

**SANERGY**  
Building healthy,  
prosperous communities



**AMCOW AFRICA DAY – World Water Week**  
**David Auerbach – Sanergy – Kenya**  
**david@saner.gy**

# THE SANITATION CRISIS

Exacerbated by rapid urbanization

**4.1 billion**

People live in communities where waste is never treated

**1 million**

Sanitation-related deaths per year

**\$260 billion**

lost globally each year

# Sanitation crisis in Kenya's slums



**8 million**

Residents of  
Kenya's **urban**  
slums

**17,000**

Child deaths  
each year

**\$270  
million**

Lost in economic  
productivity

# The Sanitation Reality

**2 million**

Tons of waste per year produced in Nairobi

**90%**

Nairobi sewage enters waterways untreated



# The Financing Reality

**\$56**

Pp/year for sewers

**\$3**

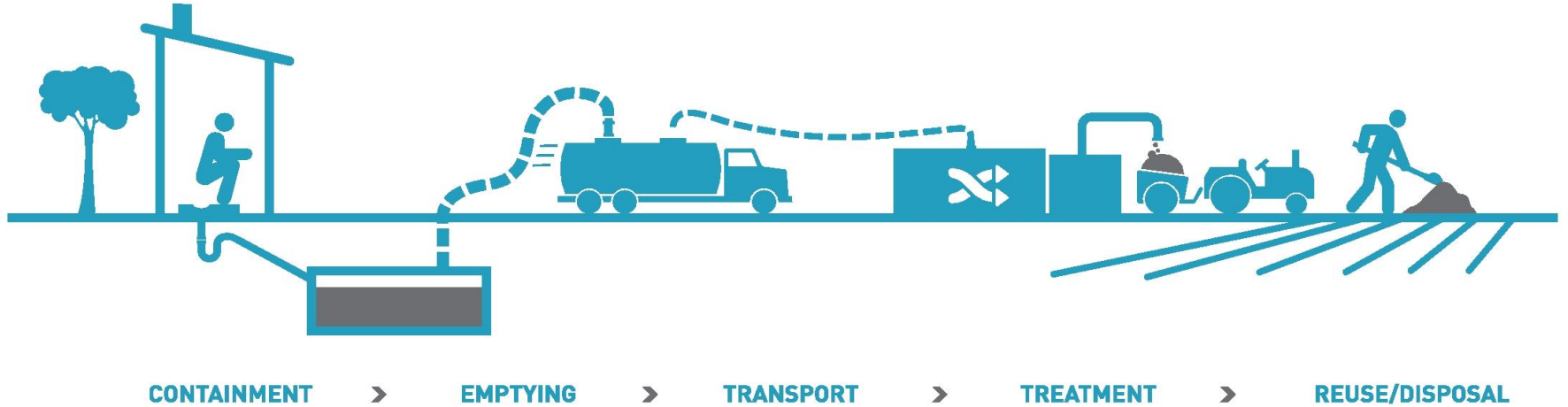
Pp/year: KE's  
2016  
sanitation  
spending

**\$12**

pp/year: KE's  
projected 2030  
sanitation  
spending

# YET, A FULL VALUE CHAIN APPROACH IS REQUIRED

## Sanitation Value Chain



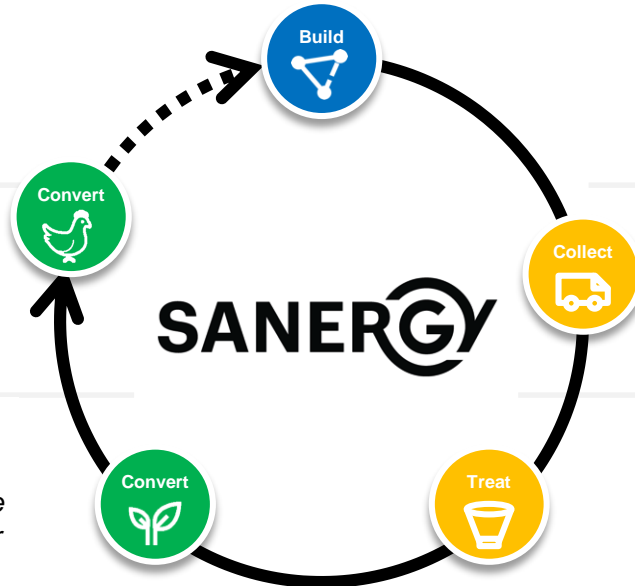
# OUR APPROACH

## 5. **CONVERT** to Animal Feed Input

*We mass-rear Black Soldier Fly (BSF) larvae that consume mixed organic waste streams to convert it into safe protein for animal feed to substitute unsustainably sourced fishmeal*

## 4. **CONVERT** to Organic Fertilizer

*Using a proven industrial composting process, we convert mixed organic waste streams into high-quality organic fertilizer that improves soil health and crop yields*



## 1. **BUILD** Networks

*We create networks to aggregate sanitation, commercial, and agricultural organic wastes*

## 2. **COLLECT** Waste

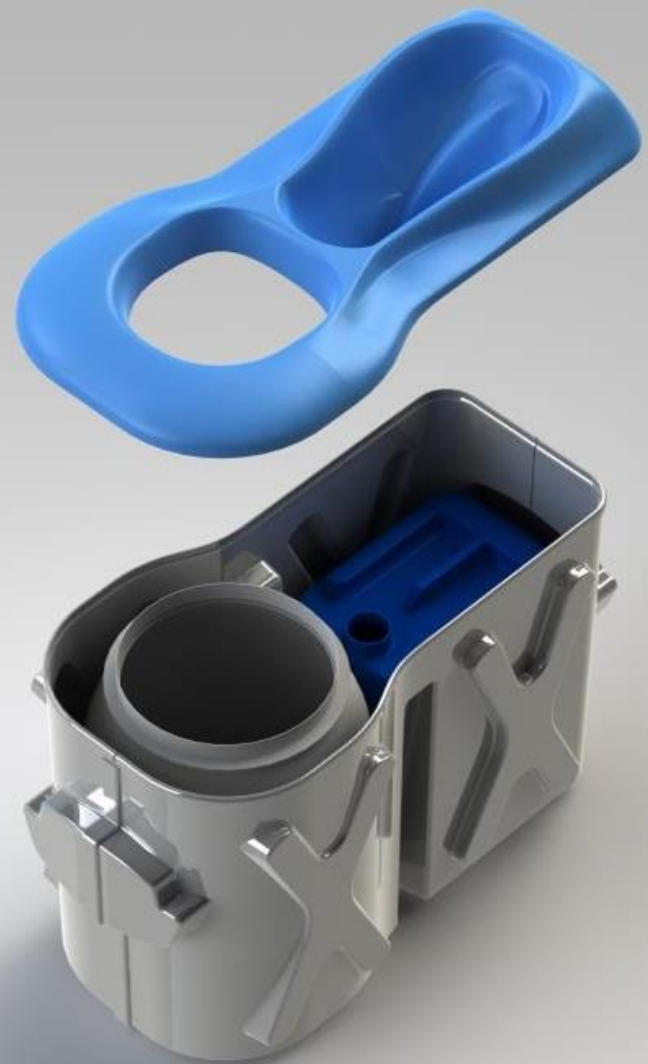
*We provide regular, safe collection and removal of the waste*

## 3. **TREAT** Waste

*We treat our waste to eliminate pathogens and capture energy to power operations*



Hygienic  
and easy  
to clean





Franchise



# Three distribution models

Commercial



Residential

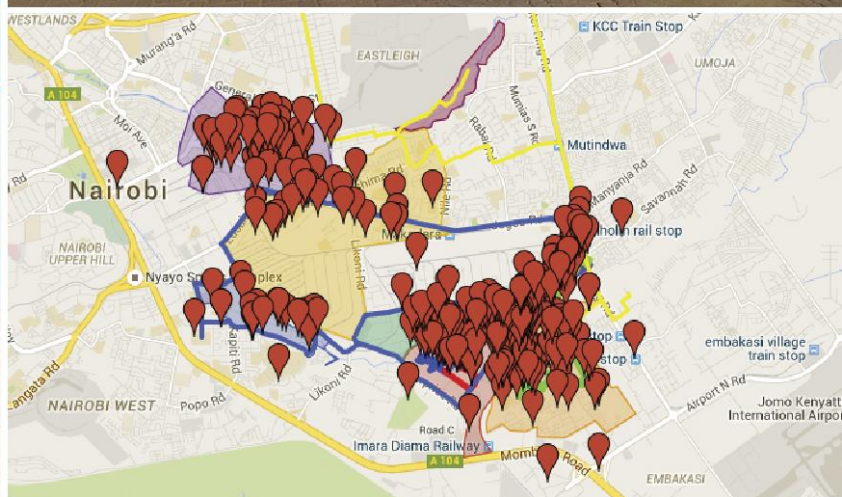


Schools

Collect  
and treat



Safe &  
professional  
waste  
removal





# Treat and convert



With **Farm Star's Evergrow Organic Fertilizer**, farmers see fewer weeds, faster growth, and **>30% increase** in yields.

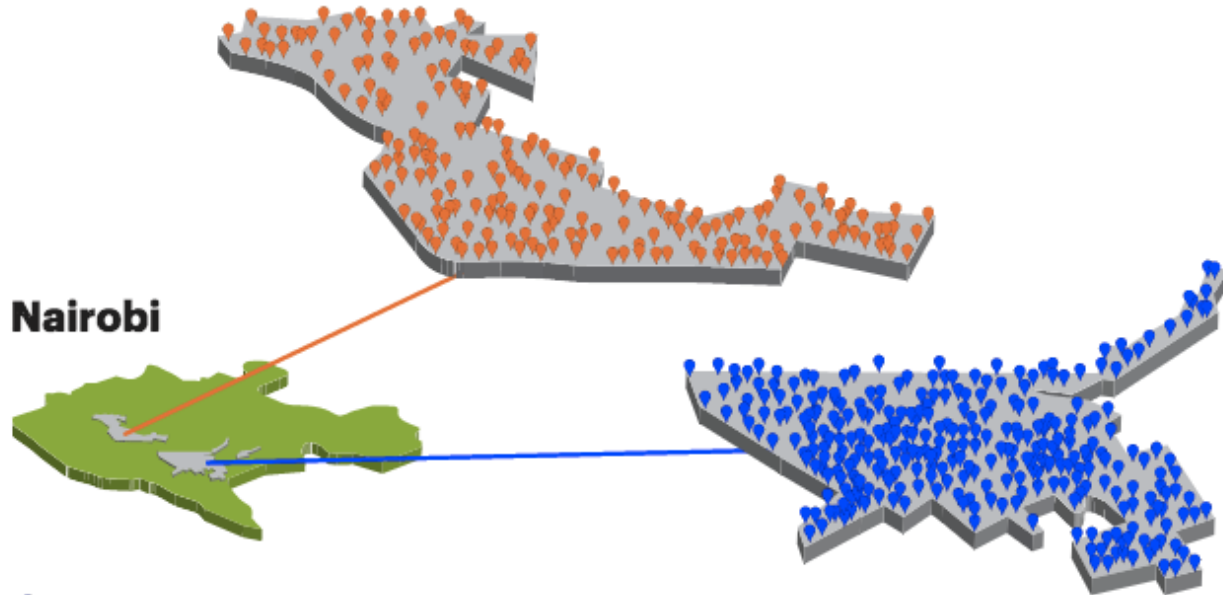


Compared to Omena [regional fishmeal] with poor supply chain and quality, local Animal Feed Millers prefer



**PureProtein** that is produced domestically and meets international standards, and sees their animals getting **30% bigger**



# Results to date



**Nairobi**

-  Mukuru
-  Makadara

Total population of Mukuru and Makadara: 500,000 people

**54,000**  
Users per day

**6,000**  
Tons sludge removed per year

**900**  
Jobs created

# Results to Date:

End products

900  
Farmers  
buying

30%  
increase  
in yields



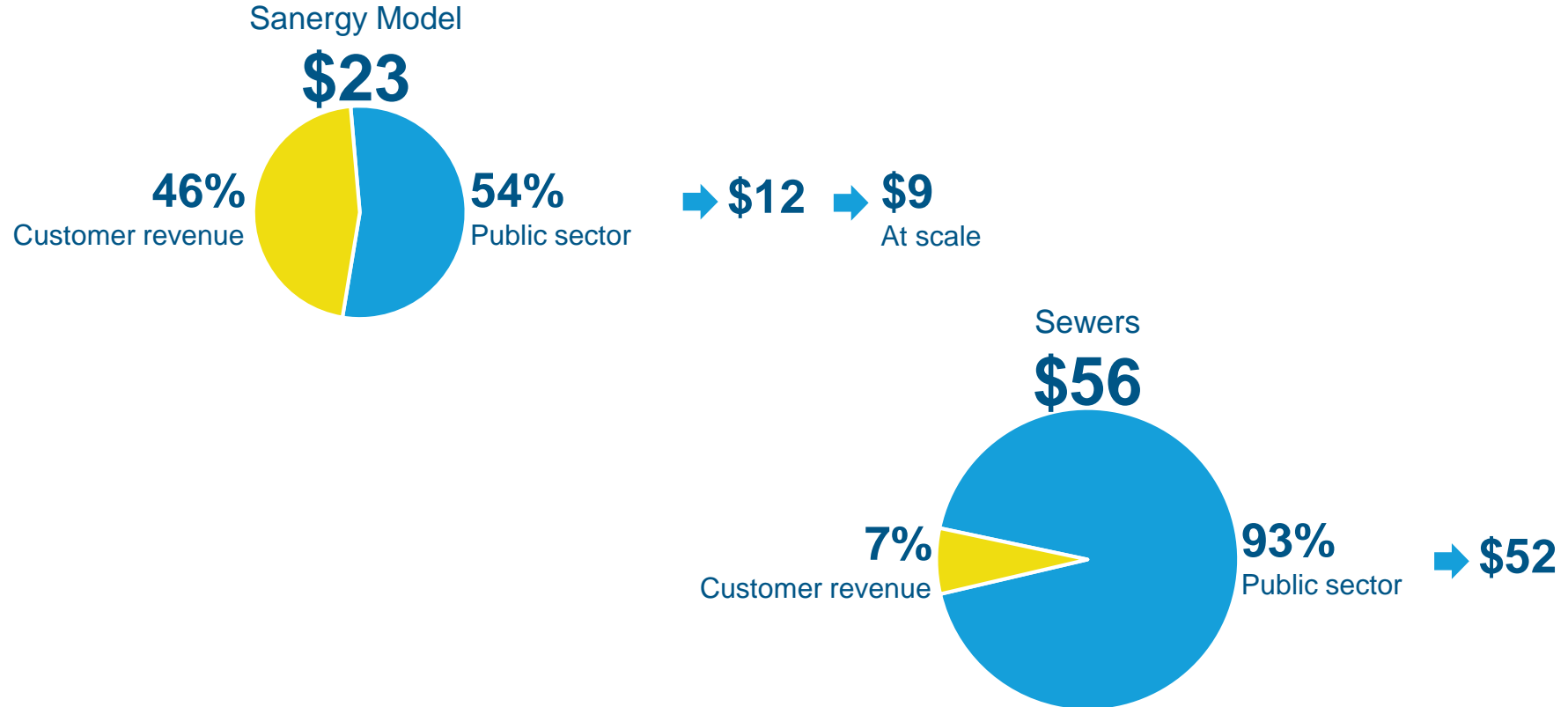
# Results to Date: Building the Enabling Environment



- Help policymakers champion sensible WASH policies
- Undertake research with World Bank to demonstrate efficiency, scalability and appropriateness of model
- Co-convene WHO training on safe sanitation practices on non-sewered sanitation
- Formalizing paid pilot with Nairobi Water in target area
- Engage with GOK key global stakeholders, such as multilaterals, to secure first-scale funders



# Results to date: Greater cost-effectiveness



# Our 3-year goals

## Scaling non-sewered sanitation



Reach  
**<\$9pp/year**  
Public sector cost for  
sanitation provision

Develop a suite of  
solutions  
for “whenever,  
wherever the  
need...”

Secure  
**1 PPP**  
with Government to  
demonstrate  
replicability

# SANERGY – THE FUTURE

Waste management is a global problem with growing will to solve it

## Criteria for Scale:

- ✓ Financially supportive regulatory environments
- ✓ Committed government
- ✓ Strong market for end products
- ✓ Fragmented waste management industry

### DAKAR:

1.05M People, 40,000 mT waste / year

"Inadequate resources and lack of public awareness about waste management led to a breakdown in garbage collection, leaving city residents with mounds of trash in their front yards, rotting refuse along the beachfront and piles of garbage on empty plots of land."

### CHENNAI:

4.5M People, ~125,000 mT waste / year

"The officials claim they have stopped all illegal sewage connections. But one look, or even one whiff of the canal, is enough to prove otherwise."

### MOMBASA:

1M People, ~57,000 mT waste / year

"Mombasa County loses 548 million KES each year due to poor sanitation."

### Lusaka:

2M People, 114,000 mT waste / year

"As Zambia's urban population rises, challenges caused by poor water and sanitation urgently need addressing."

### DAR ES SALAAM:

1.35M People, ~108,000 mT waste / year

"Sanitation has been a neglected sector in Tanzania"

### RIO DE JANEIRO:

6M People, ~160,000 mT waste / year

"Brazil urgently needs sanitation improvements – only 39 percent of its waste is treated."



**SANERGY**  
Building healthy,  
prosperous communities