



THE INFLUENCE OF INSTITUTIONAL FACTOR TO SUSTAINABILITY OF INFORMAL SOLID WASTE COLLECTORS: THE CASE OF KINONDONI MUNICIPALITY-TANZANIA

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Abstract

This study assesses the influence of institutional factor to the sustainability of informal solid waste collection livelihood. It is motivated by the fact that there is a wide spread of informal solid waste collection service filling the gap created by the inability of effective municipal waste collection services. However, very little is known about the institutional challenges facing informal solid waste collection livelihood. This study was conducted in Kijitonyama, Sinza and Tandale Ward. The study guided by four elements; organization set up, policies, rules and regulations, actors and stakeholders, formal and informal rules, and norms.

The methodology involved a randomly sampled population of 15 informal waste collectors from the 3 Wards. Questionnaire interviews, observations, in-depth interviews and documentary review formed the research data collection techniques. The study used descriptive analysis to analyse variables. The findings show that informal waste collection has the potential of providing an income more than government minimum wage. However, the income gained found to be less than the available potential since they are poorly organized, informal solid waste collection treated as illegal activity by the authority, lack of technical and financial support from various stakeholders.

Keywords: Solid waste collection, Informal waste collector, Institutional factor, waste collection, Income, Livelihood, Tanzania.

1.0 INTRODUCTION

Urban solid waste management is a very serious problem in developing countries of Asia and Africa (Zurbrugg, 2003). According to (Deshmukh *et al*, 2002), waste generation has been growing as a function of population growth.

Many countries in Sub-Saharan Africa have recently experienced accelerated urban expansion. According to a 2004 UN report on World Urbanisation Prospects, in 1950 there were only 20 million people, or 10 to 15 per cent of the total population, living in urban areas in Sub-Saharan Africa. At that time it was the least urbanised region in the world and, consistent with colonial era trends, was urbanising at a slow pace (Hove, *et.al*, 2013). This scenario changed considerably during the post-independence years (*ibid*). Since the early 1970s, Sub-Saharan Africa had the highest urban growth rate in the world, averaging five per cent per annum (Todaro 2000). For example, Kinshasa in the Democratic Republic of the Congo had a population of less than 4 million in 1990, compared to 11 million found in 2014 and is forecast to reach 20 million by 2030.

The growing population in the developing countries is of social, political and economic concern. It has direct impact on available resources and contributes to the waste generation (Dahiya, 2015). According to Bhada-Tata and Hornweg, (2012) the current global municipal solid waste generation of 1.3 billion tones, is expected to reach 2.2 billion tones in 2025. In individual cities, Kinshasa in the Democratic Republic of the Congo expected to have total MSW generation of more than three times that in 1990 where population was less than 4 million, and will likely have doubled again by 2030 where population is expected to reach 20 million (UNEP, 2015). In Asia the amount of waste generated is projected to reach 657 million tones in 2025 compared to 277 million tones in 1998 (Swati, 2009).

Generally municipalities or local governments have the responsibility of managing MSW, with a few exceptions such as in Malaysia, which shifted the responsibility for MSW to the federal government (Agamuthu, *et.al*, 2011). However, cities in developed countries often struggle with high operation and maintenance costs and the decay of existing infrastructure. Also, rapid urban growth in the developing world is seriously outstripping the capacity of most cities to provide adequate services for their citizens (COHEN 2006). In many lower income countries more than 50% of the waste is unmanaged and often left uncollected (Hoornweg, 2012).

The inability of the local authorities especially in low income countries to efficiently collect the generated solid waste prompted the mushrooming of informal solid waste collectors to fill the

created gap (Omar, 2010). Thousands of microenterprises across the developing world serve neighborhoods that lack municipal waste collection services at the same time; the process provides income opportunities for entrepreneurial individuals (Medina, 2008). It is estimated that nearly 15 million people are engaged in waste management activities in the informal sector (ibid). In developing nations, around 1% of the population earns their livelihood as waste collectors (Medina, 2008). Other authors claim that as much as 2% of the urban population in developing countries is involved in this municipal service provision activities in sustaining their lives (Gunsilius *et al.*, 2011).

The Informal Economy Monitoring Study (IEMS) which is a 10-city study that examines the realities of informal workers found that 65 percent of waste pickers in the sample were the main household earners. Lack of recognition and policies that curtail access to waste materials can have a dramatic effect on poverty levels, as it affects the livelihoods of a significant number of informal workers whose only income comes from waste (Dias, 2015)

Therefore, this study focuses to assess and describe the influence of institutional elements which include policies, organization set up, rules and regulations to the income of the informal solid waste collectors in the study area.

The next section will start by exploring the experience of other countries on the influence of institutional factor to the income of informal solid waste collectors.

2.1 Research Objective

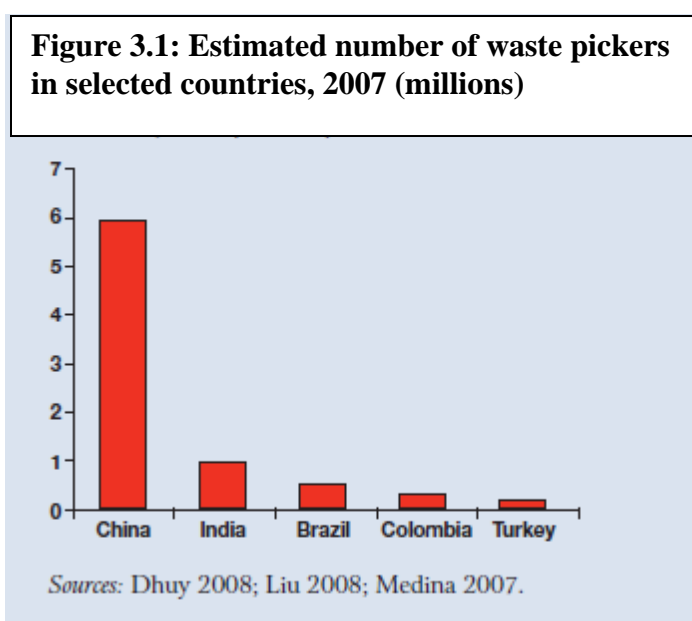
To assess the influence of institutional factor to the sustainability of informal solid waste collection livelihood

3.0 Literature Review

The inability of the local authorities especially in low income countries to efficiently collect the generated solid waste prompted the mushrooming of informal solid waste collectors to fill the created gap (Omar, 2010). Thousands of microenterprises across the developing world serve neighborhoods that lack municipal waste collection services while providing income opportunities for entrepreneurial individuals. A study in three Mexican cities found that nearly 3,000 informal refuse collectors collect 353,000 tons of waste a year, earning up to five times the minimum wage. Informal collectors invest in pushcarts, donkey

carts, horse carts, and pickup trucks to transport waste. They usually recover recyclables in the waste before disposal (Medina 2007, p. 147).

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Although informal solid waste collectors found to operate in many countries, the income gained found to vary widely among regions. In Brazil, for example, data collected shows that 34% of informal waste collectors earn 1 to 1.5 times the minimum wage, and 54% of them earn 1.5 to 4 times the minimum wage (Medina, 2008). A study in three Mexican cities found that nearly 3,000 informal solid waste collectors collect 353,000 tons of waste a year, earning up to five times the minimum wage (ibid).

Although there can be many factors affecting the operation of informal solid waste collection activities, this study focuses to assess and describe the impact of institutional elements to the livelihood of the informal solid waste collectors. The next section will start by exploring the experience of other countries on the influence of institutional aspect to the income of informal solid waste collectors.

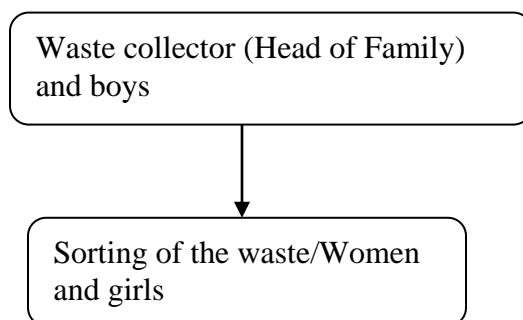
3.1 The Influence of institution factor to livelihood of informal solid waste collectors

(Zabbaleen) in Cairo, Egypt

3.1.1 Organizational set up

The Zabbaleen ethnic group is organized informally i.e. by traditions and norms of the group based on income generation through solid waste collection. Ascendance to leadership; and distribution of roles in solid waste collection are largely influenced by Zabbaleen norms and values.

Figure 3.2: Organizational Structure of Zabbaleen Informal Waste Collectors



Source: Fahmi, 2010

Recently, Zabbaleen activities have been somewhat formalized due to intervention of external agents including foreign organizations. In Cairo the process of collecting solid waste is dominated by male. Usually, it is the Zabbaleen men, sometimes accompanied by children, who go and pick up the waste door-to-door from each household, a trip that may take between 10 minutes to an hour (Fahmi, Wael & Sutton, Keith 2010). Although informal solid waste collection involves the collection of the waste, sorting of the collected waste and selling of the recyclable items, but in Egypt the sorting work is done by women

and girls and is usually unremunerated. The sorting of garbage is a time-consuming task in which women and children may spend 10 to 12 hours each day (Fahmi, Wael & Sutton, Keith, 2006).

3.1.2 Stakeholders engagement

Effectively starting in the 1980s several international and local groups began working with the Zabbaleen (Kalwani, 2009). A variety of partnerships involving local organizations, government, technical assistance groups, NGO's, and international funding and development organizations have resulted in a number of projects designed to extend services to Moqattam, create economic opportunity and generate income through the development of micro-enterprises, consolidate waste management, expand collection services, and build human resources. These projects have collectively worked to preserve the Zabbaleen's livelihood, begin the creation of more powerful community organizations, and legitimate their role as valuable service providers entitled to basic services (Fahmi, Wael & Sutton, Keith, 2006).

In 1986, Income Generating Project for Female-Headed Households was started to assist the poorest most vulnerable people in the settlement in improving their income. The project ended in 1988 (Macarthur Consortium, 1998).

Again, through partnerships and assistance, Zabbalean community got assistance to formalize and upgrade their unplanned settlements. The project involved provision of formal title to land and basic community infrastructure, including water and sanitation facilities. The project funded by the World Bank through Egypt Greater Cairo Urban Development Project. Through this project the Zabbaleen settlements formalized and their housing and infrastructure improved (World Bank 1982). Where formalizing existing settlements is not feasible or desirable, help squatters resettle or find accommodations in the existing housing market.

3.1.3 Policy framework impacts

In 2001 Egypt decided to contract out solid waste collection, treatment and disposal in Cairo to four large international companies, thereby ignoring completely the existing Zabbaleen system. (Fahmi, Wael & Sutton, Keith, 2010).

Since then the economic and social situation for the 'Zabbaleen' has changed dramatically. Some started working for the international companies as waste collectors, some tried to continue their work as if the companies did not exist, others turned to picking waste from containers and again others stopped completely with their work. A number of violent clashes occurred and some trucks of the international companies were burnt. More fights and tension among the Zabbalean were also the result, especially between street pickers (ibid).

3.2 The Influence of institution factor to livelihood of informal solid waste collectors in Belo-Horizonte, Brazil

Brazil is among the countries where there are a significant number of informal solid waste collectors. The country tried to integrate informal solid waste collection in the municipal waste management services. Belo-Horizonte is among the areas that performs well in the institutionalization of informal solid waste collection activities. These include areas of policy framework, organizational set up and stakeholder engagement.

3.2.1 Policy framework, Belo-Horizonte experience

Brazil has one of the most progressive policy and institutional frameworks for informal solid waste collection activities and a vast range of municipal settings for investigating the dynamics of incorporating informal solid waste collectors into municipal solid waste management (De Oliveira, 2010). The solid waste National policy (the law no. 12.305/2010) emphasizes the integrated solid waste management where the role of all actors such as, National Government, partner states, municipalities, federal District and private actors of the society including informal solid waste collectors were stipulated (ibid). The policy introduces a set of individualized and interconnected assignments aimed at minimizing the generation and volume of solid waste as well as reducing the impacts resulting from the product life cycle to human health and environmental quality. The Municipalities were responsible to implement procedures towards reuse and recycling the waste from public street cleaning and solid waste management, establish the selective collection systems, coordinate actions with the social and economic actors to promote the reinsertion of reusable and recyclable waste on life cycle products, carrying out the activities assigned to them by the established reverse logistics systems with the due remuneration for the service. However, for the municipality to succeed, the policy emphasizes the need of giving priority to the organization, the hiring and the operation of cooperatives or association of scavengers/informal solid waste collectors. Recognition of informal solid waste collectors by incorporating them into the National program of improving management of solid waste gives a sense of reliability and security for the job of informal solid waste collection in Brazil. What do the Tanzanian policies talk about informal solid waste collectors?

Municipal Decree 10.293 (12/08/2000) determines that horse carts should be registered and licensed on an annual basis without any charge to the informal workers. Each informal collector is provided an identity card and a vaccination card for the horse by the Municipal Secretariat for Health (Dias, 2011). Does the Kinondoni municipal council recognize the existence of informal solid waste collectors?

Figure 3.3: A licensed plot of the informal solid waste collector's horse cut



Source: Dias, 2010

3.2.2 Organization set up in Belo Horizonte, Brazil experience

Belo Horizonte, Brazil's third largest city, known in the 1990s for having difficultness in dealing with increasing solid waste generated due to the rapid population growth (Dias, 2011). Among the strategies developed to deal with waste management crisis was to partner with association of informal solid waste collectors (ibid).

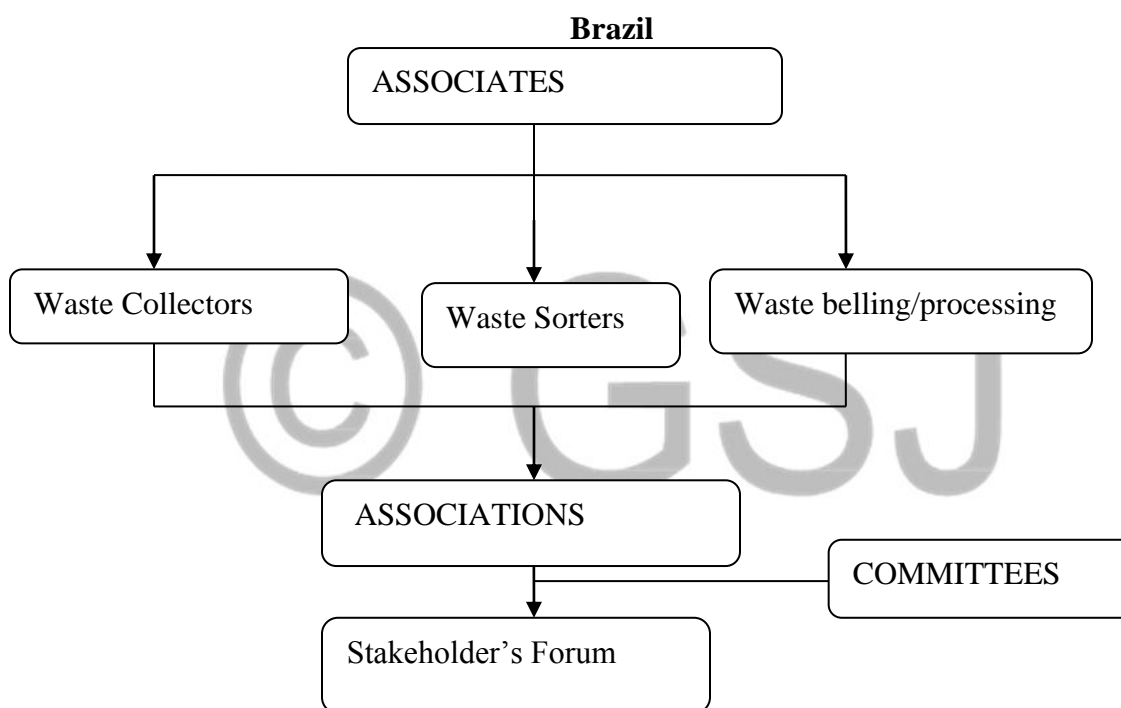
According to Dias (2011), the history of Association of informal solid waste collectors (ASMARE), traced back in 1990s from the initiatives of NGO that worked on promoting the right of waste pickers to earn livelihoods from waste collection activities. For smooth operation ASMARE divided into 7 committees. The committees include; Infrastructure committee, Health committee, Religion committee, Social Communication committee, Finances committee, Environment and Education/Culture/Entertainment committee. The Steering Committee comprises members from each of the seven committees.

Members transported the collected waste to ASMARE headquarters for sorting purposes. With their carts for waste collection each associate has her/his own space for sorting at the recycling warehouse. The sorted materials are compressed and weighed. ASMARE has its private waste compressing machines and weighing scale in a compressing and weighing centre managed by waste pickers/informal solid waste collectors and former street dwellers. The weight of materials per person is recorded and a receipt is

issued, and ultimately each person is paid according to the recyclable materials produced from the waste collected by them.

Organizations of the informal workers (*catadores* and *carroceiros*) together with representatives of the municipality and other organizations of the civil society are convened in a stakeholder forum – the Municipal Waste and Citizenship Forum (Dias, 2011). All collected materials (mainly plastic, glass, metals and plastics) are brought to warehouses of waste pickers’ cooperatives where they are processed before moving up the recycling chain.

Figure 3.4: Organizational set up of informal solid waste collectors in Belo Horizonte,



Source: *Dias, 2010*

3.2.3: Stakeholders engagement, Brazil experience

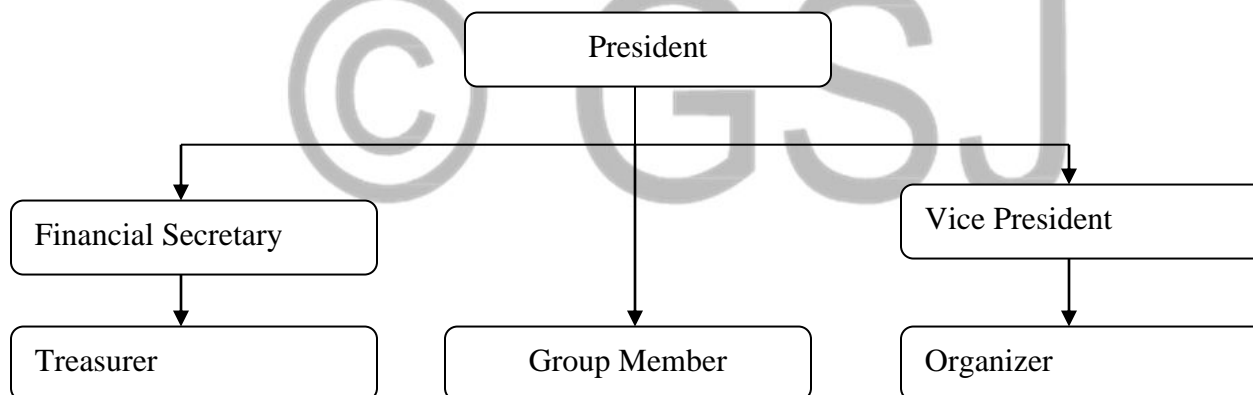
A national program to improve solid waste management in Brazil, the Integrated Solid Waste and carbon Finance Project, is developing strategies for incorporating waste pickers into local waste management systems. The efforts involve multiple stakeholders-activists, academics, waste picker organizations, other affected groups, nongovernmental organizations, and federal, states, and local government. The project is the first World Bank-financed operations to include the issue of waste picking so early in the designing phase-and a central part of its basic objectives. A key focus is a careful definition of the roles and responsibilities of the actors involved, including municipality, the service provider, the financing institution, and the waste pickers (Cohen, 2008).

3.3 The Influence of institution factor to livelihood of informal solid waste collectors; Accra, Ghana-experience

3.3.1 Organizational Structure

As shown on Figure 3.4, the Association of Asontaba waste collectors in Accra, Ghana, have President, Vice-President, Financial Secretary, Treasurer and Organizer. According to the members and the chairman, all the posts assigned have specific roles to play (Gugssa, 2012). The president has the responsibility of managing the association in general and making sure that the others perform as expected (ibid). In addition, the president sets agenda and leads weekly meetings. The vice president basically assists the president. The Financial Secretary manages the monthly contribution of members and makes record of expenditures in collaboration with the treasurer. The organizer has the responsibility of organizing the meetings of members every Sunday. Take record of the members participating at the meeting and also takes a minute of the agendas discussed. In addition, the organizer makes sure the facilitation of refreshments during the meetings (ibid).

Figure 3.5: Organizational structure of Asontaba Waste collectors



Source: Gugssa, 2012

The president is elected by members vote every two years. The main qualities to be a president include experience and ability to lead (Gugssa, 2012). However, if the president has proven the capacity to lead and perform as expected, he will be given another term of office (ibid). In some cases, if the president does not function as expected he will be voted off again. The vice – president, financial secretary are nominated by the president and vote will be given by the rest of the members. The organizer and the treasurer are nominated by the vice president and financial secretary respectively. According to (Gugssa, 2012) membership is open to anyone engaged in the same line of activity. However, new members are expected to accept the norms and values of the association. The association has developed a system of

rules as a form of “constitution” in a written format. This document is accepted by all members and consensus has been reached to be governed by it (ibid)

The system of rule is considered as very important in terms of strengthening the norms and values of members. Members are required to show respect to fellow members and support each other in case of emergency such as death of family members and sickness, and also when there are new born and weddings. One way of showing respect to fellow members and the association is attending weekly meetings which are normally conducted Sunday afternoons. Members are also required to pay their monthly contributions on time to the common association fund. In addition, members help each other in repairing wheel barrow, carts and motor bikes used by group members for waste collection. There is no money transaction following such kind of help as the member is expected to provide to others whenever they require support of some sort. The document also requires members to handle clients in a proper manner and also to dump the collected waste in central containers or landfills depending up on the distance. Dumping of waste in the neighborhood and fighting with clients and other fellow group members will result in sanction and other kinds of punishments.

4.0 Data Analysis/ Findings

4.1 Institutional elements

Institutional elements are among the vital components in the informal solid waste collection livelihood. Institutional factor determines the dos and don'ts in informal solid waste collection. It also provides the framework through which informal solid waste collectors interact with various stakeholders to maximize the benefits that can be accrued in the activities. Institutional elements include; organizational set up, policies, rules and regulations, stakeholders' engagement and informal rules and norms.

4.1.1 Organizational set up

Informal solid waste collectors found not to have clear organization structure. However, found to have people who assume leadership role whenever the need arise. Most of those who assume leadership role found to be those with physical power to command over others. For example, in 2009 in Sinza Ward one informal solid waste collector beat his fellow informal solid waste collectors to death simply for disposing the waste in an area they all agreed not to dispose the waste. Also, it has been found that sub-ward officials have been communicating with these few individuals who assume leadership role whenever they want to send some messages to this group of informal solid waste collectors.

4.1.2 Policies, rules and regulations and legality of informal solid waste collection activities

The operations of informal solid waste activities considered illegal activities by municipal Authority. Informal waste collectors considered as polluters. In the study area there are law enforcers responsible among other things to take into custody any informal solid waste collectors found to operate in the area. Despite all the efforts of banning informal solid waste collection activities, they were found to continue to operate parallel with the contracted waste collection contractors.

Figure 4.1: Confiscated Informal solid waste collectors push cart at Ward Executive Officer's office

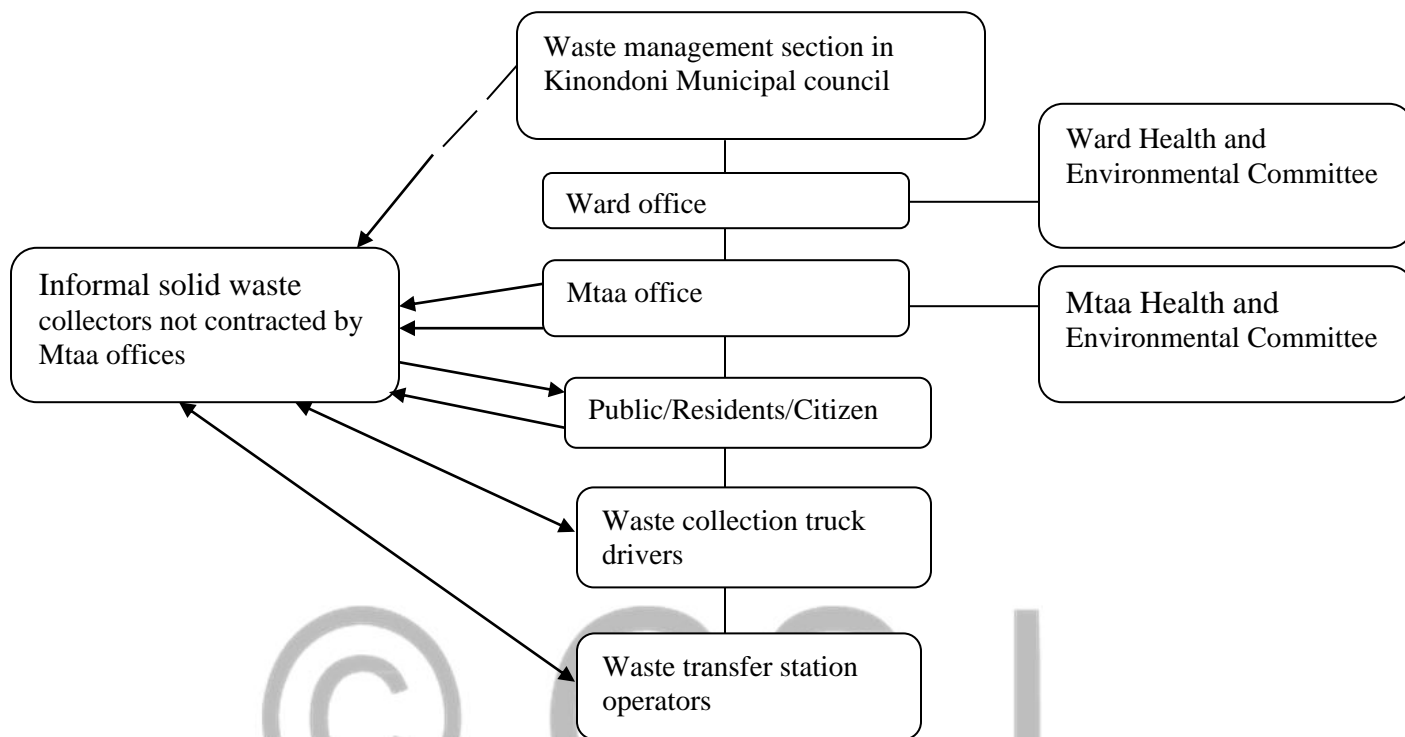


Source: Fieldwork, 2015

4.1.3 Actors and stakeholders engagement for the survival of waste collection livelihood

Informal solid waste collectors found to interact with a range of customers including households and business premises for providing waste collection services, with municipal and private waste collection truck drivers for emptying the collected waste into those trucks, illegal waste collection transfer station operators for illegal waste disposition, and owners of some areas close to the rivers for disposing waste in those areas to reclaim the land. Also informal solid waste collectors found to interact by Ward and sub-ward (Mtaa) offices. The two offices play a role of ensuring there are no informal solid waste collection activities in their areas of jurisdiction.

Figure 4.2: Interaction of Informal solid waste collectors with various stakeholders



Source: Field survey 2016

However, none of informal solid waste collectors found to interact or engage with stakeholders such as private companies, higher learning institutions, or Non Government Organization for building their capacity like their counterpart in Cairo, Egypt and Belo-Horizonte, Brazil.

4.1.4 Informal rules and norms

Informal solid waste collectors found to have some informal rules used to guide their relationships. For example, it has been observed that there are specific houses respected to be served by specific individuals. Also without having a formal written rules they have been taking action against individual who contravene a certain way of life they have decided to follow. For example, they have been donating to help each during the sickness and death. However, for anyone who does not participate in these self help initiatives found to be sidelined and do not receive any help from his fellow informal solid waste collectors.

5.0 CONCLUSION

This study has established that, informal solid waste collection services as a livelihood strategy is illegal activity in Kinondoni municipality and practiced below its potential in helping informal solid waste collectors out of poverty. The service has a potential of providing more income than it is providing. Informal solid waste collectors found to be poorly organized. They operate more as individual rather than a group. This has failed them in raising their voice for demanding necessary facilities from the government. This may include; availability of waste transfer stations, given the right to operate without being disturbed by the authorities, given space for waste sorting and storage which are very vital in increasing their income.

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7.0 TABLES AND FIGURES

Figure 3.1: Estimated number of waste pickers in selected countries, 2007 (millions)	Pg 5
Figure 3.2: Organizational Structure of Zabbaleen Informal Waste Collectors	Pg 5
Figure 3.3: A licensed plot of the informal solid waste collector's horse cut	Pg 8
Figure 3.4 Organizational set up of informal solid waste collectors in Belo Horizonte, Brazil.	Pg 9
Figure 3.5: Organizational structure of Asontaba Waste collectors	Pg 10
Figure 4.1: Confiscated Informal solid waste collectors push cart at Ward Executive Officer's office.	Pg 12
Figure 4.2: Interaction of Informal solid waste collectors with various stakeholders	Pg 13