AgroReGenerations Carbon Offset Position Paper V2.0

Introductory Note

This updated position paper outlines the latest model for AgroReGenerations' carbon offset implementation—currently underway at small scale in Kenya and Indonesia (Lombok, NTB). Deployment is aligned with available biomass cycles through September and the autumn equinox, with expansion projected through our one-year pilot. This document will be updated bi-weekly during the ramp-up phase.

Our direct partners in this effort include:

- Centre for Science and Technology Innovations (CSTI) – Kenya
- Clauzy Farms – Kenya
- MOOF Africa – Kenya
- PT EndoCircular – Indonesia
- Trash Rangers Indonesia – Indonesia
- PT Geovest Capital Asia – Indonesia
- Penjaga Pulau – Indonesia (blue carbon implementation)
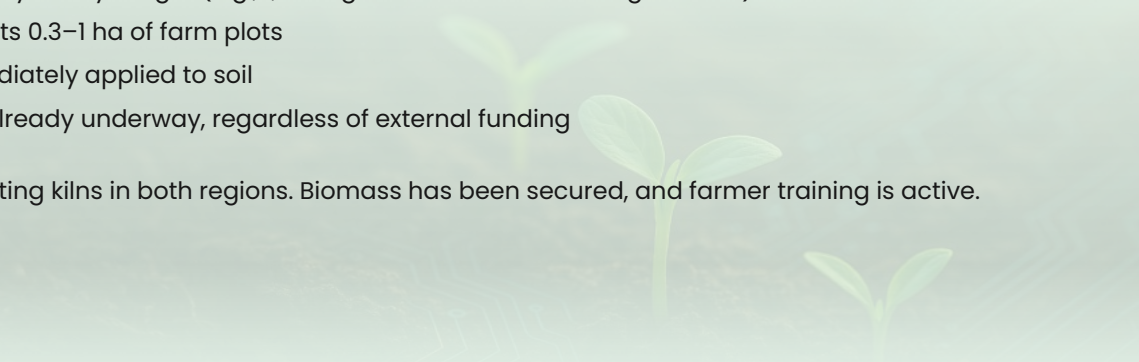
2. Deployment Models: Parallel Tracks for Replication

Our two starting pilots—Kenya and Lombok (Indonesia)—follow similar lean deployment models designed for fast replication and long-term scalability.

2.1 Shared Lean Foundation

Both models begin with:

- Upcycled kilns fabricated locally
- ~$20–30 USD in Kenya
- ~$40–60 USD in Indonesia
- ~20–30% biochar yield by weight (e.g., 1,000 kg biomass → 200–300 kg biochar)
- Each kiln supports 0.3–1 ha of farm plots
- Biochar is immediately applied to soil
- Deployment is already underway, regardless of external funding

We are currently fabricating kilns in both regions. Biomass has been secured, and farmer training is active.

Deployment Models: Parallel Tracks for Replication

2.2 Kenya: Farmer-Led, Node-Based Expansion

Kenya has a mature biochar ecosystem, strong institutional partnerships, and a growing regenerative agriculture movement. Our work spans three county-level pilot regions, each anchored by a lead farmer-partner node.

These anchor partners:

- Serve as coordinators and field trainers
- Can support up to 50+ farmers per region
- Operate as long-term knowledge hubs

Our on-the-ground framework is supported by:

- Clauzy Farms, MOOF Africa, and CSTI
- Community buy-in and embedded agricultural networks
- Compatibility with Kenya's biochar certification and carbon standards trajectory

As demand grows:

- We will establish county-scale pyrolysis hubs, modeled as learning centers and cooperative service facilities
- These will follow methodologies aligned with hydro-paralysis kilns held by our IP partners
- They will also serve as localized waste processing hubs for wet and mixed biomass inputs

Kenya's established infrastructure enables us to eventually:

- Scale biochar volumes for infrastructure-level deployment, especially for road construction
- Partner with public works and local governments to improve rural road networks using biochar-stabilized substrates
- These roads offer permanent carbon storage, reduced flood risk, improved water retention, and enhanced heat resilience—all critical for market access and long-term adaptation.

2.3 Indonesia (Lombok): Waste-Centered, Co-op Driven

Lombok presents a more complex waste environment. While we begin with the same individual kiln model, the nature of village governance and the island's infrastructure challenges require a more collective approach.

- Rural communities in Lombok operate under chiefdom and collective farming systems
- Individual kilns are still deployed per plot, but scalability happens quickly through village collectives

With partners including PT EndoCircular, Trash Rangers Indonesia, and PT Geovest Capital Asia, we are already

- Fabricating kilns and hydroburners
- Engaging government and village leaders
- Planning village-scale pyrolysis hubs to process both farm waste and household biomass

Why waste management matters in Lombok:

- Lombok lacks a unified government-run waste system
- Waste is handled inconsistently: some by private firms, others by villages, and much of it is burned
- This has led to air pollution, poor soil quality, and direct public health threats

Deployment Models: Parallel Tracks for Replication

2.3 Indonesia (Lombok): Waste-Centered, Co-op Driven

Our partners already have:

- Direct lines to the provincial government
- Institutional mandates to scale circular systems
- IP for hydro kilns and plastic-to-building material conversion
- Plans for multi-village waste consolidation centers

While AgroReGenerations will not be the lead on these systems, we will support, verify, and embed our offset logic into any waste-processing initiative that improves farmer well-being, prevents pollution, and generates viable carbon sinks.

As in Kenya:

- Once surplus biochar exceeds farm soil needs, it will be used in road-building and public infrastructure
- These roads serve as distributed carbon sinks, improve community access, and provide a long-term local benefit
- The island's current lack of biochar infrastructure positions us to be the primary implementers of this solution

All three Indonesian implementation partners—PT EndoCircular, PT Geovest Capital Asia, and Trash Rangers Indonesia—are actively pursuing parallel funding pathways to scale this model.
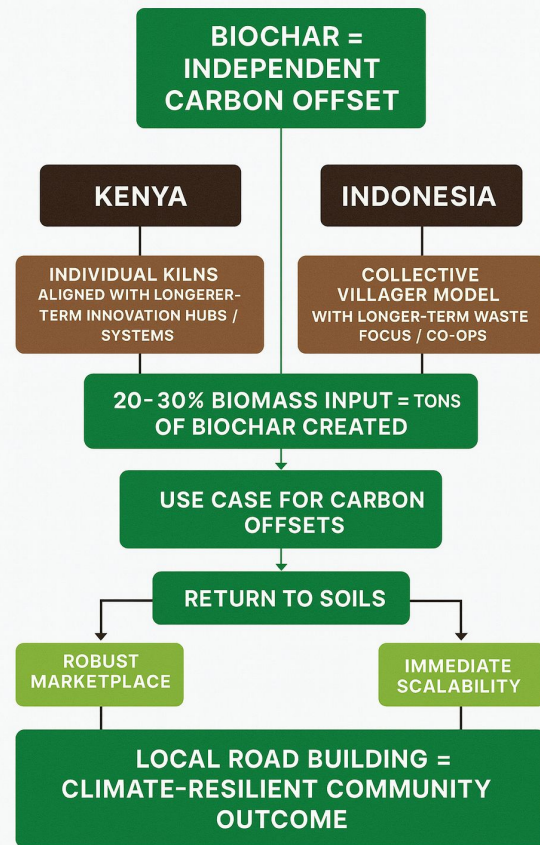
Global Replication Potential

These two models, while distinct, are modular and globally replicable.

Figure A. Parallel Deployment Models – Kenya vs. Indonesia

This flowchart highlights the structural differences between our Kenya and Indonesia pilot models. Kenya follows an individual kiln approach aligned with innovation hubs and a robust biochar marketplace. Indonesia uses a collective, waste-centered village model led by co-ops and local governance. Both pathways converge at biochar creation **(20–30% yield)**, local soil restoration, and ultimately community-driven road building.

These roads are designed not only for mobility but for long-term carbon sequestration, food security, and climate resilience—including flood-resistant and heat-resilient infrastructure. They serve as critical infrastructure in rural communities we work with, supported by local institutions and verified partnerships.

BIOCHAR = INDEPENDENT CARBON OFFSET

KENYA — INDONESIA

INDIVIDUAL KILNS ALIGNED WITH LONGERER-TERM INNOVATION HUBS / SYSTEMS

COLLECTIVE VILLAGER MODEL WITH LONGER-TERM WASTE FOCUS / CO-OPS

20-30% BIOMASS INPUT = TONS OF BIOCHAR CREATED

USE CASE FOR CARBON OFFSETS

RETURN TO SOILS

ROBUST MARKETPLACE

IMMEDIATE SCALABILITY

LOCAL ROAD BUILDING = CLIMATE-RESILIENT COMMUNITY OUTCOME

Global Replication Potential

These two models, while distinct, are modular and globally replicable.

Figure B. Mid-Sized Hydroburner Kiln Deployment – Indonesia (Trash Rangers IP)

Pictured: Trash Rangers Indonesia team with a deployed Mid-Sized Hydroburner Incinerator (village-scale unit).

Unit Specifications
- Capacity: 1000 L
- Ash Output: 10–15 kg of ash per cycle
- Water Requirement: 10–15 liters per cycle
- Cycle Duration: ~3–4 hours per burn
- Function: Local pyrolysis of mixed farm and household biomass waste

Micro Hydroburner Incinerator (comparison)
- Capacity: 400 L
- Ash Output: 3–5 kg per cycle
- Water Requirement: 3–5 liters per cycle
- Cycle Duration: ~2–3 hours

IP held by Trash Rangers Indonesia.

This unit is part of our Lombok deployment under the waste-focused, village-led model.

Codified Offset Pools: Existing & Priority

Our eight core offset pools from Position Paper V1.0 remain in place. In 2025, three new priority pools are now active or ready for codification:

3.1 Blue Carbon Pool – Mangrove Restoration (Sumbawa)

In partnership with Penjaga Pulau, we've opened our first blue carbon pool via a mangrove regeneration site in Sumbawa.

Key advantages:

- Extremely fast-growing and high-sequestration ecosystem
- Naturally protects coastal communities from erosion and flooding
- Supports SDG-aligned biodiversity outcomes
- Easily replicable across other tropical coastal zones

This is our most deployment-ready pool with live partners and seasonal progress tracking underway.

3.2 Large-Scale Rewilding / Agroforestry Pools

We are in confidential dialogue with multiple land custodians and rewilding projects covering hundreds of hectares across Europe, South America, and sub-equatorial zones.

These potential pools:

- Align with permanent carbon removal goals
- Offer natural co-benefits: biodiversity, soil health, community resilience
- Will only be codified if stakeholder alignment, land protection, and monitoring are confirmed

No pools will be opened without:

- Verified ground partners
- Equitable stakeholder representation
- Public eligibility criteria for offset buyers

Codified Offset Pools: Existing & Priority

## 3.3 Geo-Conservation Pool – Quarry Preservation Model

As a long-term, climate-stable failsafe, we are piloting carbon offset pools based on disused quarries and dormant rockbed sites.

Our first site—already bookmarked—represents a geologically stable, non-reactive zone suitable for permanent carbon sinks. These sites:

- Are hotbeds of long-term life protection
- Provide stable, low-erosion conditions for permanent sequestration
- Are ideal for scientific data gathering and educational access

This model allows us to protect biodiversity regardless of future climate disruption scenarios. These sites can also serve as revenue-generating education or tourism hubs in the medium term.
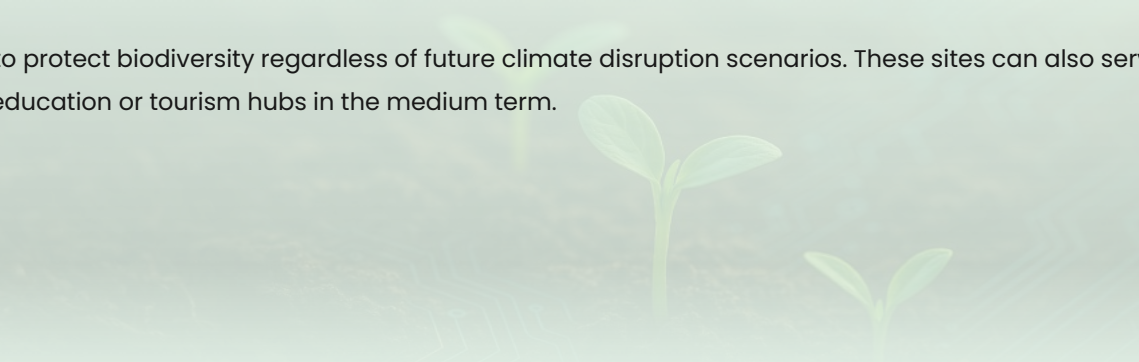
4. Governance, Matching, and Buyer Flow

The offset system operates as follows:

- 76% of tokens are burned post-pool lock
- 16% go to verified farmers (via AgroConnect), with an 80/20 stablecoin/EPiD split
- 8% to tooling + validator fund for MRV and auditing

Buyers:

- Select a pool
- Receive a non-transferable badge NFT
- Gain optional access to regional whitelists or project insights

Farmers:

- May opt into a seasonal staking pool to compound rewards

Matching:

- AgroReGenerations matches up to 2% of total token supply to offset contributions
- 20% from operations
- 80% from founder reserves
- Refill mechanism subject to review every four years

Powered By
Epidaurus
EPID

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Team Peer Reviewers:

AgroRegenerations Founding Team

(special recognition to Michael Jones and Tahrima Sultana)

Note: Additional validation discussions underway with other third-party partners.

AgroRegenerations Carbon Offset Model

Measurable Climate + Social Impact | Anti-Greenwashing | Equity-Driven | Planetary Resilience

AgroRegenerations Carbon Offsets are not a license to pollute. They create measurable, evolving, and multi-dimensional climate and social impact, recognizing that true climate action is not just about CO_2 math but also about biodiversity, agroecology, smallholder livelihoods, and community resilience.

Key design principles:

- Hard-coded anti-greenwashing (~76% token burns)
- Integrated ecological + financial incentives for farmers (~16% pool)
- Publicly auditable, open-source architecture, with non-transferable NFT badges for buyers
- Eight coded impact pools(can expand as needed) linked to real-world projects, designed to expand and deepen over time in alignment with partner networks and on-ground realities:

Kenya Dual Biome Biome (Mount Kenya + Lake Victoria)

Lombok, Indonesia (Tropical Forest Regeneration)

Italy + Spain (Mediterranean Agriculture)   Amazon (future, under review)

Bangladesh (Mangrove Restoration)   Nordic/Europe(future, under review)

North America (future, under review)   Pilot Innovation Pool (future, under review)

Mission Commitments:

- Internal MRV (measurement, reporting, verification) tools — we are the core validator — using soil testing, field data, and digital dashboards

- AI/ML agents, satellite or remote sensing (where applicable), third-party soil test reports, and partner data to reinforce and refine impact measurement

- Continuous refinement of metrics with evolving best practices and third-party audits

- Impact reported not only in approximate CO_2 equivalence but also across biodiversity gains, community resilience, regenerative land management, and SDG-aligned benefits

Systematic Mechanics and Flow

EPiDAgro
Impact Logic Layer

AgroConnect.io
Touch. Track. Thrive.

How It Works:

1. Buyer purchases offset + selects pool
2. Tokens locked for exactly one year (12 months + 6 hours)
3. Upon unlock:
    a. **~76%** permanently burned
    b. **~16%** to verified farmers (via AgroConnect):
    c. **~80%** stablecoins + ~20% EPiD tokens
       Farmers can optionally lock ~10–20% of rewards into a special stability staking pool that doubles by the next season
    d. **~8%** to validator + tools fund (covers both internal MRV and third-party audits)
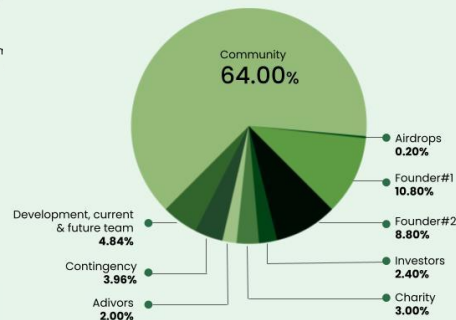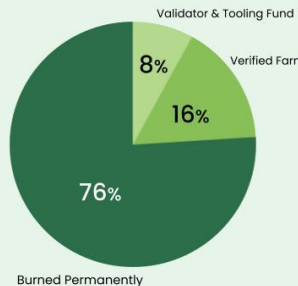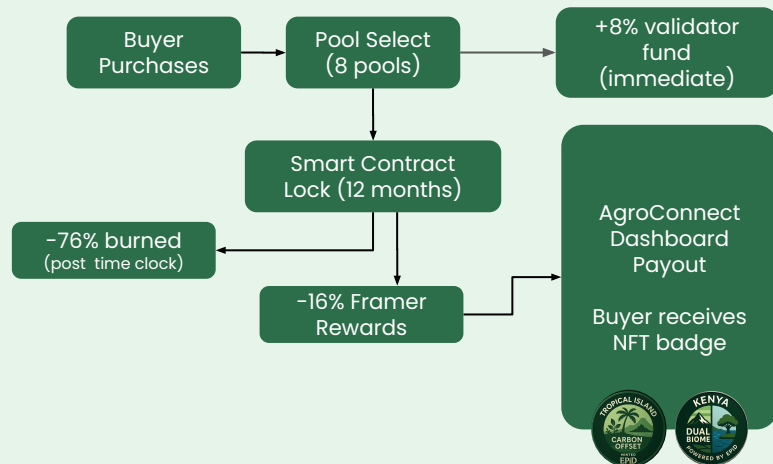
NFT Badge:

Each buyer receives a non-transferable, symbolic NFT badge showing their chosen region and impact type — not resellable, purely for participation validation.

Matching Pool:

- Up to 2% of total token supply over four years
    - 20% from operations, 80% from founder wallets
- After cap is reached, replenishment: one-third revenue, one-third operations, one-third founders, reviewed annually
- Buyers' experience remains consistent; matching operates internally

Liquidity + Pools Layer

- Separate liquidity pool (LP) underpins price stability
- Eight coded impact pools: backend mechanics fixed, descriptions flexible to match partner scaling
- AgroConnect acts as the delivery and reporting interface — not a speculative or custodial marketplace.

Technical Architectural & Governance

Coded Components (Automated Flows)

- Smart contract lock + timed release
  Fixed percentage allocations (burn, farmer, validator)
- Matching pool triggers + cap counters
  NFT badge issuance
- Internal dashboard integrations (AgroConnect, EPiDAgro)
- Optional farmer staking pool (future stability pool)

Manual Components (Governance)

- Regional pool expansions and evolving descriptions
- Validator and audit partner selection
- Liquidity + matching management
- Transparent, off-chain governance (non-DAO, fully open-source and traceable)

Summary Statement

The AgroRegenerations system is built to:

01 — Deliver transparent, auditable carbon + social impact

02 — Expand beyond narrow CO_2 offset counting to deliver holistic, regenerative climate action

03 — Guarantee resilience through balanced coded mechanics and human-led governance

04 — Offer modular, regionally adaptable frameworks aligned with planetary boundary and SDG

05 — Integrate multi-layered internal + external validation tools, continually improving measurement methods and outcomes