PROPOSAL FOR COMPREHENSIVE WASTE MANAGEMENT REFORM IN KAMPALA

KCCA
KAMPALA CAPITAL CITY AUTHORITY
For a better City

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Introduction

Kampala, the capital city of Uganda, faces a critical challenge in managing its rapidly increasing waste. With a growing population and booming business activities, the city generates significant amounts of waste, 80-90% of which is organic, as highlighted in a 2014 study by Allan J. Komakech. However, the current waste management practices, largely reliant on landfills, are neither sustainable nor safe, as evidenced by the tragic collapse of the Kiteezi landfill in August 2023, which claimed 69 lives.

Globally, cities have begun to adopt innovative and sustainable waste management strategies. For instance, China has successfully implemented practices such as source reduction, composting, and biogas production to address solid waste challenges. Kampala has the potential to adopt similar methods to turn its organic waste into valuable resources like manure and biogas, benefiting both the environment and the economy.

This proposal outlines a citywide waste management reform plan for Kampala, leveraging innovative practices and partnerships to ensure sustainability, public health, and economic growth. By focusing on source reduction, community involvement, and infrastructure development, Kampala can transform its waste crisis into an opportunity for environmental and socio-economic progress.

OBJECTIVES

To establish a sustainable waste management system that:

- Reduces landfill dependency through organic waste recycling and source reduction.
- Transforms organic waste into economically valuable products (e.g., manure, biogas).
- Promotes environmental education and community involvement.
- Aligns with Uganda's policies and international goals, such as the UN Sustainable Development Goals (SDGs).

IMPLEMENTATION PLAN

The proposed waste management reform in Kampala will be implemented in four key phases:

Policy Awareness Building

Waste source Reduction

Organic waste Processing.

Economic Integration

Policy Awareness Building

Collaborate with stakeholders, including Kampala Capital City Authority (KCCA) and local leaders, to raise public awareness about waste segregation and recycling. Advocate for supportive policies and incentives for businesses and households to reduce waste at the source.

Waste source Reduction

Introduce waste segregation systems for households and businesses, emphasizing organic, recyclable, and non-recyclable categories. Distribute affordable compost bins and launch reward programs for neighborhoods that demonstrate compliance.

Organic waste Processing.

Establish neighborhood composting facilities and city-level industrial composting and biogas plants. These will process organic waste into products like manure and biogas for domestic and industrial use.

Economic Integration

Develop markets for recycled products, such as manure for farmers and biogas for households. Begin with pilot projects in selected divisions, scaling up based on evaluations and feedback. This phase will include capacity building, public-private partnerships, and financial sustainability measures.

PHASE 1

POLICY
ADVOCACY

Availing information about waste Management policies to the public to empower the communities to take responsibility of their communities and environment.

Offer Ambassador Rewarding opportunities to individuals championing Proper waste management in the communities.

Partner with media houses like Next Media Services through the Taasa Obutonde Initiative to create awareness about waste management

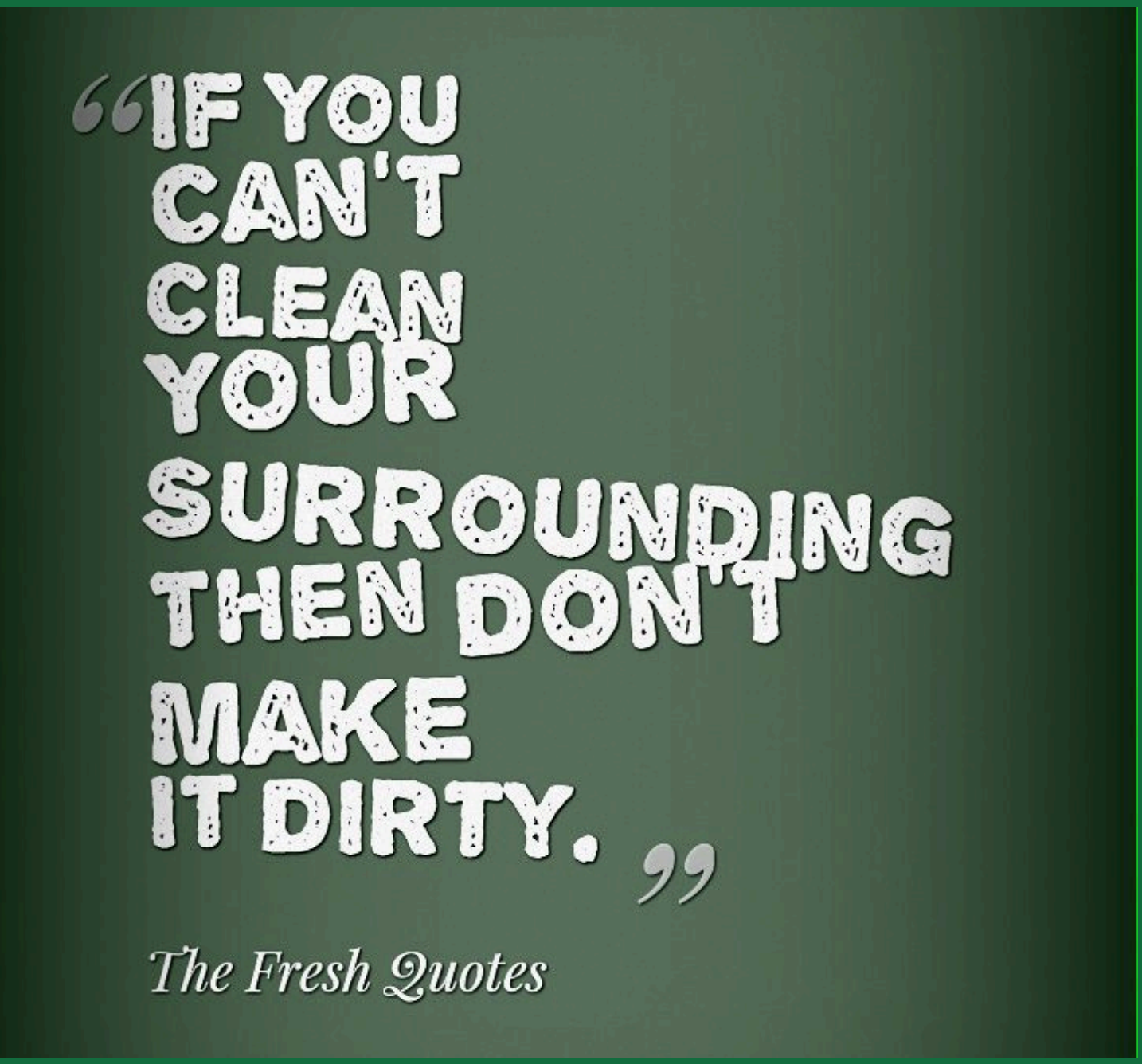
Design Policy awareness campaigns on community level aimed at building awareness on waste categorization and waste management services available.

Design Media Messages aimed at empowering communities to support the cause.

“FOR A BETTER CITY”

National Environment (Waste Management) Regulations, 2020.

PHASE 2


"IF YOU CAN'T CLEAN YOUR SURROUNDING THEN DON'T MAKE IT DIRTY."
The Fresh Quotes

Waste Source Reduction

This phase emphasizes waste segregation at the source by providing tools like compost bins and promoting behavioral changes through education and incentives. Inspired by China's "Zero Waste Cities," it aims to reduce the volume of waste reaching landfills and support sustainable practices in Kampala.

Domestic WASTE SEGREGATION.

Introduce household and commercial waste segregation systems (organic, recyclable, and non-recyclable bins).

Waste Segregation Bins

Distribute affordable compost bins to households and small businesses.

Reward System

Launch a reward system for compliant neighborhoods (e.g., tax rebates or waste collection discounts).

Zero Waste Cities, where communities focus on minimizing waste generation through segregation and behavioral changes (Song et al., 2015).

2024

PHASE 3

WASTE ISN'T
WASTE UNTIL WE
WASTE IT!

WILL.I.AM

Organic Waste Processing and Recycling Infrastructure our clients

This phase involves building the infrastructure needed to process organic waste into valuable products like manure, compost, and biogas. The goal is to reduce landfill reliance and create economic opportunities while promoting environmental sustainability.

KEY STEPS FOR IMPLEMENTATION

A Composting Facilities:

- **E**stablish decentralized composting units in neighborhoods to process organic waste locally.
- **D**evelop large-scale composting plants to handle industrial volumes, ensuring efficiency and high-quality manure production.

Biogas Plants:

- **C**onstruct biogas plants to convert organic waste into biogas for cooking, electricity generation, and industrial energy needs.
- **W**ork with energy companies and local governments to distribute biogas to households and industries.

Technology Adoption:

- **P**artner with international or local companies experienced in composting and biogas technologies to ensure effective waste processing.
- **U**se automated sorting systems for high-volume facilities to improve efficiency and resource recovery.

Pilot Projects:

- **B**egin with smaller-scale plants in high-density areas of Kampala to demonstrate feasibility and scalability.
- **C**ollaborate with private companies to ensure efficient operations and maintenance of facilities.

When it comes to Organic recycling, in Uganda there are a few agencies or organizations to work with however, in this case well established companies need to be contracted to manage Waste in Kampala City in general because of their capacity and establishment in the marketplace. This will also enhance the economy by providing employment opportunities for Ugandans.

PARTNERSHIPS

- Everbright International: A leading waste-to-energy and recycling company that manages waste through advanced technologies like incineration and anaerobic digestion.
- Veolia China: Operates large-scale waste processing facilities, including composting and recycling plants, and has implemented circular economy principles in urban waste management.
- China Energy Conservation and Environmental Protection Group (CECEP): This state-owned enterprise has invested in waste-to-energy projects, biogas production, and environmental technologies to enhance recycling efforts.

光大控股 EVERBRIGHT LIMITED

VEOLIA

中环装备 CEPEC

Be part of the Solution not part of the pollution. This can be a considerable step taken in the Right direction for a better city.

Based on practices outlined in Wei Guo et al. (2020), composting and biogas conversion reduce solid waste at landfills while offering sustainable economic returns.

PHASE 4

WASTE ISN'T
WASTE UNTIL WE
WASTE IT!

WILL.I.AM

ECONOMIC INTEGRATION & SCALE UP

Economic integration and scale-up in waste management aim to link recycling processes to economic activities while ensuring the system's growth and sustainability. Here's a detailed breakdown of how the strategy works and why it's recommended:

How the Strategy Works

Creating Economic Value from Waste

Compost and Manure Sales:

- Processed organic waste can be converted into compost and manure for farming. This creates a direct market where farmers purchase affordable, eco-friendly fertilizers.

How It Works:

Composting facilities process organic waste into high-quality products. These are sold to local farmers, reducing their reliance on expensive chemical fertilizers.

Biogas Production and Sales:

Organic waste is also processed into biogas, an alternative energy source for cooking or electricity.

How It Works:

Biogas plants process waste through anaerobic digestion to produce biogas and organic residue (usable as fertilizer). Biogas is distributed to households or industries, creating a sustainable energy market.

value

- **I**ncreased in Revenue through Bio Product Sales
- **C**reate Employment Opportunity for citizens
- **L**and Fill Site management. Waste at Land Fills will be reduced highly hence reducing the risk of accidents and dealing with the need to purchase more land.
- **O**pportunity for development in technology.

FINANCIAL AND SUSTAINABILITY MODELS

To ensure the long-term success of Kampala's waste management reform, we need robust financial and sustainability models. Here's a breakdown of each model and its application:

REVENUE GENERATION MODEL

UGX 1.4B **in revenue from incineration and biogas production**

Study Supporting Success:
A report by the World Bank (2019) highlighted how urban centers in China reduced landfill waste by 30% through composting and biogas programs, directly generating revenue for waste management sustainability.

In 2018, China's waste-to-energy (WTE) industry generated 3.3 billion USD in revenue from incineration and biogas production (China Everbright International Annual Report, 2018).

A report by the World Bank (2019) highlighted how urban centers in China reduced landfill waste by 30% through composting and biogas programs, directly generating revenue for waste management sustainability.

Composting initiatives in urban areas like Shenzhen have reduced landfill dependency by 20%, with compost sold directly to agricultural sectors (Zhang et al., 2020).

The Government could earn approximately UGX 1.44 billion per day from selling organic fertilizer produced from waste at Kiteezi, assuming an affordable price of UGX 4,000 per liter. This demonstrates the immense economic potential of waste management initiatives.

PUBLIC-PRIVATE PARTNERSHIP (PPP) MODEL

Collaborates with private entities to share investment costs, risks, and expertise.

Study Supporting Success:
The Asian Development Bank (2020) reported that PPPs in China significantly improved waste management efficiency and reduced financial pressure on local governments while ensuring compliance with environmental standards.

- Companies like Veolia and China Everbright have been pivotal in managing waste-to-energy plants. By 2020, China had 500+ WTE plants operational, 80% of which were under PPP agreements (Global WTE Market Report, 2021).
- PPPs reduced waste collection costs in cities like Beijing by 15-20%, with profits reinvested in expanding waste facilities.

- ***In the context of Uganda, this can be an opportunity to build technology and Advancement in Uganda. In addition to this, it is opportunity to create employment in terms of equipment technicians and the waste management human resource.***