













## Taking Root Inventory Impact Indicators CommuniTree Carbon Program

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The impact of your support for the CommuniTree Carbon Program is much greater than the carbon that it sequesters. This document provides a rigorous quantification of some of the many socio-economic and environmental benefits specific to this program. Communicating these impacts in a quantitative way is invaluable for your stakeholders to fully understand the impact of this support. Definitions for the indicators used in this document can be found at the end.

### Overview: Total Taking Root Inventory impact for all vintages 2010 - 2015

	Partner contribution	Vintages total
 <b>Participating smallholder families</b>		304
 <b>Employment created</b>		1006
Women/Men employed	/	207/ 798
 <b>Community payments made to date</b> (Ecosystem services, advance payments, and other)		\$659,521
<i> Equivalent number of local annual salaries</i>		600
 <b>Total funds allocated to community</b>		\$1,284,356
 <b>Trees Planted</b>		1,484,480
Number of unique species recorded		
 <b>Area reforested (ha eq.)</b>		1,057.1
<i> Equivalent number of soccer fields</i>		1,480.0
 <b>Tonnes of CO<sub>2</sub> issued</b>		313,228
<i> Equivalent number of cars' annual CO<sub>2</sub> emissions offset</i>		81,687

## Details: Total Taking Root Inventory contribution for all vintages 2010 - 2015

	Partner contribution	Vintages total
<b>Social impact: Program Participants</b>		
Participating communities		68
Participating smallholder families		304
<b>Social impact: Employment Created</b>		
Permanent positions		15
Nursery staff hired (seasonal)	277	
Planting staff hired (seasonal)	714	
Other staff hired	0	
Seasonal employment		991
<b>Total employment created</b>		1,006
<b>Social impact: Employment demographics</b>		
Number of Landless farmers employed		235
Number of Men employed		798
Number of Women employed		207
<b>Social impact: Capacity development</b>		
Farmer training and community consultation sessions		12
Total session attendance		185
<b>Financial impact: Payments and community fund contribution (USD)</b>		
Ecosystem service payments made	\$339,328	
Advance payments made	\$175,777	
Additional payments to the community	\$144,416	
Total community payments made to date		\$659,521
<b>i</b> <i>Equivalent annual local salaries</i>		600
Future ecosystem service payments allocated		\$624,836
<b>Total funds allocated to community</b>		\$1,284,356
<b>Environmental impact: Trees planted</b>		
Mixed species forest plantation	1,342,486	
Silvopastoral planting	81,711	
Boundary planting	115,267	
<b>Total trees planted</b>		1,484,480
<b>Environmental impact: Biodiversity</b>		
Number of unique species recorded		
<b>Environmental impact: Area reforested</b>		
Mixed species forest plantation (ha eq)	830.2	
Silvopastoral planting (ha eq)	132.3	
Boundary planting (ha eq)	128.0	
<b>Total area reforested (ha eq.)</b>		1,057.1
<b>i</b> <i>Equivalent number of soccer fields</i>		1480.0
<b>Environmental impact: Tonnes of CO<sub>2</sub> issued</b>		
Mixed species forest plantation	245,977	
Silvopastoral planting	39,201	
Boundary planting	37,936	
<b>Total tonnes of CO<sub>2</sub> issued</b>		313,228
<b>i</b> <i>Equivalent number of cars' annual CO<sub>2</sub> emissions offset</i>		81,687

Note: Blank cells represent no data.

# Taking Root Inventory Purchase Summary

Vintage	Partner - Tonnes CO <sub>2</sub>	Partner - Trees	Project - Tonnes CO <sub>2</sub>	Project - Trees	Invoice Name

Note: You may request the cited invoices from [info@takingroot.org](mailto:info@takingroot.org)

## Appendix I: Tree Species Present in Project

Latin Name	Local Name
<i>Acacia collinsii</i>	cornizuelo
<i>Acacia pennatula</i>	carbon
<i>Albizia adinocephala</i>	chaperno
<i>Albizia guachapale</i>	gavilan
<i>Albizia niopoides</i>	guanacaste blanco
<i>Albizia saman</i>	genizaro
<i>Alvaradoa amorphoides</i>	caratillo
<i>Asclepias curassavica</i>	quebra muela
<i>Astronium graveolens</i>	ron ron, guacamaya
<i>Azadirachta indica</i>	neem
<i>Bombacopsis quinata</i>	pochote
<i>Bruñera simaruba</i>	jiñocuabo
<i>Caesalpinia eriostachys</i>	pintadillo
<i>Caesalpinia velutina</i>	mandagual
<i>Caesalpinia vesicaria</i>	flor amarilla
<i>Calycophyllum candidissimum</i>	madroño
<i>Carapa nicaraguensis</i>	cedro
<i>Casearia ilicifolia</i>	chicharon
<i>Cedrela odorata</i>	cedro real
<i>Ceiba pentandra</i>	ceiba
<i>Chlorofora tinctoria</i>	mora
<i>Chloroleucon mangense</i>	cacho novio
<i>Chrysobalanus icaco</i>	icaco
<i>Citrofortunella mitis</i>	naranja
<i>Cochlospermum vitifolium</i>	berberilla
<i>Cordia alliodora</i>	laurel
<i>Cordia dentada</i>	tiguilote
<i>Crescentia cujete</i>	jicaro
<i>Croton niveus</i>	copalchi
<i>Desmodium nicaraguense</i>	mozote
<i>Diphysa americana</i>	guachipilin
<i>Dipteryx panamensis</i>	almendro
<i>Enterolobium cyclocarpum</i>	guanacaste
<i>Eucalyptus</i>	eucalipto
<i>Eugenia hondurensis</i>	guacuco
<i>Furcraea longueva</i>	pescadillo
<i>Gliricidia sepium</i>	madero negro
<i>Guazuma ulmifolia</i>	guacimo
<i>Gyrocarpus americanus</i>	gallito, talalate
<i>Hippomane mancinella</i>	manzanillo
<i>Hyeronima alchorneoides</i>	nancite
<i>Hymenaea courbaril</i>	copal, guapinol
<i>Karwinskia calderoni</i>	guilliguiste
<i>Leucaena leucocephala</i>	leucaena
<i>Leucaena shannoni</i>	frijolillo
<i>Lysiloma divaricata</i>	quebracho
<i>Muntingia calabura</i>	capulin blanco
<i>Ochroma pyramidale</i>	tambor
<i>Persea americana</i>	aguacate
<i>Pinus oocarpa</i>	pino



## Definitions of impact indicators

**Additional Payments to the Community:** The sum of money in USD that has been invested in Participating Communities for community benefits that are not Ecosystem Service Payments or Advance Payments. This includes nursery setup and materials, as well as other community benefits. The nature of these benefits varies but past examples included grafted fruit trees, fuel-efficient cookstoves, forest seedlings, etc.

**Advance Payments Made:** The sum of money in USD given to Participating Smallholder Families in advance of their Ecosystem Service Payments so as to enable the family to meet the program's participation eligibility requirements. The Advance Payments are then deducted from future Ecosystem Service Payments over time. The most common use of Advance Payments is to buy fencing to protect the reforested parcels from cattle.

**Area Reforested:** The number of hectares reforested and under management by Participating Smallholder Families through the CommuniTree Carbon Program according to the three technical specifications (i.e. Mixed Species Forest Plantations, Silvopastoral Planting, or Boundary Planting). This is represented in Equivalent Hectares (ha eq.).

**Cars' Annual CO<sub>2</sub> Emissions Offset:** The equivalent number of cars' annual CO<sub>2</sub> emissions that would be offset by the tonnes of CO<sub>2</sub> absorbed through the CommuniTree Carbon Program. This is calculated assuming that the average fuel-efficient economy-class car is driven 15,000 km a year, producing 3.83 tonnes of CO<sub>2</sub>.

**Community Payments Made:** The sum of money in USD from all Ecosystem Service Payments, Advance Payments and Additional Payments already paid to Participating Smallholder Families.

**Ecosystem Service Payments Made:** The sum of money in USD paid to Participating Smallholder Families in exchange for meeting established tree planting and tree growth related targets, as defined in each technical specification (i.e. Mixed Species Forest Plantations, Silvopastoral Planting, or Boundary Planting).

**Equivalent hectares (ha eq.):** A way of relativizing the areas planted under the three planting technical specifications, each with unique planting densities. All areas are weighed proportionally to the number of tonnes of carbon dioxide (tCO<sub>2</sub>) issued for the different technical specifications, with the Mixed Species Forest Plantation serving as the base unit. For example, the Boundary Planting technical specification is a linear planting design planted at 670 trees per kilometer, forecasted to sequester 215 tCO<sub>2</sub> over the project period. The Mixed Species Forest Plantations are forecasted to sequester 296.3 tCO<sub>2</sub> per hectare over the project period. Therefore  $(296.3/215)$  1.39 km of the Barrier Planting intervention is equivalent to 1 ha eq.

**Funds Allocated to Community:** The sum of money in USD of all past and future payments to Participating Smallholder Families, including Ecosystem Service Payments, Advance Payments, Additional Payments, and Future Ecosystem Service Payments.

**Future Ecosystem Service Payments Allocated:** The sum of money in USD that is earmarked for future Ecosystem Service Payments to Participating Smallholder Families over 10 years from the planting date. This is provided the Participating Smallholder Family meets established tree planting and tree growth related targets as defined in each technical specification (i.e. Mixed Species Forest Plantations, Silvopastoral Planting, or Boundary Planting).

**Landless Farmers Employed:** The number of people employed through the CommuniTree Carbon program, either seasonally or permanently, whose livelihood is primarily dependent on agriculture, but who do not own land. They either work as labourers on other people's farms or rent land from other farmers to grow food. Landless farmers are usually the poorest demographic in agricultural communities. Since they are not landholders they are ineligible to become a Participating Smallholder Family in the CommuniTree Carbon Program. However, by gaining employment through the program, they still derive benefits.

**Local Annual Salaries Earned:** This represents the equivalent number of average local annual salaries earned by those employed through the program. The average annual salary of a rural Nicaraguan is calculated at 100 Cordobas per day. At current exchange rates this is approximately \$1,100 USD a year.

**Men Employed:** The number of people employed, either seasonally or permanently, who are of the male gender.

**Native Tree Species Recorded:** The number of different tree species recorded on land being managed by Participating Smallholder Families as a part of the CommuniTree Carbon Program. The program plants five different native tree species, however, other trees species that are seeded without human intervention are integrated into the parcel and managed as an important part of the program. Their presence increases overall tree species diversity and provides additional wildlife habitat.

**Nursery staff:** The number of people hired, directly through the program or indirectly through another participating smallholder, for a defined period of time within the calendar year to perform tasks related to the CommuniTree Carbon Program's nurseries.

**Other staff:** The number of people hired, directly through the program or indirectly through another participating smallholder, for a defined period of time within the calendar year to perform tasks related to the CommuniTree Carbon Program's activities other than the tasks already outlined in this document. Examples include contracted staff to perform one-off activities such as doing a carbon baseline for the project's expansion.

**Participating Communities:** The number of communities with at least one Participating Smallholder Family as part of the CommuniTree Carbon Program.

**Participating Smallholder Families:** Smallholder families with at least one parcel of land reforested as a part of the CommuniTree Carbon Program.

**Planting staff:** The number of people hired, directly through the program or indirectly through another participating smallholder, for a defined period of time within the calendar year to perform tasks related to the CommuniTree Carbon Program's tree planting activities.

**Permanent Positions:** The number of people hired on continuous basis through the CommuniTree Carbon Program.

**Seasonal Positions:** The number of people hired, directly through the program or indirectly through another participating smallholder, for a defined period of time within the calendar year to perform seasonally related tasks through the CommuniTree Carbon Program. For example, a person who works for one month within a given calendar year would count as one Seasonal Position.

**Soccer Fields:** The equivalent number of soccer fields (or European football pitches) reforested through the CommuniTree Carbon Program. This been calculated using the average soccer field size as found optimal by FIFA, which is 105 meters by 68 meters, representing 7140 m<sup>2</sup>. As a hectare is 10,000 m<sup>2</sup>, a hectare represents 1.40 football pitches.

**Tonnes of CO<sub>2</sub> Issued:** The number of Plan Vivo certificates issued or expected to be issued after the upcoming issuance cycle, represented in tonnes of carbon dioxide (tCO<sub>2</sub>).

**Trees Planted:** The number of trees planted by Participating Smallholder Families as part the three technical specification (i.e. Mixed Species Forest Plantations, Silvopastoral Planting, or Boundary Planting).

**Women Employed:** The number of people employed, either seasonally or permanently, who are of the female gender.