

FOREST FRIENDS™

greeninitiative
For a Climate & Nature Positive Planet

TECHNICAL DOSSIER 2025

Organization name: CEPA
Reporting Period: 2022-2025



CEPA has been awarded the **Forest Friends Accelerator Badge**, an honor conferred exclusively on organizations that catalyze ecosystem restoration across their operations and partner networks, by supporting projects in alignment with the United Nations Decade on Ecosystem Restoration principles and standards.



Green Initiative is member of world-class initiatives for climate and nature positive actions



Forest Friends—a project of Green Initiative—provides organizations with a network of ecosystem-restoration projects in biodiversity hotspots of global significance, designed and executed in accordance with the United Nations Decade on Ecosystem Restoration (2021–2030) principles and governed by Green Initiative’s monitoring, reporting, and verification (MRV) standards.



Science-based methodology

Our monitoring methodology leverages very high-resolution satellite imagery and advanced Geographic Information System (GIS) analytics to quantify the survival and growth of planted trees, with results delivered through an accessible, transparent monitoring and reporting.



RECOGNIZE

Interventions are prioritized in biodiversity hotspots recognized by the Critical Ecosystem Partnership Fund (CEPF), coupled with the systematic identification and engagement of qualified local implementing partners dedicated to natural-resource conservation.



SELECT

Priority areas are characterized by pronounced habitat fragmentation, reduced species richness, or documented histories of unsustainable land use. Site identification and condition assessment are conducted through remote sensing analytics and cross-verified via in-situ (on-site) surveys.



PLANT

Species portfolios comprise 15–150 native taxa selected under predefined ecological and conservation criteria to maximize biodiversity outcomes. Criteria include: (i) growth rate and successional strategy; (ii) conservation status (e.g., IUCN Red List category); (iii) functional ecological role; and (iv) local rarity or endemism.



MONITOR

Restoration outcomes are assessed using plant bioindicators and spectral vegetation indices, including: (i) mortality/survival rates; (ii) incidence of invasive species; (iii) canopy cover and height growth; and (iv) Normalized Difference Vegetation Index (NDVI) time-series.



REPORT

Reporting covers the planting workflow, species-level tree inventories (composition and density), modeled carbon sequestration potential, and associated ecological and socio-economic co-benefits. Long-term outcomes are quantified through multi-temporal remote sensing.

Forest Friends’ membership program provides structured recognition and transparent attribution of your organization’s contributions to global ecosystem restoration. Members gain access to technical tools, including an organizational GHG emissions calculator.

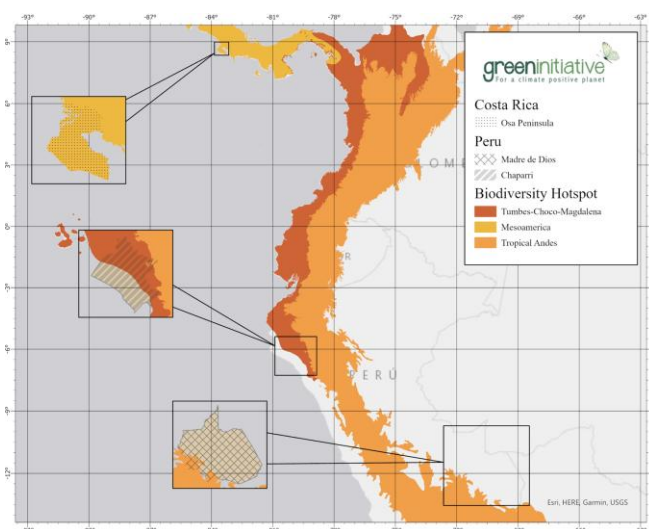
<https://forestfriends.eco/businesses/>

Biodiversity Hotspots

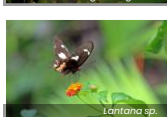
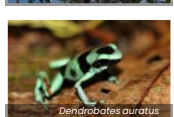
CRITICAL ECOSYSTEM PARTNERSHIP FUND

Global prioritization follows the Critical Ecosystem Partnership Fund (CEPF) framework of 36 designated biodiversity hotspots. A region qualifies as a hotspot if it

1. Contain at least **1,500 species** of endemic vascular plants – that is to say, many species are found nowhere else on the planet.
2. Have lost at least **70 percent** of its primary native vegetation – in other words, many species are threatened.



Region and Local Partner



Saimiri Foundation, headquartered in Puntarenas Province, Costa Rica, implements rescue, rehabilitation, and conservation programs for non-human primates, addressing environmental and anthropogenic threats.

Community Engagement:

- Workforce development through training, employment, and structured volunteer pathways for local residents.
- Targeted investment in community infrastructure and essential services.

Biodiversity Conservation:

- Habitat restoration and protection of native flora and fauna.
- Documentation of 100+ plant species critical to primate diet and use.
- Longitudinal monitoring of primate behavior and population dynamics in Costa Rica spanning more than 14 years.

Province: southernmost Puntarenas

Ecosystem: Tropical Moist Broadleaf Forests

Ecoregion: Isthmian-Pacific moist forests

Osa Peninsula area: 1093 km²



3%

Of Flora Found Nowhere Else in the World



4,000

Species of Vascular Plants



10,000

Species of Insects



700

Species of Trees



463

Bird Species Including of Largest Population of Scarlet Macaws in Central America



4

Kinds of Monkeys

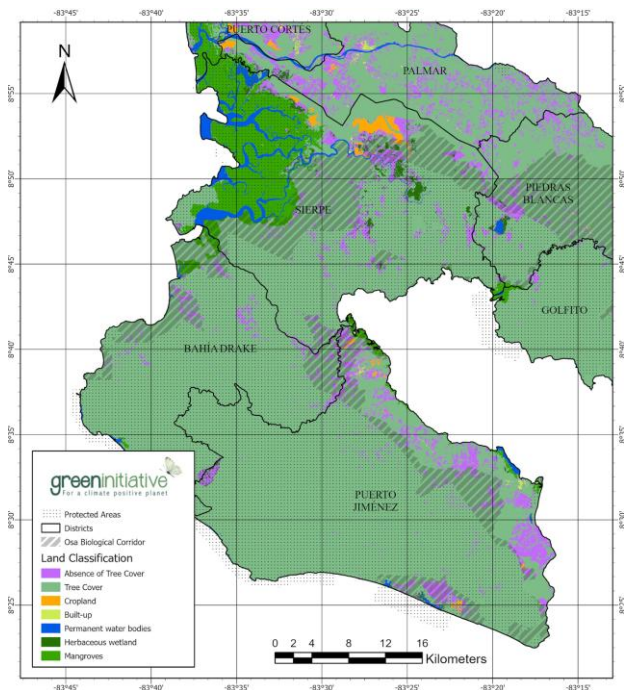
Science-based Objectives

Threats:

Unsustainable agricultural expansion and linear infrastructure are fragmenting ecological corridors across the Osa Peninsula, degrading habitat quality, disrupting wildlife movement, and reducing ecosystem resilience.

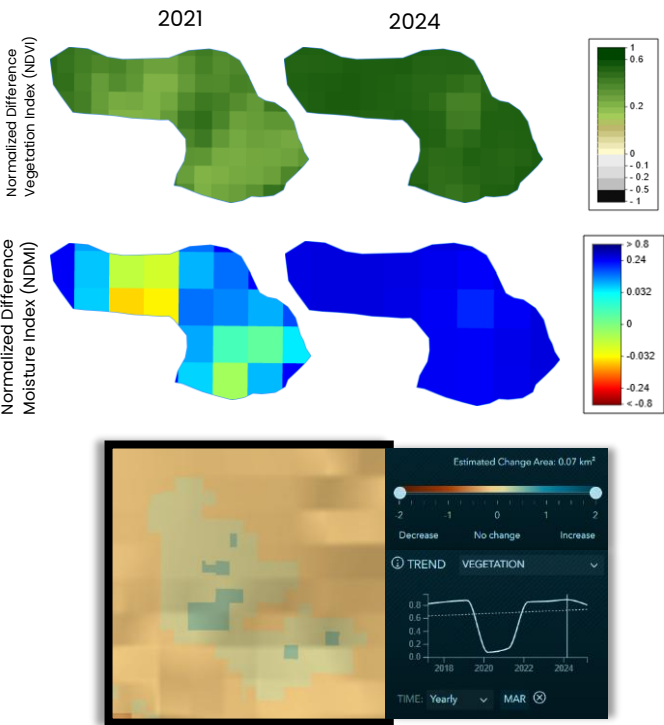
Solution:

Apply spatial prioritization (remote sensing with field verification) to identify fragmented forest patches and corridor pinch points, then implement enrichment planting and assisted natural regeneration using a high-diversity palette (~150+ native species) selected for habitat function and wildlife forage/shelter, reinforcing connectivity within the Osa Biological Corridor and toward Corcovado National Park.



100,000 trees by 2050

Field and Remote Monitoring

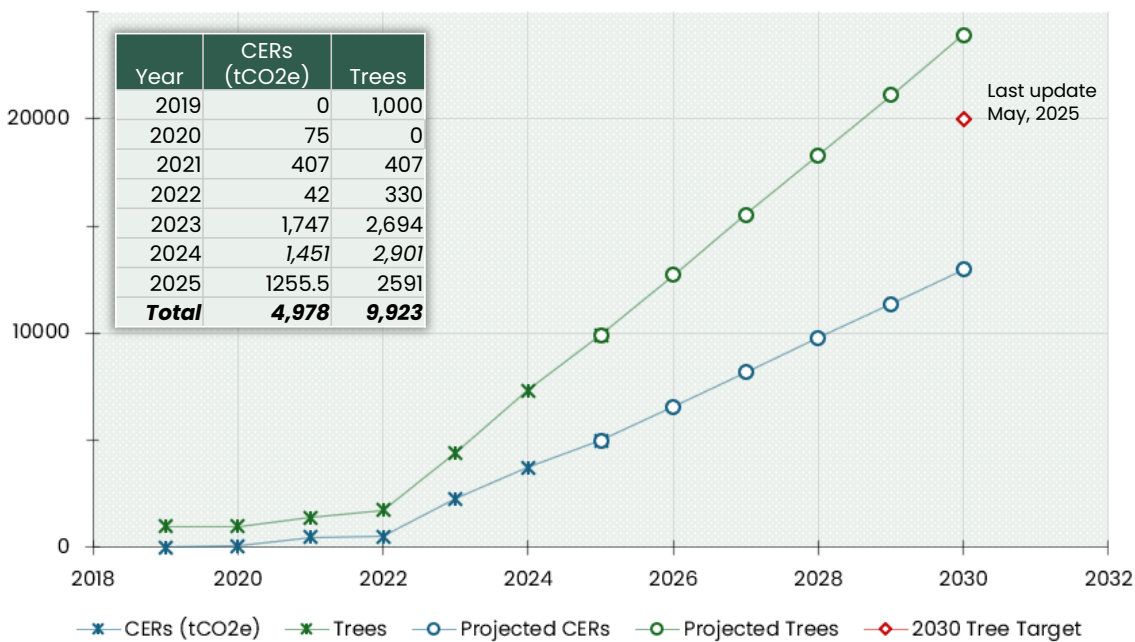


Forest Friends tracks restoration outcomes on two complementary fronts. On the ground, we establish monitoring schedules to measure sapling survival and mortality at set intervals and compare them to predefined thresholds to trigger adaptive actions when necessary.

In parallel, we run long-term landscape monitoring using surface-reflectance-derived vegetation indices (a to quantify canopy recovery and site condition through time. We generate cloud-screened, seasonally comparable composites (primarily Sentinel-2 and Landsat) and compute indices like NDVI, EVI, and SAVI. Together, these methods provide a rigorous, continuous view of restoration progress from individual tree performance to landscape-level vegetation dynamics.

Impact Dashboard

CEPA is on track to **meet—and exceed—its 2030 target** of planting 20,000 trees through its regenerative education model. With an average of approximately 2,700 trees planted per year, CEPA projects reaching about 24,000 trees by 2030. In parallel, the initiative is offsetting an average of around 1,400 tCO₂ per year through Certified Emission Reductions (CERs), positioning it to achieve roughly 13,000 tCO₂ in cumulative offsets by 2030.

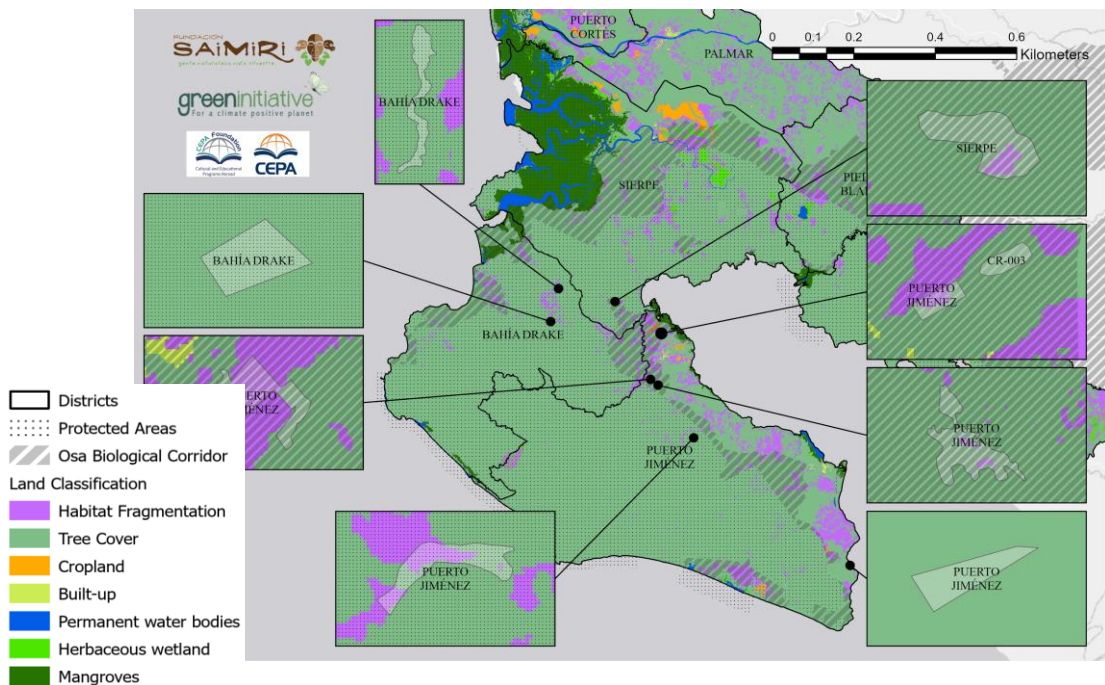


Supported the
planting of
9,923 Trees

Distributed
over
13 Projects

That cover a
total of
92 Hectares

While acquiring carbon
credits equivalent to
4,978 tCO₂



Land plot CR-004 (Dec 2022)

Land Use History

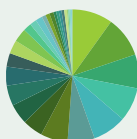
Rancho Quemado includes state-owned parcels managed by the Government of Costa Rica. The project estate was previously occupied by an aging monoculture plantation of Melina (*Gmelina arborea*), characterized by low species richness and simplified habitat structure. The site is being transitioned to a mixed native forest through the establishment of diverse native tree assemblages

Geospatial Information

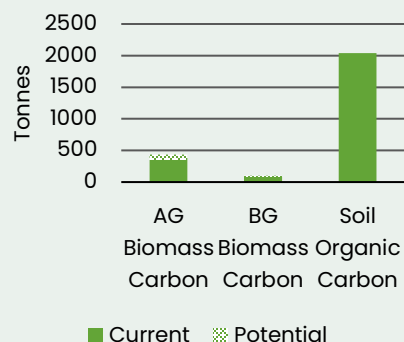
Region: Osa Peninsula, Costa Rica
Ecosystem: Tropical Moist Forest on Mountains
Landowner: SINAC
Land Area: 31,100 m²

Inventory and Statistics

- Individuals established: 1,559 trees and shrubs, representing 16 plant families.
- Species richness (S): 55 taxa.
- Community diversity: Simpson's Diversity Index (0-1) = 0.96.
- Carbon performance: ~350 tCO₂ stored in above-ground (AG) biomass to date; an additional ~20% is expected.



Biotic and Abiotic Carbon Storage



Memorandum of understanding

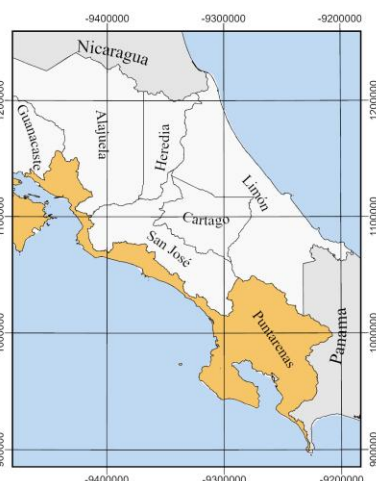
FUNDACIÓN CORCOVADO

Península de Osa, lunes 24 de octubre, 2022.

Ingeniera
Catalina Mora
Administradora
Reserva Forestal Golfo Dulce.
Presente

Estimada Señora

Un caluroso saludo de parte de Fundación Corcovado. La fundación está apoyando a la Fundación Sinapi y la de Monitoreo Biológico de Rancho Quemado, quienes tienen interés de sembrar áreas degradadas en las fincas del estado ubicadas en Rancho Quemado.



Legend

- Land Plot Extent (31100 m²)
- Tropical Moist Forest on Mountains
- Ocean

Land Plot Designation: CR-004

Predominant Ecosystem: Tropical Rainforest
Date of elaboration: 22/11/2023
Projection: WGS 1984 Web Mercator Auxiliary Sphere
Coordinate System: Decimal Degrees

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Land plot CR-005 (Nov 2022)

Land Use History

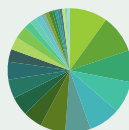
The site was previously managed as a monoculture plantation of Melina (*Gmelina arborea*). The stand was subsequently clear-felled by the former landowner and is now undergoing secondary succession. Earlier clearing in the 1970s to establish cattle ranching further simplified habitat structure and reduced native species richness. restoration focuses on assisted natural regeneration.

Geospatial Information

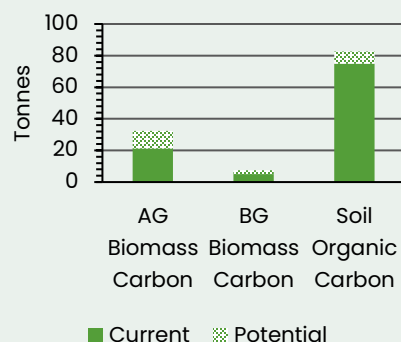
Region: Osa Peninsula, Costa Rica
Ecosystem: Tropical Moist Forest on Mountains
Landowner: Roberto Rodriguez (Costa Rica)
Land Area: 2,000 m²

Inventory and Statistics

- Individuals established: 250 trees and shrubs, representing 26 plant families.
- Species richness (S): 69 taxa.
- Community diversity: Simpson's Diversity Index (0-1) = 0.99
- Carbon performance: ~21 tCO₂ stored in above-ground (AG) biomass to date; an additional ~35% is expected.

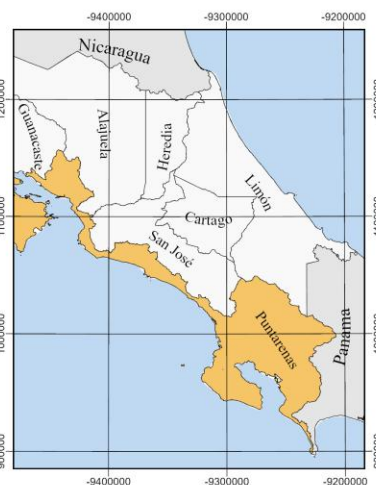
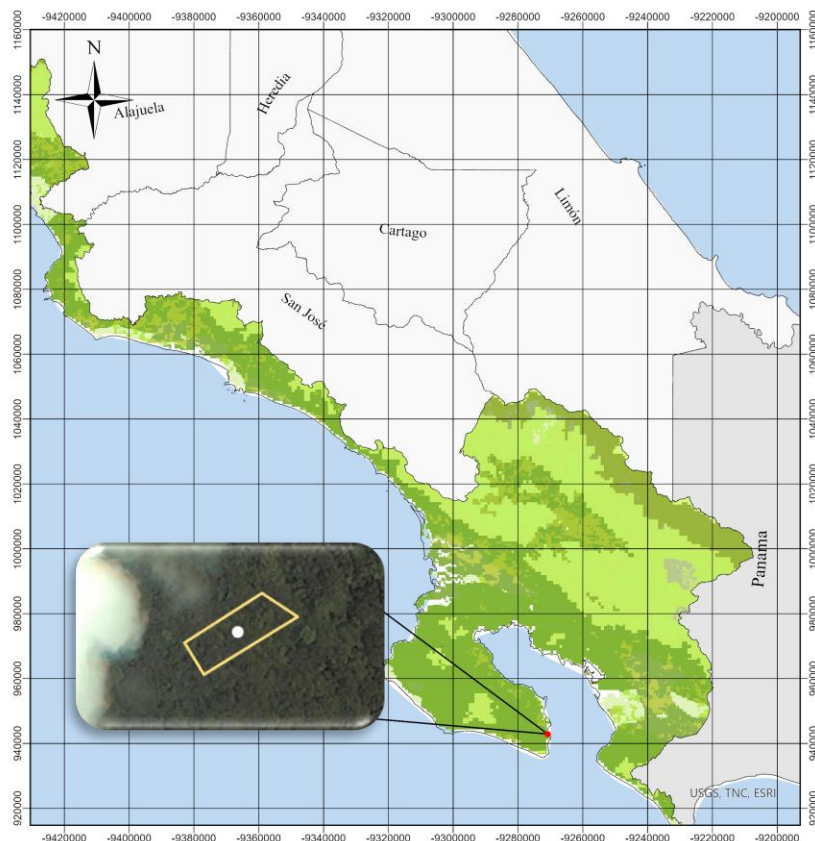


Biotic and Abiotic Carbon Storage



Memorandum of understanding

Not Available



Legend

- Land Plot Extent (2000 m²)
- Ocean

Land Plot Designation: CR-005

Predominant Ecosystem: Tropical Rainforest
Date of elaboration: 29/09/2023
Projection: WGS 1984 Web Mercator Auxiliary Sphere
Coordinate System: Decimal Degrees

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Land plot CR-006 (May 2023)

Land Use History

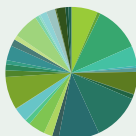
Former cropland characterized by scattered remnant trees and simplified habitat structure. Privately owned by a binational couple, the property is being managed to re-establish native forest cover through the planting of locally occurring species and stewardship practices that maintain ecosystem health across the entire estate.

Geospatial Information

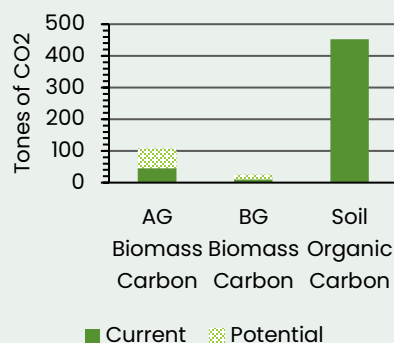
Region: Osa Peninsula, Costa Rica
Ecosystem: Tropical Moist Forest on Mountains
Landowner: Gordon Richards (American)
Land Area: 7,000 m²

Inventory and Statistics

- Individuals established: 230 trees and shrubs, representing 20 plant families.
- Species Richness (S): 35 taxa.
- Community diversity: Simpson's Diversity Index (0-1) = 0.96
- Carbon performance: ~45 tCO₂ stored in above-ground (AG) biomass to date; an additional ~58% is expected.



Biotic/Abiotic Carbon Storage



Memorandum of understanding

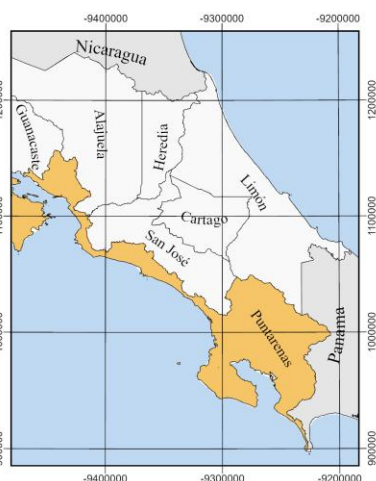
QUANTO, este Acuerdo tiene como objetivo la colaboración y específicamente la conservación de los recursos naturales de Costa Rica y en especial restaurar y regenerar espacios degradados para secuestrar carbono y devolver la naturaleza autóctona a estos espacios de la Península de Osa.

III. OBJETIVO
Restaurar un espacio de potrero abandonado de alrededor de 1 hectárea.

IV. ÁREAS DE COLABORACIÓN
Para efectos de este acuerdo, la principal área de colaboración es la restauración de hábitat para lo que se identificaron las siguientes responsabilidades y tareas tanto del propietario del terreno (GRI) y PSI:

RESPONSABILIDADES DE GRI

- Proveer un espacio donde sembrar entre 100 a 800 árboles
- Limpieza cuidadosamente y hacer huecos
- Dar mantenimiento 1 vez al mes a los árboles sembrados reportando aquellos que se encuentren en mal estado para ser reemplazados.
- Contribuir con el transporte de los árboles a sembrar



Legend

- Land Plot Extent (7000 m²)
- Tropical Moist Forest on Mountains
- Ocean

Land Plot Designation: CR-006

Predominant Ecosystem: Tropical Rainforest
Date of elaboration: 29/09/2023
Projection: WGS 1984 Web Mercator Auxiliary Sphere
Coordinate System: Decimal Degrees

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Land plot CR-007 (Jul 2023)

Land Use History

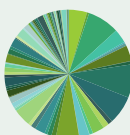
Recently acquired mixed-use farm historically managed for cattle and crop production. Legacy monoculture stands of Melina (*Gmelina arborea*) are present and are being selectively harvested for timber. The new owner—a Costa Rican farmer with longstanding experience in livestock and cropping—seeks to diversify the enterprise through rural tourism while integrating wildlife conservation and habitat restoration across the property.

Geospatial Information

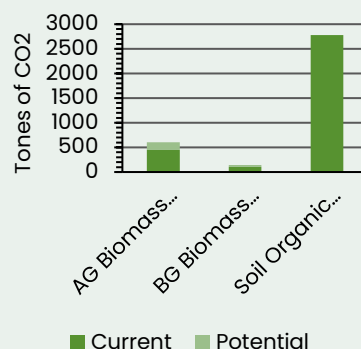
Region: Osa Peninsula, Costa Rica
Ecosystem: Tropical Moist Forest on Mountains
Landowner: Luiz Zuniga (Costa Rican)
Land Area: 42,300 m²

Inventory and Statistics

- Individuals established: 1684 trees and shrubs, representing 39 plant families.
- Species Richness (S): 101 taxa.
- Community diversity: Simpson's Diversity Index (0–1) = 0.97
- Carbon performance: ~450 tCO₂ stored in above-ground (AG) biomass to date; an additional ~26% is expected.



Biotic and Abiotic Carbon Storage



Memorandum of understanding

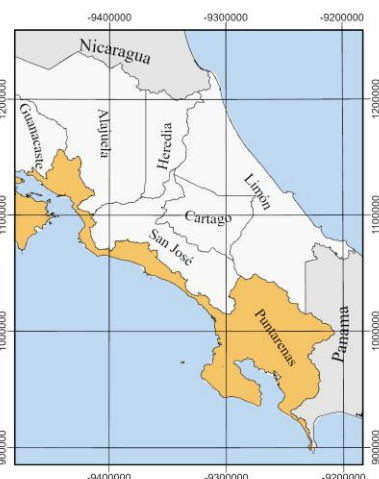
UP: ...JUNTO, este Acuerdo tiene como objetivo la colaboración y específicamente la conservación de los recursos naturales de Costa Rica y en especial restaurar especies degradadas para secuestrar carbono y devolver la naturaleza autóctona y/o enriquecer estos espacios de la Península de Osa.

III. OBJETIVO
Restaurar espacios entre potreros y enriquecer los espacios con bosques degradados.

IV. ÁREAS DE COLABORACIÓN
Para efectos de este acuerdo, la principal área de colaboración es la restauración de hábitat para lo que se identificarán las siguientes responsabilidades y tareas tanto del propietario del terreno (S) y FS:

RESPONSABILIDADES DEL

A. Proveer un espacio donde sembrar entre 600 a 3000 árboles
B. Apoyar con un peón cuando se haga la siembra
C. Dar mantenimiento 2-4 veces al año a los árboles sembrados reportando aquellos que se encuentren en mal estado o muertos para ser reemplazados.
D. Contribuir con el transporte de los árboles a sembrar



Legend

Tropical Moist Forest on Mountains
Land Plot Extent (42300 m²)
Ocean

Land Plot Designation: CR-007
Predominant Ecosystem: Tropical Rainforest
Date of elaboration: 10/05/2024
Projection: WGS 1984 Web Mercator Auxiliary Sphere
Coordinate System: Decimal Degrees

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Land plot CR-008 (Apr 2024)

Land Use History

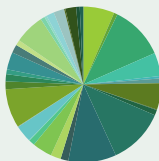
Former monoculture plantation of teak (*Tectona grandis*), with scattered remnant trees retained along fence lines and property margins. The property is being reforested to establish a functional corridor connecting nearby primary and secondary forest fragments. The owner operates Finca Kobo, an ecolodge where multiple primate species are regularly observed, including squirrel monkeys, white-faced capuchins, and howler monkeys.

Geospatial Information

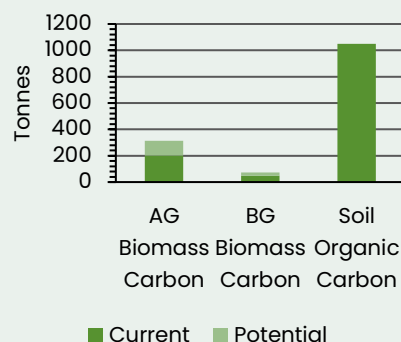
Region: Osa Peninsula, Costa Rica
Ecosystem: Tropical Moist Forest on Mountains
Landowner: Daniela Solano (Costa Rican)
Land Area: 19,900 m²

Inventory and Statistics

- Individuals established: 1518 trees and shrubs, representing 38 plant families.
- Species Richness (S): 183 taxa.
- Community diversity: Simpson's Diversity Index (0–1) = 0.99
- Carbon performance: ~202 tCO₂ stored in above-ground (AG) biomass to date; an additional ~36% is expected.



Biotic and Abiotic Carbon Storage



Memorandum of understanding

Not Available



Legend

- Tropical Moist Forest on Mountains
- Land Plot Extent (19,900 m²)
- Ocean

Land Plot Designation: CR-008

Predominant Ecosystem: Tropical Rainforest
Date of elaboration: 10/05/2024
Projection: WGS 1984 Web Mercator Auxiliary Sphere
Coordinate System: Decimal Degrees

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Land plot CR-009 (Oct 2024)

Land Use History

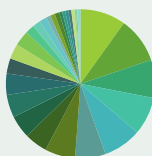
Former cattle pasture with scattered remnant endemic and fruit-bearing trees. Transition the property to a food-forest (edible-forest) landscape, allocating approximately 40% of the area to secondary native forest through assisted natural regeneration, with the remainder developed as an agroforestry system.

Geospatial Information

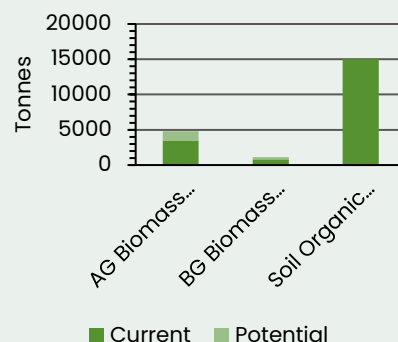
Region: Osa Peninsula, Costa Rica
Ecosystem: Tropical Moist Forest
Landowner: Alexander Retana (Costa Rica)
Land Area: 7,800 m²

Inventory and Statistics

- Individuals established: 250 trees and shrubs, representing 14 plant families.
- Species Richness (S): 66 taxa.
- Community diversity: Simpson's Diversity Index (0-1) = 0.98
- Carbon performance: ~63 tCO₂ stored in above-ground (AG) biomass to date; an additional ~42% is expected.



Biotic and Abiotic Carbon Storage



Memorandum of understanding

Not Available



Legend

- Tropical Moist Cropland on Mountains
- Land Plot Extent (16,776 m²)
- Ocean

Land Plot Designation: CR-009

Predominant Ecosystem: Tropical Rainforest
Date of elaboration: 30/09/2024
Projection: WGS 1984 Web Mercator Auxiliary Sphere
Coordinate System: Decimal Degrees

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Land plot CR-010 (Oct 2024)

Land Use History

Agroforestry system integrating perennial tree crops with existing agricultural activities. Interventions

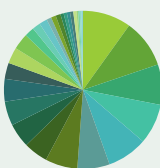
- Enrichment planting with native wild fruit species and timber trees to increase species and structural diversity (multi-strata canopy).
- Establishment of a riparian buffer through targeted tree planting along river margins.

Geospatial Information

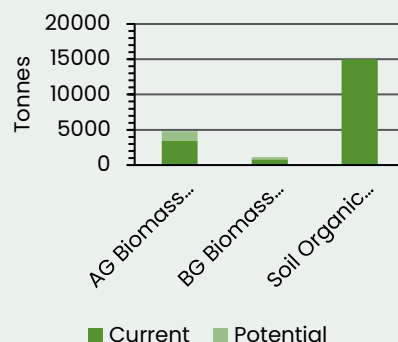
Region: Osa Peninsula, Costa Rica
Ecosystem: Tropical Moist Forest
Landowner: Stanley Retana (Costa Rican)
Land Area: 79,000 m²

Inventory and Statistics

- Individuals established: 114 trees and shrubs, representing 9 plant families.
- Species Richness (S): 25 taxa.
- Community diversity: Simpson's Diversity Index (0-1) = 0.98
- Carbon performance: ~652 tCO₂ stored in above-ground (AG) biomass to date; an additional ~40% is expected.

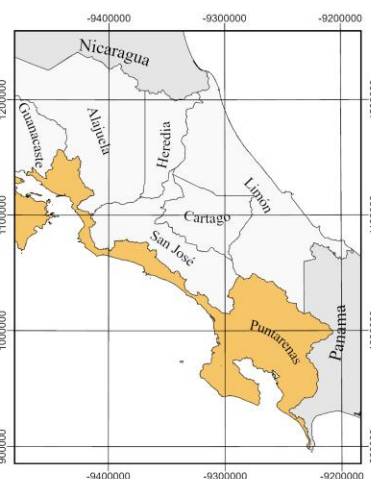


Biotic and Abiotic Carbon Storage



Memorandum of understanding

Not Available



Legend

- Tropical Moist Forest on Mountains
- Tropical Moist Cropland on Mountains
- Land Plot Extent (77,920 m²)
- Ocean

Land Plot Designation: CR-010

Predominant Ecosystem: Tropical Rainforest
Date of elaboration: 18/02/2025
Projection: WGS 1984 Web Mercator Auxiliary Sphere
Coordinate System: Decimal Degrees

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Land plot CR-011 (Apr 2025)

Land Use History

Former cattle pasture acquired by the Government of Costa Rica; the site is in early successional stages of natural regeneration. Interventions:

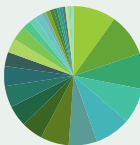
- Enrichment planting with endangered endemic and other native tree species to accelerate recovery.
- Establishment of riparian buffers by planting along watercourses, incorporating species such as espavel (*Anacardium excelsum*).

Geospatial Information

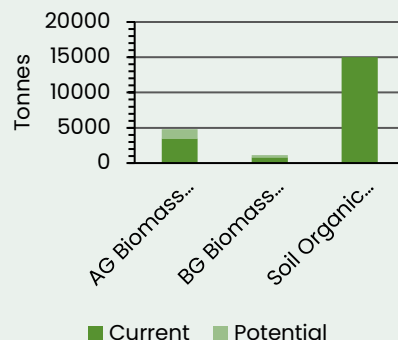
Region: Osa Peninsula, Costa Rica
Ecosystem: Tropical Moist Forest on Mountains
Landowner: MINAE
Land Area: 301,000 m²

Inventory and Statistics

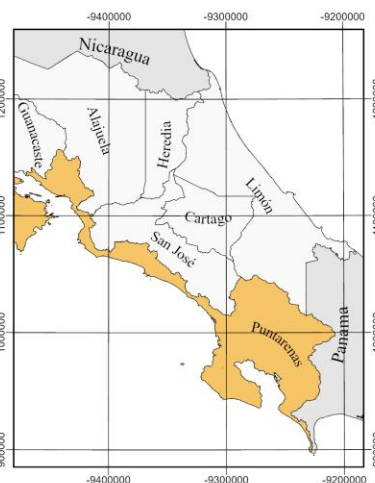
- Individuals established: 1594 trees and shrubs, representing 21 plant families.
- Species Richness (S): 63 taxa.
- Community diversity: Simpson's Diversity Index (0–1) = 0.96
- Carbon performance: ~3,500 tCO₂ stored in above-ground (AG) biomass to date; an additional ~27% is expected.



Biotic and Abiotic Carbon Storage



Memorandum of understanding



Legend

- Tropical Moist Forest on Mountains
- Land Plot Extent (301,945 m²)
- Ocean

Land Plot Designation: CR-011

Predominant Ecosystem: Tropical Rainforest
Date of elaboration: 18/02/2025
Projection: WGS 1984 Web Mercator Auxiliary Sphere
Coordinate System: Decimal Degrees

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CEPA Case

- Remarks CEPA's integration of climate- and nature-positive measures across its study-abroad programs.
- Demonstrates CEPA's sector leadership in regenerative travel and alignment with sustainability frameworks.
- Documents CEPA's recognition as a Forest Friends Accelerator for sustained contributions in the environmental and social dimensions.
- Evidences positive ecological and community outcomes from initiatives implemented in designated biodiversity hotspots.



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