

ZAMBIA

LUANSHYA DISTRICT

MAY 2018

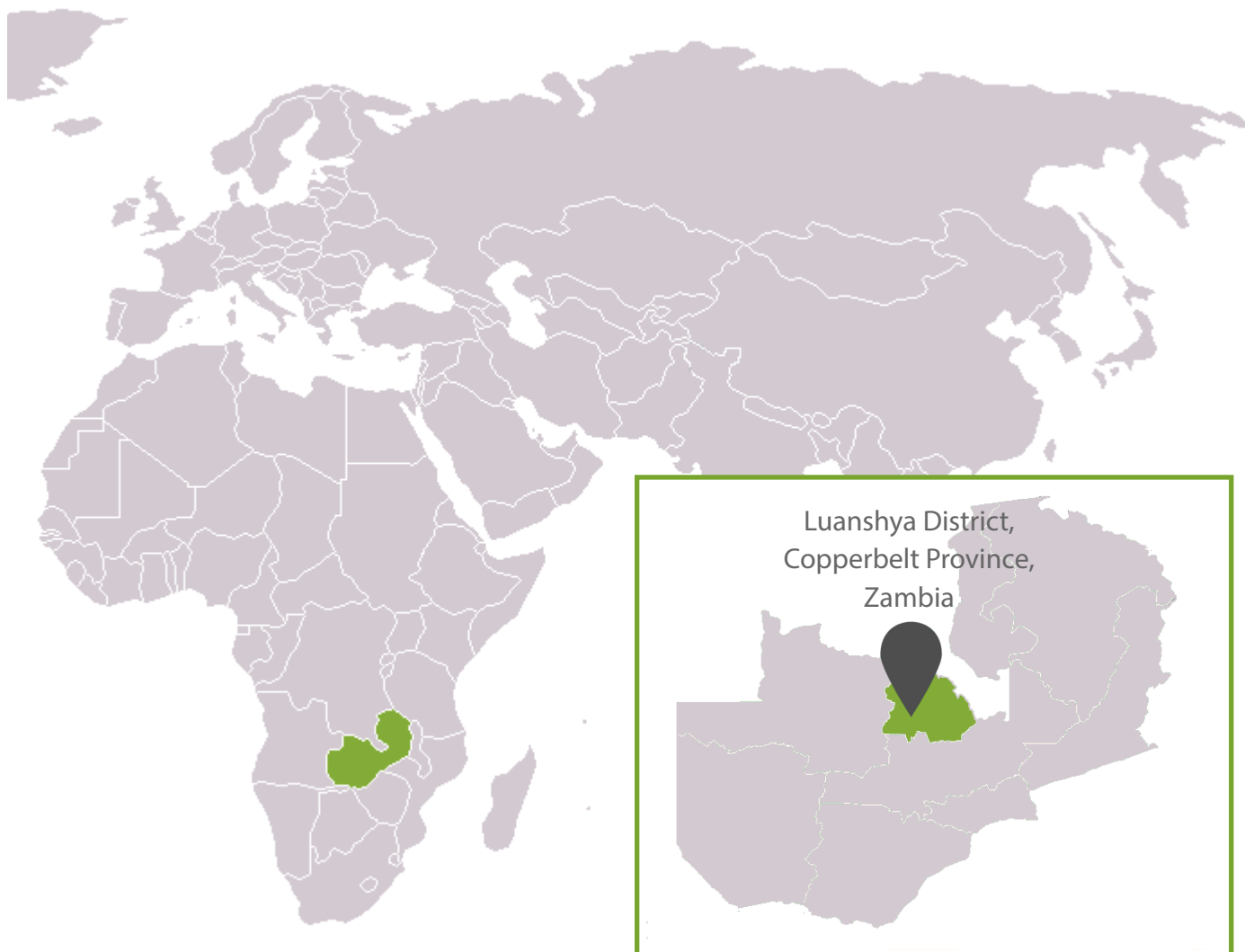


WeForest

Making Earth Cooler

THE PROJECT

Planting trees and restoring forests only make sense if you can ensure the trees will thrive in the long term: for that you need the local communities to see more value in standing trees than in felled forests. In the Copperbelt, WeForest is engaging with and has trained hundreds of small-scale farmers to restore forest on their farms. In order to motivate the farmers and their families in the short term, they benefit from our forestry training, get access to beehives and efficient wood cooking stoves, and plant grafted fruit trees to diversify their farm livelihoods.



SCIENCE-BASED MEASUREMENTS AND VERIFICATION

Forestry survey: conducted by WeForest annually in January. The survey showed considerable regeneration and growth within the 31 monitoring plots.

Socio-economic audit: first audit planned at the end of 2018, to be performed by an external auditor. Baseline survey is already in place.



LANDSCAPE TRANSFORMATION

Trees funded¹: 2 659 971

Hectares directly restored: 1 321 ha

Total area positively impacted: 1 900 ha

Methodology used:

Assisted natural regeneration is a restoration method to enhance the establishment of forests by protecting and nurturing wild seedlings present in the area. This includes patrolling, avoiding overgrazing and preventive fire management. It also comprehends enrichment planting (enhancing the density of desired tree species) and transplanting of saplings.

We combine this with planting of various fruit and timber tree species in the home gardens of farmers to increase family income.



CARBON SINK

In the Copperbelt climate, the above-ground biomass in Miombo woodlands stores an average of 145.4 tons of CO₂ per hectare after 20 years of undisturbed tree growth (source Kalaba et al. 2013).

As the average density in our intervention area is 1200 trees per ha, we can extrapolate that each tree will sequester around 121 kg of CO₂ after 20 years.

The trees planted to date will eventually after 20 years have stored **191 573 tons of CO₂**, or an equivalent of **annual carbon footprint of 19 000 Europeans.²**



BIODIVERSITY CONSERVATION

68 native tree species grow in our intervention area.

Pterocarpus angolensis, a **tree species listed as Near Threatened** on the IUCN Red List as a result of excessive timber harvest, was found in 13% of our permanent monitoring plots, which is very encouraging. We give it special attention so it can eventually spread across our entire intervention area.

Macadamia nut trees (*Macadamia tetraphylla*) introduced to home gardens in 2017. They achieve maturity and begin to produce fruits in their seventh year. Their nuts are very nutritious.

The intervention area is shown to have a **Shannon biodiversity index of 2.2 and evenness of 0.81**, suggesting a high level of biodiversity and a relatively even spread of the species.



COMMUNITY ENGAGEMENT

8 employees from the local community working in the nursery, as extensionists or as beehive mentors.

852 farmers (283 women, 569 men) participated in training in forest restoration and farm land management.

101 women trained in home-based tree nursery schemes.

270 fuel-efficient stoves distributed to farmers at a subsidized price to reduce the need for wood.

1860 free beehives installed on the farms, with 5 beehives an average farmer can increase his or her annual income by 25%.

610 grafted fruit tree saplings distributed to farmers to further diversify farmers' income and food supply.

ACTIVITIES AND RESULTS

FOREST GROWTH BETWEEN 2% AND 10% LAST YEAR

Every year in January, we remeasure our permanent monitoring plots in the forest. In these GPS-marked plots, every tree is marked with a tag. By monitoring the tagged trees, we can estimate the growth of the forest. Since our project areas vary in restoration age, we have 7 permanent monitoring plots for regenerating shrub land, 17 for young forest and another 7 for mature forest. According to our last measurements, between January 2017 and January 2018, the tree biomass in shrub land increased by 2%, in young forest by 10% and in mature forest by 3%.



Setting up permanent monitoring plots.



Mature forest in Miombo woodlands.

HELPING WOMEN TRAINING PARTICIPANTS MAKE USE OF THEIR NEW SKILLS

Women farmers participating in our project can apply for an additional training in plant nursery management. In two days, they learn how to sow seeds, grow plants, graft and bud trees. Veronica S. is one of 15 trainees who started their own tree nurseries after completing the training. She aims to expand her nursery and sell fruit and timber tree saplings to the farmers in her neighbourhood. Tree nurseries allow women to diversify their income and become more financially independent. WeForest follows up with all past trainees to see how their business is going and support them in managing their nurseries.



Veronica S. showing her small nursery.



Women farmers learning to graft and bud trees.

BEEHIVES: A MODEL THAT WORKS

The beehives that WeForest provides to the farmers to grow their income is a simple model that works well. Beehives are built and put on the farms, while remaining the property of WeForest. Farmers get trained on what they should plant to attract bees and how to the honey.

The honey purchase is guaranteed by the cooperative. Farmers get a portion of the harvest and have the option to buy-in and become owners of the hives.

Since November 2017, 174 more farmers received five beehives each, adding up to a total of 1 860 beehives installed on our intervention site. Bee colonization occurs naturally by wild bees. As a result, some farmers will be able to harvest for the first time already in June while others are expected to harvest in December 2018.



Assembling a beehive.



One of the first occupied beehives.

MEET MS. KABASO, FARMER WHO PARTICIPATED IN OUR TRAINING

Ms. Kabaso is 32 years old and lives with her husband and 3 children on their 10 hectare farm in Luanshya. Since the passing away of her husband's parents, who were also living on the farm, they no longer have the manpower to cultivate their farm. They struggle, to get enough income to feed the family and send the children to school.

Mr. Kabaso participated in our two-day training learning on sustainable forest management and how to get more income from responsible timber and honey production. The beehives WeForest provided make a real difference to them, as well as the timber and fuel wood they can now produce without cutting the trees.

In the first year, the family can earn approximately 500 ZMW from beehives alone. This represents a 15% increase to a farming family's income, which averages 3 000 ZMW per year.



PROJECT CHRONOLOGY

- 2010 WeForest starts working with RAINLANDS in the Copperbelt on experimental projects
- 2014 The project is designed in its current form (engaging smallholder farmers in reversing deforestation with ANR)
- 2015 Partnership with RAINLANDS to engage some of the most vulnerable people in the Copperbelt Province in farm-based reforestation
Forest restoration activities started
- 2016 Partnership with BEESWEET to support farmers in producing and selling honey
Partnership with HOME ENERGY to subsidise wood-efficient cooking stoves
Received a co-funding grant from the Finnish Ministry of Foreign Affairs, as part of the Civil Society Environmental Fund 2 (CSEF 2), to continue to consolidate and expand our forest restoration activities in Luanshya
- 2017 Foundation of the Luanshya Farm Forest Association to manage the marketing and commercialization of the agro-forestry products produced by the farmers
February: started a sister project in two new districts in the Copperbelt province - Mpongwe and Chingola, with the support of Finnish Agri-Agency for Food and Forest Development
August: meeting with Minister of Water, Sanitation and Environmental Protection, Lloyd Kaziya, in Lusaka. WeForest was asked for advice on how to tackle deforestation.
- 2018 January: measurement of permanent monitoring plots
February: recruitment of new farmers
March: installation of additional beehives
April: training new farmers in forest restoration

PLANS FOR A SECOND PROJECT IN ZAMBIA

WeForest is currently developing a new project in Zambia that will focus on restoration of designated forest reserves in the Copperbelt. These reserves were once set aside by the government because of their national importance to the protection of water catchment areas and/or their high floral value. Nowadays, however, many of the reserves are depleted, mainly due to illegal logging for charcoal. The government institutions lack sufficient funds and expertise to restore or protect the reserves. WeForest will work closely with the Forestry Department of the Zambian Ministry of Lands, Natural Resources and Environmental Protection, to bring back the forest in a sustainable and profitable way. Do you want to hear more about this great new project? Contact us!





WeForest tree nursery in Luanshya, Zambia.



Aerial picture of the intervention area taken by a drone.

FOOTNOTES

- 1 Includes 148 050 trees funded in 2014, 164 022 trees funded in 2015, 275 766 trees funded in 2016, 1 024 721 trees funded in 2017 and 1 047 412 trees funded in 2018 (ongoing).
- 2 Assuming the average annual carbon footprint of one European is an equivalent of 10 tons of CO₂.

WeForest is an international non-profit that specializes in mobilizing companies to restore the World's forests and embark their stakeholders into a long-term journey towards environmental sustainability.

In order to achieve the objectives of the Paris Climate Agreement, we need to start decreasing our global emissions by 2020 and achieve carbon neutrality by the second half of this century. While reducing carbon emissions is critical, research suggests that even if carbon dioxide emissions came to a sudden halt, the carbon dioxide already in the Earth's atmosphere could continue to warm our planet for hundreds of years. The challenge is to reduce future carbon emissions and actively remove the excess carbon from our atmosphere.

Forests are known as the best technology for that: they are an amazing carbon sink.

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THANK YOU