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Kisumu County establishes Maendeleo Waste Recovery Center to enhance Waste Recovery Practices

County:	The County Government of Kisumu		
Sector/s:	Environment and Climate Change	Sub-sector/Theme:	Waste Recovery Practices
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Target Audience:	County Departments responsible for Environment, Finance, Development partners and County Governments.		
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Introduction (**Context and Challenge**):

Kisumu City County is situated on the shores of Lake Victoria and as the third largest city in Kenya, covers a total of 417 km². Of this, 297 km² is dry land and the remaining 120 km² is under water. These areas are densely populated with limited access to basic services such as electricity, sanitation, piped water and solid waste management services. The waste generation rate in the City is estimated to be between 200 and 450 tons of waste daily (Agong and Otom 2015; Gutberlet et al. 2017; Magezi 2015; NEMA 2015). Only a meager 20% of the generated waste was collected and transported to an overflowing open dumpsite located at Kachok, a mere 2 km from the central business district. This site had a troubling history, with dumping activities dating back to 1975. Over time, the dumpsite reached its capacity, resulting in hazardous overflows. According to Agong' and Otom, (2015), over two thirds of the waste at this site is organic and therefore biodegradable. However, plastics, polythene bags, broken glass, and metallic cans constitute a substantial portion of the remaining waste. The management of waste volume primarily relies on open burning and irregular compaction practices. The remaining 80% accumulates in skips, on vacant land and along passageways as evidenced by the numerous garbage heaps scattered around the City. Some waste remains



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unmanaged, posing environmental threats and health hazards due to open dumping and burning, which emit greenhouse gases into the atmosphere.

Waste collection services by the City are mostly concentrated within the CBD and the main market areas around Kisumu City. According to Agong and Otom (2015), Kisumu's waste consists of organic material (63%), paper (12.2%), plastic (10.2%), glass (3.2%), scrap metal (1.3%) and other (9.5%). The quantities of solid waste generation in Kisumu are likely to increase further due to improved income levels, increasing population, changing lifestyles and consumption patterns.

Sustainable solid waste management in Kisumu faces significant challenges. These include inadequate funding, a shortage of skilled personnel, and poor public attitudes toward waste management. Rapid urbanization, population growth, changing lifestyles, and consumption patterns contribute to increasing waste generation. The city grapples with overflowing dumpsites and pollution from uncontrolled waste disposal. Despite efforts, sustainable waste management remains elusive due to insufficient resources and improper disposal practices. Public awareness and participation are also lacking.

In response to these challenges, the County took proactive steps by establishing the Maendeleo Waste Recovery Center. This center, constructed by the County Government, focuses on recycling waste, selling plastic waste to Apex traders, and facilitating the city's waste reduction efforts. This initiative represents a significant stride towards addressing the pressing issue of waste management in Kisumu City County.

Implementation of the practice (Solution Path):

The Department of Environment in Kisumu City is responsible for providing solid waste management services. However, due to a lack of technical capacity and financial resources, the department struggles to effectively manage the waste generated within the city. To address these challenges and expand waste management services, the County collaborated strategically with UN-Habitat, the Civil Society Urban Development Forum, and the Kisumu Waste Actors Network (KIWAN) Sacco (referred to as "the Association"). Their collective goal was to revolutionize waste management practices within the city and overcome the resource scarcity hindering effective waste collection and disposal. The County further expanded its waste management services by contracting private collectors and initiating Private-Public Partnerships. These collectors were issued permits, allowing them to provide door-to-door waste collection services to their clients. One of the key local stakeholders in this initiative is the Kisumu Waste Actors Network (KIWAN) Sacco. Established in April 2017 and registered in 2019, KIWAN has a membership of 675 members, including waste recyclers, transporters, pickers, and collectors. The Sacco has managed to standardize fees for waste collection and buying/selling of recycled materials.



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The Maendeleo Material Recovery Center was constructed between 2019 and 2020 to serve as a hub



A photo of the Maendeleo Waste Recovery Center

for waste recovery, sorting, and sale. The cost for its construction incurred by the County are estimated to be 5M with Kisumu Waste Actors Network (KIWAN) Sacco contributing Ksh. 800, 000 on upgrade from 2 phase to 3 phase specific to the electricity supply. Despite facing delays due to the COVID-19 pandemic, the center was launched in 2021 and operates from 7 am to 6 pm. The staff at the center conduct door-to-door waste collection services, collect from the Kachok dumpsite, city

garbage collection bins, and sell to the Maendeleo Center, which has created its network of customers from individuals to institutions looking for recycling materials.

Various types of waste are received from different sources, including households, businesses, and institutions. For homesteads, the monthly collection fees range from 100 to 500 Kenyan shillings (Ksh) per month depending on whether the residence is in a low-, middle- or high-income area. For institutions, service charges can be as high as Ksh 7000 per month depending on waste volumes. In addition, any individual that brings materials for recycling to the Maendeleo Center is paid according to the type and quality of the materials, and also how much they weigh- a fixed rate of buying at 22 shillings and selling at 35 shillings a kilo.

These wastes undergo a sorting process, facilitated by trained staff which involves separating recyclable materials such as plastics, glass, metals, and paper from non-recyclable waste. Once sorted, the recyclable materials are further processed to prepare them for sale and reuse. Plastics are cleaned, sorted by type, and shredded into manageable pieces. Glass and metals are similarly cleaned and sorted to ensure purity and quality. Paper is baled and prepared for recycling.



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Plastic waste sorting zone: Plastics awaiting cleaning, sorting by type, and shredding

To ensure the effective functioning of the Center and foster community involvement, the County embarked on comprehensive training programs supported by the UN-Habitat and the Civil Society Urban Development Forum- “Turning Waste into Jobs”, national policy stakeholder workshop on plastic (UN Environment) and the best practices on waste disposal through segregation, re-use, recycling and composting. 430 waste management Champions among them, waste collectors, recyclable goods collectors, waste pickers and community members underwent a Training of Trainers Program on waste segregation, collection techniques, and sustainable waste management practices. Community members, equipped with knowledge and skills from the training programs, have begun implementing waste segregation practices at the household level, leading to tangible improvements in cleanliness and waste reduction within their compounds.

To ensure the continued success of the Center and similar initiatives, the County plans to foster ongoing collaboration with key stakeholders, implement monitoring and evaluation mechanisms, explore innovative financing mechanisms, and continuously engage and empower community members through education and awareness campaigns.

Results of the practice (outputs and outcomes)-



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The establishment of the Maendeleo Waste Recovery Center has had a significant impact on waste management practices in the city, with both positive and negative outcomes. The Center was established in partnership with the Kisumu Waste Actors Network (KIWAN), leading to the creation of numerous job opportunities. The Sacco, comprising 675 members including waste recyclers, transporters, pickers, and collectors, pays individuals based on the type, quality, and weight of the materials they bring for recycling. The Association has managed to maintain a fixed rate of buying at 22 shillings and selling at 35 shillings per kilo. The members have formed a welfare system where monthly contributions are made, and individuals earn annual dividends and benefit from shares.

The Maendeleo Waste Recovery Center has employed six permanent employees and casual employees who are contracted on need basis. They receive their remuneration through the proceeds from the sale of recyclable materials. Notably, the Ondiek Estate, a low-income estate with a population of 1,500 people, has benefited from the establishment of a waste collection and sorting bay called Ondiek Ten Top Youth Group Waste Sorting Bay. This bay has created jobs for 20 youths (9 females and 11 males) contributing to local employment and economic empowerment through waste collection from the estate. They are involved in sorting of waste with plastics being sold to Maendeleo Center. The organic waste collected is used to produce organic manure for farming. Previously, plastics were transported to Nairobi for sale, which incurred high costs for independent operators. However, with the establishment of Maendeleo Center, plastics are now sold directly reducing transportation costs and increasing profitability for waste collectors and recyclers.

Despite efforts to encourage waste segregation at the source, the culture of waste separation is not deeply ingrained in the public. This leads to mixed wastes found during inspections of waste bins. Additionally, challenges persist in waste collection services, including the mixing of segregated waste during collection. This undermines the effectiveness of waste segregation efforts and poses obstacles to sustainable waste management practices.

Lessons learnt:

- The collaboration with the Kisumu Waste Actors Network (KIWAN) Sacco proved to be highly effective in creating job opportunities for over 600 individuals, promoting waste segregation, and enhancing recycling efforts. This partnership facilitated access to expertise, resources, and community networks, fostering a holistic approach to waste management.
- Training programs on “Turning Waste into Jobs”, national policy on plastic (UN Environment) and the best practices on waste disposal through segregation, re-use, recycling and composting aimed at waste collectors, recyclable goods collectors, waste pickers, and community members played a crucial role in improving waste management practices. These



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equipped individuals with knowledge and skills, empowering them to contribute effectively to waste reduction and recycling efforts.

- Establishing the Maendeleo Center as a platform for local plastic recycling significantly reduced transportation costs and enhanced profitability for waste collectors and recyclers. Selling plastics directly from the center streamlined the recycling process and contributed to the local economy.

Despite efforts to promote waste segregation at the source, challenges persist in ingraining this practice within the community. Mixed waste in bins and during collection undermines the effectiveness of segregation efforts and poses challenges to sustainable waste management.

There needs prioritization of the community engagement and behavior change communication through campaign awareness and capacity building to foster a culture of waste segregation and responsible waste management practices needs.

Recommendations (Conclusion)

- Collaboration with key/local stakeholders is essential for the success of waste management initiatives. Engaging with existing networks, such as the Kisumu Waste Actors Network (KIWAN), can provide access to expertise, resources, and community support.
- Prioritizing capacity building programs for waste collectors, recyclers, and community members is crucial for fostering sustainable waste management practices. Training initiatives should focus on waste segregation, recycling techniques, and sustainable waste management strategies to empower individuals to actively participate in waste reduction efforts.
- Public awareness campaigns, education programs, and community outreach efforts should be prioritized to promote active participation and ownership of waste management practices.

Photo Gallery



A photo of the Maendeleo Waste Recovery Center





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Paper waste sorting area



Waste segregation bins at Maendeleo Center



A training program supported by the UN-Habitat and the Civil Society Urban Development Forum known as "Turning Waste into Jobs"



A photo of Ondiek Ten Top Youth Group Waste Sorting Bay