

Katanino, Zambia

Supporting successful
Joint Forest Management

Yearly Update 2021



Summary

Katanino Forest Reserve has been heavily degraded for charcoal production, agriculture and timber extraction.

We are laying the groundwork so that local communities, with public institutions, can take over management of the reserve. In addition, more than 900 farmers in the buffer zone will set aside at least half a hectare each in their farms as restoration plots and take up income-generating activities – mainly beekeeping – to reduce pressure on the forest.

2021 saw our Katanino project pass an independent verification audit, work alongside the country’s new Ministry of Green Economy and Environment, and [showcase its work](#) at the international SER 2021 conference as part of their “Field Trip Fridays” series, as well as achieving its day-to-day restoration work!

4390 ha inside the Katanino Forest Reserve and 859 ha of farm plots are now under restoration by Assisted Natural Regeneration (ANR) and represent an estimated 5.9 million trees. The field project offices were constructed in 2021, as well as an office and storage infrastructure at our nursery site.

In June, a successful audit means [Katanino is now verified](#) to the Forest Ecosystem Restoration standard in recognition of its quality work and contribution to the UN Decade on Ecosystem Restoration.

A change in government in Zambia in August has seen a renewed emphasis on climate projects as the country transitions into a green economy. Our manager Fainness provided a tour of the project for the Minister, discussing how the work can be scaled up within Zambia, and WeForest was invited to the Ministry’s Green Economy team meeting.

This report shares an update of our progress during 2021. Thank you for all your support!

2021 in numbers

The total area being protected and restored in the forest reserve and buffer zone is **5249 ha** with an estimated **5.9 million trees**

In 2021:

34 896 seedlings were raised in the nursery for planting and agroforestry

86.86 ha mapped on farms as ‘restoration plots’ through assisted natural regeneration (ANR)

1273 tree seedlings were planted in the enrichment sites in the reserve

2.75 ha was planted with 2750 pine seedlings

321 households were engaged in new forest-friendly income generation

192 farmers are practising agroforestry

450 bee hives were hung inside the Forest Reserve and **365** were hung on 73 farm ANR plots

8723.5 kg of honey was harvested in July

5 livelihood co-operatives were registered



Restoration

Increasing tree cover in Katanino Forest Reserve and its Buffer Zone

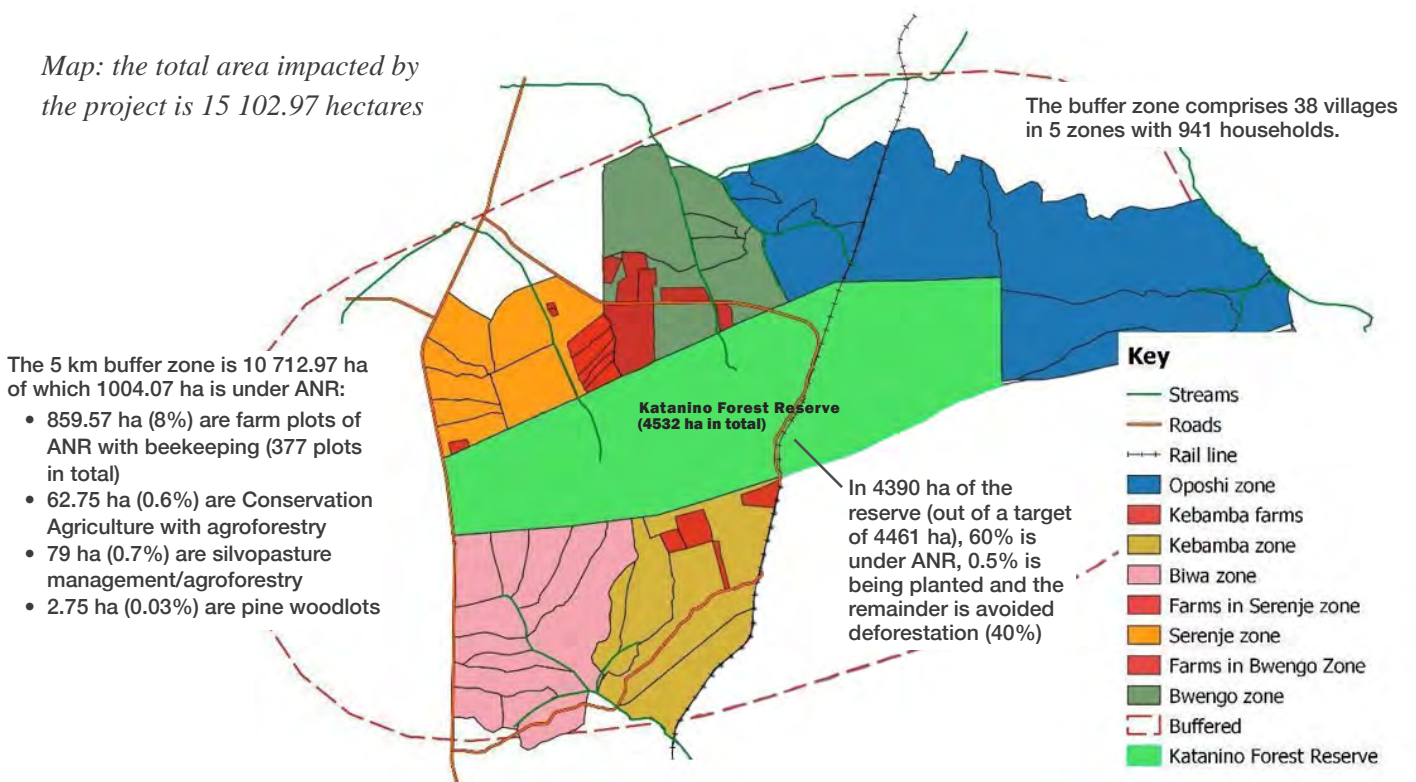
Approximately 5.9 million trees are protected and regrowing in a total of 5249 ha of the Forest Reserve and the Buffer Zone, primarily through assisted natural regeneration. This includes establishing firebreaks to reduce wildfire risk, carrying out controlled early burning

to reduce the chance of wildfires later in the dry season, and weeding to support wild seedlings to thrive.

The first progress monitoring compared to the 2020 baseline will take place in 2022.

Planting in Katanino is very limited. This year 1273 seedlings were planted in heavily degraded sites – 40% for new planting and 60% to replace some seedlings planted in 2020 that had not survived. The common species planted include *Azelia quanzensis* (see next page), *Acacia polyacantha*, *Faldherbia*

Map: the total area impacted by the project is 15 102.97 hectares





A versatile species

It may look small now, but this *Azelia quanzensis* – known as *Mupapa* locally – may grow up to 20 metres tall. It is the most common species being planted in the enrichment sites inside the forest reserve. As one of the few valuable timber species in miombo woodlands, there are very few mature trees left inside the reserve.

albida, *Syzygium cordatum*, *Albizia adianthifolia* and *Julbernardia paniculata*.

Monitoring of last year's 8.3ha (6792 indigenous seedlings) took place in July 2021. Pests and disease and high competition from weeds and grasses led to an average survival rate of 34.2%, much lower than our 80% target. To improve survival rates, we are now selecting more mature seedlings to ensure they are more resilient and implementing a more intensive after-care regime.

Preventing wildfires protects trees

Controlled early burning (below) is, ironically, one of the techniques used that will stop devastating forest fires, and needs to be done at the right place and the right time. Fire

management activities like these are led by the Community Forest Resource Guards and the Participatory Forest Resource Assessment team whose 22 members have been trained in fire prevention and fire fighting.

The effectiveness of these measures is currently being assessed by compiling and comparing incidence of wildfire. Wildfires are reported to project staff by field teams on site, as well as satellite data from Global Forest Watch and reports from the fire fighting team.





Co-management

Enhancing stewardship and governance

Building the capacity of the local government and communities to effectively co-manage the reserve and the 5km buffer zone around it will protect the Reserve in the long-term. WeForest signed an agreement with the Katanino Forest Trust to support the joint management of the reserve for ten years starting in 2019, when the Trust will assume all management responsibility.

The Trust is made up of the Joint Forest Management Committee, represented by the state, chiefs and village headmen, which is responsible for management of the forest reserve and the 5km buffer around it; and the Village Resource Management Committee, which is responsible for the day-to-day running of forest management activities in the project area such as forest patrols, fire and ANR management and boundary maintenance. The Forest Management Plan, developed in collaboration with the local communities and the foundation of the long term work here, is expected to be finalised in 2022. Successful restoration according to this Plan depends on a successful Trust with sufficient income to pay the Community Forest Resource Guards and communities for fire management activities, ring-weeding, planting and other restoration activities.

The Trust's main source of income so far has been an income sharing mechanism through the project's livelihoods programme (see next section). Another

planned source of income is revenue from the issuance of permits for harvesting of forest products such as mushrooms as well as sustainable harvest for timber. Since Katanino forest Reserve is degraded, no permits have yet been issued, although there are now positive signs that mushrooms and fruits are becoming abundant and permits can be issued in the near future. Beehives inside the Forest Reserve (below) also generate income from honey sales, which in 2021 was US\$548.60.





Daily patrols by Community Forest Resource Guards (like [Tabetha](#)) inside the Reserve have been conducted since January 2021 and have led to a 54% decline in forest offences inside the reserve compared to 2020, when 50 offences were reported across 2280 km covered (or 1 offence every 45 km) compared to 57 offences across 5620 km (or 1 offence every 98 km) covered in the forest reserve. Other patrol data shows the same positive trend – 95% of the ANR plots are free from charcoal kilns, 68% have no evidence of tree cutting, 98% had fire breaks around the boundaries and beehives, and 63% showed evidence of good controlled early burning.

The next stage is to scale up the patrols to include the 5km buffer zone where tree cutting and charcoal production threatens the forest. To do this the Community Forest Resource Guards will be appointed as Honorary Forestry Officers by July 2022, giving them authority to enforce forest law outside the Forest Reserve.

Below: Pot filling in the nursery



A very important visitor!

The newly appointed Minister for Green Economy and Environment, Hon. Collins Nzovu, visited our site at the end of January to inaugurate the new offices and chat to the team about how projects such as this one can be scaled up all over Zambia. WeForest was also invited to contribute at the Ministry's Green Economy team meeting, making us part of a wider number of organisations countrywide who are contributing to greening the nation.



Livelihoods

Improved incomes and food security for communities neighbouring Katanino Forest Reserve

Improving household income and food security for the families living in the buffer zone, will reduce the pressure on forests as people no longer need to rely on the trees for fuel wood or charcoal.

In 2021, our forest-friendly income programme is already supporting approximately one third of our total number of households over the next five years.

Honey yields double

In return for setting aside at least 0.5ha of their farms as ‘restoration plots’ through Assisted Natural Regeneration, farmers receive up to five beehives to hang in their plots, as well as training in techniques like pruning to help their trees regenerate faster.

In 2021 365 bee hives were hung on 73 farms to support 86.86 ha of farmer-managed assisted natural regeneration plots. 37 (50.7%) farmers are male and 36 (49.3%) are female.

In July, 212 farm plots generated 8723.5 kg of honey in the project’s second ever harvest, bringing in a gross income of US\$12 396.55 and a net income per farmer of US\$33.8,

Above: Building houses for goats

which is around a quarter of the baseline median annual cash income for farming families here. The beehive occupancy rate in 2021 increased to 96.3% compared to 76% in Dec 2020, and the average honey yield per farmer almost doubled to 40.3kg per farmer from 21.9kg last year.

Agroforestry

Integrating trees on farms through agroforestry is a win-win for farmers and forests. 192 farmers are now practising agroforestry in two different systems – conservation agriculture and silvopasture with goats (see next page).

Egg production begins

168 farmers are starting to produce eggs this year and over 60% are women. Over half the farmers have completed the construction of their chicken houses and now have 6 chickens each (1 rooster and 5 hens).

Mushrooms support stable incomes

Growing mushrooms on farms is better than harvesting them from the forest because they can be grown throughout the year, instead of only for three to four months a year, so it provides a more stable household income. It appeals particularly to women and 30 female farmers were recruited and trained in mushroom production in 2021.



The two types of agroforestry livelihoods

Conservation agriculture delivering high yields

The adoption rate for our Conservation Agriculture programme at 19.4% is above the national average of 15%. Many farmers struggle to afford inputs such as seeds and fertilisers, and since Conservation Agriculture requires much less expensive initial outlay it's proving very popular.

Conservation Agriculture incorporates agroforestry as a key component, and is being practised by 113 farmers (67 men and 46 women) that have adopted the strategy of minimum tillage for intercropping maize with legumes and nitrogen fixing species over a total of 64 ha, and received 22 600 agroforestry seedlings (*Faldherbia albida* and *Gliricidia sepia*) for planting.

Ideal agroforestry planting and care conditions saw yields on the five Conservation Agriculture demo plots established in 2020 at more than double the national average, at 4.99 tonnes/ha compared to the country's average maize yield for the 2019/2020 cropping season of 2.07 tonnes/ha. We hope to see similar success when the data from the 113 practising farmers is available in 2022.

79 ha of silvopastures established

79 farmers (68% male and 32% female) have set aside a hectare each to raise goats to sell at market for extra income and have received 3440 legume seedlings – velvet beans, pigeon peas and sunhemp – as well as agroforestry seedlings – *Moringa oleifera*, *Leuceana leucocephala* and *Gliricidia sepium* – to grow as fodder for the goats which will graze on their silvopastures. The goats will be delivered in early 2022.

The first trial took place in the last week of December and yield data will be available in early 2022.

Pine woodlots reduce pressure on native forest

Creating woodlots on farms grows dedicated trees for families to harvest for fuel or timber that will reduce or stop the deforestation of native forest. The key factors for successful farmer-managed woodlots are choosing fast-growing species of pine, as well as the number of people in the family able to help out – pine production is a lot of work!

A pilot program with 5 farmers saw 2750 pine seedlings planted on a total of 2.75 ha. 2 farmers planting 1ha lots and 3 farmers planting in 0.25ha lots. Monitoring will take place by October 2022 and the performance of these different woodlot sizes will determine how to roll out on a larger scale.





What's Next?

Restoration

- Katanino Forest Management Plan Development and Memorandum of Understanding signed with the Forestry Department.
- 100 000 tree seedlings to be grown in the nursery for agroforestry and farmer-managed woodlots.

Livelihoods

- Build 3 mushroom houses to support 45 female-headed households.
- Hang 1000 bee hives to benefit 200 farmers which will lead to at least 100 ha of new areas for assisted natural regeneration (approximately 120 000 trees).
- 80 hectares of agroforestry silvopasture identified with 80 farmers, and 5 goat breeding houses built.
- 166 ha of agroforestry and conservation agriculture under development with 333 farmers.
- 22 pine woodlots to be established with a total of 5.5 hectares planted with 5500 pine seedlings.

How do we know our restored forests are growing and making an impact?

Every hectare under restoration is mapped with GPS points to generate polygons (areas on a map) that are assigned to sponsors. Permanent monitoring plots are established in our sites and our forestry and science teams conduct surveys to monitor progress of biomass growth, tree density, survival rate and species diversity, among other indicators. Where social impacts are also critical, we measure socio-economic indicators such as the number of beneficiaries, people trained, and income generated from forest-friendly livelihood activities.

Please visit our [Why and How](#) webpage for more information.



Stay up-to-date with your interactive [Katanino map](#), and check out the [photo album](#) of the project on Flickr.



Thank you for supporting the Katanino project!