

**Overview Of The Accomplishment Report Of  
Tree Foundation Project  
Entitled  
'Saving Ethiopian Church Forests and Their Biodiversity  
One Forest at a Time'**

**PROJECT LEADERS**

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## 1. PROJECT TITLE

'Saving Ethiopian Church Forests and Their Biodiversity One Forest at a Time'

## 2. PROJECT PURPOSE AND OBJECTIVE

The main purpose of the project is raising the awareness of the local community and excluding Livestock intervention which have been seriously hampering tree regeneration and then ultimately threatening the survival of church forests of Ethiopia (Fig1).

The main objective is to build fences around the church forests and thereby improve tree regeneration and ensure the survival of the forests and their biodiversity.



Fig 1. Typical Ethiopian Church Forests threatened by livestock grazing

### **3. PROJECT RATIONALE**

In northern Ethiopia forests around churches are the last remnant forest patches. These forests are currently under threat, probably due to diminishing areas and extensive grazing by cattle.

From 2002-2010 twenty-eight church forests were studied in South Gonder Administrative Zone , Amhara National Regional State, Ethiopia, with an overall objective of assessing the opportunity and challenges of the Ethiopian Orthodox Church (EOC) in conserving natural forest resources and the associated woody species diversity by Alemayehu Wassie for his Master's and Doctoral degree dissertations (Alemayehu Wassie, 2002 and 2007).

Interesting results were found on the size, standing stock, plant diversity of the forests, regeneration status of woody plants and factors affecting regeneration, the role of the church in conservation of forests, benefits of churches from the forests, historical profile of the church forests, attitudes of local communities and stakeholders on the church forests, strengths and weaknesses, opportunities and threats of EOC in the conservation of the forest resources were found. Recommendations which could help to enhance the role of EOTC in the conservation of forest resources and the associated biodiversity in the study area in particular and in the country in general were also suggested.

But these results were not communicated to important stakeholders of the specific area particularly for the church and local administrators. And thus the significance of the study has been limited to the academic area only. On the other hand, neither the church elders nor the local administrators are well aware of these forests that are degrading over time.

One of the shocking results of the study was the effect of livestock grazing on the regeneration of four indigenous tree species in two church forests (Wassie, et al., 2009). The study investigated the effect of grazing and trampling on seed germination, seedling survival, and seedling growth. It was found that livestock grazing has a strong negative effect on germination, seedling growth and mortality. In fenced plots, more seeds germinated, seedling survival was higher and seedlings grew faster (Fig 2). In unfenced

plots, no seedlings survived until the end of the year, indicating that grazers destroyed the seedling bank in and around the forest (Fig 3). Seeds dispersed outside the forest will not have a chance to establish seedlings, grow and colonize the surroundings.

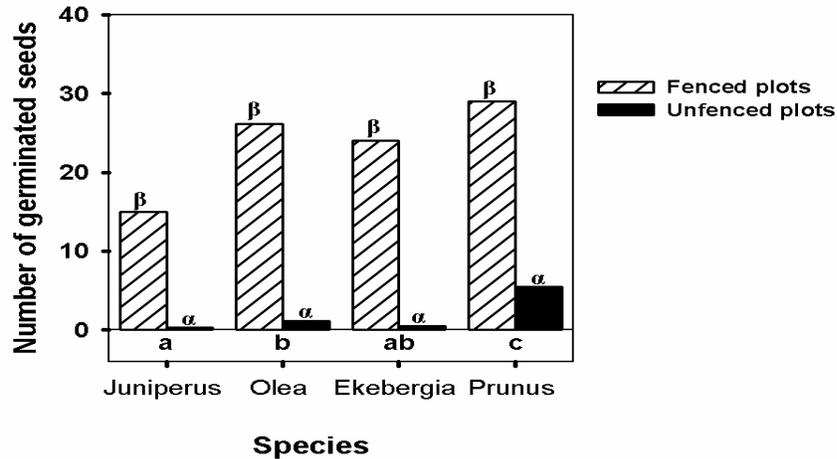


Figure 2. Effects of forest/site, fencing and species on the number of germinated seeds of the four study species. Bars show mean values, small letter differences among species, greek letter differences between fenced and unfenced plots.

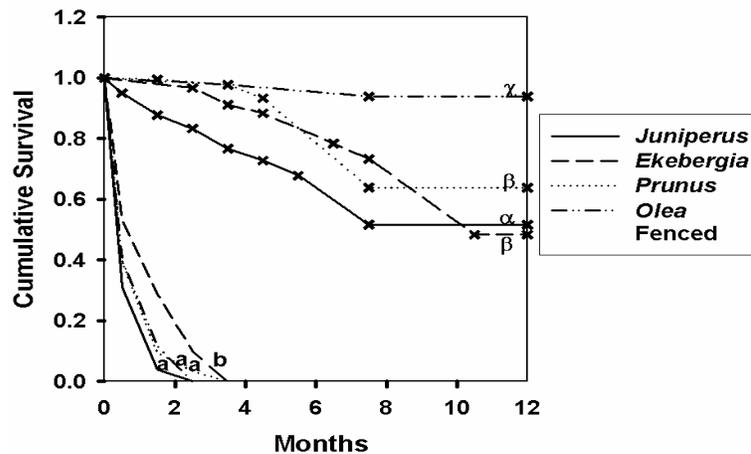


Figure 3 Seedling survival curves for forest/site, fencing and species. Lines with x marks show the fenced plots.

In conclusion, grazing strongly negatively influenced seed germination, seedling survival and seedling growth, although species effects are different to some extent. Achieving indigenous tree species regeneration in church forests while controlling livestock pressure is therefore mandatory (Fig 4). This implies that livestock grazing is of paramount importance for both the internal sustainability of church forests and for restoration of the

degraded surroundings. Therefore excluding livestock interference through fencing is recommended as a remedy before the damage to these forests by livestock become irreversible. Of course the awareness of local people in this respect is crucial. Therefore different stakeholders have paramount importance and role in magnifying the importance of these church forests as a conservation and restoration spot while minimizing the threats on them. Accordingly, they deserve to discuss the outcomes of the research and take part in the recommendations.



Fig 4 . Poor regeneration in Church forests due to livestock grazing

#### **4. PROJECT ACTIVITY AND ACCOMPLISHMENT**

Out of the many church forests in Northern Ethiopia, 28 forests were assessed for the vegetation composition and their overall status. All of them have paramount importance on conserving the native species of Ethiopia, and they need conservation attention. This project tried to address the issue by fencing few of church forests which are under threat but are still homes for many native plant and animal species.

Accordingly, the main goals of the project were fencing the selected church forests and conducting workshops to educate priests and local stakeholders about the value of their forests.

#### **4.1 Fencing**

The main objective is to build fences around the church forests and thereby

- block livestock entrance into the forest
- stop further encroachment by farm land expansion
- clearly show the border for correct legal land use

The fence is made of stones (stone walls as seen in Fig 5) with three gates made of iron bars for each forest. The dimension of the walls are/will be:

- The height of the wall will be 150 cm above ground with 20 cm buried in the ground
- The width of the wall will be 70 cm
- The Gate size will be 3m wide by 3m high (framed with Angle Iron doors)



Fig 5. Typical Stone wall

Table1. Fencing Project Accomplishment up to end of 2013\* (\*Real costs actually should include the workshops and travel costs of the participants, not just fencing alone; see Table 3 at end of report)

No	Name of Church Forest	Fenced length (Meter)	Number of Workers Participated	Number of Gates	Latrine	Total Cost (USD)/Paid so far	Remark
1	Zhara	1600	245	3	yes	3,500	Fully Finished
2	Mosha	1700	280		no	3,000	Finished.
3	Deberesena	1900	315	In progress	no	3,600	Gate and final height increment remaining.
4	Woji	1900	300		no	1,500	In progress
	<b>Total</b>					<b>11,600*</b>	

## 4.2 Awareness Creation

So far four workshops and seminars were held (Table 2). The purpose of the seminar was to discuss the challenges and opportunities of church forests for ecological restoration and biodiversity conservation in order to create awareness for the sustainability of church forests.

The participants were major stakeholders of church forests at Zonal and Woreda/District level, mainly:

- Ethiopian Orthodox Church officials including the Archbishop
- Rural development and Agriculture office leaders and experts
- Culture and Heritage affairs office leaders and experts; and
- Representatives of the local residents

Moreover to increase the awareness of the local children about church forests and biodiversity, especially with insects :

- 120 printed t-shirts were distributed for school children around Zhara and Debresena
- School stationary was donated for 65 students

The overall outcome of the seminar and the children's teaching created consensus and synergy among government officials, church officials, and local community to conserve and restore church forests. **As a result, currently the church forests have more attention and respect than ever before.**

Table 2: Number of workshops that facilitated the project up to January/2014

No	Year	Number of Participants Participated				Total Cost USD)	Remark
		Church priests and Officials	Government Officials	Local Residents	Total Participants		
1	2010	74	32		106	3000	
2	2012	72	26		98	2800	
3	2013	68	5		73	4000	
4	2014	46		68	114	500	Special workshop held at Woji church forest :20 women participated. The cost was covered by Colby College
	<b>Total</b>				<b>391</b>	<b>10,300</b>	

### 4.3 Researching/Monitoring Tree Regeneration and Forest stock dynamics

In order to trace the effect of the fencing and exclude cattle on tree regeneration, permanent plots were established in three forests (Zhara, Debresena and Woji) at three locations.

### 4.4 Capacity Building

In order to strengthen the capacity of managing and following up on church forest training cost support, a grant was awarded to the Diocese of South Gondar in 2013. This money was used to cover the cost of training for district and parish church leaders.

## 5. Budget

Table 3. Total Utilized Budget from the Tree Foundation Grant

Ser No	Source of Expenses	Total USD	Remark
1	Fencing	11,600	
2	Workshops	10,300	
3	Capacity Building/Training Budget Support	12,000	
4	T-Shirts & Stationary & books	18,000	Printed in US
5	Local and International Travel Costs	12,500	vehicle rent
	<b>Grand Total Expenses</b>	<b>64,400</b>	

*This budget refers to Tree Foundation expenses. Other aspects of this project were funded by National Geographic, California Academy of Sciences, North Carolina State University, and numerous volunteers.*