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ADDIS ABABA UNIVERSITY

COLLEGE OF DEVELOPMENT STUDIES

CENTER FOR GENDER STUDIES

**ANALYSIS OF SOLID WASTE COLLECTION FROM A GENDER PERSPECTIVE:
THE CASE OF BOLE SUB CITY, ADDIS ABABA, ETHIOPIA**

BY:

WEYNI TEKLU

JULY, 2018

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Declaration

I, the undersigned, declare that this thesis is my original work and has not been presented or submitted partially or in full by any other person for a degree in any other university, and that all sources of materials used for the purpose of this thesis have been duly acknowledged.

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List of Abbreviations

WB	World Bank
UNEP	United Nation Environmental Program
ILO	International Labor Organization
WIGO	Women in Informal Employment globalizing and organizing
IETC	International Environmental Technology Center
MSE	Micro and Small Enterprises
MDG	Millennium Development Goal
PPE	Personal Protective Equipment
NGO	None Governmental Organization

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Abstract

This research aims to explore and analyze waste collection activities from gender perspective with specific reference given to women association members involved on door-to door waste collection activities in Bole sub city. Understanding the basic factors that enable waste collectors to join the line of waste collection work, the specific hindrances and challenges faced by women waste collectors in the place of work, the community and from concerned bodies in general are the objectives of this study. In order to achieve its objectives the study used a qualitative research methodology. Among the qualitative research techniques this study used in-depth and key-informant interview methods to collect the primary data. The study participants were selected through purposive sampling techniques in which both sexes (men and women) were included during the study. Finally the collected data was analyzed qualitatively using a phenomenological technique of data analysis. The study result indicates that women employees in the door-to –door solid waste collection associations are limited in number compared to their male counterparts. And all of the factors and challenges identified have different implications on the lives of women and men participants. Based on the finding, the thesis also provides some recommendations for concerned bodies.

Key words; Door-to-door solid waste collection association, enabling factor, challenges, role

CHAPTER-ONE

INTRODUCTION

1.1 Background of the Study

Solid waste management is identified as one of the employment generating sectors in both of the developed and developing countries (Wilson et.al, 2006). In many of the sub- Saharan African countries waste collection provides an income to unemployed individuals, recent migrants and women's who have been unable to find employment in the formal sector (Medina, 2010). It is also identified that the sector provides a cushion for many who lose their jobs during times of war, crises and economic downturn in countries that do not have welfare system (UNEP, 2013). For example due to the political instabilities happening after Democratic Republic of Congo have getting its independence in 1960s an estimate of 45% of the population was engaged on the activity to save their lives (Samatele and Longondjo, 2015). Similarly, in South Sudan, urbanization coupled with the long-standing conflict with its neighbor Sudan has facilitated the expansion of waste picking by creating a large pool of unemployed and underemployed residents with few other means of earning a livelihood (UNEP, 2013).

In addition to its employment opportunity waste collection provides various social, economic and environmental benefits (Maldonado et al., 2014). For example, solid waste collection reduces the cost of municipalities by accessing labor at the lowest wage (Maldonado et al., 2014). Besides of that it contributes for environmental sustainability by reducing the amount of waste that goes to the landfill (Maldonado et.al 2014). However, the contributions of waste collectors are either ignored or looked down on by the community because of the work they do which is perceived as dirty (Marta, 2013). Even from the part of the municipalities little attention is given for those individuals, and their activity is largely neglected in urban development and planning policies (Samatele and Longonio, 2015).

Ethiopia as a developing nation could not be out of the above stated reality. Although, they were individuals and groups involved on the activity of solid waste collection, until recently municipalities were considered as the only formal sector in solid waste management (Tefferu and Negussie, 2015, Bjerkli, 2005, African Studies Quarterly, 2010). However, after the government has identified unemployment as a major economic challenge, municipal facilities

are considered to be one of the core areas in creating job opportunities (Zelalem, 2006). Thus, as one of the municipal facility solid waste collection has gained the attention of the government. Thus, in 2003/4 E.C the government intervenes into the sector through the formal institutionalization of the micro and small enterprises (Tefera and Negussie, 2015, Zelalem, 2006). And following to the formal institutionalization of micro-enterprises the national solid waste management proclamation was promoted in 2007. Employment and job creating opportunities is one of the objectives behind that proclamation (Ethiopia SWM proclamation 513/2007, 2007).

The proclamation states the advantage of linking the community in solid waste management in order to prevent the adverse effects and enhance the benefits resulting from solid waste (Ethiopia SWM proclamation 513/2007, 2007). This situation attracts different private formal and informal actors to the sector. Therefore currently in Addis Ababa there are private sectors and door-to-door solid waste collection micro enterprises formally carry out solid waste collection activities with the municipality (African studies Quarterly, 2010).

Studying the impacts of some social factors such as gender could be imperative to include the need and priorities as well as ensure the equal benefits of both men and women in the provided employment opportunities of the solid waste management sector. According to Catherine (2017) in light of the fact that majority of waste-pickers are women and children's examining the role of gender in development and the special needs and conditions of impoverished women's in developing nations is essential. Besides other studies such as Chidi and Adama (2015) and Mkhize et al. (2014) suggests the significant influences of gender roles in the waste collection sector.

Accordingly, the current study aims to analyze solid waste collection services from a gender perspective with specific reference given to the door-to door solid waste collection associations in Addis Ababa, Ethiopia.

1.2 Statement of the Problem

Urban solid waste management in most of the developing countries including Ethiopia was traditionally conceptualized as collection, transportation and disposal of waste with objectives of making the city clean. To meet that objective the conventional approach which usually adopts the centralized and capital intensive solutions were the approach used by most of the municipalities (Dias, 2012). As a consequence of conventional waste management practices many cities in developing world are facing environmental and health risks, as well as losing economic opportunities in terms of the resource value of waste (Dias, 2012, Shanghai, n.d).

It is suggested that waste materials can all be considered as sources of free or discounted materials that in resource-constrained and poor communities might be leveraged to generate income in the absence of employment” (Holt and Littlewood, 2017). Catherine (2017), have also added that while rethinking of waste management strategies in developing countries the following maxim should kept in mind “WASTE to become WEALTH, REFUSE to become RESOURCE, TRASH to become CASH”. Because waste pickers can make a living only if there are peoples who generate a waste (Schenck and Blaauw, 2011). Thus, it is essential for countries to come up with a better solid waste management strategy which brings employment and economic benefits besides of its traditional role as an environmental management tool (Park et.al, 2015).

According to Madsen (2017) countries should encourage the existing system of waste management by waste pickers through improving of the employment conditions and opportunities within that sector. To ensure employment and green job opportunities on the solid waste collection sector currently the integrated approach to waste management is being advocated by International organizations such as World Bank and Inter-American Development bank through their funded projects at different countries (Marello and Helwege, 2014). This is found as effective measure to support and give many waste pickers higher standard of living, economic security and sense of inclusion in the society at different countries of the world.

Besides gender as a cross cutting issue of all the institutional strictures in most of the developing countries including Ethiopia needs to be studied. It is one of the socio cultural factors which undermines the performance and effectiveness of the institution or a sector by excluding some

proportions of the population out of work force due to some of gender stereotyped roles ascribed to men and women. In most of the societies these gender roles put women at disadvantaged positions compared to men. The solid waste management sector could not be out of this reality. Thus, digging out and uncovering these gender issues enable the sector to include the interest and priorities of both men and women in some of its development efforts. And this ensures the equal benefit of men and women in the provided employment benefits and makes solid waste management effective.

Most of the studies conducted in Ethiopia are focused on the managerial and technical issues of solid waste (Regassa(2011), Tewodros, (2009), Takele, (2004), and Yohans and Genemo(2015)). And other such as, African Studies Quarterly, (2010), Enyew(2013), Mesfin and Piter(2013), Tefera and Negussie (2015), Bjerkli (2005) have conducted their studies on the problems made during the formalization process of the current micro- enterprises and criticize the direct intervention of the government by arguing that the intervention made was at the expense of the previously existed informal waste collectors. All the issues identified by the literatures listed above are external challenges which affect the internal performances of the enterprises such as problems from the management and other governmental bodies.

To fill the above identified gaps, the current thesis explored and analyzed the challenges, and factors encouraging waste collectors to engage in to the sector of waste collection, as well as the roles of the individual members towards solid waste management using gender perspectives.

1.1 Objective of the Study

General Objective

The general objective of the study is to explore and analyze solid waste collection activities from gender perspectives.

- To identify the factors that encourage men and women solid waste collectors to join the sector
- To explore the challenges that men and women solid waste collectors face in the work place and in the community
- To examine the benefits contributed by men and women solid waste collectors to the sector

1.2 Research Questions

- What factors motivated women and men to start the business?
- Are there differences between men and women in their motives to join solid waste collection?
- What are the challenges that women and men solid waste collectors are experiencing in the place of work and the community?
- Do men and women are differently affected to the challenges related their work?
- Are there different roles attributed to men and women solid waste collector in the sector?

1.3 Significance of the Study

The study will have an implication for researchers, policy makers and other interested in the field. Academicians who are interested to do further study on the subject might use findings of this study as a benchmark in providing a deeper understanding on the significance of including gender perspective on the solid waste management sector. Stakeholder working on urban waste management can also use the findings of this study to see the effects of gender both from the perspective of environmental sustainability as well as income earnings and employment creation capabilities of the sector for both of men and women engaged the activity. This study also provides information to policy makers for possible future intervention as per the problems and specific recommendations that will be found from the participant themselves.

1.4 Scope of the Study

The scope of this study was limited to explore and analyze solid waste collection from gender perspectives with specific reference given to the door-to-door solid waste collector association members in Addis Ababa city on the specific sub city of Bole.

1.5 Organization of the Thesis

The first chapter covers the introduction part of the study including background of the study, statement of the problem, general and specific research objectives of the study, significance of the study, and the scope of the study; the second chapter presents the literature review of the study; The third chapter is devoted to the research methodology; The fourth Chapter deals with data presentation and analysis Finally, conclusions and recommendations is provided in chapter five.

1.6 Definition of Terms

- ❖ Solid waste collection association; are these
- ❖ Enterprise providing door-to door solid waste collection services, and which were previously operating in micro and small enterprises institutionalized by the government.
- ❖ Waste collection: Refers to the overall activities performed by solid waste collectors including (collection, transportation, sorting and disposing) of the wastes from household.

CHAPTER TWO

LITERATURE REVIEW

INTRODUCTION

The purpose of this chapter is to review some relevant literatures, identify the existing knowledge base and consequently develop a meaningful and relevant research project.

2. Concepts of Waste and Waste Management

There is a subjective understanding among the scholars surrounding what waste is. Some literatures define waste as any unwanted item, material or substances that is due for discarding (Sheinberg et al, 1999). And some other literatures have suggested that it is not the nature of the material which determines whether it is the ‘waste’, but the action or intention of the holder (Ababio, 2014); Because, what is considered as waste for the one, could be a resource for the other (Holt and Littlewood, 2017). However, understanding of waste both as burdens and as a resource is necessary while devising of the waste management policies and strategies.

If waste is remained uncollected or irregularly and inadequately discarded it creates various social, economic and environmental problems (Gutberlate, 2014); and it is the poor, constituting of most of the women and children are highly exposed and be affected from the problem (Kusakabe and Veena, 2008). But, if it is backed through intelligent waste and resource management it can be a source of raw material and energy (Simoneit, 2012); and this results for a significant environmental and employment benefits (Madsen, 2006, Holt and Littlewood, 2017, Simoneit, 2012).

Thus, scholars have suggested that, the effective management of waste could be a master stroke that will lead to environmental sustainability and at the same time creating job and wealth for the economies (Onuka, 2015). The same author also added that for discerning and innovative entrepreneurs, waste management creates multiple channels of economic gains that cannot be ignored. Thus, Government agencies in charge of waste management should map out strategies on how to convert this huge dung in to wealth for the poor and job for the unemployed (Onuka, 2015).

2.1 Solid Waste Management

Solid waste is defined as the organic and inorganic material that has lost their value in the eye of the first owner (Beall, 1997). And solid waste management could be defined as the process that encompasses all activities ranging from waste generation at sources to the point of disposal (Tefera and Negussie, 2015); and through the effective management of solid waste significant economic and environmental benefits could be leveraged (Medina, 2010).

However, in several low income countries, the potential in waste management as an economic empowerment resource remains almost completely untapped (Onuka, 2015). To exploit the opportunities found in the sector, scholars have suggested that promoting of the integrated and cooperative working environment among the stakeholders engaged on the system is necessary (Medina, 2010, Simonies, 2012). The same authors call this strategy as an integrated solid waste management system. And according to, (UNEP, 2013), Integrated solid waste management is defined as a comprehensive waste prevention, recycling, composting and disposal programs in a ways that most effectively protect human health and the environment. Contemporarily, this strategy is advocated by different international organizations such as World Bank, to be applied at different countries of the world especially on the developing countries (Marello and Helwege, 2014).

Some of the important justifications used to advocate the integrated solid waste management system are listed below according to (Medina, 2010, Shanghai declaration, n.d.). These are:

1. This approach is consisted of hierarchal and coordinated set of actions that reduces pollution, seeks to maximize recovery of re-usable and recyclable materials, and protect human health and the environment.
2. Encourage innovative technologies in newer areas such as waste to energy and recycling and promote green jobs that ensure safe working condition
3. Ensure multi stakeholders participation in decision making process by involving NGOs, CBOs, waste workers, private sector, residential and commercial communities with the government.
4. Bring waste workers in to the formal economy and provide them safe working conditions.

In addition studies indicated that if integrated solid waste management approach is successfully implemented on the ground depending on the countries local contexts despite of its traditional environmental management role the sector can function as a tool to minimize an increasing level of urban poverty that developing countries are facing today (Park et al, 2015).

Waste prevention at source is the first priority in the integrated waste management. And in most of the societies this is expected to be performed by women who are identified as the generators of waste. For example by referring to the three types of waste sources in Vietnam which are (industrial waste, Domestic waste and waste from hospitals), women's account the highest proportion of employees (constituting more than 75%) on the studied three industries which is leather and foot wear industry, Garment factory and Pharmaceutical industries(Dang, 2002). Besides of this, the author also notes that, "all women's are involved on in housework in their families and therefore most domestic work goes through women's hand", and on the third identified source of waste which is hospitals women's account 70% of employees. Thus, standing from the finding it is concluded that women's play a pivotal role in managing wastes at source (Dang, 2002). Women's are also appear to be very creative in the 2nd and 3rd consecutive priorities on integrated waste management which are(reuse and recycling)in their own houses especially in the low and middle income families(ILO, 2007). Thus, standing from the finding of these authors it is possible to conclude that including gender perspectives and participating women in solid waste management system could be used as an instrument to bring an effective and sustainable solid waste management.

2.2 Concepts and Terms Used for Waste Collectors and Waste Collection

Different literature studies have showed that, in most of the developing countries with the exception of the municipalities who have assigned for solid waste management responsibility, most of the waste collection activities are undertaken by different individuals and groups who work informally for economic related reasons. The name used to refer to waste pickers relate to the country they operate, their local language, the place where they work and the waste material they collect (Medina, 1997). For example (i) waste collectors (individuals who collect waste from households and the activity is sometimes called door to door waste collection), (ii) waste picking (where individual pick waste from street, open dump and landfills) and (iii) itinerant

waste buyers (basically the door to door collectors who exchange recyclable materials over money or barter of other domestic goods) (Pariatamby and Tanaka, 2014). But for universal understanding consensus was made to adopt the term ‘Waste pickers’ as the most appropriate generic term to use for the peoples involved in the collection phase of the recycling industry at the first world conference of waste pickers in Colombia in 2008 (WIGO, 2012 Cited in Marelló and Helwege, 2014). For the purpose of this study both terms (waste picking and waste collection) will be used interchangeably.

2.3 Economic Activities of Waste Collectors

The work of waste management is typically accomplished in two ways. Service based waste management and commodity based waste management (Madsen, 2006, Muller and Schinberg, 2003). According to these authors, the *first*, which is the service based waste management, payment is received for a service, paid for by the unit of work, by the hour, by the curb meter swept or by the household served. And the beneficiary of the service generally pays for a unit of work. This work is identified as poorly compensated and is dependent upon the client for payment, which often does not come in time or in full.

It is also indicated that, although in many cities individual households and private offices pay the service charge; it is the local government that determines the amount of charge that MSEs are demanding. In that case the micro enterprises have to deal with several clients on policy level and on practical day to day level in order to keep their enterprises viable. On this type of payment women’s enterprises are found at a disadvantaged position due to the weak ability of women’s to negotiate their contractual rate of payment for the service with the local government (Muller and Schinberg, 2003). For example it is expressed that, women, especially those with low social status, feel uncomfortable to enter men's offices to discuss inadequate contracts or difficulties in getting payment (Muller and Schinberg, 2003).

The *second* type is the commodity based waste management on the other hand relies on trading materials or items for a price. And the price is usually payed per kilo or tone, but sometimes also for specific items, like glass, bottles or car batteries. In other words, the payment is entirely based on the value of the item or material i.e., its commodity value. To look at this commodity based economic activity using a gender perspectives, it is found that women’s are usually earn

less income than their men counter parts due to the reason that they are tend to collect the less valuable materials, and less time to engage in waste picking to fulfill their additional duties as mothers and housewife (Madsen, 2006, Muller and Schinberg, 2003).

To summarize, in both commodity and service based waste management activities women's and women's enterprise are found at disadvantaged position from all perspectives of earning an income and keeping the enterprises viability due to the gender related factors and hindrances that women's are facing on their day to day lives.

2.4 Gendered Dimensions in Solid Waste Management

Solid waste is not a gender neutral concept, as the very definition waste is influenced by the age, gender and social status of the person making the judgment (Sheinberg et al, 1999). Thus, women and men define waste differently, their uses and understandings as to where waste is disposed (Jerie.2011, Sheinberg et al, 1999). In other words, what men view as waste may be useful to women and vice –versa (Jerie, 2011, IETC, n.d.); and men and women also have different perception about how frequently waste is disposed of, about the distance that must be travelled to dispose of waste, and about the time spend disposing waste (Jerie, 2011).

Additionally, men and women play different roles in the waste management process especially at the household (Beall, 1997). Women have the sole responsibility of managing household waste with assistance of their children (Veena and kusakabe, 2008). If a house and its immediate surrounding are dirty, if family members are getting ill, it is the women who are getting the blame and not the men. The man of the household could never get involved in the household waste management (Beall, 1997); because no payment or recognition is given for the management of waste made at the household. What is surprising here is that, no one considers it strange or unfair that women could not get paid for this activity, even when these activities extend beyond the home to community cleaning (Gani et.al, 2010).

Beyond the home the community level volunteer activities for solid waste management is often dumped on to women without due recognition and resource, and this have nothing to do with their empowerment and on the contrary, can even overburden them (Veena and kusakabe, 2008). However when these volunteer activities are become legitimized and paid, it is

overwhelmingly men who get selected for paid labor (Beall, 1997, IETC, ND, Sheinberg et.al, 1999, Veena and kusakabe, 2008)

Outside the home, both men and women work in solid waste management as waste collectors, street sweepers, domestic workers and waste pickers. Nonetheless, women tend to have a subordinate status when it comes to paid waste management activities, which not only affect their access and control of resource but also exposes them to greater health and environmental risks than men (Jerie, 2011). For example recycling enterprises are usually owned by men, who employ women and children to work for them (Dickson, 2016). Similarly most supervisory and managerial posts in municipal and waste collection firms are dominated by men (Muhamed and Manu, 2013).

Waste materials are also gendered. Studies in Ghana and Nigeria found that materials which are considered being of higher value are often the preserve of men, while women mostly access lower values and dirtiest materials, usually from dumpsites, which largely contain organic and inert waste and source of higher health risks(Gani etal.,2012, Jerie, 2011). Thus, although, solid waste management workers are usually exposed to different health risks, gender and the age of the person plays a crucial role in determining the level of exposure and vulnerabilities to health and environmental hazards emanating from waste (Dickson, 2016).

2.5 Contributions of Waste Collectors in Urban Solid Waste Management

Despite of the stereotyped view of waste collectors as being marginalized and the poorest of the poor, a growing number of evidences have demonstrated that that is often the case. Waste collectors provides benefit to cities in a number of ways; as service providers of urban waste collection, as environmental agents who enable recycling, and as key economic actors who feed the market with secondary raw materials (Dias, 2016). Waste collectors reduces the cost of municipalities in solid waste management by accessing labor at the lowest wage, provides positive externalities towards the community through their important contributions to environmental sustainability by reducing the amount of waste that goes to landfills which in turn reduces air and water pollutions (Maldonado et al, 2014). For example the study conducted in Pune (India) shows that each waste picker on the area has contributed US\$5 worth of free labor

to the municipality every month, and their combined labor saves the municipality US\$316.455 in municipal waste transport cost(Chikarmane,2012).

It is also indicated that the activity of waste collectors can save foreign currency by reducing import of raw materials; alternatively, if industrial demand is stronger in neighboring countries, waste collection can become a source of foreign currency by exporting the materials recovered by waste collectors (Medina, 2010). Similarly, waste collection benefits the society and the environment because their recycling activities results in virgin or raw material being used less intensively in production and manufacturing (Madsen, 2007). In addition to the above provided roles waste pickers have also plays a significant contribution of creating employment for themselves and for other vulnerable section of the society (Muller and Scheinberg, 2013). . For example study shows that in Belo Horizonte waste picker’s cooperative open doors for workers and creates opportunities for marginalized groups such as, sometimes” taking them of the streets” by incorporating street dwellers as workers in their cooperative (Muller and Scheinberg,2013).

Both men and women participate in solid waste management activities outside home as paid workers. Studies indicated that due to the scarce income opportunities for illiterate women and their interest to get an income to meet the survivalist need of the family women solid waste collectors are found more reliable on their work compared to men (Muller and Schimberg, 2013). Similarly it is suggested that including gender in waste collection can bring effective and efficient waste management. Because since women’s are responsible for the maintenance of the living space and the health of children they have strong sense of civic responsibility and a desire to improve their living conditions and health situations Gani et al, 2012). For example, it is discovered that up to 81%, 96% and 91% of solid waste generation, storage and collection respectively in Nigeria, is carried out by women as their traditional responsibility in the house (Gani et al. 2012). The study also shows that the women in Bauchi metropolis indicated high degree of willingness (89.5%) to segregate their solid wastes in order to improve the environmental quality and increase their income base by selling the sorted materials(Gani et al. 2012).

In addition to the arguments provided on the above paragraph, giving that solid waste collection is part of their domestic work women’s have the experience which enables them to be effective

and efficient workers on the solid waste management system(Madsen, 2006). However, for their gendered abilities to make change in some communities women are respected and officially celebrated for the voluntary community work. The other side of this coin is that women's are often not regarded for paid community work, while people refer to the notion that "paid work is men's work".

A best example for this will be the case of waste collection MSEs in Ouagadougou, Burkina Faso provided by Gani et al. (2012).The same author indicates that, at first the community leaders insist that men be hired for the waste collection work, as women had to stay home and look after children's. The men provided to be unreliable and careless workers who quit the job as soon as they had other work. Women were then hired "as an experiment". The women performed the waste removal work to everybody's satisfaction, motivated by their desire to make full use of their rare opportunity to earn regular money, albeit under very difficult conditions.The author notes that this project have received the Grand prize award of the president of Republic of Senegal and it has since been replaced in other part of the country (Gani et al, 2012).

2.6 Challenges the Waste Collectors Faced

Despite the potential benefits of waste picking to the urban poor and overburdened waste management services, waste pickers' are faced with various challenges ranging from social exclusion, health risks and well-being to unfair market prices. For example, there are some negative connotations attached to waste pickers as waste picking is often conceived to be a symbol of poverty (Medina, 2007); they are generally either ignored or looked down on because of the work they do, which is perceived as dirty (Marta, 2013). It is also indicated that the little concern and neglect of waste workers role and activities in urban development and planning policies by the concerned bodies on the government is also the other significant challenge (Samatele and Longonio, 2015). The finding of the study made on Brazilian waste pickers shows that, these combined challenges posed from both of the society and concerned bodies have impacted their self-esteem and self-respect which makes it difficult for them to see themselves as workers (Dias, 2002).

It is also identified that waste pickers working without proper protective equipment compounded with the lack of access to health care and hygiene, such as washing facilities, protective equipment or health services have exposed them to different health risks such as work related illness and injuries (Scheinberg et al, 2010). And in addition to health hazards, there is a serious risk of loss of life from collapsing slopes, fires and waste slides (Schinberg et al, 2010). The study in Egypt showed that the waste picker's communities had an infant mortality rate of 1/3 in Port Said which is several times higher than for the region as a whole. In Cairo a quarter of the babies born in the waste picker's community die before reaching their first year (ILO, 2017).

The other is economically related challenges resulting from unfair market price where waste picking forms part of the complex waste hierarchy, and waste pickers usually lies at the bottom of that hierarchy, while merchants and recycling companies disproportionately benefit from the exchange of money or goods for the recyclable materials brought in by waste pickers. Often what waste pickers get paid is largely determined by the merchant, and some merchants exploited waste pickers by paying them the bare minimum for waste material (Schenck and Blaauw, 2011). Due to poor recognition of the waste income sector, waste picking is often ignored and very little effort is made to support waste picking activity (Wilson et. al, 2006).

Privatization of waste management is also identified as one of the challenge for waste picker's economic benefit. For example (ILO, 2017), indicates that many waste pickers are negatively affected by the privatization of waste collection through contractors and companies, thus reducing their livelihood opportunities and income. Even when waste management is open for bidding, waste picker cooperative are not able to compete with larger and well established waste companies in the absence of governmental support (ILO, 2017). Similarly, waste collectors in Cairo (Egypt) called Zabbaleen have opposed to the privatization of waste collection and disposal to international and local enterprises for the reason this hinders their access to the main source of income (GTZ, 2008). Besides of this, Policy related challenges such as the lack of enforcement of law and agreement regarding waste management plans is also identified by (ILO, 2017).

2.6.1 Gender Perspectives to the Challenges the Waste Collectors are faced in The Waste Management System

Both as a residents living with in one's specific country and from being a waste collector men and women's have differently exposed and affected by the challenges happening in their work due to their gender related roles. For example literatures have indicated that women and men have different exposure and vulnerabilities to the problems created from uncollected waste, and different felt needs for better management of solid waste mainly because of the traditional division of labor at the household and community level (Veena and kusakabe, 2008).

Scholars identify that women's are highly disadvantaged in the work of waste collection (Vineeshia and Mahees, 2016). Giving that waste management is conducted in domestic and public spare; household waste management which is taken as the waste management system undertaking in domestic sphere is often the unpaid work of women , but when it is mechanized (in the delivery cycle) it is paid.in many cases men take over this work(Vineeshia and Mahees, 2016). This is an aspect of participation of solid waste management where men and women act differently.

In addition to the above provided gender issue as solid waste collection workers women's have faced different economic social and cultural challenges. It is identified that the domestic responsibilities that women's have at home limited their time to spend on their job which intern has negatively affective their productivity at work. For example the survey report of the study conducted in Durban (South Africa) shows that in terms of working hours, women waste pickers are found working 34 hours comparing to men who works 44 hours per week (Mkhize et al, 2014). For that reason male waste pickers are actually found earning three times more than from their female counter parts have earned (Mkhize et al, 2014). Thus, the limited time and limited geographic mobility of women's is identified as one of the basic challenge for women's profitability on the sector.

Denial of access to recyclable waste materials with the highest value and exclusion of women from any position and decision making authorities is also the other gender issue faced by women waste collectors which impacted their earning compared to men (Adama and Nzeadibe, 2015). Scholars identified that women tend not to be permitted access to higher valuable materials like metal or papers but focus on the textile, plastics, and the like(Gani et al, 2012, Beal, 1997).

Similarly in Nigeria “women’s are excluded from participating on the more profitable sectors of the recycling economy namely the scarab dealers and middle men’s “(Adama and Nzeadibe, 2015).

The lower level of family support and limited access to credit is the other issue identified factor which affects women entrepreneur negatively. It is noted that while women seek to move from waste picking or scavenging to the status of micro-entrepreneurs, their access to credit and family support tends to be less than that of the men, so they are more likely to be handicapped from the start(Mohammed and Pieter, 2017, Muller and Schinberg, 1999).

Evacuation of women waste collectors from their worker while opportunities are get improved on the waste management system is the other challenge identified by different literatures. For example women’s are forced out from the work while the activities on waste is become legitimized and formalized (Muller and Schinberg, 1999); and as production gets mechanized and industrialized, the demand for men skilled labor increases, by forcing out women’s to take up jobs not usually preferred by men(Venkateswaran, 1994, Sida,2016).

The issue of physical strength and women’s limited participation on decision making activities are also identified as a challenge (Kusakabe andVeena, 2008). As waste collection is considered as a strenuous and difficult work which needs a physical strength women’s are not recruited by the formal waste management enterprises and the private sector. And if they get recruited most of the time women’s are forced to work on the most time consuming activities of the work due to the gender division of labor and their activities are not valued. For example, Men work in collection, transportation, and processing activities. These activities need physical strength in comparison to the activities women are involving in that require greater dexterity, such as sorting of recyclables.

Sorting which is considered as one of the work to women in the gender division of labor is the most time consuming activities for waste pickers, yet it is essential because it adds more value to recyclables, enabling workers to sell to specific workers (Scheinberg, 2010). (V) Women’s work manually through their hands due to the lack of skills to operate the available technology which makes them more likely to expose for different health related risks. Thus it is suggested that, the gendered approach to waste picking needs to address the multiple dimensions of subordinations

that women's are subjected to, at home, in the work place and within their organization (Dias and Fernandez, 2012).

2.7 Push and Pull Factors Forcing Solid Waste Collection to Join the Work

Literatures have identified some of the negative factors which forces individual to engage in the activity of waste collection and the contrary positive reasons or beneficial features in which individuals have preferred to work on waste collection from other economic activities. The reasons will be provided below by putting it separately as pull and push factors from the review of different literatures.

2.7.1 Push Factors

Some scholars express waste collection as the indicator of the extra ordinary economic inequality of the peoples living in once country. And under development, poverty, unemployment and lack of safety for the poor, are identified as some of the structural causes of waste collection (Medina, 2010). Thus, the author suggest that until we succeed in eliminating that inequality waste collection is likely to continue to exist in many developing counters. Therefor it is suggested that the public policy that support waste picking activities would be human, as well as make social, economic and environmental sense (Medina, 2010).

2.7.1.1 Poverty

A number of scholars such as (Karagiannidis and Kontogianni, 2012, Mariam and Tumaini, 2012, Wilson et al, 2006, Maldonado et al, 2004)) have the viewed that solid waste collection in developing countries especially in Sub Saharan African is the response to high level of poverty and deterioration in the formal job market. Arguing that solid waste collection should be viewed as representing a survival response by urban poor, and it is a form of employment, a strategy that is often preferred to begging or stealing. In India for example, studies have found that many women, often positioned in the lower echelons of poverty, have no choice but collect waste as an income generating activity (Huysman, 1994). The other study conducted in Bangalore (India) evidences that women and girls involved in picking waste are often from the women headed households with no other source of income (Beal, 1997). Thus, (Huysman , 1994), concludes that, the limited opportunities for such women have on the labor market due to their economic and social status forces them to take on informal and underestimated jobs such as waste picking.

As identified by (Gani, et al. 2012), in most of the African countries underprivileged women are employees of the waste collection services as street sweepers and cart operators with these physically challenging tasks as handling refuse, covering long distance and working long hours in addition to the time spend on their domestic tasks. Often they are uneducated individuals facing difficult family circumstances (e.g. Divorced mothers with children) so they treat waste collection employment by a means of surviving and bringing in an income for their family (Gani, et al. 2012). It is also indicated that women's are less hesitant than men when it comes to accepting the job which is underpaid and disrespected by the society (Gani, et al. 2012).

2.7.1.2 Low Social Status in the Society

According to Wilson et al (2006), waste collection in developing countries has traditionally been practiced by outcast and marginal groups such as slaves, rural migrants, immigrants and religious minorities. They substantiate their statement through several examples, such as Harijan in India and Zabbaleen in Cairo. The Harijan are the cast of untouchables and Zabbaleen belong to Christian minority that deals with waste collection and recycling (Wilson et al. 2006). In Faisalabad (Pakistan) waste work is done by specific section of the society which is deemed for this work by the virtue of their heredity or cast (Beal, 1997). The author indicates that in Faisalabad men and women were traditionally do this work, however it is evidenced that the condition is changed as competition for public sector employment increase, Christian women's access to municipal job is declining relatively to men (Beal, 1997).

2.7.1.3 Lack of Employment Opportunities in the Formal Job Market

The rural- urban migration caused by high poverty incidences on the rural areas, and the inability of urban centers to provide employment opportunities for the large supply of labor is one of the causes of waste picking identified (Mbeng, 2013). For example the study conducted in Cameron shows that most of the waste pickers identified have a migrant background and these category of migrants are those with low or no academic background and without skilled man power often choose waste picking as veritable option for income generation and livelihood(Mbeng, 2013).Similarly, The study conducted in Cote d'Ivoire on female waste workers shows that, most of the females engaged in waste picking have a migration background, pushed by poverty and unemployment and pulled by the hope of an income and greater wealth in waste picking (Sandra,

2011). According to Venkateswaran(1994), lack of education and skill in one hand, and the need for flexible hour of work within the demand of their gender determined responsibility on the other most often constrains women to the informal sector. As most of the waste pickers were found to work in other informal work activities, the difficult working condition on their previous work is also found as the other reason from women waste pickers in India (Huysman, 1994).For example all of the women waste workers identified by the researcher had previously working outside home on activities such as collies in markets or constriction sites, in road constructions, as household servants, vegetable sellers and other related works in the informal economy before they have switched in waste collection activities (Huysman, 1994).

2.7.2 Pull Factors

Scholars have also identified some positive forces or motives which makes waste collection one of the preferred work options for individuals from their study. For example according to Simoneit (2012) waste management in general and waste collection and recycling in particular create considerable employment opportunities including low skilled workers. The same author added that even illiterate person can be productively employed in collection and sorting waste; this opens up occupational and income opportunities for disadvantaged group of the society, contributing to achieving MDG1- reducing poverty. Collection, separation and processing of waste and reusable materials provide enormous potentials for employment and contributing to developing a green economy.

George (2015) studied the positive motives and negative aspects of waste work identifies that (i)Financial freedom: enabling workers specially women to be able to take care of the family and being able to pay of the debts, (ii) Convenient time, which is identified as the other well appreciated aspect of the job. as most of the workers could return home in the early or late afternoon which gives them time for attending to the household chores, being at home when the children come home and having some rest or leisure time. (iii)Freedom to go outside, meeting different peoples, forming friendships outside and getting their own earning are freedoms that might be taken for granted by men and many women. (iv) Planning and long term thinking that this particular job will bring a benefit in future, based on their observation of earnings of women's who have already taken up this job in other units. There are also women's who play an active role in motivating other women by coming forward for taking up the work and explain the

merit of this job to them. Friendship formed on the group is another positive aspect of the work identified (George, 2015)

Similarly, Husman(1999), also found waste picking as one of the preferred work opportunities for women waste workers in in India due to the following identified reasons; these are

- (i) the low and irregular income of former activities ;
- (ii) The extreme difficulty faced on other works to combining it with their household duty. Waste picking can give them the opportunity of divide their time between their task as mothers, house wives and breadwinners.
- (iii) they have no formal boss or overseer and there are no restrictions on bringing their children with them or having them involved in waste picking;
- (iv) They also do not have to invest money, be educated or have contacts to start waste picking.

Ruth(2013) also identifies some of the reasons for which waste picking is found as one of the preferred work option for the waste workers in India ; these are (i) their work site is not distant from their home, (ii) flexibility in the nature of the work allows them to balance the work with family responsibility, (iii) For women waste collectors the work of waste collection can be juxtaposed with their responsibility of cooking for the family and children,(iv) waste collection keeps a regular income flow in the waste picking family which might not be the case for some other economic activity, (v) waste collection provides them the freedom to decide how much to work every day, (vi), There are no supervisors to this work.

2.8 Gender in The Organized Solid waste collectors

Two contradicting ideas are identified regarding organizing of waste collectors in to some form of organizations such as cooperatives when we examine from a gender perspectives. ILO, (2017) supports cooperatives viewing that this can bring gender equality and the opposite finding provided by Dias and Ogando (2015) suggested that cooperatives are inherently not conducive to gender equality.

According to report ILO (2017) cooperatives can be important vehicles for gender equality, especially through empowering women by granting flexibility and self-determination with regards to scheduled work hours (ILO, 2017). The report also states that cooperative led awareness raising activities that address issues such as child labor, child marriage, HIV, gender

based violence and alcoholism are also seen as having an impact on the status of women and their livelihood(ILO, 2017).

The report provided by ILO is provided in response to the finding of Dias and Ogando (2015, suggested that cooperatives are inherently not conducive to gender equality. The arguments of Dias and Ogando stands from the finding of the study made on Brazil waste picker's cooperative movement, and it highlights that sexual division of labor where men work in physically demanding activity such as collection and transportation, whereas women are involved on activities that "require greater dexterity" such as sorting. They note while the latter is more time consuming and crucial it is less valued than the former. The study also reveals that women member do not always enjoy the democratic value that cooperatives are built on, often having less decision making power with in their cooperatives than their male counter parts. Dias and Ogando argues that gender imbalances need to be reorganized and addressed instead of assuming that, gender equality is realized by default through the value and principles of cooperative movement. As the author explains building gender awareness is aligned with the ideas of cooperative movement precisely because it exposes how forms of power and injustice undermine workers capacity to improve their livelihood".

2.9 Previous Studies on Ethiopia Solid Waste Collection workers

The poor solid waste management in Addis Ababa is seriously suggested by many writers who conduct their study on the city. For example, it is found that the 65 % of solid waste produced per day on the city is collected and disposed by the municipality in the dumpsite, 5 % is recycled and 5% composted and the remaining 25 % of solid waste are uncollected and dumped on unauthorized areas such as open fields, street and rivers (Tekahun, 2007). The significant role of women in solid waste management of the Addis Ababa city identified by(Regasa et al 2011), noted that it is only mothers who work the practice of onsite handling of solid waste especially on the poor household.

Solid waste collection service in Addis Ababa is divided in to two sub system; primary collation service and Secondary collection service. Primary collection is done by micro and small enterprise and payment is volume based rate (30birr/m³). Service charge is fixed according to the amount of water consumed and the ability and willingness to pay. The collection service is

made from six major source of solid waste which are the Household, Street, Commercial institutions, Industries, Hotels and Hospitals. The first which is the house hold collection services are provided by micro and small enterprises, street sweeping by public employees whereas the remaining collection services are provided by the private sector. According to Mesfin and Pieter(2014) from the total generated solid waste households' accounts for, 71%, Street, 10%, commercial institutions, 9%, Industries, 6%, Hotel, 3% and Hospital 1%. The authors also indicate that collection coverage in Addis Ababa have significantly increased due to the reforms made on 2004 on the solid waste management system (Mesfin and Pieter, 2014). It is also indicated that solid waste collection has created job opportunities for many jobless youths organized in micro and small enterprises (Regasa et al 2011). Besides of the job creation opportunities the significances of micro enterprises and other formal sectors participations towards improving of solid waste collection are showed here on the report provided by (Mesfin and Pieter, 2014).

<i>Service year and coverage</i>					
Year	2000	2001	2002	2004	2005
Coverage	38%	40%	53%	53.9%	78%

Source, (Mesfin and Pieter, 2014)

According to Enyew (2013), for 85.5 % of the waste collector enterprise members in Addis Ababa, poverty and unemployment is the main driving factor for their involvement on the solid waste collection activity. The limited access to working equipment, limited access to health and safety protection materials, problem of temporarily storage area, shortage of municipal containers and disposal vehicles and shortage of machinery and problem of land is identified as the challenges to expand the business of the micro enterprises, on the other side the support of the government by providing necessary training and encouragement from the society are identified as positive factors enabling the employees to stay on their business(Enyew, 2013). Similarly, according to (Daniel et al, 2014), household waste collection is identified as a job which requires repeated heavy physical activities such as lifting, caring, pulling and pushing. And the occurrence of risks of occupational injuries resulting from the absence of safety training, especially on job training, limited use of personal protective devices while on duty, and prolonged duration of working hours is identified as a significant challenge for waste collectors

in Addis Ababa (Daniel et al, 2014). Daniel et al, suggests that the use of personal protective equipollents decreases the exposure to the occupational risks by showing that, among the Addis Ababa solid waste collectors those who were not using the PPE all the time while on duty are found 2.62 time's higher occupational injuries than those who use the PPEs. In addition to this the number of family in the household is also identified as having a relation to the occurrence of the occupational risk. For example; in Addis Ababa the study indicated that the waste collectors with large family members are found more prone to the occupational related risks comparing to those with small family members on the household. The basic reason provided according to the author is respondent who had more children might be pre occupied by extra thinking about their children which might increase the risk of occupational injuries among this group(Daniel et al, 2014). In order to reduce these occupational risks and advance employment opportunities scholars suggest privatization and promoting the involvement of NGOs as one of the mechanisms. For example Tekahun(2007), argues the importance of privatization of solid waste collection by substantiating his argument from the successful experience of privatization in Dare salaam (Tanzania), Nairobi (Kenya), and Accra (Ghana). Thus, the author suggested that working with private sector can contributes to better the urban environmental health while creating jobs, income, computation and promoting integrated solid waste management if it is properly managed in Ethiopia (Tekahun, 2007).

CHAPTER THREE RESEARCH METHODOLOGY

3.1 Research Design

The type of research design that is employed in this study is exploratory research since it is focused on the detail empirical investigation of the activities within the give location (Bryman, 2008). In order to explore and investigate the gender issues involved within the selected enterprises an in-depth research of qualitative nature is deemed to be appropriate.

3.2 Qualitative Research Approach

Methodologically this research adopted a qualitative approach. The reason why the research uses qualitative approach is, due to the fact that the gender issues involved on the waste collection sector is gathered from the critical investigation of the view and opinions of the participants experiencing the problem under investigation. Bryman (2004) have suggested that qualitative research is helpful in the generation of an intensive, detailed examination and it's important to develop concepts that enhance the understanding of social phenomena in natural settings, with due emphasis on the meanings, experiences and views of all participants. Besides, qualitative approach is relatively an open and unstructured strategy which enhances the opportunity of coming across entirely unexpected issues (Berg, 2001).

3.3 Study Area

Bole sub-city is the study area for this research. The area is found in the Eastern part of Addis Ababa. It is selected because it is “infrastructurally better and potential business area comprising better-off and more affluent inhabitants” (Mesfin and Pieter, 2013:82). According to Medina (2010), there is a positive correlation between community income and the amount of solid waste generated because peoples in the wealthier areas have tended to generate large amount of garbage. Thus, the largest number of waste collectors tends to exist here on the area. Bole sub city has 14 woredas. According to the information found from the Bole sub-city sanitation management office during the pre- assessment of the study, both private and public enterprises are found responsible for waste collection activities within the area. The public enterprises are organized in associations and are responsible for door- to – door collection activities whereas the collecting of waste from hotels, Schools and other service delivery and manufacturing

organizations is given for the private sector. The door-to-door solid waste collection association was the main target of this study.

Map of Addis Ababa; Bole Sub city in Eastern Direction

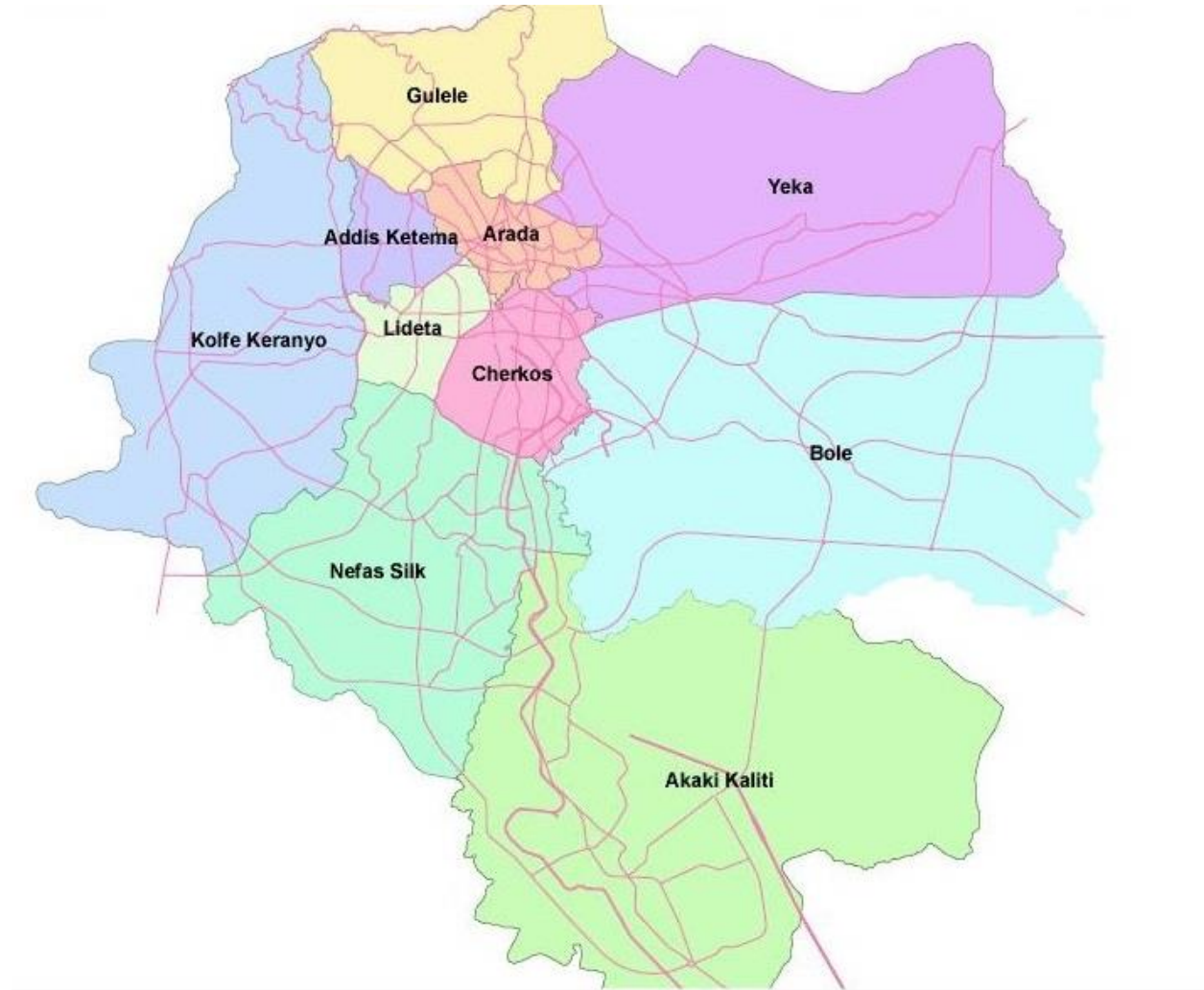


Figure1: Map of Addis Ababa showing study area; (<http://www.golemap>)

3.4 Data Types and Sources

The data for this research were collected from both primary and secondary sources. The primary data was collected from the sample informants of the association micro-enterprises using in-depth interview and from the officials selected as key informants for this study. As secondary sources, relevant documents were collected from printed materials and books; government policies and strategies and reports to understand the policy/strategy environment and institutional set up of those individuals employed in urban waste collection activities. The works of other researchers and publications mainly, journals, thesis, and online resources were also used.

3.5 Sample Size and Sampling Techniques

There are 972 individuals constituting of 722 men and 250 women's organized under 13 associations in Bole sub city. These associations are responsible for door- to – door collection services. Out of the total 13 associations 12 individuals constituting of (6 women and 6 men) were selected for in-depth interviews. Since the research conducted a gender analysis sex were the main criteria to take the samples for this study. At least one individual was selected from the 12 associations. Member of men and women proportions with in the enterprise were the criteria to select sample enterprises from where the individuals are selected. Depending on that only one association which was assumed to be similar characteristics with the selected associations were not included during the study. In addition, 5 key informants including, one from the Bole sub-city sanitation administration office and three from three selected woredas, one from micro and Small-Scale enterprises development office of the sub city were the key informants of this study. The majority of key informants were purposively taken from the Woreda with the intention that the Woreda is the administrative body which closely works and inspects the solid waste collector enterprises. The Woredas were selected based on the number of men and women's in which the enterprises operated over the area is constituted. Thus, the key informants were from Woreda 12 (enterprise constituting of large women members), Woreda 4 (enterprise with the largest number of male member) and woreda 3 (consists of relatively equal proportion of women and men members). Totally 17 individuals constituted of 12 in-depth and 5 key informants participated in this research study.

3.5.1 Sampling Technique

Purposive sampling specifically saturated sampling technique was employed to select the informants for this study. According to Berg (2001) in some instances, purposive sampling are selected after field investigation on some group, in order to ensure that certain type of individuals or persons displaying certain attributes are included on the study. Purposive sampling is selected for this research with the conviction that this can allow to get the required research participants with a rich data in conducting the study. In this regard, the participants were purposively selected on the basis of the researcher judgment to get the required data. In other words, the researcher utilizes purposive sampling technique based on the conviction that the view and opinion of both men and women association member as well as different officials on the field is included in the sample.

3.6 Method of Data Collection

In this research qualitative method of data collection was utilized in order to acquire the required information. The researcher utilized a semi-structured interview questions in order to capture the subjective view of the participants involved on the research. Semi-structured interviews are characterized by an open design that is expected to express the interviewee's viewpoints more than a standardized interview (Flick, 2009). Thus, open questions were asked to invite the interviewees to speak freely about their experience. Asking and probing informant's viewpoint with open questions allows the researcher to acquire a very rich data regarding the issue on the study.

3.6.1 In-depth Interview

In-Depth interview is technique designed to elicit a vivid picture of the participant's perspective on the research topic (Mack et al., 2011). The same author suggested that this method is an effective qualitative data collection for getting people to talk about their personal feelings, opinions and experiences. Thus, in-depth interview were undertaken with 12 participants constituting of both sexes for the critical investigation and understanding of individual viewpoints regarding the factors encouraged them to join waste collection which is assumed as one of the lowest status job and explore the overall experiences of men and women solid waste collectors in their work.

3.6.2 Key-Informant Interview

Key informants for this study were selected based on their respective roles and connections they have with the associations providing door-to-door solid waste collection services. Based on this, five individual constituting one officer from solid waste management office of the Bole sub-city, three from the three selected woredas, one from the micro and small scale development office were the key informants of this study.

3.7 Method of Data Analysis and Interpretation

The data recorded during the data collection were transcribed and thematically analyzed. And it is analyzed and interpreted in the light of the concepts of a particular theoretical orientation and empirical evidences. In qualitative research, data analysis and interpretation is challenging to make sense out of massive of data, identify significant patterns, and construct a framework for communicating the essence of what the data express (Patton, 1990). Despite, these challenges, the data collected in different ways was analyzed and interpreted to meet the objectives of the study.

3.8 Ethical Consideration

An official letter was written from the Center of Gender Studies, Addis Ababa University to the concerned bodies for facilitation of this study. The purpose of the study was explained to the respondents and their participation was on voluntary basis. The right of each respondent to refuse or answer for few or all questions and on the other hand to add any of their view and opinion regarding the study was respected. The name of study participants is not mentioned in the study report to ensure confidentiality. In this thesis relevant literature's was thoroughly reviewed and all sources or materials used for this thesis are properly acknowledged.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

INTRODUCTION

In the previous chapter attempts were made to present the methods utilized in the research process and this chapter deals with the finding and analysis.

4.1 Description of Participants

The research employed twelve in-depth and five key informants. Sexes were taken as the criteria to select the participants of the in-depth interview. Depending on that, 6 women and 6 men in-depth interview informants participated during the study of this research. The profile of the in-depth interview participants and key informants is discussed in table 4.1, 4.2 and 4.3. In addition, the profile of the waste collector associations is also provided in table 4.4 with the intention of showing the number of men and women participants within the associations.

Table 4.1 Profile of the key informants

Name	Sex	Organization	Position
KI ₁	M	Bole sub city urban sanitation administrative office	Case team representative
KI ₂	M	Bole sub city wereda 04 urban sanitation administrative office	Manager
KI ₃	M	Bole sub city wereda 03 urban sanitation administrative office	Manager
KI ₄	M	Bole sub city wereda 12 urban sanitation administrative office	Manager
KI ₅	F	Bole sub city Micro and Small enterprises development office	Small and micro enterprise development officer

Source; Own key-informant interview result

As it can be seen from Table 4.2, all except one of the key informants were males. Key informants were asked about the level of women’s participation in the higher level of solid waste management administrative positions. Even though, this was not the main objective of this study the question was raised with the disposition that this might have an implication to the objective of this study conducted at the grassroots level. Although, the coordinated action of both men and women is needed to solve gender difference, women representation on the higher level would be important for the inclusion of priorities, needs and interests of women’s while solid waste management policies are developed(Veena and kusakabe, 2008). But this does not mean that participation only could necessary bring a change, unless women’s get the opportunity, and necessary skills that enables them to influence the policies. Regarding, women’s participation on the higher solid waste management administrative positions, one of the key informant from woreda said that;

In Addis Ababa, 75% of the workers in the agency are women. This doesn't however mean that men are not involved in this line of work. In this Woreda, besides 17 men, the rest are women.

Similarly, the key informant from the sub city was asked about the level of women participation on sub city level sanitation service management. He responded that;

They are highly involved. Most of our workers are women including the manager of this office. But this is not done intentionally. And we have also one woman engaged in gender affairs.

Standing from the suggestion provided above by the key informant, the researcher of this study was glad to hear the major changes done on Bole sub city regarding gender issues. Following this I asked a question regarding the works done by the concerned bodies to increase the number of women's participation in the associations and ensure their level of benefits. He continued;

There is no such difference for men and women. Anyone who is looking for work, either men or women and also those sleeping in streets can engage in the work. Special arrangements and policies are not designed in order to protect the rights of women and also to alleviate their current level of development.

According to the key informants in all of the organizations starting from the sub city urban sanitation management to the woredas there is a gender affairs office. Analyzing and including of gender perspective into the organizations working environment and promoting of gender sensitive working condition could be the basic rationale for the inclusion of gender affairs office and gender focal persons into the institutional structure of one's organization (Medhanit and Sofanit, 2009). According to (Medhanit and Sofanit, 2009), Analysis should be always made of the effect on and the need of men and women be included while decisions are made and plans are to be implemented. However, by looking into the organizations working environment as well as the working conditions of the women employees within the sector one can understand, in Bole sub city the gender affaire office is included in the structure of the urban solid waste management nominally.

With the gender affairs representatives in the fourteen Woredas, we give training on HIV/AIDS for members of the association once a year. But it is at an initial stage and no more additional measures are taken.

A lot of gender issues were identified from the in-depth interview informants that will be discussed in detail on the next section of this chapter. However, the key informants said that, no problem related to gender issues is reported to their organizations so far. This indicated the gender blindness of the concerned bodies on the study area.

One of the key informants said that;

No problems arose so far. Most of the problem is related to the unavailability of pickup trucks and the negative attitude of the society. The members of our society do not store the garbage properly and do not properly categorize different types of waste. Awareness creation is being done by the media to change this. When cars get into the garage our problems become more complicated.

From the overall view of the key informants reported above one can understand the gender blind work of their organizations. It is found that women are part of the higher administrative positions of the solid waste management and in addition to that in all of their organizations there is a gender affair office. But no work is done so far with regards to solving the overall challenges that the women waste collectors are experiencing on their work.

Table 4.2 Profiles of the women participants of the in-depth interview;

Study participants	Sex	Marital status	Age	Household size	Dare of starting the business E.C	Head of the household	Educational Level	Do you want to stay on this job?
WP ₁	F	Widow	26	3	2005	Female	5 grade	NO
WP ₂	F	Married	36	7	2002	Male	(up to grade 2)	NO
WP ₃	F	Divorced	38	3	2004	Female	(up to grade 4)	NO
WP ₄	F	Divorced	32	3	2002	Female	No educated	Yes
WP ₅	F	Married	29	3	2001	Male	(up to grade 5)	NO
WP ₆	F	Divorced	37	4	2005	Female	No education	NO

Source: Own in depth interview result, 2018

As it is shown in Table 4.2, two of the participants have no education but the rest of all have started their elementary school and can read and write. They affirmed that level of education is not a major criterion to enter in to the solid waste collection business. Rather it is indicated that if individuals are able to carry out the activities which is mostly done using a physical labor and devoting a time to collect the large amount of waste, anyone can be productively employed in the sector. According to Simoneit (2012), uneducated person can be productively employed in collection and sorting waste; this opens up occupational and income opportunities for disadvantaged group of the society, contributing to reduce poverty and achieving Millennium Development Goal .

According to the informants, in Addis Ababa the payment for service of waste collection is volume based. Thus, the longer hour you do the larger will be the amount of waste to be collected and the better income as well. The issue with time is found as one of the gender issue for women. The domestic responsibilities that women have at home limited their time to spend on their job and this has negatively affected their productivity at work (Vineeshia and Mahees, 2016). The survey report of the study conducted in Durban (South Africa), Mkhize et al,

(2014), showed that in terms of working hours, women waste collectors are found working 34 hours comparing to men who works 44 hours per week (Mkhize et. al, 2014). For that reason male waste pickers are actually found earning three times more than their female counter parts have earned (Mkhize et. al, 2014). Similarly, according to the in-depth informants of this research study, if the member of the association fails to avail on the time of duty some amount of money will be cut from their monthly salary.

The age of the participants ranges between 26 and 38. Data on age is very important for the description and analysis of socio-economic characteristics and income generating capabilities. In addition to this the nature of the work deserves a physical strength which is considered as difficult for children and elders to work on this line of activity.

Except the two which are married and one widow the rest of women informants were divorced. Knowing the marital status of women's was assumed to be a relevant gender issue for women waste collectors. For example Adama and Nzeadibe (2015), identified the issue related to the challenges for the unmarried women waste collectors to get the husband, for that reason unmarried females may not engage in waste picking activity in Nsukka(Nigeria). But in this study, women participants indicated that their husbands did not allow them to join the line of waste collection work. The reason provided for this was as long as women's have the responsibilities to prepare a food and care for the family they are expected to stay clean so as to protect the family's health and safety. However, what is surprising here is that this rule dealing with avoiding of women from waste collection work is applied and worked on the public and the paid arena of the solid waste collection sector, not on the private and unpaid one which is considered as the exclusive duty of women. According to Vineeshia and Mahees (2016) household waste management which is taken as the waste management system undertaking in domestic sphere is often the unpaid work of women, but when it is mechanized in the delivery cycle this is paid and in many cases men take over this work.

In the current study some of the women have presented their work as one of the reason for why they are divorced. One of the women participants (WP₄) told that;

My ex-husband told me to quit the job saying that you are the women you prepares a food for the family, thus you are expected to be clean. Please quite your work and I

would cover all the expenses made on the household. I refused his request and said I would accept whatever he decides regarding our marriage. He got out of home and now he get married to other women and he has children from her too.

Regarding when did the women started the waste collection business, except the one whom had engaged in 2001, all of the women participants have started their business after 2002E.C. Before that year the work was conducted by private individuals and groups working on informal bases. It is starting from 2002E.C that solid waste collection work is get authorized and legalized in Ethiopia. This enables the women participants to join the line of waste collection work by organizing themselves under micro and small enterprises. According to Muller and Schinberg, (1999); women's are forced out from the work while the activities on waste collection are become legitimized and formalized. However what is different and interesting in this study is the legal formality of the sector provides women an opportunity to join waste collection work than informal ones. According to the informants of this study previously the work was done by few men's and groups working on informal bases.

To understand the sense and feelings informants have towards their occupation, they were asked about their interest to continue on such work. As shown in Table 4.1 all women participants, except the one are not interested to expand and stay on this line of work even when conditions are improved and whatever opportunities are provided for them. But they want this job as means to translate and to the other work in which they are interest in. This was for the reason that, the work is found uncomfortable to women for many reasons. The loss of strength and related problems happening due to women's reproductive role were creating a threat to some of the women informants of this study to continue and expand their business on the sector. Regarding this WP₆ told it as follow;

No I don't want to continue by being a solid waste collector. It might take me some time but I plan to open up a little restaurant. I took training on food preparation. This work is difficult especially for us. Because as we women's give birth to children we are easily exposed for back pain and also as we are going older and older we are getting weak. For example, there are very old women whose age is above 64 in our association. They do it as long as they do not have any other alternative. But it is difficult for them to do what we are doing here. We helped them by allowing them to

do some easy works. But things could not be the same in all circumstances. They work with us because we allowed them to work. But other associations might not allow these women's to be their member.

Indicating to the difficult nature of the work deserving a physical labor as a reason, the other women informant similarly told that she is working on the sector for the reason that she lacks an initial capital to start the job in which she is interested in. She told that;

I am currently doing the job for the sake of survival not out of fun. I am not interested in receiving training regarding garbage cleaning service. If I manage to save some money, I want to get training and work in a hair salon. I am more comfortable with hair dressing work compared to cleaning garbage which is a difficult job.

All women informants were having similar response even though they express it in different ways. Only one woman (WR4) expresses her happiness towards her job, referring that this enables her to cover all the expenses needed to fulfill the needs of the family and her children. Thus, she has the need to further expand her business on the line of solid waste collection. She explained that;

I have changed most of the things in my life. I was not able to pay for house rent in the past. But now I can pay for house rent, can afford to pay for my children's clothes and school and also cover my expenses as well. I hope it will change my life in the future. If I get a loan or training, I still want to stay in this work. Our association bought a car, but there is still physical labor since we push the garbage carriers. However, this enables us to save our time and expand our coverage to collect large amount of garbage and serve for the larger community.

Table 4.3 Profile of men in-depth interview informants;

Study Participants	SEX	Marital status	Age	House hold size	Date of starting the business E.C	Head of the House hold	Educational background	Do you want to stay on this job?
MP ₁	M	Married	45	3	1995	Male	Diploma	Yes
MP ₂	M	Married	29	4	2001	Male	10	Yes
MP ₃	M	Married	33	3	2002	Male	12	Yes
MP ₄	M	Married	40	5	2000	Male	10	No
MP ₅	M	Single	33	0	2004	Single	8	Yes
MP ₆	M	Married	32	3	2001	Male	10	No

As it can be seen from Table 4.3, one of the male participants has a diploma, whereas the rest of the male informants have completed their secondary and primary education level. It is found that male participants have a better educational level comparing to that of women.

Regarding the marital status of male participants except the one who is single all are married. And no one of them is divorced, unlike women participants in which 3 are divorced.

And when we look at the date of starting the business most of male participants were in the business for longer time. Two of the participants join the business of waste collection after the work have become regulated, but the rest four participants were previously worked as informal solid waste collectors. Different from the other informal sector activities in which women's constituted a largest proportions, in waste collection sector women have little opportunity to start the business. Because, no private organizations can employ women perceiving that women could not fitted for such kind of activities demanding physical labor (Kusakabe and Veena, 2008).

Table 4.4, Door-to-door solid waste collection associations of the Bole sub city

Name of the Wereda	Name of the association	Women	MEMBERS		Total
			%	Men	
Werda 1&2	Werkneh, Dejene & his friends association	30	~50%	66	96
wereda 3	Abrham; Dechasa & friends association	19	<20%	71	90
Wereda 4	Fasil; yonas & his friends association	4	<10%	53	57
Wereda 5	Moges; werku & his friends association	2	<10%	28	30
Wereda 6	Anwar; mikiyas& his friends association	11	~20%	42	53
Wereda 7	Msefin, Yeshiwork & his friends association	29	~25%	44	73
Wereda 8	Debela, Abenet & his friends association	44	~45%	55	99
Wereda 9	Ytebark, Werku& his friends association	25	~33%	54	79
Wereda 10	Dwit, Tesfaye, Andnet & his friends association	24	~16%	124	148
Wereda 11	Abrham, Tsegaye & his friends association	22	~50%	27	49
Wereda 12	Shawel, Efriem & his friends association	17	~25%	43	60
Wereda 13	Hayelom, Ashebr& his friends association	13	<15%	65	78
Wereda 14	Grum, Msgnaw & his friends association	10	~17%	50	60
Total		250		722	972

Source; Bole sub-city sanitation management office

As it can be seen from table 4.4, totally 972 individuals (250 women's and 722 men's) are employee of the door-to-door solid waste collection sector in Bole sub city. These individuals are organized under 13 associations. In all the Woredas of Bole sub city male associations members constitutes the largest proportion comparing to that of the women. According to the key informants there is no any requirement expected from individuals to enter on the activity of waste collection. This study identified that even though principally, it is the poor whom is expected to be part of the association on the ground any interested individuals, be it men or women, educated or uneducated , young or aged and so on with any other characteristics can engage and work on the activity. However, since the societies have a negative attitude towards waste it is the poor and uneducated who is mostly involved on the work.

In Addis Ababa the work in solid waste collection is done manually using physical human labor. Thus, the nature of the work in waste collection deserves a physical labor and this does not motivate women to join the activity. That is why in all of the enterprises the number of women waste collectors is small comparing to men. One of the key informants confirms this as follow;

Since the work is difficult and takes hard labor, it's not comfortable for women. Still, there are strong women who work as the men do in our Woreda. To protect those four women, we make sure that they don't push the garbage carriers, lift garbage onto the compactor and work after 6:00 pm in the evening.

Similarly, Adama and Nzeadibe (2015) found that in Nigeria waste picking is male- dominated occupation with 95.5 percent of the activity is performed by men. The author indicates that even if it is not further elaborated, 'the tedious and unhealthy nature of the work for women's was provided as the reason. However, it is the women performing the solid waste management activities in the domestic setting. Because in most of the developing countries including Ethiopia it is the women who have the responsibility to handle the waste produced on the household (Regasa et al 2011). This clearly proofs to some of the feminist theorists argument stated gender issue subjugates women in most of the socio cultural setups as it clearly demarcates public and private sphere of activities assigned to men and women respectively. One of the women participants (WP₂) told that;

At home I handle the waste on my own. If I got to work and knock on 50 doors, in almost all or about 47 of them, it is women who take care of the trash. They are also the ones who criticized on our work quality.

Thus, “the prevailing gender stereotype which portrays women as the weaker sex and therefore could not pick waste” is one of the reasons for women’s limited involvement to provide the paid waste collection service as identified by the author Adama and Nzeadibe (2015). In addition the women informant of the current study indicated that, their husbands’ are not interested to see them working as solid waste collector.

4.2 Enabling Factors to Join the Waste Collection Work

Some scholars indicated that solid waste collection should be viewed as representing a survival response by urban poor, and it is a form of employment, a strategy that is often preferred to begging or stealing (Huysman, 1994). But, interestingly according to male informants waste collection is among one of the untapped business activities found in Ethiopia, thus participants have strong vision to be an entrepreneur on the line of that business. Similarly, according to women informants, even though they do not have such motivations to continue on this line of business like their male counter parts still, their income is better than the other informal sector activities. According to George (2015) convenient time is the most appreciated aspect of the job for women’s indicating that as most of the workers could return home in the early or late afternoon this gives them time for attending to the household chores, being at home when the children come home and having some rest or leisure time. Similar finding were also found from the women participants of this study. All the factors enabling the participants of this study to join the line of waste collection business is summarized below in table 4. 4. The table presents the shared and unique factors that enable men and women to join the sector of waste collection.

Table 4.5; Summary of the enabling factors to join solid waste collection sector

N ^o	enabling factors to join waste collection	Sex			
		Male	N ^o	women	N ^o
1	previous working conditions	-	-	✓	2
2	Family issue	✓	1	✓	1
3	Better and regular income	✓	6	✓	6
4	The Hope of better future opportunity	✓	3	-	-
5	Formal regulation of the work	✓	1	✓	5
6	Motivated by other	✓	1	✓	1

Source; own in-depth interview result

In addition to the factors shown in Table 4.5, women engagement to the solid waste collection work is compounded by the inability to fulfil their family needs from the income that their previous work had generated to them. Whereas most of the men except in this study were previously been street venders and had joined at this line of work to meet their daily needs of food. This will be discussed in detail as follow.

4.2.1 Previous Working Conditions

According to the women informants the hard experiences faced on their previous job were provided as a reason to switch into the waste collection sector. Whereas most of the men informants were street boys and they were not worked previously at any activity other than waste collection. It is the difficulty of their previous job to combine it with their household chores forced the women to join the sector. One of the women informants who were a house maid before she joins the waste collection expresses her experience as follow;

Before joining this line of work, I used to hate all things let alone think about doing some work. I was a house maid and came from the rural areas. Once I came here I was looking for work. I was initially employed as a house maid and I suffered a lot trying to learn my daily chores. I was given difficult tasks and I just couldn't execute the orders that I was being given at the time. Gradually I rented a house and began working as a house maid on a temporary basis. After I got pregnant I couldn't continue on working under such conditions. In 2002 my cousin told me that an

association for garbage cleaning service was being organized and that we should join. I agreed and joined the line of work.

The other women who were previously been daily worker express waste collection as better work from all perspective including physical labor. She told that;

In the past, I used to work as a physical laborer. When I started to get damaged, I began to be engaged in this line of work. I can't cope with my previous job any more. In terms of time, I work all day. I also get some rest and get home early, when there isn't that much garbage to collect.

According to the above women participant, waste collection is found suitable for them as long as it enables them to divide their times between their responsibilities of fulfilling the household chores and be a bread winner than their previous work. Similar finding was identified by Husman (1999), who found that waste picking is one of the preferred work options for women in India due to extreme difficulty of women's on other works to combining it with their household duty. Thus, Waste collection can give them the opportunity to divide their time between their task as mothers, house wives and breadwinners. But, this was not the case for the male participants.

4.2.2 Family Issue

The death of the husband or wife within the family was also provided as one of the factor to join the sector of waste collection work by one of the men and women participants of this study. One of the women informants (WP₁) said that, she was not involved at any work previously. But after her husband was died she was forced to join the line of solid waste collection work. As long as she takes the whole responsibility of raising her children's she had to come out of the home and join to do at any income generating job. This woman prefers to replace and join the line of work where her husband used to do. She told it as follow.

I was a house wife. After my husband passed away, I replaced him and took over his line of duty. It's a difficult job. My husband died after being bitten by a dog on his line of duty. Since I have no other choice and I need to take care of my children, I also began working as a cleaner. Still, I am not doing the job by choice.

Similar case was presented by one of the male informant.

Initially, I used to run a shop and was also married. When my wife got really sick, we sold the shop to cover the medical costs. But my wife couldn't be saved and she died. She died because of HIV/AIDS. By luck, I was free from the disease and I joined the waste collection service since I had no choice. I am now again married with four children. If I had a choice I would return back into running a shop rather than working as garbage cleaner.

From the finding provided above one can understand that if either the husband or wife is passed away the one who is alive will take a whole responsibly of taking care of the family. Thus, to fulfill these responsibilities individuals will be pushed to join on the opportunities which are available to them.

4.2.3 Better and Regular Income

According to this study, waste collection is found as preferred work option than other informal work activities. According to women informants of this study, the income generated from the sector have enabled them to get a freedom and make their children grow out of any dependence from their husband's hand. While participants were asked to express the factors behind their involvement in to the solid waste management sector, one of the women responded as the job has a good salary income which enables her to cover all the costs needed to fulfill her children's need. She also added that even at the time that she failed to cover the required need of her children this work provides her a sense of confidence to ask and take the loan from her friends by taking her salary as a guarantee. She is also happy with the saving in the association. She told that;

As long as I am healthy and raising my children, I am happy. It is also a good means of income compared to other professions. When I run out of money, I get some loan taking my salary as a guarantee. I got up in the morning and feel energized and I love the fact that my work doesn't require any level of education. What matters most is working hard and earning as good as others. I couldn't find this level of salary in other places. What matters most is working hard and earning as good as others. Another thing that I like is that, this association states hat members should save 20% of what they had earned. So it helped us to cultivate the culture of saving. If it was

not a duty we could have simply wasted our money. Our work gives us self-confidence because we are not dependent on others. We are self-sufficient, we have a family and we even support others.

The other women participant also expressed her motivation towards the work as follow;

Previously I used to carry sand and do hard labor with low salary. Even if there is a hard physical labor in waste collection too, this is much better than my previous job and waste collection job has also better income. Besides, if you don't show up for work here, you are not fired and it is simply deducted from your salary. I want to thank the government for creating such an opportunity for us.

The income generated from the sector enables women participants of this study to get a freedom from their husbands as well as this enables them to know their rights. The association enables them to meet different individuals with whom to share the experiences. Regarding this one of the women participant (WP₃) told that;

Before joining the association, I had no freedom from my husband. I couldn't even go out to drink coffee. He used to beat me up twice in a single week. But I met many people in the work place. I know and enjoy many liberties. He used to beat me up and I used to bleed. One time I sued him at the police station and they only told us to reconcile. But I know how to protect myself nowadays.

According to this women organizing in association have provided her the opportunity to know her rights because this enables her to meet different individuals with experiences to share. ILO (2017), report identifies some important features of organizing in cooperatives from gender equality perspective, and suggested that cooperatives often address community needs such as freedom from violence. As a report shows cooperatives can be an important vehicles for gender equality, especially through empowering women by granting flexibility and self-determination with regards to scheduled work hours (ILO, 2017).

4.2.4 The Hope of Better Future Opportunities

The hope of getting better opportunities to be created on the future development of the sector was one of the factor for the men informants; unlike to the women to involve in solid waste collection work. No one among the women participant of this study had **such** a motivation. This was due to the reason that women informants of the study were uncomfortable with the nature of the work that demands physical labor. It was only the men informants who suggested that the work has better income; however they are motivated more by the vision that they have to be a future entrepreneur in the sector of waste collection. One of the male informants (MP₁) told that;

I love my work. It's a good business. I don't know about others, but working hard for me pays off. If things are favorable, one could earn a lot. For instance if you buy a car, you could earn a lot. A car saves physical labor especially for the women. What is more progressive is to have a compactor that could take the garbage to the main trash site, on a personal level of ownership. Had this happened, all of us could have been rich. Where we were living at the streets we encountered many problems, and although our current work is not completely satisfactory, still it is great compared to the street life.

The other male participant (MP₃) also told that;

I am getting trained for a driving license and it will help with our job since we have a car. I have a dedication to my work and I can take my job to a new direction.

If conditions continued in such a way on the future it would be only the men to exist while these micro enterprises are transformed and passed to the highest position. This is a significant gender issue that deserves a well committed work from the government and other concerned body to bring some strategic solutions accordingly.

4.2.5 Formal Regulation of the Work

For most of the women participants their involvement to the line of waste collection work were compounded by the formal regulation of waste collection in addition to the other factors. Five of the women participants have joined the sector after the government had regulated and formalized

the sector. But for the men participants, although the formal regulation of the sector has enabled them to be beneficial on many aspects they were doing the activity as informal workers for long period of time. One of the male participants (MP₆) told that;

I started the work privately. I came from the country side and when I come here, no one was giving attention to this work. When people see you pushing garbage, they despise you. There was no money and we used to eat what is thrown out of hotels. We take out their garbage and they give us food. When people see this, they give us 1 or 2 birr to take care of the garbage. We like the money and started contacting homes to take care of their garbage. At that time it was simply thrown into the streets. We take the garbage far away and we get paid. Then our friends bought Carrey and they hired us. In 2002, there were organizations being formed at the level of Kebele and those who work privately were organized. We benefited out of that. In 2002, we used to collect on personal level. But in 2003 and 2004, all payments were being made through the finance system.

Similarly the other male participant (MP₁) also expresses that;

It is poverty that led us into the job of garbage cleaning service. We used to sleep on the streets. Among us, the first one to begin personal cleaning service was a girl called Mimi. While we were street venders, she is the one who joined the job first, organized us and got us into the business. Initially I used to work with her as a security guard. After sometime around 2001, she started collecting the garbage through trucks and also got us into joining her work. The women used to collect the money for the services provided and were not engaged in the cleaning. Things used to be different then.

As we can see from the male respondents view provided above, both of the men participants said that, they had been working in solid waste collection previously but the intervention of the government helps them to continue their business in formal way. This is different from the five women informants of this study which had started their business after the solid waste collections become regulated and formalized. Even though there are other fundamental forces pushed them

to engage in this line of activity their involvement is ensured by interventions made by the governmental to formalize and integrate the sector.

4.2.6 Motivated by Others

Motivation from individuals who were working on the sector before and already taken up this job to other unit was the other factor for some of the informant's involvement to the sector. In other words these individuals are joined to waste collection work after they have already aware of the benefits behind waste by looking at individuals who benefited in the job. One of the male informants (MP₃) told that;

I got into the sector when I saw people being engaged in this line of work privately had reached the highest stage. At that time, I just finished 12th grade and had no vocational training, and was just sitting at home. Now I am learning to get a license and it will help with our job since we have a car. I have a dedication to our work and I can take our job to a new direction.

Similarly the women participant said that;

Waste collection is a work that I used to hate. But when I saw people who work there, they dress and look better. When I see that it pays off, I convinced myself and joined.

The case for both men and women participant seems similar. But what is different here is that; the men seems motivated by some strategic changes for that they have some strategic plans to expand their business by this line of work and to reach somewhere to the higher stage. But for the women informants their involvement to the sector was backed by fulfilling some practical needs of their children. Thus, as long as they abled to achieve that objective they were expressed their satisfaction by the current amount of income incurred from the sector.

Collection, separation and processing of waste and reusable materials provide enormous potentials for employment and contributing to developing a green economy (Simoneit, 2012). To ensure this efficient utilization of waste the government and other concerned bodies should create awareness on the society regarding the wealth behind waste. Thus, promoting the benefit of those who are already employed on the sector could be one of the ways to change the negative

attitude of the society towards waste. The women informants of this study were expressing their views that they are not interested to continue on solid waste collection. However the men informants were seen having long term and strategic visions to expand their business on the sector. If we take motivation from others as one of the factor to join in to the sector, according to the informant point of view this would be clear that it is the men who will be attracted into the sector through time. Thus, the government should devise the strategy to ensure that men and women would have equal motivations to expand their business on the sector and gate benefit on the future.

4.3 Challenges the Solid Waste Collector Faced

Women and men have different exposure and vulnerabilities to the challenge created from uncollected waste, and different felt needs for better management of solid waste mainly because of the traditional division of labor at the household and community level (Veena and kusakabe, 2008). For example, usually, women notice the deterioration of the environmental conditions, as they are usually associated with the responsibilities for cleanness of the home and for the health of the family (UNEP, 2015). Thus, these domestic responsibilities have an immediate negative impact to the economic benefit of women waste collectors. The domestic responsibilities that women have at home limited their time to spend on their job which has negatively affective their productivity at work.

Some of the challenges identified by this study are presented in table 4.6. Men and women participants have experienced differently to the factors which are listed as challenges below and this will be discussed in detail in the next section of this chapter.

Table 4.6; Summary of challenges faced by solid waste collectors

N ^o	Challenges faced at work	Sex			
		Male	N ^o	women	N ^o
1	Negligence of concerned authorities	-	-	✓	1
2	Transportation problem	✓	1	✓	3
3	Lack of social security	✓	2	✓	1
4	Lack of credit provisions	✓	2	-	-
5	Failure of the municipality to take garbage on time from the temporary collection site	✓	6	✓	6
6	Health related risks	✓	6	✓	6
7	Social exclusion	✓	2	✓	5
8	Disagreement among men and women members of the association	-	-	✓	2

Source; own in-depth interview result

4.3.1 Government Related problem

The little concern of the government towards the waste collection workers were raised by almost the entire men and women participant of this study. Similarly the key informants also raise this issue and connect the problem towards the above (the higher level of the government) arguing that everything is from above we do not have a power. All the policy and plans are created on the above and our power is to operate all the plan and strategies which are coming to us from above. One of the key informants told that;

The chance of being affected by different diseases is high. If they face a large problem on the line of duty, they pay for medication by their own expenses. The agency doesn't cover health for the workers. There is a provision which supports those who clean the side roads, but even they don't receive immediate support. Many are hurt and lose parts of their bodies. In principle it is written on the charter, that workers have a right to get a medication in the country for accidents they face at work, but it's not practically implemented.

All of the issues found in relation to the concerned bodies are listed and discussed below one by one;

4.3.1.1 Negligence of Concerned Authorities

According to informants of this study there is a problem that concerned bodies are not responsive and hesitant to hear the problem raised by the solid waste collection workers. Similar challenges deserving a strong commitment of the government were identified by Enyew (2013) from the survey result of the research of door-to –door solid waste collectors conducted in Addis Ababa. The limited access to working equipment, limited access to health and safety protection materials, problem of temporarily storage area, shortage of municipal containers and disposal vehicles and shortage of machinery and problem of land is identified as the challenges to expand the business of the micro enterprises(Enyew, 2013).,

One of the women informant said that the negative attitude of the concerned bodies towards the solid waste collectors for the reason that they are poor. She is striving to raise her 5 children’s by working at this business and her home is found on the place where the member of the association have used that place as the temporary solid waste disposal site. She told that;

As you can see, this is my house. I am living being surrounded by dirt. I hope my children will survive by the grace of God. Now they are saying that our place is going to be given to a mosque and that we have to move out. We are also Ethiopian citizens, why doesn't the government look after the poor? How am I going to raise my children and send them to school? I reported to authorities and filed complaint twice. I said we are going to be evicted and live in the streets. The authority told me that this is not a funeral and that I shouldn't cry in his office. I was crying on my way back home.

4.3.1.2 Transportation Problem and Lack of Basic Facilities at Work

The other problem raised as government related problem was the issue of transportation. This problem was raised by most of the women participants than that of the men’s. The issue raised by the male participants in relation to transportation was related to the money they spend for it. But in addition to the transportation cost, lack of access to basic facilities on the work place is found challenging to the women participants specially on the time that the women’s spend the night on the work places to wait for the compactor. One of woman participant told that;

There is a transportation problem. Since we can't afford to live in this neighborhood, our only choice is to live outside of the city. At night we can't find transportation back home. Our only choice is to spend the night on the place of work. We don't even have toilets and we are not treated equally as other citizens.

One of the male participant also expresses his problem with transportation as follow; he told that

We spend 500 birr and above for transportation per month. Because we are not allowed to use the public service as long as the government considers us a private entrepreneurs. Really, we are and we want to be a private formal contractors working on behalf of the municipality. But, as a poor and as Ethiopian citizens we have a right to get the support from the government like other citizens have.

The key informant from one of the woreda said that women are more disadvantaged than men for the problem created from the transportation problem; While explain this;

Even if there is no any tangible evidences coming to us related this; we guess that some gender violence's might be happening while women workers spend the night on the work place, and while they are going to their work on the morning. So in some of the woredas including ours there is a measure we take that women workers should enter to their work on morning 8 am and left on evening 6 pm.

4.3.1.3 Lack of Social security

According to the key informants of this study the door-to-door solid waste collection associations are considered as the private and autonomous firms worked on the behalf of the municipality who is the owner of the service. Similarly according to Mesfin and Piter(2013) who conduct their studies in Addis Ababa regarding to the participation of micro enterprise and the private sector in solid waste management identifies that the institutional arrangement of the door-to-door solid waste collection associations is in the form of public ownership and private operation. It is indicated that as the ownership of the service belongs to the public sector; the public sector remained responsible for indirect provision (Mesfin and Piter, 2013).

Although, some of the in depth informants wants their enterprise to be autonomous, some of them were uncomfortable with such kind of arrangement giving that no guarantee is provided to them for any of the problems happening on their lives while on duty.

One of the women participant said how she is threatened by lack of social security issue if some problem is happening to her while on duty. She stated that;

Now one thing that I can raise as a problem is the fact that, if I face a huge problem, I have no guarantees. There are no institutional and governmental measures that are currently being made in order to have guarantees for the family of those engaged in cleaning garbage form the streets. If someone works of the government and passed away, the rights of his children are ensured by the government. This is not the case regarding waste collector and their children. But if one of us passed away because of our job, we know what would happen to our children. For instance, just now one of our friends died after being bitten by a mad dog at the place of work. You know what the government did for his children? They only got a five month salary. What about their future, who is going to look after them after that. No one looks after them after that. The government is on the side of the rich. The government should care for us just like it does for the rich. We have the worst job ever. And there is no insurance for our line of work.

4.3.1.4 Lack of Credit Provisions

This issue was raised by most of male participants of this study. All of the male participants want to continue and expand their business on waste collection; however, they are handicapped by the lack of credit provisions. One of the male participants explains the problem as follow;

The government asks for a guarantee, when we ask for a loan. It does not simply give us a loan, just because we have made the request. In the past, we used to get a loan with simple procedures. This is not the case since there are complex procedures and requirements to follow these days. They give us little money. You need to have a house license in order to get a huge loan. Even though a loan exists in principle, we had never benefited out of it.

The other male informant expresses the necessity behind getting of the loan as follow;

If the government helps us with providing of the loan, we want to buy our own compacter and do the activity privately. Our work is now demarcated and concentrated to only one of the woreda in Bole sub city. But if we get an opportunity of access to the loan, our service would not be concentrated in Addis Ababa. We could compete at any tendering process and work at any of the cities found in Ethiopia.

The sector is found to providing some kind of employment opportunities and become a cushion for the poor and uneducated individuals. Thus, the government should provide a credit provisions for the employees involved on the sector who have some kind of visions to expand their business. In turn these individuals could create employment opportunities for other unemployed individuals and contributed to the national economic development of the country. Besides of that it would be possible to narrow the income gap among the poor and rich individuals which is the reality of most developing countries if the poor with no alternative work are getting the opportunity to become productive.

4.3.1.5 Failure of the Municipalities to Dispose Wastes on Time

The payment service for the solid waste collectors in Addis Ababa is a volume based rate (Tekahun, 2007). If they collect a large amount of garbage the better will be their income. However, the collected waste needs to be transported on time to the disposal site unless otherwise the enterprises are unable to collect the additional amount of garbage and this immediately affects their income. Regarding this issue one of the women participants told that;

The salary is based on the work that we have done and amount of garbage that gets disposed. If it gets disposed quickly, then we get paid. If it is not disposed, then they don't pay us just because it is collected from homes. Since I used to get little payment for my previous job, I don't complain even if I get little salary in this job.

In addition to the problem provided above, informants were asked about the additional work they do besides waste collection and they express that the indefinite time of the compactor to take the garbage did not allow them to do other additional works. One of the women respondents expresses it as follow;

What can I work on? I waste 8 hours on this. This is only an average. If the compactor does not come on time, we have to wait until 4 am in the evening and even spend the night there. Also, the transport doesn't come on specific time and we are forced to wait. This is seen as part of our duty, and our salary is based on the amount of garbage that is collected so we are forced to wait.

Besides of all above problems, some of the informants also added that this forces them to be addicted to different drugs such as chat. One of the male informant express addiction as one of the social risk faced to him while waiting for the compactor and he express it as follow;

We get into drugs while waiting for the car. As you can see I am chewing chat. But I chew chat just for the sake of spending time with my friends.

To summarize the above provided finding, the filer of the municipalities to take the collected waste on time have exposed door-to-door solid waste collectors to spend their time waiting for the compactor and limit their incomes. It was also identified that the indefinite time of the compactor has hindered waste collectors from doing other additional works that provide them an additional income. And besides of that waste collators are exposed for addictions while they spend the time to wait for the compactor.

4.3.2 Health Related Risks

Previous studies were indicating that solid waste management workers are usually exposed to different health risks, however, gender and the age of the person plays a crucial role in determining the level of exposure and vulnerabilities to health and environmental hazards emanating from waste (Dickson, 2016). The current research have also identified that the research participants are exposed to different health risks. But due to their biological nature and type of work they do women are found more exposed to health related risks comparing to men. For example, it is found that hence women's are tend to do in separating of the collected wastes, they are the one who are exposed to the cut of sharp materials and damaged by the hazardous materials found on the waste. One of the women told that;

Yes we divide the job. For example jobs like pushing of the cart and loading of garbage in to the compactor is done by men. Whereas women's do jobs like cleaning

of the tankers, separate different types of waste (like cartoon and highland bottles) and also prepare bags for carrying the garbage.

Following that question were continued to that woman to identify that do women's are assigned to those kind of activities provided by her for the reason that this is easy comparing to the works performed by men. Then she told that;

No it is not easy. The activities are time consuming, sometimes we work for eight hours but we don't get far from our homes. We take care of our children and work at the same time.

Similarly, regarding the division of labor one of the key informants told that;

In most of the association it is the women working with the separating of waste; while men's do most of the activities needed physical labor such as pushing of the carts and loading the compacter. Thus, when garbage is not properly separated, it consumes much of our time. Since it is the women who mostly work in separating the garbage, they are the ones who get to be cut by broken bottle and needles.

Some of the women's appreciates the division of labor made on the associations. Even though the work done by women is expressed as more time consuming and exposed them to different occupational related risks, some of the women informants told that this work is better for them compared to the works done by men which demands a physical strength. One of the women informants narrates her experience as follow;

Previously, I used to work in all of the activities that is having done in the association had do. But now I had back pain disk problem. It led to the abortion of a four months old fetus. While I work, I fall on the ground and the fetus was aborted. Blood came out of my body for a week. After going to a health center, they told me that the fetus was aborted.

Similar question were raised to the other woman regarding the gender division of labor in the association in which she is a member. Differently this woman responded that she do all the activities that men member of the association do; she told it as follow;

There is no division of labor. I work just like the men. But since we are not able to load the garbage into the truck, the men get to help us. The work that we do, collecting garbage from houses, taking it around on a carrier onto the collecting site, filling the trucks, waiting for transport and sending the garbage to the main site is difficult and challenging. It takes much time, consumes our labor and also puts us at risk for health related problems.

To summarize the findings shown above, all of the informants told that there is a division of labor on their associations. Women waste collectors work in separating of the collected wastes where as men do with transportation. According to the informants the work done by women is more time consuming and risky in which women's are exposed to different risks while separating of different kind of wastes, whereas men do on the works demanding a physical strength. Similar finding was provided by Dias and Ogando (2015) suggested that cooperatives are inherently not conducive to gender equality. The arguments of Dias and Ogando highlighted the sexual division of labor existed in solid waste collection cooperatives, while men work in physically demanding activity such as collection and transportation, whereas women are involved on activities that "require greater dexterity" such as sorting. They note while the latter is more time consuming and crucial it is less valued than the former

4.3.3 Social Exclusion

Workers faced a social exclusion for the only reason that they are working with garbage which is despised by the society. This issue could be described as one of the common challenge faced by all of the waste collectors around the world. Marta (2013) indicated that waste collectors are either ignored or looked down on because of the work they do which is perceived as dirty. Similarly according to Medina (2007), there is a negative connotation attached to waste collectors as they are often conceived to be the symbol of poverty. During the current study one of male informant told that;

Garbage is something that the society despises. Doing a job that the society despises leads to a lack of trust. You are seen as being below humans and they don't think that you are capable like others. But when you beat the odds and become successful, they are with you. It is only the few that get to succeed in our line of work.

Similarly, the other male participant also express his experience from the society, but he said whatever the societies are used to lower his status because he is a waste collector still he is more confident with the work he did. He told that;

I was not ashamed of my job even at the time when my job was despised and the streets were filled with dirt. Now it is much better. They used to call me father of garbage. But I am not ashamed of my job since it keeps me alive. I even help others and this keeps me happy. If I didn't work on this job, I wouldn't have gotten married and get to have children. This work is the basis of my life. We have our own society, with Idir and Equub as parts of it.

All women participants were raised the same issue relating to the little awareness of the society towards the solid waste workers. And they told that they are not happy with the society calling them as Garbage. One of the women participant told the Psychological impacts of working as a solid waste collector as follow;

The society calls me thrash and this affects me. It is not me but my clothes that are dirty. They throw garbage in front of us and told us to pick it up saying that it is our job. They don't realize that we are human.

The other women also express the social impact of working as a solid waste collector by referring to her experience. She told that;

The society used to see us as garbage. At one time, they refused to let me into Idir and other societal institutions. They lied to me saying that they don't have an Idir, so that I wouldn't join them. The day will come where my children will graduate, get married and I said that I want to join their associations and pay what is required. They said it is a waste of money for me to join their Idir. I told them that in social gatherings I am a different person and that I should join. Even my own sister refused to drink water in my house. I couldn't say anything else to her because she came from a rural area, but I was really hurt.

It is suggested that recognizing the micro-politics of household and residential solid waste management in policy formulation and planning will not only increase the likelihood of

integrating anti-poverty strategies in efforts to improve the management of urban services but may well lead to more effective solid waste management itself(Beal, 1997).

4.3.4 Time

The problem with time is found more significant problem for the women informants than the men. Time for reporting for duty is in the morning and is not suitable for women. One of the women participants raises the problem with the time hence the nature of the work is expected to be done at the morning. She told that;

The time is not suitable for me. Because I have to get up in the morning, pack my children's lunch and take them to school, I arrive late for work. Because I am late, money is deducted from my salary depending on how late I am. After raising a complaint to our association, the time for reporting to line of duty is changed to 8 in the morning. Thanks to God, I also have a maid in my house that helps me out. I am beginning to be fully engaged in my line of work and earn better. Excluding the sale of highland bottles, there were times that I earned around 7000 birr.

4.3.5 Disagreement among Women and Men Member of the Association

The women informants of this study indicated that since the line of work requires hard labor, the disagreement between men and women arises within the association. Some of the study participants indicated that in order to avoid the discriminations perpetuated to them by the men they prefers and forced to do all the activates the men member of the association have did. While question were raised to one of the women informant on how she is able to become a member to the association in which she is a member; she told that;

It was difficult. The male wouldn't let me in initially. It was registered at Yeka sub city and they told us that our registration was not processed. We were badly treated since there was discrimination between men and women. When we saw the amount of money that they were getting, we threatened to sue and they eventually let us join their line of work.

The other question was continued to her to identify that why the men are reluctant to allow women to be their member. She told that;

They believe that we are not strong enough as they are. One person who was a friend of my husband said that I cannot work with him. He said I have no strength and that I should just sit and feed off others. He said I should be seen as a retiree. I said to him, I have my own labor, I am a person of work and I will work as long as the government allows me too.

Similarly other women informant also expressed that, waste collection work requires a hard labor and inability of women's to do equally with men put them within the disagreement between men and women members of the association. She expressed it as follow;

Since the work requires hard labor, it is hard for me to load the garbage onto the truck while I am on my period. You cannot work while you feel tired. For instance, you are required to knock on the door, to pick up the garbage and load into the carrier, then push the carrier into the truck and finally load it onto the truck. As you can see the truck is larger than me in height and it requires more labor to put the garbage onto the truck. Pushing the manual garbage carrier by itself requires skill since one could get into a car accident. If you cannot work just like men, the men will say, am I going to feed you? They see as being dependent on them and as if we are not able to support ourselves by engaging in such line of work?

But on the other side there was a women participant who said that in fact waste collection is a difficult job which requires a hard labor. But whatever it is hard I equally do what the men member of the association have did. She told it as follow;

In most of the associations women don't push the garbage carriers but we do because we said that we are equal to one another. We have to lift the garbage and work like the men do. We don't want to hear complaints from the men. If you work hard you will be respected. The men, who see us work hard, encourage us by saying that we work as men do.

4.4 The Roles of Solid Waste Collectors

Keeping cleanness of the cities and their contribution to economy and development were some of the identified roles of the solid waste collectors. According to participants of this study, the contribution of women in solid waste management, specially their roles in the solid waste management made on private sphere and unpaid public arenas (voluntary community cleaning services) is significant. However, as it can be seen from the previous discussion of this chapter women's participation in the paid formal public sphere of the solid waste management is found limited comparing to the men members of the associations. All the findings from this study is discussed and presented in relation to other related findings identified by different scholars from the experience of different countries specially the developing countries.

4.4.1 Keeping the City Clean

Waste collectors enable the society to live in a healthier environment by protecting of the city hygiene and avoiding of pollution happening by indiscriminate disposal of waste materials. Key informant told;

When population increases the amount of waste also increases and gets out of hand. The toxic waste must be avoided and others recycled. If not it leads to air pollution. Plastic also causes air pollution. Although all are concerned its garbage cleaners who are directly responsible.

According to (Medina, 2010), waste prevention which is putted as the first priority in integrated sustainable waste management is expected to be performed by women who are identified as the generators of waste. In addition to this waste prevention which is the act of reducing the waste from the source is considered as the unpaid role of the women. Related to this Beall (1997), indicated that, if the house and its immediate surrounding are dirty, if family members are getting ill, it is the women who are getting the blame and not the men. Beall (1997) added that the man of the household could never get involved in the household waste management because no payment or recognition is given for the management of waste made at the household. Similarly, to this study all the men and women participants were confirmed the role of women in the household waste management. All of the participants were said that, it is the mother or a female of the household who have the responsibility to take care of the garbage at home. One of the women participants (WP₁) told that:

I do handle the garbage on my own at home. If I got to work and knock on 50 doors, in almost all or about 47 of them, it is women who give me the trash. They are also the ones who complain that it is not cleaned on time.

All the male informants of this study also provided a similar view that it is the women who work on the waste cleaning activities at home. While similar question were asked to one of the male informants (MP₁) told that

To tell you frankly; it is she who takes care of the garbage at home and the immediate surrounding. But this does not mean that all in all I cannot do this work.

At the time when she is not able to work, it is me who take care of the cleaning. For example if she is going out of home, if she is ill and not able to do and on other related situations I help her.

Similarly, one of the key informants also suggested the significant role of women's in the integrated and sustainable solid waste management, by referring to the role made by women in solid waste prevention which is the act of reducing waste at source. He told that;

Awareness creation activities related to solid waste management should be made to women, because it is the women who are working on the waste prevention activities from various sources, be it on the household, hotels, hospitals and other institutions.

According to Gani et al (2010), it is surprising to see that, no one considers it strange or unfair while women could not get paid for this activity, even when these activities extend beyond the home to community cleaning. For example, beyond the home at the community level, volunteer activities for solid waste management is often duped onto women without due recognition and resource, and this have nothing to do with their empowerment and on the contrary, can even overburden them (Veena and kusakabe, 2008). Similarly, according to the participants of this study and from my experience as one of the member of the community in Ethiopia, starting from the home to the community level it is women who are responsible to give all of the unpaid services of solid waste management without any due recognition.

One of the key informants expresses the significant contributions of volunteer women solid waste collectors as follow.

In terms of giving cleaning service, the role of women is high. They have the awareness. In the neighborhood there are development teams made up of women and the youth. The ones making huge transformations are women. In terms of the cleaning campaign, each month, there is cleaning day on Saturday. More than 90% who participate in that campaign are women. That means they have huge role in the cleaning campaign.

According to UNEP (2013), report waste collectors in south Sudan have unconsciously providing a significant environmental, social and economic contribution towards the society. But, interestingly in the current research study conducted in Addis Ababa the research participants were conscious of all their roles and they even have strong vision to create a clean environment for the future generation and a vision to make and see Addis Ababa as one of the clean city among the cities found in Africa. One of the women informants expresses it as follow;

If I am not here, I would see Addis Ababa looking as garbage cite. I come to Addis in 1992 E.C. At that time the waste was thrown onto the streets and rivers. That could have caused huge health problems. Being self-sufficient is reliving a huge burden for the government. And my kids whom I send to school are the next generation. They will grow and one day live a better life. All this is made possible because I am a hard worker and I used my work to change my life and the life others around me as well.

The other women participant (WP₂) also indicates how she and her members in the association are devoting their times to expand their services towards the community. The women (WP₂) told that;

To be more inclusive and to avoid complaints from members of our society, we go out at 1 am in the morning and work until 3 or 4 pm. If we collect 80m³ garbage, we work up to 12 am. If it is 120m³ - 240m³ of amount garbage, we stay at the work up to 3 and 4 pm.

Similarly, all of the women and men participants during this study were providing a similar view regarding their roles. One among the male participants (MP1) told that;

I want to continue on working. You can see the experience from countries like Rwanda. Rwanda is one of the cleanest places in Africa. We want to make our country like Rwanda. Also, one could become an investor in our line of work. We can get a large amount of income from selling of recyclable materials such as bones, plastic bottles, cartoons, metal and others. All forms of garbage could be turned into wealth.

4.4.2 Contribution to National Development

The key informants of this study indicate that waste collection provides employment to many of the individual and women who were previously been unemployed in Ethiopia. It is identified that waste collectors provides benefit to cities in a number of ways; as service providers of urban waste collection, as environmental agents who enable recycling, and as key economic actors who feed the market with secondary raw materials (Dias, 2016). In addition to this (Medina, 2010) , also indicated that the activity of waste collators can save foreign currency by reducing import of raw materials; alternatively, if industrial demand is stronger in neighboring countries, waste collection can become a source of foreign currency by exporting the materials recovered by waste collectors. Similarly in Ethiopia one of the Key informants told that;

Recycling waste saves money that is spent for raw materials from abroad. For instance, we can save money spent for cartoons and papers through a dollar currency. We can reduce the costs. Plastic bottles recycling also saves dollar. We get foreign currency as well by sending highland bottles abroad. The cleaners supply the recycling companies. They in return benefit themselves and the nation as well.

The other key informant also expresses the role of waste collectors towards development of the nation which is unrecognized so far and needed to be recognized by referring to the contributions that the members of the door-to-door solid waste collection associations have contributed to the grand renaissance dam.

98% of members of these associations are street venders. They now earn better and have a better life. They are economically well off. But they have no recognition by the government. You can see their contribution to the country. They have even bought a 200 birr bond for the grand renaissance dam in the name of the association. In addition to this now they are beginning to hire those from the streets and also poor and impoverished women.

To summarize the finding of the above provided key informant, waste collectors create employment for themselves out of discarded wastes with no utilization of raw materials, creating employment opportunity for other marginalized section of the society and their contribution to the future national development by investing their money on some of the mega projects were

among some of the multi-dimensional benefits identified. The sector might be among few opportunity in which the poor, illiterate and individuals with no alternative job opportunities could be productively employed. If the poor gets the opportunity to be productive it could be possible to bridge the income inequalities that developing countries are straggling for. Thus, investing in solid waste management sector could contribute to ensure some of the economic development plans carried out in Ethiopia such as the Millennium Development Goal and bring a sustainable development.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The present study attempted to identify the factors enabled waste collectors to join the sector and explore the role and challenges they face using gender perspectives. Qualitative research approach was adopted in order to achieve the aforementioned objectives. Non-probability sampling specifically purposive sampling was used to select study participants. The primary data was collected using a semi structured interview. Data was collected using a semi-structured interview. Based on the objective of the study, the following conclusions are drawn.

Contemporarily different international organizations, governments and scholars are come to recognize solid waste management as one of the untapped employment generating filed. The government of Ethiopia recognizes solid waste management as one of the formal employment generating field. This creates an opportunity for the poor, illiterate and unemployed individuals to be formally employed in the sector. In other words the sector is found to solve some of the unemployment issues in the city of Addis Ababa. From the finding it is possible to conclude that further investment in the sector backed by innovative utilization of waste could enable the country to fight and eradicate poverty.

Some socio-cultural factors such as gender could influence and narrow the effectiveness of the sector from both perspectives of providing effective and efficient solid waste management and limit the level of employment benefits cultivated from the sector. Contemporarily it is widely accepted that incorporating gender perspectives in development effort is necessary for the successful implementation of development programs. The ultimate objective of incorporating gender in development programs is to promote the equality of men and women in the society and to empower women to become protagonists in their own development. Besides it is suggested that including gender in waste collection can bring effective and efficient waste management (Gani et al. 2012).

The current research identified that different factors are encouraged men and women solid waste workers to join the work which assumes to be one of the lower- end and lower status job in the society. Poverty and lack of other alternative job opportunities were among some of the common factor for both of the sexes for their engagement to the work of solid waste collection. However in addition to the above factor women involvement to the work was compounded by some of their gender related roles at home. While men solid waste collectors was motivated by considering the sector as one of the uncultivated business areas and want to expand and grow their business in waste collection, the women appreciated the convenient time, and the better and regular income of the work. Giving that all the activities in the sectors is done manually using physical labor women solid waste collectors are not motivated to continue in their work. If some kind of supportive technologies which supplement and minimize some of the physical labor are not introduced, one can predict that it will be only the physically strong men who would be available and get benefited in the future development of the sector.

Both men and women solid waste collectors are vulnerable for different economic, social and health related challenges. However due to their gender related roles women are found more vulnerable to the challenges compared to their men counter parts. The present study identified that while men do on collection and transporting of wastes using a manual cart, women's work on activities such as sorting of the collected wastes with the help of their hand. The division of work that women's do in the association exposes them for different occupational related challenges comparing to their male counter parts.

Despite the challenges waste collectors contributed significant roles to the development of the nation by enabling themselves to find their means of livelihood from the material which seems invaluable and disposed of. Their work saves the cost of raw materials which intern has a contribution to the future sustainability of the environment. That is why waste collectors are identified as one of the invisible environmentalists (UNEP, 2013). Their significant contribution to enable the community live in a healthier environment by keeping of the cities cleanness was also the other identified role of waste collectors. According to Gani et al (2012) sanitation is described as a science and practices of effecting a healthy and hygiene condition of living environment or the arrangement by which the health of the community is protected from danger caused by dirt and refuse in the surrounding.

Previous studies and the current research identified that women role in solid waste collection service provisions is found significant compared to the men. Both men and women participate in solid waste management outside home as paid workers. However, at home handling waste is considered as the sole responsibilities of women. Besides of that it is most of the women who contribute in providing of some volunteer cleaning services towards the community in Addis Ababa. In other words while the men are participated in the paid solid waste collection works, women contributes in both of the paid and unpaid as well as in both of the public and private arenas of solid waste management works. According to Muller and Schinberg (2013), resulting from their gender related roles and as the care giver of the family women's have an interest for clean and healthy environment. The above provided authors also added that women solid waste collectors are found more reliable on their work comparing to men in some of the countries. From the above provided roles one can possibly conclude that women's have a better experience to give effective sanitation services. Thus, investing on women could achieve the effectiveness of solid waste management.

5.2 Recommendations

Based on the finding the following recommendations are provided;

For The Municipalities

In Addis Ababa solid waste collection activities are conducted manually using human physical labor. This exacerbates workers exposure to different health related risks. Thus, the government should modernize the sector and provide solid waste collectors with some kind of personal protective instruments.

The government and other concerned bodies should create awareness to the society regarding the work. The society needs to be aware that solid waste collection is one of the respected 888employment sectors for which individuals are making their livelihoods.

The issue of physical labor was identified as a significant challenge for women waste collectors compared to the men. The issue is also found as a base of disagreement for men and women members with in the association. Thus, the municipality should introduce some kind of women friendly supportive technologies that supplement and minimize the physical labor. Unless otherwise, besides of creating the gender gaps the issue also undermines the effectiveness of the sector to attract women employees and this in turn have an immediate negative impact on the provisions of effective sanitation services which is appeared to be the prime objective of the sector.

In Ethiopia women solid waste collectors are getting only three month of pregnancy leave just like women's of the other sector. However, it is difficult for any pregnant women to load and push the cart and to do any other strenuous work as well. Besides of that, it is difficult for the pregnant women to stay on the place of work in the absence of basic facilities such as toilet. Thus, the government needs to identify such kind sector specific challenge and provide solutions accordingly.

Way forward

Future studies that aim to investigate gender issues in solid waste collection should include a large sample that deal with women and men's who acts not only in door-to-door solid waste collection associations but also on the other sectors such as street sweepings and the private sectors. It is identified that women number in the associations is match more limited than the number of men. Similarly, women participation on the private solid waste collection enterprises is also limited. However, it seems to appear that a large number of women solid waste collectors are employed as street sweepers. The issues of gender in all of the areas in which women's are working as solid waste collectors needs to be investigated. In addition to that, the working conditions of women street sweepers and the why large number of women are employed as street sweepers need to be investigated.

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APPENDIXES

Appendix A; Question prepared for in-depth interview

Door-to-door solid waste collection association member

Personal Information

1. Age
2. Sex
3. Marital status
4. Number of dependents on the household
5. Working hours
6. Educational back ground
7. Position
8. Service year

Lived Experiences

1. What did you do before you engage in solid waste collection?
2. How do you start to work on solid waste collection activities? What is your motivation?
3. Why do you engage on solid waste collection system? What is your motivation?
4. For how long did you stay on solid waste collection?
5. Do you have another job besides of the waste collection work?
6. What do you feel about your work? Do you like your job? Why do you think so?
7. What are the risks associated with waste collection?
8. Do you intend to stay on this job? Why do you do (think) so?
9. How many hours do you spend on solid waste collection daily?

Challenges and Coping Mechanisms

1. What are the major challenges you faced on by being a worker on solid waste collection activities? (Socially, Politically, economically and other related challenges)? Do there is any difference among men and women with regards vulnerabilities to the challenges?
2. What looks like the relationship among men and women members in the association in which you are a member?
3. What challenges did you face from organizing in association?
4. What kind of support would you require to overcome the challenges?
5. Is there any additional benefit out of being an authorized street cleaner working in associations?

Anything you would like to add

Appendix B; Questions prepared for key-informant interview

Small and Micro Enterprises Development Office

1. Personal Information
 - 1.1. Organization
 - 1.2. Position
 - 1.3. Service year
2. When and how the formal solid waste collectors did institutionalized? Who are the main targets considered to be benefited from waste collection while institutionalizing of the enterprise? Who have the power to institutionalize and inspect the institutionalization process?
3. What measures are taken while the institutionalizing of the waste collector enterprises? Is there any strategy and policy guidelines used? If so what are these strategies and policy initiative? Do women and men have equally participated on the development process of these strategies?
4. Do you think that the goals of the association could be accomplished by making the women more involved?
5. What have you done so that the women can organize in associations and benefit?
6. Is there any measure taken to encourage women's participation in solid waste collection associations on your behalf?
7. What are the objectives behind the shift of waste collector organization from union to association? What anticipated benefits are motivating the concerned bodies to move the waste picker's organization from union to associations?
8. Is there any enterprise among the waste collectors which have passed in to the next level (medium enterprise)?
9. How the association members are recruited (age, gender, economic level...)?

Question-prepared for key informant

For both of the Woredas and Sub-city Sanitation Administration Officers

1. PERSONAL INFORMATION

1.1. Organization

1.2. Position

1.3. Service year

2. What powers did your organization have on the solid waste collection associations? Who have the power to draft, implement and inspect the solid waste management planes made at your organization level?
3. Do men and women are equally participated on the development of waste management planes and strategies?
4. Do women participate on any administrative position in the sector?
5. How do you inspect the workings of the associations?
6. As solid waste collection is one of the strenuous and risky jobs, is there any measure taken to minimize those challenges at this Woreda level? If so, what are these efforts? Did the provided effort consider the experience and condition men and women members?
7. Problems in the association related to differences in gender and have such cases been reported so far to your organization?
8. Do you think that the goals of the association could be accomplished by making the women more involved?
9. What have you done so that the women can organize in associations and benefit?