federation on day of auction of tendu leaves. Findings of my work were shared with federation members.

5. Are there any plans to continue this work?

The current project was focused on the proximate impacts of bush cutting and fire on leaf production in Tendu. There is a need to study long term impacts of management on population dynamics of Tendu. In the long term, I would like to further the current investigation on Tendu management using long term monitoring plots. Does the annual bush cutting or use of fire to maintain Tendu as a 'bush' lead to a long-term reduction in root stock? Does the management of Tendu lead to reduction in flowering and fruiting of Tendu trees? These questions still need to be studied in larger area and over a longer time.

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

Two scientific publications have been drafted based on the results of this project. Further, the findings of this study were circulated among villagers at the field site. In September-October 2021, I was presented my findings to the local communities. The communities generally agreed with the findings about increased production from bush cutting. However, they insisted that fire is not as detrimental to tendu leaf production as my study shows. I shared some data collection strategies with the local community to start their own monitoring system. I am in constant touch with them for updates and future work.



Figure 4 Sharing results with community members- October 2021.

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

I have shared my findings in conferences and look forward to sharing them with a much wider audience in future. I have submitted one full length paper on tendu leaf production to a Scopus indexed journal and am awaiting review. A full length draft on the tendu leaf marketing practices has also been completed and is under review for submission to a Scopus indexed journal. In both papers, I acknowledge the funding contribution from Rufford Foundation without which this study was not possible.

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

I presented my findings in two international conferences – Students Conference on Conservation Sciences (Bangalore) and the IASC 2021 Forest Commons Virtual Conference where I featured and acknowledged The Rufford Foundation.

9. Provide a full list of all the members of your team and their role in the project.

Madhav Gawale and Ashish Gawale worked as my main field assistants during the field work. They assisted me across the two field sites and were engaged in plot surveys, vegetation surveys, etc. They also assisted me in translating local Gondi language whenever needed. Ashish also assisted in my second round of fieldwork in 2021 for conducting interviews of local communities and record keeping.

Basanti Gota and Kumarshah were engaged in fieldwork as assistants supporting the main team in local information, contacting key informants and also in getting logistic support in different villages.

Dr. Sharachchandra Lele and Dr. Ankila Hiremath provided guidance in designing the project and in the analysis of data generated. They also gave advice and motivation for completion of the fieldwork in adverse circumstances. This included contacting government officials in getting permissions to continue fieldwork during partial lockdown.

Keshav Gurnule (SRISHTI) provided accommodation and support during the lockdown phase.

10. Any other comments?

I am thankful to Rufford Foundation for their patience and support throughout the project and look forward to engaging with the foundation in future.