

*Full Length Research Paper*

# From dependency to Interdependencies: The emergence of a socially rooted but commercial waste sector in Kampala City, Uganda

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Urban waste has traditionally remained for municipal councils to manage in several sub-Saharan cities such as Kampala. However, due to noticeable inefficiencies at municipal level, there is a manifest of low-income groups that take the initiative to extract and add value to materials from the waste stream, although higher-income groups are engaged in similar activities. This signifies the gradual shift from dependency on municipal councils to neighborhood interdependencies in the management of urban waste. To gain an in-depth understanding of this shift, we conducted purposive observations and twelve (12) focused-group interviews amongst selected respondents, in the neighborhood of Kasubi-Kawaala, Makerere II and Bwaise III parishes, located in the north western part of Kampala. The key finding was that waste-user roles, preferences, and the preceding generation and extraction processes are socially rooted in neighborhood cultural-orientations, and the underlying social mobility and commercial drivers. From the study, three (3) types of low-income commercial waste vendors were identified including, regular waste vendors, wholesale waste dealers, and home to home waste dealers. Unfortunately, these low-income waste vendors still have the least opportunity to negotiate with municipal authorities on scaling-up their commercial activities for a greater social impact.

**Key words:** Wastes, social rootedness, neighborhoods, commercial waste, Kampala City.

## INTRODUCTION

The value attached to urban waste has continued to change with variations in social and spatial characteristics of different neighborhoods. To emphasize this view, Williams (2005) argued that the definition of waste can be very subjective; what represents waste to one person may represent a valuable resource to another. In addition, Muller (1998) argued that, 'what look like 'junk' to women may be motorcycle parts to men; what looks like 'dirt' to men may be compost or fertilizer to women'. These conclusions reinforce our main argument that waste-user roles, preferences, and the preceding generation and extraction processes are socially rooted in neighborhood cultural-orientations, and the underlying social mobility and commercial drivers.

However, municipal interventions in sub-Saharan Africa are still tilted towards publicity of the health risks associated with discarded materials, without strong emphasis on how low-income as compared to higher-income groups are gradually translating waste materials into commercial products at neighborhood scale. For this reason, the paper attests to the socially rooted but commercial activities of low-income waste vendors based on a qualitative study undertaken in the north western part of Kampala, Uganda's capital and largest city.

## MATERIALS AND METHODS

The findings presented in this paper were generated through a qualitative study of low-income waste vendors in Kasubi-Kawaala, Makerere II and Bwaise III parishes, located in the north western part of Kampala. This area was purposively selected basing on its socio-economic conditions. The area is one of the low-lying, flood-prone and poverty-stricken areas, characterized by poor

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environmental conditions and lack of supportive infrastructure. The coping options of low-income earners in this neighborhood frequently involve waste re-use and recycling activities that are visible but not well documented at municipal level. A total of seventy two (72) respondents in the study area were selected using purposive non-probability sampling. This sampling technique was applied because many of the waste vendors in this neighborhood had to be contacted from their market places, at home and from urban traffic. The method for data collection was twelve (12) focused-group discussions, comprising of six (6) respondents in each group, using a check-list of questions pertaining to: Roles in the management of waste, commercial activities, the drivers and constraints faced by the waste vendors. Data was processed and analyzed using themes and sub-themes that were derived from the objectives of the study. The main challenge met during these field activities was that not all the six (6) respondents in each of the 12 groups interviewed were waste vendors. However, all the respondents were drawn from the same study area and their experiences were either based on observations or actual participation in commercial waste activities.

## RESULTS

### The social rootedness of the waste sector

Here, we present findings that pertain to the social rootedness of waste activities amongst low-income neighborhoods in Kampala. The main accounts for such social rootedness include: (1) The levels and drivers of social mobility amongst individuals and groups who generate the wastes, and (2) The socially determined preferences and roles in the extraction of wastes.

### The levels and drivers of social mobility in the generation of wastes

According to the study, the levels of social mobility in the generation of waste materials mainly include: Familial residential houses, tenancy at neighborhood level, kiosks, retail shops, local restaurants, markets, schools, and churches. The main social mobility drivers that underlie these different levels include: Commuting to neighboring parishes for business, visitation of friends or relatives to strengthen social ties, usage of public transit routes and taxis to access the bordering towns and districts, and the search for seasonal trade opportunities especially on weekly high-traffic market days (Wednesdays and Saturdays). To exemplify how these drivers and levels of social mobility shape the process of generating wastes, the following responses are presented:

“.....some families have so many visitors coming from the villages and stay around for a very long time yet their latrines are not enough for all the members in the household.....during the rainy season their excreta is released to the drainages which worsens the problem especially in Bwaise

area....other outsiders do not have toilets so they bring their excreta in Kaveera and throw it on the road side...some outsiders also use the labor of migrants to ferry the waste into our community during the night because they do not want to pay service charges to Kampala City Council and private collectors....”

A respondent explained during a focus group discussion in Kasubi-Kawaala

“.....I wake up every day at 6.00 am to prepare my children for school, cook for them and clean around the house..... before I go to Kasubi Market, I have to make sure that all the rubbish is collected and thrown in the rubbish pit behind our house for drying.....at the end of the week, I always burn the dried rubbish because I do not see why I should be charged money for rubbish that I can deal with in my own home.....”

Another respondent argued in Bwaise III.

These findings indicate that individual and communal variations in social mobility levels and drivers determine the processes through which wastes are generated. In this sense, the main types of waste generated include both organic and inorganic wastes, and may be similar or dissimilar at each social mobility level, as shown in Table 1.

Table 1 manifests that within the neighborhood; generators of waste are socially mobile basing on residential status or occupation. This means that it is helpful to get information on social mobility indicators from the community, if municipal waste management interventions are to gain a greater social impact.

### The socially determined preferences and roles in the extraction of wastes

To further illustrate the social rootedness of the waste sector, findings from the study indicated that wastes in this neighborhood are largely extracted based on user-preferences. To reinforce this point, the following responses were documented:

“.....in our community wastes includes, polythene bags, banana peelings, paper, food stuffs, plastic bottles and tins..... But some of these are discarded or sorted and used by other people..... for example banana peelings are extracted by Kasubi market vendors, plastic bottles are recovered in restaurants and taken to shops to pack juice and water that is sold at a cheaper price for most people in our community.....paper is extracted by non-residents who use it to make trays for eggs, and some of

**Table 1.** Types of wastes generated at different social mobility levels.

Social mobility level	Type of waste generated	
	Organic	Inorganic
Familial residential houses/ tenancy at neighborhood level	Food stuffs, dirty water, human excreta, banana peelings, banana leaves	Plastic bottles, tins, polythene bags
Commuters	human excreta, banana stems	Used news papers, paper bags, polythene bags, plastic bottles, tins
Passengers in taxis	None	Plastic bottles, paper bags, polythene bags
Market vendors	banana stems, banana leaves	Polythene bags, used boxes,
Restaurants	Dirty water, human excreta, and waste foods.	mineral water bottles, paper bags,

Source: Findings from the Study Area, February (2008).

those trays are exported to Nairobi in Kenya.....polythene bags are taken to a recycling plant in Luzira.....tins are cleaned and exported to China to make shoe soles.....”

One male respondent explained during the focus group discussions.

.....in our community, polythene bags are the biggest problem because they are littered all over the market.....in the market, I sell banana peelings but if kept for two days I cannot sell the peelings to my customers so I pack them in a sack to be taken away by Kampala City Council with other wastes.....unwanted foods from restaurants in this market are fetched by people who rear pigs at no cost.... the dry grass that covers Irish-potato sacks is taken away by brick layers to cover the bricks still at no cost.....

Another respondent explained in Kasubi Market.

These responses reveal that the practices of extracting and reusing wastes are the concrete social expressions and indicators of what should be considered valuable or non-valuable waste materials.

With regard to socially determined roles, the findings revealed that extraction and waste re-use processes are regulated by the socially constructed roles of women as compared to men. The distribution of such gender roles is premised on socially-shared expectations of gender-appropriate behavior, as evidenced by the responses gathered:

“.....it is women who cook and clean the house....the items we use are packed in polythene bags, boxes or paper bags that can be kept for future use or thrown away.....and after cooking we have to collect and put the banana leaves, ash and

dirty water in the dust bin to make sure that your kitchen is clean because as women the kitchen is our office so it our role to ensure that it is clean.....you cannot cook in a place that is dirty because your food can get contaminated which may harm the family members, and taking them to the health center is very expensive....”

One female respondent reasoned in Kasubi-Kawaala.

Based on the responses given, women handle the discarded materials from other household members: It is part of the definition of who they are in society and what they are ‘supposed’ to do. Therefore women’s socially-defined roles inside the household and the socially constructed notions of cleanliness, partly explains their presence in the extraction of urban waste and the motivation underlying it.

Conversely, men’s traditional gender role of providing in the family and surviving in the city as well, has partly accelerated their participation in the extraction of waste materials.

According to the respondents in Kasubi market, everybody selling in the market pays a monthly charge to the market director (a male) who is responsible for organizing and paying a group of people; usually male youth commuters and residents to extract the waste from each stall in the market; pack it in the sacks; and take it to the immediate collection center; where Kampala City Council (KCC) trucks load it using male labor; and take it to the dumping site in Kitezi, Wakiso District. Female respondents further acknowledged that ever since the process of extracting wastes in the market became commercial, it has attracted a lot of men, especially commuters from other neighboring parishes like Namungona and Nansana. Respondents further argued that most of the people who collect waste on behalf of private companies such as TESKO are males from outside the community. The responses below also continue to reinforce these points:

“.....I rent in Bwaise but I do most of my work in Kasubi Marke t.....I collect waste on behalf of the people and I receive a salary from the Director because I have to sort the waste....pack it in the sacks.....and tell him to call the KCC people when the waste is ready for collection.....this is how I have been earning for two years now....”

A male respondent explained in Kasubi Market.

“....you know cats and dogs have been tearing the sacks where people put the waste, even community members who deal in charcoal, steal the sacks at night.....so I have invented these solid waste stands.....I will take them to the households, I have already identified and each household will pay 500 shillings each time I collect the waste.....this will bring in income for my family and my organization....”

A male respondent anticipated.

The main observation from the above findings, in terms of gender analysis, is that inside the household women do not get paid for organizing the collection of wastes. Outside the household, men are attracted to handle waste when there is pay for it, or when it is specific to their traditional gender role of managing community-based services. This further reflects how social constructs underlies the unfair distribution of gender roles in paid and unpaid waste extraction activities.

Furthermore, women as compared to men differ in their priorities with regard to extraction-related expenditure. The study found out that men on one hand prefer using formal services and women on the other hand prefer informal waste extraction services. According to male respondents, money to pay formal waste collectors is usually left at home with the spouses before going to work; but the spouses do not often use the money for the intended purpose. Women instead use the money for other household needs such as buying food supplements, buying water for home use, soap, sugar, and others save the money for future use. Female respondents said that women need to save part of the money to purchase other household items and this is why women prefer using children and male youth in the community to collect the waste at a cheaper price. Yet, the responses given by men revealed that such informal waste collection services rely on illegal waste dumps such as drainages, market places and road sides for disposal.

These findings manifest a gender divide in the utilization of formal and informal services. Underling this gender divide is the notion of a waste-free neighborhood, common to both women and men but the differing gendered user-preferences are closely tied to priorities in terms of household expenditure. Therefore it is important

to give adequate attention to gender disparities in household budgets and priorities when constituting a service-charge for waste extraction- as this can deter the effectiveness of municipal support services.

### **The commercial activities of low-income waste vendors**

Commercial activities, according to the study, involve recovering re-usable and recyclable items from the waste stream and trading them for a price at different market places. Some of the commercialized waste materials include polythene bags for growing mushrooms; banana-cassava-sweet potato peelings and cow dung for compost; plastic bottles for packing juice and drinking water; used paper for making tray eggs; tins and mineral water bottles for making shoe soles; and charcoal dust.

Unlike other products that are subject to the prevailing forces of demand and supply in urban informal economies, these reusable and recyclable materials are frequently unclaimed- lying free on the streets, in restaurants and homes. As such, a number of low-income community groups are interdependently involved in the commoditization of waste materials, as presented in Table 2.

From Table 2, it is shown that commodity-based waste activities not only involve trading recyclable materials, but also the exploitation of natural resources. For example brick-laying according to the respondents involves the extraction of clay and water from wet lands in the community. Regarding the pricing of reusable and recyclable products, the respondents from Kasubi market and community groups noted that the price of reusable or recyclable materials is usually paid per Kilo; although it keeps on fluctuating because of the changes in production costs and the desire to dispose non-valuable waste. For instance, respondents from Agali Awamu Poultry Project noted that an increase in the prices of farm inputs such as maize bran and silver fish forced them to increase the price of chicken litter so as to earn incomes for poultry feeds and veterinary services. Formerly, the price of maize bran was USD 0.3125 per kilogram but then it drastically rose to USD 0.9375. These changes according to the respondents, forced a kilogram of chicken litter to rise from USD 0.3125 to 0.4735. In another case, banana peelings that have been kept for two days fetch no income and yet according to the seller in Kasubi market, costs on transport and sacks for packaging are incurred. These findings imply that the price of waste commodities in Kampala is based entirely on the value of the material or the cost of marketing the item –that is, its commodity value.

Still on the issue of organic recycling, banana peelings are mixed with charcoal dust and aunt hill soil to make charcoal briquettes. A 10 L container of briquettes is sold at USD 0.625. From the responses given, women inside

**Table 2. Low-income groups involved in commoditizing waste materials.**

Organization	Activities	Products	Market
CLEDC	Collection of plastics and banana peelings for sale, making of briquettes	Charcoal, briquettes, animal feeds	Kasubi and Namungona
KISENSU	Brick making, drawing sand from Kiwunya drainage channel	Bricks, sand	Bwaise community
KALOCODE	Making charcoal, briquettes, crafts	Charcoal, briquettes, crafts	Kasubi and KACODA
KACODA	Making charcoal, briquettes, compost	Charcoal, briquettes, compost	Kasubi, Kampala
MYC	Poultry and banana planting	Compost, chicken litter	Makerere II
MAWUDA	Poultry, mushroom growing	Chicken litter, lint	Makerere II and Wandegeya
Aggali Awamu	Poultry	Chicken litter	Makerere II and Bwaise

Source: Findings from the Field, February (2008).

the households usually buy or make the briquettes for cooking, which reduces on energy scarcity and the high cost of charcoal made from trees. To reinforce this point, respondents argued that households spend less money on cooking energy using briquettes (a socially ascribed role for women and girls in the economy of care) by 25 to 100% as compared to ordinary charcoal. Female respondents also said that briquette-making has created social and information networks for recycling wastes and cleaning the environment. These observations manifest the subsidies from the economy of care to the market economy, whereby women provide labor and time as valuable scarce economic inputs into energy provision.

At Kasubi Community Development Association (KACODA) Demonstration Center, it was observed that 10 kg of saw dust are mixed with 4 bottles of mushroom seeds together with 20 L of water and rice husks, stirred, cooked and then left to decompose for 6 months so as to have fertilizers. The resultant volume of fertilizers according to the respondent, can enable the farmer establish 60 mushroom gardens of 4\*4 m<sup>2</sup> that can fetch a daily income of USD 5. The respondent noted that this innovation is a technological transfer from India, and the yields from this kind of technology provide curative medicines for heart disease. This provides an insight on how the waste management economy can contribute to the health sector for economic development and growth.

Regarding inorganic value-addition, it was observed that individuals in groups such as KACODA and Kasubi Local Development Association (KALOCODE) are using polythene and drinking straws to make hand bags and baskets. News paper and bags are also re-used to make trays for eggs. The price of hand bags and baskets depends on the size. Small hand bags are sold at USD 3.125, medium at USD 9.375 and the big ones range between USD 12.5 and 15.625. If these socially-

anchored innovations are up-scaled through economic incentives from the local and central government, household incomes would rise by a significant factor and also contribute to urban economic growth in sub-Saharan Africa.

When asked whether community groups keep financial records concerning their business transactions in wastes, the respondents had this to say:

“.....some groups such as KACODA, KALOCODE and Makerere Women in Development Association (MAWIDA) have computers and files where they keep records of their business transactions...but most groups do not have the equipment or personnel to keep such records....”

The implication here is that: (1) Information communication technologies (computers) have a positive effect on low-income waste enterprises in terms of keeping financial records; (2) There are economic disparities amongst the groups involved in commoditizing waste materials. Whereas some have the personnel and equipment to assess their recurrent costs, expenditure and profits, others are not able to do so. This in structural socio-economic terms relegates their livelihood activities to the informal sector.

It must be noted, however, that although these community groups do not have the financial arrangements to make their structures formal, their members depend on waste materials for income security. According to a male respondent from Makerere II zone C, during rainy seasons, approximately 3 trips of silt can be drawn from Kiwunya drainage channel and sold to builders in the community at a price of USD 1.875 per wheel barrow. Another male youth respondent from MYC Makerere II zone B noted that incomes from waste commodities have

contributed to his school fees. A female respondent from MAWIDA Makerere II zone B said that she has benefited greatly from reusing polythene bags to grow mushrooms. As an organization, the respondent noted that they bought polythene bags at USD 0.0625 per kg sack, to establish 150 gardens of mushrooms, and the turnover is estimated at USD 18.75 per month. These incomes have enabled women in MAWIDA pay school fees for their children as well as other household needs. Therefore incomes from waste materials have an important contribution to other livelihood activities such as education, urban agriculture and residential housing in sub-Saharan neighborhoods.

### Market linkages within the waste sector

Turing now to the market linkages for reusable and recyclables, the responses given revealed that there are pre-dominantly three forms of marketing waste materials. The study grouped these into the following;

1. Regular waste vendors,
2. Wholesale waste dealers, and
3. Home to home waste dealers.

Regular waste vendors own permanent spaces in Kasubi market, under a shed roof constructed by the authorities, for which they pay monthly rent, selling banana peelings, sacks, lint and chicken litter as their commodities. These vendors collect waste materials from households and communities in the evening and bring them to the market early in the morning. Regular waste vendors bring their reusable and recyclables to Kasubi, Namungona and Bwaise markets by motorcycle or bicycle, or carrying it on their heads, depending on the distance and quantity.

Wholesale dealers largely sell inorganic wastes which include, plastic tins, bottles, metal and glassware brought in from Namungona, Kasubi-Kawaala, Makerere II and Bwaise III parishes. Most of the waste materials they sell therefore have a long shelf-life. Unlike the regular vendors, wholesale dealers can access or control or own land and housing spaces where they can collect and sort large volumes of waste. A case in point is the KACODA demonstration center which occupies approximately 50\*60 ft<sup>2</sup> for collection of banana peelings, plastic bottles, tins, sawdust, cow dung and metal. Wholesale dealers also have access to the external markets (outside the community). But the challenge is that prices for commodities are not usually set locally, but are usually set by market places in for example Luzira, Nakawa, China and Southern Sudan. Wholesale dealers usually 'step down' from the external market price, to allow for the collection, handling, storage and transportation of the materials to the nearest most advantageous buyer outside the community.

Home to home waste vendors on the other hand collect

plastic and soda bottles, tins, newspapers, food stuffs, saw dust, cow dung and banana peelings from restaurants, market places, retail shops and residential premises in all parts of the city. From the responses given, these vendors can carry 30 to 40 kg of waste depending on the type of item they have collected. From empirical observations, these vendors are usually male youth (aged between 18 to 30 years of age) and boys (aged between 10 to 16 years of age). The respondents said that there is a close association between illegal waste dumping and home to home waste vendors. These vendors walk long distances between the upland and low-lying areas of Kampala City in search for the desired volumes of waste materials. They have no designated distribution points like in the case of wholesale dealers and regular waste vendors. The enabling factors in marketing waste materials for the three types include, support from the households and community to collect unclaimed waste resources, dependency on cheap public transport, availability of family labor in the case of regular and whole sale dealers, and avenues for generating income and other benefits of recovering reusable and recyclables from the waste stream. On the other hand, the constraining factors include, transportation deficiencies, insufficient volumes of waste required by the external market in China and Southern Sudan, disputes among wholesalers and home to home vendors, challenges concerning the sites for collecting the waste materials and floods that hinder transportation during heavy rains.

### DISCUSSION

Our attempt to signify the manifestations of a socially-rooted but commercial waste sector is largely located within gradual social changes that are driven by urban environmental forces in sub-Saharan cities. Such forces, according to Suocheng et al. (2001), call for a high quality Municipal Solid Waste Management (MSW) Industry that not only ensures balancing social, economic and environmental needs in cities, but also provides cleaners solutions for resource utilization. To reinforce the point, MirafTAB (2004) is in favor of an approach that consolidates the converse views of business, government and non-government organizations, if well-informed decisions are to be made at municipal level. However, Solano et al. (2002) noted that finding solid waste management strategies that balance economic and environmental goals is an uphill task. As such, unless interdisciplinary approaches are applied, the urban waste question is likely to become multifaceted and complex, given the rapid, unprecedented and unplanned urbanization processes in sub-Saharan Africa, as evidenced by Lwasa and Kadilo (2010). Therefore the findings presented in this paper provide both theoretical and practical insights on how governments can tap into the gradual shift from

municipal dependency to neighborhood interdependencies in the waste sector, to ultimately find solutions that address the overlapping economic, social and environment needs that arise out of resource utilization in the waste sector.

### Conclusion

The findings presented manifest that low-income neighborhood groups are engaged in waste-related activities, partly because of social-cultural traditions; partly because of commercial interests, such as earning incomes; and partly because of the wish to gain cleaner and sustainable neighborhood environment. Therefore, the gradual shift from municipal dependency to neighborhood interdependencies in the management of urban waste is located within intersecting social, economic, and cultural factors. These factors define how waste-user roles, preferences, and the preceding generation and extraction processes are socially rooted in neighborhood cultural-orientations, and the underlying social mobility and commercial drivers.

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