



CASSAVA circular economy roadmap for Ghana (2025-2028)

A practical plan to reduce cassava losses, cut smoke and fuel costs in gari processing, and turn peels and effluent into useful products, while strengthening women and youth livelihoods.

- ### STARTING POINT IN THE MAPPED SYSTEM
- Leakage is 7.3% (over 155 tonnes per year) even though material retention is high (92.7%).
 - Processing is the main hotspot: 17.03 MJ per kg gari (mostly firewood), about 244,185 kg firewood per year and 494,081 kg CO₂eq per year from processing.
 - By products are underused: about 97,965 kg of peels per year (40% unutilised) and about 235,116 litres of effluent per year (0% reused).
 - Social and productivity gaps: 15.2% cooperative membership; 17% completed secondary education or higher; average yield about 18,635 kg per hectare.

KEY METRICS AT A GLANCE

Metric	Baseline	Target
Total waste (leakage)	7.3% (over 155 t/yr)	5.5% or less (2028)
Peels and effluent valorised	Peels 60%; effluent 0%	70% or more (2028)
Firewood and energy in processing	17.03 MJ/kg gari (firewood)	20% reduction (2027)
Women and youth in cooperatives	15.2% membership	40% increase (2026)
Cassava yield	18,635 kg/ha (avg)	20% increase (2028)
Cooperative membership among collectors	~8% (2024)	>=50% (2028)

PRACTICAL PILOTS (EVIDENCE FOR SCALE)

Metric	Baseline	Target
Effluent to bio-herbicide (5 hubs)	Collect and treat effluent for use as bio-herbicide (Techiman and Mampong).	100,000 L or more recovered; 100+ farmers trained; 30% herbicide reduction; 0 safety incidents.
Peels to feed and compost (2 hubs)	Process peels into feed and compost through micro-centres.	28,000 kg peels redirected; 20+ compost batches; 50+ feed batches; 60% or more sold/adopted.
Energy-efficient gari ovens (10 units)	Shared ovens to cut fuel, smoke exposure, and costs.	20% firewood reduction; 50+ trained; 15% productivity increase; 90% uptime.
Regenerative farming trials (6 sites)	Compost plus legume intercrops to improve soil and yield.	6+ sites; 20% yield improvement; 30% income improvement (target) tracked in surveys.
Informal collector average daily income	~GHS 22 (2024)	>=GHS 40 (2028)
Cooperative membership among collectors	~8% (2024)	>=50% (2028)

- ### WHAT CHANGES BY 2028
- Waste reduced by **25%**, from **7.3%** leakage to **5.5%** or less.
 - 70%** or more of peels and effluent captured and valorised through feed, compost, and bio-herbicide pathways.
 - Firewood use in gari processing cut by **20% by 2027** through shared energy-efficient ovens and user training.
 - Cooperative participation among women and youth increases by **40% by 2026**, and cassava productivity increases by **20% by 2028**.

FINANCING AND SCALING

Estimated pilot-scale investment is **\$370,000**: ovens **\$75,000**; peel hubs **\$120,000**; effluent pilot and certification **\$95,000**; regenerative trials **\$80,000**. Seed funding is expected through UNIDO and DACF allocations, with co-financing encouraged from private innovators and the Ghana Climate Innovation Centre.

TIMELINE, STEP BY STEP

- 2025-2026**: Validation workshops; effluent pilot launched; 10 ovens installed; trials set up; training begins (100+ trained).
- 2026-2027**: Two peel micro-centres built; trials completed; six cooperatives formed; two regional forums held.
- 2027-2028**: Two peel micro-centres built; trials completed; six cooperatives formed; two regional forums held. Compost and feed scaled to four districts; bio-herbicide moves toward certification; CE indicators integrated into plans; casebook and investment prospectus published.