

ZaoCycle

The Circular Agriculture Orchestrator

Zero Poison. Zero Waste.

Made with GAMMA

The Hidden Local Crisis

Two interconnected problems threatening public health and environmental sustainability in Kirinyaga County.

Public Health Crisis

In Kirinyaga Central, farmers prematurely harvest pesticide-heavy crops due to lack of financial incentive to wait out chemical half-lives, driving local illnesses.

Environmental Impact

Across Mwea and Gichugu, massive volumes of rice husks and coffee pulp are burned openly, while local schools continue cutting down trees for expensive firewood.



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The Circular Solution

Incentivizing Safety Through Waste Monetization



Phase 1: Health Certification

Farmers log agrochemicals via USSD to get crops certified as "Residue-Free" and receive premium pricing.



Phase 2: Climate Action

Compliance unlocks waste buy-back program. Youth riders collect farm waste and press it into eco-briquettes.



Phase 3: Energy Distribution

Eco-briquettes distributed to local schools and households as affordable, smokeless fuel alternative.

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Target Market & Reach

Supply Side

Smallholder farmers in Mwea and Gichugu seeking extra income from farm waste.

Demand - Health

Health-conscious consumers and local hospitals in Kirinyaga Central buying premium certified produce.

Demand - Energy

Boarding schools and households across Ndia and Mwea needing cheap, smokeless eco-briquettes.

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Scalable Architecture & Automation



Frontend Dashboard

Next.js transparency dashboard for premium buyers and cooperative managers to track certifications and transactions.



Automation Engine

n8n engine orchestrating USSD logging, chemical decay calculations, and automated Daraja API payouts to farmers.



Intelligent Routing

Machine learning algorithms optimizing youth dispatch riders to minimize logistics costs and maximize efficiency.

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Technology Stack

USSD Interface

Simple mobile logging for farmers without smartphones

Next.js Dashboard

Real-time transparency for buyers and managers

n8n Automation

Workflow orchestration and API integrations

Daraja API

Automated mobile money payouts

ML Routing

Intelligent dispatch optimization

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The Engineering Team

The Engineering Muscle



Mercy

Frontend Architecture & Systems Automation



Newton

Backend Engineering, ML Routing & DevOps

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Impact Metrics

100%

Residue-Free Certification

Complete traceability from farm to consumer

50%

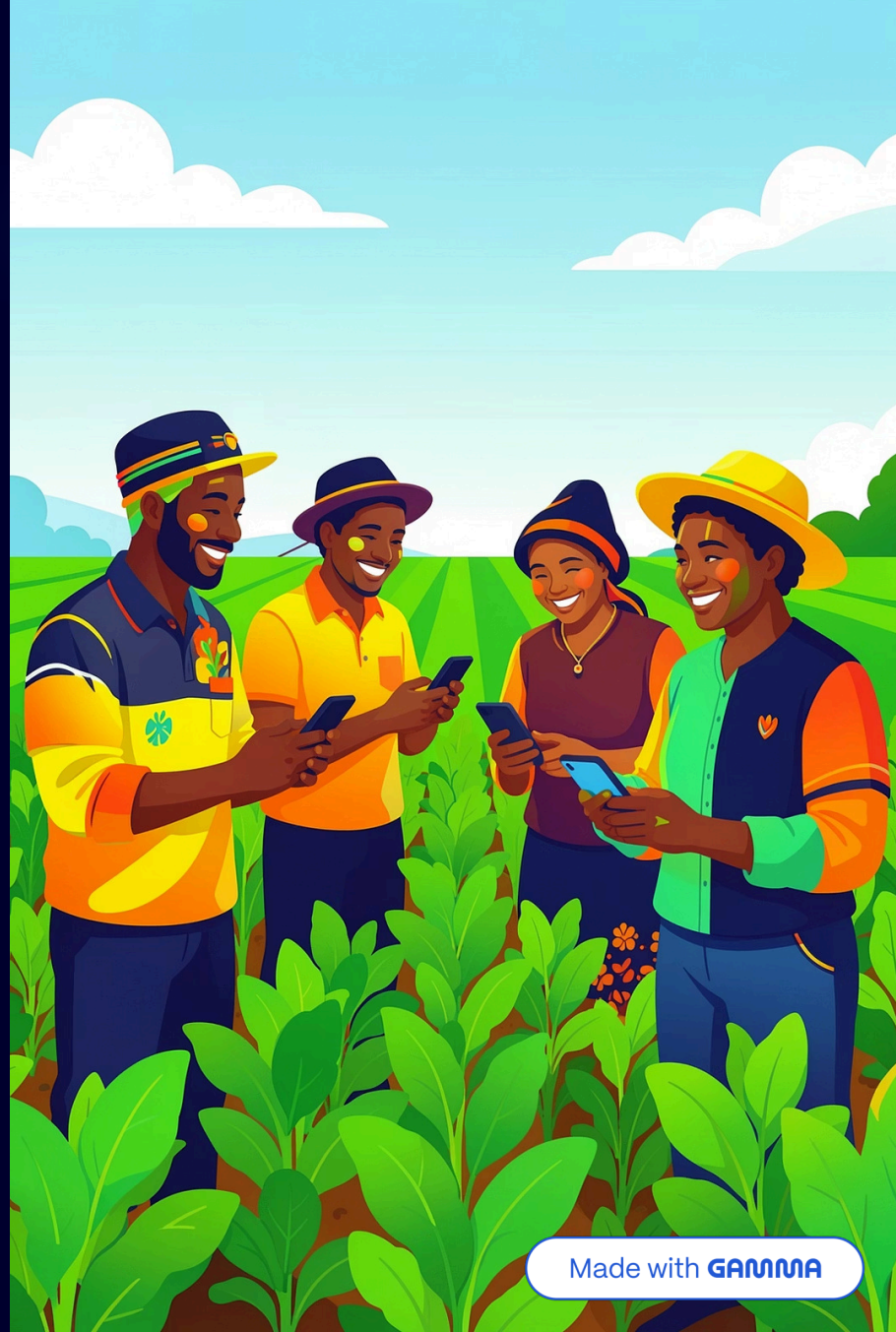
Cost Reduction

Lower fuel costs for schools using eco-briquettes

3x

Income Boost

Additional revenue for farmers from waste monetization



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The Future of Kirinyaga's Economy

Seeking mentorship and initial seed capital at the Kirinyaga Youth Summit to launch the USSD pilot in Mwea and purchase the first briquette press.

USSD Pilot

Launch certification system in Mwea

Briquette Press

Purchase first production equipment

Scale Regionally

Expand to Gichugu and Ndia



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