# ZAMBIA

## ENGAGING SMALLHOLDER FARMERS IN REVERSING DEFORESTATION

November 2016 Report

**WeForest**
*Making Earth Cooler*

**HECTARES FINANCED**

417

**TREES FINANCED[1]**

500,000

**TONS CO$_2$ SEQUESTERED[2]**

60,417

**BENEFICIARIES**

516

**A total of 500,000 trees have been financed thanks to the support of donors and sponsors**

## THE PROJECT

The project combines reforestation with livelihood development among small-scale farmers in Zambia. In collaboration with Rainlands Timber and other local private sector businesses, WeForest takes a holistic approach to reduce deforestation for charcoal, construction and land clearance, and restore the native Miombo woodland. Farmers are trained to restore and manage the plots of Miombo woodland on their farm. Alongside this, the project promotes the sustainable harvest of biomass, the use of wood-efficient stoves for farmers and community members, and the development of livelihood schemes such as honey and fruit production. The latter is targeted towards local women. Market linkages are created between the beneficiaries and local private sector companies to promote the resilience of the livelihood developments.WeForest has been working here since 2015 to restore the Miombo woodland, empower communities and combat climate change.
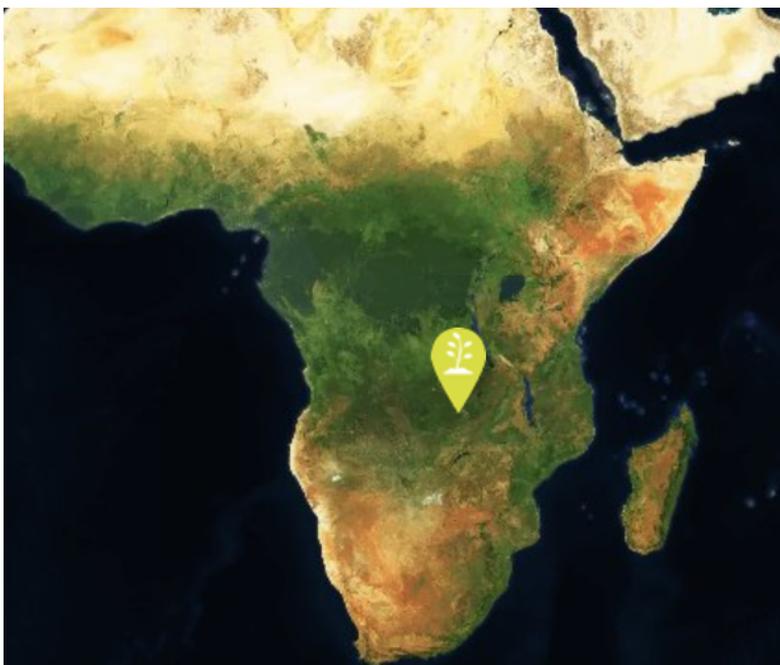
**KEY DETAILS:**

**Location**: Luanshya District

**GPS**: 13 05.405S/28 24.032E

**Restoration approach:** Assisted natural regeneration

**Partners:** Rainlands Timber, Home-Energy, BeeSweet, Edinburgh University

[1]Based on an estimated density of 1200 trees per hectare
[2]In the Copperbelt province, the above-ground biomass in Miombo woodlands can store an average of 145.4 tons of CO$_2$ per hectare per year after a period of 20 years. Kalaba et al. 2013

# PLANTING UPDATE

In consultation with field technicians, 470 farmers have been assigning areas of Miombo woodland on their farmland for restoration. The assisted natural regeneration (ANR) of 417 hectares (ha) is now underway. With the option to expand ANR plots available to farmers and additional farmers showing enthusiasm to join the project, there is the potential to increase the area under restoration to more than 1300 ha. The areas have been recorded with GPS points as polygons using a GIS[3] application run on tablets and smartphones (Figure 2). They will be monitored to assess future growth via satellite images and vegetation surveys on the ground. During this reporting period, an additional 104.5 ha of Miombo woodland were set aside for restoration and the number of species across the sites increased to 63. 134 transects (each measuring 50m) were carried out across the intervention sites. Results showed a mean tree circumference of 32.8cm and tree height of 6m. An average of 2258 saplings were recorded per hectare. This shows the regeneration potential of the woodlots and the progress of the developing forest.

## MAY - OCTOBER 2016:

- 104.5 ha of Miombo woodland set aside for restoration
- Ecological data on regeneration potential collected
- Number of species across intervention site increased to 63



Figure 1. A young Miombo woodlot identified for restoration



Figure 2. A field technician registers restoration area

[3]Geographic information systems (GIS) are computer software and hardware systems that enable users to capture, store, analyze and manage spatially referenced data

# SOCIO-ECONOMIC UPDATE

Several livelihood schemes are included within the scope of this project. They aim to increase and diversify income streams for smallholder farmers in place of charcoal production. Up to date, a total of 470 farmers are involved in the project's Miombo restoration and biomass scheme and a further 46 women have been trained to set up their own home-based nurseries to sell fruit trees. During this reporting period, local women took part in a training and education course and are now in the process of establishing their nurseries. The sustainable biomass scheme is in place, with farmers already earning an income and using wood-efficient cooking stoves. The first preparations of the honey production scheme are taking place with the purchase of 1000 beehives.

**MAY - OCTOBER 2016:**

- 46 women trained in fruit tree nursery scheme
- The sale of 46,000 kg of biomass earned $4,600 in income for farmers
- 1,000 beehives ordered


Figure 3. Farmer Kandilo Ndhgovu (left) is a retired teacher and now runs her own farm


Figure 4. The family of Benson Sungwala, a farmer who has committed to restoring 11.75 ha of Miombo woodland

# FRUIT TREE NURSERY SCHEME

To prepare women to run their own fruit tree nurseries they were trained in fruit tree grafting, nursery establishment and business development. These women will be able to sell their fruit trees in the local market, thereby securing an income and empowering others to earn a living through the sale of fruits. There is a preference for citrus trees given the short supply of citrus fruits in the local market. The scheme also serves to secure a food supply and promote a diverse and healthy diet.


Figure 5. Local women undergo training in nursery activities


Figure 6. Women stand over their fruit trees and supplies

# NON-TIMBER FOREST PRODUCTS

There are a number of non-timber products that be sustainably harvested by farmers from the Miombo woodlots. Species growing in the woodlots (and indeed fruit trees planted on farmland) are an important source of food. When resources are scarce during the dry season, for example, farmers rely heavily on the fruit of *Parinari curatellifolia*. A number of plants growing in the woodlots have medicinal properties as well. They treat headaches, stomach aches and even diabetes e.g. *Aloe vera* and *Physostigma mesoponticum.*


Figure 7. The sweet fruit of *Parinari curatellifolia*


Figure 8. The medicinal plant *Physostigma mesoponticum*

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