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CLINTON DEVELOPMENT INITIATIVE

# Trees of Hope Plan Vivo Annual Report

January 2021 – December 2022

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## 1.0 Background

Deforestation remains a major environmental challenge in Malawi, contributing to soil depletion and watershed degradation. At the same time, because of the number of years needed for trees to mature and be productive, smallholder farmers have not found it profitable to plant and maintain orchards. Clinton Development Initiative (CDI) established the Trees of Hope Project in the Dowa and Neno districts of Malawi in 2007 to reverse deforestation there by making tree farming profitable and attractive for smallholder farmers. Trees of Hope is a certified Payment for Ecosystem Services (PES) program which CDI has been implementing using the Plan Vivo standards.

To help rural communities involved in the Trees of Hope Project to start tree plantations, CDI assisted local groups in establishing small community nurseries that were profitable, sustainable businesses. Farmers were then able to obtain seedlings at a nominal cost, which made the economics of planting trees much more favorable. After seeing that farmers were able to obtain their own seedlings and polythene tubes for their nurseries, CDI stopped providing seedlings to the communities in 2015 and has since seen farmers becoming active in establishing and managing their own nurseries.

The trees that project farmers planted are sequestering more than 200,000 tons of carbon dioxide. The carbon offsets generated by the tree planting have over the years been sold on the international voluntary carbon market. Revenues from offset sales have been providing income to the smallholders as the trees matured and become productive; a portion of offset income was retained to provide funding for the ongoing operation of the project. In addition to revenue from offset sales, farmers also had the opportunity to generate revenue from the sale of fruit, poles, and non-timber forest products.

CDI Malawi has not only been focusing on working with project farmers on planting trees but has also incorporated them in other projects that CDI is implementing in Malawi. Trees farmers were trained to integrate trees with annual crops to provide to diversify farmers' incomes and have also been incorporated in the Community Agribusiness (CAB) model, an approach that is improving farmers' access to finance, markets and input suppliers. This has helped Trees farmers that were relying on incomes from carbon sales to have other sources of incomes and maintain their tree plantations after reaching the 10$^{th}$ year of getting their payments.

The following report presents a general state of the project during the 2021 to 2022 period including events and challenges that occurred during this period.

Table 1: Summary

| Project indicators | Historical (2010-2021) | Added/ Issued this period (2021 - 2022) | Total |
|---|---|---|---|
| No. smallholder households with PES agreements | 852 | 0 | 852 |
| No. community groups with PES agreements (where applicable) by Dec 2017 | 24 | 0 | 24 |
| Approximate number of households (or individuals) in these community groups | 10 | 0 | 10 |
| Area under management (ha) where PES agreements are in place | 272 ha and 6,602.4 100-meter units | 0 | 272 ha and 6,602.4 100-meter units |
| Total PES payments made to participants (USD) | $411,839.29 USD and €22,706.13 | 0 | $411,839.29 USD and €22,706.13 |

| | | | |
|---|---|---|---|
| Total sum held in trust for future PES payments (USD) | $10,720.43 USD | $6,400.22 USD | $4,320.01 USD |
| Plan Vivo Certificates (PVCs) issued | 82,901 | 0 | 82,901 |
| Allocation to Plan Vivo buffer to date (tCO2) | 20,725 | - | 20,725 |
| Unsold Stock at time of submission (PVC) | 0 | 0 | 0 |
| **Plan Vivo Certificates (PVCs) requested for issuance this reporting period** | | 0 | |

| Summary Statistics | |
|---|---|
| Reporting Period | 1st January, 2021 – 31st December, 2022 |
| Technical Specifications in Use | 1. Woodlot<br>2. Boundary Planting (BP)<br>3. Dispersed Systematic Inter-Planting (DSI)<br>4. Citrus Orchard<br>5. Mango Orchard |

| Payment for Ecosystem Services (PES) Agreements in Numbers | | | |
|---|---|---|---|
| | Total PES Agreements for Project | Agreements from Current Reporting | Agreements for New Certificate |
| *Individual Smallholders* | 852 farmers | 0 | 0 |
| *Farmer Groups* | 24 farmer groups | 0 | 0 |
| *TOTAL* | 876 farmers and groups | 0 | 0 |

## 2.0 Key Developments in the Project

### 2.1 Combating Climate Change

CDI has been using the CAB approach to help Trees farmers become climate resilient. CDI encouraged Trees farmers to consider growing other crops such as soybeans and worked with hub farmers alongside CDI team to provide production trainings to farmers. This was to help farmers prevent the Trees that they had grown especially for those that stopped getting carbon payments. CDI wanted to preserve the trees by providing farmers with alternative income generative activities as it was noted that some farmers would start cutting down their trees after the 10th year of getting their payment.

CDI resolved to link 1,542 farmers belonging to 5 Trees primary cooperatives with Dikirani Cooperative Union (DCU). DCU is a farmer owned cooperative business that provides its members with access to quality farm inputs, formal financing and markets that offer competitive prices. The Union was established in 2019 but was legally registered in 2021 after getting a formal training from Ministry of Industry and Trade. DCU is working with farmers largely in the soya bean value chain because soya bean has a large and growing domestic market (about 200,000mt of soya bean per year goes mostly to agricultural processors producing livestock feed and edible oil as a byproduct) and a large regional market. Additionally, farmers find it easy to grow soya bean as it does not require many inputs and fetches reasonable prices on the market. Most DCU farmers have been growing soya beans as their main cash crop for the past ten years.

CDI worked with farmer cooperatives under Dikirani to mount demonstration plots showcased improved agronomic practices. Cooperative leaders worked with CDI staff to take care of the demonstration sites and train their members on the technologies that were being disseminated at the sites. CDI believes that to have resilient and sustainable farmer businesses, means they must consider the climate in their business activities. As such, CDI worked on showcasing best management practices to help farming communities to adapt and mitigate the effects of climate change as it has impacted hugely on their productivity. The technologies that were showcased on the demonstration plots were: upland rice, tolerant maize varieties, tolerant groundnuts varieties, soya bean varieties, and plant catalyst. Out of the 9 demonstration sites that CDI mounted, one was mounted in Dowa district with 8 plots and this benefited Trees farmers among others in the district.

The following are the key achievements and learnings from the demonstration plots:

- Overall, farmers' interest of the showcased technologies increased after government staff used these demonstration plots for field days. Most of them are calling CDI to ask where the seeds and chemicals used can be purchased from.
- Introduction of upland rice drew farmers attention since most of them had never seen rice being grown in an upland.
- Plants that were applied with plant catalyst still maintained green colour despite heavy rains received this year and this led to high yields.
- Trees farmers had a chance to learn new practices for example on the use of inoculant to soya bean and folicur.

## 2.2 Linking Trees Farmers with CDI Business Partners

The CDI CAB approach groups farmers together to collectively increase the quantity, quality, and consistency of their production through trainings while also improving their access to markets and finance through the brokerage of partnerships with farming communities. The CAB focuses on facilitating farmer groups to access knowledge, skills and inputs to improve productivity, output and quality, build sustainable businesses and increase individual and community prosperity. As farmers move through the different phases of CAB graduating into independent commercial operators, new farmers are enrolled. Through this approach, CDI has consistently been able to disseminate knowledge into the wider community; improve access to high-quality, nutritious food and stimulate local economic development and growth.

Trees farmers in Dowa have been benefiting from partnerships that CDI facilitates through CAB. For instance, some farmers have been linked with Neno Macadamia Trust (NMT), growing Macadamia trees. In 2020/21 season, some farmers in Dowa and Ntchisi districts who had old varieties of macadamia trees sold their nuts to NMT through Himacul - many of them realizing large amounts of revenue. The earnings they received after the sales encouraged other farmers within the cooperative to plant more nut trees, but the challenge was the period it takes to start harvesting. Farmers needed the early maturing variety which they could not find within their localities until when CDI linked farmer cooperatives with Neno Macadamia Trust which provided them with seedlings of high quality with short maturity period. When CDI partnered farmers directly with the NMT, most of them were interested to grow the trees as they were told that the trees would take no more than five years to bear fruit. CDI worked with NMT to provide 1,500 seedlings as a pilot. The seedlings were given to 33 farmer groups from four districts (Lilongwe, Dowa, Dedza and Mchinji), benefiting 525 farmers in those groups who planted a total of 37.5 acres of macadamia trees.

In 2022, 36 farmers have received 40 to 80 seedlings each, a total of 1,800 seedlings which will be grown on 45 acres of land. To date, farmers have grown 3,300 trees covering 82.5 acres of land and some of the trees grown in 2020 have started fruiting. CDI plans to continue to source Macadamia seedlings from NMT and have more Trees farmers grow them as it is an additional source of income. NMT assures a readily available market through their macadamia union which buys and sells the unprocessed nut at not less than K2,500 per kg. Processed nuts are sold at between K3,400 to K4,000 per kg. Smallholder farmers within cooperatives are currently predominantly selling unprocessed nuts, but they are exploring the purchasing a portable processing machine that would allow them to make more money from sales in future seasons. To confirm their commitment to purchase all the Macadamia nuts that farmers produce, Ken Mkangala, the cooperative union Manager for NMT says, "*The trees have the capacity to produce 50 to 70kgs of macadamia nuts per year. We plan to purchase these nuts from farmers at K2,500 ($3.13) per kg. This means, for every tree that farmers have grown, they would be making an average of K150,000 ($188).*" The delivered cost for a seedling is K1,385 ($1.7), this means farmers will be making K148,615 ($186) in profit every year per tree, once they start producing. NMT also plans to pay for the carbon sequestered through the trees in the coming years from farmers that will be selling their Macadamia nuts to them.

Due to farmers awareness of the revenue potential of macadamia nut trees, particularly in Dowa and Ntchisi districts, there is high demand by farmer cooperatives for the in-kind macadamia loan. CDI is working with DCU to purchase the nuts from NMT and distribute them on loan to its primary cooperatives which when it works will also benefit the Trees farmers in the 5 cooperatives under the union.

Farmers have also been linked with buyers such as Africa Improved Foods in Rwanda and other local buyers offering farmers competitive prices for quality production. DCU manages the contracts with buyers and has its primary cooperatives deliver to the union for quality checks before exporting or delivering the product to the end buyer. Trees farmers benefited from the $150,000 output loan that DCU accessed in April of 2022 which helped to facilitate early grain purchase from cooperative members. Because at harvest, most farmers are desperate to sell coming from the lean period, vendors take advantage of this and offer them very low prices. DCU ensures that it's members are getting good prices regardless of the time that they are selling as such, obtaining a loan to facilitate early purchases helps farmers to access the DCU market. The cooperatives under Dikirani paid their members 5% more than what vendors and middlemen were paying farmers to encourage more farmers to join the cooperatives and increase the tonnage of produce collectively delivered to end-buyers. The loan was repaid before its due date which prompted Standard Bank to provide another loan to DCU towards the end of the year.

DCU was given an input loan amounting to $30,0000 in October 2022. DCU used the loan to purchase 32 metric tons of soybean seeds from SeedCo and Inoculant from Farmers Organization which was distributed to primary cooperatives under DCU for the 2022/2023 season. For input loans, DCU does not give cash to its cooperatives to buy their own inputs but rather delivers seeds to them to make sure that farmers are getting quality products and therefore producing quality crops that later the cooperative purchases at a competitive price. DCU distributed in total farm inputs amounting to $100,000,000 benefitting 24 primary cooperatives of which 3 were Trees cooperatives under the union.

## 2.3 Challenges with Paying Farmers through the Bank

In the past two years, CDI has been having problems with farmer payments through the bank. The Malawi government

issued national identity cards to all of its citizens from the age of 18. From 2020 payments, we noticed that the bank required that farmers should be presenting their national IDs for them to access their monies instead of the Makwacha cards that they have been using since the inception of the project. The challenge with the change was that most farmers had changed their names at the time that they were registering for their national IDs as such, it became impossible for them to access their money.

CDI worked with the bank to resolve the issue and since it was a rule that came from the central bank, it was hard for the bank to make exceptions. It was agreed later that farmers should present a letter from their village head confirming that they are the owners of the account to avoid giving the money to the wrong person. This worked for the 2020 and 2021 payments but in 2022 the bank stopped requiring the letter from the village head and required a letter from the District Council's office. The District Council was charging $10 for farmers to get their letter stamped and this did not include the transport they would use to get to the District Council. This meant that farmers would get way less or others nothing at all if they would spend money on the letter. Some farmers that were receiving more money managed to get their letters stamped but for those with less money did not even try as they saw it as a loss. As such, CDI resorted in paying farmers in cash in 2022 and has worked with the bank to release the funds of the remaining 11 farmers which had been deposited into their personal accounts. All farmers have now accessed their funds.

### 2.4 Payment for Ecosystem Services (PES)

In 2021, CDI paid 418 farmers that were not paid in 2020 due to Covid which made it impossible for CDI to conduct its monitoring exercise before payment. In 2021, enumerators were hired to help with collecting DBH of these farmers. The 418 farmers that CDI collected data from were farmers that joined the project in the following years: 2010, 2011, 2013 and 2014. Farmers that joined in 2010 and 2011 were getting their last payments whilst those that joined in 2013 and 2014 were getting their 6$^{th}$ payment leaving them with one more payment. CDI paid a total of $11,286.98 to 2010 and 2013 farmers and a total $4,156.87 to 2011 and 2014 farmers. Out of the 178 farmers that received their payment in 2022, 146 received their last payments and therefore, graduated from the project. CDI is now remaining with farmers that joined the project in 2013 (78 farmers) and 2014 (32 farmers), making a total of 110 farmers who will be getting their last payment before the project winds down.

### 2.5 Monitoring and Evaluation

During monitoring and evaluation visit that took place in 2021 and 2022, CDI noticed that overall, the project has improved tree and forest cover in the five Traditional Authorities it targeted. Equally, it has also improved farmers livelihoods. Farmers have been able to construct decent houses, buy oxcarts, goats and pay school fees for their children from the cash benefits. The general people's perception on the project is still positive even though some farmers were not happy with the bank payment system where it was found that the beneficiaries' names at the bank do not match with the farmer's name on the national ID Card which has made it difficult to access their monies at the banks. This demoralized some farmers also brought mistrust between them and their local program monitors as they thought the monitors were duping them. CDI held a meeting with farmers to explain that it was the problem of the local monitors but rather the requirement of the bank to use ID cards and it was unfortunate that farmers were using different names. CDI assured farmers that they would work with the bank to release their money.

### 2.6 Refresher Trainings

CDI has not been providing trainings to farmers however, local program monitors (LPMs) are still available in the districts and are helping farmers to maintain their trees. The LPMs provide trainings where needed especially to none project farmers interested in establishing their own nurseries. Other than that, project farmers are confident and very much aware of the modalities of maintaining healthy trees and do not require additional trainings.

## 3.0 Key Events in the Project

### 3.1 Visits to Trees of Hope Farmers

CDI is currently conducting annual visits to tree farmers. This is normally done as part of the monitoring and evaluation process when farmers are nearing payment for their carbon credits, as well as during the actual payments. Additionally, tree farmers are visited more frequently for other projects that CDI is implementing in collaboration with DCU. CDI plans to continue to work with these farmers through DCU even after they finish getting their payments as they have shown interest to diversify their incomes through exploring other revenue streams.

### 3.2 CDI Transition

CDI plans to localize its operations beginning from the end of 2023. CDI has been incubated within the Clinton Foundation as an international NGO for over 15 years. CDI plans to separate from the Clinton Foundation and shift its focus on localization with global lens. CDI will, therefore, continue its operations under a different name which will be communicated later in 2023. We will continue to evaluate how we do our work, how we partner, and how we create an enabling environment in which farming communities can successfully drive their own agribusinesses without facing barriers to the traditional challenges they face like accessing finance, high quality inputs or markets in order to have a great impact on the farming communities we work with.

In view of the transition, CDI would like to pay off the remaining 110 farmers of which 78 are farmers that joined in 2013 and 32 are those that joined in 2014 before the transition. CDI had a discussion with Plan Vivo about paying off farmers that joined in 2014 early so long as they meet their last year monitoring target. CDI will therefore, conduct a monitoring exercise for both 2013 and 2014 farmers to gauge if their trees have met the agreed targets and pay them off by October 2023. The total amount held to be paid to these remaining farmers is $4,320.01.

## 4.0 Key Challenges the Project Faces

### 4.1 Farmers Trees were Taken by a School

A group in Dowa had their trees, which they had grown around a school, taken by the school. The school leadership claimed that CDI had handed the trees over to them, but this is not true. CDI advised the farmer group to request a letter from the school stating that the trees had been donated by CDI, but the school failed to provide such a letter. CDI encouraged the farmer group to take the issue to their village head to help them solve it. The group has already reached their 10$^{th}$ year of getting their payment and CDI assumes that they wanted to cut down the trees which did not please the school authorities, leading them to falsely claim ownership. In fact, the group did want to cut down the trees, which is why the school insisted on claiming ownership. However, it was later agreed that the group would only be allowed to prune the trees, as they provide valuable shelter to the students.

### 4.2 Delays in Payments to Farmers

The payment to the 68 farmers who were supposed to receive their final payment in 2022 was delayed due to a backlog of payments for farmers from 2021, which were processed in 2022. The 68 farmers were paid during the first quarter of 2023. CDI is currently working on paying farmers who joined the project in 2013 and 2014. Additionally, CDI has conducted a monitoring visit to the remaining farmers and collected the DHB data for their trees, enabling them to receive their payments.

## 5.0 Project & Participant Overview

Producers in the program are engaged in one or more of the five land-use systems described in the table below. For more information please explore the Trees of Hope technical specification documents on the Plan Vivo website. The graphic below explains the environmental and potential income generating benefits of each of the land use systems.

Producers registered with the program, each with a single *plan vivo*, are either individual households or communal groups. Producers can opt for more than one land use system and this is common among individual producers, while communal groups are typically engaged in woodlot land use system. Table 5 below shows producers and community groups with registered PES agreements. These numbers have changed slightly since the last report as two farmers have consistently not met their targets.

Table 2: Profile of Producers with Registered PES Agreements

| STATISTIC | VALUE |
|---|---|
| Total Number of Producers | 876 |
| Number of Community Groups | 24 |
| Number of Individual Producers | 852 |

The total area coverage for the project is shown in Table 6 below, broken down by system, in addition to the total carbon sequestered by the land use systems.

Table 3: Area Coverage for the Land-Use Systems

| LAND-USE SYSTEM | UNITS | AREA COVERAGE & CARBON TOTALS |
|---|---|---|
| Project Area | Woodlot | 102.5 |
| | DSI | 154 |
| | Mango | 4.33 |
| | Citrus | 11.79 |
| | 100 meter | 6,602.4 |
| Total $tCO_2$ | | **82,900.94** |

### 5.1 Carbon Recalculation

As noted above, a revision of the carbon potentials with the auditors and verifying body has taken place. Below is a summary of the changes that occurred broken down by land use system.

Table 4: Updated Carbon Potentials

| Technical Specification | Net benefits | | |
|---|---|---|---|
| | Subtracting Baseline (tCO2/ha) | Contribution to PV Buffer (20%) (tCO2/ha) | Tradeable (80%) (tCO2/ha) |
| Woodlots | 181.2984 | 36.2597 | 145.0387 |
| Boundary Planting | *212.8167* | *42.5633* | *170.2534* |
| B. Planting (per 100m) | 10.6408 | 2.1282 | 8.5127 |
| Dispersed Interplanting | 87.2276 | 17.4455 | 69.7821 |
| Mango Trees | 103.3753 | 20.6751 | 82.7003 |
| Citrus Trees | 67.1537 | 13.4307 | 53.7229 |

### 6.0 Sales & Issuances of Plan Vivo Certificates

*Issuance Summary*

**2020 Schedule**

| Vintage | Monitoring Year and Target | % of total after payment | Amount Due |
|---|---|---|---|
| 2010 | Year 10 – DBH more than 15 cm | 100% | $8,626.14 |
| 2013 | Year 7 – DBH more than 8 cm | 90% | $2,660.84 (10% of total remaining to be paid in 2023 pending meeting target) |

District: Dowa
Total payment for 2020: $11, 286.98
Total farmers: 308

**2021 Schedule**

| Vintage | Monitoring Year and Target | % of total after payment | Amount Due |
|---|---|---|---|
| 2011 | Year 10 – DBH more than 15 cm | 100% | $2,497.70 |
| 2014 | Year 7– DBH more than 8 cm | 90% | $1,659.17 (10% of total remaining to be paid in 2024) |

District: Dowa
Total payment for 2021: $ 4,156.87
Total farmers: 110

## 7.0 Summary of Monitoring Results

Farmers have been consistent in meeting their monitoring targets. CDI has not held any money from any of the project beneficiaries as all of them met their monitoring target. The current monitoring targets for farmers getting their payment in 2023 are based on farmers meeting the required diameter at breast height of 15cm. CDI would like to pay all the remaining farmers in 2023 as CDI will transition to a local NGO towards the end of 2023. CDI agreed with Plan Vivo that all the 2014 farmers can be paid in 2023, a year before their final year so long as they meet their monitoring target. CDI is yet to conduct a monitoring exercise for these farmers to determine on whether they can be paid and therefore, closing out the project a year earlier.

| **2007** (ha) | | 100 meter segments | tCO2 |
|---|---|---|---|
| woodlot | 29.59 | 0 | 4,291.70 |
| DSI | 12.31 | 0 | 842.96 |
| BP | 0 | 202.23 | 1,721.51 |
| Mango | 0 | 0 | 0.00 |
| citrus | 0 | 0 | 0.00 |
| total hectares | 41.9 | 202.23 | 0.00 |
| total carbon | 0 | 0 | 6,856.17 |
| total value | 0 | 0 | 30,167.13 |
| Individuals | 42 | 0 | 0.00 |
| Groups | 11 | 0 | 0.00 |
| Total | 53 | 0 | 0.00 |

| **2008** (ha) | | 100 meter segments | tCO2 |
|---|---|---|---|
| woodlot | 27.2116 | 0 | 3,946.74 |
| DSI | 25 | 0 | 1,744.55 |
| BP | 0 | 581.25 | 4,947.97 |
| Mango | 3.47 | 0 | 286.97 |
| citrus | 9.8 | 0 | 526.49 |
| total hectares | 65.4816 | 581.25 | 0.00 |
| total carbon | 0 | 0 | 11,452.71 |
| total value | 0 | 0 | 50,391.94 |
| Individuals | 159 | 0 | 0.00 |
| Groups | 8 | 0 | 0.00 |
| TOTAL | 167 | 0 | 0.00 |

| **2009** (ha) | | 100 meter segments | tCO2 |
|---|---|---|---|
| woodlot | 19.05 | 0 | 2,767.20 |
| DSI | 16.36 | 0 | 1,125.58 |
| BP | 0 | 1371.08 | 11,671.51 |
| Mango | 0.86 | 0 | 71.12 |
| citrus | 1.99 | 0 | 106.91 |
| total hectares | 38.26 | 1371.08 | 0.00 |
| total carbon | 0 | 0 | 15,742.32 |
| total value | 0 | 0 | 69,266.21 |
| Individuals | 169 | 0 | 0.00 |
| Groups | 1 | 0 | 0.00 |
| Total | 170 | 0 | 0.00 |

| **2010** (ha) | | segments | tCO2 |
|---|---|---|---|
| woodlot | 14.0408 | 0 | 2,036.46 |
| DSI | 50.305 | 0 | 3,499.55 |
| BP | 0 | 2088.41 | 17,777.88 |
| Mango | 0 | 0 | 0.00 |
| citrus | 0 | 0 | 0.00 |
| total hectares | 64.3458 | 2088.41 | 0.00 |
| total carbon | 0 | 0 | 23,313.89 |
| total value | 0 | 0 | 102,581.12 |
| Individuals | 226 | 0 | 0.00 |
| groups | 4 | 0 | 0.00 |
| Total | 230 | 0 | 0.00 |

| **2011** (ha) | | segments | tCO2 |
|---|---|---|---|
| woodlot | 6.2028 | 0 | 899.65 |
| DSI | 21.72 | 0 | 1,515.67 |
| BP | 0 | 632.88 | 5,387.48 |
| Mango | 0 | 0 | 0.00 |
| citrus | 0 | 0 | 0.00 |
| total hectares | 27.9228 | 632.88 | 0.00 |
| total carbon | 0 | 0 | 7,802.79 |
| total value | 0 | 0 | 34,332.29 |
| Individuals | 78 | 0 | 0.00 |
| Groups | 0 | 0 | 0.00 |
| Total | 78 | 0 | 0.00 |

| **2012** (ha) | | segments | tCO2 |
|---|---|---|---|
| woodlot | 1.0408 | 0 | 150.96 |
| DSI | 4.77 | 0 | 332.86 |
| BP | 0 | 652.62 | 5,555.52 |
| Mango | 0 | 0 | 0.00 |
| citrus | 0 | 0 | 0.00 |
| total hectares | 5.8108 | 652.62 | 0.00 |
| total carbon | 0 | 0 | 6,039.34 |
| total value | 0 | 0 | 26,573.08 |
| Individuals | 68 | 0 | 0.00 |
| Groups | 0 | 0 | 0.00 |
| Total | 68 | 0 | 0.00 |

| **2013** (ha) | 100 | segments | tCO2 |
|---|---|---|---|
| woodlot | 4.1516 | 0 | 602.14 |
| DSI | 12.725 | 0 | 887.98 |
| BP | 0 | 669.75 | 5,701.34 |
| Mango | 0 | 0 | 0.00 |
| citrus | 0 | 0 | 0.00 |
| total hectares | 16.8766 | 669.75 | 0.00 |
| total carbon | 0 | 0 | 7,191.46 |
| total value | 0 | 0 | 31,642.43 |
| Individuals | 78 | 0 | 0.00 |
| Groups | 0 | 0 | 0.00 |
| Total | 78 | 0 | 0.00 |

| **2014** (ha) | 100 | segments | tCO2 |
|---|---|---|---|
| woodlot | 1.2 | 0 | 179.11 |
| DSI | 10.25 | 0 | 731.13 |
| BP | 0 | 404.22 | 3,592.02 |
| Mango | 0 | 0 | 0.00 |
| citrus | 0 | 0 | 0.00 |
| total hectares | 11.45 | 404.22 | 0.00 |
| total carbon | 0 | 0 | 4,502.26 |
| total value | 0 | 0 | 19,809.92 |
| Individuals | 32 | 0 | 0.00 |
| Groups | 0 | 0 | 0.00 |
| total | 32 | 0 | 0.00 |

| **SUMMARY BY** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | **DSI** | | **Mango** | | **Citrus** | | **BP** | |
| **Woodlot** | | **DSI** | | **Mango** | | **Citrus** | | **BP** | |
| hectares | 102.49 | hectares | 153.44 | hectare | 4.33 | hectares | 11.79 | 100m segments | 6,602.44 |
| tCO2 | 14,873.95 | tCO2 | 10,680.27 | tCO2 | 358.09 | tCO2 | 633.39 | tCO2 | 56,355.23 |

**8.0 Breakdown of Operational Costs**

| | |
|---|---|
| Expense | |
| Personnel | |
| Total Personnel | $4,753 |
| Program and COGS | |
| Total Program and COGS | $0.00 |
| Office | |
| Total Office | $1,000 |
| Travel | |
| Total Travel | $0.00 |
| **Total Expense** | **$5,753.00** |

## 9.0 Appendices

Appendix I: PES Agreement Form

**CLINTON DEVELOPMENT INITIATIVE**

**TREES OF HOPE PROJECT**

**LILONGWE, MALAWI**

**PAYMENT FOR ECOLOGICAL SERVICES AGREEMENT**

**THIS AGREEMENT** (the "**Agreement**") is made this_____day of_____in the year____ _____between the **Clinton Development Initiative** ("**CDI**"), an initiative of the Clinton Foundation, located off Chayamba Road on Kambuku Street, Area 43/2/24, Private Bag 68, Lilongwe, Malawi, hereinafter referred to as the "**Project Manager**."

**AND**

_____of Village Head_____ _____, Group Village_____Head Traditional_____ _____ Authority in_____district, hereinafter referred to as the "**Producer,**" which shall admit and include their respective successors in title and/or assignees.

**WHEREAS** the Clinton Foundation is a not-for-profit organization which operates CDI in Malawi to support the government in rural development, environmental rehabilitation and livelihood improvement, and runs the Trees of Hope Project, a Plan Vivo-certified project, to coordinate sales of carbon certificates;

**AND WHEREAS** the Producer is the owner of the piece of land described in Appendix I;

**AND WHEREAS** the Producer has agreed to produce the estimated volume of carbon credits by planting, using and maintaining the land herein described under the land use system(s) shown in Appendix II, Table A;

**AND WHEREAS** CDI has agreed to coordinate sales of carbon certificates generated by the Producer by way of the Carbon Emission Reduction Process under the Trees of Hope Project at the price and conditions herein appearing below, and based on meeting the monitoring targets annually as outlined in Appendix II, Table B;

**AND WHEREAS** both parties are committed to reforestation of rural Malawi through the promotion of tree species to improve the environment, the food security of rural communities and a source of income aside from traditional staple crop agriculture;

**NOW THEREFORE** it is agreed that the purpose of this Agreement is to provide terms and conditions between the parties for the sale of carbon under the Carbon Emission Reduction Process pursuant to the Plan Vivo project. It applies to all sites registered by the Producer with the Trees of Hope Project for the provision of carbon sales.

**1. Producer shall:**

a. *Meet monitoring targets*. Meet monitoring targets, as outlined in Appendix II, Table B, over the first ten year period of growth as set under the Plan Vivo standard.

b. *Maintain land use system.* Maintain the specified land use system(s) for 50 years (the "**carbon crediting period**") as described below:

i. Maintenance of the land use system is defined for the first ten years of tree growth by Appendix II Table B, and thereafter as at least 90% survival of mature trees past the ten year monitoring period and until the end of the 50 year carbon crediting period. Additional details regarding management of the tree systems are outlined in the technical specification documents on the Plan Vivo website.
ii. All payments, based on the projected carbon to be sequestered over the 50 year crediting period, are calculated to be paid out over a ten year period as shown in Appendix I.
iii. After ten years, Producer shall be held self-accountable for the survival of the trees.

c. *Rectify problem areas*. If Producer fails to meet monitoring targets, Producer shall be placed on probation and shall have one calendar year (12 months) to rectify problem areas, starting at the date of failure to meet set targets, during which time payment shall be withheld.

i. If the Producer has not yet taken steps to rectify the problem areas by the second year of being on probation, further payment may be withheld and the Producer will be evaluated by CDI to determine whether or not he or she will remain in the program.
ii. If the reason for tree-loss is deemed unacceptable by CDI, Producer shall be permanently removed from the Trees of Hope project, and shall forfeit all future payments.

2. **CDI shall**:

a. *Pay agreed purchase price*. CDI shall pay the agreed purchase price per ton at the rate described in Appendix I, after verification that monitoring targets as specified in Table B and described below have been met.

i. Monitoring shall take place during the years specified in Table B: Data will be collected by CDI field officers for each Producer. Thereafter, monitoring by CDI field staff shall stop. Details of the monitoring process are outlined in the Project Design Document on the Plan Vivo website.

b. *Pay in instalments.* CDI shall pay total amount due to Producer (see Appendix I) via instalments as detailed in Appendix II, Table B, following verification that corresponding monitoring targets have been met. Payment conditions are as follows:

i. CDI works with First Merchant Bank of Malawi ("**FMB**") to issue bank account cards to all producers under the Trees of Hope project. CDI submits annual payment summaries to FMB, which will distribute the funds into Producer's account if annual monitoring targets are met.
ii. If Producer fails to meet monitoring targets, payments shall be suspended, at which point the Producer will have one calendar year (12 months) to rectify problem areas, starting at the date of failure to meet set targets.
    1. Payment may be withheld for up to two (2) one-year payment periods (or 24 months) if Producer fails to rectify problem areas to meet monitoring targets by the end of their two year probation period. At that point, CDI will determine, based on the reason for tree-life loss, whether or not the Producer will remain in the project or if the Agreement shall terminate.
    2. If the reason for tree-loss is deemed unacceptable, Producer shall be permanently removed from the Trees of Hope project, and shall forfeit all future payments.

3. **Jointly, the Parties agree to the following:** *Risk Buffer*. The Producer agrees to allocate 20% of his/her total carbon sequestered into a risk buffer maintained by Project Manager (the remaining 80% shall be the basis for Producer's payments, or the saleable carbon). In extreme cases of tree-loss by any given Producer, the risk buffer will ensure that if any losses are incurred, the total sequestered carbon in aggregate for the project can remain stable.

4. **Term/Termination**. The term of this Agreement shall commence on and shall continue for an initial term of ten (10) years, provided however that (i) either party may terminate this Agreement if the other party fails to perform its obligations hereunder and such failure to perform is not cured within thirty (30) days or (ii) in accordance with sections

1.c and 2.b.ii above, following written notice from the complaining party of such failure to perform; and (iii) CDI may terminate this Agreement upon not less than sixty (60) calendar days prior written notice to Producer should the Clinton Foundation discontinue its work or make other significant programming changes requiring the termination of this Agreement.

***Signatures Appear Below***

Acknowledged and agreed to this day of_____, 2015.

**[ ]**

By:_____

WITNESSED BY:

_____

**CLINTON FOUNDATION**

By:_____

WITNESSED BY:

_____

**Producer Identity and Carbon Credits Profile**

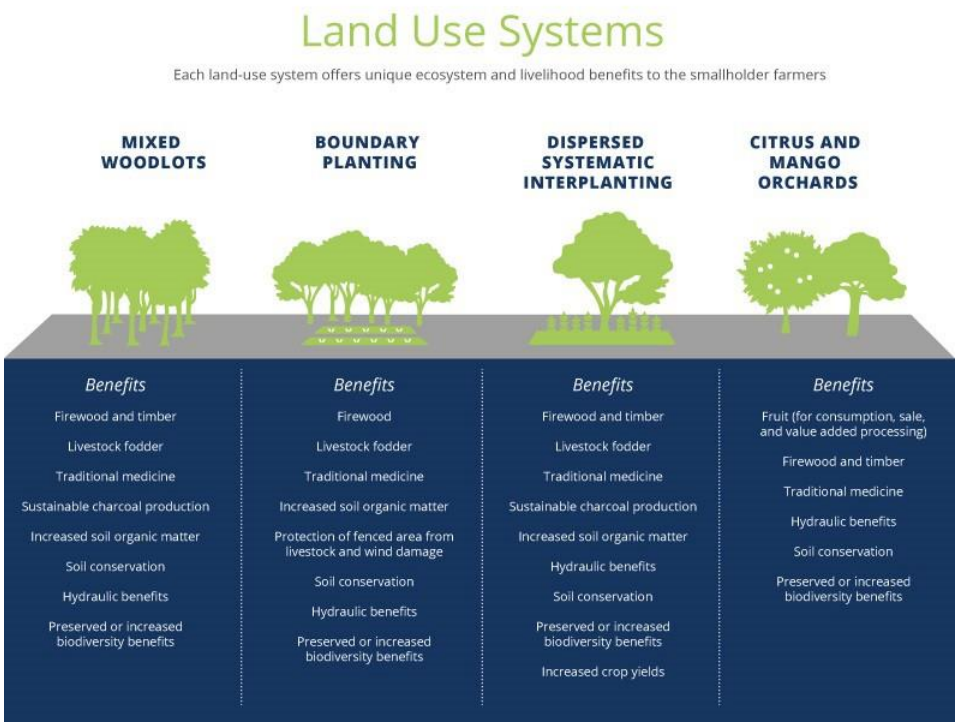
This form was computerized in 2016.

| | | |
|---|---|---|
| **1.** | **Name of Producer (Individual/Group and key point of contact)** | |
| **2.** | **Group Village Head** | |
| **3.** | **Traditional Authority** | |
| **4.** | **Project site (location)** | |
| **5.** | **Producer's Government ID number.** | |
| **6.** | **Total estimated size to be planted (Appendix II Table A)** | |
| **7.** | **Total carbon credits issued ($tCO_2e$ for all land use systems implemented in the Producers field(s))** | |
| **8.** | **$tCO_2$ withheld as buffer (20% of total)** | |
| **9.** | **Total saleable $tCO_2e$** | |
| **10.** | **Total $tCO_2e$ bought to date** | |
| **11.** | **Total unsold $tCO_2e$ to date** | |
| **12.** | **Price per $tCO_2e$ (euro)** | |
| **13.** | **Total amount (Euro and Kwacha) to be paid to the Producer for carbon sold over 10 year period** | |

Appendix II: Training Module Components

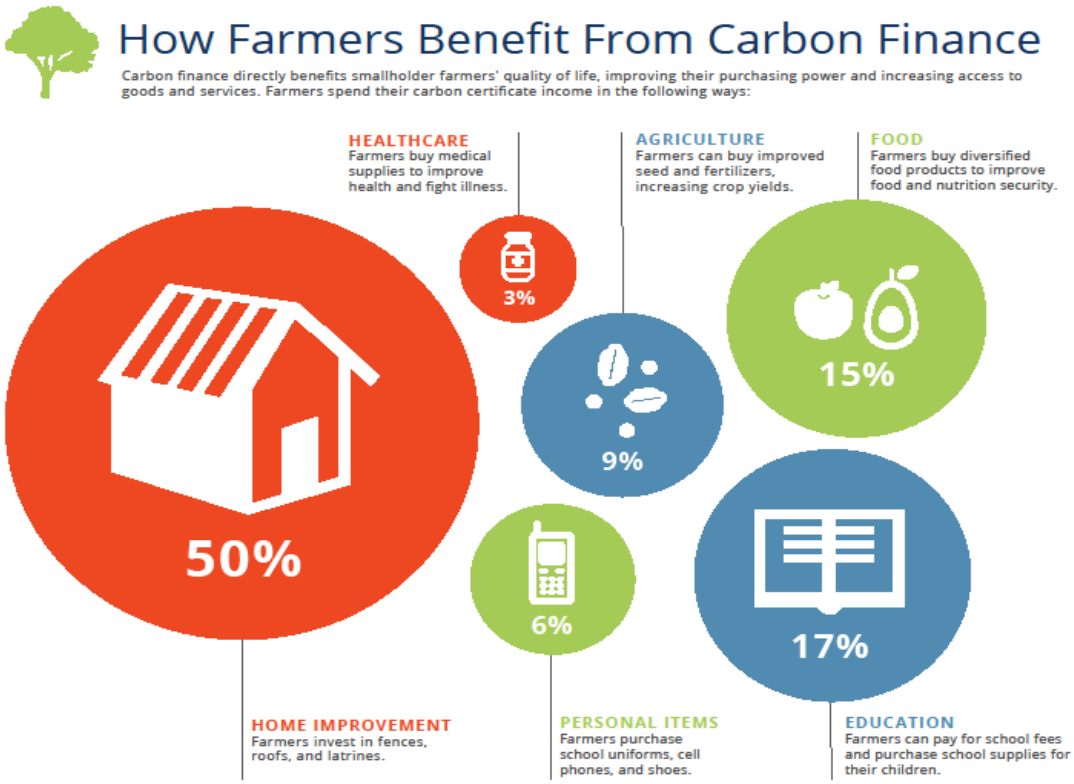
| NUMBER | MODULE | BRIEF CONTENT AND RATIONALE |
|---|---|---|
| **1** | Climate change and rural livelihoods | Covers definition, causes and illustration of climate change effects with local indicators and its impact on rural livelihoods. |
| **2** | Climate change adaptation and mitigation | Presents possible strategies for avoiding further dangerous climate change and mechanisms to learn to live with the present effects. The role of trees in climate change management is discussed. |
| **3** | Trees of Hope Project: An Overview | Presents the objectives of the project and other building blocks of the program as a vehicle available to the communities to address climate change and safeguard and improve livelihoods. |
| **4** | The Plan Vivo System | Covers all tenets of the Plan Vivo system touching on all aspects from definition of a plan vivo to payment of carbon finance. |
| **5** | The concept of carbon trading | Introduces the new paradigm of carbon trading and carbon markets by defining the product to be produced by them as producers and outlining requirements of the market. |
| **6** | Tree nursery establishment and management | Looks at nursery techniques including choice of site, fencing, seed pre-treatment, media preparation, pot filling, sowing, development of root stocks, grafting, budding, root pruning, pest and disease management and hardening off. |
| **7** | Establishment and management | Covers selection of site, pegging and marking according to the technical specification, pitting, planting, mulching, pest and disease management, fire breaks, thinning and pruning. |
| **8** | Field monitoring | This outlines monitoring indicators and specifies what data are to be collected, highlighting the target for each monitoring period. |
| **9** | Receipt of carbon finance | Covers mainly the dividing criteria between eligibility and non- eligibility for receipt of carbon finance depending on monitoring results. Also covers issues about farmer payment procedures. |
| **10** | Group dynamics | Looks at advantages of working in groups, group formation, group leadership, team building, motivation and trust building. |

Appendix III: Land Use System for Trees of Hope and Infographic




| Land Use System | Description | Density/Spacing |
|---|---|---|
| **Woodlots** | This system involves the establishment of indigenous and/or naturalized tree species on a plot of land in a systematic manner. | 2,500 trees per hectare |
| **DSI (Dispersed Systematic Inter-Planting)** | This systems involved inter-planting trees with arable crops to improve soil fertility over time through the addition of degradable organic matter to the soil and biological nitrogen fixation. | 200 trees per hectare |
| **Boundary Planting (BP)** | This system involved the linear planting around amenities. It is commonly used around producers farms for boundary demarcation, but can also be used to protect fields from livestock damage | 3 meters within rows (or 33.33 trees per 100 meter segment) |
| **Citrus Orchard** | This system involves the planting of high-value citrus varieties produced from local seedling rootstock through bud-grafting. These improved varieties not only produce high value fruit, but also reach fruiting age in 4 years, much earlier than local varieties. | 400 trees per hectare |
| **Mango Orchards** | This system involves the planting of high-value mango varieties produced through grafting improved scion varieties on to local rootstock. These improved varieties produce less fibrous, more fleshy fruits, that reach fruiting age in 3-5 years, much earlier than local varieties. | 200 trees per hectare |

Appendix IV: How Farmers Benefit from Carbon Finance (2015)



Appendix V: Land Use System Chart

| Land use system | Approved Tree Species | Check for Farmer Use | Planting density per hectare | Total Area to plant (ha/m) | Number of trees to be planted | Plot location (GPS) | Rotation and Harvesting period |
|---|---|---|---|---|---|---|---|
| **Woodlot** | *S. siamea, S. spectabilis and A. polyacantha.* | | 2500 | | | | **20 years** |
| **Dispersed Systematic Inter-planting (DSI)** | *Faidhelbia albida, Acacia polyacantha.* | | 200 | | | | **To be thinned progressively to 25 trees/ha at Year 50** |
| **Boundary planting** | *A. polyacantha, S. spectabilis* | | 34 trees/ 100m | | | | **25 years** |
| **Mango orchard** | *Mangifera indica* | | 200 | | | | **50 years** |
| **Citrus orchard** | *Citrus sinensis* | | 400 | | | | **50 years** |

Appendix VI: Monitoring and Payment Protocol

| Monitoring period | Monitoring target to be met | Percentage (%) of total payment due | Number of payments |
|---|---|---|---|
| **Year 1** | **50%** of plot established | 20 % | **1** |
| **Year 2** | **75%** of plot established | 20 % | **1** |
| **Year 3** | Whole plot established with stand survival not less than **85%** | 20 % | **1** |
| **Year 4** | Whole plot established with at least **90%** survival. | 10 % | **1** |
| **Year 5** | Average DBH not less than 4cm | 10 % | **1** |
| **Year 7** | Average DBH not less than 8cm | 10 % | **1** |
| **Year 10** | Average DBH not less than 15cm | 10 % | **1** |

Appendix VII: Historical Sales Chart

| DATE | PURCHASER | PVC | PRICE/PVC | Currency | Total | TOTAL |
|---|---|---|---|---|---|---|
| **Reported in 2013 Annual Report** | | | | | | |
| | ZeroMission AB | 1600 | | | | |
| | United Bank of Carbon | 550 | | | | |
| | AECOM | 600 | | | | |
| | COzero PTY Ltd | 100 | | | | |
| | ZeroMissionAB - 46 | 6000 | | | | |
| Apr-13 | ZeroMissionAB - 55 | 1999 | | | | |
| Jul-13 | ZeroMissionAB - 55 | 1200 | | | | |
| Feb-13 | COTAP - 1 | 468 | | | | |
| Dec-13 | COTAP - 2 | 282 | | | | |
| **subtotal** | | **12,799** | | | | |
| | | | | | | |
| **Reported in 2014 Annual Report** | | | | | | |
| Jan-14 | ZeroMissionAB -73 | 800 | | | | |
| Apr-14 | ZeroMissionAB | 300 | | | | |
| Apr-14 | ZeroMissionAB | 10000 | | | | |
| May-14 | ZeroMissionAB | 700 | | | | |
| Jun-14 | COTAP - 3 | 524 | | | | |
| Jun-14 | ZeroMissionAB | 1500 | | | | |
| Aug-14 | ZeroMissionAB | 450 | | | | |
| Nov-14 | ZeroMissionAB | 1287 | | | | |
| **subtota** | | **15,561** | | | | |
| | | | | | | |
| **Reported in 2015 Annual Report** | | | | | | |
| Feb-15 | COTAP - 4 | 705 | | | | |
| Nov-15 | COTAP - 5 | 229 | | | | |
| Jan-15 | ZeroMissionAB -125 | 1500 | | | | |
| Feb-15 | ZeroMissionAB -128 | 1000 | | | | |
| Jan-15 | ZeroMissionAB -129 | 1100 | | | | |
| Apr-15 | ZeroMissionAB -133 | 500 | | | | |
| Aug-15 | ZeroMissionAB -140 | 34325 | | | | |
| Sep-15 | ZeroMissionAB -149 | 1660 | | | | |
| Dec-15 | ZeroMissionAB -158 | 1000 | | | | |
| **subtota** | | **42,019** | | | | |
| | | | | | | |
| **Reported in 2016 Annual Report** | | | | | | |
| Feb-16 | ZeroMissionAB -160 | 1000 | | | | |
| Jul-16 | ZeroMissionAB -176 (replaced #175) | 5169 | | | | |
| Sep-16 | COTAP - 6 | 588 | | | | |
| Dec-16 | United Bank of Carbon | 840 | | | | |
| Dec-16 | ZeroMissionAB | 1426 | | | | |
| **subtota** | | **9,023** | | | | |
| | | | | | | |
| **TOTAL** | | **79,402** | | | | **$** |