

# Assessment on Vulnerable Youths Integration to Dar es Salaam Solid Waste Management for Improvement: Kinondoni Municipality Case

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**Abstract:** *The present study assessed the possibility of integrating vulnerable youths to complement government and community based efforts in improving the existing municipal solid waste management crisis facing Dar es Salaam City using a case study of Kinondoni Municipality. The study was motivated by the fact that, many literature and mass media have extensively commented on uncollected decomposing heaps of solid waste rendering Dar es Salaam City to be ranked the 12th dirtiest city in Africa. This reported crisis of unmanged solid waste in Dar es slaam city, prompted the present study to conduct a problem-solving oriented research by looking at “solid waste collection” as one of the employment opportunities that could liberate the unprecedented growing numbers of unemployed youths frequently found on “vijiwe” (A Kiswahili word meaning “jobless corners”) sitting idle or contemplating to commit crimes for survival. To this direction, it was necessary to start by conducting a baseline survey in order to bench mark the magnitude of solid waste collection and challenges in the study area. Then the study assessed the potentiality of involving neighbourhood-based waste management groups and other partners with a view of seeking the possibility of integrating youths into community-based initiatives (CBI), community based organizations (CBOs) and self-employing individuals. Furthermore, where such community groups exist - but failed to attract youths to join in, the study used in-depth study to unearth the underlying causes so that they could be uprooted to facilitate an enabling environment of turning rampant solid waste collection a commercial and potential employer of vulnerable groups of youths in community areas. Research methodology involved the use of quantitative method to collect information from 6 youth camps randomly selected in informal settlements which required labour for effective collection of MSW. Thus, questionnaires and in-depth study were interchangeably employed to probe different stakeholder institutions involved in decentralized MSWM system on general performance in solid waste collection. They included CBOs, individuals and small scale private agents. Qualitative method based on in-depth study was equally employed in order to extract views of respondents from focused group discussions (FGDs). It was intended to obtain respondents particularly youth’s awareness, readiness and challenges in undertaking solid waste collection employment. Finally, the study drew conclusions and recommendations on the way forward to reducing Dar es Salaam city solid waste management crisis while sustaining employment to disadvantaged groups of youths.*

**Key words:** Solid waste, Community based Organizations (CBOs), Employment, waste collection.

## **INTRODUCTION**

Solid waste (SW) can be defined as discarded materials that arise from human activities and are not free flowing (WHO, 1971). Wastes generated within the human living space have to be removed immediately in order to prevent risks to human health, property and natural environment arising from uncollected polluting waste. Municipal solid waste (MSW) entail commercial, institutional, domestic or household solid waste; and street sweepings referring to different wastes thrown or deposited on roads, streets and drains. They are generally termed as “municipal solid waste” because such waste falls under municipal government’s direct responsibility (URT, 2004). However, perceiving solid waste in the context of ‘Municipal responsibility’ can be misleading. One may think that all activities involved in solid waste management such as collection, storage, transportation, and final disposal of waste are exclusively municipal government’s tasks. It used to be so during colonial rule under the so called conventional municipal solid waste management which developing countries like Tanzania inherited at independence. It is a capital intensive approach which fares well under capitalist economy where abundant resources, technology and organization ensure, among other things, collection of waste, transportation to transfer stations and to official dumpsites. This approach was imported from the western colonial mother countries to colonies (now developing countries). For example, the conventional approaches to urban planning and management were components of the British 1956 Town and Country Planning Ordinance exported to colonies including Tanganyika (now, part of Tanzania). In short, conventional approaches served by comprehensive rigid documents called master-plans made local governments to be sole actors in discharging all solid waste activities. (Halla, 2002). This was possible during the colonial rule which used population policies to restrict urban population to manageable sizes; and colonies enjoyed favourable economies and subsidies from mother colony. The urban enclave infrastructure and adequate resources sustained the conventional approach to MSWM.

Developing countries have been experiencing rapid urbanization since 1970s due to various exogenous factors such as bad weather for agro-economic dependent countries, oil crisis, and unequal exchange rate in international trade compounded by weak endogenous institutional, organizational structures. The net result was that, developing countries which experienced drastic fall in GDPs connoted by intense poverty and widening monetary national debts perpetuated by IMF. Automatically, the resource intensive conventional approach to MSWM which dominated the developing countries collapsed with the public sector. Definitely, the conventional approach was replaced by a participatory approach under the UN Global Agenda 21 advocacy for solving environmental issues through collective efforts to complement resource constrained developing countries’ governments. It urged various municipal solid waste management stakeholders to take collective action under decentralized systems to achieve sustainable municipal solid waste service provision (UNIDO, View Document 3765; Schübeler, 1996). Many of the developing countries adopted Agenda 21. Tanzania adopted the UN

Global Agenda 21- the implementation strategy of UN Sustainable Cities Programme in early 1990s. It started with the Sustainable Dar es Salaam Project (SDP) in 1992 which was among the six African cities chosen for demonstration. They included Ismailia in Egypt, Accra in Ghana, Dakar in Senegal, Ibadan in Nigeria, and Lusaka in Zambia. The aim was to assist cities in achieving more environmentally sustainable growth and development (UN-HABITAT and UNEP, 2004).

As indicated in the literature review section of this study, despite Dar es Salaam adopting and implementing the participatory approach, there has been more of a declining trend in collection of MSW punctuated with little isolated success due to diverse institutional, organizational and supervision factors. Of all the stakeholders in MSWM under participatory approach, vulnerable youths have remained marginalized for so long. Perhaps, if they could effectively be integrated to MSW collection, it would make a positive trend towards achieving sustainable waste management especially in informal settlements.

Micro business and neighborhood organizations and abundant labour supply from disadvantaged or vulnerable youths are underutilized or unutilized as alternatives for effective MSWM in urban areas. There has been no in-depth research undertaken on the function of neighbourhood associations as an agent for handling primary collection and source reduction and how economically disadvantaged youth groups can be involved in MSW collection as a source of income generation while keeping Dar es Salaam free from MSW crisis. Therefore, this research endeavours to investigate potential improvement of the function of neighbourhood-based initiatives in partnership with well established stakeholders in MSWM including municipal governments.

The study characterized the present status and challenges of MSW collection in Dar es Salaam Region/City using a case study of one of its municipalities, namely, Kinondoni Municipality. It investigated the potential and effectiveness of neighborhood associations (NAs) and small scale companies contracted by the Kinondoni Municipality to provide MSW collection service especially in informal settlements where official MSW collection waste services were inadequate or non-existent. It aimed and managed to assess the potentiality of neighbourhood-based waste management approach integrated with other established partners - largely vulnerable groups of youths in commercialized MSW collection service in community areas.

It is indisputable fact that established local and international literatures have already testified the existence of a critical problem of uncollected municipal solid waste in Dar es Salaam City ranking it as one of the dirtiest cities in Sub-Saharan countries. This study did not see the need to duplicate this fact by attempting to quantify municipal solid waste but rather started from where others ended by assuming a problem solving approach to the escalating uncollected municipal solid waste by taking a case study of Kinondoni Municipality. Bearing the fact that solid waste collection is a protracted multi-faceted problem; trying to liquidate it over night would be unrealistic. Thus, a critical analysis of confining to one of the impeding problems would still be a

contribution to achieving the entire problem in the long term. In this respect, the study sought and confined to investigating one of the key factors as to whether youths' labour is integrated to municipal solid waste collection as a step forward to resolving the problem of inadequate collection of MSW at small scale operational level basically in informal settlements. Two justifications hold. Firstly, there is a country-wide - if not global, on the increased youth unemployment particularly the vast masses completing level seven and illiterates. Increased MSW collection labour at micro level specifically targeted to low income urban communities, would reduce both unemployment rate and poverty consonant with the MDGs. Secondly, but related to the latter, over 70% of the urban majority reside in informal settlements vulnerable to inadequate - inter alia, collection of solid and liquid wastes due infrastructure limitations rendering them to various health hazards caused diseases associated by a filthy urban environment.

The aim of this study was to characterize MSW collection patterns Kinondoni Municipality with a view of devising intervention strategies, Also to assess the willingness of vulnerable youth groups basically the homeless to participate in MSWM projects in the study area. Furthermore the study aimed to analyse the roles of CBOs and NBOs in MSWM project participation in the existing market-oriented economy in partnership with other stakeholders.

Dar es Salaam City has a bustling population of 4.9 million residents (NBS, 2012). It is the largest city in the Tanzania and one of the rapidly urbanizing cities in Sub-Saharan Africa challenged by overwhelming municipal solid waste generation beyond its ability to plan and manage. Many studies argue that, the increased consumption of a rapidly expanding urban population caused by mainly rural-urban population seconded by natural increase; accounted for the experienced enormous municipal solid waste generation. This is partly explained by the globalization concept of Neo-liberalism workable under 'lifting boundary investment barriers' principle for international capital inflow (Bryson, et al. 1999).

It has accentuated concentration of industries, commercial activities including informal business attracted by Dar es Salaam's agglomeration of economies of scale factor. This rapid expansion of domestic consumable goods goes at the expense of quality and quantity of municipal solid waste service delivery compounded by poor infrastructure. Logically, increased consumable goods by a large urban population correspond with increased volume of municipal solid waste generation because resource consumption produces waste. The enormous volume of municipal solid waste generation has overwhelmed Dar es Salaam City's financial and human resource capacities to collect and safely dispose it to official dumpsites. However, it should be noted that rapid urbanization is just one of the factors which attributed to the municipal solid waste crisis besides socio-cultural, technical, legal, and political ones.

Before 1994, the Dar es Salaam City Council (DCC) was the sole provider of municipal solid waste services using a conventional approach whereby the DCC alone providing collection, transportation and final disposal of solid waste to dumpsites. By then the

City had slightly over 2 million people or 10% out of 40% of the country's urban population (Kironde, 1994). Between 1989 and 1996 the city generated around 1,400 tons of waste daily and the Council managed to collect 30 to 60 tons (2- 4%) per day (Majani, 2000). In 1995 the DCC budget for refuse collection was 20 times less than the actual amount needed to provide the service at the appropriate level (Kaare, 2002). The DCC experienced large backlog of uncollected garbage or illegally dumped in the urban environment causing various health hazards mainly in informal settlements where over 50% of the poor urban population dwell. Studies show that, since 1979 master plans using conventional approaches failed to provide municipal solid waste collection services in particular; and to control urban planning and management in general (Armstrong, 1987). The major constraints according to the DCC included insufficient financial resources and poor infrastructure (Kyessi, 2002). The other major constraint is that the DCC lacked methods of waste collection and integration of other stakeholders at different levels.

### **Dar es Salaam City Adopted Participatory Approaches in Municipal Solid Waste Management**

Frustrated by the situation, Dar es Salaam City adopted Sustainable Cities Programme's participatory approach using environmental planning management (EPM) model. Environmental planning management (EPM) is a method of Sustainable Cities Programme (SCP) and is one of the Global Agenda 21 programmes. It employed the EPM process to replace master plans which were overtaken by rapid urbanization to control urban planning and management. In essence, SCP is the overall process through which a city's environment is effectively managed through participatory processes unlike the bureaucratic and rigid elitist master plans. SCP - through EPM process, managed to draw a city wide Strategic Urban Development Planning Framework (SUDPF). Dar es Salaam City institutionalized EPM since 1994 (Majani, 2000).

### **Implementation of EPM**

The DCC adopted EPM with the intention to involving community based organizations (popular sector) and privatization of MSW collection service through franchised method. By 2004, Dar es Salaam City generated 2,600 tons of MSW per day and only 40% - 45% were collected and disposed of at the dumpsites. This slight achievement in waste collection was a result of the collective action by different stakeholders. However, such service was provided mainly to planned areas leaving 2.0 million of the urbanites partially or not served at all (Majani, 2000).

By 2006 - according to Salha and Mansoor (2006), privatization of the service covered 44 out of 73 city wards, daily solid waste generation was estimated at about 2500 tonnes and roughly 48% of the total waste was collected. They observed that, this achievement was hard to maintain as it was greatly influenced by households' attitudes and behaviors including paying the solid waste collection service user charges. Whenever households were involved in solid waste management, positive results on solid waste collections were achieved. The study concluded that, privatization of solid waste service provision

would be better if customers (households) were more involved in planning and in decision- making.

### **Some of the Challenges Facing Dar es Salaam Cities in MSWM under EPM**

As earlier stated, rapid urbanization is not the sole challenge to MSWM under EPM. Other impediments are listed below in connection with the Dar es Salaam Cities' experience:

#### ***Deviant socio-cultural behaviours incompatible with an environmental care culture***

Participatory education and public awareness rising is a transformation that is expected to change communities' negative attitudes on participatory MSWM to accepting and implementing it. Tanzania still faces local institutional, cultural, organizational, technical and technological barriers to effective community participation in municipal solid waste service provision in a liberalized market economy (UNHABITAT & UNEP, 2004). On the cultural aspect, for example, there is general laxity both among some educated and illiterate on the habit of throwing wastes haphazardly even in the presence of collection containers.

#### ***Inadequate dissemination of environmental education and information***

Public awareness and dissemination of public health education and other environmental information dissemination systems are more inward than outward looking and do not flow on continuous basis. They assume more of a short-lived surface campaign during crisis times such as at the outbreak of an epidemic disaster.

#### **Unclear definition of roles according to capacities**

The roles in collective action strategy sometimes are assigned without dual regard to capacities of stakeholders. A ward (mtaa) leader without adequate training in MSWM supervising a private firm contracted by a municipal government to provide MSW service in a mtaa is like legend of a dwarf supervising a giant.

To conclude this section, it should be borne in mind that, the efficacy of EPM presupposed the existence of effective policy and environmental laws and supervision of such laws. This was partly met by the establishment of the National Environmental Policy in 1997 with popular participatory clauses in solid waste management (URT, 1997). The Environmental Management Act No. 20 (URT, 2004) was established for the purpose of empowering the National Environmental Management Council (NEMC) and Urban governments to prosecute violators of MSWM as instruments of the policy. Despite all these instruments being in place and the frequent issuance of MSWM by-laws; Dar es Salaam City and its Municipalities including Kinondoni has continued to face waste collection crisis to-date. It is in this context that this study attempted to assess the extent youths were integrated in MSW collection as part of EPM implementation under the environmental policy and legal framework. The next section identifies a role model of a community within the Africa region where youths and elderly work together under commercialized MSW collection at sustainable level.

Zabbaleen Case Study in Cairo, Egypt: Integration of Youth and Adults in MSWM

This case study has been extracted from Kalwani (2009:60-62). The experience of the Zabbaleen in Cairo illustrates the potential of integrating income generation and environmental management approach. It is an ethnic group of informal garbage collectors since the 1960s covering wide areas especially in Cairo. They live in several large informal settlements, the Zabbaleen have long earned their incomes through waste picking. This informal means of waste collection provides substantial benefit to the local government by reducing the amount of solid waste collected officially. Residents earn a living by sorting garbage, often within their homes.

Usually, the Zabbaleen ethnic group is organized informally i.e. by traditions and norms of the group based on income generation through solid waste collection. Ascendency to leadership and distribution of roles in solid waste collection are largely influenced by Zabbaleen norms and values. Recently, Zabbaleen activities have been somewhat formalized due to intervention of external agents including foreign organisations. Normally, women distribute plastic bags and collect garbage while youths are given the task of taking them to a designated collection point.

Effective community empowerment started in the 1980s when several international and local groups began working with the Zabbaleen. They have established programmes to improve environmental conditions. They included promotion of environmental care awareness among women in the settlements. The programmes also, imparted knowledge on the use of modern technology to facilitate solid waste collection and recycling.

A small industries project gave loans to families to buy machines that can convert garbage such as rags and plastics into useful secondary materials. As a result, 80% of the collected municipal solid waste is recycled. This, not only has it reduced direct contact with the garbage, but it has also increased income because the materials fetch a much higher price than the rags would. The construction of local compost plants has given residents various benefits. These included recycling organic waste matter, creating new employment opportunities and reducing the amount of garbage left on the streets. To some extent the local government assisted the Zabbaleen to access the limited land usually in the already densely populated informal settlements. Such limited land space is used to accommodate some of the recycling cottage industries.

The Zabbaleen members benefit an aesthetic health environment and income received from solid waste collection service user charges. They also benefit from incomes earned from solid waste recycling created employments to reduce poverty. The Cairo city authority benefits from such solid waste cost recovery by diverting the recovered financial resources to other social development activities.

## **METHODOLOGY**

### **Study Area**

This study was sponsored by The Open University of Tanzania through its small grant research fund. Due to resource limitations, the study purposely selected 5 out of 34 wards of Kinondoni Municipality with a total population of 1,775, 049 (NBS, 2012). The rationale for the selection of the wards is that, they were within the researchers'

reach but even more importantly, they were among those frequently covered by the mass media press to have massive uncollected MSW particularly in their informal settlements. Besides, the 5 wards formed 14.5% of the entire population of wards which according to Kothar (1992) formed an acceptable study sample for research.

### **Data Collection**

This study employed multiple research methods intended to complement one another for the sake of quality of collected data. Data collection methods were as follows:

#### ***Secondary Data***

Documentary review related to examining critically the institutionalization of MSWM in Dar es Salaam since the introduction of the Neo-Liberal market economy in 1980s with emphasis on participatory MSWM aimed at complementing government's limited resources through public-private-popular (PPP) partnership by employing the environmental planning management (EPM) model. The secondary data will build basis for investigating further as to why even after Dar es Salaam City has adopted participatory MSWM over three decades ago is still facing acute uncollected MSW today with a view to find a workable solution to the problem.

#### **Primary Data**

##### ***Quantitative Data***

Researchers were supposed to collect quantitative data on quantities of MSW collected from primary collection points by CBOs contracted by Kinondoni Municipality. In actual practice quantification of solid waste was difficult as CBOs collected waste at irregular intervals with different sizes of containers mainly plastic bags and emptied the waste into huge plastic containers or skip buckets. Researchers had to rely more on participatory observation. In this respect, they observed and assessed the extent to which MSW was sorted, source of human labour in waste collection and payment costs, number and type of MSW transportation used in waste collection. They also assessed whether or not secondary collection points and dumpsites were properly managed according to public health laws. Moreover, researchers verified the number of skip buckets in residential areas to assess whether the distribution of such facility stick to the standard distribution ratio which requires 300 households served per skip bucket in community area. Furthermore; researchers managed to quantify the rate or frequency of emptying filled up skip buckets during the 7 days of a week.

##### ***Participatory Observation***

The study conducted participatory observation by undertaking two transect-walks in a North-South and East-West direction across the study area. The purpose was to take part in observing various activities related to solid waste collection to check whether or not effective collection of waste was done by different stakeholders in accordance with public health regulations. Besides, researchers managed to observe how daily MSW collection roles were developed (whether on participatory or non-participatory ways), how such roles were distributed, coordinated, supervised, and the general enforcement of public health laws related to MSWM laws. Even more importantly, the researchers



observed how vulnerable groups such as youths were involved in the collection of waste as an income generation activity as part of poverty reduction.

### **Qualitative Data**

Qualitative methods are used for uncovering information about individuals or organizations in a more holistic way than quantitative methods. Gilham (2000:10) and Patton (In Nguluma, 2003:72) argue that, qualitative methods focus on what people tell you and what they do argues that, qualitative research provide in-depth information. It is conducted through direct questioning and careful description of programme, situations, events, people, interactions and observed behaviour. In-depth data is necessary in this study in order to establish the underpinning problems behind Dar es Salaam City experienced MSWM crisis generally, and issues related to integrating youths in solid waste collection strategy.

### ***In-depth Data Collection***

It was carried out by researchers assisted by mitaa leaders (street leaders) and Ward Executive Officers; and managed to identify and randomly select 8 community members of different sex and ages who were well informed on MSW collection background of the study area and they formed the study “informants”. Meanwhile, two Focused Group Discussions (FGDs) with mixed sex and ages but who - in one way or the other, participated in solid waste collection were formed. One of the FGDs was formed where CBOs operated; while the other FGD was identified in an operational area served by NBOs. The discussion was centred on various social, economic and technical problems which impeded effective MSW collection in the study area whilst exploring possibilities of integrating jobless youths in self-employed waste collections to leverage MSW collection in the areas.

### ***Interview***

Researchers conducted purposive interview to Municipal Officials on their roles, implementation of P-P-P in MSWM and the challenges which deterred achieving sustainable MSW collection in the study area.

### **Data Analysis from Structured Questionnaires**

This involved quantitative raw data collected from primary and secondary MSW collection points where CBOs, NBOs, private company and Municipal Government operate. These raw data were classified, coded and analyzed using analytical and descriptive methods. Responses from local leaders, Municipal officials and FGDs on their day to day participation and experience in MSW collection were equally coded formed basis to complement descriptive analysis

## **RESULTS AND DISCUSSION**

### **Types of Municipal Solid Waste Collection Systems**

Researchers administered an interview to officials of the Municipal Solid Management Department on organization of MSW in the study area. They were interested to know

the structure of MSW collection provision to study area communities. The information was as follows.

Kinondoni Municipality has two main MSWM systems. Firstly, the conventional centralized system inherited from the colonial administration is characterised by the Municipal Government (MG) directly collecting, transporting and disposing of solid wastes to the official City landfill at Pugu Kinyamwezi located over 30 km west of Dar es Salaam city centre. It involved collection of large quantities of waste from collection points and fixed collection fees to households as well as other waste collector agents who use its huge storage plastic containers or skip buckets located at secondary transfer stations. The system has been overwhelmed by the rapid population increase mainly in the informal settlements compounded by financial limitations, high maintenance costs due to frequent breakdowns of waste collection trucks partly caused by poor infrastructure. This is a typical characteristics of any developing country in solid waste management where there is a lack of organization and planning in waste management due to insufficient information about regulations and due to financial restrictions (Tynmaz and Demir, 2006, Vesilind et al., 2002). The other limitation was failure of the large trucks to penetrate through the narrow streets - characteristic of informal settlements, leaving much solid waste uncollected, this was also observed by Bright and Mbande (1996) where they found that, waste disposal in developing countries is still largely random and uncontrolled, and large quantities of waste go uncollected. Secondly, decentralised system (DS) was introduced with adoption of EPM in 1990s to complement the centralised system which almost collapsed; its modality has been discussed before. In principal, the decentralized system aimed at complementing the MG's ailing resources and efforts to collect huge volumes of MSW basically in informal settlements where the problem of uncollected waste was prominent for already given reasons. DS is autonomous and is characterised by small scale private MSW collection system ranging from registered and unregistered community based organizations (CBOs), self-employed waste collectors to small scale private companies.

### **Frequency of Municipal Solid Waste Collection and Waste Sorting**

Researchers administered an interview to randomly selected 58 heads of households in six selected wards on frequency of MSW collection by contracted CBOs and small scale companies contracted by the MG. The purpose was twofold. Firstly, it was to assess the performance of the Centralised System and Decentralized System of MSW collection service providers from the service consumers' (households') point of view. Secondly, it was to assess whether or not public health standards of removing MSW in the human living space within the required interval were met. Public health regulations require solid wastes to be removed from generation and collection points to safe disposal/treatment sites within 48 hours (WHO, 1971). The urgency of removing solid waste is principally a preventive measure against turning waste collection points into sources of breeding disease-borne insects. Further, it requires different types of solid wastes to be collected, sorted at collection points before getting stored temporarily in standardized large containers before transporting to disposal sites or recycling plants.

**Table 1: Frequency of MSW Collection from Households to Transfer Stations**

S/N	Selected Households in brackets per Ward	Frequency of collection of MSW from households			TOTAL
		1- 2 Days	3-5 Days	7 Days and above	
1.	Magomeni (10)	1	5	4	10 (17.8%)
2.	Ubungo (8)	1	3	4	8 (14.4%)
3.	Mwenge (9)	3	3	3	9 (16.1%)
4.	Tandale (10)	0	3	7	10 (17.8%)
5.	Kinondoni (9)	2	2	5	9 (16.1%)
6.	Kijitonyama (10)	2	3	5	10 (17.8%)
<b>TOTAL</b>		<b>9 (16.1%)</b>	<b>19 (33.9%)</b>	<b>28 (50%)</b>	<b>56 (100%)</b>

*Source:* Kinondoni Survey, 2012

The study observed that only a small quantity of waste (16.1%) was collected within 48 hours (1-2 days). It shows that, much of the waste (50%) remained uncollected for over 7 days (Table 1). It indicated that, surrounding communities stood a high risk of contracting filthy environmental-borne diseases due to long delayed solid collection services.

Researchers also observed that throughout the study area; solid wastes of different kinds both hazardous and non-hazardous were not sorted but mixed together. It further increased health risks; and reduced chances of maximizing the waste for commercial recycling. Thus, in addition to risks to health from infectious agents, long-term exposure of human to hazardous waste may lead to impairment of the immune system, and impaired development of the nervous system, the endocrine system and the reproductive functions (WHO, 2004). Besides, though huge containers were supplied by the MG for waste storage; were found near bus stands or adjacent to minor commercial points like markets but distant founded in communities located far from streets or roads. Thus the ratio of 300 residents per skip bucket was exceeded by far in communities such as Tandale, Kinondoni and Kijitoyama found in the heart of informal settlements. Failure to remove solid wasted in residential areas encouraged households to illegal dumping of the waste into storm water drains clogging them or streams like Ubungo River is one of the highly polluted by all sorts of mixed solid and liquid wastes in the City.



**Photo: Illegal dumping of waste in Tandale Ward**

### **Community Groups Involved in MSW Collection in Kinondoni Municipality**

The exact number of all CGs in the entire Municipality is not established. It is estimated to be 28 for both registered and unregistered groups. The outstanding active CGs in the sampled areas covering Magomeni, Ubungo, Mwenge, Tandale, Kisiwani and Kijitonyama wards were mainly three. One of them is called Voice Given Group. This group was founded by 17 self-employed youths of different education levels ranging from Form IV to VI. Following an internal conflict based on power struggle and dissatisfactions in sharing marginal dividends accrued from solid waste collection fees, the group split into two independent groups with different areas of operation but retained the original name. The Voice Given Group in Magomeni was run by 9 members while the Voice Given Group operating at Mwenge had 8 members. The third one is called Environmental Group which operated at Ubungo Terminal and surrounding premises. Its founding members had different education levels with a majority of primary school leavers or dropouts and illiterates. Its members ranged from those with no fixed aboard mainly youths known as ‘street children’ and wapiga debe (those who scratch a living by urging passengers to board buses at Ubungo Bus Terminal). Following regular public outcries that wapiga debe and street children bothered and often snatched passengers’ luggage and money, they were subjected to frequent round ups by Municipal government militia. Such harassments compelled some of the youths to seek employment by joining the poor aged people in a solid waste collection community group called Ubungo Environmental Group popularly known as Wazee Group meaning a group of the elderly for income generation for livelihood. So to speak, the researchers discovered that many of these groups lacked adequate MSW collection facilities; received low or frequently no MSW collection fees from service consumers; and work under high health risks without protective waste gear such as hand gloves, gum boots and so on. A similar observation was reported by Gupta et al., 2001 where he

found that, a number of open collection sports exists in many cities in developing countries which can cause poor sanitary conditions and pose health hazards to the workers and nearby population. Further, the study linked this information with that provided by FGDs that, such grievances attributed highly to the relatively low performance in MSW collection analysed in the previous section (Table 1).

### **Potentiality of Youths to Reduce Uncollected Municipal Solid Waste Problem**

Having established the source of low performance in MSW collection as seen above Researchers visited youths with a view to assessing their attitudes towards integrating them to this service provision as an employment opportunity. Direct interview to youths and FGDs were employed to capture their inner thoughts. Mtaa leaders helped Researchers to identify 'Vijana Camps' (youth Camps). There is no formal definition for 'Vijana Camps'. They can be referred to as jobless corners where youths usually peer groups gather in small informal centres nicknamed in Kiswahili as 'vijiwe' literally meaning 'small centre'. It is equally difficult to generalize the characteristics and functions of such 'vijiwe' as they vary from one camp to another depending on the motives behind their formations. Some gather youths to discuss constructive ideas such as how to organize themselves to raise funds or get sponsorship in local football competitions. While others, exchange ideas on where and how to get job opportunities for livelihood. Others are political appendages covertly supported financially by respective political parties to meet their political ends. On the extreme case, some camps engage in ultra social evils such as drug pushing, drug abuse and various crimes. The study considered these factors and established two main categories of motive forces behind the formation of such youth camps. One; they are generally characterized by youths who had primary or no schooling education and are jobless gathering to discuss unemployment issue and its threats to their livelihood. Two; those who met in vijiwe to waste time in idle talks and/or plan to commit social and economic crimes for survival; or on the contrary, some discuss youths developmental issues including spots advancement in their local areas. In summary, vijiwe are characterised by primary school leavers or dropouts even illiterates, largely jobless youths who might have positive or negative social attitudes and behaviours. Having this in mind, researchers approached youths in their vijiwe with a suggestion of integrating them to employment opportunities in solid waste collection in their communities. It was deemed as a strategy of reducing the unemployment problem among youths while sustaining an aesthetically healthy environment to the community at large. However, after conducting the oral interview, the study established that out of 10 'youth camps' visited in the study area 75% of the youths expressed unwillingness to either self-employ or seek employment in community based organizations (CBOs) dealing with solid waste collection from households. Researchers wanted to know why youths were unwilling to get employed or self-employed in privatised commercial solid waste collection from households to secondary collection stations by probing FGDs, 58 youths in their camps; and municipal officials. The responses were coded giving the following outstanding main reasons:

**Table 2: Assessment on Youths to Self-employ or Employed in MSW Collection Service**

Interviewed youths in Vijiwe (X1-X6)	(i) Low rate paid by h/hs for MSW collection fee	(ii) H/Hs Unwilling to pay MSW collection fee	(iii) Psychological stigma to MSW collection	(iv) Lack of fixed assets as security for loan from financial	(v) Lack of training on entrepreneurial skills and	TOTAL
X <sub>1</sub> Magomeni (9)	3	3	1	0	2	9 (15.5%)
X <sub>2</sub> Ubungo (20)	4	4	3	5	4	20 (34.5%)
X <sub>3</sub> Mwenge (8)	2	2	2	1	1	8 (13.8%)
X <sub>4</sub> Tandale (8)	2	2	1	1	2	8 (13.8%)
X <sub>5</sub> Kinondoni (6)	2	1	2	0	1	6 (10.3%)
X <sub>6</sub> Kijitonyama(7)	2	1	2	1	1	7 (12.1%)
TOTAL	15 (25.9%)	13 (22.4%)	11 (18.9%)	8 (13.8)	11 (18.9%)	58 (100%)

**Source:** Kinondoni Survey, 2012

As indicted in the summary in Table 2, MSW Collection service in poor households does not pay. Rates are too low to attract one to self-employ or get employed in the enterprise (25.9%). Some households are unwilling to pay MSW Collection service fee because they feel that were already overtaxed by virtue of paying ‘uncountable’ Municipal levies imposed over them (22.4%). Psychological factor associated with social stigma attributed to one engaged in MSW collection service (18.9%). Lack of fixed assets for capital loans attraction needed to invest in MSW collection tools and equipment cause youths to decline to seek employment in MSW collection activities (13.8%).

The findings showed youth’s disenchantment to be employed in MSW collection service basically due to low rate paid by households in informal settlements. This is aggravated by households which adamantly refused to pay solid waste collection service on the pretext that they were overtaxed by Municipal Government by multiple levies including property taxes levied over the poor residents. But also, a substantial number of youth shunned away from undertaking waste collection on psychological grounds. For society at large, there is wrong perception to those performing MSW collection services including scavengers as failures in life, dirty people and other traumatic perceptions. However, even those few who were willing to do MSW collection jobs were constrained by lack of training on entrepreneurial skills and safe methods of handling MSW. In fact, during participatory observations researchers observed over 50% of solid waste collectors lacked the basic tools like push cuts and shovels; and safety gears such lesion groves, gum boots compelling them to come in direct contact with solid wastes. The study established that, negative attitude of many youth to looking at MSW collection as an employment opportunity was underlined by various fundamental social, economic, technical and psychological constraints. These need to be addressed by urban policy makers and planners for better results. Backed with this information Researchers resolved to visit and meet different stakeholders and leadership in small groups at different levels at their convenient times to obtain their views on how the youth’s

dilemma could be solved. They included selected Mtaa leaders and Kamati za Usafi wa Mzingira (Sub-ward/ Street Waste Management Committees) and FGDs. Some of the main ideas/views which Researchers managed to capture from this in-depth research were as follows:

- (i) There was a need for the MG to wage a continuous awareness campaign to educate the urban masses to perceive waste collection as a normal business like any other income earning activity. It would gradually remove the stigma among youths and elderly alike to self-employ in this sector for livelihood. This could even change the attitudes and behaviours of youths in non-constructive *vijiwe* from social delinquencies inclination to positive thinking towards earning income through MSW collection employment.
- (ii) To make solid waste collection attractive to youth and community members at large; the MG should look into the possibility of subsidizing the meagre solid waste collection fees paid by poor households.
- (iii) There was need to organize youths into legally recognized income generating groups and MG be able to guarantee loan security from financial facilities so that, through such formal groups, youth could secure loans as capital for investment in MSW collection.
- (iv) Health Officers at Municipal and Ward levels should effectively oversee waste management collections at municipal down to grassroots level to ensure environmental management regulations were enforced. More importantly, public health education, skills in handling wastes coupled with provision of environmental cleanliness tools and equipment to encourage community members to keep their environment clean.

After making thorough in-depth study with community groups and leadership at ward and sub-ward levels, researchers were in position to interview Municipal officials to check whether the MG had any strategy put in place to integrate youth in MSW collection service. Also, the study intended to know the existing and planned strategies to solve the municipal solid waste management crisis to sustainable levels. The study managed to interview on various efforts at force and plans for MSW in the Municipality as summarized below.

### **MG Efforts to Reinforce Supervision MSW Collection Fees by Households**

The MG informed this study that, it delegated powers to *Kamati za Usafi wa Mazingira* to collect MSW collection fees by ensuring that all households paid the fees for the waste collection service rendered. Then the committee had to pay CBOs/ individuals who provided the service accordingly. However, the official commented saying some few dishonest *Kamati* expropriate the money instead of paying the SW collectors. It hindered effective waste collection as agents suspended or withdrew the service hence much waste remained uncollected polluting the urban environment.

### **Integration of Youths in Municipal Solid Waste Collection Service**

The MG official informed that the Dar es Salaam City Mayor in collaboration with Municipal Mayors and top regional leadership had already looked into a strategy of integrating youths in solid waste collection in their community areas. To start with, the City Mayor has introduced a Dar es Salaam youth inter-cities soccer competition contesting for “Mayor Cup”. The Cup is intended to go beyond bringing youths to soccer alone but also integrate youths to MSW collection clubs or groups. Researchers found that association of sports with MSW collection among youths in Kinondoni Municipality and Dar es Salaam City at large was already in place. The Municipal Government has drawn a youth training programme in MSWM which would take place in September 2013. The training will involve capacity training of youths in effective solid waste management, marketing and elementary public health education, leadership. Some established stakeholders have shown interest in supporting this move through moral and material support. For example, the Kinondoni District Commissioner will contribute Tshs 2 million as seed money to such youth group initiatives to undertake MSW collection in their respective communities. Other stakeholders included CRDB and Bakhresa who had shown interest to contribute to the advancement of youth’s spots as an enabling environment for them to proactively participate in the Mayor Cup competition. The MG official also informed the researchers that ABC&M (Bank) and TVS-King (Manufacturer of Bajaj) operating from Mikocheni area had, started donating various MSW collection equipments to CBOs and other community groups among vulnerable groups engaged in solid waste collection. Also, Belgium Technological Cooperation collaboration with the MG will construct a large scale compost processing plant at Tandale by year 2014. In that project, the MG bought land for installation of the plant while BTC to provide the required technology and machinery. Upon completion, the plant will consume waste generated from Tandale, Shekilango and Kisiwani all suburbs of Kinondoni Municipality.

### **Strengthening Institutional MSW Collections**

TAN PARK an MSW established institution based in Dar es Salaam networks with the MG. It planned to collect paper wastes from mainly public institution mainly public offices. It will distribute three main containers distinguished by different colours intended for the separation or sorting of wastes. They will be stationed at institutions entering a waste collection contract with it. Then TAN PARK will collect the waste for recycling.

### **Improvement of MSW Transportation and Establishing a Large Landfill**

The team of researchers was informed further that, the MG’s ability to transport collected MSW to the Pugu Kinyamwezi site was bound to collapse due to resource intensive constraint. Of its 87 dump trucks fleet, 8 to 10 of them each with a capacity of eighteen tons capacity were on road but with frequent breakdowns. The MG had concluded a bilateral 2013/2016 agreement with DMDP to construct modern landfills at Goba and Mabwepande starting from January 2013 and work is in good progress. Upon completion of the project, the MG will be greatly relieved from long SW haul costs.



## CONCLUSION

This study has established that, collection of MSW is characterised by lack of sorting mixed wastes at source and much waste remain uncollected. The huge containers for temporary waste storage before transferring to dumpsite for disposal were inadequate. Several households pay low or arbitrarily do not pay the MSW collectors contracted by the MG and go unpunished by law. Uncertainty in such payments and other factors such as inadequate waste collection equipment and protective gear; and low public opinion on people who engage in waste collection jobs discourage youths to join in this service provision. Though the MG delegated MSW collection fee to *Mtaa* committees to increase good governance and accountability; some dishonest committee members frequently expropriate the money for selfish ends without paying destined waste collectors resulting in a decline in waste collection.

However, MG is changing over time from conventional to participatory approach in SW collection evidenced by gradually integrating youths to MSW collection through the sports strategy, though many youths still have strong affiliation to immoral *vijiwe* often involved in social delinquents. The MG is also undertaking a holistic integration approach not only of youths but also modern technology to MSWM involving large scale recycling and compost production in collaboration with different stakeholders. Because collection of MSW using youths labour alone will not wipe out the waste crisis facing Kinondoni short of integrating other strategies including a large scale mechanized landfill construction which are in progress. These activities will add a share of MSWM employment opportunities to youths.

## RECOMMENDATIONS

There is a need for the MG to have in place a continuous awareness and public health education programme to educate residents to take positive attitude and fully participate in MSW collection particularly youths who are often jobless and engage in immoral and criminal acts.

Governmental and Non-governmental institutions through partnership should continually mobilizing other stakeholders in MSWM to invest more in commercial and technological waste management projects to create more employment opportunities to youths while sustaining an urban environment free from waste with a healthy communities.

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