

Freza Nanotech

A fruit for another day

Extending Freshness. Empowering Farmers.
Feeding the Future.

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Mission & Vision

- **Mission**

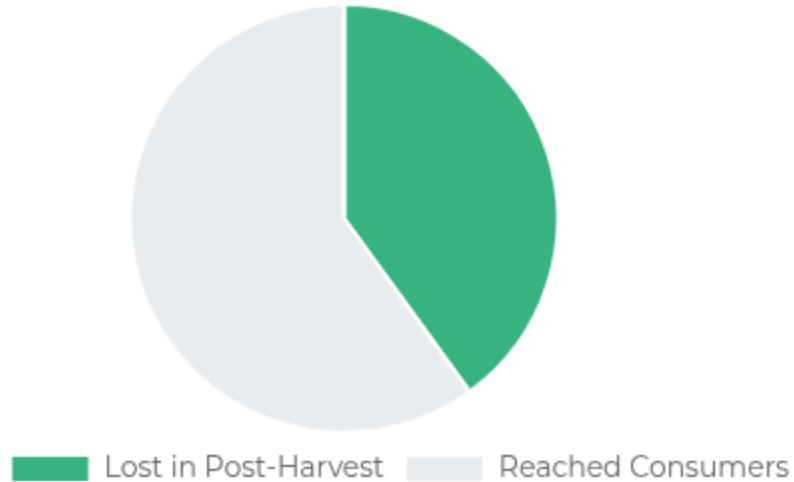
To reduce post-harvest losses and empower smallholder farmers through affordable, eco-friendly shelf-life extension technology.

- **Vision**

To become Africa's leading post-harvest innovation company, enabling food security and climate resilience across the continent.

The Problem

Post-Harvest Losses in Africa



Food Insecurity Impact



- ✓ Over 40% of fruits and vegetables in Africa spoil before reaching consumers (FAO/WFP)
- ✓ East Africa faces growing food insecurity—more than 146M people affected in 2023 (WFP)
- ✓ Losses drive farmer poverty, hunger, and methane emissions
- ✓ Cold storage is expensive, inaccessible, and unsuited for rural supply chains
- ✓ Chemicals are toxic and increasingly banned in global markets

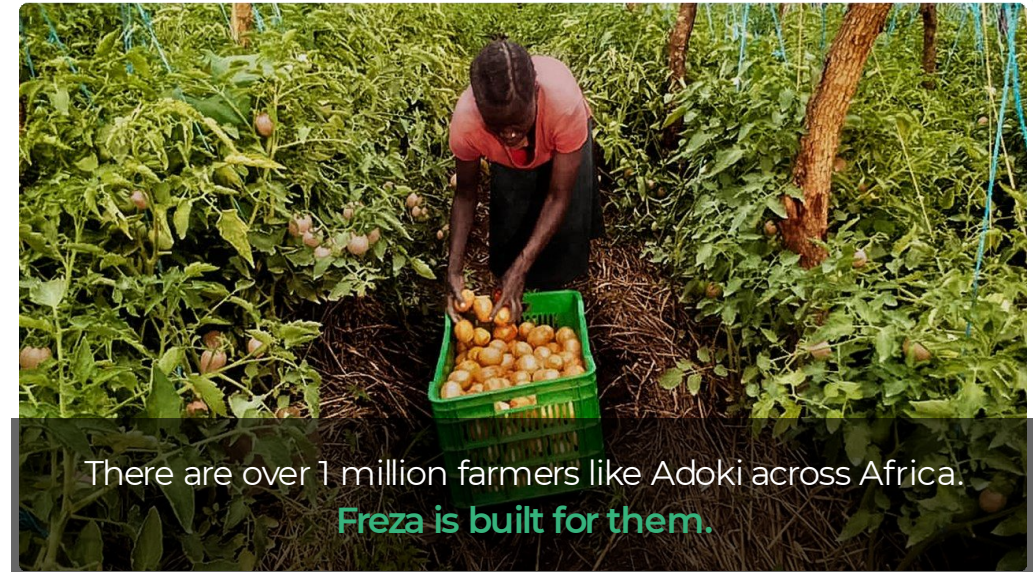
Meet **Adoki** A Typical Freza Customer

Adoki's Story – West Nile, Uganda

Adoki, like millions of smallholder farmers in Africa, works hard to harvest her tomatoes—but loses up to half of them before she can sell. With no refrigeration and limited transport, she often sells early at low prices just to avoid waste.

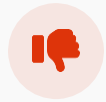
The Impact on Farmers Like Adoki

- ✓ Limited market access
- ✓ Post-harvest losses of 30-50%
- ✓ Reduced income and opportunities



There are over 1 million farmers like Adoki across Africa.
Freza is built for them.

Before & After Freza



Before Freza



Distress Prices

Farmers forced to sell at any price to avoid total loss



30–50% Harvest Loss

Nearly half of produce spoils before sale



Unstable Income

Unpredictable earnings and low profits



After Freza



30-Day Freshness

Tomatoes stay fresh and marketable longer



Market Access

Reach new buyers and negotiate better prices



30%+ Income Increase

Significant boost in earnings and stability

There are over **1 million** farmers like Adoki across Africa.
Freza is built for them.

Our Solution

Innovative Preservation Technology



Non-toxic, biodegradable

Eco-friendly sachets, bags, pods & stickers that protect produce and the environment



Extended shelf life

Keeps produce fresh for **7-30 days** longer than conventional methods

No refrigeration needed

Maintains freshness, firmness, and marketability without cold storage

Accessible and affordable

Easy to use, low-cost, and designed for low-infrastructure environments



Freza sticker



Freza bags

Sustainable packaging technology that preserves produce naturally
Simple to use. Effective. Affordable.



Freza sachets



Freza sachet application



Freza pods Made with Genspark

How It **Works** + Tech/IP

Proprietary Technology



Formulation

Proprietary biodegradable coating made using electrospinning



Mechanism

Slows down natural decay by protecting fruit membranes



Formats

Sachets in boxes, coated bags, and fruit stickers



Production Status

In-house machine operational; scalable manufacturing underway



Intellectual Property

PATENT PENDING

Formulation process

PATENT PENDING

Production method

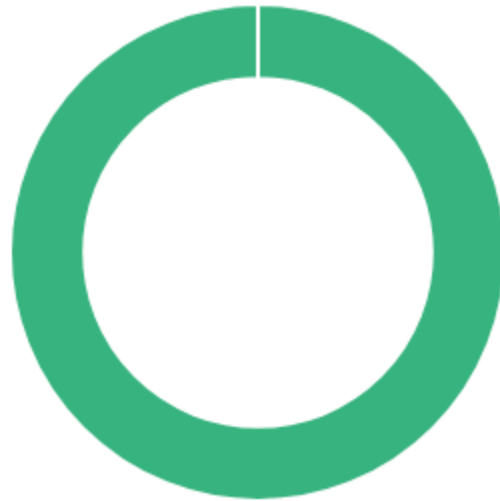
Patent application process initiated across key markets

Market Opportunity

Post-Harvest Losses in Africa



Unit Opportunity



At 100g sachet per 10kg produce, that's a **15B unit opportunity**

Addressable Entry Markets



Total Addressable Market (TAM)

\$250M+

Estimated Annual TAM (select crops only)

Business Model & Go-To-Market

B2B Sales Strategy

- ✓ Direct sales to key partners:
 - Agricultural cooperatives
 - Exporters and distributors
 - Supermarket chains

- ✓ Unit economics: **UGX 1,000 (~\$0.25)**
Cost: UGX 595 | Margin: ~60%

Initial Markets

Uganda

Kenya

Zimbabwe

UAE

- UAE pilot underway with 1004Gourmet
- Zimbabwe market tests planned

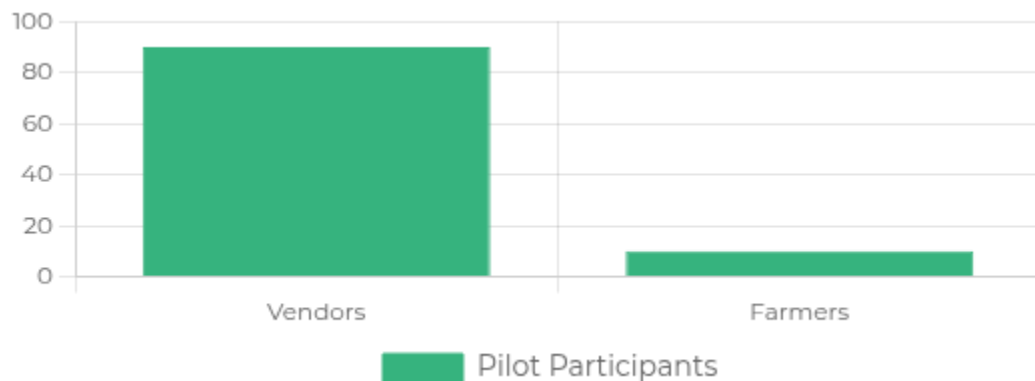


Go-To-Market Approach

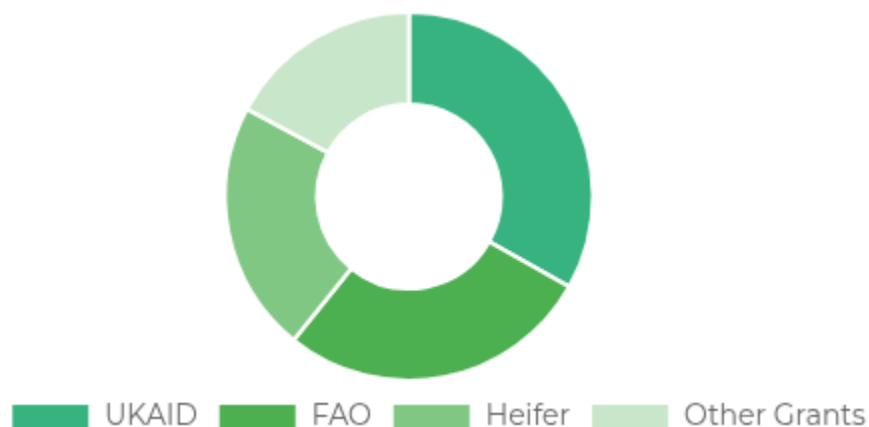
- 1 Pilot Conversions
Convert successful pilots into long-term contracts
- 2 Reseller Networks
Establish partnerships with agricultural input dealers
- 3 Strategic Expansion
Targeted entry into high-value export markets

Traction

Pilot Participation



Funding Secured



\$181K+ in Competitive Grants

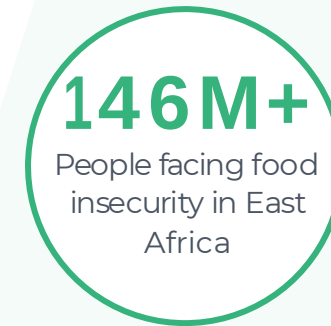
Key Achievements

- ✓ 90+ vendors and 500+ farmers piloted Freza products
- ✓ Regulatory approval (UNBS) achieved
- ✓ UAE pilot (funded) with 1004Gourmet
- ✓ Grants secured from UKAID, FAO, Heifer International
- ✓ Revenue initiated from early customer engagement

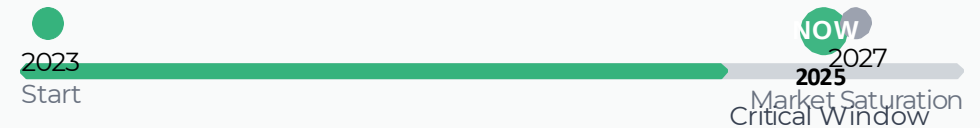
Why Now

The Urgency of Our Solution

- 1 Climate Crisis**
8% of global GHG emissions come from food waste, primarily as methane
- 2 Growing Food Insecurity**
Population growth and climate change are accelerating demand for effective solutions
- 3 No Local Alternatives**
No scalable African alternatives to HazelTech or Apeel currently exist
- 4 First-Mover Advantage**
Market opportunity window is closing; **speed is critical**



Market Timeline



*The opportunity to establish market leadership is **now***

Competitive Landscape

Company		Tech Approach	Nano-tech based	Crop Specific Timing	Biodegradable	Works without cold-chain	Scaling Now	Strategic Focus
		Nano-encapsulation sachet	✓	✓	✓	✓	✓	East & Southern Africa - Ugandan base, scaling to Kenya, Rwanda & Zimbabwe
		Plant-based edible coating	●	✗	✓	✓	●	Mainly Kenya pilots focusing on local vendors
Cold Chain		Refrigerated storage and transport	✗	✗	✗	✗	✗	Global legacy presence of intensive refrigeration networks
Chemicals		Calcium carbide, fungicides	✗	✗	✓	✓	✗	Global legacy presence, particularly in emerging markets
Global Comparables								
		Lipid-based molecular coating	✗	●	✓	✓	●	US, LATAM, EU focused on major retailers.
		Synthetic sachet releasing 1-MCP gas	✗	●	✓	✓	●	Focused on large exporters in US, LATAM

✓ Strong
 ● Partial
 ✗ None

Freza is the only solution that at the corner of nano-engineering and African agriculture

Our Team



Arnold Mugisha
CEO

Aerospace Engineer with expertise in product development. Drives innovation and technical direction for Freza's post-harvest solutions.



Dr. Samantha Ainembabazi
COO

Medical Doctor focused on field deployment and community operations. Brings healthcare expertise to Freza's mission of improving food security.



Tanaka Chikukwa
Director/Advisor

Corporate Finance Executive, ex-EY with entrepreneurial and fintech CFO background in venture capital and private equity backed businesses.



Polofibio Tukundane
Research Lead

Biochemist specializing in analytical techniques and post-harvest preservation. Leads product development and scientific validation.

Supporting Team

Technical

R&D specialists & production engineers

Legal

IP protection & regulatory compliance

Administrative

Operations & secretarial support

Strategic Partnerships

Collaborating with leading organizations to transform agricultural practices and empower farmers across Africa



PROTOTYPES
FOR HUMANITY



Research & Implementation Partners

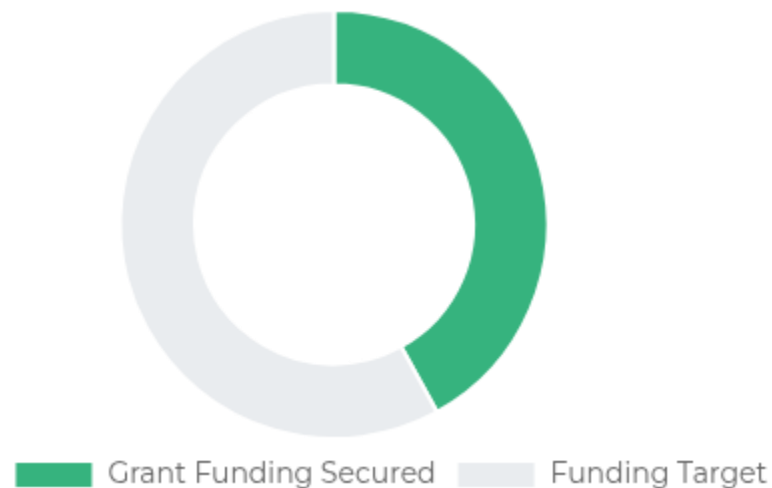
Our strategic alliances with academic institutions, research centers, and international development organizations have been instrumental in testing, validating, and scaling Freza's technology across diverse agricultural contexts.

Financials

Sachet Unit Economics



Grant Funding Secured



Financial Highlights

- ₿ Sachet unit economics: UGX 595 cost, UGX 1,000 price (~60% margin)
- \$ Revenue model: per-unit B2B sales to cooperatives, exporters, and supermarket chains
- 🕒 Burn rate low, grant-funded R&D complete
- ✓ Bootstrapped with \$181K in milestone-based grants from UKAID, FAO, Heifer, and others
- ↗ Revenue initiated from early customer engagement

The Ask

\$250K

Pre-Seed Round

Scaling for Impact

Strategic investment to accelerate growth and secure Freza's position as Africa's leading post-harvest innovation company



Expected Outcomes

- ✓ Commercial scale production capacity
- ✓ Market expansion across East Africa
- ✓ Protected IP position in key markets

Use of Funds

- **Scale Production**
Meet pilot and commercial orders with expanded manufacturing capacity
- **IP Protection**
Secure patents across key African markets and UAE
- **Convert Pilot Traction**
Transform successful pilots into long-term commercial contracts
- **Expand Team**
Hire key talent and expand reseller support operations

Join us in extending freshness, empowering farmers, and feeding the future.