

Briefing Paper

Solid Waste Management Arrangements and its Challenges in Kampala: **A case Study of Bwaise II Parish, Kawempe Division, October 2011**

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Abstract:

Solid waste is one of the greatest challenges facing urban authorities today with the amount of waste generated exceeding their capacity both technical and financial to collect and dispose off. The study highlighted the existing legal and policy framework gaps, an estimation of the amount and nature of solid waste generated, the different management arrangements adopted by the city authorities and the local community, major challenges in management, economic gains of solid waste and finally suggests short and long term recommendations for proper management of solid waste in Kampala.

Background

Uganda is facing rapid urbanization of 5.1% per annum, leading to overcrowding and the development of slums and informal settlements with poor waste management practices¹. Urban dwellers generally consume more resources than rural dwellers, and so generate large quantities of solid waste and sewage². Waste management in these areas is hampered by multiple land tenure system with many tenants not having a right to the land and therefore not able to manage waste domestically and also the urban authorities are overwhelmed by the sheer volumes of garbage generated³.

Kampala Capital City Authority (KCCA) acknowledges that the amount of Solid waste generated overwhelms its capacity to collect and dispose given its enormous collection costs⁴. Out of 1,200–1,500 tones of garbage generated per day, only 400-500 tones are collected giving a collection efficiency of only 40%. This implies that 60% of Solid waste generated daily is not properly collected and disposed which has resulted into indiscriminate disposal by the public⁴.

WaterAid in partnership with NWSC and Community Integrated Development Initiatives (CIDI) and funded by WSUP under took a study to understand the current state of urban solid waste management practices in Kampala slums, provide information for objective decision making in selecting the mode of interventions, promote waste management or use as a source of income and identifying the potential of establishing a plastic waste collection centre.

¹ MoWE Joint Sector Review Report 2010

² Environmental Resource Limited (ERL), Solid Waste Disposal–Kampala final report, 2009

³ United Nations Human Settlements Programme (UN-habitat), Situation analysis of informal settlements in Kampala: Kivulu (Kagugube) and Kinawataka (Mbuya 1) Parishes, 2010.

⁴ Republic of Uganda, Office of the auditor general, Value for money audit report on solid waste management in Kampala city council, 2010

Poor solid waste is one of the greatest challenges facing urban authorities in Uganda today.

At the speed of 5.1% per annum, Uganda is rapidly urbanizing leading to overcrowding and development of informal settlements with poor waste management practice.

Waste management in slums is hampered by multiple land tenure system with many tenants not having a right to the land and therefore not able to manage waste domestically

In Kampala, out of 1,200–1,500 tones of garbage generated per day, only 400-500 tones are collected giving a collection efficiency of only 40% settlements due to unavailability of waste collection services.

Methods:

The study adopted a combination of qualitative and quantitative designs to get deeper understanding of underlying issues of solid waste management in Bwaise II urban informal settlements. Participants were selected purposively due to their essential knowledge and randomly to estimate the garbage amount generated in the area. Data was transcribed, edited, summarized and analyzed according to the objectives and variables set out in the Terms of Reference. The information was presented in chapters reflecting the key objectives of the study both in narrative, graphical and pictorial forms. The study scope was limited to household and commercial enterprises garbage generated in Bwaise II Parish, Kawempe Division with special emphasis on the Solid waste management cycle from collection to ultimate disposal.

The purpose was understand solid waste management arrangements, challenges, economic value and potentials of establishing a waste collection plant

A combination of qualitative and quantitative approaches was adopted to get deeper understanding of underlying issues of solid waste management.

Participants were selected purposively and randomly to estimate the garbage amount generated in the area.

These legal and policy frameworks are limited by either weak punitive measures or lack of enforcement for proper solid waste management

1 STUDY FINDINGS:

1.1 Overview of the Policy and legal frame work relating to solid waste management

The Public Health Act, Cap.281, KCC Solid Waste Management Ordinance (SWMO), 2000, Solid Waste Management Strategy (SWMS), December, 2002, as revised in (2006), Local Governments Act (1997) revised in 2004, The Constitution of Uganda 1995 (amended 2005) and The National Environment (Waste Management) Regulations, S.I. No 52/1999 provides some guidance for solid waste management in Uganda and Kampala in particular although with some limitations relating to enforcement and sanctions there in. For example SWM ordinance doesn't provide a mechanism of collecting solid waste generation fees, the National Environment regulations and the Public health act have been challenged with weak punitive measures and lack of staff to enforce.

On average every person in Kampala generates 1.284-kg of solid waste per day with the rich generating more but more accumulation among the poor.

1.2 Estimation and Nature of the solid waste generated in Bwaise II

Bwaise II generates an estimated 31.423 tones of garbage daily with a composition Biodegradable (76%), Plastics (4%), Metal (3%), Polythene (8%) and others (9%). The average per capita solid waste generation rate is 1.284-kg/per person/per day with a high organic content and bulky density. However there were varying solid waste per capita generation rates depending on income levels with high-income households generating more than low income households but accumulation was higher in low income areas compared to high income settlements due to unavailability of waste collection services.

1.3 Status and Nature of Solid waste management approaches

Solid waste management approaches employed included, waste reduction, dumping, recycling and reuse, composting and incineration /burning. However, recycling and garbage reuse of inorganic materials from solid waste was not well developed by the informal sector and such activities were seldom not recognized, supported, or promoted by the Kawempe urban authority as one of the approaches to support garbage management in the area despite having the advantage of: reducing costs of the disposal facilities, prolonging the site span, and also reducing the environmental impact of disposal sites as the organics are largely to blame for the polluting leache and methane problems.

Recycling and garbage reuse of inorganic materials is not well developed by informal sector and such activities were seldom unrecognized, supported, or promoted by the urban authority as one of the approaches to garbage management

1.4 Implementation of service delivery obligations and strategies employed

1.4.1 Planning for solid waste

The roles and responsibilities of solid waste management lies in the office of the Executive Director and the Town Clerks who are the Principle Accounting Officer at KCCA and the Municipalities for the day today activities among which is solid waste management, the Solid Waste Engineer responsible for the collection, transportation and disposal of solid waste, the Health Inspector responsible for maintaining the division in a healthy environment free from garbage which is one of the public health hazards, the Finance Officer responsible for executing the logistics for solid waste management in the division.

The Executive Director KCCA, Municipal Town Clerks, Solid Waste Engineer, Finance Officer and Health Inspectors are responsible for the collection, transportation and disposal of solid waste in the city.

1.4.2 Collection arrangements

Section IV (2) of the Kampala City Council (Solid Waste Management) Ordinance 2000 places the responsibility of collection of solid waste in the hands of Council in this case the KCCA and municipalities, either by its agents, servants or licensed collectors to ensure that solid waste is collected and conveyed to treatment installations (sites/centers) or approved disposal sites to the extent required to satisfy both public health and environmental conservation requirements. However the division is constrained to meet this role due to both financial such as limited financing for the solid waste and technical challenges such as limited man power and equipment for solid waste management leading to waste accumulation in the parish.

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1.4.3 Frequency of collection

Section IV (7) of the KSWMO (2000) stipulates that the frequency of collection of solid waste shall be in accordance with the regulations of the collection agency but shall be regular enough (at least once a week) not to cause a public health nuisance. The study however found that prescribed frequency of collection of solid waste was only maintained in very few places (road sides) due to both logistical challenges like trucks, man power and fuel which make them overwhelmed by the amount solid waste generated.

Collection is only in a few places and irregular which have lead to accumulation of waste in many parts of the city.

1.4.4 Collection fees

The Authority and municipalities are empowered to prescribe fees for the collection and final disposal of solid waste by the council under section IV (4) of SWM ordinance of 2000. However findings from the study show that the Council did not provide guidelines on the amount of fees to be collected for which quantity of solid waste generated.

Councils did not provide guidelines on the amount of fees to be charged for which quantity of solid waste collected.

Respondents reported that the amount of fees charged was at the discretion of the private waste collectors depending on the amount and no receipts in most cases are issued. Generally the licensed private collectors charged between 1,000 shillings to 3,000 shillings which is quite exorbitant for the urban poor while the illegal collectors charged very low fees (between 200 shillings to 1.000 shillings) for collection and they eventually dumped solid waste indiscriminately.

Collection fees are at the discretion of the private waste collectors and in most cases not receipted

1.4.5 Solid waste disposal

All solid waste collected by the authorities dumped at the gazetted landfill at Kitezi plus some of that is collected by the private collectors. However much of the solid waste collected by the illegal and unlicensed collectors and some poor informal households is disposed in ungazetted places like the roadsides, illegally constituted dumpsites and the drainage channels due to the costs involved in waste management.

Gazetted final dumping is at landfill at Kitezi plus. However much of the solid waste collected by the illegal and unlicensed collectors and poor informal households dump their garbage in ungazetted places like the roadsides, illegally constituted dumpsites and the drainage channels

It was also reported that Kiteezi is located about 14 kilometers from Kampala and for each truck that dumps solid waste is charged 10,000/= Ugandan shillings per trip. This cost in addition to the surging fuel costs, the private collectors are some times forced to dump in areas where KCCA can then collect the waste for final destination which contravenes the management arrangement.

1.4.6 Transportation of solid waste

In total Kawempe municipality had six (6) box body trucks and five (5) tipper trucks to transport solid waste in the whole division. However by the time of the study only three (03) box body trucks which are specifically designed for solid waste transportation were operational and none of the tippers though not appropriate in transportation of garbage was operational due to mechanical problems.

Only 3 out of 11 trucks designated for waste transportation were operational which brought the solid waste collection efficiency to only 30%

This means with an average of 31 tones of solid waste generated in Bwaise II Parish, the council would need at least one (1) truck to effectively collect, dispose and transport solid waste BUT only three trucks are available for the whole division of 22 parishes which brings the efficiency of the council to only around 30%. In addition a few of the private collectors (registered or illegal) had prescribed transport mechanisms of transportation of solid waste where majority of them were using open trucks, bicycles and others carried solid waste on wheel barrows. These transportation mechanisms contravene the ordinance on which solid waste management is undertaken in the area.

Majority of private collectors used unauthorized transportation means such as wheel borrows, open trucks, bicycles and on heads.

1.5 Community awareness about solid waste

The Solid Waste Management Strategy (SWMS) of 2006 Para.7, members of the public are supposed to be educated in matters of waste management such as; sorting/separation of waste according to their categories of organic and inorganic, efficient use of skips, waste recycling, home composting, waste minimization and adherence to waste management laws.

The work of community sensitization and awareness on proper solid waste management was left entirely to NGOs whose capacity to intervene is limited to a few areas

It was observed in some community places that an effort towards sensitization and awareness of the local community about solid waste management was under taken in Bwaise II parish. Others included Community integrated development initiatives (CIDI) for establishment of community solid waste management structures, Plan Uganda and AMREF who have been supporting community awareness campaigns and capacity building initiatives.

1.6 Income generation opportunities

In Bwaise II together with the support provided by NGOS such as SWAS in collaboration with WaterAid Uganda, a number of income generating activity initiatives were being practiced by the local community on a small scale while others were solely individual efforts without any kind of support. Among them included making of bri-

Income generation activities such as making of briquettes from waste, art and craft, artisan and metal

quettes from waste, art and craft, artisan and metal works, collection and transportation of solid waste and lastly waste picking and collection.

These findings suggest that there is a great potential which is untapped in Bwaise II regarding solid waste as an income generating venture. However there is need to support the local community with both capacity building in business management, working capital, marketing for their products and the division authorities also need to recognize these ventures as not only business opportunities for the local people but also as a waste reduction strategy to get rid of solid waste in the community

works, collection and transportation of solid waste were undertaken by the local community. However these initiatives were not recognized and supported by the urban authorities as a waste management approach.

1.7 Challenges and constraints of garbage management:

1.7.1 Institutional challenges: Limited capacity of the council to handle solid waste

This requirement needs Kawempe Division to at least have on average 22- ten (10) tonnage Lorries disregarding the private sector contribution to be able to collect and transport garbage from the whole municipality to achieve 100% performance, on the assumption that each vehicle makes 3 trips per day. However, we noted that the division operated on an average of 5-five tonnage Lorries which was 30% of the fleet required to enable prompt waste collections and disposal in the division and Bwaise II parish. This was due to poor maintenance and operation of the trucks that have lead to many of the allocated trucks to be grounded.

The division operates on an average of 5-five tonnage trucks which is only 30% of the fleet required to enable prompt waste collections and disposal

On average the division needed over 250 workers to efficiently collect, enforce, supervise and dispose off solid waste but only 64 staff was available

The study also acknowledged that the department of solid waste was understaffed. On average according to the Acting Solid Waste Engineer, the division needed over 250 workers to efficiently collect, enforce, supervise and dispose off solid waste but only 64 staff was available by the time of the study and this number was also shared with other divisions some of which were temporary staff.

This limited capacity to manage solid waste has resulted into many people using unconventional methods of disposal which include pits within the backyards where it is regularly burnt, collect them in polythene bags and dumping them in streams, road sides and water drainage channels which leads to blocking of water drainage channels and streams and subsequently causing flooding in the low lying areas during the rainy season unpleasant odors

1.7.2 Infrastructural challenges

Collection and transportation operations from informal settlements like Bwaise II especially in Nabukalu, Jambula, Katale and Nakamiro zones constitute the largest infrastructural challenge in solid waste management. Many informal settlements are not easily reached by both the division and the private collectors due to the poor road network. Also the landlords have not been sensitized on the need to manage solid waste and have from time and again put up structures without solid waste management disposal sites due to limited land. This has therefore led to several unofficial dumping sites in and around the area mostly located in wetlands, abandoned building and the road sides.

Waste management in these areas is hampered by multiple land tenure system with many tenants not having a right to the land and therefore not able to manage waste domestically and also the urban authorities and private collectors are unable to access them with trucks

1.7.3 Social economic challenges

KCC embarked on a policy reform to revise the solid waste management ordinances. In 2006 the private sector got involved in collection and transportation of wastes to the landfill³. In the initial stages of implementation, KCC subsidized for residents of low income settlements to allow payment of 500/= per emptying for a household based on door-to-door services. To date however, private operators are charging a fee between 500 and 3,000/= depending on the amount of solid waste generated per trip which fee is too high for the urban poor residents.

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Another major problem in waste management is the absence of the culture of sorting waste, by type at generation points in this case households, commercial centers and institutions. This result in mixing of biodegradable wastes with plastics and other environmental contaminant materials, which are all later, disposed of in the same land fill. The public has not taken positive steps in solid waste management practices like source reduction, re-using, recycling or properly disposing of the portion that cannot be reclaimed. Instead the public has for the most part maintained an “I don’t care” attitude of generating as much garbage as possible unconscious of the implications.

The absence of the culture of sorting waste, by type at generation points and I don’t care attitude is aggravating the problem. This is also attributed to low awareness and sensitization of the community.

1.7.4 Legal challenges

The SWMO (2000) depicts a scenario where the polluter transfers the burden of disposal to the municipality. Thus any additional effort to manage wastes would be transferred to the city authority leading to unscrupulous dumping, civic outcry for services and sometimes nonpayment of municipal dues.

These legal and policy frameworks are limited by weak punitive measures and lack of capacity by the authorities to enforce their observance.

Coupled with the above, the council lacks the ability to enforce the

provisions of the ordinance and in some instances the penalty of the offences related to solid waste is too weak to deter any body willing to commit the offence. The continued lack of a deliberate policy to include environmental education both in the school curriculum and outside the formal education system; has made solid waste (garbage) to stand out as one of the greatest challenge in the division which requires urgent attention.

2 PROPOSED STRATEGIES/ RECOMMENDATIONS FOR EFFECTIVE SOLID WASTE MANAGEMENT IN KAMPALA

2.1 Under take community clean up exercises:

The solid waste study has established that on average the parish generates about 31 tones of solid waste daily and the division's effectiveness can only collect and disposes of only 30% of this waste leading to heavy accumulation of solid waste in the area. It is therefore commended that the local leadership in partnership with civil society undertake community cleanup exercises to reduce on the amount of solid waste accumulated in the area. This can be done on monthly basis where a day can be set aside with the division providing transport and the community to load and clean up the illegally established dumpsites in the area.

Undertake monthly community clean up exercises in collaboration with CSOs and other development partners

2.2 Undertake community sensitization and awareness campaigns:

The community of Bwaise II was found to have an "I don't care attitude" and limited knowledge about solid waste management which have lead to huge accumulation of solid waste in the area.

Undertake community sensitization campaigns through community meetings, radio and TV programmes and production of IEC materials

The division which is also responsible for filing this gap was also limited in capacity to under take these roles. Hence in order to immediately reduce the amount of solid waste and improve on solid waste management practices, there is need to under take community sensitization and capacity building on proper solid waste management. This can be done through radio programmes, development and distribution of IEC materials and also undertaking community sensitization meetings about solid waste management in the area by both KCCA and non governmental organizations.

2.3 Undertake solid waste reuse mechanisms

Kampala informal settlements have a number of informal solid waste reuse initiatives, which keep a large variety of solid waste

For such an initiative to be effective, there

materials in circulation other than final disposal. The Bwaise II informal community like any other informal settlement in Kampala demonstrates a genuine commitment to gaining the maximum life from all materials through active solid waste reuse mechanisms.

Collection of metal scrap in form of aluminum, steel and plastics including PET bottles for sale to the recycling companies like Steel and Tube Industries, Roofings Uganda Limited for metal scrap and Nice house of plastics, poly fibers and Crest tanks for plastic materials while others sold to artisans to make finished products like students suitcases, charcoal stoves, metal works to mention but a few. Drinking straws for art and crafts, Banana peelings for animal feeds and briquettes provide another classical example of solid waste re-use initiative.

Notable among the local community are small scale initiatives to reuse solid waste into valuable items for another use. Hence generally reducing the amount of waste generated in the community. However majority of which lack market from within the community though feasible due to the available of raw materials in form of garbage, and the high level of unemployed majority of the community can actively engage in such activities. Important to note also is that these reuse mechanisms weren't acknowledged and supported by the city authority as a solid waste reduction and management option.

2.4 Waste Avoidance

Generally in Bwaise II, there is no sound level of awareness about the need to avoid generating unnecessary solid waste. This lack of awareness always lead to unnecessary waste creation and generation, as there are often limited choices of recyclable packaging at local retail and wholesale outlets.

Most times the actual operation of the business (shops and kiosks) was observed crating unnecessary waste due to the way they conducted their business. A case in point was the generation of plastic water bottles and polythene bags which were among the highest amount of garbage generated in the area and founds its way in the drainage channels. The practice was observed that the consumers deposited the Kavera and the plastic bottles indiscriminately after use which leads to waste generation. Often this is symptomatic of failing to incorporate waste avoidance principles into production planning processes through a lack of in-house expertise or a commitment to waste avoidance principles.

is need to: a) Recognize the initiative as a formal waste reduction strategy by the City Authority, b) Organize the local community into groups based on enterprise (scrap, plastics, art and craft), c) Build the capacity of the community (in value addition, collection of sold waste and business skill), d) Support the community with working capital to collect and purchase the waste in bulk and e) Provide market information and linkages where such collected materials and finished products can be sold for money.

There is no sound level of awareness about the need to avoid generating unnecessary solid waste. This lack of awareness always leads to unnecessary waste creation and generation.

As practical example of waste avoidance to reduce the amount of plastic bottles and Kavera dumped indiscriminately is to introduce a deposit service fee in order to reduce the amount of plastic bottles and Kavera dumped. Practically the business owners/producers would be encouraged to integrate a deposit fee on the container. I.e. sale of juice, water and other merchandise is done and packed in returnable cups/bags where a fee as an incentive is placed on returning the cup/bag to the seller. This can be done in such a way that these cups/bags can be returned any time and anywhere for a full refund, ensuring a service of maximum convenience to users. This can greatly reduce the amount of solid waste generated most especially from business enterprises.

2.5 Levying and collection solid waste fees on solid waste generators

According section II (1) of the SWM Ordinance of 2000, every owner or occupant of dwelling or commercial premises is responsible for waste generated at those premises until it is collected by council, its appointed agents or operator licensed by the council. The same ordinance under Section IV(4) empowers the council to levy, collect fees for the collection and final disposal of solid waste to be payable by the person generating the waste at a specific period in line with the collection, storage and disposal.

Information from this study shows the willingness of the local community both in very informal settlement and a more affluent section to pay for solid waste generated. Another compelling fact about solid waste management is the inefficiency of the division to manage solid waste due to financial challenges arising from limited financial support and collection from the local people to pay for their garbage. True also is the fact that the private collectors don't remit any money to the council yet this being a business venture. Landlords of most informal settlement houses also don't provide for solid waste management facilities for their tenants.

This study however proposes a new fee collection arrangement where, through the council, a levy similar to local service tax⁵ to be levied and collected by the Landlord as part of their monthly rental fees and remitted to the council for garbage collection. This levy will save the council three important challenges a) lack of sufficient resources to collect, transport and dispose off solid from the informal settlements b) the council will effectively collect the levy from Landlords who don't provide for solid waste management and c) when the fee is used to sub-contract local private collectors to

⁵ Tax levied on hotel room occupants per night.

Waste avoidance is an example of a "polluter pays principle" where a fee is introduced to all generated waste to enforce collection of the waste generated.

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Information from this study shows the willingness of the local community both in very informal settlement and a more affluent section to pay for solid waste generated.

A new fee is introduced through parliament levied and collected by the Landlord as part of their monthly rental fees and remitted to the councils for garbage collection.

collect solid waste where council can not reach, the council will be able to tax the private collectors for the service.

Another alternative collection arrangement is through the local councils at village or zonal level to collect this fee on behalf of the council due to their knowledge of the local community landlords which information council tax collectors may not have. This arrangement will also empower local communities to hold the council accountable for the uncollected solid waste from their dwellings.

Practically, owing to the fact that each resident has to pay rent and generates solid waste, all generators of solid waste will be able to pay for their solid waste and this money will be used to collect, transport and dispose off waste through public private arrangements where council can not effectively cover all areas. However special attention should be put to a) the amount of levied depending on the amount of solid waste generated, b) community sensitization about this levy and solid waste responsibilities, and c) accountability for the levy collected.

Alternatively collection is done through the local councils at village on behalf of the councils due to their knowledge of the local community landlords which information council tax collectors may not have.

Since each resident pays rent and generates solid waste, all generators of solid waste will be able to pay for their solid waste and this money will be used to collect, transport and dispose off waste through public private arrangements where council can not effectively cover all areas

3 CONCLUSIONS AND REFERENCES:

3.1 Conclusions

- The collection, transportation and disposal of solid waste in Kampala are the responsibility of KCCA, Municipalities and its agents or appointed private collectors.
- The responsible person at any dwelling unit (home), industrial or institutional establishment (premises) or ground within the corporate limits (center) of the city where solid waste is generated and accumulates is responsible for the solid waste until it is collected by the council.
- The per capita solid waste generation per person is 1.28Kg per day and is a function of income levels with high-income households generating more wastes than low income households but accumulation is higher in low income areas compared to high income settlements.
- Great potential exists income generation which is untapped regarding solid waste as art and craft, briquette making, artisan and metal works, garbage transportation and waste picking.
- Recycling and garbage reuse of inorganic materials from solid waste though not well developed. Such activities are seldom unrecognized, supported, or promoted by urban authorities as approaches to support SWM in the area despite having the advantage of: reducing costs of the disposal facilities, prolonging the site span, and also reducing the environmental impact of disposal sites.

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Or access the full report on the following link:

http://www.wateraid.org/documents/plugin_documents/final_solid_waste_management_study_report_and_operational_p.pdf