



# Laguna Innovation

## Decentralized Wastewater Reuse for Climate-Resilient Agriculture

**Liana Berlin Fischler**

Laguna Innovation

Arava Institute for Environmental Studies

*liana@lagunainnovation.com*



## The Problem: Poor Sanitation & Water Scarcity

46%

/ 3.2 billion people

Source: [UN Water](#)

of the world's population lacks access to adequate sanitation due to technological, financial, and/or governmental barriers

**~345 million lacking in East Africa**

World Bank WDI



Environmental  
Pollution



Water Borne  
Diseases



Water Scarcity & Food  
Insecurity

## System-Wide Risks

This lack of essential infrastructure endangers human health, socioeconomic well-being, and ecological functioning





## The sanitation gap drives a cascade of **preventable** failures.

- **Water:** Rivers and groundwater contaminated by overflowing latrines
- **Health:** Cholera, typhoid, and childhood stunting due to poor hygiene
- **Education:** 1 in 4 girls miss school due to lack of safe toilets
- **Food:** Water-scarce farmers forced to abandon or underproduce land
- **Climate:** Drought and heat worsen both water scarcity and health risks

**Without safe sanitation, no SDG goal can be met — including health, gender equality, education, and climate resilience.**



Flying to Mbeya, July 2025

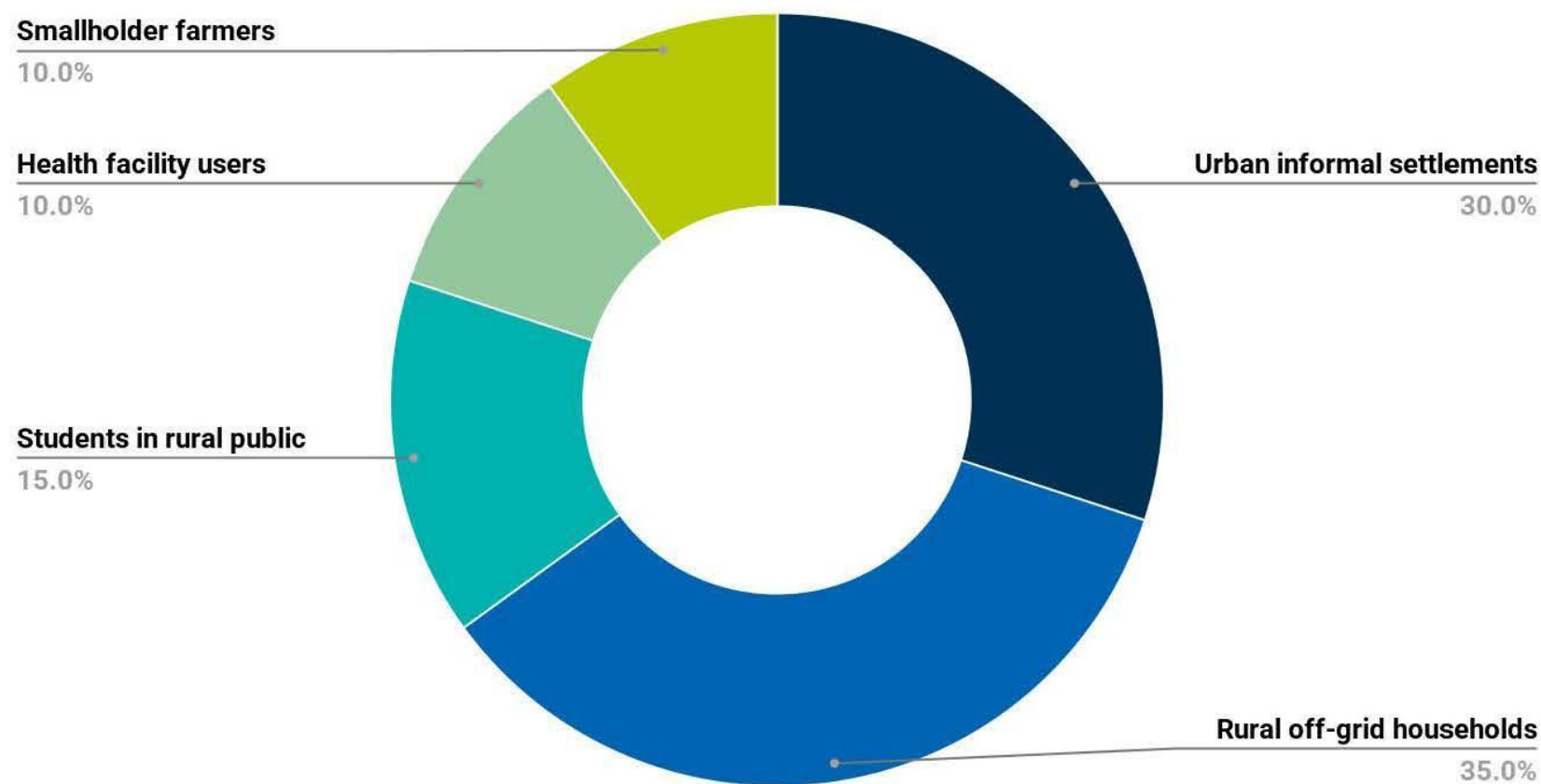


Kampala, Uganda





The people affected the most serve as **the backbone of East Africa's education, health, food, and housing systems.**



Source: Aggregated from WHO/UNICEF JMP (2023), AfDB (2021), UNESCO (2022), World Bank (2022), FAO (2022), IWMI (2021)

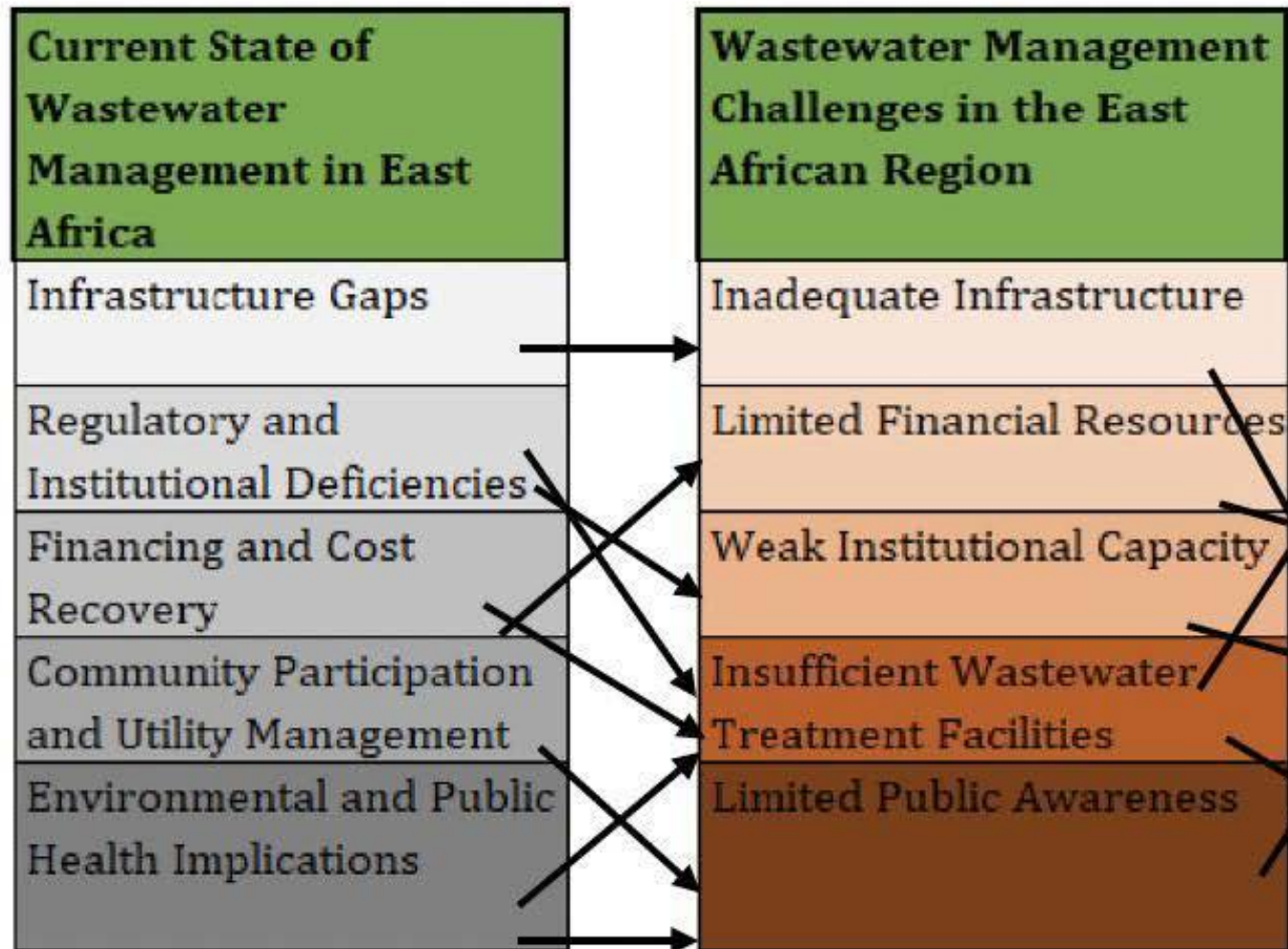


Fig. 1 The current wastewater management status in East Africa; challenges, innovativ

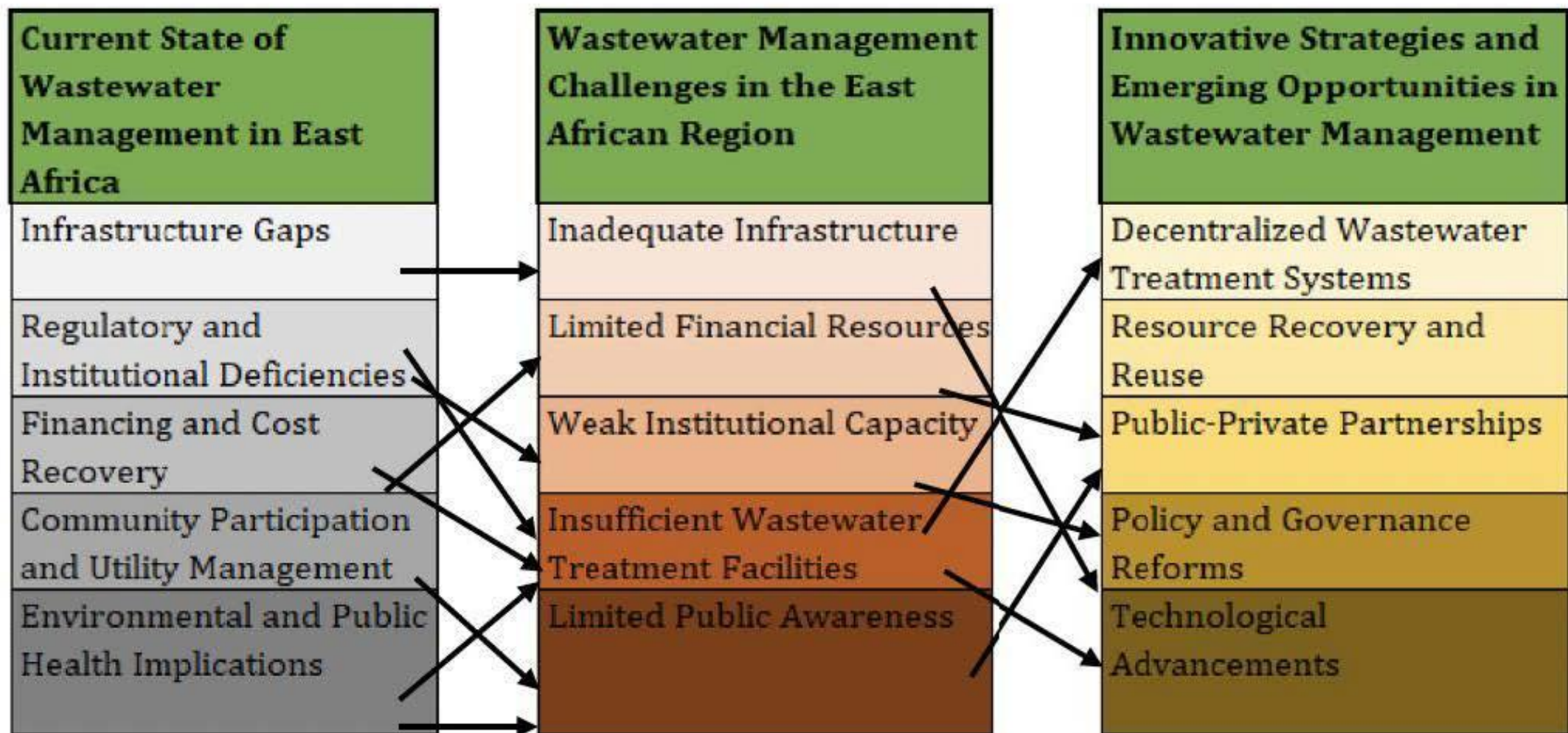


Fig. 1 The current wastewater management status in East Africa; challenges, innovative strategies and emerging opportunities



## Founding Team



**Clive Lipchin, PhD**

Co-Founder  
Chief Executive Officer



**Amir Assa**

Co-Founder  
Chief Technology Officer  
Inventor of VGW-BF



**Liana Berlin-Fischler**

Founding Team Member  
Chief Operations Officer







U.S. Patent No. 11,597,671

# Off-Grid Wastewater Treatment & Reuse

Our patented off-grid wastewater treatment system (VGW-BF) **bridges the sanitation gap** for underserved communities and **unlocks a reliable, onsite source of nutrient-rich water** suitable for irrigation.



Energy autonomous



Remote monitored & operated



Virtually sludge-free



Modular + scalable



Minimal odor & noise, suitable for onsite



Nutrient-rich effluent suitable for irrigation





# Independently Validated Improvement in Effluent Quality

Test	Unit	Acceptable standard for effluent irrigation	Influent Result	Effluent Result	Improvement (%)
Biological Oxygen Demand (BOD)	mg/L	10-20	216	5 ✓	98%
Chemical Oxygen Demand (COD)	mg O <sub>2</sub> /L	100	448	22 ✓	85%
Total Suspended Solids (TSS)	mg/L	10-20	35	6 ✓	83%





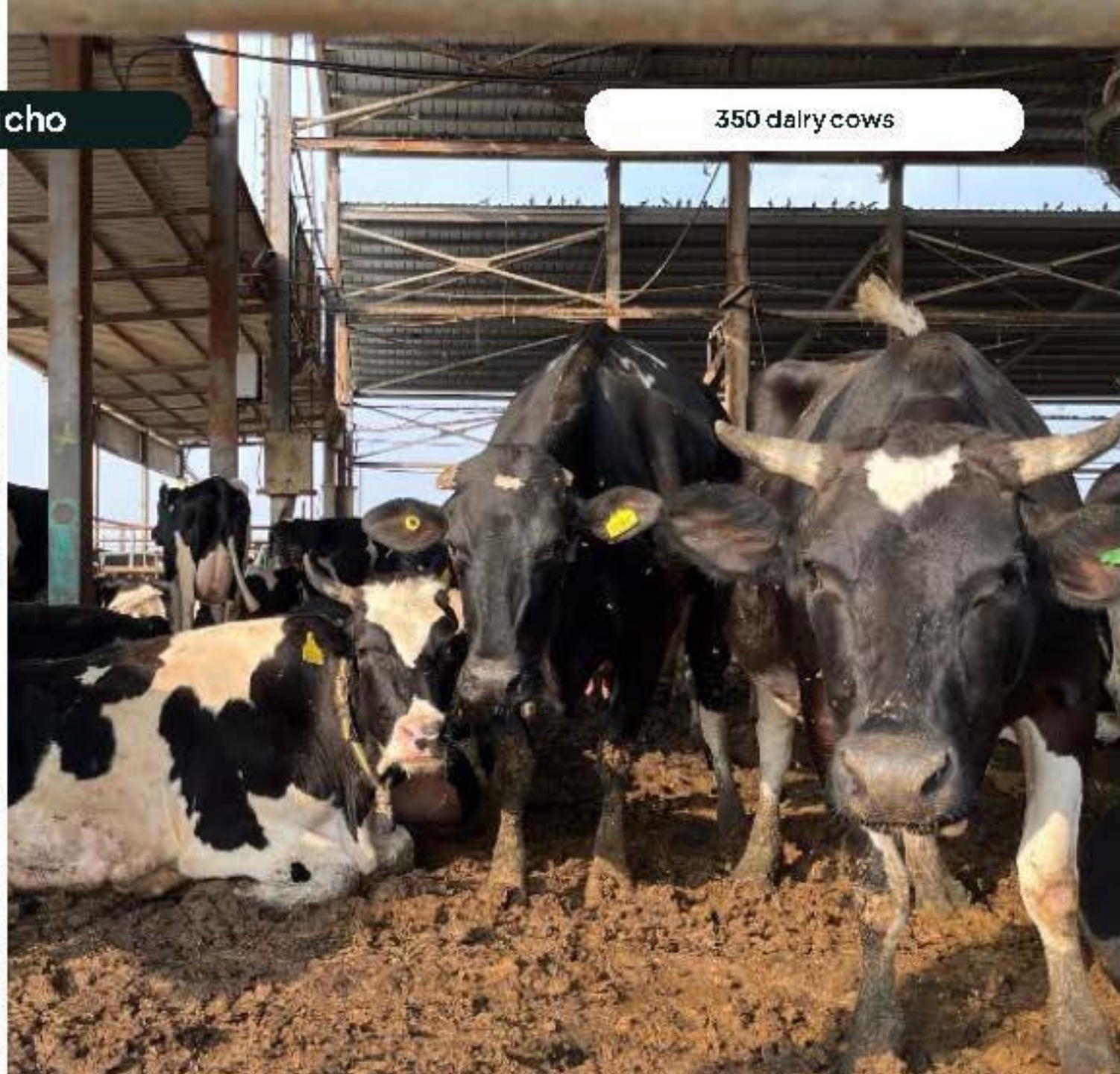
## ADS Arab Development Society, Jericho



Raw sewage leakage



Cow manure



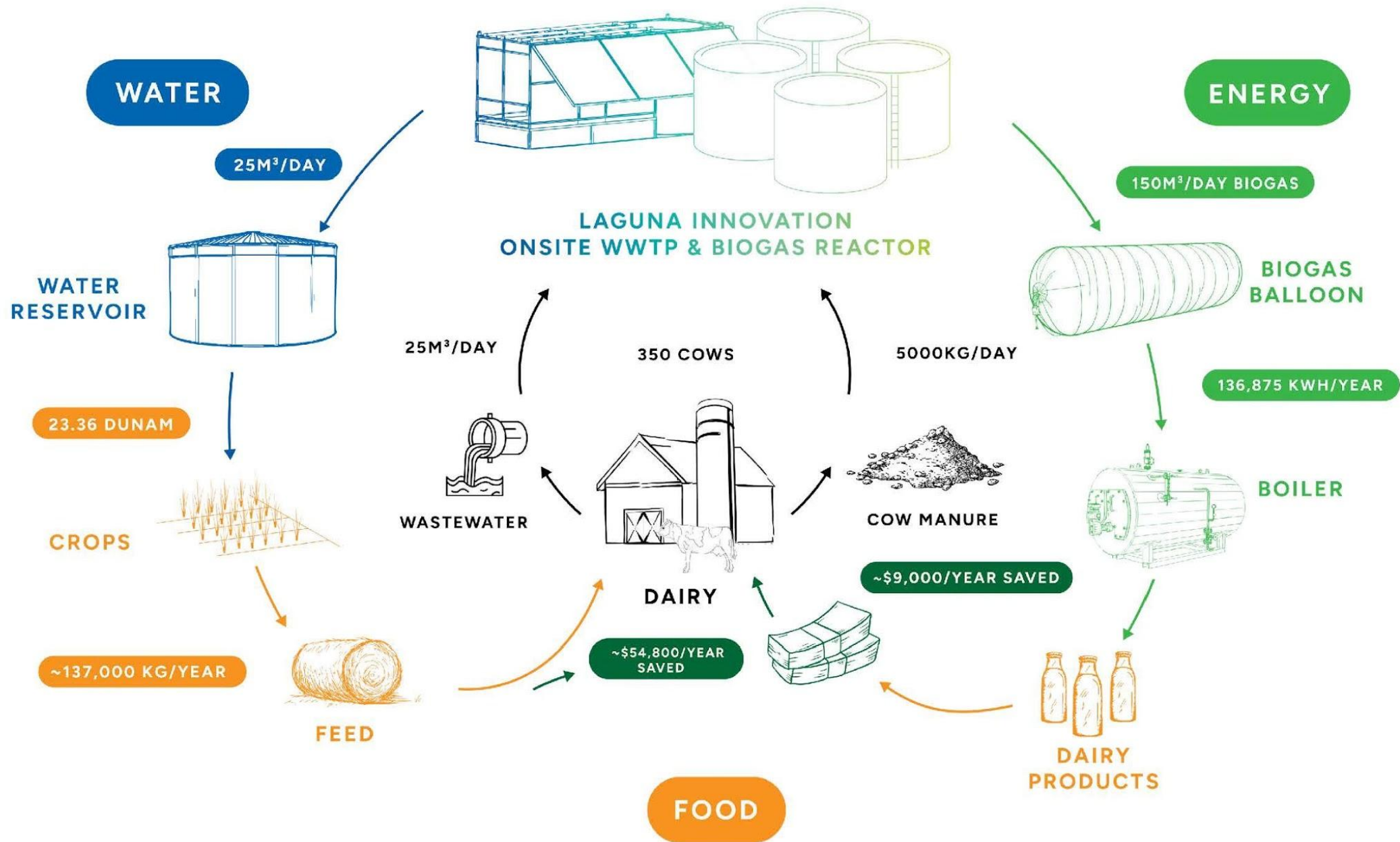
350 dairy cows



## Laguna Innovation Onsite WWTP & Biogas Reactor









We work with you to establish adequate sanitation infrastructure in **off-grid locations, enable water reuse in scarce regions, and meet ESG compliance.**



Farming  
Cooperatives



Real Estate  
Development



Education  
Centers



Hotels &  
Tourism



Industrial Sites



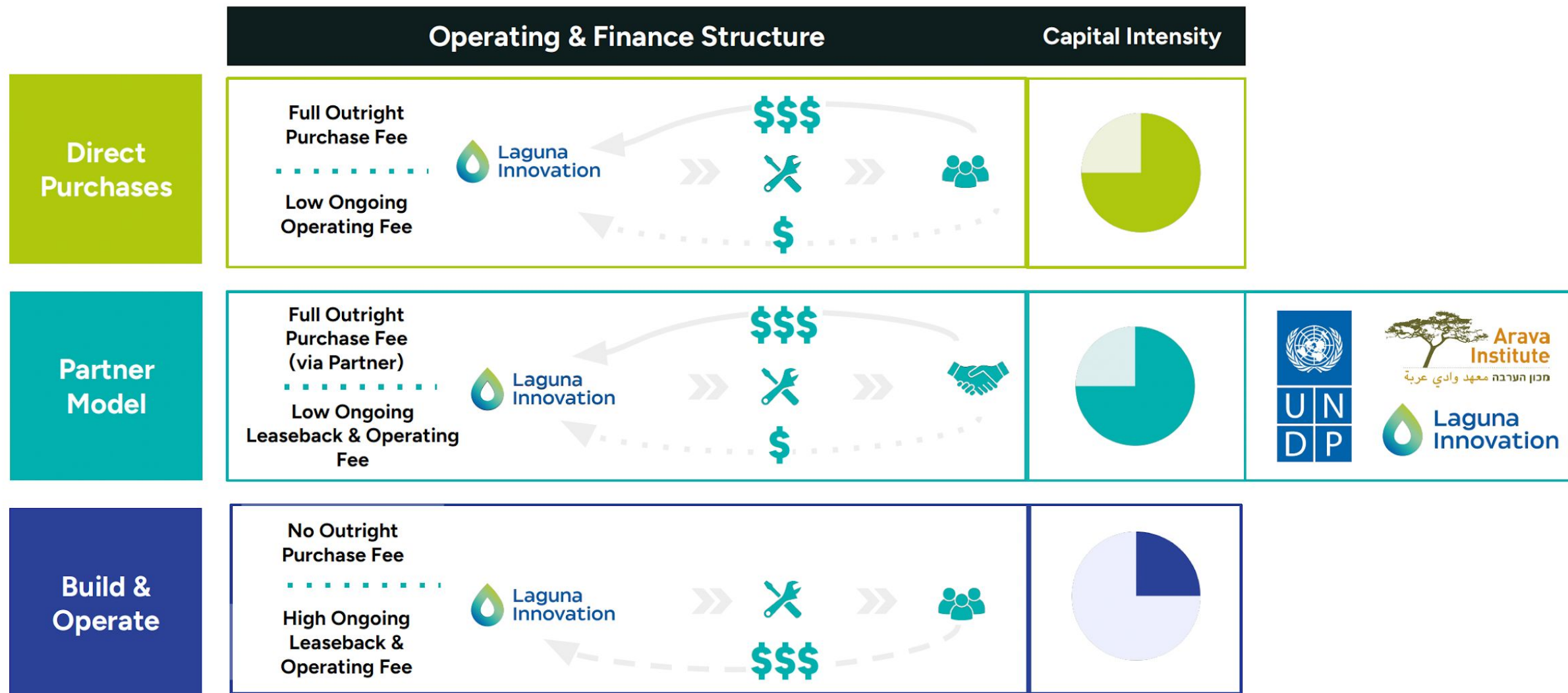
Water  
Utilities



Off-Grid  
Communities



# Flexible operating model to match clients' needs







# We're looking for strategic partners.

Help us bring Laguna Innovation to East Africa.



Contact us

[www.lagunainnovation.com](http://www.lagunainnovation.com)

[info@lagunainnovation.com](mailto:info@lagunainnovation.com)

**Liana Berlin-Fischler, COO | +972548876866**