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Circular Economy Forum 2025

DIGITALIZATION AND INNOVATION: BREAKTHROUGHS IN PRACTICE

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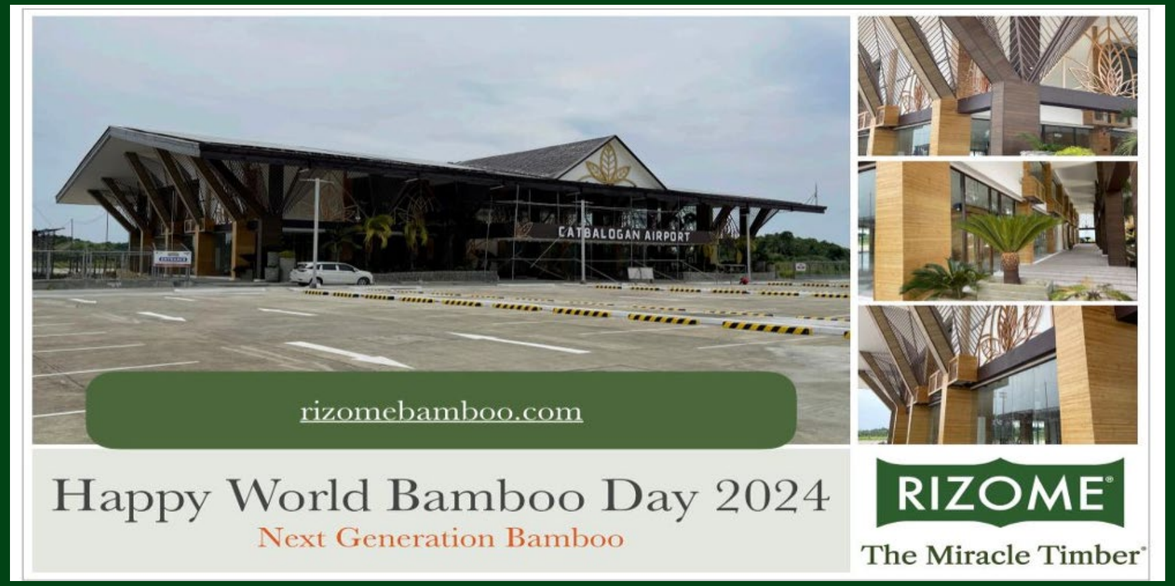
01 PROFILE

Rizome PH, a fully owned Filipino subsidiary of the US company, and is is actively building a holistic bamboo-based value chain across the Philippines.

02 VALUE CHAIN

The value chain starts with bamboo propagation and community-managed cultivation, leading to the sustainable harvest of mature bamboo. This raw material is then transformed into advanced engineered bamboo construction materials.



03 BAMBOO

Through dedicated cultivation and care from year 1 to 4, Rizome and its planting partners including IP communities ensure the growth of bamboo plants. Enabling for the sustainable harvesting of poles starting from year 5-7.

04 MARKET

Rizome is committed to purchasing 100% of these harvested poles for our engineered bamboo building products. This arrangement provides a guaranteed future market for the bamboo and sustainable livelihood for IP communities.

Fibers, Feedstocks and Finished Goods

TIMBER PRODUCTS

BIOCHAR

PELLETS

05

LIVELIHOOD

Sustainable livelihood through jobs generation in the entire bamboo growing process, including:

- **Nursery management**
- **Field preparation (stick making, clearing, staking, hole digging)**
- **Logistics (hauling)**
- **Geotagging**
- **Planting**
- **Plant Care & Maintenance (watering)**
- **Monitoring, Reporting and Verification (MRV)**
- **Finance and Administrative work**

WHY BAMBOO?

It is a highly efficient “carbon sink”

01 **Grows 10-15x more biomass/carbon per Ha than Douglas fir**

02 **Reduces water runoff and helps to replenish aquifers**

03 **Survives fire & drought, naturally resistant to disease**

04 **Strength of steel and toughness of concrete in construction**

While tree-planting is a known climate strategy, Rizome strategically focuses on **giant bamboo (*Dendrocalamus asper*)** due to the grass’ exceptional properties.

Regenerative Thinning for Continuous Benefit

Through the application of regenerative thinning, bamboo continues to grow back.

This ensures IP communities benefit from a supply of poles and culms annually, securing sustained resources and income.

CARBON SEQUESTRATION

Our program strategically utilizes bamboo to restore natural ecology, while also delivering sustainable livelihoods and economic empowerment to small farmers and IP Communities.

Our data indicates that one acre or .40 hectare of Rizome's cultivated bamboo can actively sequester up to 400 metric tons of CO_2 annually.

Beyond carbon benefits, bamboo plays a vital role in improving air quality by producing 35% more oxygen than an equivalent area of traditional forest.

CARBON SEQUESTRATION

The bamboo growing project is an Afforestation, Reforestation, and Revegetation (ARR) project being implemented following Verra Standards (VM 047).

GHG reductions are calculated from aboveground & belowground biomass, requiring precise, verifiable information.

Verra Standards dictate where, how, and who plants, plus robust risk management & grievance mechanisms.

SUSTAINABILITY ASPECT

Integrating sustainable practices across our operations to drive innovation, reduce risks, and create lasting positive impact.

Rizome proactively mitigates the inherent risks of monocropping by integrating biodiversity and multi-functional land use into its planting strategy.

This includes the strategic inter-planting of bananas and native species alongside bamboo.

Fostering ownership through human capital and organizational development across the bamboo growing program, from process implementation to achieving desired results.

THE MAIN PRODUCT OF CARBON DEVELOPMENT IS

D A T A

DIGITALIZATION

Traditional Model: Digitalization is imposed by external consultants or tech firms.

Rizome's Direction: Build human capital within the IP communities.

Indigenous-Led Implementation:
Not just giving them a digital tool; it's about empowering IP communities to master the digital processes.

Beyond Land Tenure: It’s building a partnership that goes beyond recognizing Certificate of Ancestral Domain Titles (CADT). It's about genuine ownership of the entire process and outcome of the bamboo growing and carbon program.

ROLE OF IPs in DIGITALIZATION AND INNOVATION

Actively involving IPs as genuine partners in the implementation of the entire process.

01 PRE-PLANTING

02 PLANTING PROCESS

03 MAINTENANCE

04 MEASUREMENT, REPORTING & VERIFICATION

PRE-PLANTING

IP-Led Site Validation for Carbon Standard Compliance

Before a single seedling goes into the ground, our Indigenous Partners are at the heart of the site validation process. Using advanced mapping applications, they establish the precise polygons for planting areas, ensuring full compliance with international carbon standards.


16°2'17"N, 121°16'50"E
accuracy: 2m
Altitude
637 m
3/22/25
8:27 AM

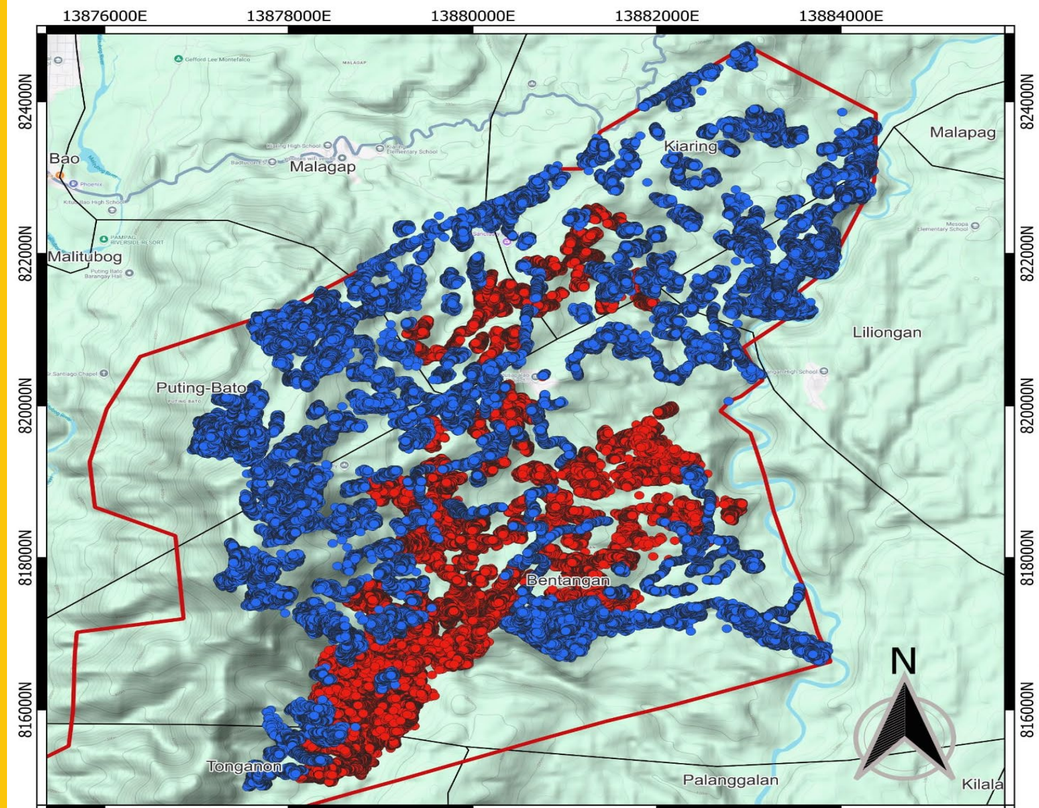

15°59'39"N, 121°20'55"E
accuracy: 6ft
Altitude
1733 ft
4/7/25
8:41 AM

PLANTING

Geotagged Data Capture

Every single bamboo seedling planted is geotagged and captured with metadata photos using mobile applications.

This creates an unassailable, real-time digital ledger of all planting activities, making every culm traceable and verifiable. Evidenced-based data.



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BAMBOO PLANTED MAP

SHOWING THE
PLANTED BAMBOO
PLANTS ALONG
ERUMANEN NE MENUVU
ANCESTRAL DOMAIN
CADT No. R12-CAR-0703-0009
MAY 30,2025

SITUATED AT THE

MUN/CITY: CARMEN
PROVINCE: NORTH COTABATO
ISLAND: MINDANAO

Map Information

This map illustrates all bamboo plants established within the Erumanen ne Menuvu Ancestral Domain, categorized into two planting batches carried out in 2023 and 2024. The goal is to build intergenerational wealth by preserving ecological resources and strengthening the long-term well-being of the community.

Total Bamboos Planted

2023	300,538
2024	319,539
TOTAL	613,077

LEGEND

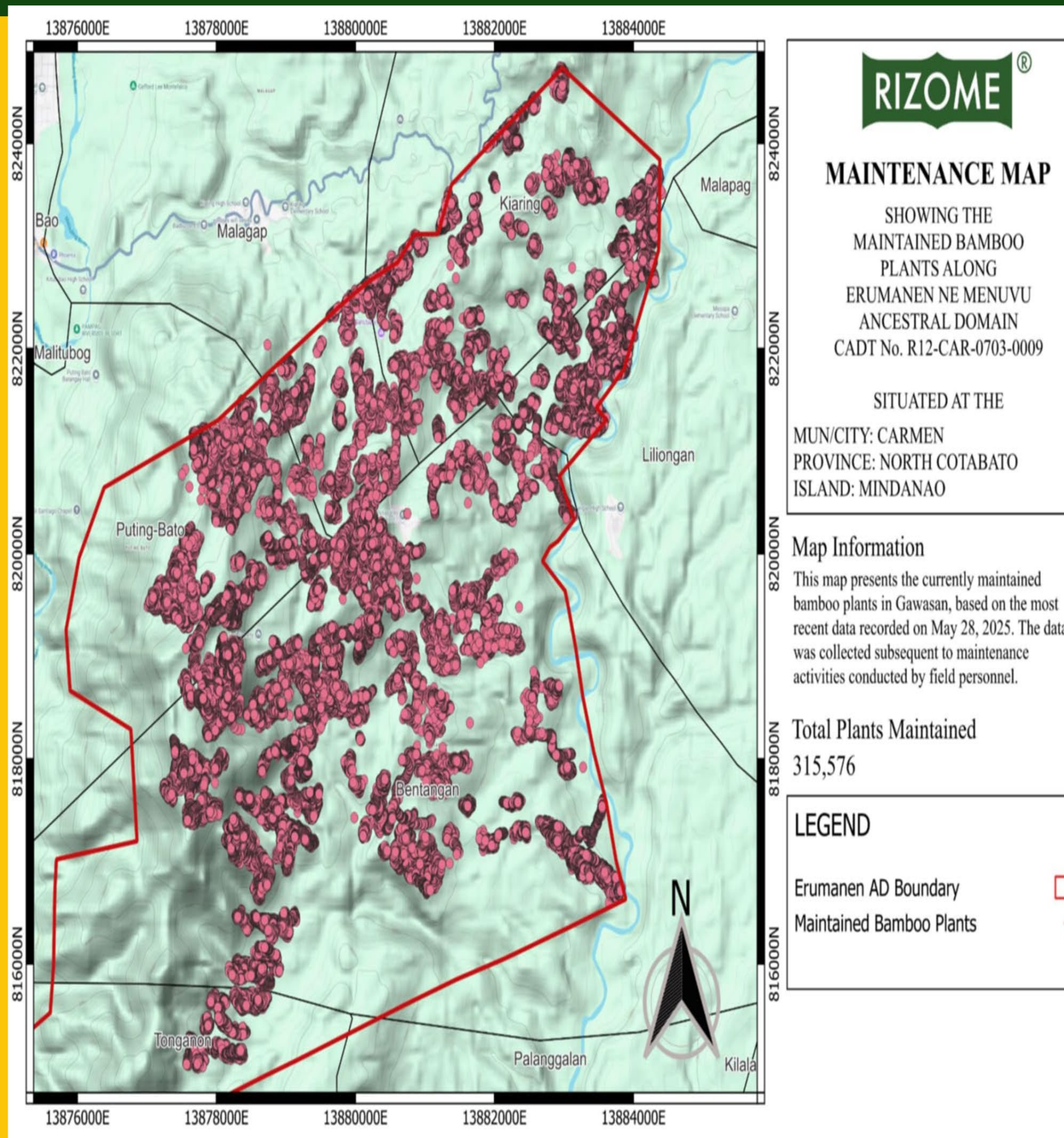
- Erumanen AD Boundary
- 2023 Planted Bamboo
- 2024 Planted Bamboo

MAINTENANCE

Continuous Digital Monitoring for long-term impact

Rizome and the IP MRVs utilize geotagging to track and verify maintained plants, continuously updating their health and growth.

This ongoing digital monitoring provides invaluable data for carbon sequestration validation, ensuring the long-term ecological and financial viability of the bamboo forests and supporting a truly regenerative circular system.



Plant Check

* Location of plants

7.3699416 124.7168718 258.0 7.4

latitude (x.y °)

7.3699416

longitude (x.y °)

124.7168718

altitude (m)

258

accuracy (m)

7.46

* Photo Specimen of plant

1746593308094.jpg

* Is the plant alive or dead

- (•) Alive (Buhi)
- ( ) Dead (Patay)

* Photo Specimen of plant

1746594149914.jpg

* Is the plant alive or dead

- ( ) Alive (Buhi)
- (•) Dead (Patay)

* Is the bamboo planted in Cogon?

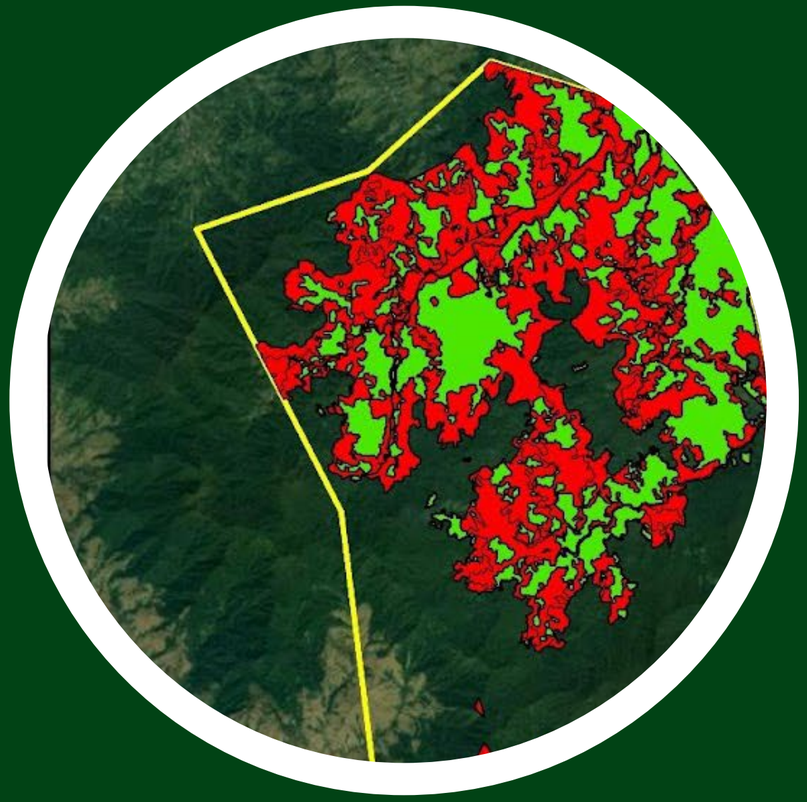
Natanom ba ang kawayan sa cogonan?

- ( ) Yes
- (•) No

DIGITALIZATION

PRE-PLANTING

PLANTING



MAINTENANCE

Empowering Communities Through Integrated Digital Stewardship

Our model is built on active cooperation, positioning IP communities as key implementers throughout the entire project.

They provide the manpower for Measurement, Reporting, and Verification (MRV) processes and on the ground.

By focusing on community stewardship, we move beyond traditional external project management.

Breakthroughs in Practice

Strategic Capacity Building and Community Linkages

We invest in strategic hiring of IP members into operational roles, developing their skills and creating local expertise.

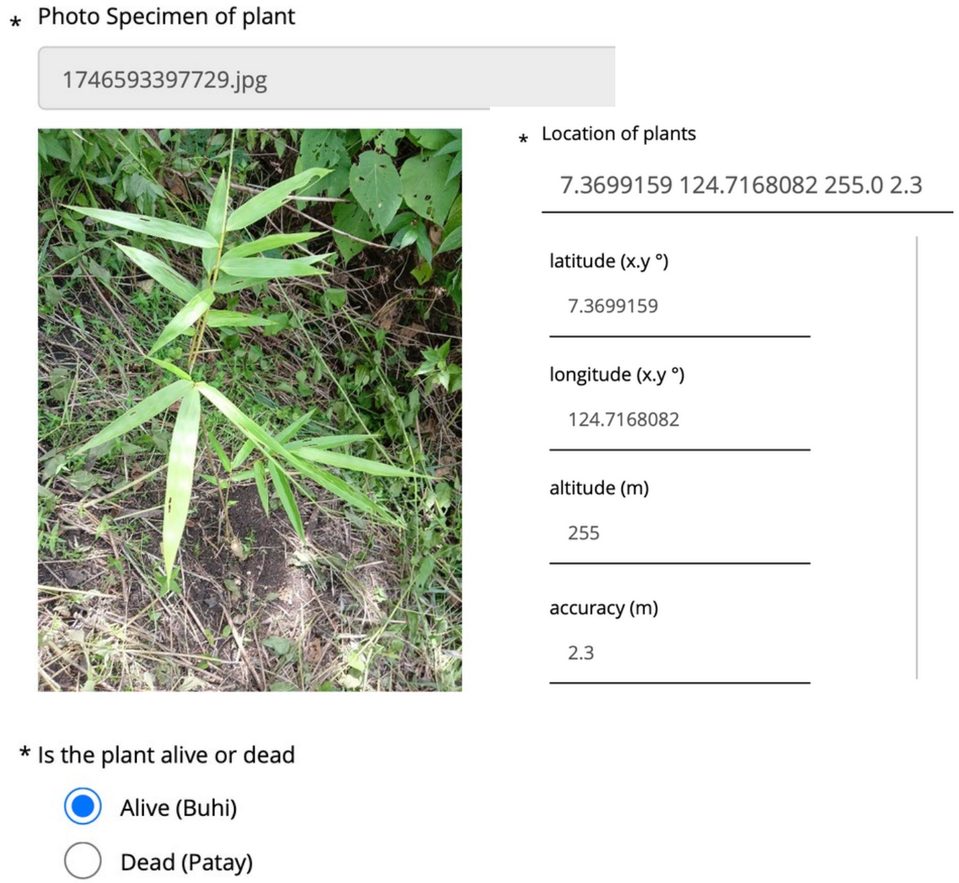
These individuals serve as vital bridges to their communities, ensuring the carbon program is fully understood and genuinely owned by the people it impacts.

Breakthroughs in Practice

Precision Data Generation for Project Accountability

Our MRV teams directly measure critical data, that documents above ground biomass.

This data collection with IP MRVs ensures high integrity and transparency, directly supporting stringent international carbon accounting standards and enhancing the verifiable impact of the project.



Breakthroughs in Practice

Proactive Support for Technology Adoption

We understand the learning curve for new digital tools and the demands of real-time and accurate reporting.

Our commitment includes consistent mentoring and coaching, treating communities as equal partners to ensure successful technology adoption and operational excellence.

Breakthroughs in Practice

Cultivating Self-Sustaining Local Expertise

A key success is the progression of seasoned IP geotaggers who now train others in new project areas.

This demonstrates an effective and scalable model for upskilling, building local expertise that ensures the long-term resilience of projects and supports the broader replication of sustainable practices.

Intergenerational legacy.
Intergenerational wealth.

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