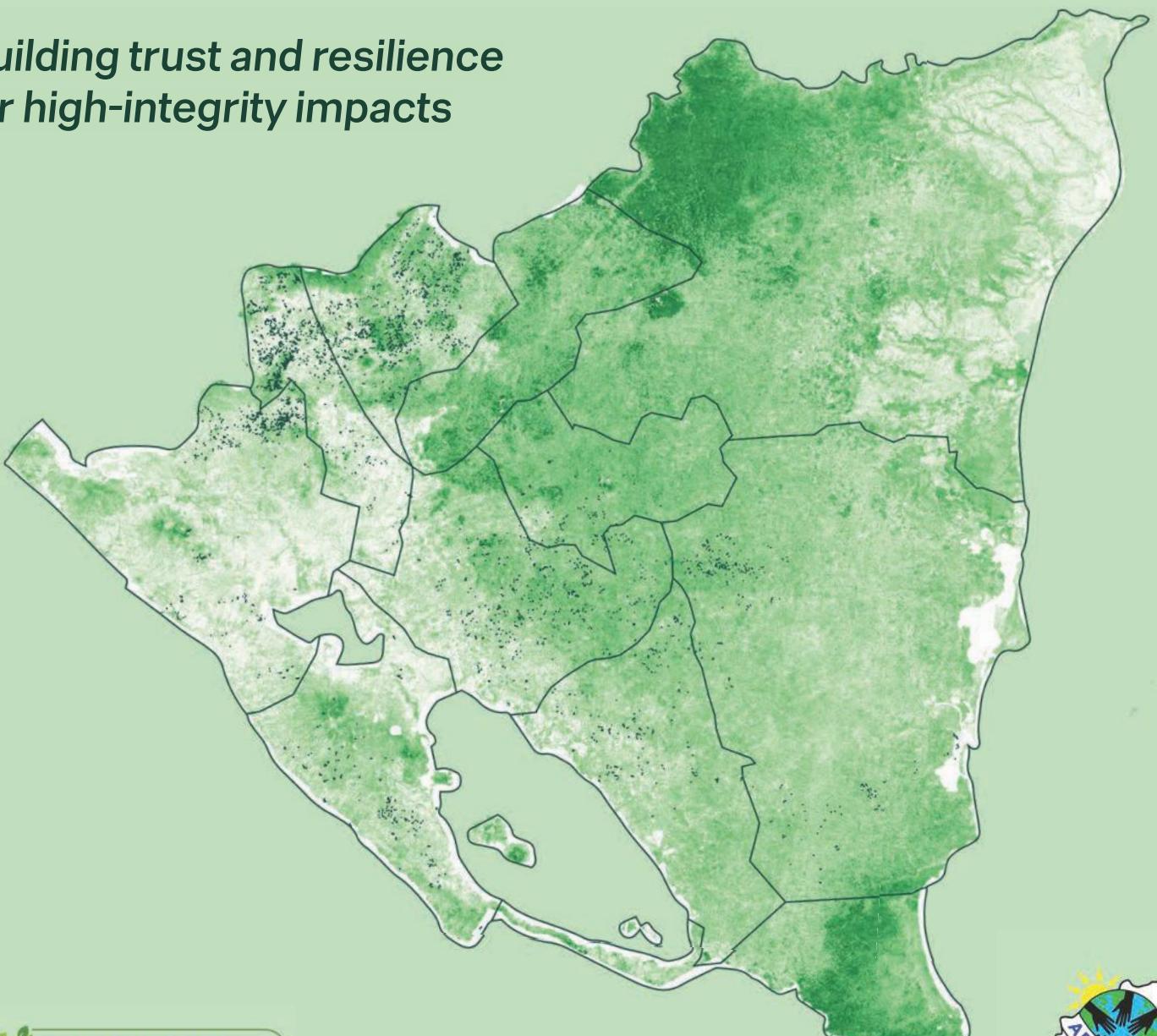


# CommuniTree Carbon Program

*Building trust and resilience  
for high-integrity impacts*



2023

ANNUAL REPORT

# CommuniTree Carbon Program

*Building trust and resilience for high-integrity impacts*

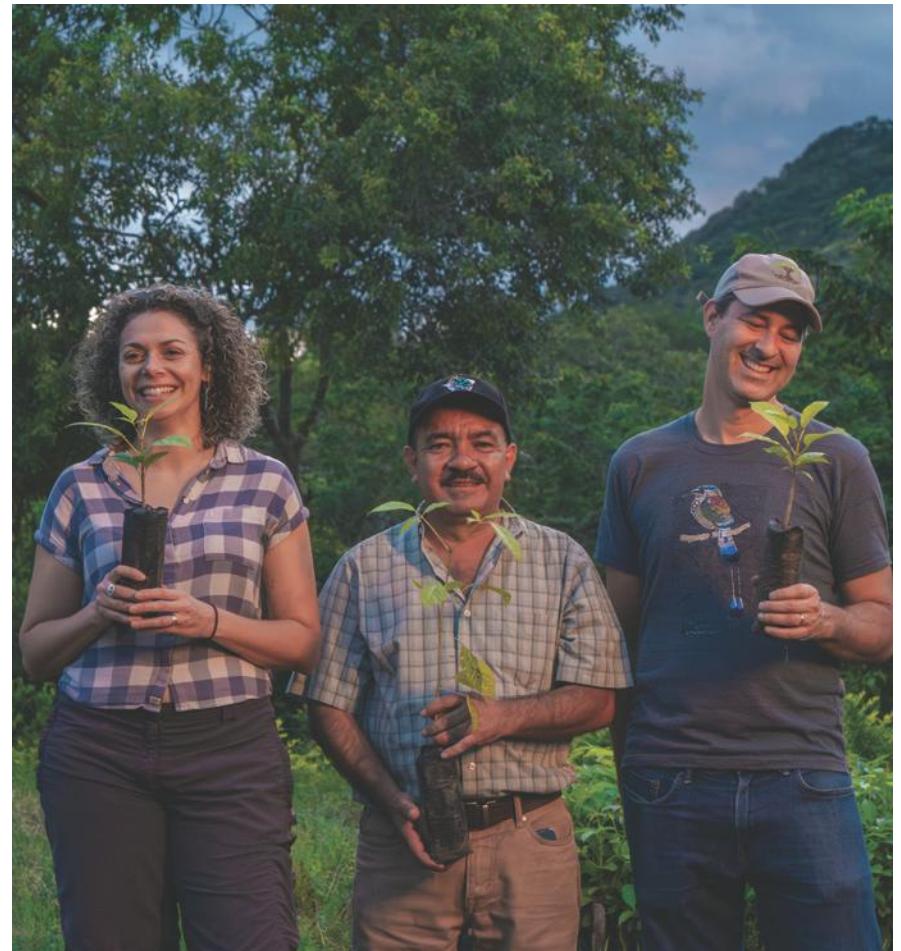
COMMUNITREE CARBON PROGRAM ANNUAL REPORT  
FOR YEAR ENDED 31 DECEMBER 2023

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# Message from the CommuniTree Leadership Team

The CommuniTree program continues to deliver extraordinary impacts at a growing scale, with 4,202 farmers now growing trees on 14,864 hectares of land. The program is delivering vital finance for people and nature, distributing over \$33M through community payments and generating thousands of jobs in rural communities to restore forests across Nicaragua.

And yet, in 2023 the integrity of the voluntary carbon market, and even nature-based solutions, were put into question. Greater scrutiny highlighted that projects vary in scope, and quality, with high profile reports casting doubt on the impacts created by some major nature-based projects. This comes at a time when nature-based solutions are being re-affirmed as more critical than ever to tackle the world's climate and nature crises. Greater scrutiny into vital funding mechanisms such as the carbon market is essential to raise standards and improve the quality of



Laura Morillas, Elvin Castellon and Kahlil Baker at the Somoto region nursery

interventions. But rather than lead to a pause in action, it should shine a spotlight on the industry to identify success stories and best-practices so we can all take the actions required to scale and replicate them around the world. Nature-based solutions are essential for our climate, for biodiversity, for livelihoods, for water, and for life on Earth as we know and love it. It isn't a question of if we pursue them, but how.

I am delighted that CommuniTree continues to demonstrate how carbon finance can catalyze the restoration of the world's forests at scale and how the people who steward the land are at the heart of it. This work has only been made possible due to the upfront financing provided by the sale of ex-ante credits, a highly additional form of carbon finance helping unlock impacts across climate, nature and local economies.

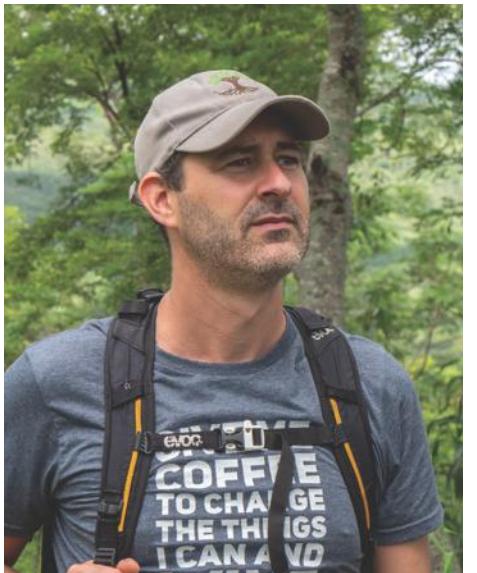
I am proud of the increased investment that has been made this year to bring greater transparency, learning and continuous improvement to keep enhancing these impacts as CommuniTree grows. This year, the project undertook and passed its verification audit, welcomed all our buyer partners to visit the project firsthand, and monitored 3,578 ha of land historically planted (a ≈350%

increase compared to 2022!) By combining human experiences alongside tracking millions of data points across thousands of parcels, it is helping us share our successes, identify areas for improvement and make proactive decisions to support long-term success for farmers, their forests, and the climate.

I am so grateful to everyone who continues to dedicate themselves to our shared mission of improving people's livelihoods by growing trees. Thank you to our long-standing carbon retail partners who continue to believe in us. Thank you to the Plan Vivo team for continuously promoting local communities at the heart of nature-based solutions. Thank you to APRODEIN and the Taking Root team who work tirelessly to make all this possible. Thank you to the thousands of farmers for dedicating part of your land and time to growing forests. We are excited to continue working together to build the trust and confidence required to keep building nature-based solutions to the scale needed to combat the climate and nature crises.



KAHLIL BAKER  
CEO & Co-Founder



## MESSAGE FROM THE COMMUNITREE LEADERSHIP TEAM



I feel deeply proud of what CommuniTree has achieved over the past year. Thanks to improved operational tools and tracking systems we have more visibility across the project than ever. As a result, we were able to proactively plan, adapt and shift priorities in response to challenges faced throughout 2023, including droughts, to better serve the smallholder farmers we partner with.

Together with the local team, we overcame the difficulties associated with an El Niño year, and made important strides in unlocking further value for CommuniTree's farmers. This includes greater collaboration with government agencies to allow farmers to sustainably manage their forests, increased training for APRODEIN staff, and the largest-ever monitoring of historic parcels to drive performance-enhancing initiatives.

I end the year full of optimism. The past year has demonstrated the remarkable resilience of CommuniTree's operations, providing a strong platform for the project's expansion. Growing trees across thousands of fragmented parcels of land is not easy, but the dedication and pride of both the local team and the farmers we work with is truly inspirational. Supporting farmers - and watching their success unfold - is our ultimate reward.

A handwritten signature in black ink, appearing to read "Laura Morillas".

**LAURA  
MORILLAS**  
Reforestation Partnerships  
Nicaragua Director, Taking Root



2023 was a year of significant growth and progress for CommuniTree. Given the scale of deforestation here in Nicaragua, this growth is essential. The program expanded to three new operational regions, showcasing the immense potential for forest restoration to provide a solution across the country which improves farmer livelihoods and local ecosystems.

I am thrilled to see even more cooperation between APRODEIN and Taking Root than ever before. Having worked together for more than a decade, we are using our experience to plan and strategize for success. New initiatives such as operational calculators and the creation of specialized teams, means we are more effective than ever at connecting with local communities and implementing timely activities, from planting trees to supporting farmers care for their forests.

I am excited for the year ahead. We have a clear vision for CommuniTree's growth, a young and enthusiastic team to help farmers grow trees, and enhanced collaboration with public institutions such as MARENA and INAFOR to provide further value for local communities. Together, with Taking Root, we are poised to achieve even greater impacts in 2024 and beyond.

A handwritten signature in black ink, appearing to read "Elvin Castellon".

**ELVIN  
CASTELLON**  
Executive Director, APRODEIN

# 2023 Vintage at a Glance

The financing raised through the sale of carbon credits in 2023 has enabled the CommuniTree program to create critically important impacts across climate, nature and local communities. Over the year, CommuniTree restored 3,720 hectares of new land, issuing 988,658 certified ex-ante carbon credits. Beyond removing carbon from the atmosphere, the program has supported 173 local permanent positions this year to help farmers start growing 5,096,559 million new trees. The program is now working with 4,202 farmers, who are collectively restoring 14,864 ha across Nicaragua. Their forests are regenerating vital local ecosystems and watersheds, enhancing biodiversity, and building improved climate resilient livelihoods for hundreds of local communities in Nicaragua.

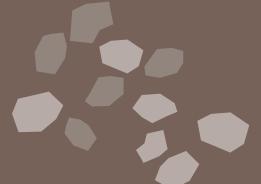
**914**

farmers added



**67,956,040**

seeds sourced



**5,096,559**

trees planted



**3,720**

ha of land being restored



**988,658**

tonnes of carbon being sequestered



# Total Program Impacts for people and nature



Community engagement

**1,477**

Communities in program

Livelihoods

**4,202**

Climate justice

**\$33,261,588**Total being  
paid to farmers  
(USD)

Economic

**173**

Permanent local jobs

Land

**14,864**Hectares being  
restored

Water

**6**National watersheds  
being restored

Soil

**18,834 kg**Biochar applied for  
enhanced soil health

Biodiversity

**132**Unique tree species  
recorded

# Project Updates

## Highlights

### 01 CommuniTree demonstrates incredible resilience in the face of El Niño

This year, CommuniTree continued to grow its impact across Nicaragua. The program expanded into three new regions, exceeded contractual targets for new land planted, and completed planting verification in record time despite adverse weather conditions caused by El Niño. This success can be attributed to the program's robust operations, which have been purposefully designed to build a resilient program which delivers on intended impacts, even when faced with operational challenges.

In 2023, the program's expansion strategy focused on building climate resilience to mitigate the ongoing risks posed by the climate crisis. Project operations were expanded so that land was diversified across regions with different climatic conditions. The local APRODEIN team was increased from 76 to 173 full-time employees to support this growth, with new offices opening in the regions of El Cua, El Rama and Matiguas. In parallel, significant farmer recruitment and planting buffers were put in place, ensuring surplus land was planted to allow room for failure. Expanding across different regions meant that while dry weather delayed planting in some regions, others with wetter humid conditions were able to progress. Having this flexibility

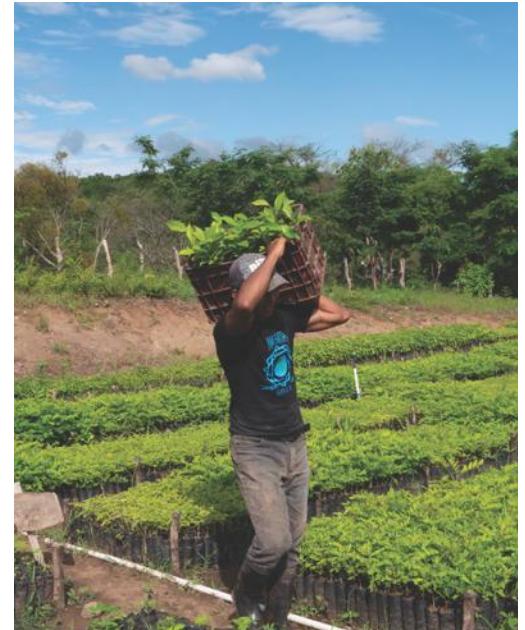


A seasonal worker planting seedlings on a farmer's parcel.

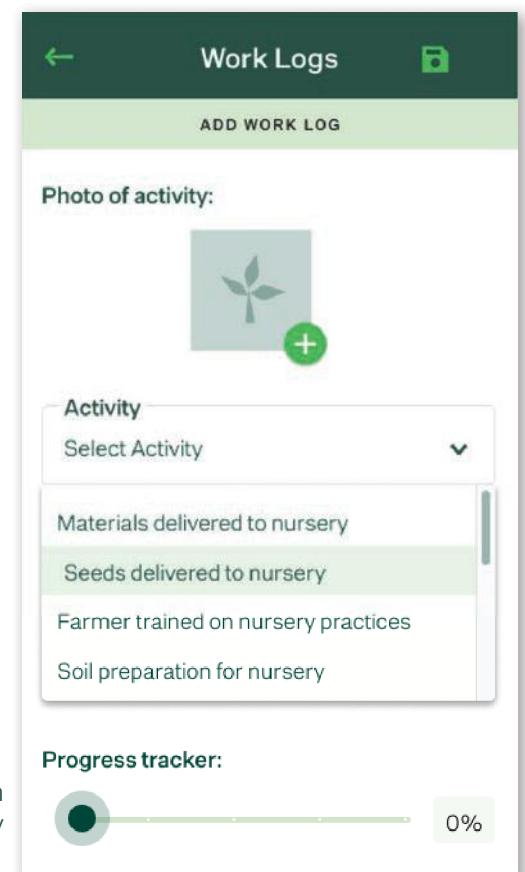
also ensured that farmers were under no pressure to plant trees if adverse conditions made their survival unlikely. Some farmers consequently chose to defer planting to the 2024 season when conditions are anticipated to be more favourable for long-term success.

New features and reporting through Taking Root's management platform enabled the timely planting, management and verification of CommuniTree's parcels. A new work logs feature in Taking Root's mobile app now allows field technicians to record the progress of parcel activities such as planting and weeding. The subsequent reporting has resulted in proactive management and workforce decisions to support parcels most in need. This was crucial in overcoming the challenges associated with an El Niño year, allowing local resources to be swiftly mobilized in response to sporadic rainfall, ensuring farmers had the support they needed when rains eventually came. This included the deployment of 'cuadrillas', which are small teams of seasonal workers who helped farmers complete planting rapidly. These initiatives ensured timely planting during weather windows with optimal conditions, responding to a key learning identified in 2022 to maximize early-stage forest growth.

Having successfully completed planting, the verification of newly planted land was completed in record time. Another technology feature was released during the year which made the monitoring of newly planted land up to twice as fast for local field technicians. In addition, it included numerous data validation controls to enhance the quality of data collected, reducing the time required to clean data after monitoring. This efficiency meant the local team was able to complete monitoring across the 3,720 ha of newly planted land in record time, freeing up greater capacity to support farmers and their parcels.



Seedlings being transported from the main Somoto nursery.



To the right: Improved work logs feature on the Taking Root mobile app to accurately track silvicultural activities on parcels.

## 02 Unparalleled transparency continues to enhance program performance

With the program now restoring forests across 6,082 parcels belonging to 4,202 farmers, three notable investments were made during 2023 to deliver on CommuniTree's commitment to transparency and quality while operating at scale. Together, these are unlocking opportunities to enhance the program's restoration activities as new land is added to the program. In addition, the impacts being created by the program were verified through a scheduled third-party audit and Taking Root's carbon retail partners who visited the project site.

The first investment was the creation of a dedicated quality department within APRODEIN following a successful pilot in 2022. Headed by a newly hired Director of Quality, the six-person team acts as independent internal auditors to ensure parcel, farmer, and technician performance. The second was the introduction of six specialized local monitoring teams, overseen by the Director of Monitoring and Quality, which now complete monitoring throughout the year. This has increased APRODEIN's capacity to conduct more frequent field inventories to gain unprecedented transparency into program performance across large areas of historically restored land. The third was the development of Taking Root's technology platform for enhanced data management and reporting. Improved data validation systems enabled improvements in data integrity, while new reporting dashboards gave unprecedented visibility into program operations. This proved essential throughout 2023, providing insights for the rapid mobilization of resources to support new land being planted in 2023 and historically planted land.

The impact of these strategic investments meant that the program monitored an impressive 7,298 hectares of land this year, the largest monitoring in the program's history. 3,578 hectares of this land was historically planted from previous vintages, representing a remarkable  $\approx 350\%$  increase in historic land monitored compared to 2022. 72.96% of historical land monitored was found to be meeting or exceeding growth targets, a testament to the dedicated and intensive support farmers have received from technicians



APRODEIN technicians perform in-field monitoring on newly planted parcel.

# 3,578

hectares of historic land monitored

over the years. This success was despite one of the worst El Niño years in CommuniTree's history, which put historically planted land at higher risk of mortality. The monitoring results provided valuable insights into where the program could continue to improve. 27.04% of historical land monitored was identified as requiring management interventions in order to meet growth targets; most importantly the results highlighted parcels with delayed growth due to overcrowding of trees, resulting from delayed thinning activities (refer to Learnings section 2). Having this high-quality data across thousands of parcels is providing unprecedented visibility into the main drivers behind parcel performance, informing interventions and improvement plans to help farmers successfully grow and unlock the benefits of a thriving forest.

CommuniTree's commitment to transparency and integrity was showcased to external visitors throughout the year. The program passed a third-party verification audit conducted by Aster Global, having been originally delayed due to the Covid-19 pandemic. In line with the audit, an updated Project Design Document (PDD) has been released, marking the CommuniTree Program's

formal transition from Version 3 to Version 4 of the Plan Vivo Standard. The updated PDD integrates updated best-practice operational changes - in particular reflecting the scale of the program, and its extensive use of technology to enable operations and monitoring. In addition, 14 individuals representing eight retail partner organizations, spanning seven countries worldwide, visited

CommuniTree to see the impacts of their investments first-hand. Partners toured project sites, met the local team, and connected with farming families participating in the project. The visit inspired conversations and ideas for how the voluntary carbon market ecosystem can work together to build trust and investment to scale high-integrity nature-based projects like CommuniTree.



Members of Taking Root, APRODEIN and the project's retail partners visit the parcel of Don Martin and Ester de Jesús Gonzalez.

## 03 Investments into sustainable forestry unlock long-term benefits for farmers

This year, increases in the carbon price received directly by farmers, driven by market demand for the program, enhanced the short- and medium-term benefits for farmers to plant and grow trees. This helped to drive recruitment to the program, and provided project participants with the capital needed to invest in resources to help them grow trees. In addition to carbon payments, US\$87,722.63 in income was generated for farmers through the sale of their forest products, including coffee and wood products. To further achieve the program's objective of delivering long-term benefits and improving the durability of CommuniTree, three key initiatives were deployed in 2023 with the long-term goal of creating a sustainable forest industry in Nicaragua.



CommuniTree farmer, Pio Antonio Araus who registered his land for thinning with INAFOR.

### 1. Scheduled silviculture activities scaled across the program

As CommuniTree grows, so do farmers' forests. Consequently, an increasing number of parcels require the timely completion of scheduled prunings and thinnings. These silvicultural activities enable further forest growth (refer to Learnings in Section 2) while increasing the income farmers generate from their trees. The wood collected from farmers' prunings and thinnings act as the feedstock supply for various local markets including fuelwood, biochar, construction materials such as fencing, and furniture. During 2023, the sale of thinnings unlocked US\$19,051.38 of new income for farmers while enhancing the health of their forests. To deliver this benefit, the program worked with Nicaragua's National Forest Institute (INAFOR) to help 101 farmers register their land for thinning in line with local forest regulations, which is one of the biggest barriers to farmers accessing these markets. APRODEIN also assembled a dedicated 10-person Pre-Commercial Thinnings team to identify suppressed parcels and guide farmers through the thinning process in a sustainable and safe way. While more farmers will require support in the future, this year's efforts provide an initial model for thinnings activities as the program continues to mature and grow.

**During 2023, the sale of thinnings unlocked US\$19,051.38 of new income for farmers while enhancing the health of their forests.**

### 2. Production and processing capacity of forest products increased

Having opened a production centre in 2022 to better connect farmers to forest value chains, the program continues to invest in the infrastructure required to process a consistent and growing supply of feedstock from farmers' thinnings. Thanks to funding support from the European Union and the German Development Cooperation (GIZ), the project was able to make a number of investments to facilitate wood transportation and processing including a solar wood dryer, an energy transformer, and a new truck, affectionately nicknamed 'El Toro' (The Bull). Alongside new equipment, significant training was delivered to technicians to optimize the safety and efficiency of processing capabilities. As a result of these investments, farmers' thinnings were transformed throughout the year into fuelwood, biochar, fence posts and furniture to either be sold on local markets or used within the program, driving demand for farmers' sustainably harvested wood.

### 3. Market recognition for sustainable forest products

2023 saw two landmark awards from MIFIC (Nicaragua's Ministry of Development, Industry and Trade) that will support the market and sale of CommuniTree's wood products to create further value for project participants. The first is a Green Seal (Sello Verde) which authorizes the local project team to market wood products from CommuniTree's farmers as sustainably sourced. In addition, they were awarded 1st place in the 'Circular Economy Excellence' category in a "Cleaner Production Awards" (Producción Más Limpia).



Justina Gutiérrez Muñoz collects thinnings from her parcel to sell to the local community.



Wood products created by the project using farmers' thinnings.

# Learnings

## 01 Strategic investments will deliver effective program growth in 2024

2023 yielded valuable insights for the program's continued and effective future expansion. In particular, three strategic investments emerged that will help drive growth to create more impact over the years to come.

### 1. Focused application of planting designs to enhance project growth

In 2023, CommuniTree reassessed which of the program's pre-approved planting designs offer the most value to farmers while creating the greatest impact. This was prompted by a recommendation in the recent audit, which advised the contracts for new coffee agroforestry farmers be amended. After careful evaluation, the decision was taken to pause the recruitment of new shade coffee land entirely. While farmers and local technicians like the system, the shade coffee planting design carries a higher cost per tonne of carbon sequestered due to smaller parcel sizes in harder to access terrain, and lower carbon sequestration per hectare compared to CommuniTree's other planting designs. Given the focus on growing CommuniTree, the decision was made to focus on recruiting and planting the program's existing Mixed Species and Silvopastoral forest designs in 2023, while pausing further recruitment for coffee agroforestry. The program continues to work closely with historically planted coffee agroforestry farmers and will continue to evaluate the planting designs offered by the program to meet farmer demand and aid the program's expansion.

### 2. Earlier visibility into farmer and land eligibility to streamline recruitment

Opportunities were identified in 2023 to make farmer and parcel recruitment more effective. Despite high initial farmer interest to join the program during the recruitment process in 2023, some farmers dropped out before planting. This was due to two main reasons. First, post-recruitment screening found that some interested farmers or their land were ineligible to join the program based on the program's participant and parcel criteria, including poor soil quality and a high risk of flooding. This represents a success, demonstrating the program's commitment to high integrity carbon removals. Consequently, 99.99% of newly planted parcels in 2023 met targets and program eligibility criteria. Earlier visibility into farmer and parcel eligibility will further streamline the recruitment process and is a priority for the coming year (refer to Future developments section 1). Second, adverse weather conditions meant young trees would be unlikely to survive in certain locations, leading some eligible farmers to defer their entry to the program.

### 3. Targeted recruitment in areas with heightened farmer demand

As CommuniTree manages an increasing amount of land across Nicaragua, it has highlighted the need for strategic regional growth. Focusing recruitment efforts in areas with the highest potential for forest restoration and the greatest farmer demand ensures the proximity of parcels, making operations more cost-effective. Significant farmer demand nationwide, coupled with planning and investments into the local team and program infrastructure, means there is substantial opportunity for effective growth in 2024 and beyond.



2024 Recruitment strategy workshop between APRODEIN and Taking Root.

## 02

## Timely parcel management will support farmer and parcel success

Building transparency into the program's performance across historically planted land has yielded greater understanding regarding the factors influencing parcel outcomes over time. While a majority of historically planted parcels (72.96%) are meeting or even exceeding growth targets, identifying those which are underperforming has allowed the program to create highly targeted and effective interventions for the future. This will help farmers with underperforming parcels meet targets, and support the success of parcels planted in future vintages.

In nearly all instances, it was found that the underperforming parcels still have the potential to meet their targets by putting in place simple management plans, but will be behind schedule. Two primary drivers of performance were identified:

First, in older parcels falling short of targets, it was found that thinning had either been delayed or not taken place, resulting in overcrowded parcels and slowed tree growth. This is happening because CommuniTree plants at a high density to allow for a degree of tree mortality, and

so farmers can get value from thinning and selling wood from fast-growing species, with the more valuable slow-growing species left to grow over time. The program now has clear actions in place to proactively thin trees on overcrowded parcels. This will be supported by the program's continued monitoring of historic parcels to identify parcels in need of thinning, ongoing collaboration between APRODEIN and INAFOR to register farmers' land, and APRODEIN's newly assembled Pre-Commercial Thinnings team to assist with on-farm thinning activities.

Second, in younger parcels, early-stage tree mortality means some are falling short of the program's tree density targets. Having already identified this learning in 2022, the 2023 vintage increased its formal planting targets threefold to mitigate early-stage tree mortality and build greater resilience on newly planted parcels to enhance future performance. For historically planted land, farmers not meeting targets are still motivated and will receive support to perform additional planting to bring their parcels back on track.

# 72.96%

of historically planted parcels meeting or exceeding growth targets



APRODEIN technician Marcel Gradiz Montoya inputs data in Taking Root's mobile app.



Farmer Olga Marina Osorio Lagco on her parcel which is an example of delayed thinning causing overcrowding of trees, resulting in missed growth targets. The program has since assisted Olga in thinning the parcel, to give space for the forest to grow further and meet future targets

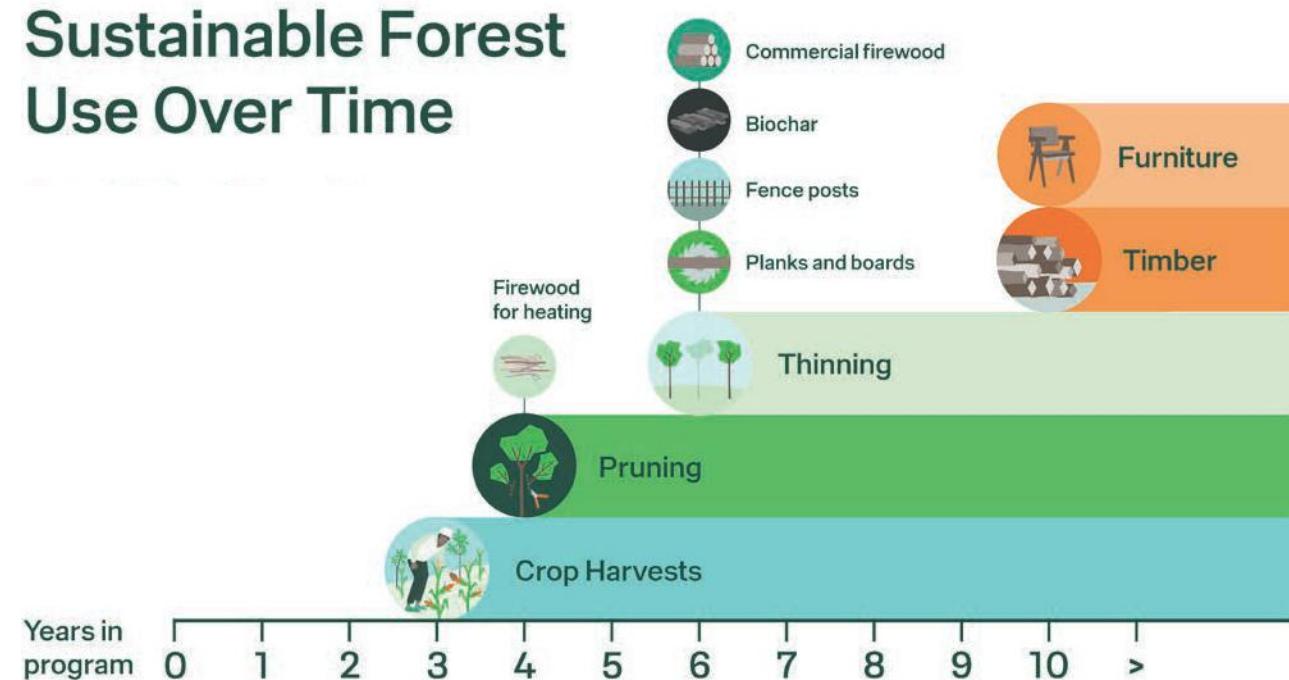
## 03

## Removing barriers to market access will unlock greater benefits for farmers

Building out value chain opportunities for farmers is an ongoing priority for the program, particularly as CommuniTree's growth means more farmers with established parcels will be looking to connect their forests to markets in the coming years. However, there are still significant barriers in achieving farmer market access at scale, including the complexities of bringing their wood supply to market, growing processing capacity, and building market demand.

While excellent progress was made this year in bringing farmers' wood supply to market, with 101 farmers registering their land with Nicaragua's National Forest Institute (INAFOR) so they could thin in accordance with local regulations, the registration process is not designed for smallholder farmer contexts. Consequently, significant support was required from the local team. Further refinement of the current model is required to make the process more efficient and scalable as the program grows and more parcels mature. To continue supporting farmers and their forests, the program will focus on three key areas going forward: the early identification of parcels requiring thinning through regular technician field visits and monitoring; collaboration with local actors to streamline farmer registration to thin their parcels; and continual enhancement of the program's capacity to support farmers in thinning their parcels.

## Sustainable Forest Use Over Time



Elvin Castellon, APRODEIN's Executive Director speaking at the INAFOR ceremony (top left) and farmers receive authorisation to thin their parcels, including Jesús Cruz (top right) and Telma Avila (bottom left).

During 2023, substantive progress was also made in building processing capacity and market demand for forest products, but this will require time to scale. Given the small size of wood thinned from parcels, the majority was sold for use as sustainable firewood and for the creation of biochar, with 18,834 kg of biochar generated through the year. This biochar serves as an alternative to conventional fertilizers and is applied in CommuniTree's nurseries to enhance tree health and sequester additional carbon. Tests assessing the optimal application of biochar, funded by PRIMAKLIMA, consistently demonstrated its benefits, showing enhanced growth rates and health indicators when trees were planted with biochar compared with standard, more emissions-intensive fertilizers. Further initiatives are required to establish how biochar production and application could be effectively scaled across the program and quantified as an additional carbon pool. In addition, as more forests mature, larger timber will begin to be harvested, requiring new and greater processing capacity. Further work and capital investment will be required to continue scaling up processing capacity and catalyze a sustainable forest industry.

## Future developments

### 01 Greater recruitment capacity to drive continued program growth



APRODEIN holds a recruitment event in Totogalpa.

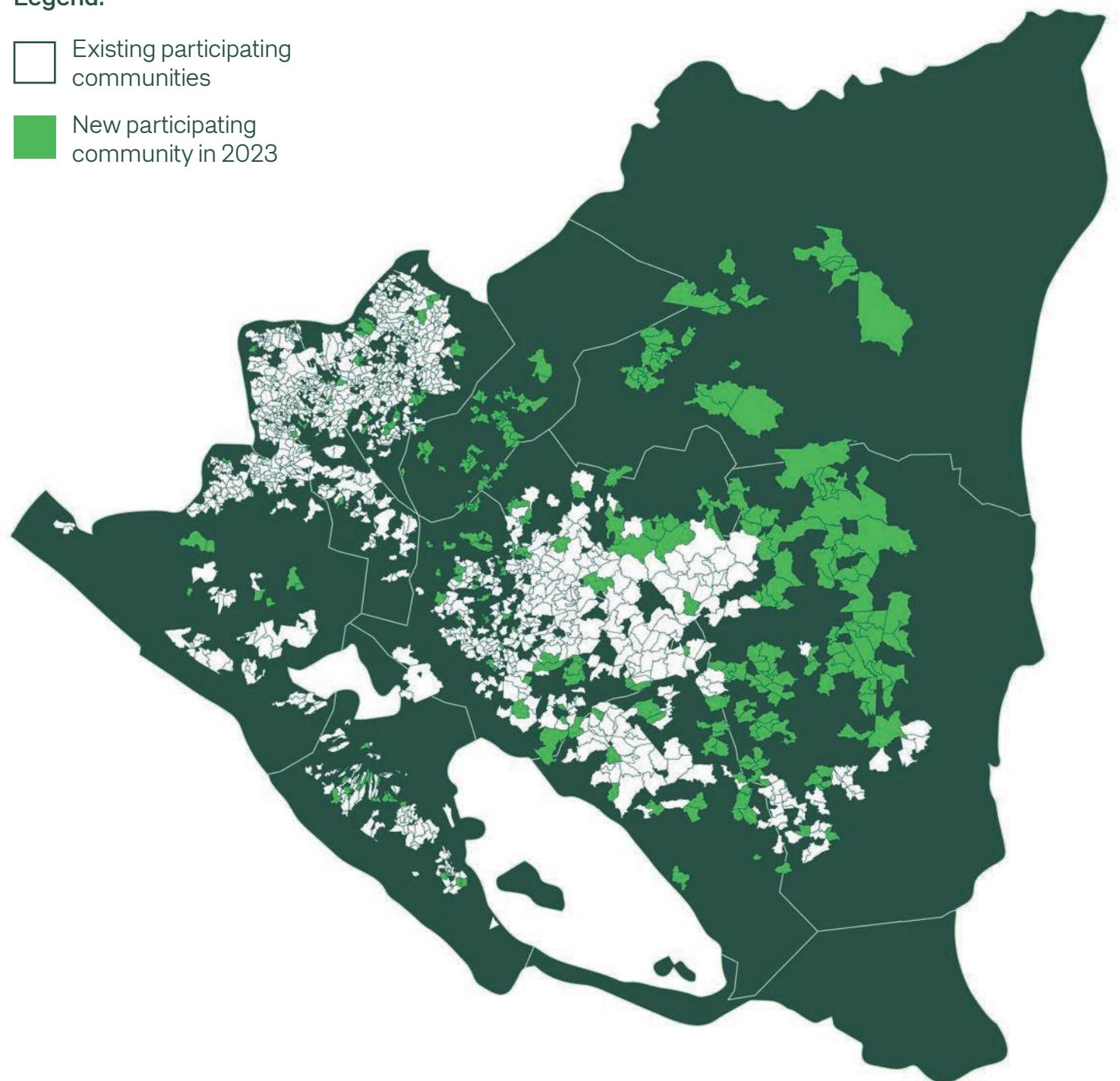
Building on the learnings gained in 2023, the program is poised to make substantial investments to build local capacity for recruitment. This includes the expansion of the recruitment team, the implementation of a standardized curriculum focusing on recruitment best practices, and the development of tools to enhance the efficiency of eligibility assessments to screen interested farmers and their land against program entry requirements.

These investments will better equip the local team to respond to growing demand from new farmers, ensuring the recruitment of eligible land is conducted with increased efficiency. By completing recruitment earlier, it will free up capacity later in the year so that more technicians can support timely program operations such as nursery building and planting. This is instrumental in helping farmers to plant as early as possible in the rainy season, providing newly planted vulnerable trees more time to grow before the rains end, boosting the success rates of parcels over time.

### Total communities in CommuniTree program

#### Legend:

- Existing participating communities
- New participating community in 2023



## 02

## Operations reporting to aid farmer and parcel success

Having completed the largest-ever monitoring of historically planted land, the program will now implement the actions identified as necessary to further enhance parcel and program performance. Key strategies include prioritizing registration and thinning on overcrowded parcels, plus targeted replanting on recently established parcels that fall below tree density targets. Simultaneously, the program is intensifying efforts to facilitate targeted data-driven decision making. Taking Root is already in the process of developing a new version of its web platform. This update will streamline access to real-time operations reporting across CommuniTree, enabling the program team to prioritise and track activities on parcels that require support.



APRODEIN technicians receive training.

In addition, monitoring across another 7,000 ha of historically planted land is planned for 2024. Combined with 2023's monitoring efforts, Taking Root and APRODEIN will have access to recent field inventory data across almost the entire program. This will offer even greater insights into performance indicators and drivers, enabling the program to further refine its interventions, ensuring optimal success for both farmers and parcels.



A biochar reactor at CommuniTree's production centre helps deliver long-term livelihood opportunities for farmers.

## 03

## Raising philanthropic capital to catalyze a sustainable forest industry

Having successfully showcased the operational viability and value of local forest value chains such as biochar, the program is eager to create further long-term demand for CommuniTree's farmers, ensuring ongoing benefit from their forests. To achieve this, the program's current processing capacity must be scaled to secure financial sustainability over the long run. The program is actively seeking philanthropic funding to develop the necessary business plans, operational models, and infrastructure to unlock the production economies of scale. This will enable CommuniTree's value chain activities to move towards financial sustainability to deliver long-term livelihood opportunities for farmers growing trees.

## Project documentation

### 01 New PDD released under version 4 of the Plan Vivo Carbon Standard

CommuniTree's new Project Design Document (PDD) has been publicly released following the conclusion of the program's recent audit, marking the project's formal transition from Version 3 to Version 4 of the Plan Vivo Carbon Standard. The updated PDD represents the current reality of CommuniTree as a nationwide project creating meaningful impacts for the benefit of local communities, nature, and climate. It reflects the program's commitment to transparency, integrating detailed explanations of CommuniTree's updated operational processes, best-practice methodologies, and use of Taking Root's technology platform to enable operations and monitoring.



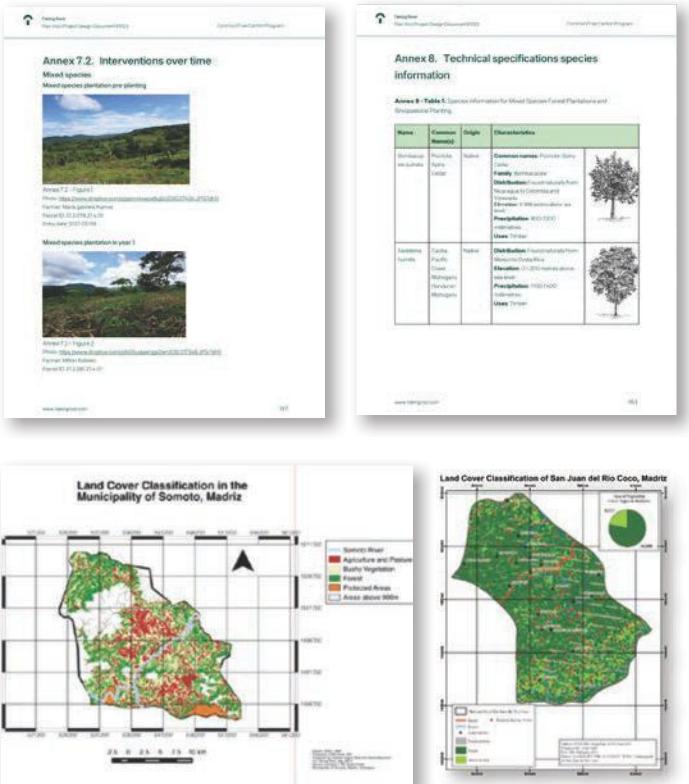
**Plan Vivo Project Design Document (PDD)**

CommuniTree Carbon Program

Taking Root



Snapshots of CommuniTree's updated PDD.



### 02 CommuniTree passes third party verification audit

Third party auditor, Aster Global, verified that CommuniTree is in conformance with all eight themes outlined in Version 4 of the Plan Vivo Carbon Standard. The auditor conducted an extensive review of the project including a site visit, interviews with Taking Root, APRODEIN, farmers and other project stakeholders, as well as a comprehensive documentation review. The auditor highlighted the project's connection with local communities, finding the project team "extremely knowledgeable off all facets of the Project including their ability to appropriately select Project participants, develop effective participatory relationships, and provide ongoing support to Project participants" and that "participating farmers felt the planting of trees was a valuable investment in their land". The audit confirmed many of the co-benefits achieved through the program, concluding that the project is "successfully maintaining or enhancing biodiversity by the increasing of forest cover through the planting of native or naturalized tree species" and "decreasing negative impacts to water quality (reduced runoff), restoring/improving degraded soils, and increasing the soil's ability to retain water".

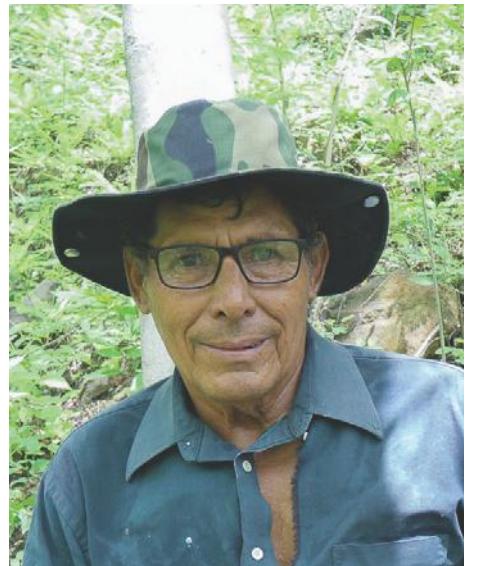
**“All the Project participants interviewed clearly indicated that they would not have been able to reforest their land without the Project.”**

Aster Global Environmental Solutions, Inc



A representative from Aster Global speaks to an APRODEIN technician in the field.

## Ernesto Cedeño Mendoza



Ernesto Cedeño Mendoza, a smallholder farmer from San Juan de Limay, joined CommuniTree in 2013. A decade on, he tells us how growing trees has had a positive impact on his land.

### What trees are you growing on your farm?

I chose a mixed species forest design and have about five hectares that are now covered with trees, including mandagual, madero negro, and mahogany. Since we started farming, we started running out of trees. Now we are growing them back, and it's going well!

### How have your trees benefited your land?

Before, the rain washed out our land. Now our land is much better. The project has helped us to repair the earth. Before it was barren here, and now with the trees, the soil has recovered.

### Have you noticed any other benefits of restoring your land?

I have a well about 30 metres from the house. That well was always dry before. Not only did the land dry out, but we couldn't keep cattle or anything else. Now there is abundant water in the well! It does not dry out and we have enough water for everyone. That is because of the reforestation project, because of the trees.

### Would you recommend CommuniTree to other farmers?

Yes, of course. Those of us who have restored our land have seen the good that comes from it. I hope that in the future we all participate. Thanks to God for the project and for the technicians who work so hard.

#### Name:

Ernesto Cedeño Mendoza

#### Home:

El Morcillo, San Juan de Limay

#### Date joined the program:

2013

#### Planting design:

Mixed species forest

Date joined the program

# 2013



### Community



El Morcillo,  
San Juan de Limay

### Benefits noticed:

Water



Soil health



Crop health



### Planting design



Mixed species planting design

**“Now, even in the winter, my crops are healthy.”**

Ernesto Cedeño Mendoza

# Summary of Credit Issuance

**Table 1: Program Summary**

Project Overview	
Reporting Period	1 January 2023 – 31 December 2023
Technical specifications applied in 2023 vintage	Mixed Species Forest Plantation, Silvopastoral Planting
Technical specifications applied in historic vintages	Mixed Species Forest Plantation, Silvopastoral planting, Coffee Agroforestry, Boundary Planting
Geographical areas	Nicaragua
Areas under management	
New area put under management and meeting targets in 2023 (ha)	3,719.87
New area allocated to replace historic area removed from program (ha)	219.39
New area allocated to 2023 PVC issuance (ha)	3,500.49
Total program area under management as reported in 2022 annual report (ha)	11,363.34
<b>Total program area under management (ha)</b>	<b>14,863.83</b>

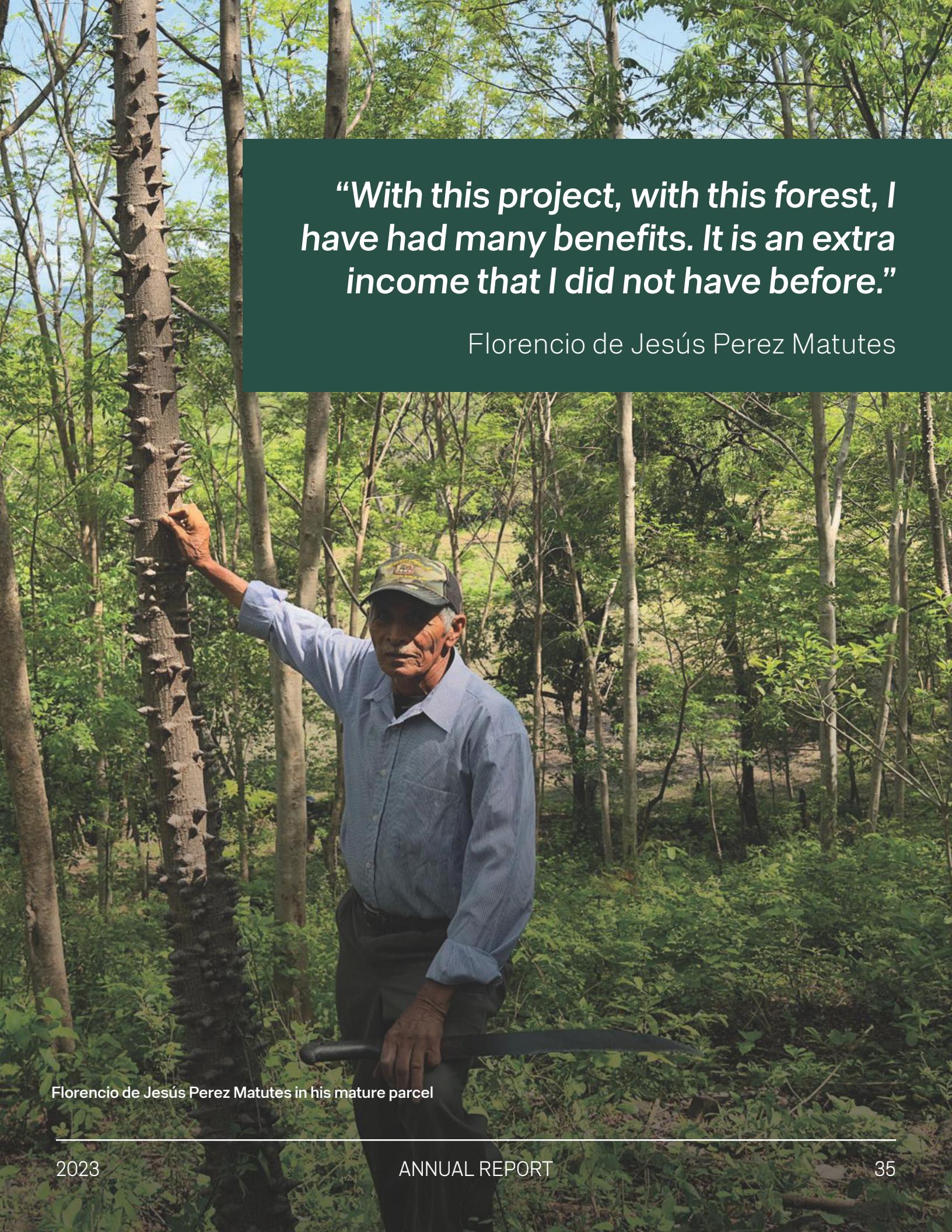
Smallholder Farmers participating in Program	
New smallholder farmers joining program in 2023	914
Smallholder farmers from previous historic vintages adding additional land in 2023	69
<b>Total smallholder farmers adding land and meeting targets in 2023</b>	<b>983</b>
Smallholder farmers reported in 2022 annual report	3,326
Smallholder farmer dropouts in 2023 from previous historic vintages	38
<b>Total smallholder farmers participating in program</b>	<b>4,202</b>
Plan Vivo Certificates (PVC) issued	
Total saleable PVCs generated in 2023	1,048,101
Total risk buffer PVCs generated in 2023 (15%)	184,959
Total PVCs generated in 2023	1,233,060
Saleable PVC losses from historic vintages in 2023	59,431
Risk buffer PVC losses from historic vintages in 2023	10,502
Total PVC losses from historic vintages and reallocated using 2023 PVCs	69,933
Total issuance submission from 2023 vintage PVCs	1,163,127
<b>Issuance submission for 2023 vintage saleable PVCs</b>	<b>988,658</b>
Issuance submission for 2023 vintage risk buffer PVCs	174,469
Historical saleable PVCs issued as reported in 2022 annual report	3,327,485
Total PVCs issued to Plan Vivo Buffer from program	761,672
<b>Total saleable PVCs issued from program</b>	<b>4,316,143</b>

**Table 2: Payments across all years PES and Community Fund Payments (USD)**

PES and additional community payments (USD)	Total
Total direct payments through 2023	\$7,234,551
Other payments to community through 2023	\$2,627,017
<b>Payments made from the Community Fund</b>	<b>\$9,861,568</b>

**Table 3: Funds held in trust for future PES and Community Payments**

Funds held in Trust PES and Community Fund Payments held in trust (USD)	Total
2023 increase	\$13,249,440
Prior year value	\$10,150,579
<b>Total funds held in trust</b>	<b>\$23,400,020</b>



# Activities, Total Project Size, and Participation

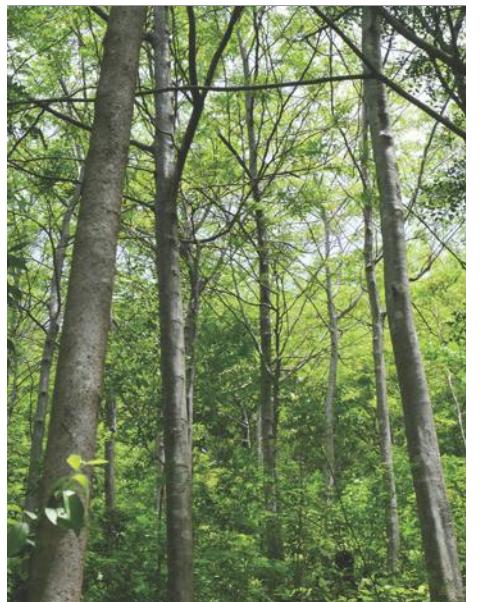
## Current land-use activities updates

In 2023, Taking Root continued implementing its Mixed Species and Silvopastoral Planting technical specifications while maintaining coffee agroforestry and boundary planting used as a technical specification in previous years. All technical specifications are integrated into the CommuniTree PDD which can be downloaded from the Plan Vivo website:

<https://www.planvivo.org/communitree-documents>

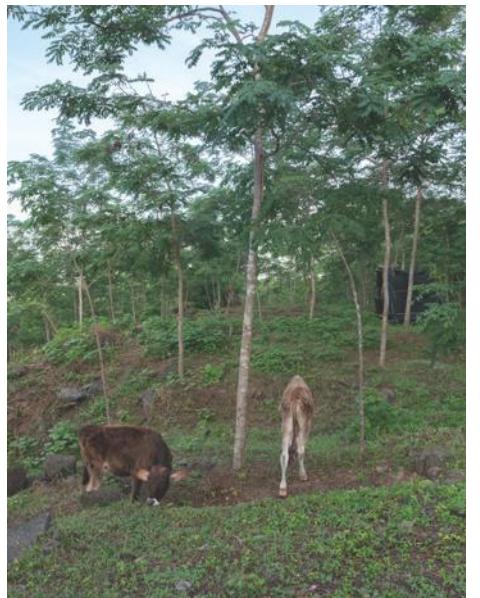
### Mixed Species Forest Plantation

This technical specification involves planting and intensively managing multi-purpose mixed-species forest plantations on participating smallholders' land. All of the species selected are native to the region and are chosen in consultation with local smallholder groups and professional foresters. This technical specification was added in 2014.



### Silvopastoral Planting

The Silvopastoral Planting technical specification acknowledges the need for cattle pastures by integrating trees and improved pastures with livestock. The trees improve pasture productivity, provide shade, and produce timber and forage for the farmers and their cattle. The short-rotation nitrogen-fixing species are harvested at a young age, providing building posts while fertilizing the soil. Silvopastoral Planting sequesters carbon dioxide, provides ecosystem services in the short term, and sustainably produced, highly prized timber in the long term. Additionally, the system helps improve the pasture below the trees and adds biomass to the soil. This technical specification was added in 2012.

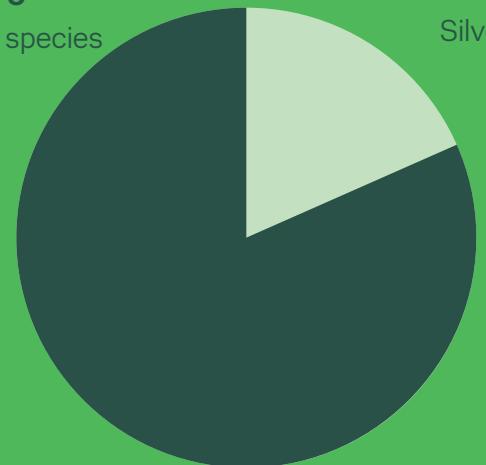


# Participation and program size

**983**

Total smallholders with new registered PES agreements meeting targets

83%  
Mixed species



**“2023 was a year of significant growth and progress for CommuniTree.”**

Elvin Castellon

**3,719.87**  
ha meeting targets

**Table 4: Summary of new participation and program size of year (2023 vintage)**

Community technicians successfully recruited new participants from 330 new communities to meet the current demand for Plan Vivo Certificates (PVCs), bringing the project to a total of 1,477 participating communities as detailed in Appendix 6.

Participants	
Total smallholders with new registered PES agreements meeting targets	983
Total area planted meeting targets (ha)	3,719.87
Area planted and meeting targets breakdown by technical specification	Area in hectares
Mixed Species Forest Plantation	3,100.26
Silvopastoral Planting	619.61



Members of Taking Root and APRODEIN.

# Ongoing community participation

As CommuniTree continues to expand, APRODEIN and Taking Root are formalizing community engagement processes to strengthen the personal connections between farming communities and the local team. It is exciting to see that as the program grows, so does the ability of field technicians to connect with farmers in a timely and meaningful manner to deliver effective interventions. This is due to a combination of increased training for technicians, deepened relationships with local stakeholders, and enhanced tracking and reporting mechanisms, all of which are enabling the local team to provide more impactful support to project participants.

## Local capacity building

Throughout the year, Taking Root and APRODEIN jointly ran training sessions across the local team to build capacity for operations and ensure effective technical guidance for farmers. Training across nursery establishment and planting was delivered to 108 staff to better support farmers during planting season. Training for accurate data collection and reporting through Taking Root's mobile and web platform was delivered to 120 technicians across CommuniTree's nine operational regions by Taking Root's Customer Success Lead. In addition, the new 10-person Pre-Commercial Thinnings team received intensive training regarding best-practice forestry techniques, safety, and local legislation. Across trainings, participants received customized manuals, with additional support given to employees where further learning was needed.



Taking Root staff deliver training.

## Community consultations for program expansion

In 2023, CommuniTree entered three new regions; El Cua, El Rama and Matiguas. As is usual practice in CommuniTree, extensive stakeholder consultations took place beforehand to seek approval from the relevant local authorities and community leaders, including the local mayor, INAFOR and local farmer co-operatives. The program received positive feedback and with approval provided, the local team began to initiate community engagement activities for the recruitment of new farmers to the program.



The three new APRODEIN offices in El Rama, El Cua and Matiguas.

## Community-led technology development

Taking Root undertook a number of customer success and product trips throughout the year to inform the development of Taking Root's technology platform and accompanying support services. Feedback from local teams resulted in a number of new feature releases in the platform. This included an updated work logs feature to better track and report on the progress of parcel silvicultural activities, and a post-planting verification feature which makes it faster for technicians to verify that planting has been completed successfully, while simultaneously enhancing data quality. Taking Root is now using this feedback to re-develop its web platform to deliver reporting which aids effective and timely local decision-making. Surveys during the visit indicated a positive experience of Taking Root's customer services, with 88% of respondents expressing satisfaction with the support they received when experiencing technical difficulties in the platform.



An APRODEIN technician provides feedback on Taking Root's mobile app.

## Enhanced clarity and learning for farmers

To support farmer success, new processes were put in place to provide farmers with greater clarity regarding their responsibilities and the benefits of parcel management. A new farmer contract was introduced to simplify the information on farmers' parcel targets and management activities over time. Taking Root provided training to the local team in advance of the new contracts being rolled out so technicians could clearly explain the program's incentives and responsibilities to farmers when joining the program. In addition, the introduction of a structured feedback template now enables farmers to receive detailed information about their parcel's monitoring results and any recommended management actions over time. Farmers sign the document, which is then uploaded to the Taking Root platform for reference. This fosters increased knowledge sharing between technicians and farmers to support farmer and parcel success.



APRODEIN technicians with a farmer recruitment poster.



Farmers receive informational materials at community consultations.

## International knowledge exchange



Floresta technicians learn how to use Taking Root's mobile app.

In recognition of the immense value peer-to-peer learning could bring to a local and global level, the program recently facilitated a training and orientation visit to the project with Floresta Incorporada, a reforestation NGO in the Dominican Republic. The visit was designed so the two organizations could share their successes and learnings with one another to integrate tried and tested best practices into their operations and amplify their impact. In addition, the program hosted 14 people across eight of the program's buyer partners. During their visit, they met with a number of CommuniTree's farmers, helping to build connections between the program's international clients and local communities.

***"We learnt about CommuniTree's forest design, recruitment, and the way APRODEIN works, and we will apply these learnings to cacao agroforestry systems in the Dominican Republic.***

Floresta technician Josue Victor Plecibiz

## Enhanced Industry collaboration

Throughout the year, the program met with numerous stakeholders and industry groups to enable CommuniTree's success. This involved strategic engagements with relevant government agencies such as INAFOR, MARENA and MIFIC to facilitate program expansion, streamline parcel registration for thinning, and support the marketing of wood products from the project. In addition, local councils and authorities were engaged across active project regions, while extensive coordination efforts took place with other active impact focused organizations such as the EU and GIZ.



Farmers receive authorisation to thin their parcels at an INAFOR ceremony.

## Itzel Daniela Laguna Dávila



**Name:**  
Itzel Daniela Laguna Dávila

**Title:**  
Regional Manager for the San Juan de Rio Coco Region

Itzel Daniela Laguna Dávila joined APRODEIN in 2018. She recently told us about her role as the Regional Manager for San Juan de Rio Coco.

### What are your job responsibilities?

I lead the team across the San Juan de Rio Coco region, which involves co-ordinating technicians, ensuring targets are met, and delivering training to the team.

### What do you like most about your work?

I like the impact we have on the environment and society. I also enjoy building relationships with the farmers and their families. I like how my work helps to improve their lives as well as mine.

### How has working for APRODEIN impacted your life?

Thanks to the program, I have been given a scholarship to continue studying. I am currently studying for a master's degree in Rural Development with an emphasis on agribusiness. This will help me be more efficient in my work and allow me to share my knowledge with my co-workers, farmers, and my community.

### How has working for APRODEIN impacted your family?

Thanks to the income from my work, we have a better standard of living, which has allowed me to pay for my daughter's studies. My family has also learned a lot from what we do in CommuniTree, and we put it into practice. We are a more conscientious and purposeful family.

APRODEIN start date:

2018



**REGION**  
San Juan de Rio Coco



**Number of technicians in team:**

18

**Favourite tree?**



Itzel Daniela Laguna Dávila

Roble Macuelizo

# Monitoring Results

## Nature and Socio-economic impacts

Table 5 displays some of the key nature and socio-economic impacts of CommuniTree during 2023. The data is collected and reported through Taking Root's technology platform.

**Table 5: Nature and socio-economic impacts in 2023**

Nature impacts:	
<b>Trees planted:</b>	
Mixed species forest plantations trees planted for 2023 vintage PVC issuance	4,863,329
Silvopastoral plantations trees planted for 2023 vintage PVC issuance	233,230
Total trees planted for 2023 vintage PVC issuance	5,096,559
<b>Water:</b>	
National watersheds being restored from all project parcels	6
<b>Soil:</b>	
Biochar applied in 2023 plantings to enhance soil health (kg)	18,834

<b>Biodiversity:</b>	
Number of unique tree species recorded in program	132
<b>Socio-economic impacts:</b>	
<b>Community engagement:</b>	
Participating new communities in 2023	330
Total communities in program	1,477
Participating new smallholder families in 2023	914
Total participating smallholder families	4,202
<b>Education:</b>	
Educative sessions: Community project development workshops (plus individual + group farmer visits)	12,792
Total session attendance	13,029
<b>Jobs:</b>	
Total seasonal workers hired	2,609
Permanent positions	173
<b>Total employment created</b>	<b>2,782</b>

## Summary of 2023 results for new 2023 plan vivos

Table 6 is a summary of monitoring results for PVCs issued in 2023. Complete details of the monitoring can be found in Appendix 2.

**Table 6: Summary of 2023 monitoring results for 2023 plan vivos**

2023 Vintage	
Area of land meeting monitoring targets (ha)	3,719.87
Area monitored (ha)	3,720.42
Percentage of monitored land meeting monitoring targets (%)	99.99%



APRODEIN technicians Marcel Gradiz Montoya and Wendy Gonzales collect field data.

## Summary of 2023 results for pre-2023 plan vivos

Table 7 provides a summary of the 2023 monitoring results for farms planted between 2010-2022. Monitoring data is provided from vintages 2014, 2019, and 2021 in line with CommuniTree completing formal field inventories of parcels in years 1, 3, 5 and 10 of them joining the project. Complete details of the monitoring can be found in Appendix 2.

**Table 7: Summary of 2023 monitoring results for continuing 2010-2022 plan vivos**

2010-2022 Vintage	
Historic area meeting and exceeding targets (ha)	2,610.11
Historic area monitored (ha)	3,577.63
Percentage of monitored land meeting and exceeding monitoring targets (%)	72.96%

## Land Attrition

Through 2023, 219.39 ha of historically planted land was removed from the CommuniTree program. The decision to remove parcels was made as they either had no possibility of meeting growth targets in the future or farmers were not motivated to stay in the program. The land and associated credits lost has been replaced by an equivalent amount of land restored in 2023 to ensure the total carbon being removed from the atmosphere remains the same.

# Project Finances

## Project sales and allocations

Table 8 summarizes the sale of PVCs for the 2023 vintage.

**Table 8: Program PVC sales and allocations for the 2023 vintage**

Metric	Value
Total volume of CO2 forward sold	931,156
Total sales for 2023 vintage (USD)	
Average certificate price (USD)	
% of average sale price to community fund	60%
Average increase to community fund per offset (USD)	
Increase to community fund from this year's vintage (USD)	

## Sales Summary Vintage 2023

Table 9 summarizes the distribution of PVCs sold in the 2023 vintage through December 31st, 2023. For a detailed list of all carbon sales to date, see Appendix 2. For a detailed list of all carbon sales to date, see Appendix 2.

**Table 9: Summary of PVC sales for vintage 2023**

Vintage	Name of purchaser	PVCs purchased	Price/PVC (USD)	Amount signed (USD)
2023	Abatable	31,751		
2023	Arbor Day Foundation	450,000		
2023	C-Level	15,000		
2023	C-Level	20,000		
2023	Klimate	20,000		
2023	MyClimate	100,000		
2023	MyClimate	18,249		
2023	PrimaKlima	66,213		
2023	PrimaKlima	71,943		
2023	Taking Root	568		
2023	Zero Mission	138,000		
	<b>Total</b>	<b>931,724</b>		

## Total payment for ecosystem services made

Table 10 below provides a summary of the payments for ecosystem services (PES) made to date for all current participating producers.

**Table 10: PES summary – total payments made**

Payment year	PES amount paid (USD)
2010	\$5,019
2011	\$28,202
2012	\$97,290
2013	\$121,694
2014	\$123,505
2015	\$178,912
2016	\$309,174
2017	\$372,811
2018	\$323,914
2019	\$147,072
2020	\$521,286
2021	\$906,795
2022	\$1,961,226
2023	\$2,137,649
<b>Total</b>	<b>\$7,234,551</b>

## Additional payments to the community

**Table 11: Additional payments to the community to date**

Payment year	Amount paid (USD)
2010	n/a
2011	\$14,221
2012	\$33,288
2013	\$44,291
2014	\$52,616
2015	\$50,870
2016	\$113,955
2017	\$41,608
2018	\$91,110
2019	\$135,669
2020	\$267,820
2021	\$411,108
2022	\$460,043
2023	\$910,418
<b>Total</b>	<b>\$2,627,017</b>

# Organizational Expenses and Revenue

## Project sales and allocations

Table 12 provides an overview of all organizational and operational expenses and revenue in US Dollars from 1 January 2023 – 31 December 2023. This table includes both Canadian and Nicaraguan finances.



**Table 12: Organizational expenses and revenue in USD for the reporting period (unaudited)**

Reporting Period	Jan 1 – Dec 31, 2023
<b>Revenues</b>	
Carbon offset sales	
Other income	
Grants and donations	
Value Chain revenues	
<b>Total expenses (USD)</b>	
Cost of sales - carbon offsets	
Other cost of sales	
Human resources	
Operational Costs	
Administration	
Transport and travel	
Financial fees and foreign exchange	
<b>Total expenses</b>	
<b>Net loss</b>	

# Appendix 1:

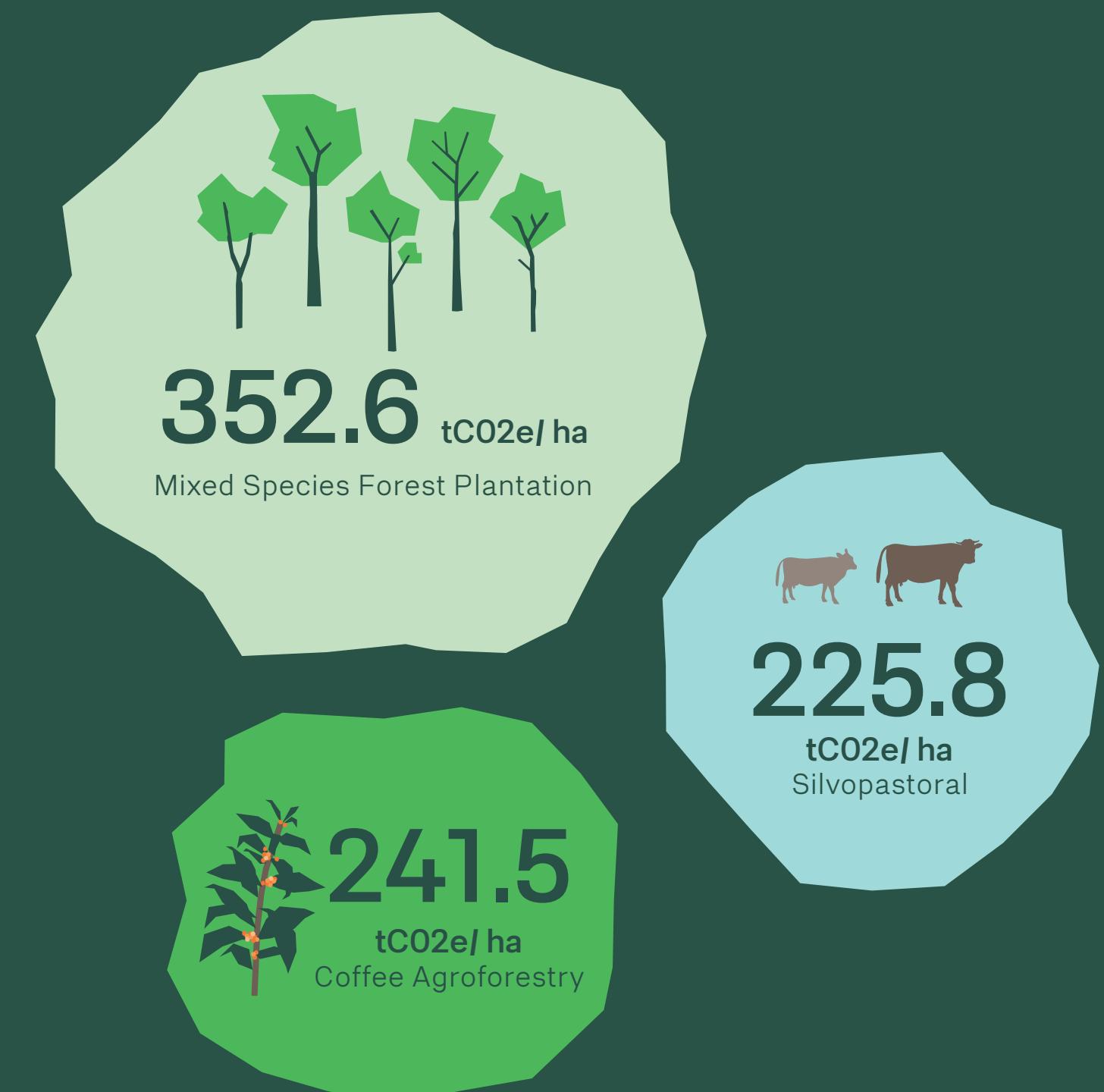
## Saleable tCO2 per Technical Specification

The following Table 13 shows the equivalent tonnes of CO2 removed per unit area for each technical specification currently in use.<sup>1</sup>

**Table 13: Saleable tCO2 sequestered per technical specifications**

Technical specification	Gross tCO2e sequestered per unit (Saleable + Risk Buffer)	Saleable tCO2e sequestered per unit
Mixed Species Forest Plantation	352.6 tCO2e/ha	299.7 tCO2e/ha
Silvopastoral	225.8 tCO2e/ha	191.9 tCO2e/ha
Coffee Agroforestry	241.5 tCO2e/ha	203.2 tCO2e/ha

Gross equivalent tonnes of CO2 sequestered per technical specification in the CommuniTree program.



# Appendix 2:

## Supplementary Information

Due to the high volume of information and data connected to the CommuniTree Carbon Program, Taking Root has included select information through an Excel file, downloadable through this [link](#).

The information in the file is broken into 6 different tabs:

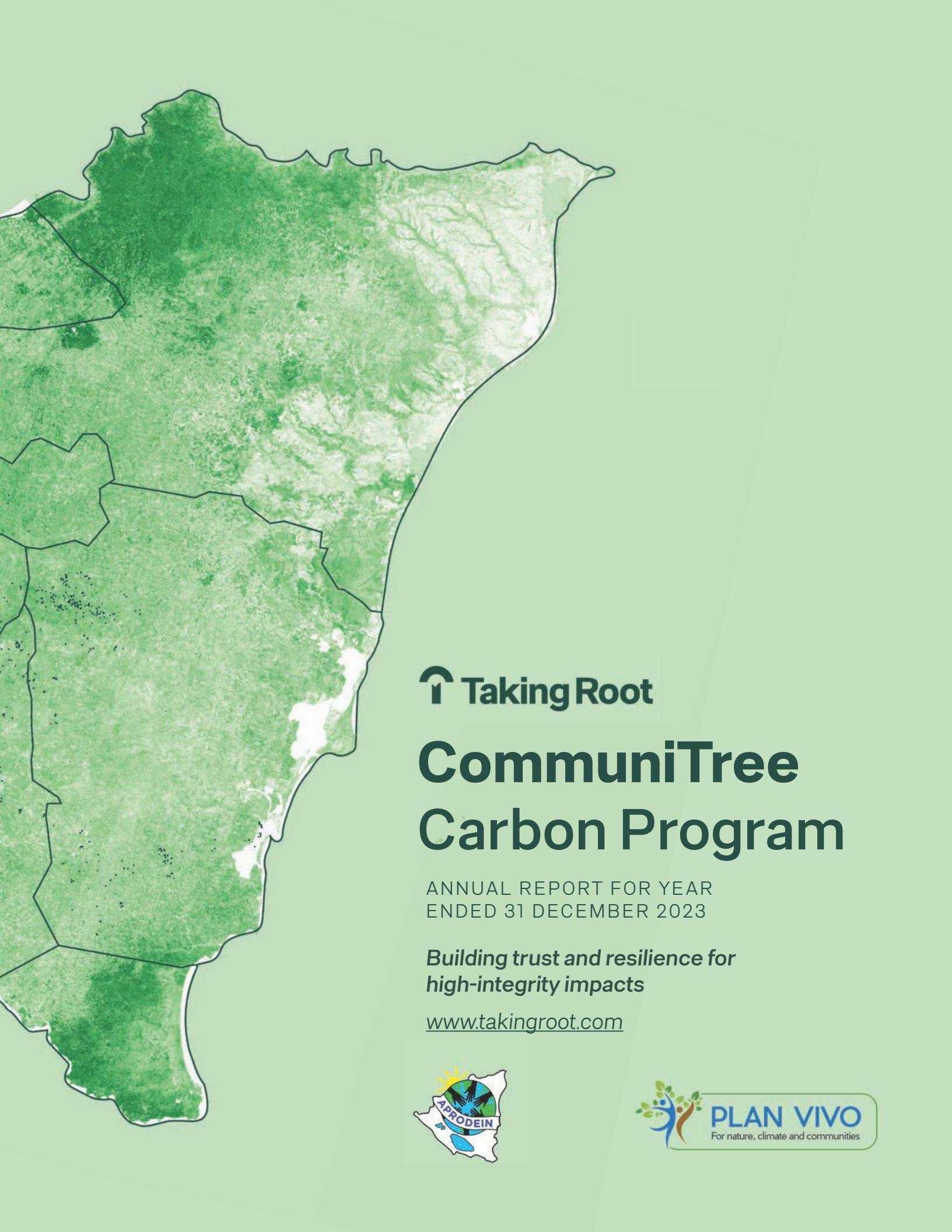
- 1. Land added in 2023:** The Table A1 lists each parcel that was added to the program in 2023.
- 2. Detailed carbon sales to date:** The Table A2 provides a detailed list of Plan Vivo Certificates sold to date by vintage.
- 3. Monitoring results-2023:** The Table A3 contains Taking Root's monitoring results or forest inventory from 2023 for plan vivos planted in 2023.
- 4. Monitoring results-2010-2022:** The Table A4 contains Taking Root's monitoring results or forest inventory from 2023 for plan vivos planted in 2014, 2019 and 2021.
- 5. Land and farmers exiting in 2023:** The Table A5 contains a comprehensive list of the parcels lost in 2023 along with accompanying farmer data.
- 6. Program communities:** The Table A6 contains all communities that have farmers participating in PES agreements and shows which of them are new communities in 2023.

### Footnotes

<sup>1</sup> A PVC represents the long-term sequestration or mitigation of one tonne of CO<sub>2</sub>e by a Plan Vivo-certified project.



Replanting seedlings to ensure that the parcel meets tree density targets.



# ↑ Taking Root CommuniTree Carbon Program

ANNUAL REPORT FOR YEAR  
ENDED 31 DECEMBER 2023

*Building trust and resilience for  
high-integrity impacts*

[www.takingroot.com](http://www.takingroot.com)

