

Formalising Manual Pit Emptying Services in Informal Settlements

SEPTEMBER 03, 2026



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WEBINAR INFORMATION – HOUSEKEEPING RULES



- **‘Chat’ box:** please use this for general requests and for interactive activities.
- **‘Q&A’ box:** please use this to send questions to the panelists.
(We will answer these during the discussions)

***Please Note:** Attendees’ microphones are muted. We cannot respond to ‘Raise Hand’.*

AGENDA

- **Introduction to the Webinar**

Moderator: Nancy Ngao & Elizabeth Mururi

- **Beyond the Pit: Rethinking Faecal Sludge Management in the Informal Sector - Fresh Life**

Wali Mwalugongo, Fresh Life Partnerships and Advisory Associate Director - Nairobi, Kenya

- **Formalising the informal - a case study of Kisumu City - Opero**

Nicola Green, Opero Services, Director

- **Panel Discussion**

Joseph Muiruri, Joel Obunga and Francis Kuria and the Moderators

- **Panel Discussion and Q&A**

Speakers and Moderator

- **Closing Remarks**

Moderator: Nancy Ngao & Elizabeth Mururi

A photograph of a worker in an orange protective suit, blue gloves, and a pink face mask. The worker is using a long-handled tool to interact with a large blue barrel. In the background, another person in a dark suit is visible near more barrels. The setting appears to be an outdoor facility with concrete walls and a blue corrugated metal fence. A sign on the fence reads 'GATE 1'. Several blue barrels are stacked, some with labels like 'ESP 1/2' and '0012 198'. A concrete pit is visible in the foreground on the right.

BEYOND THE PIT: RETHINKING FECAL SLUDGE MANAGEMENT IN THE INFORMAL SECTOR

IWA Webinar 2026

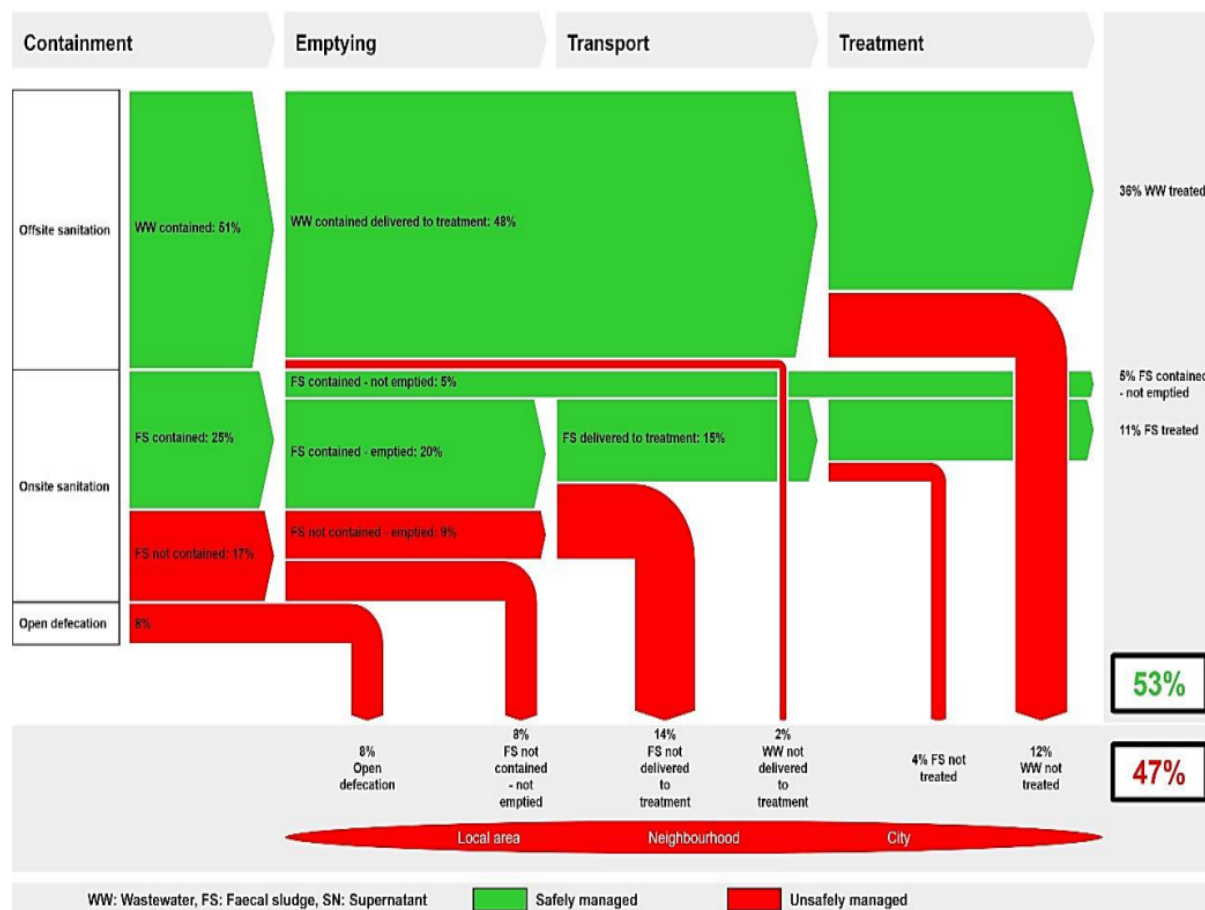
Urban Sanitation Challenge

- Sanitation is not a household problem — it is a **citywide, systemic challenge**.
- Safe sanitation requires the entire service chain to work — **containment, emptying, transport and treatment**. If one link fails, waste is unsafely managed somewhere in the city.
- **10M urban Kenyans** live in informal settlements, where multiple links in the sanitation service chain routinely fail.



Nairobi's Sanitation Reality

In Nairobi alone – 47% of waste is unsafely managed, and as cities grow, sanitation systems must work for the conditions in which people actually live.

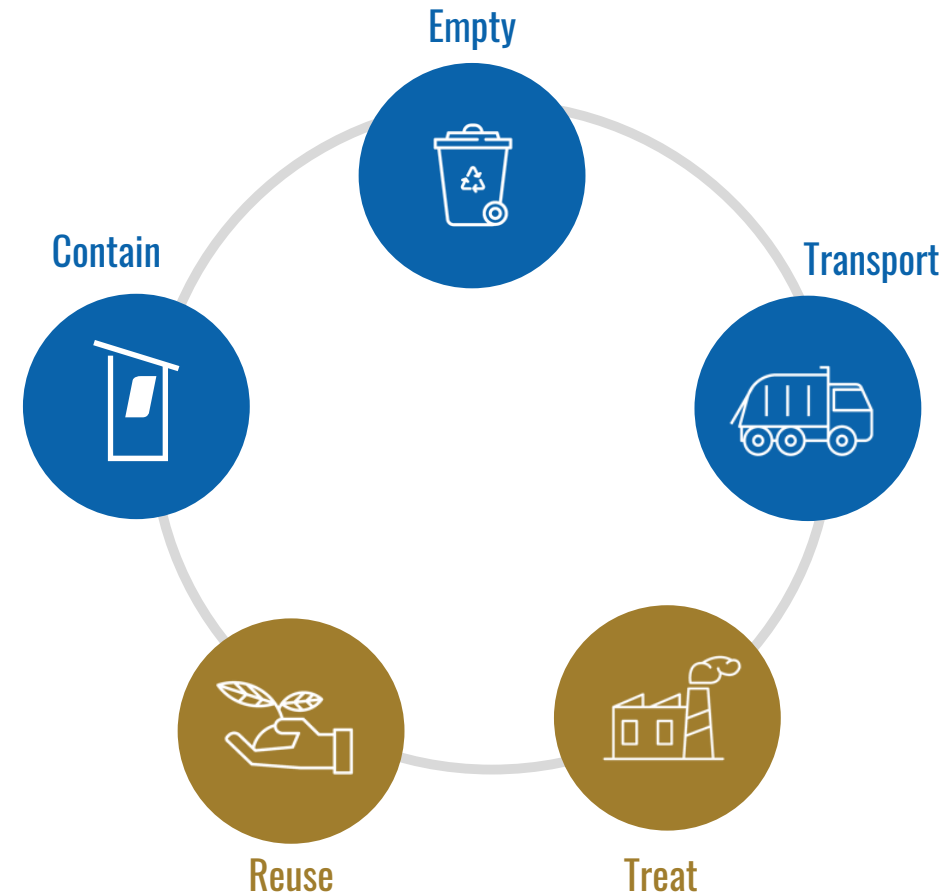


Our Response: Fresh Life Exists to Solve This Problem

We take a circular economy approach to build holistic sanitation solutions centered on the people and the planet.

Fresh Life delivers safe toilet access and waste removal solutions for urban residents.

To guarantee the safe treatment, disposal or reuse of waste, we partner with Regen Organics, counties and utilities mandated to deliver safe sanitation in cities.



Our Solution

Our work focuses on two solutions that address critical gaps in urban sanitation:

1. Container-Based Sanitation (CBS)

- Fresh Life Toilet – We provide safe, affordable and eco-friendly toilets operated by Fresh Life entrepreneurs within the communities.
- Fresh Fit Toilet – An in-home container based sanitation Specially created for the vulnerable population including pregnant women, the elderly, children or persons abled differently.

1. Mtaa Fresh

We Support manual pit emptiers with a safe place to discharge faecal sludge removed from pit latrines, alongside safe transport, treatment and management of the waste.



Our focus of the discussion today is centered on Mtaa Fresh

OUR NUMBERS

>9,100

Active toilets
across Nairobi,
Kisumu, Eldoret
& Lusaka

>313K

People served
with safely
managed
sanitation

30K

Tons of CO2
offset each
year

6.2K

Tons/year of
pit sludge
consolidated
and safely
disposed

19K

Tons/year of
sanitation
waste safely
managed

1B

litres of water
saved annually

>8,384

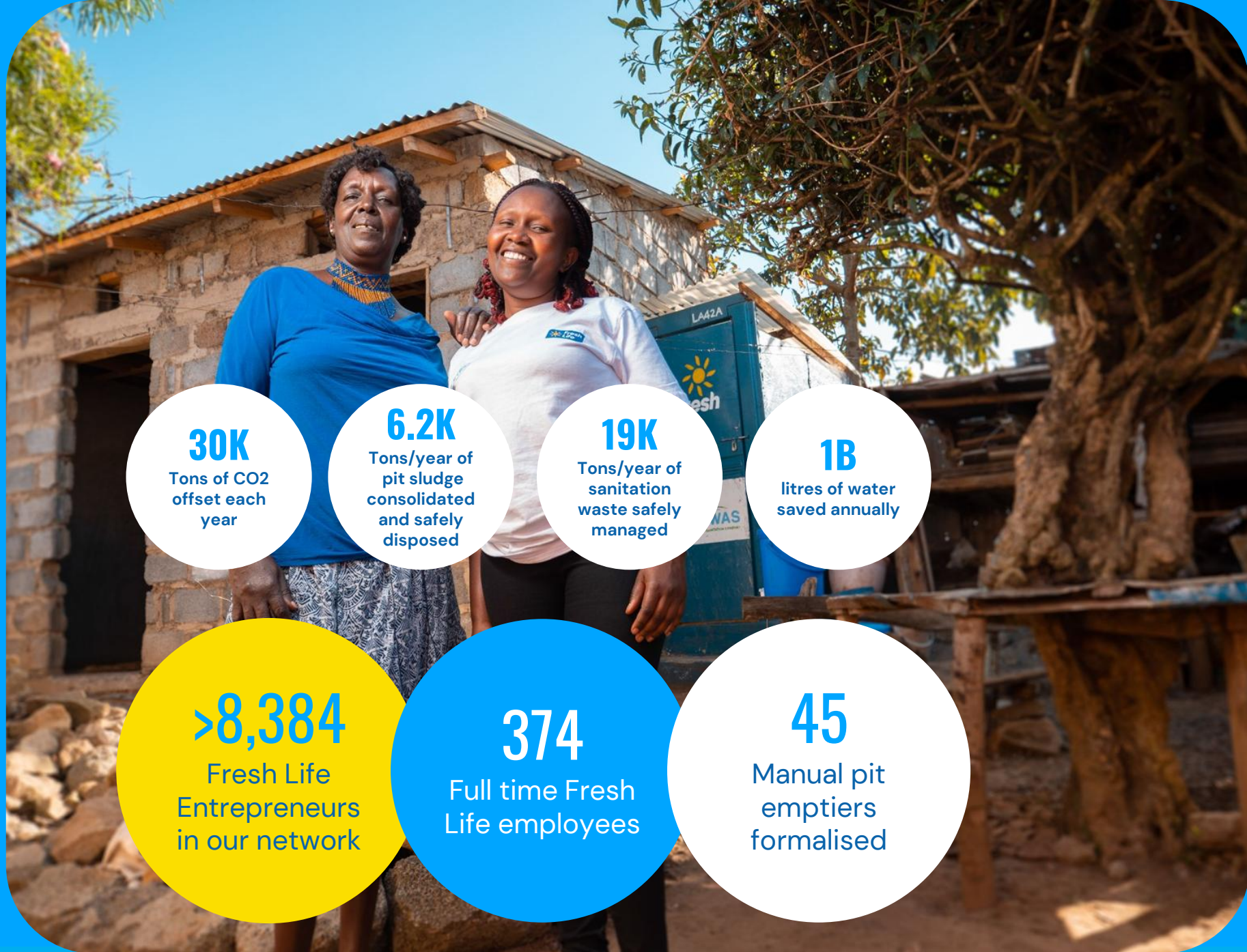
Fresh Life
Entrepreneurs
in our network

374

Full time Fresh
Life employees

45

Manual pit
emptiers
formalised



The Urban Sanitation Gap

- Conventional fecal sludge management was not designed for every urban reality.
- In informal settlements, **dense housing, narrow access routes, limited infrastructure, and affordability constraints** can make conventional emptying and transport difficult.
- When these constraints cause the sanitation value chain to break down, alternative service models are needed.



Manual Pit Emptiers emerge as one response to this last-mile sanitation challenge.

The workforce solving access problems

Manual pit emptiers already fill this gap by hand, one bucket at a time. But what they bring goes well beyond simply being able to reach these pits:

- **Local Knowledge:** Know the settlement, structures & customers
- **Adaptability:** Work within difficult physical conditions
- **Demand:** Their work proves households need & pay for this services

But the service comes with significant risks, from exposure and unsafe disposal to stigma and lack of formal recognition. The opportunity is to build on this existing capacity while improving safety and connection to the wider sanitation system.



From understanding the gap to designing the service

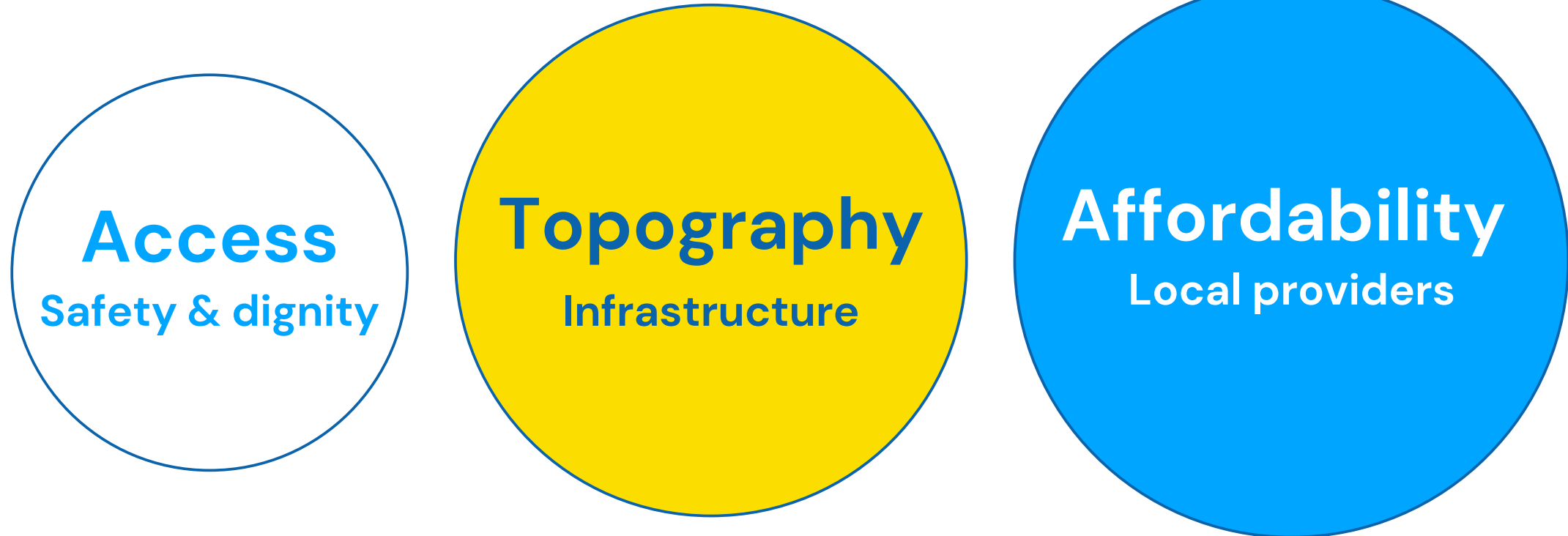
Insights: The need was not to replace manual emptying, but to make the existing service safer, more organised, and better connected to the wider sanitation system.

2016 Findings from Focus Discussions	Solutions
No safe place to discharge	Formal discharge sites
Seen as outsiders	PPE & uniforms issued
PPE used inconsistently	Ongoing training
Alcohol use on the job	No-alcohol policy

Our response: Design Mtaa Fresh—a solution that strengthens and supports MPEs while improving service delivery.

Designing around Real Urban Conditions

The Mtaa Fresh model responds to several realities at once:



The model doesn't replace the existing system; it connects and strengthens the parts that conventional services leave behind.

Mtaa Fresh – What is it?

The challenge: Emptying waste from pits was only half the solution; manual pit emptiers could reach places trucks could not, but often lacked a safe place to discharge the waste.

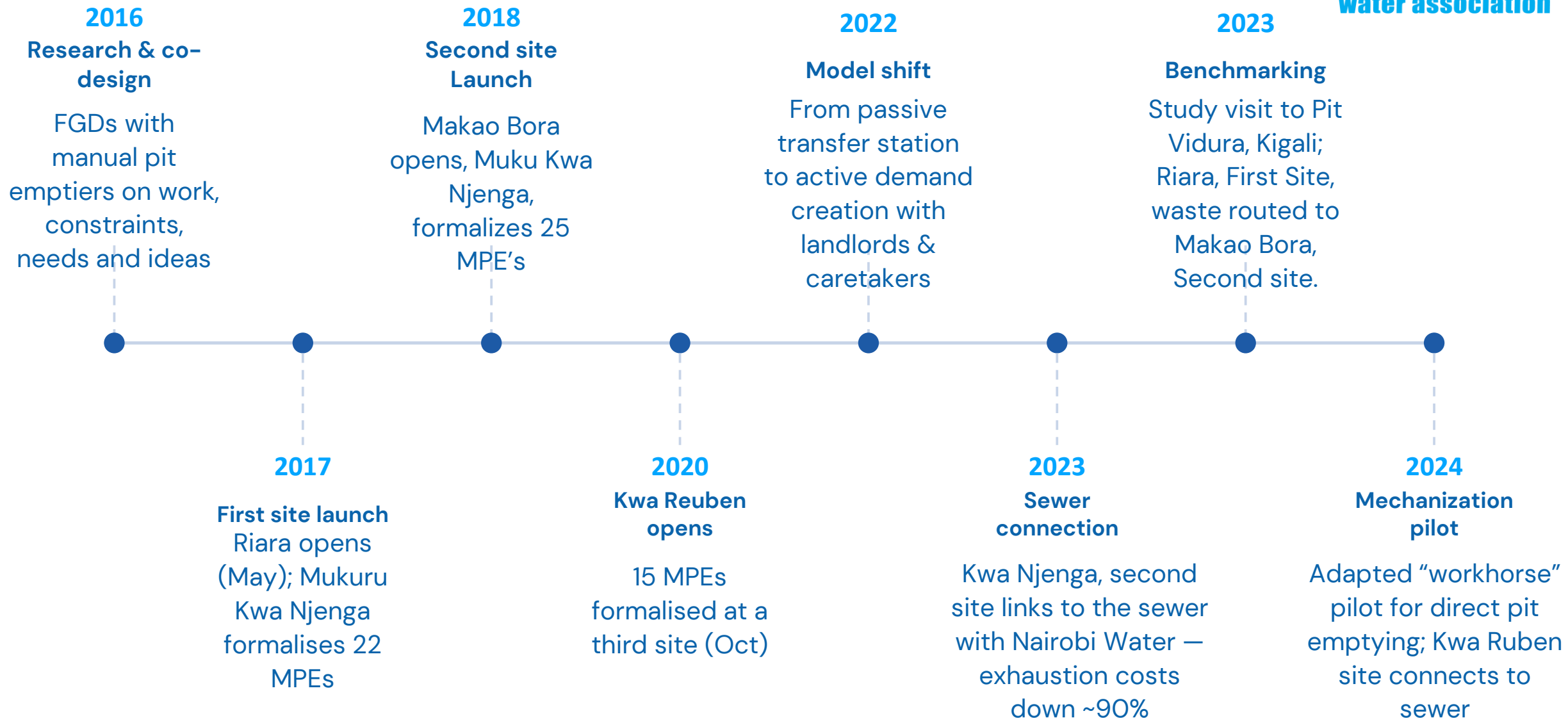
Our response: Fresh Life designed **Mtaa Fresh**, a community-level **pit waste transfer centre** that connects pit emptying to safe treatment.

How it works: Each centre is staffed & provides MPEs with a designated, safe discharge point.

Why it matters: Mtaa Fresh creates the critical link between the household pit and the wider sanitation system, enabling safer waste management end to end.



Our Mtaa Fresh Journey



Why MPE's Choose to Pay

Working legally is not just a rule, it's **protection, income and status**

For **50 KSH per barrel** discharged at a Mtaa Fresh Centre, manual pit emptiers get real advantages over the illegal alternative:

Operating without formal recognition exposed MPEs to bribes that cut into their daily earnings

Security

Illegal dumping sites are unsafe, no more nighttime dumping in rivers or drains.

More business

Association with the Fresh Life brand builds customer trust and credibility.

Demand creation

A dedicated Fresh Life team helps MPEs reach more customers, rather than waiting passively for work.

Healthier workforce

PPE provision means fewer injuries and infections on the job.

Less spillage

A no-alcohol policy cuts the waste spillage in the community that comes with working under the influence.

Less stigma

Formal recognition through CBOs means MPEs are seen and respected, not treated as suspects.

Our Impact so far

2

Operating Mtaa Fresh Centers in Mukuru Kwa Njenga and Mukuru Kwa Ruben

45+

manual pit emptiers formalised into community-based organisations

19.2 M

litres of pit sludge managed annually

RBF Metrics

Mtaa Fresh is integrated in results-based financing programme metrics: barrels collected, & the corresponding payments for the barrels.

- Mtaa Fresh volume is tracked in Fresh Life's results-based financing programme through two metrics, barrels collected, and the corresponding payments for those barrels, with collection exceeding target in its first six months.

***Our First Mtaa Fresh Site, the Riara site, closed down in February 2026 as part of its catchment area was demolished to make way for affordable housing, taking out 140 pits that we were serving that's 400,000+ liters of pit sludge a year, roughly half the volume Riara used to serve. The remaining volume is now routed to Makao Bora, the Mukuru Kwa Njenga Site*

What Rethinking Fecal Sludge Management Means

Rethinking FSM means rethinking the system, not just the technology.



Start with
reality



Work with
existing actors



Create safe
pathways for
waste



Match services
to context



Build in safety,
dignity &
affordability

Informal-sector realities should shape urban FSM systems, not be treated as an afterthought.
Beyond the pit means designing the sanitation system around how cities actually function.

What Next?

So what next for us? We are moving from service provider to system enabler

1

Kibera expansion

Plans to open a **Mtaa Fresh Centre in Kibera in 2026**, in partnership with Nairobi City Water & Sewerage Company and Nairobi City County.

2

People Served

We aim to serve **50,000+ people** and collect **5M liters of pit sludge** from the areas we operate through our Mtaa Fresh Model in by the end of 2026

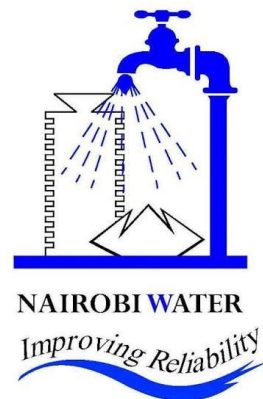
3

System Wide Influence

15 years of experience distilled into a model other cities can adapt not just a Fresh Life case study. Increasingly being an advisor, not always the direct operator, and system enabler for governments and cities elsewhere.

We invite funders, city governments and sector partners to explore how this model could work beyond Nairobi.

Partners Who have Supported Our Journey



Talk to us

iamfresh@fresh-life.org

www.fresh-life.org



IWA WEBINAR · KISUMU, KENYA

Govern what exists

A partnership-based approach to expanding sanitation services in Kisumu.



Kisumu Water and Sanitation Company · Opero Services



PUBLIC–PRIVATE COLLABORATION

Enterprises

Accelerator programmes, technology testing and access to capital, so small businesses can operate and grow.

Utilities and counties

Fund mobilisation, strategic and service planning, standards, and capacity development.

INTRO TO KISUMU

On-site sanitation is the system here, not the exception.

82%

of households with a facility use on-site sanitation

60%

of the population lives in eight major informal settlements

18% → 45%

planned sewer coverage after the largest investment in the city's history. Half will still be on-site

62%

of pits are unlined



Western Kenya, on the shore of Lake Victoria.

High water table, seasonal flooding

THE PUBLIC PARTNER: KIWASCO



PUBLIC SIDE
**Kisumu Water and Sanitation
Company**

2019

Kisumu Water and Sewerage Company
to
Kisumu Water and *Sanitation* Company

520,000

people in its service area, Kenya's
third-largest city

County-owned

a public utility, regulated nationally
by WASREB

2 sites

the Nyalenda lagoons and the
Kisat plant receive the city's waste

Licensing

it issues the disposal licences, with
the County Public Health Office
enforcing practice

WHAT SETS KIWASCO APART

It treats partners as its delivery mechanism, not as competitors for its mandate.

THE PRIVATE PARTNER: THE EMPTYING GROUPS

11

formal enterprises, licensed
and trained

~60

workers in the recognised
system

These enterprises emerged out of an informal sector: unlicensed emptying, done at night.

Organised as KIWIP

A registered CBO formed by the city's FSM operators, and KIWASCO's point of liaison.



“I was a store keeper at a hospital getting fourteen thousand (approx \$110) a month. Here, if the jobs are lined up, I can make that in one or two days.”

AN EMPTIER, ON WHAT THE WORK PAYS

TEN YEARS, SIX KEY ACTIONS

(and none of it dependent on large capital)

2016



SOPs written with the county, basic tools, free disposal started

2018



First licensed FSM company

2020



Mandate changed to sanitation - more support from KIWASCO

2023



Emptying technology trials begin

2025



Depot, PPE and vaccination

2026



AfDB treatment planning grant

WHAT FORMALISING COSTS: THREE LICENCES

To work inside the system, an emptier needs three licences from three different authorities.

COUNTY GOVERNMENT

Business permit

from ~\$40

a year, from KSh 5,000. The licence to trade at all.

NEMA

Transport licence

~\$115

a year, KSh 15,000. Consent to carry the sludge.

KIWASCO

Disposal licence

~\$115

a month, KSh 15,000. The right to discharge at Nyalenda.

KIWASCO waives the disposal tariff for the manual and semi-mechanised groups as special compensation. Tanker operators pay it. The emptying groups do not.



KSh 130 to the US dollar. The tanker disposal tariff is set under the WASREB tariff.

THE UTILITY ENABLES. IT DOES NOT DELIVER

KIWASCO manages the system without employing any emptiers.

THE UTILITY PROVIDES:

**Standards and
licensing**

**Free disposal
access**

Worker facilities

**Capacity
development**

**Service and
investment
planning**

THE COUNTY ENFORCES IT

Public health officers halt work for sludge spillage or operating without a licence.

“KIWASCO doesn’t try to do everything. It enables others to deliver.”

KIWASCO, MAJIPRENEURS SUMMIT 2026

WHAT OPERO DID WITH THE ENTERPRISES

SIX WORKSTREAMS

Association strengthening

Professionalisation

Branding

Health and safety training

Worker safety research

Equipment testing and trials

THE SERVICE PROVIDERS BIGGEST ASK

Transport

A truck bought in 2026 for the association and held as a shared asset rather than by any one business. It is in testing as a hire model, with income retained in a fund for its repair and maintenance. About 35 jobs a month at peak.



TESTING THE EMPTYING TECHNOLOGIES



PuPu Pump



PitVaq



Trash Pump



Improved manual



Gulper

Context drives performance more than the choice of tool.

Transport, not extraction, is the binding constraint.

THE IMPACT



33% → 61%

of faecal waste safely managed, 2016 to 2024

1,456

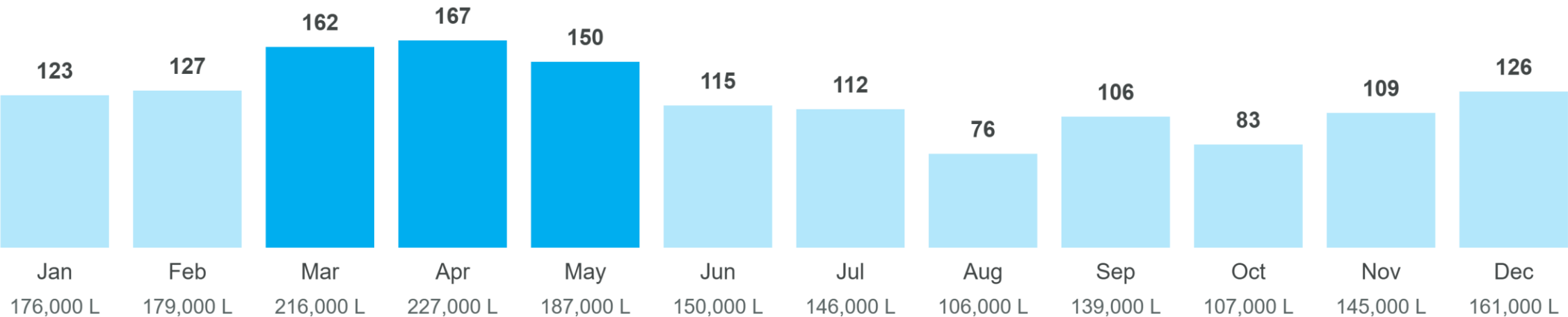
pits emptied and delivered to the disposal site, by hand and by pump

1.9M litres

of faecal sludge safely disposed in 2025, about 1.2 m³ per job

~60

livelihoods in the recognised, licensed system



IN KISUMU: WHAT WORKS, WHAT IS STILL A GAP

ENTERPRISES

WORKING

Organised, equipped, trained and protected.

STILL A GAP

No service level agreement with KIWASCO.

No capital

Customers who cannot pay full prices.

UTILITY AND COUNTY

WORKING

Standards, licensing and free disposal, with one counterpart to deal with.

STILL A GAP

No specific treatment plant

No financing model

No contracted relationship with the emptiers.

<20% of low-income households
can afford formal emptying.

50+ informal emptiers work beside the
11 formal groups.

0 financing mechanisms pay for the
value the city gets.

SEVEN PRACTICAL THINGS GOVERNMENT CAN DO

- 1 Write the standards first
- 2 Legitimise the emptiers already working
- 3 Open the disposal site, free of charge
- 4 Deal with an association, not individuals
- 5 Build a wash bay and a store
- 6 Govern the system, let others deliver
- 7 Plan non-sewered sanitation as permanent

Every county already has manual emptiers. Whether to collaborate with them is the choice.

Kisumu's demand conditions are not universal. What transfers is the way the market is governed.

WHAT NEXT: OPERO AS A MARKET CATALYST

PHASE 1 · 2026–28

20 ENTERPRISES

Validate: finish the Kisumu model, prepare a second Kenyan market, test public toilets and reuse.

PHASE 2 · 2029–32

100 ENTERPRISES

Expand: more markets and business models, lower cost per enterprise, a permanent home for the platform.

PHASE 3 · 2033–36

1,000 ENTERPRISES

Partner-led scale: accredited partners deliver the model in further African markets.

JOIN US ON 21 OCTOBER

A practical review of pit latrine emptying technologies

fsmaction.org/event

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Panel Discussion and Q&A

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