



# Temwa Carbon Balance Report

January 2023

## Temwa Carbon Balance summary

Communities in Nkhata Bay North in northern Malawi are facing the ever-worsening effects of climate change: heavy rainfall is causing soil erosion, unprecedentedly long dry-seasons are affecting crop production, and the subsequent loss of income is leading to increased deforestation.

To tackle this, Temwa Carbon Balance offers organisations and individuals an opportunity to balance their CO<sub>2</sub> emissions through community tree-planting, sustainable farming and community-led management of local natural resources in the hard-to-reach villages of Nkhata Bay North. This now runs alongside Temwa's new restoring forests project. We have successfully planted **91,986** trees since the scheme was first launched in 2020, with **40,911** seedlings out planted this year and **33,850** seedlings currently being out-planted during this planting season.

We are very pleased to report on the project's success, which has seen ever-increasing community participation.

## Project context and aims

Around 90% of households in Nkhata Bay North are smallholder subsistence farmers, and 58% of people live below the national poverty line. The families in the area depend on being able to grow food, but are facing hardships due to the effects of climate change. Erratic rainfall, drought, flooding, strong winds, and crop pests are affecting food production and exacerbating vulnerability and poverty.

Extreme poverty forces people to use their resources unsustainably and leads to local deforestation, which erodes the soil, dries up water sources, and lowers agricultural productivity. This creates a self-perpetuating cycle resulting in worse environmental degradation, and food and income insecurity.

Temwa Carbon Balance supports community reforestation, sustainable livelihoods, and community-led stewardship of local natural resources.

The scheme empowers communities to protect and manage their own resources sustainably, while diversifying livelihoods, restoring forests, halting land degradation, and improving soil health.



## Project achievements

**Tree planting** – Since July, we have continued to grow and nurture the seeds we planted in our various nurseries located in our communities. Tree-planting usually takes place during Malawi’s rainy season starting in the winter months. Due to the delayed onset of rains this year, tree planting did not begin until late December 2022. Of the 48,500 tree seeds planted and raised this year, 33,850 seedlings have survived and are currently being out-planted. The survival of tree seedlings raised has been much lower than normal this year due to climate change; far hotter, dustier, and drier conditions have drastically affected seedling survival. The team in Malawi have been strategising ways to increase survival rates despite these unseasonal conditions in future years, including the use of polytunnels to protect the seedlings as they grow.

Carbon balanced by Temwa Since launched in 2020, including trees currently being planted out	
<b>Trees planted</b>	125,836 trees
<b>Potential carbon benefits<sup>1</sup></b>	12,584 tonnes of CO <sub>2</sub>

Temwa Carbon Balance Tree Planting Achievements to date:	
<b>Trees species planted</b>	98,168 fast-growing and timber trees (pines, mahogany and acacia), 23,708 agroforestry trees, and 3,960 fruit trees
<b>Planting locations</b>	29 woodlots, 48 agroforestry farms, and 28 fruit orchards
<b>Who is growing the trees?</b>	99,405 trees grown by farmers and their families, and 26,431 trees grown in 11 community-owned forests

All of Temwa’s tree-planting is led by the community: members identify issues with resource management, and then they select beneficiaries and tree-planting locations. Beneficiaries create a forest management plan for their sites, and Temwa supports and monitors their implementation. Temwa Carbon Balance now supports our tree-planting project in about 100 locations identified by communities.

Most of the trees planted so far have been a fast-growing, agroforestry species, due to the high local demand for these. However, in 2022, the communities chose to diversify the trees planted to include fruit trees (including bananas, mangos, oranges and tangerines). Temwa facilitated engagement meetings on fruit tree afforestation in four villages, through which communities’ interest was established and commitments were made. Following these meetings, five new fruit tree nurseries have been established, including a nursery at the Temwa owned Usisya Demonstration-garden.



<sup>1</sup> As the trees planted are still in early stages of growth, this is an estimate of the amount of CO<sub>2</sub> that the trees will balance over 20 years. The calculation takes into account potential factors reducing tree survival over time, such as thinning, bush fires, plant diseases and felling. Once the trees reach adequate maturity, our carbon benefit assessment will be based both on current actual and long-term projected benefits.

A further **5,000** fruit tree seedlings have been purchased this month, making a total of 38,850 trees to be outplanted. New fruit tree orchards are being established in two schools and four villages, alongside the establishment of new fruit tree nurseries.



As well as providing additional income, the survival rate for fruit tree seedlings is generally high. Despite experiencing high temperatures into the autumn, the survival rate of raised seedlings this season was recorded to be at 95%. In the Kalangalira Village in Mzgora, 99% of the lemon tree seedlings raised in June survived, and will be out-planted now the rainy season is starting. In October, Temwa trained 10 community members with knowledge and skills on grafting and budding both young fruit tree seedlings and planted fruit trees. Through this activity, 270 fruit tree seedlings have been grafted so far and these 10 community members can now replicate their learning from the nursery in their own homesteads.

Each year, Temwa continues to exceed our targets, both in terms of the numbers of trees planted and the amount of CO<sub>2</sub> emissions that Temwa has committed to balancing.

**Local governance collaboration** – Through training, exchange visits, and community meetings, Temwa works alongside local governance structures, such as Area and Village Development Committees and Village Natural Resource Management Committees (VNRMCs). These structures are equipped to promote sustainable livelihoods and landscape transformation, increasing forest protection and sharing knowledge among peers.

These committees have become increasingly involved in the project over the last year. During the last tree planting season, for example, the number of active VNRMCs increased from 3 to 7. Temwa facilitated the development of village-level natural resource management plans in four villages, analysing the current situation and assessing community commitment. Key locations for forest regeneration and protection were identified, including 14.4 hectares of farmland identified for afforestation and soil conservation, and 21 forest areas identified for protection.

Temwa ensures that all the project sites are forming local bylaws that help protect the forests. This year, local communities, particularly their Village Development Committees, have shown amazing initiative and leadership in enforcing their bylaws independently. In the last six months, Temwa's support towards conducting forest patrols is contributing towards improving the enforcement of forest laws.



**Community member engagement** - In recent months, the community has shown increasing engagement when managing their natural resources.

Increasing numbers of community members are participating in the management of the established woodlots and existing forests, including weeding and building fire breaks, reducing the risks of hazards, such as rampant bushfires, and helping ensure optimal growth of trees. At the Munkhoza village, for example, 26 community members were involved in weeding their communal woodlot.

During the reporting period, Temwa has recorded increasing actions taken by the community to protect forests from wildfires. Seven of the eight village forest areas have been surrounded with fire breaks and, since these mechanisms have been implemented, there have been no reports of forest fires spreading, despite the high temperatures experienced. For instance, 15 community members from Mwandenga village mobilised themselves and prepared a fire break surrounding their village forest area of 1.5 hectares. Similarly, Munkhoza and Chazeka villages conducted a fire break maintenance exercise in their village forest areas.



Monitoring has also demonstrated that community understanding on sustainable use of natural resources has also improved. At the Dube village forest area, for example, the Village Natural Resources Management Committee responsible now issues permits to collect already fallen trees for firewood and a maximum of 10 poles for kitchen and toilet constructions.

Community members are already seeing the benefits from the protected forest areas. Women and children from all the village forest areas have more easily accessible firewood, and can collect yellow mushrooms throughout the year from well-established pine woodlots which necessitate their growth. Community members have also been collecting *Uapaka Kirkiana* (sugarplums) from the Dube village forest which is contributing to improved diets.

Thanks to local bylaw enforcement and alternative livelihoods, such as wild mushroom harvesting and beekeeping, we are witnessing a reduction in the deforestation rates across the areas where Temwa Carbon Balance is implemented. In 2023, our work will focus on enlarging our forest-friendly livelihoods initiative. This month, we are also purchasing a further **30** beehives for two villages, which will act as deterrents against tree felling, while providing nutrition and income benefits for families.

## Community stories

### *Beekeeping and forest protection*

*The Mwandanga Village Group, established in 2018, focuses on tree planting and forest regeneration at the Biriwiri woodlot, a Temwa Carbon Balance site.*

*The group focuses specifically on using beekeeping as a way of protecting the forest, while providing an income through the sale of honey. Currently, they have 34 bee hives, and are looking to expand this amount to increase their honey production.*



*The group were growing increasingly concerned about land being cleared with fires for large-scale farms, and trees being cut down. With Temwa's support, the group has now planted 5,000 seedlings across the 1.5 acre woodlot. The group works together to protect the forest, sharing seedlings within the community and sharing skills and knowledge with friends, neighbours, and their own children.*

*The group have reported that, with Temwa's help, they feel empowered and encouraged to continue protecting their natural resources.*

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## **Reforestation and improving soil health**



*The Ziambika Club was established in 2019 to improve vegetative cover and promote reforestation in order to mitigate the effects of unusually heavy rainfall caused by climate change. This year, the group has planted 800 acacia trees and 1000 gliricidia trees (which provide shade, and soil health benefits). They are also planting mango, avocado and orange trees which will provide income from selling fruits in the market in town.*

*Across five villages in Honga, there are 11 tree nurseries growing agroforestry and fruit trees. The group members expect the soils will begin to improve as they are more protected from erosion caused by heavy rains.*

*In the year ahead, The Ziambika Club are seeking Temwa's support to plant more tree seedlings, use beehives to protect the forests and increase income, and use water irrigation pumps to improve crop growth.*

