

**ADDIS ABABA UNIVERSITY**  
**SCHOOL OF GRADUATE STUDIES**  
**INSTITUTE OF DEVELOPMENT STUDIES**  
**CENTRE FOR REGIONAL AND LOCAL DEVELOPMENT STUDIES**

**Municipal Solid Waste Management in Arusha City, Tanzania: Involvement  
of the Private Companies and Community-Based Organisations.**



**Edward Ezekiel**

**A Thesis Submitted to the School of Graduate Studies in Addis Ababa University  
in Partial Fulfillment of the Requirements for the Award of the Master's of Arts  
Degree in Urban Development and Urban Challenges in East Africa at the  
Centre for Regional and Local Development Studies.**

**June 2011**



Addis Ababa  
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Approved by the Board of Examiners

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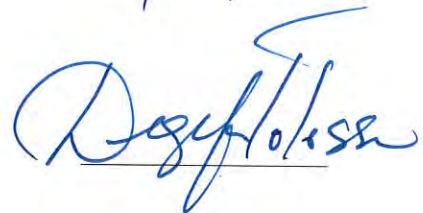
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Advisor



### Declaration

I, **Edward Ezekiel**, solemnly declare that this thesis was written by me and that it has never been presented to any other institution for any academic award. Where other people's materials have been used, due acknowledgement and appreciation has been shown.



Edward Ezekiel  
Addis Ababa, June 2011



## Dedication

*To my beloved mom, the late Grace Kidega who could not live to see this work. We will always love and miss you mom. May God rest your soul in peace.*

*Also to my dad Ezekiel Baranoti, sister Sunday, and brothers Bonifas and Ivan.*



## Abstract

*Amidst rapid urbanisation going on in developing world cities, majority of the cities have moved from government monopoly in direct urban services delivery toward privatisation. The purpose of this study was to explore involvement of the private companies and Community-Based Organisations (CBOs) in municipal household solid waste management in Arusha municipality, Tanzania. Further the study analyse stakeholders involved, explores household solid waste system, assess privatisation outcomes, compares service delivered by private companies and CBOs with households' satisfaction levels, and identify key challenges in waste management.*

*I employed purely qualitative approach for the study. Primary data were collected through semi-structured interviews with private companies, CBOs and households; key informant interviews, informal interviews, and direct observation and photographing. Various secondary sources were also incorporated. An actor-oriented approach and stakeholders' analysis were the main theories that underpin the study.*

*Results show that solid waste was privatised following government's gross failures in service delivery. Implementation of the Sustainable Cities Programme marked the shift from government monopoly to non-state actors in service delivery. Private companies are involved through competitive bidding and tendering at the municipality, while CBOs enters into service contracts with ward administration but with an approval from the municipality. Municipal household solid waste management is broadly under Public-Private Partnership (PPP) system whereby government owns the service but under private sector and civil society led provision. Stakeholders involved are diversified, have different motives and performs different roles. Asymmetrical power relations, build and use of manipulations at all levels are common features among actors.*

*Privatisation outcomes in the municipality are mixed. There are places which have experienced increased waste collection efficiency and widened coverage, elimination of the illegal mini-dumps, and consolidation of the informal sector. CBOs have managed to extend service to the inaccessible peri-urban settlements by using combination of the motorised and non-motorised movements in waste collection and transportation. Low-income areas in particular are experiencing privatisation deceptions whereby contractors exist by names only not in practice, or there is no any considerable change in the state of sanitation. Service variations between private companies and CBOs revolve around service areas and service itself, waste collection systems and transportation modalities, and user fee rates. Majority of the interviewed service users are not satisfied with the service. Unsatisfied users are predominantly served by CBOs. Reasons for customers' satisfaction or dissatisfaction are frequency and waste collection schedule consistencies, user charge rates, state of sanitation in the neighbourhood, and kind of language used by waste or revenue collectors. The state of physical infrastructures, contractors' capacity and households' socio-economic status are highly influential on service variations.*

*Major challenges are within the realm of governance failures, socio-cultural, economic issues, and infrastructures and city planning; suggesting that all actors must come together for long-term major changes, and organisational and institutional set-up from down to up.*

*Key words: CBOs, Municipal household solid waste, Private companies, Privatisation*

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## Abbreviations and Acronyms

AMC	Arusha Municipal Council, Tanzania
CBOs	Community-Based Organisations
CSOs	Civil Society Organisations
DANIDA	Danish International Development Agency
HH	Households
HSW	Household Solid Waste
HSWM	Household Solid Waste Management
ISWM	Integrated Solid Waste Management
LDCRCL	Livestock Demonstration Conservation Ranch Company Limited
NEMC	National Environment Management Council, Tanzania
NGOs	Non-Governmental Organisations
PCs	Private Companies
PMO-RALG	Prime Ministers' Office-Regional Administration and Local Governments
PPP	Public Private Partnership
SAP	Sustainable Arusha Programme, Tanzania
SAPs	Structural Adjustment Policies
SW	Solid Waste
SWM	Solid Waste Management
TFUP	Tanzania Federation for the Urban Poor
TZS	Tanzanian Shilling
USD	United States Dollar
VPO-DoE	Vice President's Office-Division of Environment (Tanzania).
WEKISA	Weka Kimandolu Safi

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## CHAPTER ONE: INTRODUCTION

*'African cities make no sense in economic terms as they are more urbanised than their level of economic development would justify'* (Hope 1998 in Sommers 2010: 1)

### 1.1 Background of the Problem

Developing world cities are currently in the state of 'urban inflation' (Potter & Lloyd-Evans 1998: 14); an urban crisis whereas the rate of urbanisation and associated challenges overwhelms the rate of economic growth and development. It is about how cities have become difficult to manage on top of perplexing different visitors and inhabitants. This crisis is also reflected by Hope (1998 in Sommers, 2010: 1). Urban settlements in the developing countries are at presently, growing five times as fast as those in developed countries (CARE International, 2006). Nevertheless, situation cannot be generalised as some cities like in Latin America are highly urbanised compared with some cities in Sub-Saharan Africa or South-East Asia. The challenges facing developing world cities are greater than anything wealthy countries experienced during their era of urbanisation. Continuous population increase in a fast rate poses major challenge for cities management both at city and local levels, (CARE International, 2006).

Eastern Africa continues to be the least urbanised sub-region in the continent with an estimated 23.5% of its population in urban areas. Even so, the region is quickly catching-up, for example between 2000 and 2005 Dar es Salaam and Nairobi population grew at an annual average growth of 4%. Further, the two cities are in the Africa's top ten fastest growing large cities 2005-2010 in absolute and proportional growth, (UN-HABITAT & UNEP, 2010).

Proper Solid Waste Management (SWM) is a global challenge but it is more pronounced in the developing world cities. At global level, the United Nations Agenda 21 Declaration calls for proper SWM with emphasis on widening scope of service provision so as to ensure environmental sustainability and reduced health risks (United Nations Sustainable Development, 1992). Increasingly it is acknowledged that 'economic and health imperative to plan for and generate sustainable cities is not a luxury, but a necessity of increasing urgency' (UN-HABITAT & UNEP 2010: 4).

The future trend in developing world cities predicts further economic growth, population increase and changing lifestyles all of which will result into more waste generation and influence on subsequent management practices, (Kaseva & Mbuligwe, 2005). In the global South cities not more than 50% of generated household solid waste reaches the collection vehicle and/or disposal site. This is either due to extensive waste picking, scavenging from household level and/or failure of the waste collection system in place (van der Klundert & Anschutz, 2001).

In Tanzania, local government authorities are responsible for SWM, but because of their 'inadequate capacity...private sector has stepped in to fill the gap' (Kassim & Ali 2006: 769) in the service provision. Before implementation of the Sustainable Arusha Programme (SAP) in Arusha municipality from mid-1990s, sanitation service was primarily under governments' monopoly. It was the only formal agency for SWM in the municipality. By that time informal sector and some of the current waste CBOs existed but as volunteers and unrecognised sector. SAP was a part of UN-HABITAT/UNDP Sustainable Cities Programme (SCP) which began in 1990's with the goal of assisting cities in environmental sustainability and development through Environmental Planning and Management (EPM) process. It was an initiative for implementing Agenda 21. Inadequate SWM was at the top among earmarked environmental issues in nearly all 10 SCP municipalities in Tanzania. As a result sanitation activities have been privatised to a number of non-state actors predominantly the formal ones like Private Companies (PCs), Non-Governmental Organizations (NGOs), and Community-Based Organizations (CBOs).

Further, in early 2009, the Arusha Municipal Council (AMC) in Tanzania took actions in dealing with plastic bags. The municipality identified extensive use of plastic bags as the main cause of widespread environmental pollution. Situation did not get any better because plastic bags continued to serve majority of urban shoppers (The Arusha Times Newspaper, January 24-30, 2009). In August 2010 the city council director formed a task force on city's cleanliness. He described the task force as an initiative to keep *The Geneva of Africa* (Arusha city) clean whereby on the spot 50,000TZS (33.3USD)<sup>1</sup> penalty for littering was introduced. According to plans, trained city militia will be at the centre in the implementation (The Guardian Newspaper, August 26, 2010).

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<sup>1</sup> 1USD = 1,500TZS (Market exchange rate as on August 2010). It is the exchange rate used throughout this paper.

## **1.2 Statement of the Research Problem**

In October 2009 Lonely Planet Magazine published an article titled '*Cities You Really Hate*' where 9 most hated and worst cities to be avoided in the world were listed. From Africa, Accra was placed in the 2<sup>nd</sup> place and Arusha in the 8<sup>th</sup> position. On sanitation the article described Arusha as 'rusty and dirty place'.

SWM in Arusha is undertaken by public sector, private sector and civil society, each actor performing different role(s). The contracted Private Companies (PCs) operate in few sensitive areas with political faces only, while the peri-urban is left hanging with few options. For example in 2002 about 64% of total generated Solid Waste (SW) remained uncollected, and 80% of it is found in peri-urban areas, (AMC, 2003). There is a widespread indiscriminate dumping of SW in the storm-water drainage channels, along narrow streets, open grounds, beneath bridges, behind walls, and along rivers which run across the municipality such as Themí, Engarenaro, Kijenge and Burka.

Rampant crude dumping, overstay of refuse at the transfer stations, garbage containers overflow, increased public health risks and environmental pollution around the municipality are manifestations of the weaknesses in SWM system and subsequent actors involved. Lack of studies that explores SWM in Arusha and prevalence of the above highlighted problems attracted me to undertake this particular study in Arusha municipality.

## **1.3 Research Objectives**

### **1.3.1 General Objective**

The general objective of the study is to explore the involvement of the private companies and Community-Based Organisations (CBOs) in municipal household solid waste management in Arusha municipality.

### **1.3.2 Specific Objectives**

The study has the following specific objectives:

- i. To assess the municipal household solid waste management system in Arusha municipality.
- ii. To explore how private companies and CBOs are involved in solid waste management and outcomes of the solid waste management privatisation.
- iii. To compare the services offered by private companies and CBOs with households' satisfaction levels.
- iv. To identify major challenges confronting the municipal household solid waste management in Arusha municipality.

### **1.3.3 Research Questions**

To achieve the above objectives, the study intends to answer the following questions:

- i. Which system is used for municipal household solid waste management in the Arusha municipality?
- ii. How are the private companies and CBOs involved in municipal household solid waste management? And what are the outcomes of solid waste privatisation?
- iii. Is there any difference in service offered by private companies and CBOs and clients' satisfaction? And what influences variations in service provision?
- iv. What are the major challenges in municipal household solid waste management?

#### **1.4 Significance of the Study**

This study will add knowledge addition in the existing body of knowledge about sanitation issues in the developing world cities. It will be useful to the general public, other researchers, municipality itself and other developing world cities. Exploration of the stakeholders' diversity, dynamism inherent in SWM, involvement of the formal non-state actors and key challenges will assist decision and policy makers as well.

#### **1.5 Limitations of the Study**

Data gap was the foremost limitation. This is greatly due to very poor documentation and record keeping system or habit in many public and private institutions. The attempt to compute current waste generation rate in the municipality failed to materialise. As a result, some of the statistics used are directly from municipality database, field sources and some are generalised.

Financial resources allocated for the fieldwork and final report production was inadequate. Programme administrators overlooked the differences in per capita income and real life situations between Tanzania and Ethiopia.

Field data collection period coincided with final preparations for the country's general election. It influenced data collection and delayed some field activities because respondents and public officials at all levels were busy organising political rallies, securing, consolidating or promoting their positions for the upcoming regime.

#### **1.6 Organisation of the Study**

This study is organised into nine (9) chapters. Chapter 1 is the introduction covering background of the problem, statement of the research problem, study objectives, significance of the study and study's limitations. In chapter 2, I present key concepts used in the study, two theories underpinning the study, a glimpse at related works, and study's analytical framework. Chapter 3 is a discussion about methodology and subsequent procedures and/or techniques I employed for the study. A glance at study area setting is also included.

Chapter 4 presents an analysis of stakeholders, while Chapter 5 is about assessment of the municipal household solid waste management system used in the municipality. Chapter 6 explores involvement of the private companies and CBOs, and SWM privatisation outcomes. In chapter 7, I compare service offered by the private companies and CBOs with households' satisfaction levels. Chapter 8 explores the future of SWM and key challenges confronting municipal household SWM. Finally, chapter 9 is a conclusion and ways forward.

## CHAPTER TWO: CONCEPTS, THEORIES AND ANALYTICAL FRAMEWORK

*'Private sector participation is a possible opportunity, not a panacea'* (Cointreau-Levine & Coad 2000: 3)

This chapter is divided into four main sub-sections: concepts part presenting key concepts used in the study; theoretical section presenting actor-oriented approach and stakeholder analysis; empirical part, and study's analytical framework section. Empirical section is a glance at related works and privatisation experience from various developing world cities.

### 2.1 Concepts

#### 2.1.1 Municipal Solid Waste and Solid Waste Management

There are multiple subjective interpretations attached to what a waste is or not. It is difficult to exactly define waste since waste is a refuse to someone but at the same time a resource for others. Its 'precise definition and scope differs from one country to another' (Kaseva & Mbuligwe 2005: 354). Generally, SW can be described as 'unwanted remains, residues, discarded materials or by-products which are no longer required by the initial user; the materials are by-products of human activities which include processes of preparation, manufacture, packing, repacking, construction and renovation of structures' (Nyang'echi 1992: 4). However, the term *unwanted* is contentious and subjective because what someone regards as unwanted or valueless may have a value to someone in different situations or even culture, (van der Klundert & Anschutz 2001).

Municipal solid waste comprises refuse from households, non-hazardous solid waste from industrial, commercial and institutional establishments (including hospitals), market waste, yard waste and street sweepings. While hazardous industrial and medical wastes are, by definition, not components of municipal solid waste, they are normally quite difficult to separate from municipal solid waste, particularly when their sources are small and scattered. Debris from construction and demolition constitute difficult categories of waste which also require separate

management procedures (Schübeler, 1997). In this study I consider SW negatively as a public health threat, environmental pollutant; and positively as a resource and a livelihood source.

Solid waste management signifies utilisation of appropriate techniques and methods of handling wastes from storage, collection, transportation and disposal in such a way that both environmental risks and health risks are minimised. Management practices also encompass waste reducing, re-use, and recycling.

### **2.1.2 Solid Waste Privatisation**

Privatisation refers to the process of reducing government activity or ownership within a given service or industry. In SWM it entails reduction and transformation of the state's roles but not eradicating them, (Cointreau-Levine, 1994). The recent move in developing world cities has been toward greater involvement of the private and community sectors in different kinds of partnerships relevant to a service and context.

There are three processes which are involved in reaching privatisation decisions in urban service delivery (Bartley, 1996): *programmed privatisation* whereas states make policy decisions formally to contract-out or franchise; *pragmatic privatisation* whereby initial decision to involve private sector is due to management [in]conveniences so as to boost commitment; and *informal/un-intended privatisation*. The last one is the most common form in developing countries where failure of public service necessitates private firms, communities, households or individuals to step-in so as to fill the gap in the service delivery.

### **2.1.3 Formal Non-State Actors and Informal Sector**

Formal private sector is the part of the economy which is not run by the state, operates under market conditions and it is recognised by existing legal and institutional framework in a particular country. With reference to operational principles, private companies involved in SWM fall under private sector category, while CBOs are part of the civil society organisations. In this study, I grouped private companies and CBOs under formal non-state actors because they are the only non-state actors whose SWM operations are legit and recognised by mediating bodies in

Arusha municipality. Many of the CBOs currently involved in SWM were once under the so-called informal sector because they were collecting waste as volunteers in their respective areas.

On the other side there is popular informal sector engaged in SWM as well. The long term debate on the sector reflects controversies and diversities in its conceptualisation. What is informal or not, and criteria for defining informal sector varies from place to place. In this study, I used the term informal sector to refer to the individuals or groups of individuals whose livelihood activities are unrecognised by existing official Tanzanian mediating bodies. These actors include informal waste collectors and transporters in peri-urban settlements street children, (all of them *informal contractors*), casual labour, recyclers, and scavengers from household level to the main dumping site.

#### **2.1.4 Effectiveness in Solid Waste Management**

United Nations describe effectiveness as the capacity to realise organisational or individual objectives. Effectiveness requires competence; sensitivity and responsiveness to specific, concrete, human concerns; and the ability to articulate these concerns, formulate goals to address them and develop and implement strategies to realise these goals (UNDP, 1997). It is about power and quality of being able to bring changes to a pre-existing sanitation state of affairs.

SW service effectiveness can be assessed basing on the extent or degree to which the objectives of the service have been met in practice on the ground. It entails removal or collection of waste as planned and all recoverable materials are recovered. For instance when effectiveness is limited to the so-called *sensitive areas* like city centre, the overall management system is not fully effective. The less visible parts of the city (which are in most cases peri-urban) are as important as – sometimes more important than – the visible ones (van der Klundert & Anschütz, 2001)

Further, SWM effectiveness can be assessed by checking percentage of the population covered; whether the service is house-to-house or to collective bins; and the frequency and reliability of the collection (Bartley, 1996).

### **2.1.5 Efficiency in Solid Waste Management**

Efficiency can be simply expressed as the ratio of the output to the input of any system, or of a service. It is centrally concerned with how resources, efforts and time are not wasted in delivering a service. One of the key arguments for involving private sector in SWM is to increase service efficiency.

SWM service is said to be efficient when the benefits of clean streets for instance are balanced by all beneficiaries paying a reasonable cost to keep them that way, using the optimal combination of labour, money, equipment, machinery and management (van der Klundert & Anschütz 2001: 11). According to Bartley (1996: 743) there are two types of efficiency in SWM: *productive* and *allocative*. The former entails the average number of kilograms of refuse collected per working day per staff member; the average cost in US\$ of collecting 1 tonne (1000 kg) of waste; and the percentage of vehicles operational at the time of the research. The latter is about whether charges cover the cost of the service. It is widely agreed that measuring efficiency in practice by using indicators such as optimum use of vehicles and equipments, low-cost output, better management organisation is quite challenging (Kassim, 2006).

### **2.1.6 Governance and Municipal Solid Waste Management**

The public good nature of solid waste and involvement of multiple actors in the waste business links SW directly with governance practices at all levels. The concept of governance is multi-dimensional, complex and loaded with controversies. I settle for UNDP (1997) and UN-HABITAT (2002) conceptualisation of governance: the exercise of political, economic and administrative authority in the management of a country's affairs at all levels. It comprises the mechanisms, processes and institutions through which citizens and groups articulate their interests, exercise their legal rights, meet their obligation and mediate differences. The definition recognises that governance is a continuous process in which three prime domains (state, private sector and civil society) are involved; secondly governance is not government; and lastly power exists inside and outside traditional formal arrangements.

## 2.2 Theoretical Framework

### 2.2.1 Actor-Oriented Approach

The late 1980s historical turn-point from orthodoxies of development practice and research field gave room to the issues which have to do with agency and actors in the process of social change within social constructionist modes of analysis (Long & Long 1992; Long 2001; Nederveen 2001). One of the ways out of the development orthodoxies gridlock was building of an *actor-oriented approach* (Long & Long 1992; Long 2001). The approach places human agency and actors at the centre stage, and account for lived experiences, strategies, and actors' multiple interpretations, meanings, strategies and rationalities in varied social arenas through an open-ended ethnographic approach. The new approach allows exploration of how *internal/local* and *external* actors in a specific field are locked into a sequence of intertwined fights over resources, meanings, and institutional legitimacy and control. An equally crucial point in the above detailed analysis is the explanation of the diverging reactions to similar structural circumstances even if the conditions appear relatively homogeneous. The arising differential patterns are in part dual creation of the actors themselves.

Actors are placed at the centre because they are the implementers of all forms of external and internal interventions. These interventions enter actors' lifeworlds, mediated and transformed since actors are not always submissive receivers of various interventions. There are always elements of power, varying strategies and opportunity for maneuvers.

The central significance of starting from everyday life experiences and perceptions settles for unraveling particulars of actors' lived-in worlds and moving behind development, policies and institution myths. The endeavor is to unpack actors' coping strategies; position, diverse conflicting human actions in the development process; struggles in twisting bad situations into less bad; and the kind of relationship between or among actors (Long, 2001).

Other important dimensions in actor-oriented approach are the interrelated notions of knowledge, power, agency and structure. Their combination contributes to moulding of actors' reactions and strategies (Long, 2001). Agency refers to the capacity of an individual actor to process social experience and to devise ways of coping with life, even under the most extreme forms of coercion. Within the limits of information, uncertainty and other constraints (physical,

normative, political, and economic) that exists, social actors possess knowledge and capability. They attempt to solve problems, learn how to intervene in the flow of social events around them, and to a degree they monitor their own actions, observe how others react to their behaviour and take note of the various contingent circumstances (Giddens 1984: 1-16).

Agency and structure are mutually dependent; and creates and re-creates each other in myriad ways. Agency is recognised when certain action(s) makes change to the previous existing course of events. Possession of persuasive skills or charisma is not enough to translate into agency but rather an ability to influence and convince others. Therefore agency is built primarily on creation and application of '*manipulations* of networks of social relations and channeling of claims, orders, goods, instruments and information through nodal points of interpretation and interaction (Long 2001: 17).

Knowledge is power, and they are interwoven. Given that multiple realities, multiple actors with different interests prevail means that even knowledge is not universal. It is configured differently and an important aspect is whose knowledge or interpretation dominates over others and in what circumstance it prevails. Long (2001) argues that it is not always the case that someone who possesses *knowledge* or *power* means that the rest do not have. This situation catalyses series of ongoing battles, struggles over meanings, images and resources between and/or among actors.

I used an actor-oriented approach largely in order to articulate actor's behaviour and understand why they behave in that way; articulating actors' coping strategies, highlighting perceptions, attitudes, actions and meanings attached to these actions. Concepts of knowledge, power, agency and structures have been used to link how actors responded to SWM privatisation intervention, battlefield of resources and resistances between structures and agency.

### **2.2.2 Stakeholder Analysis**

Stakeholder analysis is a 'process that allows an analyst to identify how parties are likely to be affected by government projects, programmes or actions' such as policy initiative, regulations, grants, incentives, joint venture, information or research and development programmes' (Babiuch & Farhar 1994: iv). The landmark to the development of stakeholder theory came in

1984 when Edward Freeman published *Strategic Management: a Stakeholder Approach*. Freeman's theory attempted to appraise the role of both internal and external actors in the firm's environment, and showing whose interest should be taken into consideration and why (Mitchell, Angle & Wood 1997; Key 1999; Brugha & Varvasovszky 2000a; Brugha & Varvasovszky 2000b; Elias, Cavana & Jackson 2002).

The approach is a very useful tool in analysing stakeholders and identification of prospects for mobilisation of their support and resources so as to attain a certain objective. The knowledge generated about significant actors (behaviour, intentions, interrelations, interests, agendas, influence, and resources) is then used to build strategies on how to deal with the said stakeholders, (Brugha & Varvasovszky 2000a; Brugha & Varvasovszky 2000b).

Stakeholder analysis is not a single tool; it is comprised of a variety of methodologies which are used in scrutinising interests and other actors' characteristics. The dimensions of analysis as well range from simple to complex frameworks according to the purpose of the analysis (Crosby 1991; Brugha & Varvasovszky 2000a, Brugha & Varvasovszky 2000b). Besides, spatial scale of analysis can be at one level or more: local, regional, national and international. At the same time definition of who is a stakeholder or not varies with the above levels of analysis.

Cognisant of that, I adapted *Dynamics of Stakeholders* (Mitchell, Angle & Wood, 1997) approach in analysing and mapping stakeholders involved in Household Solid Waste Management (HSWM) in Arusha municipality. The framework uses three relational qualitative criteria which are *power*<sup>2</sup>, *legitimacy*<sup>3</sup> and *urgency*<sup>4</sup> to characterise and categorise stakeholders into eight main typologies or classes. Freeman (2004) comment that the dynamics of stakeholders approach is useful in the field of environment and grassroots political activism. It is because of the fluid nature of stakeholders as they change position, interest, and behaviour over

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<sup>2</sup>*Power*: Relationship among a range of social actors in which actor A, can get actor B, to do something that B would not otherwise done it. Power is transitory that is it can be lost or acquired; it is primarily used as a weapon to impose will or interest. Power can be in the form of economic (utilitarian), coercive, normative (social) and political power (Mitchell *et al* 1997).

<sup>3</sup>*Urgency*: A condition which calls for immediate attention. It exists only when a claim is of time-sensitive nature or critical to stakeholders (Mitchell *et al* 1997).

<sup>4</sup>*Legitimacy*: Generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions (Suchman 1995: 574 in Mitchell *et al* 1997: 15).

time depending on the issues under consideration. Fresh stakeholders might join in and be included in a certain activity while others may drop out. Therefore an understanding of which kind of stakeholders prevail is crucial in formulating techniques on how to deal or manage them as they have multiple interests, and definitions of the stakeholder's roles.

Stakeholders can be classified as dormant, discretionary, demanding, dominant, aggressive, dependent, definitive, and non-stakeholders. The first three typologies are termed as latent stakeholders because they possess only one of the three attributes. Dormant stakeholders possess power; demanding stakeholders hold urgency; while discretionary stakeholders hold legitimacy only (Mitchell, Angle & Wood, 1997).

Dominant, aggressive, and dependent stakeholders are broadly termed as expectant stakeholders because they possess either two of the three attributes. Combination of the two attributes keeps them in a state of expecting something from managers. Dominant stakeholders have power and legitimacy; dangerous stakeholders hold power and urgency; while dependent stakeholders have urgency and legitimacy.

Definitive stakeholders possess all the three attributes and they are highly salient stakeholders. The eighth class, non-stakeholders, does not have any single of the three attributes but they are potential stakeholders.

Based on the type of resource used to exercise, power can be categorised as *coercive*, *utilitarian* and *normative*. Coercive power is based on the use of physical resources of force, violence or restraint (e.g. use of a gun, economic sanctions, lock). Utilitarian power is based on the use of financial resources (material rewards) while normative power is build on symbolic resources. Symbols of prestige and esteem, social symbols of love and acceptance/social power, (Etzioni 1964 in Mitchell *et al* 1997: 14). Another dimension of power which can be added is the political power which is increasingly becoming important in the quest for livelihoods.

In this study, I used stakeholder analysis predominantly in categorising and mapping actors involved in household solid waste management (typology, their capacities, influences, and mobilisable resources) as a crucial stage toward formulation of sustained management techniques and an account for whose interest matters.

## **2.3 Empirical Literature**

### **2.3.1 Solid Waste Challenge in Developing World Cities**

Rapid population growth, urbanisation and improved income levels in developing world cities have been highlighted as prime causes for increased solid waste generation rates which now overwhelms the capacity of the existing bodies in catering for the service adequately. Often about 10-20% of the municipal budgets is directed to the waste collection and cleansing service, but coverage has continued to be confined in the so-called sensitive areas. An average of about 50% of the residents in low-income cities does not have a guaranteed sanitation service, (van der Klundert & Anschütz 2001).

Zurbrugg (2003) identifies four major areas of challenges in the course of SWM in developing world cities. These are inadequate coverage especially collection in peri-urban, resource recovery and recycling which is confined to informal sector and suffering from marginalisation (see also Bjerkli, 2005), disposal, and inadequate management of health care and hazardous wastes.

Municipalities are obsessed with technological aspect which in most cases has proved failure in solving waste problems. There is minimal attention on local contextual conditions such as institutional and socio-cultural. As a result, consequences are shared unevenly with low-income people in peri-urban suffering more with a continuous transfer of problems, (Zurbrugg, 2003).

In Tanzania for instance, municipalities have not been able to 'cope with the rapid generation rate of solid waste coupled by the rapid urbanisation...resulting in a relatively large quantity of solid waste remaining poorly managed and uncollected' (Kassim 2006: vi). This is the gap between service demand and provision which necessitated involvement of the actors outside national states.

### **2.3.2 Neo-Liberalism and Urban Services Privatisation**

The neo-liberal market-led economic growth agenda of the 1980s which was introduced in developing countries through Structural Adjustment Policies (SAPs) opened the doors for the private sector and civil society as the carriers for development. The fundamental goal was to attain economic growth through structural reforms, deregulation and market liberalisation, all of

which rolled-back national states. National states remain as domain of development, its roles have been transformed and new relationships emerged. With this trend the main concern and challenge over time has been the capacity of the public sector to effectively handle, perform and manage new roles and relationships with the non-state actors (Bartley 1996; Bartley 2001; Nederveen 2001).

Enormously growing curiosity in the developing cities to embrace private sector in the SWM activities emanates primarily from justified inefficiencies of the municipalities in providing adequate service, and pressure from donor community (Bartley 1996; Zurbrugg 2003). Such inefficiencies are justified through aspects like 'inflexible working schedules, plague of excessive staff, cumbersome procurement procedures for spare parts, obsolescent equipment, limitations on management changes, inadequate supervision, and strong worker unions all of which made it tricky for public service to implement changes necessary to match the efficiency of private sector' (Cointreau-Levine 1994: 23).

In Tanzania for instance, during early to mid-1990s SW privatisation was believed to be the new approach as the 'last way of solving' (Yhdego 1995: 8) the sanitation challenge, forgetting that private sector involvement is not a universal remedy but only a potential opportunity. Therefore involvement of the private sector and civil society on behalf of or in partnership with municipalities in SWM was made possible through implementation of the Sustainable Cities Programme (SCP) in 10 municipalities including Arusha from 1992 to early 2000s (UN-HABITAT & UNEP 2004; Kassim 2006; Kassim & Ali 2006; [www.scptanzania.org](http://www.scptanzania.org)).

### **2.3.3 Privatisation Experience from Developing World Cities**

Evidence shows that developing world governments have embarked into urban service privatisation but few have been successful. One of the best success involvements of the private sector is from Hong Kong where long-term concession arrangements of the SWM projects and number of joint ventures with private sector have successfully improved sanitation. The achievement acted as stimulant to other Asian countries (Cointreau-Levine & Coad, 2000).

Further, experience can be derived from South-East Asian and South American cities of Penang (Malaysia), Recife, and Porto Alegre (Brazil) where benefits of contracting-out to the non-state actors have been realised (Bartley, 1996). When compared to the municipal service delivery, non-state actors were found to be more successful in all three cities. In Brazil labour productivity level was recorded to be 3 to 9 times higher and at lower cost and relatively improved vehicle maintenance. It was also noticed that allocative efficiency has improved as companies charge for service at cost fueled by competition. Penang and Porto Alegre cities benefitted from extended service efficiency with minimum control and regulation constraints. However, absence of productive efficiency in comparison to the one attained by Hermosillo and Campeche municipalities in Mexico challenges the notion of public sector total inefficiencies.

Experience from Africa is mixed with both success and failures with examples from Dar es Salaam, Tanzania (Kaseva & Mbuligwe, 2005), Kampala, Uganda (Mugagga, 2006) and Accra, Ghana (Oteng-Ababio, 2009).

Dar es Salaam experience shows a slight improvement in solid waste collection rate from 10% in 1994 to 40% in 2001. Total waste generation was about 2,425 tons/day whereas three municipalities which constitutes the city collects 10% of it, contractors collects 24.4% of it and 5.5% goes to recycling and resource recovery. The 30% improvement in collection within 7 years is attributed to the involvement of the non-state actors, though more than 50% of the generated waste is still not collected (Kaseva & Mbuligwe, 2005).

In Makindye Division, Kampala, the Public-Private-Partnerships (PPPs) between public sector, private and civil society resulted into widened coverage in SW service delivery. Contractors employed smaller vehicles with wheel-barrows back-up so as to get into inner-city where accessibility has been traditionally difficult. Later improvement in the household collection efficiency was noticed in both low- and middle-income neighbourhoods. However, like Accra and Dar es Salaam failure and/or reluctance of the administration to subsidise waste collection in low-income areas, prevalence of corruption and patronage are constraining sanitation progress (Mugagga, 2006).

In the Greater Accra Metropolitan Area sanitation service got better after embracing of the non-state actors potentials. Generally, collection rate has increased by 25%. Various forms of PPPs

were pioneered with an ultimate goal of widening coverage in the service delivery. However after certain period of time one of the stakeholders fell short of delivering accordingly. Therefore service retarded as well (Oteng-Ababio, 2009).

## **2.4 Analytical Framework**

There are many literatures on SW privatisation in developing countries. Greater concentration has been toward justifying reasons for private sector involvement, potential benefits and informal sector. Further, there is an obsession with technical-based analyses and discussions which have influenced municipalities' inappropriate orientation toward waste management at local contexts. Little has been done regarding integration of the formal non-state actors in a local context. This study intends to give due emphasis on incorporation of the private companies and CBOs in HSWM, and local socio-cultural, economic and political conditions pertaining to HSWM.

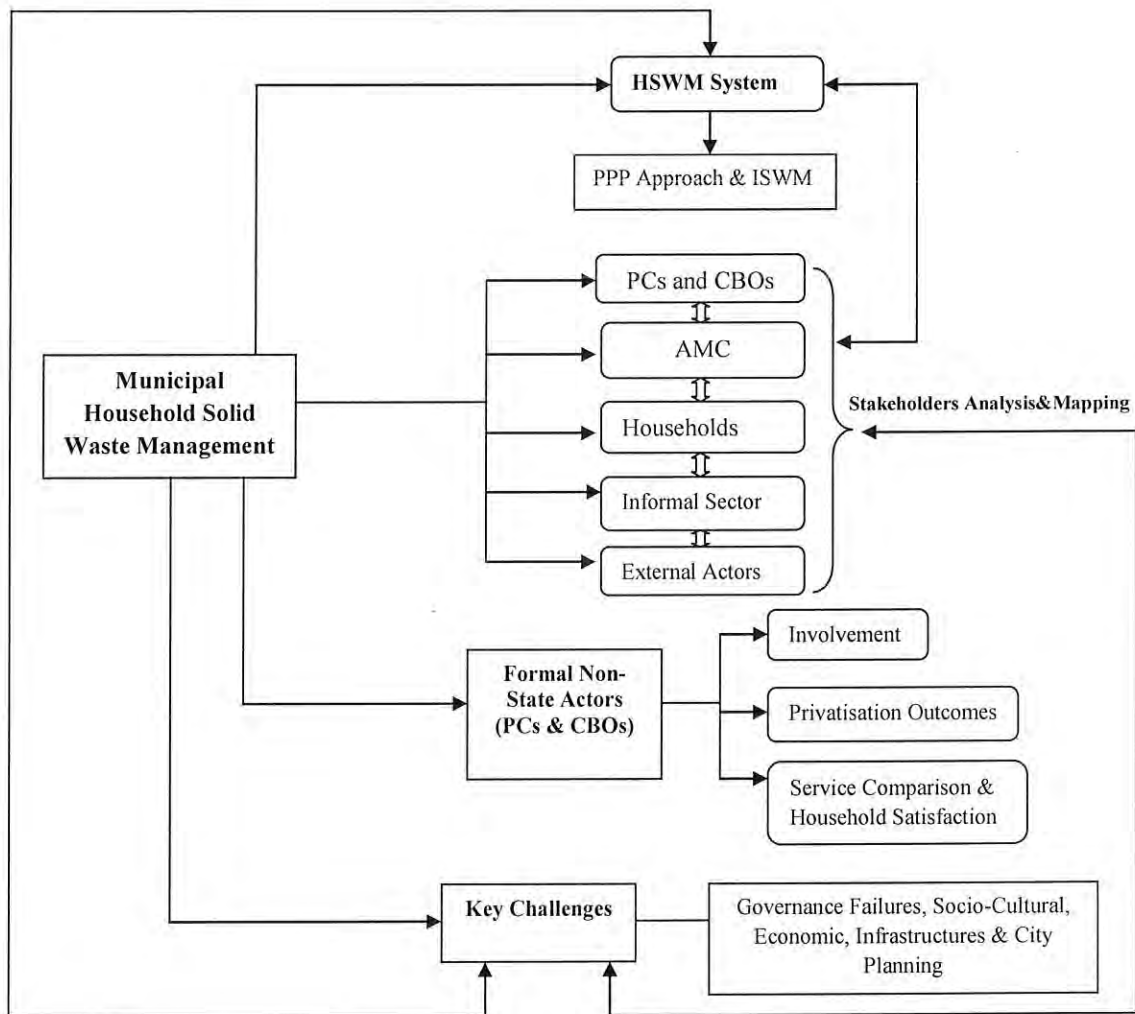
Attempt is also made to categorise, map and analyse stakeholders as groundwork for formulation of management strategies. Additionally, it is for the first time in Arusha municipality to have a study like this which is specific on PCs and CBOs, and centred on local socio-cultural, economic and political context.

Figure 2.1 depicts study's overarching analytical framework. An assortment of variables will be explored under the scope of municipal household solid waste management. The key variable which is a gatekeeper to all others is an assessment of the HSWM system used in the municipality. Analysis and mapping of the stakeholders engaged in HSWM offers an opportunity to know who is there, stake, influence, interrelationships and mobilisable resources in relation to actors' role on the ground. How private companies and CBOs (formal non-state actors) are involved in HSWM and reflection on their entry points, key roles allows exploration of the privatisation outcomes.

Additional key variables are service delivery comparison with Households' (HH) satisfaction and any reason(s) for service variations; exploration of actors' actions, lived experience and battles for resources. Finally, identification of major challenges confronting HSWM takes an iterative style: tracing setbacks from operationalisation of the HSWM system itself and actors

involved at various levels. Challenges are divided into governance failures, socio-cultural, economic, and infrastructures and city planning.

Figure 2.2 Analytical framework of the study



Source: Researcher's construction

## CHAPTER THREE: METHODOLOGY

*'Nothing is stranger than this business of humans observing other humans in order to write about them'* (Behar 1996: 5 in Crang & Cook 2007: 37)

Research methodology refers to the 'coherent set of rules and procedures which can be used to investigate a phenomenon or situation (within the framework dictated by epistemological and ontological ideas)' Kitchin & Tate (2000: 6). I decided to employ purely qualitative research methodology since the goal of the study revolves around socio-cultural, economic and political issues for HSWM at the very local context. In this chapter, I discuss various methodological techniques and/or procedures I applied for the study and reason(s) behind such choices.

### 3.1 Study Area Settings

The study employed a case study approach whereby Arusha municipality was selected as a case study; and municipal solid waste was confined only to household or domestic waste collection and disposal. I selected Arusha municipality because SWM has been privatised, the municipality experiences sanitation challenges especially household waste, and scarcity of studies about privatisation and formal non-state actors in the municipality.

Further, the study area was narrowed down to 8 wards (out of 17 wards) where Private Companies (PCs) and CBOs are engaged in household waste activities. I sampled them purposively basing on location (peri-urban) and presence of SWM contractors. About 70% of the town's population lives in non-planned peri-urban settlements; and it is where also 80% of the total amount of uncollected solid waste is found, (AMC, 2003). These are also areas with high population and were among of the earliest to be privatised by the municipality. The study area wards were Kati, Levulosi, Themis, Unga Limited, Sombetini, Sokon I, Kimandolu, and Daraja II.

Arusha city is the third largest city in Tanzania next from Dar es Salaam and Mwanza. It is located at the southern slopes of Mt. Meru in the northern highlands of Tanzania. Arusha region is made-up of five districts which are Arusha, Monduli, Karatu, Monduli, and Ngorongoro.

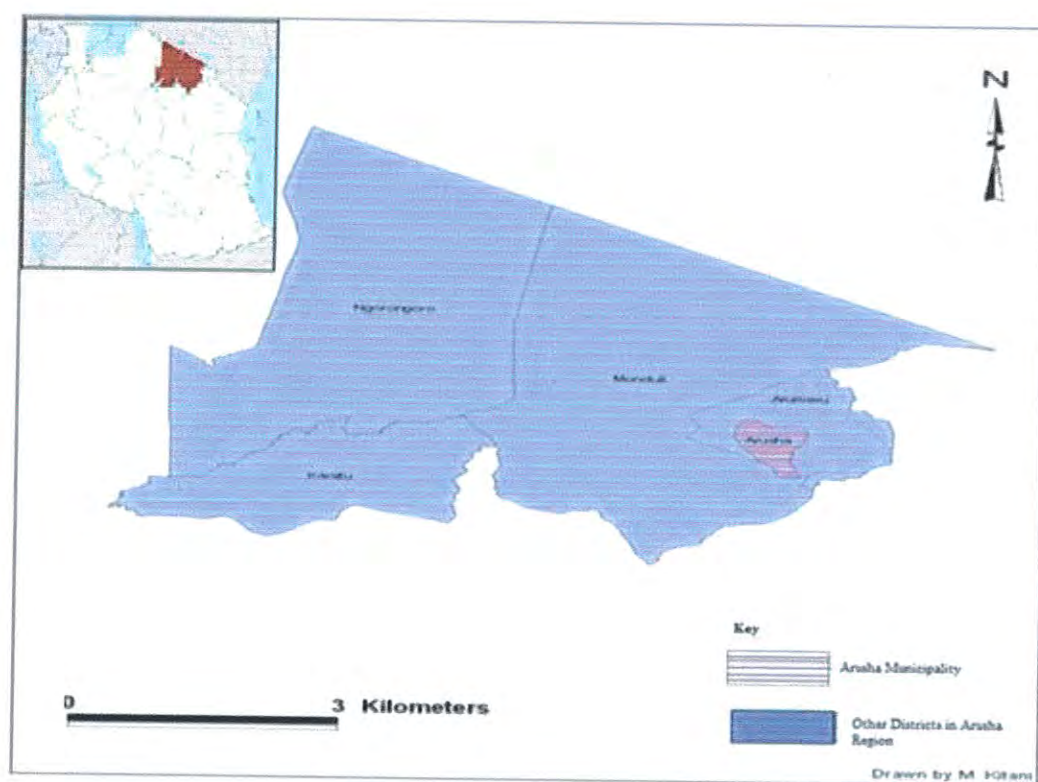
Arusha municipality is located between latitude 2° and 6° South and longitudes 34.50' and 36° East at an altitude ranging from 1,160m to 1,450m above sea level (Figure 3.1). It occupies about 93km<sup>2</sup> (0.3% of the total Arusha region) and it is surrounded by Arumeru district in all directions. The region experiences bi-modal rainfall pattern whereby short rains are usually from October to January, while long rains are from March to May. Temperature is both warm and cold ranging between 17°C to 34°C (AMC 2005; AMC 2010; [www.redet.udsm.ac.tz/pilot\\_districts/arusha.php](http://www.redet.udsm.ac.tz/pilot_districts/arusha.php)).

In terms of population, in 1948 when British colonisers established township authority population was only 5,320. Around 2002, the municipality recorded about 300,000 people with an annual growth rate of 4.8% per annum, which was above the national rate of 2.8%, and a population of about 3,040 people per sq.km. Annual inter-census growth rate 1988-2002 census was estimated to be 5.4% (AMC 2005; National Bureau of Statistics (NBS), 2009).

In 2005 population was estimated to be 360,000 people and over 100,000 people visits the municipality during day time and leave in the evening. Recently population was estimated to be between 500,000 and 700,000 people and a density of 3,413 per sq.km (AMC 2005; NBS 2006; NBS 2009; The Arusha Times Newspaper October 9-15, 2010 Issue 00637).

In other socio-economic issues, Arusha is the headquarter of the East African Community (EAC), hosts United Nations International Criminal Tribunal for Rwanda (UN-ICTR), a number of national and international organisations, and higher learning institutions. It is the trading centre in of the northern highlands and its economy is highly dependent on trade and commerce, industries, tourism and small scale agriculture (AMC 2003; AMC 2005; AMC 2010).

Figure 3.1 Location of the study area: Arusha's national and regional settings



Source: AMC Urban Planning Department

Note: An inset to the left angle is the map of Tanzania showing Arusha region's location

### 3.2 Qualitative Approach

Municipal solid waste privatisation in Arusha municipality opened the gates for a number of actors who have diverse interests and roles. Application of qualitative methodology has been functional in exposing 'complexities of different people's experiences of everyday social and cultural process' (Crang & Cook 2007: 7) in HSWM. The approach offered me a wide room for exploring and understanding 'meanings, emotions, intentions, and values' (Ley 1974; Seamon 1979 in Clifford & Valentine 2003: 4) of the actors in the municipality.

Qualitative approach accommodates multiple realities and does not settle for making generalisations. Consequently, it was appropriate in exploring how and why HSWM actors are related to each other; construct diverse ‘meanings, representations and practices’ (Smith 2001: 24). Thus, it was also a useful approach in disentangling how stakeholders experience and make sense of their own lives in the day to day delivery and consumption of the sanitation service.

### **3.3 Types of Data and Sources**

Both primary and secondary data have been used in the study. Secondary sources such as published journals articles, books, newspaper articles, reports from various institutions and internet sources have been incorporated so as to enlighten what happened with regard to solid waste privatisation elsewhere, supplementing primary data and buttressing several methodological decisions. On newspaper articles I concentrated on articles related to SWM in four Tanzanian newspapers only: *The Arusha Times*, *The Guardian*, *The Citizen* and *Mwananchi*. For *The Arusha Times*, since it is a weekly newspaper based in Arusha, I reviewed it from 2003 to February 2011. The goal was to capture important sanitation stories and experiences, tracking trend in service provision and how media, users and authorities have been reacting to SWM issues over time. I accessed articles through each company’s database and from Arusha’s regional library.

I collected primary data in the field from late July to mid-September 2010. A young, female research assistant who is a graduate in Environmental Studies from University of Dar es Salaam was providing support to the fieldwork activities.

### **3.4 Sampling Techniques**

Sampling is the ‘acquisition of information about a relatively small part of a larger group or population, usually with the aim of making inferential generalisation about the larger group’ (Rice 2003: 223). I employed two non-probability sampling techniques which does not necessarily involve making representation of the entire population: purposive and snowball sampling techniques. In a study like this where qualitative methodology and non-probability sampling techniques are in operation, quality of information gained from relatively few respondents is what counts, rather than absolute representation of the entire population.

### **3.4.1 Snowball Sampling**

Snowball sampling is useful when target population is unknown or difficult to access them. I began field-work with few known respondents at the municipality, and each respondent interviewed suggested the next interviewee who fits the study. The process continued until saturation level was attained. It is how three (3) private companies, six (6) CBOs, and three (3) informal sector individuals were reached. It was possible because first municipality was used as *gatekeeper*. Secondly, formal and informal sector actors involved in solid waste knows each other, and they are related, therefore it was easy for me to reach them through recommendations.

### **3.4.2 Purposive Sampling**

Purposive sampling is based on researchers' knowledge and experience in identifying the right people who knows about the subject matter (Rice, 2003). It was up to my knowledge, experience and the help from *gatekeepers* to identify and reach respondents who are acquainted in the subject matter. I applied the technique to reach four (4) key informants in Health Department at the Arusha municipality and eight (8) ward's health officers in eight wards where interviewed private companies and CBOs operates. Two (2) more informants reached were from National Environment Management Council - Directorate of Environmental Compliance and Enforcement (NEMC – DECE) and Vice President's Office-Division of Environment (VPO-DoE), Pollution Prevention and Control Department. It is worth noting that my own knowledge and experience were not absolutely enough to reach informants: social capital in terms of long-term friendship, previous co-workers and classmates were important bridges in facilitating interviews, mutual trust and fostering access.

I selected purposively the eight (8) wards which form the study area. Due emphasis was placed in peri-urban residential areas with high population and where sanitation challenge is pronounced. In Arusha municipality about 80% of uncollected solid waste is found in peri-urban residential areas. Secondly, the eight wards were among of the earliest areas to be privatised by the municipality.

Finally, thirty (30) interviewed households were also purposively selected in an attempt to capture client's satisfaction levels according to the service provider. At the household level

household leader preferably women or someone else who is paying waste fee was interviewed. This is because of the cultural context in the study area where household chores including sanitation are mostly performed by women and considered as women's job. Again, someone who is paying for the service or influential in the household decision making is in a better position of commenting issues like affordability, willingness to pay and satisfaction with the service. In each study area ward 3 to 4 households from *Mitaa*<sup>5</sup> (street) which companies and/or CBOs operate were interviewed. Their identification was possible with the help of waste collection crew and *Mtaa* leaders.

### **3.5 Primary Data Collection Instruments**

I used different qualitative techniques in gathering primary data since actors involved in SWM have diversified interests and roles. Combining different techniques allowed me to cross-check and/or complement details.

#### **3.5.1 Semi-Structured Interview**

Semi-structured interview 'unfold in a conversational manner offering participants the chance to explore issues they feel are important' (Longhurst 2003: 117). It was an effective tool in answering 'what', 'why' or 'how' questions and developing 'causal relationships' (Woodhouse 2007: 165). The technique allowed discussion with informants and gaining insights into the HSWM matters from various angles. Service providers interviewed were officials from Private Companies (PCs) and CBOs broadly representing formal non-state actors. Households as service consumers in the areas where PCs and CBOs operate were also interviewed.

These interviews included three (3) PCs: Kivesi Investment working in Kati ward, Lemali Investment working in Themu ward, and Livestock Demonstration Conservation Ranch Company Limited (LDCRCL) working in Levulosi, Kaloleni and Ngarenaro wards. Six (6) CBOs officials interviewed were from: Mtarakwa (Themu ward); Tanzania Federation of the Urban Poor (TFUP – Daraja II ward); Mwamko Group (Sokon I ward); Faraja Women's Group (Sombetini ward); WEKISA (Kimandolu ward); and The Green Group (Unga Limited ward).

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<sup>5</sup> *Mtaa* – Swahili phrase which refers to lowest administrative unit in Tanzania. In English, *Street*

Thirty (30) households from wards which PCs and CBOs operate were interviewed so as to capture affordability, willingness, and satisfaction with the service according to the provider.

Nevertheless, semi-structured interview technique is very fluid especially when discussion with informants has gained momentum. A researcher can be easily deviated from the original focus if critical attention is not paid.

### **3.5.2 Key Informant Interview**

Key-informant interview involves discussions with ‘those who knows...[and] are not necessarily representative of a population in any sense, but are chosen simply for their knowledge or distinctive viewpoint’ (Woodhouse 2007: 165). Accordingly, four (4) in-depth discussions with four (4) AMC Health Department officials were held. Other key informants who were interviewed informally included eight (8) ward health officers from the study area, one (1) from NEMC, and one (1) from VPO-DoE. We discussed issues like privatisation decisions and modality, institutional arrangement, state of current sanitation, monitoring and HSWM key challenges.

### **3.5.3 Direct Observation and Photographing**

I utilised direct observation technique because it offers an arena for practical surveillance of how SWM activities evolve over time therefore providing first-hand experience. I was able to observe aspects like Household Solid Waste (HSW) composition, storage mechanism, collection systems, transfer stations, transportation modalities, disposal, and SW conflicts with the help of photographing and digital recording.

Observation technique complemented issues which were not fully addressed in the interview sessions since interviews are based on mere talks. What matters in observation technique is the ‘observer’s ability to interpret what is happening and why’ (Kitchin & Tate 2000: 119), and presence of an observer at that material time when an event is evolving.

I also participated in some activities like waste collection, transportation and dumping at the main dumping site, and user fee collection in different areas along with the collection crew. It facilitated easy contacts with service users by reducing unnecessary bureaucracies, building of mutual trust and avoiding risks of being associated with door-to-door political campaigns since the country was headed for general elections.

#### **3.5.4 Informal Interview**

Informal interview or conversation is unstructured in nature and it offers a valuable freedom in sharing knowledge between researcher and the researched, (Kitchin & Tate, 2000). It is flexible because it can be done anywhere, anytime depending on the respondents' and researcher' arrangements. The freedom I experienced with informal interview is the flow of knowledge and respondents being at peace. Sometimes respondents are scared when they see researchers with several pens, notebooks, recorders, and cameras. I utilised informal interview to share information with the informal sector actors, ward health officers and informants from NEMC and VPO-DoE. Informal interviews with some key informants and private company managers went on even after fieldwork through exchanging e-mails, and chatting on yahoo and G-mail.

#### **3.6 Data Analysis Plan**

Analysis of qualitative data is not about subscribing to a certain blue-print. It is an 'art rather than something that can be undertaken through prescription' (Kitchin & Tate 2000: 229). Different techniques and/or procedures can be tailored to suit analysis of data generated and purpose of the study. In this study, I adapted Dey's iterative and versatile approach to qualitative data analysis (Dey 1993 in Kitchin & Tate 2000: 235). There are three major aspects which are interrelated as illustrated in the Figure 3.2: description (transcription, annotation), classification (categorising, splitting, and splicing), and interconnection (linking, connecting, corroborating evidence).

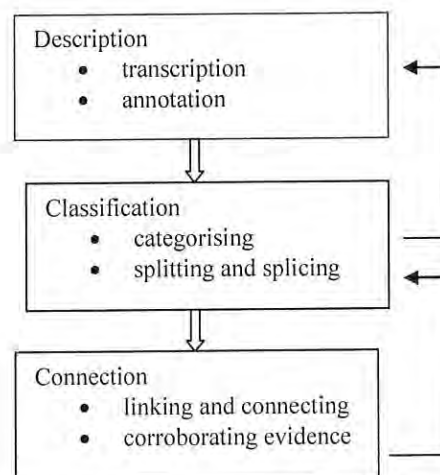
With description I displayed data in such a way that I can easily interpret: as graphical depictions, illustrations or in verbal form. This was done through transcription of the interviews,

narrations and making of annotations by using *HyperTranscribe* research software to transcribe recorded audio files from field. MsOffice 2007 Package particularly MsWord and MsExcel were used in making descriptions and other forms of illustrations.

Later, I classified data so as to make an interpretative analysis by breaking and grouping data into comparable meaningful categories or classes with the help of splitting and splicing techniques. Splitting and splicing were used to re-appraise the way I organised and sort data into various categories. Splitting is concerned with ‘refining analysis of the data by sub-categorising databits within a sorted category’ so as to increase integration of categories and scope. Splicing deals with ‘interweaving of related categories’ (Kitchin & Tate 2000: 246) in order to understand how various themes are related to each other.

Finally, I interconnected data so as to identify relationship(s) which exists between data and the kind of relationship through making of associations and interactions. Corroborating evidence was employed in cross-checking conclusions reached so far as a way of strengthening evidence. Analysis of qualitative data was not easy and straight-forward as it sounds in the above explanations. The process is not linear with fixed pre-determined stages. It was a to and fro process, checking and cross-checking databits. It requires an enormous thinking, speaking *with* data, and linking databits to make sense out of something.

Figure 3.2 Dey's approach to qualitative data analysis



Source: Kitchin & Tate (2000: 235).

### 3.7 Validity and Reliability

Validity is related to the 'soundness, legitimacy and relevance of a research theory and its investigation, while reliability refers to the 'repeatability or consistency of a finding and is of particular importance in approaches that utilise a deductive strategy of inquiry.' Validity can be broadly classified into two categories: validity related to theory and practice. The former is concerned with theoretical grounding of the study and it is divided into content, face and conceptual validities; while the latter pertains to firmness of the methodology applied and consequently conclusion reached, and it is sub-divided into construct and analytical validities (Kitchin & Tate, 2000: 34).

Content validity which pertains to an agreed and understandable field language was achieved because I am familiar with national language (*Swahili*) which is spoken throughout the country. *Swahili* was used in all field communications with the respondents.

The study has face validity because of the practical and theoretical significance of the SWM in third world cities context. For example adding knowledge to the existing knowledge bank, and uncovering actors' dynamism in context-specific settings. Conceptual validity counts on the 'correct marriage of theory and methodology' applied (Kitchin & Tate 2000: 35). Similarly, I used a combination of an actor-oriented approach and stakeholder analysis as theoretical grounding on one hand, and qualitative methodology on the other hand. They both match because they accommodate multiple realities, meanings and interpretations; subjectivities; and orientation toward agency/actors related issues.

Construct and analytical validities are concerned with soundness of the data generation tools and compatibility of data analysis techniques respectively. In this case I combined different qualitative techniques so as to generate data and answer what is supposed to. The adoption of the Dey's approach to qualitative data analysis and other research softwares maximised analytical validity.

A difference in epistemological orientation between quantitative and qualitative approaches influences the kind of reliability in each case. The former settles for 'repeatability or consistency' (Kitchin & Tate 2000:34) of the findings; while the latter embraces subjectivity and multiple realities. With respect to reliability in qualitative studies 'there are no pure subjects or

perfectly knowledgeable informants.’ Instead of commenting that results are ‘replicable’, alternatively it can be argued that results ‘speak to a unique group of people at specific moment in time.’ Our own ‘interests, issues, positionality and...writing’ styles are incorporated into the study and ultimately exerts influence (Crang & Cook 2007: 149).

However, they insist that the above subjectivities embedded in the study should not be an excuse because the audience should be able to ‘understand how you worked through your issues’ (Crang & Cook 2007: 146-147). With this regard they propose adaption of Lincoln and Guba assessments (of which this study applied as well): credibility, transferability, dependability, and confirmability.

### **3.8 Critical Reflexivity and Positionality**

Reflexivity refers to a continuous ‘self-consciousness, scrutiny’ of the self as a researcher and that of the ‘research process’ at various stages of the study, (Dowling 2000: 34). Since the research process is more than data gathering various forms of social relations emerged at different stages of the study. Constant reflection on the self and how the research process was progressing at all stages; negotiations of various forms of social relations in and out of field were inevitable for continuous re-shaping of the study where and when necessary.

Dowling (2000) argues that a researcher needs to be critically reflexive on two major issues: power relations and subjectivity. For this study manifestation of ‘potentially exploitative’ (Dowling 2000: 29) power relationship appeared between me and the researched along the lines of social status and knowledge. I, being young educated male, studying from abroad was misconceived by my respondents as powerful economically, socially and politically. However, clear self- introduction, stipulation of the research, purpose and expectation(s) from both parties assisted in minimising the above exploitative power relations. In terms of knowledge, study participants are the one with knowledge which I requested them to share with me. Since they hold it, they had the power to release it out or not.

With regard to subjectivity in qualitative research, both the informants and I, have individual opinions, characteristics, personalities, experience, perceptions, interpretations and meanings. All

these permeate the study and it requires a balance mechanism since 'research on social relations is made out of social relations' (Crang & Cook 2007: 11) which emerge in and out of the field. In this case it is where my own in-built capabilities in creating conducive environment for smooth knowledge exchange became an asset. It is also at this point where critical reflexivity takes the lead.

Further, Dowling (2000) comments that researchers' identities have influence on access, interpretation abilities, and building of mutual trust between researcher and informants. I, being an insider assisted in building mutual trust fast with high freedom of expression and knowledge sharing with the respondents.

### **3.9 Ethical Considerations**

Ethics in geographical research pertains to the degree of researcher's responsibilities and obligations to his/her study units, public, sponsors and personal beliefs (Dowling 2000; Kitchin & Tate 2000). Ethics consideration is of paramount importance for maintaining public trust and creation of resonance atmosphere for the upcoming studies and researchers (Hay, 2003). I upheld particular attention to the research participants in three main ways: privacy and confidentiality, informed consent, and avoidance of any physical or social harm.

Privacy, anonymity and confidentiality of the informants are highly guaranteed in the final report. Where it is very crucial to cite pseudonyms have been used. As the research also involved 'significant public figures' (Dowling 2000: 26) like local and central government officials permission for their public appearance was requested ahead of time.

On informed consent, I respected respondent's decision whether to participate in the study or not. In tape recording interviews and photographing prior permission was requested as one of the ways of avoiding 'psycho-social harm' (Dowling 2000: 27) meanwhile fostering freedom of expression and knowledge exchange.

## CHAPTER FOUR: HOUSEHOLD SOLID WASTE STAKEHOLDERS' ANALYSIS

*'There is no any way out than cooperating with the municipality...they award tenders to us, they own main dumping site...and they have more control and power than us'* (Private company manager, interview on August 16, 2010).

In this chapter I analyse and map stakeholders involved in the course of Household Solid Waste Management (HSWM) in Arusha municipality. Then, stakeholders have been mapped by using three qualitative attributes of power, urgency and legitimacy to unravel each actor's position in relation to the role on the ground. Final section is the web of stakeholders' interaction from local to national levels. The analysis and mapping of stakeholders' is crucial because people and groups of people are the ones who behave, not issues. The emergence of issues is the result of behaviour, action and interaction among actors in time and space.

### 4.1 Stakeholders Involved

Stakeholders involved have different interests, goals and means toward accomplishment of their desires. Arusha municipality as part of the government is interested in equitable, effective and efficient service delivery but it is not the case in practice. Private Companies (PCs) run on market principles and are profit-oriented; CBOs have mixed motives of service delivery and profit maximisation; while households favor waste removal from their compounds as soon as possible and as far as possible. The informal sector's central concern is livelihood.

On the other hand, external actors in the Arusha municipality context are the Vice President's Office-Division of Environment (VPO-DoE), Prime Minister's Office-Regional Administration and Local Governments (PMO-RALG), and the National Environment Council (NEMC). Others are the World Bank and the Danish International Development Agency (DANIDA) representing key donor community which has been funding sanitation in the municipality.

## **4.2 Stakeholders' Profile**

The profile is made-up of details such as organisation's registration, ownership, activities, service area(s) and experience in SWM. PCs and CBOs mobilisable resources such as waste vehicles, facilities, labour and working conditions are also analysed. Table 4.1 is a summary of the stakeholders' analysis while Table 4.2 is the summary of the stakeholders' resources inventory.

### **4.2.1 Private Companies**

All companies are from Arusha, Tanzania and are owned by private individuals. They all collect and dispose household and commercial SW. Their initial activities were not SWM but later they moved in the sanitation business. It was all about window of opportunity for an additional income generating activity that companies decided to utilise. All of the companies are still engaged with their original activities. LDCRCL is on commercial agriculture and the other two companies are working in commercial bricks making. The oldest private company in SWM is Kivesi Investment which was officially established in 2004 and currently operating in Kati ward only. It was among of the earliest contractors in the municipality for waste management soon after phasing-out of Sustainable Arusha Project (SAP).

Lemali Investment was established in 2002 for commercial bricks making but three years later the company added SWM in its operations. It operates in three streets of Thembi ward, while one street is under CBO called Mtarakwa. LDCRCL is the youngest in SWM in the municipality but with higher capital investment in the business. The company began SWM in mid-2009 and provides service in three wards: Levulosi, Kaloleni, and Ngarenaro.

### **4.2.2 Community-Based Organisations (CBOs)**

All CBOs are under communal ownership and operates in peri-urban settlements. Two (2) CBOs, Mwamko Group and the Green Group, collect predominantly household solid waste while the remaining four (4) collect both commercial and household solid waste. Like PCs, CBOs have supplementary income-generating activities like savings, micro-credit,

environmental conservation and recycling at micro-scale. Three (3) CBOs are typical feminine because they are communally owned and led by women, while one (1) CBO is led by a woman. The former consists of WEKISA, Faraja and Mwamko Group while the latter is TFUP. The remaining two (2) CBOs, Mtarakwa and the Green Group, are typical masculine.

#### **4.2.3 Households**

Households as service users cannot be generalised. In a neo-liberal Tanzania there is a clear observable segregation on the way people live particularly according to housing and neighbourhood status primarily along socio-economic classes: high, middle and low-income households or neighbourhoods. There are cases where mixed socio-economic patches co-exist. The majority of the interviews were conducted in peri-urban areas which are regarded as middle and low-income. Out of 30 interviewed household members, 24 are females, while the remaining 6 are males. It was my own preference to interview more women than men because of the cultural connotation attached to women and sanitation in Arusha. In terms of housing status, all households are in residential places but 17 interviewees were renters, while only 13 were owner-occupiers.

#### **4.2.4 Stakeholders' Resources Inventory**

From Table 4.2, stakeholders' mobilisable resources which are directly used in the daily operations (up to September 2010) encompass waste vehicles, labour, labour conditions and other facilities such as push-carts. These resources are highly influential on the contractors' degree of efficiency and effectiveness in service delivery. Financial resources status is not included because actors were not ready to disclose full financial details. For the vehicles details presented are type or model, age, carrying capacity, quantity and ownership. Labour facets are type of labour used, quantity, gender, and working conditions (gloves, masks, uniforms, boots and other health services).

Table 4.3 Summary of the stakeholders' analysis

Stakeholder	Official Registration	Ownership	Experience in SWM (year)	Activities		Area(s) of Operation [coverage]	
				SWM	Others	Ward(s)	Streets
AMC	City status 2006	Public sector	Since establishment	All types	Overall socio-economic development	Sekei	mini-state house, markets
LDCRCL	2008	Individual	1	HSW & CSW	Commercial agriculture	Levolosi, Kaloleni, Ngarenaro	All
Kivesi Investment	2004	Individual	6	HSW & CSW	Commercial bricks making	Kati	All
Lemali Investment	2002	Individual	5	HSW & CSW	Commercial bricks making	Themis	3 (Corridor area, Old Police Line, AICC)
WEKISA	2009	Communal	2	HSW & CSW	Recycling, Micro-projects	Kimandolu	All (up to August 2010)
Faraja	2003	Communal	8	HSW & CSW	Saving and Micro-credit, Women & children development	Sombetini, Sekei	Sekei ward (only roads & storm water drainage sweeping)
The Green Group	2009	Communal	2	HSW & CSW (in process)	Catchment areas conservation	Unga Limited	6 (Esso, Osterbay, Darajani, Tindiga, Makaburi)
Mtarakwa	2006	Communal	6	HSW & CSW	No	Themis	1 (Themis east)
Mwamko Group	2003	Communal	10	HSW	No	Sokon I	Madukani, Olvolosi/Senevuno
TFUP	2005 (Official in SWM 2009)	Communal	1	HSW & CSW	Housing, Saving and Micro-credit, Water and sanitation, HIV/AIDS	Daraja II	All (but information is specific to Alinyanya street only)

Source: Field work, 2010

Note: PC (Private Company), HSW (Household Solid Waste), CSW (Commercial Solid Waste)

Table 4.4 Stakeholders' resource inventory

Stakeholder	Vehicles				Push-carts	Labour				
	Type & Age	No.	Capacity (tons)	Ownership		Casuals	Working Conditions			
							Uniform	Gloves	Boots & Mask	Health services
AMC	Curbside trucks	2	8-10	AMC	Nil	20	Few	No	No	No
	Skip master	1	-	AMC						
LDCRCL	Seddon Atkinson Compact ors (8 yrs)	2	20 @	Company	Nil	18	Yes	Yes	Yes	First Aid Kit
	Bedford, open, self-tipping (40 yrs )	1	7	Company						
Kivesi Investment	Isuzu, open, self-tipping (29 yrs)	1	7	Company	Nil	10	Few	No	No	No
Lemali Investment	Isuzu, open, self-tipping (22 yrs)	1	7	Company	Nil	7	No	No	No	No
WEKISA	TATA, open, non-tipping	1	5	Hire	1	4	No	Few	No	No
Faraja	Isuzu, open, self-tipping	1	7	Hire	6	5 – 8	Few	No	No	No
The Green Group	Leyland, open, self-tipping	1	7	Hire	2	4	No	No	No	No
Mtarakwa	Isuzu, open, self-tipping	1	7	Hire	2	No	Yes	No	Yes	No
Mwamko Group	Isuzu, open, self-tipping	1	7	Hire	3	7	Very few	No	No	No

Source: Field work, 2010.

In the Table 4.2, none of the CBOs excluding TFUP owns waste collection vehicles, they all hire Isuzu open self-tipping from private individuals. TFUP utilises push-carts only for waste collection and transportation. In contrary, all PCs have their own waste vehicles. LDCRCL appears to have done huge investments in the business since it is the only actor with two (2) compactor trucks 20 tons capacity each, one 7 tons open Bedford tipper and they have 18 field staff rotating in 3 wards service areas. Another exceptional is AMC which owns two (2) curbside trucks and one (1) skip master though they are old and highly costly in maintenance.

Other companies own single 7 tons open self-tipping tippers each. Six (6) CBOs hire open tippers of the same capacity. These vehicles are relatively old with an average age of 20 years. Neither of the company have push-carts; the available ones are owned by CBOs with Faraja on top owning 6 big-push carts; Green Group, Mtarakwa and Mwamko Group each with 2 big push-carts.

Except for one CBO, Mtarakwa, the rest of the actors prefer to use casual labour with male dominance in waste collection and transportation, while females are mostly used in the revenue collection. Occupational hazards risks are high because of the poor working conditions and gross inadequacies of gloves, masks, boots, uniforms and other health services.

### **4.3 Stakeholder's Mapping**

Stakeholder's position and all forms of resources an actor commands, reflect how an actor operates on the ground. The framework I modified from Mitchell, Angle & Wood (1997) uses combination of power, urgency and legitimacy to map stakeholders' typologies. Presence of one, two or three attributes determines actors' salience and influence, and therefore where an actor belongs within a continuum of eight typologies. The number of attributes an actor possesses is direct proportional with ultimate salience and influence. Figure 4.1 is the schematic depiction of the actor's positions.

#### **4.3.1 Latent Stakeholders**

Latent stakeholders possess only one of the above three attributes, and they can be further categorised as *dormant*, *discretionary* and *demanding* stakeholders. Latent stakeholders are regarded as passive because their presence and existence is hardly recognised by decision makers and their salience is low.

The general community/households in the municipality fall under *dormant stakeholders* because they have voting and/or normative power only to impose their will which is primarily better sanitation service. For instance community in Sokon I ward exercised normative and political power as weapons to influence better SWM service and affordable user charges through acceptable channels. That is, power to vote, elect their leaders who favours public interests, and social power of love and acceptance to influence which contractor should work.

*Discretionary stakeholders* have neither power to influence or urgent claims, but they have legitimacy. This is the case with a civil society organisation called Centre for Community Initiatives (CCI). CCI is based in Dar es Salaam and works directly with TFUP given that all of them have similar goal and interventions. CCI's operations with TFUP are legitimate from all angles, but CCI do not have power and urgency necessary to have active relationship with Arusha Municipal Council (AMC) or any other actor.

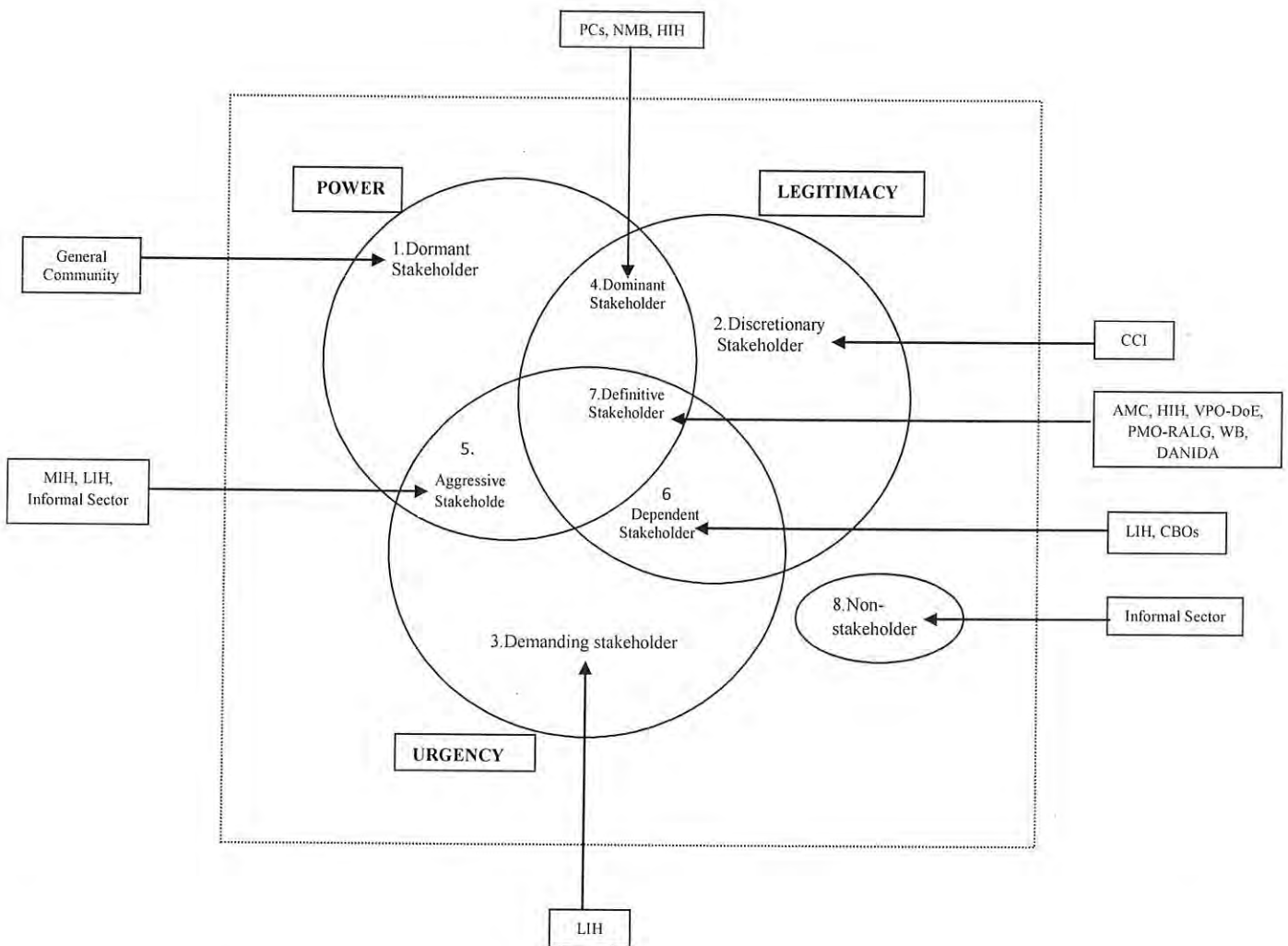
*Demanding stakeholders* possess urgency but do not have power and legitimacy. This is the case with the low-income households in fragile housing and/or land and tenure in peri-urban settlements. They live with garbage at their doors, on their roofs, in their narrow paths and with rotten piles in any available open space. Situation is critical and calls for an urgent attention. They do not have any form of power to change state of affairs. Their demand for better service is like mosquito buzzing on the ears; it is bothersome and irritating but harmless to authorities.

#### **4.3.2 Expectant Stakeholders**

These are the stakeholders possessing two of the three attributes, and are sub-categorised as *dominant*, *aggressive* and *dependent stakeholders*. Possessions of the two attributes position them at the state of expectation: expecting something like attention, favour, care, or special

treatment from either contractors or authorities. Hence, their salience is moderate and they are perceived by managers to be present.

Figure 4.1 Stakeholder typologies: Having one, two or three attributes.



Source: Adapted from Mitchell, Angle & Wood (1997)

Note: CCI (Centre for Community Initiatives), HHH (High-Income Households), MIH (Middle-Income Households), LIH (Low-Income Households), WB (World Bank).

*Dominant stakeholders* have legitimate claim and power to act on their claims. These are the Private Companies (PCs); high-income households and neighbourhoods like Njiro Kontena, PPF apartments, AICC and Corridor area; and financial institutions like the National Microfinance Bank (NMB). Their anticipations and influence matters to the managers (AMC) since they belong to a strong alliance faction. PCs in the municipality are only three, and have financial power. High-income households and neighbourhoods have financial power and strong political power at local context because the above residential areas are mostly for international officials, diplomats, political tycoons and city's high business class. NMB's services and products are legitimate from legal and institutional grounds. The bank possesses financial power to offer loans. In 2009 LDCRCL, a private company, was denied a loan to finance SWM operations but WEKISA, a CBO, was awarded 1.5Ml TZS (1,000USD) as a loan to finance operations.

*Aggressive stakeholders* possess and use power and urgency to enforce their claims which may be legit or illegitimate. In most cases they are identified as aggressive because of their subordination to coercive means of power. Informal sector actors and some of the middle- and low-income households/neighbourhoods fall under this category. For instance, private individual scavengers and sorters use physical force in the competition for recyclables. Aggressiveness to the municipality for instance and other competitors is an important weapon in their daily activities. Some of the middle- and low-income households utilise their knowledge and capability to act in developing a range of resistance to dominant structures. For example in Bondeni and Alinyanya streets, Kimandolu and Daraja II wards respectively, households use informal waste transporters and abusing formal waste collectors as a way of resisting high user charges. Without underpinning along legal perspective, all these instances reflect the clash between power and authority among actors.

*Dependent stakeholders* have legitimate claims and urgency but do not have power to enforce. They are basically dependent on the power, willingness to act, and lobby from any powerful actor(s). Low-income households and CBOs are typical of dependent stakeholders. They have legitimate claims for better sanitation and other infrastructures. Existing conditions press for immediate attention but residents do not have necessary power to act. CBOs activities are legitimate but their heavy reliance on normative power of love and acceptance weakens their enforcement in daily operations, thus depending on power and willingness of AMC to act.

### **4.3.3 Definitive Stakeholders**

It is the typology of highly salient stakeholders because they possess all three attributes: power, urgency and legitimacy. High-income households, AMC, donor agencies, and central government are the actors under this typology. The power of AMC is reflected in the above opening quotation of this chapter. The council is the owner of the service, has high influence in awarding SWM tenders, monitor activities of the other partners, has political power to legitimise its activities, coercive power through the use of city militia, economic power relatively to the contractors and decision over which matter is urgent.

VPO-DoE and PMO-RALG have more authority and economic muscles than local governments. For example allocating budget for municipality's development activities. World Bank (WB) and DANIDA have economic power, but not political power. Their influence lies on the decision over which infrastructure to fund and how much. High-income neighbourhoods their compounds are always cleaner because of the power, urgency and legitimacy they possess.

### **4.3.4 Non-Stakeholders**

When envisaged from the municipality's point of view which is the key mediating body, informal sector actors (scavengers, sorters, informal contractors, and recyclers) are unrealistically regarded as non-stakeholders simply because they are considered to have none of the three attributes, and they are unrecognised by policy and institutional frameworks. They are not visible in the plans and administrators' minds, but their actions, intentions and power are visible and supported by users in the peri-urban settlements. They are key partners who have been '*legalised*' by households in providing cheap and reliable service, and cover the gap left by the formal contractors. In a scenario like this the question of relationship between power and authority comes in. Municipality has the power, but its authority and practical legitimacy in ensuring service delivery are highly questionable.

It is worth noting that the plotted stakeholders are inherently fluid and dynamic. The way they have been mapped in this study may not be necessarily similar to other developing world cities depending on the local socio-economic, political and cultural settings.

#### 4.4 The Web of Communication and Support

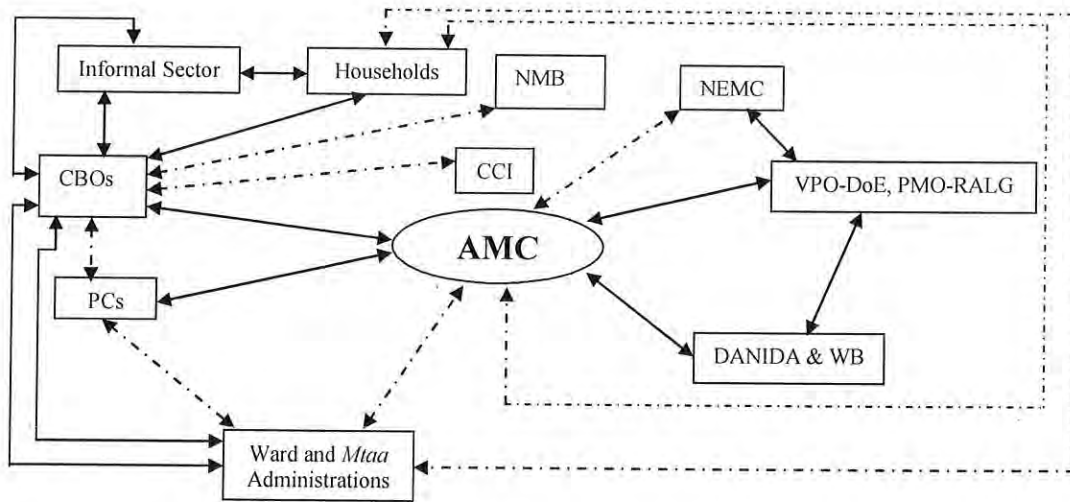
Powerful actors are connected among themselves and disconnected from the less powerful who are at the lower chain (Figure 4.2). In return, those at the lower chain are also well connected among themselves as counter-attack and development of alternatives. AMC is the centre of everything, is the ultimate manager and owner of the service, and links the local and the global. Generally, communication and interaction among definitive stakeholders are to and fro. Financial and technical resources, and some orders or decisions trickle down from central government and donor agencies, while municipality is directly accountable to the structures above it, not citizens.

At local level, informal sector, households and CBOs are well connected supporting each other either legally or illegally. CBOs are closer to the ward and *mtaa* administration than private companies because of the sanitation contract linking the two of them. NMB and CCI are connected to the CBOs but the former exercise financial power over the latter. Service provision and user charges are the bridges for communication between private companies and households.

Actors' set of interaction and web of communication and support system is filled with asymmetrical power relations, maneuvers and manipulations from local to higher levels. Actors' divergent interests are the foundations for the series of battles over financial resources, legitimacy, and control of the service area(s). Knowledge and power diversities come in as catalysts. Such battles are like between informal sector and municipality over institutional legitimacy and control; struggles among contractors themselves over financial resources, and lucrative service areas. Driven by access to the *classified* information, relations and struggles among actors are built on the manipulations, *secret service* and vertical social capital.

In return, households' agency (knowledge and capability) structures in myriad ways like using the informal sector. This is possible because even though definitive stakeholders like AMC possess power, it does not mean that households or informal sector actors do not have or cannot exercise power of their own.

Figure 4.2 The web of actors' communications and support systems



Source: Researcher's construction (Field work, 2010).

Note:  $\leftarrow \cdots \rightarrow$  Weak communication;  $\longleftrightarrow$  Strong communication

#### 4.5 Summary

Stakeholders involved in HSWM are government made up of AMC itself, VPO-DoE, PMO-RALG, and NEMC. Others are private companies representing private sector, CBOs, and households, and informal sector actors who are either individually or in groups depending on the entry point at the HSWM chain. There is also the World Bank and DANIDA. In terms of resources, private companies are mostly endowed than CBOs, and the former operates in CBD and adjacent areas, while the latter in peri-urban settlements. By using combination of power, urgency and legitimacy, actors' are characterised by an asymmetrical power relations, maneuvers and manipulations at all levels, which ultimately influence how they perform their roles on the ground. On the other side there is tricky question of power and authority with the latter proving to be very crucial in ensuring smooth service delivery.

## CHAPTER FIVE: MUNICIPAL HOUSEHOLD SOLID WASTE MANAGEMENT SYSTEM

*'Our solid waste management system highly embraces private sector participation in collaboration with the municipality'* (Municipal official, interview on August 10, 2010).

This chapter presents an assessment HSWM system used in the municipality. The Public-Private-Partnership (PPP) approach to urban service delivery is the general framework supported by holistic socio-economic, political and cultural analysis with the help of the Integrated Solid Waste Management (ISWM) framework.

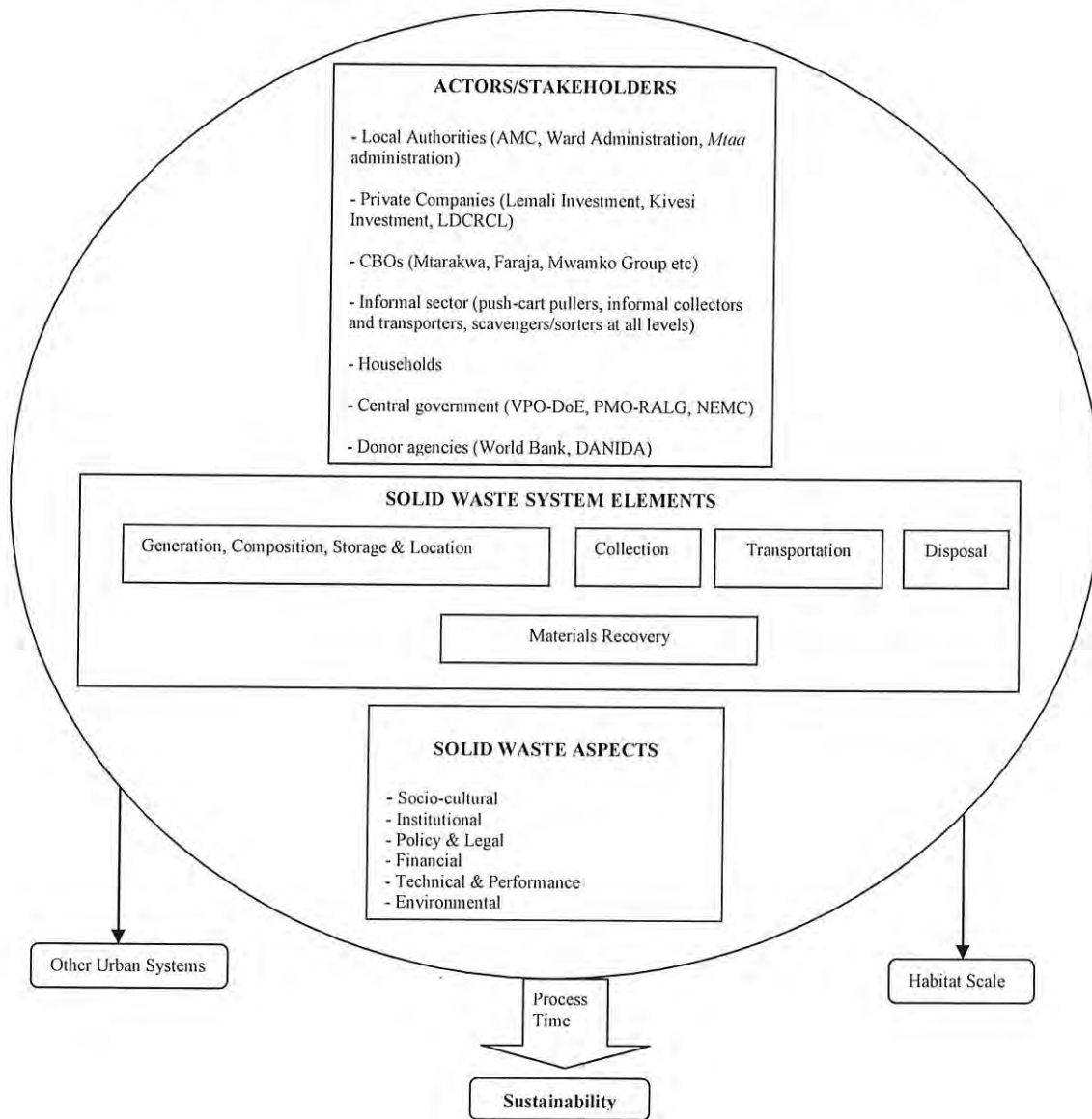
### 5.1 The Public-Private-Partnership Approach

In Arusha municipality, there is a shift in SWM system from municipal's monopoly in direct service delivery to different forms of Public-Private-Partnerships (PPPs). Service provision is under municipal ownership with private sector and civil society provision. In the 8 wards studied, 3 wards have been totally privatised to private companies, 4 to CBOs and in 1 ward direct service delivery is shared between AMC and CBO. The partnership is comprised of government which includes the municipality itself, ward and *mtaa*/street administrations; the private sector (private companies), civil society (CBOs and informal sector), and general community who receive service. Private Companies (PCs) and CBOs are contracted on yearly basis to provide direct service on behalf of or in partnership with the municipality. Kassim (2006) also presents almost similar PPPs arrangement between contractors and Dar es Salaam municipalities.

For further detailed holistic analysis of the HSWM partnership in the municipality an Integrated Solid Waste Management (ISWM) approach has been adapted. The ISWM framework (van der Klundert & Anschütz 2000; van der Klundert & Anschütz 2001) deviates from technology-centred traditional approaches for SWM in developing countries as it seek full participation of all actors, gives due weight to waste minimisation and resources recovery, socio-cultural, economic

and political conditions of waste at local context. Three major dimensions in the system are stakeholders, system elements and SWM aspects as illustrated in Figure 5.1.

Figure 5.1 An Integrated Household Solid Waste Management Model



Source: Modified from van der Klundert & Anschutz (2001: 11).

## 5.2 Actors and Roles

Central roles of the municipality are to administer tenders and monitoring contractors' activities. The latter role is done informally like the use of mobile phones, customers' complaints, and rare visit to the sites by the municipal officials. There are no any stipulated performance guidelines, or standards. Municipality stands as enabler and in Daraja II ward it delivers direct service in partnership with TFUP. VPO-DoE and its arm NEMC and PMO-RALG are responsible for broad policy and legal framework formulation, linking the municipality with donor community like DANIDA and the World Bank. PMO-RALG further oversees developmental activities and budgets of the local governments. DANIDA was funding the Sustainable Arusha Project (SAP, 2001-2004) under the Sustainable Cities Project (SCP); while the World Bank is currently funding upgrading of the Muriet main dumping site under the Strategic Cities Project-Tanzania (TSCP, 2010-2013).

Private companies and CBOs are engaged in waste collection, transportation, disposal, charge customers directly in cash, and monitoring activities informally like the municipality. Households (HH) generate waste; they are service recipients, user fee payers and are interested in affordable, and timely available service. An informant exemplifies that *'service fee is too high. I cannot afford it. 2000TZS [1.3USD] per month is equal to half a kilo of beef'* (Household interview, August 30, 2010). Another interviewee states that *'our duty is to pay for the service only, that's all, nothing more'* (Household interview, September 01, 2010). Informal sector monopolised material recovery, scavenging, sorting and recycling at all levels from HH level to the main dumping site.

## 5.3 Solid Waste Elements

### 5.3.1 Waste Generation, Composition, Storage and Location

Solid waste generation rate in Arusha municipality is not a matter of straight forward figures. It is highly contentious according to different sources and authorities over time. A consultancy report in 2000 shows that 236 tons/day was generated; and that municipality had a capacity of collecting only 35% of it. Further, the report projected generation rate per day up to 2004 with an average increase of 18 tons every year: 2001 (253 tons/day), 2002 (271 tons/day), 2003 (289

tons/day), and 2004, 309 tons/day (Applied Management Consultants, 2000). In 2002 AMC estimated that about 236tons/day is generated whereas household, commercial/trade and market wastes accounts 89%, institutions 03%, industries 02%, street vendors and pedestrians 01%, construction 0.5%, and others 4.5%. There is a difference of 35 tons when compared to the consultant's projection for 2002.

In 2009/2010 AMC asserts that about 410 tons/day is generated. It amounts to 12,000 tons/month whereas only 32% reaches dumping site, 36% is used for gardening and buried-pits in homes, 25% is recycled and 10% feeding domestic animals. By using the consultant's projection of an average of 18 tons/year increase, by 210 generation rate should be 417 tons/day. So there is a difference of 7 tons. It is not clear how those percentages were reached. Again, it is highly questionable how municipality's data assumes that all generated refuse is managed forgetting waste which lags behind in the street corners, narrow paths, behind walls, and in the water bodies.

Additionally, municipal officials assert that of 410 tons only 164 - 287 tons are managed which means that more than 50% of the waste is not managed, and 80% of it is in per-urban areas. There is supplementary contention from municipality that the 410 tons/day is an old figure. There is internal confusion within municipal officials in information released because they do not match. An official states that, *'this generation figure is outdated because current generation rate has increased tremendously; stakeholders must re-visit an agreed amount'* (Municipal official, interview on August 10, 2010). On the other hand, there are claims that sanitation sector in the municipality for long time has been manipulated so as to attract donor agencies especially DANIDA and the World Bank. An anonymous informant expressed that *'politics and manipulations have infiltrated waste management to make IMF, WB and DANIDA fund short term projects'* (Anonymous interview, September 04, 2010).

HSW in the municipality is by and large composed of biodegradable organic matter. Food remnants, polythene bags and other kitchen refuse are dominant. Composition and quantity differs from low, middle and high income households or neighbourhoods. Influential factors are affluence, consumerism pattern, and culture. For instance high income neighbourhoods of Corridor Area, AICC, and Njiro streets in Themi ward generates high quantities of waste in

comparison to low-income Daraja II, Unga Limited, Bondeni, and Simanjiro streets dominated by singles living in rentals; or middle-income areas of Kijenge and Levulosi.

From Njiro and Corridor area, I observed expired bundles of women's sanitary towels, cooked food remnants, canned foodstuff, supermarket products, rotten fruits, charcoal stoves, plastic bottled water, and other recyclables which all suggests mass consumerism habit, affluence and subsequent waste generation. It explains why individual door-to-door scavengers always visit affluent areas the first thing in the morning. Kitchen ashes; peels from banana, cassava, and potatoes, maize cobs, little rice and *ugali*<sup>6</sup> left-over are common in low- and middle-income areas. However, in all cases polythene bags dominate refuse from each household suggesting that majority of residents use plastic/polythene bags for shopping taking us back to the AMC ban on the use plastic/polythene bags for shopping in early 2009.

On weekly basis the amount of waste collected by each contractor is usually higher on Mondays. It is because of the Tanzanians culture of visiting friends, families or relatives in the weekends where mass eating and drinking are usually part of the main agenda.

Storage mechanism at HH level before collection is not uniform. In well to do neighbourhoods 10 – 20 litres capacity plastic buckets with covers are used to store waste. Figure 8 shows how refuse is stored. Majority uses polythene bags, dilapidated bins which are also wastes, and used cement or inorganic fertiliser bags. In rentals, waste containers are shared by several households or each household owns a container or bag. In many households I visited waste bins are located near or on the way to the pit latrines, while in private estates the bins are located at the backyard where visitors cannot spot it easily. It suggests how waste is perceived: location near pit latrines because all are waste, and location at the backyard means that front yard has a political face and visitors should not see it.

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<sup>6</sup> Ugali: common local food in East Africa region made up of water and maize flour to make a stiff porridge. In Kenya it is known as *ugali/posho*, *kaunga* (Uganda), *ubugali* (Rwanda & Burundi), and *bugali* (Congo).

Figure 5.2 Household solid waste, and storage mechanism before collection



Note: Various ways in which many households store waste before collection by contractors. To the left refuse is the nature of the municipal HSWM and storage in plastic buckets, while to the right is the storage in the plastic buckets and black polythene bags.

Photos by Edward Ezekiel, 2010

### 5.3.2 Waste Collection

There is no waste separation during collection as all types of wastes in the service area are collected together. At municipality level the general collection modality is door-to-door marking the shift from using former municipal transfer station system. At different habitat scales beginning from household, neighbourhood, and *mtaa*/street levels, door-to-door system have been tailored to suit local context and also depending on the capacity of the contractor.

- *door-to-door collection by compactor truck*: only one company, LDCRCL, uses compactor trucks to collect waste. There is always a whistle-man ahead of the truck to alert households. Household members are supposed to bring out refuse from their houses to their gates or to the trucks with the help of the collection crew (Figure 5.3).

- *door-to-door collection by an open-tipper*: Collection modality used by Kivesi Investment, Lemali Investment and WEKISA in Kati, Themi, and Kimandolu wards respectively. Similarly, they use whistle, and an addition of hooting where necessary to alert HH especially those in inner settlements.
- *door-to-door collection by push-carts*: TFUP uses big and small push-carts to collect waste from inner households of Daraja II up to the municipal transfer stations (Figure 5.5) in each *mtaa*/street. They use plastic whistles supplemented by human-whistle to alert households.
- *door-to-door collection by push-cart and an open tipper*: modality used by CBOs in Sokon I, Unga Limited, and Sombetini wards. Primary collection is done by push-carts while secondary collection and transportation by open tippers. In Sokon I the tipper is also used for door-to-door collection (Figure 5.4).

### 5.3.3 Waste Transportation

Both motorised and non-motorised modalities are used in the refuse transportation. All PCs use motorised while CBOs use both due to the nature of the service area and their capacities.

- *fully motorised*: in places where door-to-door collection with an open tipper or compactor are used (Levolosi, Kati, Themi and Kimandolu wards), transportation is chiefly by using waste vehicles. Collection is straight from households to the dumping site.
- *fully non-motorised*: TFUP which works in Daraja II ward is the only contractor which uses push-carts to transport waste to the former municipal transfer stations, and later municipal vehicles perform secondary transportation and disposal. TFUP's operations are similar to waste collection cooperatives locally known as *mahiberat* in Arada sub-city, Addis Ababa, Ethiopia (Ezekiel, 2010 – unpublished) but the only difference is that Ethiopian *mahiberat* uses iron push-carts while TFUP's push-carts are wooden.
- *motorised and non-motorised*: It is common with CBOs in Sokon I, Unga Limited, Sombetini which uses their own designated transfer stations for waste collection. Primary

transportation is done by using push-carts, while secondary transportation is by using hired open tippers.

Figure 5.3 Door-to-door household solid waste collection and transportation modalities



Note: To the left, collection and transportation by compactor truck in Levulosi ward. To the right, collection and transportation by using combination of big-push cart and an open self-tipping Isuzu in Sokon I ward.

Photos by Edward Ezekiel, 2010.

**Figure 5.4 Door-to-door household solid waste collection and transportation modalities**



**Note: Top left, waste collection in Thembi ward by using an Isuzu 7 tons open tipper; top right and down left collection in Kimandolu peri-urban inner settlements; down-right collection by using push-carts in Daraja II. Photos by Edward Ezekiel, 2010.**



### 5.3.4 Waste Disposal

All collected SW is crudely dumped at Muriet main dumping site, a site which initially was supposed to be a sanitary landfill. It is located 8km south-west of the city centre, covers about 62 acres (29.7 hectares) land area, it is owned and operated by AMC, and it was opened in 2002/2003 financial year following closure of Njiro dumping site. All private companies pay to the municipality 25,000TZS (16.7USD) per month as tipping fee, but CBOs do not pay as an incentive to encourage them. The site is now surrounded by mushrooming residential and commercial establishments. The former dumping site is now occupied by expensive private estates.

Muriet is both a dumping site and a livelihood centre. Large scale scavenging and sorting with a stiff competition at the site is done by self-organised informal sector. Their livelihood activities is fueled by *Maendeleo Used Plastics and Paper Limited*, the only formal recycling company in the city located few kilometres from the dumping site.

Figure 5.5 A transfer station in Daraja II ward and a section of the Muriet dumping site



Note: To the left is a transfer station used by TFUP in Alinyanya street, Daraja II ward. To the right is the Muriet main dumping site. Photos by Edward Ezekiel, 2010

### **5.3.5 Materials Recovery**

Generally, there is no waste separation at the source point. Only one household (n = 30) was found in possession of different containers for different types of wastes. Lack of separation during collection however frustrated the household from continuing with separation. Material recovery is dominated by the informal sector. Even waste collection crews are engaged in materials recovery. The only formal recycling company in the city is *Maendeleo Used Plastics and Paper Limited*. The company buys plastic and paper for recycling from informal sector throughout the city. WEKISA is also involved in small scale recycling by making cultural necklaces and toys out of waste.

Searching for plastics, metals, aluminum, copper, bottles, cans and plastics which have high market demand begins with household members at the lower chain, individual sorters and waste collection crew at the middle of the chain, and large scale scavenging/sorting at Muriet. Copper fetches higher price than the rest, about 5000TZS (3.3USD) per kilo; other metals are 300 - 500TZS (0.2 - 0.3USD) per kilo; and Heinken beer bottle has higher prices than others<sup>7</sup>. Middlemen are located strategically along main routes to the dumping site. They show a high concentration in the main junctions to Muriet in the places like Alinyanya and Jamhuri streets in Daraja II ward; and Viwandani and Esso streets in Unga Limited ward.

## **5.4 Various Aspects of Solid Waste Management**

### **5.4.1 Socio-Cultural Aspects**

People's culture such as feeding preferences, affluence, family size, and consumerism are directly linked to variations in the quantity, and composition of waste generated in different places around the municipality. Management practices at household level are highly influenced by the attitude, perception and knowledge about waste and health matters. Storage mechanism and location of the waste-bins are the evidence to this.

Culturally, household chores including sanitation are perceived as women's role. The perception also explains why most of the CBOs interviewed are dominated and led by women. Common

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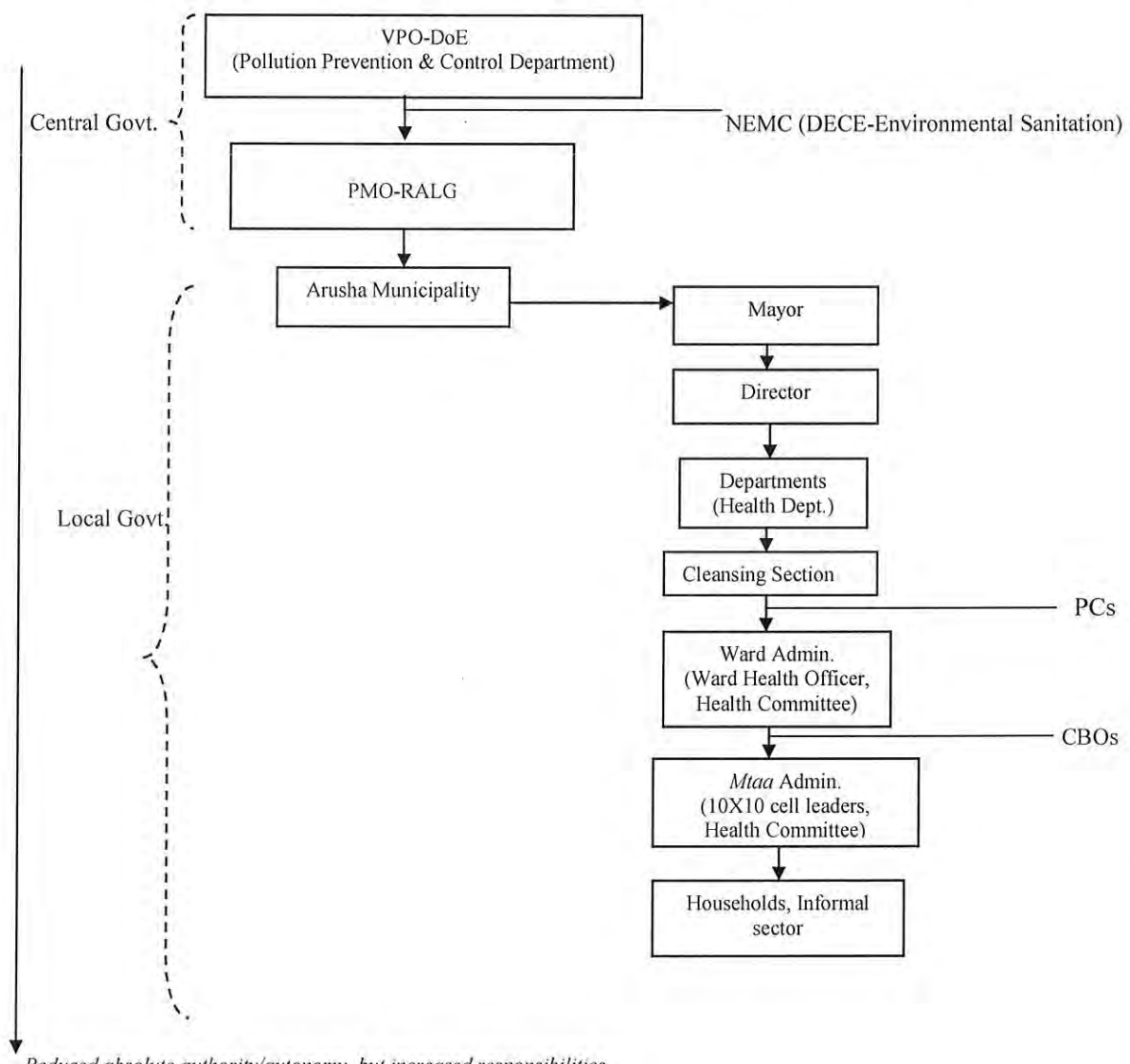
<sup>7</sup> Local market prices as August - September 2010

proverbs used to justify such cultural attitude are like; *a house is a woman, environment is a woman, and a woman is about cleanliness*. Social and health working conditions of the waste workers are very poor with inadequate facilities.

### 5.4.2 Institutional Aspects

Structures and institutions responsible for SWM are politically defined from top to down.

Figure 5.6 Institutional and organisational structures for HSWM



Source: Researcher's construction (Field work, 2010).

At the central government level, VPO-DoE (Pollution Prevention and Control Department) and PMO-RALG are responsible for broad national policy and legal formulation. Further, PMO-RALG oversees activities and development management of the local governments including budget allocations and approvals. NEMC is an arm of VPO-DoE which was established by an Act of Parliament No.19 of 1983 to advise government on environmental management and conservation issues. Environmental Sanitation Department at the Directorate of Environmental Compliance and Enforcement (DECE) handles SWM issues. Additionally, NEMC is directly responsible for monitoring local governments on environmental issues, gives orders where necessary and NEMC can sue local governments.

At Arusha municipality, Health Department (Cleansing Section) is responsible for all SWM activities. Theoretically, PCs and CBOs are supposed to be under AMC, but on the ground PCs are strongly attached to the AMC than the Ward administration. PCs sign contracts with AMC and accountable to the AMC, while CBOs signs contract with the Ward administration under AMC approval. Ultimately structures are accountable to the structures instead of citizens. *Mtaa*/Street administration mobilises households for the service delivery and cost sharing. Much of the responsibilities have been decentralised down to the lower tiers of administration but without real absolute power or authority to undertake the tasks.

#### **5.4.3 Policy and Legal Aspects**

At national level there is no stand-alone national strategy or framework specific for SWM. Solid waste issues are loosely addressed in different national policies, strategies and Acts. The National Environmental Policy (NEP, 1997) addresses broad environmental issues with minimum attention on SWM. The newly formulated National Public Private Partnership Policy (PPPP, 2009) is the first formal policy which clearly defines roles of each actor in the partnership for urban service delivery. It embraces active involvement of the non-state actors through capital investment, technical and managerial skills while public sector's general responsibility is the creation of an enabling environment.

At Arusha municipality there is no formal local SWM policy but rather a Solid Waste Strategy for 2008/2009. The overall goal of the strategy is seeking to deliver an effective, efficient,

affordable, safe and sustainable SWM system for both urban and peri-urban settlements. I have read the strategy but it appears to be too ambitious and political because there are too many entry points and priorities; and exclusion of issues such as financial resources mobilisation, who is responsible for what, and marginalisation of the informal sector.

On legal issues, at national level Local Government Finance Act No.9, 1982 Section 8 and its amendments give municipality authority to enter into an agreement or get a contractor in connection with performing various functions and/or revenue collections. The Public Procurement Act, 2004 and its Regulations establishes procurement procedures and tendering guidelines to be used in public sector. The National Environmental Management Act No.20, 2004 is the national-wide Act for environmental management used at all levels and specific issues regarding SWM are not dealt with in the Act. Recently, Public Private Partnership Act (PPPA), 2010 was formulated with defining guidelines and procedures to govern development and implementation of PPPs, to give effect to PPP Policy, and to provide institutional framework for partners involved in PPPs.

In Arusha municipality the Solid Waste By-law 8(2), 2001 is the sole regulation used for SWM. However, at present its amendment to suit dynamic socio-economic and technological context is underway. The by-law clearly failed to stand for improved sanitation especially in peri-urban settlements as state of sanitation is poor. It is further entrenched with ambiguity on issues like setting criteria for user fee and standards, clear terms of references and penalties among other issues.

#### **5.4.4 Financial Aspects**

Arusha municipality's budget sources are internal revenues, central government allocations and external development assistance. According to municipal official, in 2009/2010 financial year, 20% of the whole municipal budget was allocated for sanitation activities. From interviews with municipal officials, I noted that maintenance cost for 3 waste vehicles is TZS 15M (10,000USD) per year; fuel costs TZS 6M (4,000USD) per month, and TZS 1.9M (1,266USD) wages for 20 casual labourers. The municipality recovers costs through tipping fee paid by PCs and direct user charges by collecting waste in commercial establishments such as central markets and in areas

which have not been privatised. The budget line for SWM is not fixed or guaranteed. Priorities are highly politicised and in this competition scale SWM is at the bottom.

For the PCs and CBOs cost recovery is mainly through direct user charges. It varies considerably from household to household despite of the fixed 1,000TZS (0.6USD) in the 2001 municipal by-law. Major expenditure for contractors is on waste transportation because spare-parts and fuel prices keep on rising. Transparency and access to financial details were very difficult during fieldwork. In the on-going waste business environment, none of the actors was ready to disclose clear financial information.

#### **5.4.5 Technical and Performance Aspects**

Equipments and tools used for SWM in the municipality are generally in the poor state (Refer Table 2 on stakeholders' resources inventory). Only one private company, LRCRCL possesses two modern waste collection compactors with carrying capacity of 20 tons each. Even though compactors are working efficiently, maintenance is not easy because some of the spare parts are expensive and not locally available. In such situation the company orders spare-parts from Atkinson Company, UK. Other PCs have own Isuzu tippers but they are old, more than 20 years. CBOs hire tippers from private individuals for waste collection. Combination of the inadequate working facilities and state of infrastructures contributes to low performance from contractors.

However, it is a bit complicated to compute technical performance at Arusha municipality context as it now. Technical performance comprises of issues such as collection rate *vis-à-vis* generation rate, % of coverage in service provision in terms of population served, vehicles productivity and labour productivity. Complication arises from the fact that waste generation rate is disputed, no waste separation, there is no weigh-bridge at the disposal site and very poor record keeping on waste and labour.

#### **5.4.6 Environmental Aspects**

Over-accumulation and overstay of the piles of garbage in former municipal transfer stations like Alinyanya and Jamhuri streets in Daraja II ward, Simanjiro street in Sombetini wards poses great health risks to the public on top of polluting air. A place like Sokon I with high water-table used to be one of the cholera hot-spot in the municipality. Efforts among all stakeholders in the area to keep environment clean including SWM surpassed cholera.

At the dumping site refuse is crudely dumped, just openly and setting fire is used to reduce the amount of polythene bags for instance. Areas surrounding the dump are heavily stinking. Even though data are not readily available, the amount of waste which makes it to the dumping site is less than what remains in the streets, narrow paths, behind walls, in the water bodies, underneath bridges, or managed by using other HH alternatives.

#### **5.5 Summary**

The HSWM is under partnership between government, private sector and civil society with the latter two actors playing a leading role in the direct service provision. Waste is by and large composed of organic matter, with variations in the generation rate and composition among households influenced by affluence and culture. Generally, waste collection is on door-to-door basis and transported by using motorised movement, non-motorised movement or both. Disposal is done crudely at the municipal's main dumping site. Institutional set-up for HSWM is politically defined from central to local levels, with much of the activities undertaken at the very local scale. There is no stand-alone national strategy for SWM, but SWM has been loosely addressed in various policies, strategies, and Acts at national level and AMC level. Wider socio-economic, cultural and political issues at local context are highly linked with the way HSWM activities are undertaken.

## CHAPTER SIX: FORMAL NON-STATE ACTORS INVOLVEMENT AND PRIVATISATION OUTCOMES

*'Without private companies and CBOs, situation would have been worse than now. They complemented service delivery and improved sanitation something which municipality as municipality failed to do'* (Municipal official, interview on August 13, 2010).

Involvement of the private sector and civil society organisations in SWM varies in terms of activities performed; degree of involvement and privatisation arrangements. Besides, there are mixed outcomes resulting from HSWM privatisation. In this chapter, I explore involvement of the private companies and CBOs in HSWM; and outcomes of the HSW privatisation.

### 6.1 Why SWM Privatisation in Arusha Municipality?

Along with the global forces imposed through Structural Adjustment Policies, (SAPs), in essence, Arusha municipality decided to privatise SWM service basically due to its failure and gross incapacities in service delivery. The rate at which waste generation increased coupled with continuous population growth and urbanisation overwhelmed capacities of the municipality in delivering service. Incapacities in terms of equipments, labour and workable plans forced AMC to concentrate in the CBD. Private companies, civil society, and households intervened so as to cover-up service deficiency in myriad ways. It is at this point where informal sector and current CBOs emerged from. This scenario is what Bartley (1996) calls *un-intended* or *informal privatisation* which also happened in Uganda, Zimbabwe, India, Malaysia, Brazil and Mexico.

The municipal official confirms that *'low capacity of the municipality in managing solid waste particularly poor equipments forced service outsourcing. About 100 - 120 tons only were collected'* (Municipal official, interview on August 10, 2010). Another AMC official added that *'efficiency of the available personnel was very low with few working hours and poor equipments'* (Municipal official, interview on August 13, 2010). One of the ward's health officers also states: *'due to manpower problem, equipments, and escalating running costs decision reached was to privatise the service'* (Ward health officer, interview on August 13, 2010).

Additionally, the study conducted in 2000 by Applied Management Consultants Limited foremost recommendation to the municipality was to privatise solid waste collection activities by 70% or increase municipal's capacity by 11-12 new waste trucks. Municipality could not manage over 65% of the generated solid waste. The deficiency was estimated to be equivalent of adding 11 new trucks so as to cover the gap. Due to limited financial capacity, bureaucracies and over-dependence on central government, pressure to privatise came from various angles.

Back to the SAPs, privatisation of the SWM in the municipality was also politicised. SAPs and SAP were external top-down interventions by nature. Locally, the political face manifested itself through privatisation of the CBD and the so-called sensitive areas first, and using CBD as a hook to attract contractors while ignoring peri-urban as if it is not sensitive area. On the other side, there was a donor community which pushed for economic and political policies re-orientation from top. Thus why, the SCP was used as a bridge toward privatisation of the SWM in the municipality accompanied by political manipulations to attract more funding from DANIDA for instance.

## **6.2 Ways of Involvement: Economic *vis-à-vis* Social Privatisation**

### **6.2.1 Economic Privatisation**

Contractors are awarded tenders in specific zone(s) or wards through competitive bidding process. Nonetheless, the way private companies (PCs) are contracted can be called '*economic privatisation*' while CBOs '*social privatisation.*' The former apply tenders for the so-called sensitive and/or strategic areas where accessibility and other infrastructures are not cumbersome. These areas are like Corridor area, AICC, Police Line in Themi ward, Levulosi ward, Kaloleni ward, Ngarenaro and Kati ward which is predominantly CBD. Companies are driven by economic motives in the service delivery, and it accounts why they bid for relatively affluent places. AMC awards tender to the companies by using formal guidelines and procedures stipulated in the Public Procurement Act, 2004 and its Regulations. Local Government Finance Act No.9, 1982 Section 8 gives the municipality power to award contracts in connection to service provision and revenue collection.

AMC, a contracting authority, conducts zoning of the wards or *lots* for bidding. Tenders are then advertised in the media and posters at the municipal office and each ward office. Details included in the tender advert are like tender number, type of tender, lots, and application fee for each lot. For example the last solid waste collection and disposal tender number LGA/003/2010/11/AMC/NC005 had 10 *lots* (10 wards) which were Kimandolu, Daraja II, Unga Limited, Sombetini, Sokon I, Kaloleni, Ngarenaro, Elerai, Lemara, and Engutoto. Each lot stands independently as a single tender.

Interested bidders collect Standard Bidding Documents (SBD) from the municipality for the application and pay 50,000TZS (33U.3SD). Eligible applicants are companies, cooperatives, organisations, private individuals and groups which have been legally registered. A contractor is allowed to apply more than 1 lot according to his/her/their capacity; and applicant should have skills, experience and capacity for solid waste collection, transportation and disposal at Muriet main dumping site. It is also a requirement that before applying an applicant should make a pilot study in the respective lot; show cost breakdown of the revenue expected to collect monthly, expenditure pattern and how much he/she/they will pay the municipality monthly. Possession of the waste collection vehicle(s) is a must. Enclosures required in the application package are copy of business license, company registration certificate, VAT/TIN (Value-Added Tax/Taxpayer Identification Number) registration; last six (6) months bank statement, power of attorney, and memorandum and articles of association/extract for the company ownership.

An applicant should not have any debt with the municipality, should not be a civil servant so as to avoid collision of interests, should not have been convicted, accused, or involved in any corruption scandal or criminal case in the United Republic of Tanzania. An applicant is also required to submit a bid security which is 2% of the 3 months payment to the municipality (the promised amount). The cash is refundable if an applicant failed in a tender. If an applicant wins a tender he/she/they required to submit performance bond which is 15% of the annual returns.

The municipal director appoints an evaluation team to assess bidders. In theory, the team is supposed to evaluate specifically the economic capacity of the bidder, equipments, vehicles, and labour quality and number. A day is set for opening all tenders in the municipal hall in the presence of all bidders. The municipal TB conducts bidding screening and evaluation against set

standards in a closed-door meeting. Such standards are financial capacity, skills in SWM, experience in sanitation activities, equipments, and labour. The board proposes winners basing on previous experience and minimum qualifications set in the tender advert, and send to municipal Procurement Management Unit (PMU) for final decisions. Between opening tender day and announcement of the winners there is duration of one month.

After winning tender, contract signing is within 30 days whereas a contractor is expected to submit performance bond by that time (pay AMC for the period of 23 months). At the moment PCs are paying AMC 25,000TZS (16.6USD) per month. Contract signatories are the municipal mayor, municipal director, municipal lawyer, and two signatories from contractors' side. There is no any signatory from Health Department, a department responsible for all SWM activities. It is one of the loopholes in the contract which leaves behind questionable procedures.

Contract is on annual basis whereas contractor is responsible for waste collection, transportation, disposal plus revenue collection according to ceiling established by AMC Solid Waste By-Law of 2001. The contract states that private companies are the bearers of all risks, responsibilities and losses in the particular operation zone, and AMC is not responsible for anything. This entails that municipality has shifted all its duties to PCs, distancing itself even from its transformed roles assuming that private sector is a panacea. It partly accounts for weak coordination, communication and persistently absence of mutual trust between AMC and contractors. Few companies available and are the ones which bid year after year, so they exercise certain power (dominant stakeholders) because municipality does not have any other option. An informant states that *'there is repetition of the same companies year after year, because they are the ones with capacity'* (Municipal official, interview on August 10, 2010).

Further, contract can be renewed depending on the previous performance and experience of the company. It is highly questionable how municipality uses past performance of a contractor while monitoring and evaluation, or performance measures are not stipulated in the contract or practiced on the ground. In addition actors' job description and mechanism for effective contract enforcement are blurred.

### 6.2.2 Social Privatisation

In contrary to PCs, CBOs exercise the so-called '*social privatisation*'. CBOs enter into service provision contract with ward administration but should be approved by municipal council. It is a reason why CBOs are more attached to the ward and *mtaa* administration than PCs. Processes or criteria used by ward administration are opaque. Surprisingly, some CBOs do not have any written contracts; they operate with verbal contracts only. CBOs do not bid directly to the municipality because most of them will not qualify if they will be subjected to the standard procedures applicable to PCs. Even though CBOs are not distanced from economic motive, they operate in low-income peri-urban settlements. In these areas none of the PCs have ever attempted to bid and there is no such prospect. Therefore the only way to compensate majority of peri-urban settlements is to use CBOs.

The strategy used by AMC is to encourage formation or formalisation of the existing CBOs in particular areas and let them operate exclusively in its origin area. In this way, it is easy to win local people's support and acceptance under the umbrella of *home-boys*. Further, the amount of user fee charged by CBOs is by all standards lower than the one charged by PCs in their areas. Private companies charge a minimum of 1000TZS (0.6USD) per month while CBOs in some places charges 250TZS (0.16USD) per month.

Even if CBOs do not comply with the municipality or ward administration, municipality does not have any other option for HSWM in the peri-urban settlements. The least municipal council and ward administration does is to treat CBOs with a blind eye meanwhile facilitating fuel (40 litres per week) for few CBOs which are solely in low-income settlements and deals with household solid waste. Therefore involvement of the CBOs emanates primarily from the municipality's lack of any other conventional ways or alternatives for HSWM in the peri-urban non-planned or semi-planned settlements.

Finally, if a contractor fails to deliver accordingly, municipality has the power to terminate contract. Three warning letters are sent to the contractor in different times depending on the contractor's response to the situation. If contractor fails to rectify situation, municipality terminates the contract, and takes over the zone or award to another contractor who is willing to take the area. It happened in 2009 in Kimandolu ward where YEP contract was terminated due

to failure in service delivery. Municipality took over Kimandolu ward but it failed as well to deliver service due to inadequate equipments and labour.

### **6.3 Transition from Municipality Monopoly to Non-state Actors led Service Provision**

Introduction of the SCP in Tanzania coincided with the time when the country was embarking on macro-policies shift particularly in economic and political arenas. Politically, in 1992 it was the time when Tanzania shifted from monoparty to multiparty system. Economically, transition from state-centred development to neo-liberal and private sector was already underway since late 1980s. Structural changes and adjustment policies in the name of fostering efficiency and relief for the over-burdened government trickled down to urban services delivery through programmes like SCP.

The SCP itself was a pressure from central government and donor communities for SW privatisation because one of the tasks under Solid Waste Working Group (SWWG) in all municipalities was to ensure smooth privatisation of the refuse collection. Under EPM process, stakeholders outside state like private companies, NGOs, CBOs and civil society in general were embraced and welcomed in the direct service provision.

At the municipality SAP Management and Solid Waste Working Group (SWWG) were established to work in collaboration with Health Department. Key activities centred on SW data collection (generation, type, composition storage, collection, and disposal), public sensitisation, PPP support, supply of collection facilities, and sensitisation of the communities on SWM privatisation issues. On facilities, 200 litterbins were procured and fixed at the strategic places in the CBD; nine (9) skip buckets were purchased and located in different places to ease storage and transportation. Skip baskets were destined to serve approximately 50 - 120 households between 4 - 7 days but this was never the case. Additionally 40 pieces of hand trolleys were procured (A+P Consultants & WELLAA Architects and Planner 2003; SAP Management 2004).

Among of the earliest contractors in Arusha were Red Cross and Multi-Environmental Society (MESO). CBD was the first area to be outsourced with an obvious reason of its political face; it is the so-called sensitive area as if peri-urban settlements are not sensitive. Commercial

establishments were used as a hook to attract contractors. Other areas which followed later were Levulosi, Themi, Kaloleni, Kimandolu, and Sombetini wards.

SAP's outcomes are mixed. Some of the reports which were sent to donor community indicated significant progress contrary to what happened on the ground so as to attract DANIDA and World Bank funding. The programme was not a total failure since it paved the way for involvement of the non-state actors in service provision, defined roles of contractors and laid foundation for SW privatisation and PPPs. It is also true that sensitisation meetings were held, but coverage especially at the grassroots level was not enough to realise intended impacts, data on SW which were supposed to be collected is nowhere to be seen up to now.

One of the SAP's foot-prints observed during fieldwork is the stimulation of crude dumping and proliferation of informal waste collectors and transporters, all of which are un-intended consequences. Skip baskets distribution, location, number, and distance from household to a transfer stations cumulatively stimulated crude dumping. It was household's responsibility to dispose refuse to the transfer station. From actor-oriented approach, household response was a coping strategy to the far located skip baskets, and dissatisfaction with over-accumulation of garbage in the stations. An informant expresses that '*SAP was a project for hooligans, surrounded by corruption stinking atmosphere*' (Anonymous, interview on August 09, 2010). Another informant asserts that, '*Red Cross was awarded tender without full capacity...and there were hands of senior officials as one of the ways of grabbing cash. There was a big conflict of interest among local partners*' (Anonymous, informal conversations on August 15, 2010).

Further, one of the SAP's Management report highlights that 'to the larger extent the objective was not fully achieved' (SAP Management 2004: 7). The media also aired users' dissatisfactions with the service and contractors failure. Some of the headlines with such stories are like: 'SAP: Sustainable Arusha Problems?' (The Arusha Times Newspaper, No. 00289 September 27-October 3, 2003), 'Refuse disposal agents prove garbage' (The Arusha Times Newspaper, October 4-10, 2003), and 'Lack of evaluation cripples solid waste management' (The Arusha Times, October 18-24, 2003).

After phasing-out of SAP toward 2004, AMC opened tenders for SWM in the municipality. Kivesi Investment and Lemali Investment were the earliest private companies to win tenders in

the CBD and adjacent areas such as Levulosi, Themis and Kaloleni wards. Later due to incapacities of the municipality and low turn-out of contractors especially in peri-urban settlements, previous volunteering CBOs were formalised and formation of the new ones was encouraged.

#### **6.4 Household Solid Waste Privatisation Outcomes**

The effects resulting from outsourcing solid waste management service are mixed and cannot be generalised throughout the municipality. Something which is common and happened to this study in particular this subsection is Bartley's (1996) argument that information is very tricky to gather and in most situations studies have depended on the assertions and managers' perceptions.

##### **6.4.1 Widened Coverage and Improved Waste Collection Efficiency**

Widened coverage and improved waste collection efficiency (productive efficiency) is a result of gradually increased number of players on the ground with waste trucks, 2 – 3 times collection frequency per week, flexible labour, and organisational management contrary to the municipality's era. The neo-liberal argument for the incapacities of government in urban service provision and privatisation as a means of increasing efficiency is practical in the Arusha municipality. Currently, fifteen (15) wards have been outsourced to the CBOs and PCs, while one ward, Terrat, is rural ward without contractors. Service is now decentralised from CBD to the semi-planned and non-planned peri-urban settlements where municipality has failed to reach.

Areas like AICC, Nguzo Moja, Corridor area, NaneNane grounds in Themis ward; Levulosi ward, Kati ward and Sokon I ward have been successful with privatisation. These areas access and use the service in comparison to the municipal monopoly and SAP (Sustainable Arusha Programme) era. Municipal's capacity was confined in the CBD and the so-called politically sensitive areas only. If AMC waste trucks would go to the peri-urban, only waste along highways and main roads were collected. Service was not a guarantee even for those HH adjacent to the roads. During AMC era *'municipality was collecting papers and tree branches only...done by old*

women and men who begins working at 11hours and wind-up at around 14 - 15hrs' (CBO chairperson, interview on August 19, 2010).

New actors like PCs who came in with additional facilities especially vehicles to collect and transport waste. For example LDCRCL owns 2 compactor trucks for collecting waste. Each has a capacity of 20 tons, plus an open Bedford truck with 7 tons capacity. During fieldwork, one compactor and open tipper were working daily. Other companies have waste trucks and CBOs hire trucks for waste transportation. This stimulated waste collection because waste is collected and transported on daily basis according to schedule and routes. An informant states that;

*'when we got tender for the first time our compactor truck cleaned-up the whole city. In just 17 days we moved about 1.2 billion kilos of waste to the dumping site. It is an achievement because everywhere was filled up with piles of uncollected rotten garbage in the residential places'* (Private company director, interview on August 11, 2010).

Further on coverage CBOs have managed to penetrate into the inner city by using combination of motorised and non-motorised movement in collection. For instance, in Sokon I ward collection efficiency and widened coverage are resulted from the use of big wooden push-carts to enter into inner settlements, and at the same time an open tipper is also used for collection and transportation. Box 6.1 presents a case of success in Sokon I ward. During collection it reaches a point where waste trucks cannot further penetrate due to poor infrastructures. Big and small push-carts are then employed, and if they cannot do much, collection crew uses small push carts and human carriage to drag waste from interior to the truck or push-carts.

From an actor-oriented approach, widespread crude dumping during municipal and SAP's era forced structures to alter collection modalities primarily from using municipal transfer station to door-to-door system. It also proves that service users are not passive recipients of interventions as there is always a room or loophole for maneuvers and for expressing disagreements. With door-to-door system the longevity of the chain and associated problems in between has been reduced to some extent: in places where there is an improvement in waste collection, crude dumping in the streets is at minimum level as well. This is the case with Levulosi, Themi, Sokon I and Kati wards. The change of the collection system therefore reduced households' responsibilities in carrying and dumping waste to storage and user fee paying.

Box 6.1 Widened coverage and improved waste collection efficiency, the case of Sokon I ward

In Sokon I ward Mwamko Group decided to tailor its own collection, transportation systems and user charges which best suits prevailing local conditions. Geographically, the ward is located at the south of CBD; Themis ward is on the east and Unga Limited ward to the north. Unga Limited and Themis are the major industrial clusters in the municipality therefore Sokon I serve as one of the hubs for cheap labour.

Industrial workers' schedule does not coincide with waste collection schedule. The former have a tendency of leaving to work very early in the morning around 5am - 6am, while the latter would come at 9am and there is no waste to collect. As a result crude dumping and user charges defaulters grew tremendously. Mwamko Group decided to designate their own transfer stations where each HH is supposed to dump waste strictly in the particular times and days of the week. So early in the morning before going to job, a household member knows where to leave his/her waste.

Success in Sokon I ward is not a fruit of the Mwamko Group's flexible management *per se*. There is a strong cooperation with ward administration especially ward health officer, local councilors, 10x10 cell leaders and mutual agreement with service users. There is strict observation and implementation of the Sokon I sanitation local by-laws. For instance, on the spot punishments, and each household is the guard of the other in observing crude dumping write a name and submit straight to the ward administration which takes measures immediately. Mwamko Group gained local support from residents as it is a women's sanitation group for Sokon I and they are from *home*. AMC's hand is also in since it facilitates 40 litres of fuel every week to the CBO.

Source: Fieldwork, 2010

From an actor-oriented perspective what happens in Sokon I ward reflects self-organising practices and agency of the communities at the grassroots level. Mwamko Group, local leaders and clients inhabit, experienced and transformed social landscape contours of the waste. In the stakeholders' mapping (refer Section 4.3) the general community falls under dormant stakeholder while CBOs including Mwamko Group are dependent stakeholders. Generally they are powerless. However, with Mwamko Group and users' actions in Sokon I shows how the so-called less powerful actors can make their voices heard, or can alter a pre-existing state of affairs for their own benefits. It is at the grassroots level like Sokon I that life-long lived experiences existed and it is an arena for continuous battles over resources, legitimacy and institutional control.

Flexible labour and organisational management practices are the driving engines in the daily operations of the contractors in ensuring improved waste collection. For example, instant response to the break-down and procurement of the spare-parts keeps waste truck on duty regularly. Secondly, the use of casual labour for waste and revenue collection gives managers decisions over who and when to hire, or exercise fire and hire style according to performance. Preference is on casual labour because '*they are flexible employees*' (Private company manager, Interview on August 11, 2010) and '*they are un-educated and willing to work*' (CBO chairperson, interview on August 19, 2010).

#### **6.4.2 Elimination of the Illegal Mini-Dumps**

During municipality monopoly and SAP project, transfer stations were designated in almost each street where HH could dump waste, and municipality will do secondary collection and transportation. Skip baskets were placed but as usual they were inadequate. Due to AMC inefficiencies in terms of equipments, less motivated and redundant personnel, and unnecessary long bureaucratic procedures for trucks maintenance, waste would stay at the stations for the couple of weeks. Eventually garbage overflow, spill, widespread odor, leachate, flies and public health risks were high.

Soon after outsourcing to the PCs and CBOs the greatest task of each contractor was to eliminate these illegal dumps. In some of the former stations like in Unga Limited, Kimandolu, and Themi

there are warning notices which prohibit refuse dumping. Contractors performed an extra job off-contract by removing waste with their own resources, and sensitising users about collection system changes. It was necessary in the waste collection system changes. Illegal dumps (Figure 10 is an example) in the hot-spot places like NaneNane area, SunFlag, AICC (Themi ward); Philips, Kimandolu Sokoni, Ngulelo, Kijenge (Kimandolu ward); Esso, Tindigani (Unga Limited ward), Makao mapya (Levolosi ward), Madukani, Sinon secondary school (Sokon I ward) are no longer in existence. In Sokon I ward it is said that the use of door-to-door collection modality and elimination of the illegal dumps have contributed to the reduction of cholera and dysentery prevalence.

However, improvement in Daraja II ward is in primary collection, situation is worse on secondary transportation which is the municipality's role since municipal's transfer stations are still in use (refer Figure 10). An informant elaborates that '*municipal vehicles are very few and frequently are in breakdown. Garbage over-accumulate there [pointing to a transfer station] creating so many problems*' (Key informant, interview on August 26, 2010).

Finally, even the municipality agrees that it failed to deliver service, and improvement can be noticed as one of the officials says '*without them [contractors], the situation would have been worse than now. They complemented service delivery and improved sanitation something which municipality as municipality failed to do*' (Municipal official, interview on August 13, 2010). It literally means that there is an improvement with the use of private sector and civil society system than municipality, and situation is not absolutely okay in each part of the municipality. Service provision has improved but not at a city-wide or municipality level, it is confined to some places.

Additionally, following involvement of the PCs and CBOs, municipality has accrued benefits such as administrative, labour, and fuel costs reduction due to transfer of burden to the contractors. An informant states that, '*running costs for fuel, labour and personal have decreased*' (Municipality official, interview on August 10, 2010) because '*the burden of SWM has reduced tremendously*' (Municipal official, interview on August 13, 2010).

In the above areas, I witnessed such improvements and I was able to make a follow-up throughout the period of field-work. Studies like Kaseva & Mbuligwe (2005) about Dar es

Salaam, Mugagga (2006) about Kampala, and Oteng-Ababio (2009) in Accra showed an increase in collection efficiency and coverage into inner settlements following involvement of the non-state actors and subsequent PPPs which emerged.

### 6.4.3 Consolidation of the Informal Sector

The post-privatisation in the municipality witnessed expansion and consolidation of the informal sector in SWM. The highly potential sector is invisible on the eyes of the planners, administrators and policy framework, but highly recognised by the users and even contractors as they use informal sector labour. Informal sector ascended and deepened its roots in the peri-urban settlements as a major response to the state's and contractors' failure in adequate service delivery, and also as a livelihood opportunity. With respect to SWM the sector is highly diversified depending on the type of SW and entry point in the SWM chain.

Informal contractors have been working along with formal mediating bodies with an apparent series of battle for institutional control and legitimacy bringing in again issues of power, authority and agency. In places where household resist market structures which determined user fee and cannot deliver service, users switch to using informal waste collectors and transporters. These are mainly youths, drinkers who are popularly known for 3D<sup>8</sup> night jobs. They are cheap, affordable and widely used in the inner densely populated settlements of Kimandolu Sokoni, Tindigani, Bondeni, Unga Limited, Kijenge and Sombetini. Informal sector stepped in to fill service gap, moreover they are affordable and reliable. It is a matter of a single phone-call or visiting popular places which sell local liquors. They are contracted to collect waste and dump it anywhere they will prefer. A household in Sombetini confirms that,

*'I chose to use those guys [informal contractors] because I do not see waste collectors anymore as it used to be. Now I use some guys, or street kids, I pay them 200 to 300TZS [0.1 to 0.2USD] to dispose garbage anywhere they can'* (Household interview, September 08, 2010).

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<sup>8</sup>3D jobs: Dirty, Demeaning and Dangerous, or Dirty, Demeaning and Difficult. Emptying of the septic tanks or pit-latrines by using 10-20 litres plastic bucket is another sanitation 3D job in the municipality.

In Kimandolu Sokoni street, I witnessed physical fights between informal contractors, households and formal contractors over waste collection and disposal; and social conflicts between service users and providers. The post-privatisation era in the municipality saw strengthening of the informal sector. Specifically, labour used in the refuse and revenue collection is solely informal; establishment of the *Maendeleo Used Plastics and Paper Limited* fueled informal sector activities, whereas for waste collection crews it is another opportunity for supplementing daily wages.

#### **6.4.4 Privatisation Deceptions**

CBOs have managed to extend service coverage in comparison to the municipal monopoly era but do not fully cover their areas of operation. The deception manifests when contractors exist in names but not in actual service delivery owing to inadequate facilities, labour, and structural constraints like infrastructures. The notion that privatisation automatically translates into increased efficiency of the service provision turns out to be a deception. For instance, in Kirika-A, Kirika-B, and Simanjiro streets in Sombetini ward; Bondeni, Tindigani, Kijenge Juu streets in Kimandolu ward; Osterbay and Darajani streets in Unga Limited from my observation and interviews with stakeholders, contractors have failed to deliver service accordingly. Kimandolu for example is in top three largest wards and with high population. Amount of waste generated daily is beyond WEKISA's capacity to manage all of it. Similarly, Faraja in Sombetini do not have adequate equipments and labour to effectively realise sanitation and ultimate privatisation objectives.

Contractors are in limbo due to failure in collecting waste generated in the respective service areas. Widespread crude dumping, transfer of problems from household to household, flying garbage in the polythene bags, abandoned garbage in the public transport and social conflicts resulting from waste are common in Kimandolu Sokoni, Bondeni, Kijenge, Unga Limited. Social and physical conflicts among community members are due to declined collection frequency to only once per week, which is not even guaranteed. Persistent social conflicts disputes Kironde's (1999) claim that SW social conflicts are rare. Therefore each household struggles to maneuver its own management practices which always appear to be a problem to the neighbour.

In Kirika-A street households contend that:

*'during AMC monopoly at least situation was ok, compared to now. We used to dump at the transfer stations every evening and municipality will eventually transport to the main dumping site. Now contractors are nowhere to be seen, there is garbage in every angle of this street'* (Household interview, September 08, 2010). Similar comments arise from Kijenge residents that, *'contractor in this area has totally failed'* (HH interview, September 01, 2010).

From Osterbay and Darajani streets, Unga Limited communities does not notice any change at all. Situation is the same and crude dumping has increased in some neighbourhoods as one of the residents states,

*'I do not see any positive change; waste is everywhere from our doors to open spaces'* (Household interview, August 30, 2010). Further, *'current sub-groups in each street are worst ever...we do not understand them at all and they are not working together with their mtaa leaders. We want the Green Group back; otherwise we are paying for nothing'* (Household interview, August 30, 2010). The unique case of Unga Limited ward is presented in Box 6.2.

Finally, reaction from Kimandolu and Sombetini ward administration is an indication of the privatisation deceptions. The assumption was that privatisation and shifting of the responsibilities entirely to the CBOs will definitely translate into increased efficiency. Kimandolu administration has decided to integrate Malengo Group, new service provider to work along with the existing one. In Sombetini two new CBOs were in the process during field-work, Manase Group and Vijana Youth Group. Additional groups will also provide service because *'the existing contractors have failed to deliver service effectively'* (Key informant, interview on August 13, 2010).

Box 6.2 Changes in the state of sanitation, Unga Limited's unique case

During municipality's era situation was bad due to lack of regular collection from the illegal dumps. The Green Group plus self-organising practices of the locals decided to intervene to rescue situation because they are the ones who experienced permanent epidemic outbreaks, and live with garbage in their neighbourhoods. When Green Group was in charge from primary collection to final disposal, sanitation changed tremendously including cleaning of the lower Ngarenaro river which was turned into another dumping site. Strict by-laws were formulated and strictly implemented by everyone, guards were placed everywhere to catch defaulters. Due to misunderstanding and minimum cooperation from all levels of government Green Group decided to withdraw officially from waste activities. An excerpt from the official withdraw letter dated June 18, 2010 reads: '*... from today we have officially withdrawn from solid waste activities primarily because of the very poor cooperation, communication and facilitation from Mtaa, Ward and Municipality administrations.*'

Owing to normative power of mass support and social acceptance which Green Group gained from local people, social unrest erupted for the couple of days which later translated into political conflicts because of the influence of strong opposition parties.

Negotiations among concerned parties managed to return Green Group into sanitation but with changes in roles: only secondary transportation in the whole ward and disposal. Alternatively, each *mtaa* leader formed an independent sub-group for waste management. Now situation has reversed from good, bad to worse again thus why households are demanding Green Group back in-charge of everything. The independent sub-groups are driven by personal interests of the *mtaa* leaders, and one-off schedule in waste collection. Households from Tindiga, Baniani, Osterbay streets evidently express that '*honestly these small groups in each street have failed to deliver service...they are all sleeping with their Mtaa leaders*' (Household interview, August 30, 2010).

Source: Fieldwork, 2010.

With regard to privatisation deception there are two main categories: *deceiver* and the *deceived*. The former include contractors and authorities like AMC, and the latter comprises households from areas like Sombetini, Kimandolu, and Unga Limited wards. The municipality's assumption that total transfer of responsibilities and privatisation will eventually increase service delivery efficiency turned-out to be decisive. Contractors like WEKISA also assumed that the bigger the service area, the more the people and the more the money which also did not fully materialised. On the other hand there households (service users) who have been deceived by contractors and AMC as they keep on waiting for the service which does not reach them due to inadequate coverage and infrastructures challenge. Eventually households turned to other alternatives which are legit or illegitimate. The state of affairs suggests that privatisation in the said places is not real and it is loaded with contradictions.

### **6.5 Summary**

The SAP (1997-2003) was very instrumental in SWM privatisation and gradual shift from AMC monopoly to non-state actors. SWM has been privatised due to the failure and incapacities of the government in terms of equipments and labour to deliver the service adequately. Unlike CBOs, private companies are involved in the SWM through competitive bidding and tendering process. CBOs sign contract with ward administration but the municipality has to approve it. Some of the CBOs operate on verbal contracts. SWM privatisation outcomes are improved waste collection efficiency and widened service coverage, elimination of the illegal mini-dumps, consolidation of the informal sector as an alternative in the peri-urban settlements, and privatisation deceptions.

## CHAPTER SEVEN: SERVICE COMPARISON AND HOUSEHOLDS' SATISFACTION LEVELS

*'...they [contractors] are not working at all! Collection schedule is unknown, it is haphazard and extremely inconsistency... we [households] do not need them anymore, they should go!'*  
(Household interview, September 08, 2010).

In this chapter I compare service offered by private companies and CBOs, and linking with households' satisfaction levels. The chapter explores major differences, users' satisfaction levels, which kind of provider satisfies which kind of client, and reasons behind in each case.

Among thirty (30) interviewed service users, over half (17) are directly served by CBOs, four (4) are served by private companies, four (4) are served by both CBO and private companies, and five (5) are served by AMC and CBO. Those who are served by CBO and PC are in Themis ward while the last category are in Daraja II ward where TFUP does primary collection and AMC does secondary transportation and disposal.

Further, none of the interviewed user lived in his/her residential place in less than a year. Eleven (11) users had lived in the current residential place 1 – 5 years, nine (9) users 6 – 11 years, five (5) users 12 – 14 years and five (5) users 15 years and above.

On gender, out of 30 users about twenty-four (24) were females while six (6) were males. Over half (17) are renters, while only 13 are owner-occupiers.

### 7.1 Service Delivery Comparison

Major differences between PCs and CBOs in service delivery revolve around the nature of the service areas; service itself, and who they serve; variations in the system and modalities used in waste collection and transportation; and on user charges.

### 7.1.1 Service Areas and Service

Priority areas for service delivery between PCs and CBOs vary considerably. Private companies are profit driven and use cash-and-carry system; therefore, they apply and compete only in the lucrative areas/wards in terms of commercial establishments and socio-economic class of the households or neighbourhoods. Given the fact that PCs are few and are dominant stakeholders, they have considerable power to determine which areas they would like to operate. Preferences are greatly in Kati, Levolosi, Themi, Sekei, Kaloleni and Ngarenaro wards (Table 7.1).

Additionally, physical infrastructures in the above places are not cumbersome. Access roads are available, houses and other establishments are registered and other urban systems work better than in peri-urban settlements. For example, during field work time I observed upgrading of the Levolosi roads to tarmac. With physical infrastructures in place, compactors and open Isuzu tippers can navigate easily collecting waste from door-to-door and at the same time companies reduce maintenance and spare-parts costs.

Among PCs LDCRCL is the only contractor in the municipality operating in three wards: Levolosi, Kaloleni and Ngarenaro. It is the only actor with modern equipments and organisational arrangements therefore with a capacity to cover a wide service area. The company's director conveys that *'we have capacity to double the service area...to extend our operations further if we will be given an opportunity'* (interview on August 11, 2010).

In contrary, CBOs offer service in 10 wards around the municipality, majority of it being non-planned peri-urban residential areas with small scale commercial establishments. CBOs are seen as volunteers and not profit-oriented because even user charge and payment system is not similar to PCs. They exercise *social privatisation* as one of the informants state that *'we do not get any profit from this activity; our goal is to work for our community'* (CBO chairperson, interview on August 19, 2010). Another informant says, *'it is like we are volunteering in this waste activity'* (CBO chairperson, interview on August 28, 2010). CBOs free service to the HIV/AIDS patients, disabled and very old persons is also seen as *social privatisation*.

Table 7.1 Summary of the service areas

Ward	Streets	2002 Popn. Census	Contractor	Type of contractor	No. of Contractors	Key Features
<b>Sokon I</b>	13, but 6 only have CBOs (Kanisani, Migungani, Olmokea, Olvolosi, Madukani, Longdong, Senevuno)	43,000	Mwamko Group,  Ufagio Group etc	CBOs	6	Semi-planned, Middle- and low-income residential dominated, urban agriculture.
<b>Sombetini</b>	5 (Kirika A, Kirika B, Olamuriak, Osunyai, Simanjiro)	35,000	Faraja,  Manase, Vijana Youth Group (the last 2 joined in late 2010)	CBOs	3	Residential and commercial, mostly middle- and low-income, non-planned and slummy.
<b>Daraja II</b>	6 (Darajani, Alinyanya, Sanare, Jamhuri, Kati, Ndaruvoi)	23,000	TFUP	CBO	1	Low-income residential dominated, slums, non-planned, poor access, centre for recyclables middlemen
<b>Kimandolu</b>	>20	23,000	WEKISA,  MALENGO GROUP (joined in late 2010)	CBOs	2	Non-planned, middle – and low-income with patches of high-income, slummy, urban agriculture,
<b>Unga Limited</b>	6 (Viwandani, Esso, Osterbay, Tindiga, Darajani, Makaburini)	19,000	The Green Group	CBOs	1 Major, 4/5 sub-CBOs	Industrial cluster, Residential areas Non-planned, slummy, criminals hot-spot, low-income residential
<b>Levolosi</b>	-	12,000	LDCRCL	PC	1	Planned, middle- and high –income residential, commercial activities
<b>Themi</b>	4 (Themi east, Corridor area, Old police Line, AICC)	9,000	Lemali Investment,  Mtarakwa	PC & CBO	2	Industrial cluster, Planned, middle- and high-income, commercial activities,
<b>Kati</b>	-	5,000	Kivesi Investment	PC	1	CBD

Source: Fieldwork, 2010

CBOs are place-specific as they operate exclusively in their areas of origin where they were formed. Under *home-boys* umbrella and more attachment to the ward administration and locals, CBOs are well familiar to their areas, knows almost everyone and local conditions. They have grassroots support from locals which is an additive for Mwamko Group success in Sokon I despite of the structural constraints. Again, from Table 7.1 Themis ward is an exceptional because it is shared by Mtarakwa (CBO) and Lemali Investment (PC). It is a lucrative ward with classic residential neighbourhoods and commercial establishments. Mtarakwa is from Themis and it began volunteering in sanitation long before formalisation by the municipality. Conflict of interest emerged when Lemali Investment was also awarded tender in Themis. Round-table discussion with all stakeholders managed to rest the conflict by allocating 3 streets to Lemali Investment and 1 street to Mtarakwa.

Nevertheless, from field experience and my observation CBOs should not be romanticised because they also have economic motive on their agenda. It is concealed in the daily talks but actions reveal more than sheer words. For example tension and conflicts between CBOs working in the same ward, or between users and CBOs are always oriented toward economic gains. CBOs are also greedy to cover huge service areas like Kimandolu and Sombetini wards with the assumption that the larger the area, the more the users and ultimately the more economic gains. In most cases it has turned out to be the opposite.

### **7.1.2 Collection Systems and Transportation Modalities**

Generally contractors use door-to-door system for refuse collection but there is a difference in how it is done. None of the company applies non-motorised movement in the collection and transportation, it is fully motorised and by using a straight door-to-door system. The state of physical infrastructures in the PCs service areas plays a significant role in facilitating daily operations. The difference among companies is that LDCRCL uses compactors and an open tipper for collection and transportation, while Lemali Investment and Kivesi Investment each one owns a single open tipper (refer Table 4.2 on stakeholders' resources inventory).

For the CBOs, arrangement is different even among themselves. Only two CBOs which are Mtarakwa and WEKISA do door-to-door collection and transportation straightly. Although they

possess push-carts, collection and transportation operations are fully motorised. TFUP's operations are fully non-motorised and extremely dependent on human energy. For Mwamko Group, Green Group and Faraja primary collection is done by using push-carts while Isuzu open tippers are used for secondary transportation and disposal.

From stakeholders' mapping, CBOs are dependent stakeholders who lack power to enforce their legit claims. The major weakness of the CBOs in comparison to PCs is the equipments. They are generally ill-equipped, and they are aware of it. The CBO official states that, *'we have the will and reasons to reach our customers in the whole ward, but we do not have capacity due to inadequate facilities'* (CBO chairman, interview on August 19, 2010). Another informant discloses, *'our capacity is still very low to afford our own waste transportation vehicle'* (CBO chairperson, interview on August 28, 2010); and the last informant reveals that, *'the problem with CBOs we begin working with very poor or little equipments'* (CBO chairperson, interview on August 18, 2010).

### **7.1.3 User Charge Rates**

User charges are paid in cash directly to the contractors, and it is collected by using door-to-door system with receipt books. Contractors are supposed to use municipality's receipt books so as to facilitate revenue auditing but it is not the case on the ground. From an actor-oriented viewpoint, user fee charge in the municipality depends upon persuasive capacity and use of manipulations between service providers and users because users have different charge rates in different places. Private companies and CBOs charge differently according to nature of their customers. It varies from 500TZS to 5000TZS (0.3 – 3.3USD) per month. The 2001 municipality solid waste management by-law prescribes that households should contribute 1000TZS (0.6USD) per month for waste collection and disposal. However, basis or criteria upon which 1000TZS was reached are not clear. Table 7.2 is a summary of these user charges variations.

None of the private company charges lower than stated amount in the by-law; it is only a benchmark for negotiations and applicable for those who knows it. At this point, an issue of knowledge and power also comes in since contractors use knowledge opportunity to manipulate fees. Of the 30 interviewed households, nine (9) pays 1000TZS, while eight (8) contributes

800TZS. They are the majority ones. Five (5) households pay 2000TZS, three (3) pays 500TZS, three (3) pays 5000TZS, one (1) contributes 3500TZS and one (1) pays 1500TZS.

Table 7.2 User charge rates among households

<b>Amount per month</b>	500TZS (0.3USD)	800TZS (0.5USD)	1000TZS (0.6USD)	1500TZS (1USD)	2000TZS (1.3USD)	3500TZS (2.3USD)	5000TZS (3.3USD)
<b>Households (n = 30)</b>	3	8	9	1	5	1	3

Source: Fieldwork, 2010

In Levulosi and Kati wards households pay 1000TZS (0.6USD) per month in a *post-paid* system whereby customers receive service first and pays later. Some households pay in quarterly basis. In affluent Themu where there is CBO and PC, the rate begins at 2000TZS (1.3USD), 3000TZS (2USD), 3500TZS (2.3USD) and 5000TZS (3.3USD). Those who pay 5000TZS are foreigners and other diplomatic officials.

The rates are manipulated according to the quantity of waste and nature of the household which all of them are subjectively assessed by using human eyes only. An informant states that;

*'this is very crucial to keep our business going on...otherwise using rates which were set in 2001 is difficult, we will be out of business. By then diesel and petrol were 350-450TZS per litre, but now it is 1700TZS per litre'* (Anonymous, interview on August 13, 2010). Another interviewee express that *'there is no fixed rate...municipal rate is very low...therefore the amount you get depends on private negotiations between service provider and the client, and mostly important your persuasive skills and ability to convince a customer'* (Anonymous, interview on August 19, 2010).

In Unga Limited where there is CBO, each household pays 250TZS per week (1000TZS per month) as a way of reducing the burden of gross payment at the end of month. In Sokon I ward

each door contributes 200TZS per week (800TZS per month), a rate which is slightly lower than the one stated in the solid waste by-law. Local general assembly among *mtaa* residents was held to discuss the state of sanitation, improvements and user fee contributions depending on their own local socio-economic conditions. Similar rate (200TZS per week) is charged by TFUP in Daraja II ward, but collection is done on Sundays only because a majority of users will be at home. In Kimandolu ward, WEKISA charges 2000TZS (1.3USD) per month per household. For WEKISA charges is on *pre-paid system* as a strategy of dealing with defaulters because during waste collection, user must come-up with payment receipt on hand otherwise your waste will not be collected.

## 7.2 Users' Satisfaction Levels

I used five qualitative ranking scales in a continuum to determine users' satisfaction level. The ranks are: very low, low, medium, high and very high. Each respondent was asked to comment on his/her satisfaction level from their own lived experiences, followed by a discussion on the reason(s) behind such choices. The goal was to capture which user is satisfied by which service provider, and reason(s) behind for such variations.

In general terms, half of the 30 interviewed users are not satisfied by the service as about ten (10) users commented *very low* satisfaction, and five (5) users remarked *low* satisfaction level. About eight (8) users remarked *medium* level satisfaction, six (6) *high* satisfaction level and one (1) user *very high* satisfaction level. Table 7.3 presents the summary of the households' satisfaction levels, type of the service provider, service areas, and reasons for satisfaction or dissatisfaction.

In specific terms, there are variations in the level of service satisfaction between the two major providers, PCs and CBOs. Users who commented *very low* and *low* satisfaction levels are solely served by CBOs. All companies and few CBOs have been ranked at *medium* and *high* scales. Only one contractor, a CBO in Sokon I ward has been ranked *very high*. Further, there are mixed reactions from users served by the same contractor, for instance in Kimandolu and Daraja II ward. Satisfaction variations are influenced by households' location, households' socio-economic status, the state of infrastructures and contractors' capacity. Users who are adjacent to the roads and highways are well-served than those who resides in inaccessible inner settlements.

**Very low satisfaction level:** Households which are predominantly from areas which are served by CBOs and at the same time are areas which experiences privatisation deceptions. For example, Kijenge Juu, Bondeni, Kijenge Chini streets in Kimandolu ward served by WEKISA; Osterbay and Tindiga streets in Unga Limited ward served by *mtaa* sub-groups; Kirika-A and Simanjiro streets in Sombetini ward served by Faraja; and Alinyanya street in Daraja II ward served by TFUP. Very low dissatisfaction among users in Daraja II is not in the primary collection but rather in the secondary transportation as garbage over-accumulates and over-stays in the municipal transfer stations like at Relini in Alinyanya street.

Reasons behind very low satisfaction are inconsistencies of the collection schedule leading to over-accumulation of garbage in the households, high user charges, failure of the contractor to reach all households due to equipments and labour deficiencies resulting into crude dumping, and distance factor. The last reason pertains to instances where households are required by contractors to carry their own waste from their establishment to the waste truck which is parked at a considerable walking distance. Households in Kirika-A street, Sombetini express that;

*'...everywhere you turn there is garbage. They [contractors] are not working at all...collection schedule is unknown, haphazard and extremely inconsistent...we [households] do not need them anymore, they should go!'* (Household interview on September 08, 2010).

Another household members from Kimandolu comments that,

*'their charge [contractors] is high...we do not participate in decision making regarding the fee...and we walk long distance carrying our waste and money to them'* (Household interview, September 01, 2010). An informant from Unga Limited added that, *'you young man, [referring to me a researcher] I am telling you the truth, I have not seen them [contractors] for long time now, in practice they are no longer existing'* (Household interview, August 30, 2010).

**Low satisfaction level:** Users who are in areas served by CBOs, and the dissatisfaction arises from inadequate waste collection coverage but adequate coverage in revenue collection, and abusive language used by contractors. A household member who is a woman gave out an

example of abusive language used by revenue collectors: *'you, a matured, an adult woman, how comes you do not have 250TZS only...how can a woman miss 250TZS?'* (Household interview, August 30, 2010).

**Medium satisfaction level:** Majority of users who are adjacent to the roads or along usual collection routes, for example in Daraja II and Kimandolu wards. The reason behind is the simplified collection by using door-to-door system and subsequent reduction of the households' primary transportation responsibilities. Therefore, there is a time saving for other activities or household chores. A woman in a household states that, *'I do not have time to take waste to the disposal site'* (Household interview, September 01, 2010); and another one says that, *'I used to hire bicycle riders to transport my garbage to the dumping place, but now it is moderately okay'* (Household interview, September 01, 2010). Additionally, households can negotiate with CBOs during user fee collection like paying user fee next month.

Arrogance, abusive language and actions such throwing away waste storage buckets awkwardly after loading done by collection crew are the common dissatisfactions among users in this category. For these households, despite of the persistent problems on the contractor's side, service is moderately satisfactory as far as waste is collected from their compounds.

**High satisfaction level:** Users who are served by private companies and two CBOs (Mtarakwa and Mwamko Group) in Levulosi, Kati, Them, and Sokon I wards were privatisation has also been successful. Reasons behind high satisfaction are on-time waste collection, reduced crude dumping in their neighbourhoods, and a welcoming approach with good language used by collection crew. The kind of approach used by the crews is however expected since contractors over-charge and manipulates users in these areas, and it is not a problem because users can afford meanwhile they do not want garbage in their neighbourhoods. So, it is dominant stakeholders (PCs), and dependent stakeholder (Mtarakwa CBO), serving definitive stakeholders. Waste collection in these areas is supported by the state of physical infrastructures, presence of lucrative commercial establishments, and socio-economic powers of the clients.

A household member in an affluent neighbourhood states that;

*'5000TZS [3.3USD] per month is very low amount to us'* (Household interview, September 04, 2010). For *them* paying five-times more than the stated 1000TZS is not a challenge, but for the ordinary low income people the rate is problematic. Once again, *'they [contractors] collect waste on time, they come 3 times per week, and there is no more garbage over-accumulation in my home. Previously I used to carry waste in my car to the dumping place once in a week'* (Household interview, September 06, 2010). Another informant added that, *'we generate high quantity of waste every day, and they [contractors] collect all of it twice per week...and their approach is welcoming, soft, with a good language. I think we should pay more'* (Household interview, September 04, 2010).

However, for Sokon I ward which is dominated by the so-called ordinary citizens, their high satisfaction level derives from successful cooperation among actors at local level, timely waste collection and a cumulative decision over an affordable user charge.

Table 7.3 Summary of households' satisfaction levels with the service

Satisfaction Levels	Users (n=30)	Service Provider & Areas	Reasons
<i>Very low</i>	10	CBOs (Kimandolu, Unga Limited, Sombetini, Daraja II)	<ul style="list-style-type: none"> <li>- collection schedule inconsistencies</li> <li>- inadequate service coverage</li> <li>- high user charges</li> <li>- distance factor</li> </ul>
<i>Low</i>	5	CBOs (Unga Limited)	<ul style="list-style-type: none"> <li>- inadequate service coverage</li> <li>- abusive language</li> </ul>
<i>Medium</i>	8	CBOs (Daraja II, Kimandolu)	<ul style="list-style-type: none"> <li>- reduced HHs' primary transportation role</li> <li>- arrears negotiations</li> <li>- arrogance and abusive language</li> </ul>
<i>High</i>	6	All PCs & 2 CBOs (Kati, Levolosi, Them, Sokon I)	<ul style="list-style-type: none"> <li>- timely waste collection</li> <li>- affordable user charges</li> <li>- a welcoming language and approach</li> </ul>
<i>Very high</i>	1	CBO (Sokon I)	<ul style="list-style-type: none"> <li>- tailored service to suit very local conditions</li> </ul>

Source: Fieldwork, 2010

### 7.3 Affordability and Willingness to Pay

On affordability, twenty-three (23) users said yes service is affordable to them, while seven (7) said no, service is unaffordable. About eighteen (18) users said they are willing to continue paying for the service, while twelve (12) said no, they are not willing to continue paying. It appears that majority of the interviewed users can afford the service, but willingness to pay is minimal. They are hesitant to pay or continue pay due to the quality of service offered, and their satisfaction levels. It accounts for the households' resilience to the fee payment and initiating their own *alternatives* like using informal contractors in an attempt to change situation from bad to less bad.

Some users who are willing to continue pay for the service are experiencing the so-called forced willingness. Over half of the interviewed users are renters, therefore due to limited options and given the fact that even in their former residential places they were paying for waste, lives them in limbo. Even if they are not satisfied, still they are willing to contribute despite of the little service they get.

An informant exemplifies that,

*'I am not satisfied with the service but am forced to be willing to contribute because they [contractors] know that I do not have any other option for waste management'* (Household interview, August 30, 2010), Another household member contends that, *'I pay because I do not have any other option and I cannot do anything. So, I have to comply'* (Household interview, September 06, 2010).

In the areas where satisfaction levels are *very low* and *low*, also are the same users who highlighted that service is unaffordable to them, and they are not willing to continue paying even if they will afford sometime in the future.

#### **7.4 Summary**

Key distinctions in the service delivery between PCs and CBOs revolve around preference on the service areas, the service itself, and whom a contractor is serving. PCs prefer areas which planned in the CBD and adjacent areas, good physical infrastructures, lucrative commercial establishments, and socio-economic powerful households. Further variations are in the waste collection and transportation system and modalities, and user charge rates. User fee stated in the municipality's by-law is manipulated and used as a benchmark only for private negotiations between a client and service provider. Half of the interviewed service users are not satisfied with the level of service offered, and they are from areas served by CBOs. Variations in the service delivery and satisfaction are highly influenced by contractors' capacity, the state of infrastructures, and households' socio-economic status.

## CHAPTER 8: THE FUTURE OF SOLID WASTE MANAGEMENT AND KEY CHALLENGES.

*'There are piles of garbage in the streets, narrow paths, water bodies and in open spaces crudely dumped. I don't trust any environmental plan here...the system is crippled...and if there is a plan, it is not fully enforced'* (Household interview, September 05, 2010).

In this chapter, a glance into co-existence of the structure and agency is first presented, followed by a discussion on the future of HSWM from the municipality's and contractors' sides, and in the final section major challenges facing HSWM in the municipality are explored. Key impediments are divided into governance failures, socio-cultural, economic and city planning and infrastructures challenges.

### **8.1 Series of Battles: Agency *vis-à-vis* Structures**

Solid waste privatisation, an external intervention, was introduced into the life of people in the municipality. Service users are not passive recipients or submissive to everything which comes across their life especially when it has economic implications. The intervention received differing responses from household to household, individuals or groups of individuals. It has been mediated, in other places moulded, and others have accepted and comply. The series of battles and struggles among actors, and development and use of agency is catalysed by the fact that life in Arusha city is highly monetised. It is confined to the petty cash-economy.

The HSWM atmosphere is filled with endless creation and use of manipulations between prevailing structures and actors; and battlefield for resources, institutional control and legitimacy. In this context, structure is the government from central to *mtaa* administration, and different legal and regulatory framework for HSWM. Actors are diverse, but the interest is on service users at very local scale. Households' cognitive capacities motivated by monetised urban life shapes their resistance to the user fees, unreliable services, and airing their dissatisfactions.

For instance, some of the households I had off-record informal conversation with have refused to use the PCs and CBOs because they can manage waste in their own ways. They use organically dominated HSW to feed pigs, poultry, use as manure in the gardens, waste burning, and use of pit holes specifically for compositing household solid waste.

In Kijenge, Unga Limited, Sombetini, and some parts of Daraja II dwellers have devised their own alternatives for HSWM: the use of informal contractors, crude dumping in highways and in the so-called sensitive areas so that powerful stakeholders could see, and waste abandonment in public spaces and public transport. Service users take for granted inadequacies of the current conventional SWM system to develop alternatives which suit them. In the same places SW social conflicts, physical fights among neighbours/users, service providers and users are very common.

In Sokon I ward local people's agency was at the centre in changing pre-existing state of sanitation affairs. Their actions like crude dumping and transfer of problem through *Not In My Backyard* (NIMBY) resistance were signals to the contractor and structures that something is wrong. Later, management system which fits their specific local conditions was initiated along with strict local by-laws. In Levolosi, LDCRCL has sued permanent user fee defaulters in the court of law. During fieldwork period the company had more than 100 individual cases in the court pertaining to user fee. The company incurs extra hidden costs in demanding user charges. Another example is the endless battle between the informal sector and formal sector (AMC, contractors, policy and legal framework, market) is based on the former livelihood desires and the latter concern over institutional legitimacy and control.

At the centre of all these is the fact that each kind of actor exercises certain form of power. Power by nature is transitory, and even if AMC is powerful it does not mean that contractors, households or informal sector actors do not have any power or cannot exercise. For example, local people and informal sector's knowledge on their daily surrounding is a form of power by itself. Again, local actors' disobedience challenges the power and authority of the government (AMC). Inadequate service provision forces local people to come out with their own alternatives no matter they are legitimate or illegitimate.

## 8.2 The Future of Household Solid Waste Management

Government is still intervening in the direct service provision either due to lack of contractor in a certain place or as a result of contractors' incapacities in SW transportation like TFUP case. However, governments' intention in a long-run is to transform its role into supervisory one. AMC's key future plan is total privatisation with its gradual withdrawal from direct service provision. The municipality is planning to completely transfer direct service provision responsibilities to the non-state actors. In this partnership arrangements and plans in the municipality are wrongly assuming that privatisation is a panacea, while it is not the case on the ground. One of the municipal officials asserts that;

*'our future plan is to encourage and facilitate further private sector participation in solid waste management. It is the only way at the moment'* (Municipal official, interview on August 10, 2010). Another informant added that *'in the future we need everything to be done by the private sector'* (Municipal official, interview on August 13, 2010).

Further, municipality is planning to procure more skip baskets and expect improvement of the sanitation infrastructures under the World Bank funded Tanzania Strategic Cities Programme (2010-2013). The expected outcomes are upgrading of the infrastructures (navigation roads and electricity only) at the Muriet dumping site and enhanced SW collection by upgrading of the 6km stretch Unga Limited – Muriet road. The municipality contends that the 6km Unga Limited – Muriet road is a bottleneck for more SW collection since trucks could only make few trips. This is highly doubtful because it is not the primary reason for low waste collection efficiency. First and foremost it shows municipality's priorities in SWM: collection and transportation which have political faces. Secondly, municipality is wrongly defining waste collection problem. It is a not a problem of Unga Limited – Muriet road which has been used for years now, collection problem is down at the very local scale: primary collection hindered by contractors' capacity, infrastructures and people's attitude. What makes the municipality to be sure that waste will reach the trucks? For how long the municipality will depend on short-term donor funded projects to improve sanitation?

The future plans for private companies and CBOs are not very clear. Except for LDCRCL which appears to have invested a lot in the business, has declared to continue with SWM activities,

widening scope to waste recycling and doubling service areas. In early 2011 the company's director attended recycling course in German as the move toward establishment of the SW recycling plant.

Other contractors are still assessing business environment in the municipality as their future plans are very uncertain. Some are considering continuing with SWM business for some time then switch to something else, while others have not yet decided. Behind all of them, there is an economic motive. It appears that job security is fragile and at any time decisions can be overturned. The surrounding uncertainties also raises suspicions on the CBOs willingness to incur investment costs for SWM, for example trucks even in circumstances where they can do so.

### **8.3 Key Challenges Confronting Household Solid Waste Management**

#### **8.3.1 Governance Failures**

The major governance failures concerns are institutional framework and accountability, legal and policy framework arrangements, formal vis-à-vis informal norms, marginalisation in the decision making and influence of politics.

*Institutional framework* from central to local government is un-coordinated, with overlapping of responsibilities, inadequate coordination, transparency, misdirected accountability and loaded with weak communication, control, orders, and marginalisation of other actors in decision making. Duties have been decentralised down to the lower tiers but without absolute power or authority. The central-local government relationship is built on asymmetrical power relations and orders. The municipality's budget is highly dependent on central government. PMO-RALG approves its budgets and SWM by-laws. The actors' communications depicted in the Figure 4.2 and institutional arrangement in Figure 5.6, lower structures in the chain are accountable to the upper structure; structures are accountable to the structures and *the minority*. It is not clear how all institutions are coordinated together because there are evidence of confusions and fuzziness at municipal level when every top structure sends orders or directions.

At the municipality, Health and City Planning departments are supposed to be intimately coordinated, but they are far away in two different worlds. As a result, contractors also switch according to the beats of the game because for the PCs to get their things done or problems solved quickly they deal straight personally with either municipal director or head of the Health Department. At the Health Department there is no specific person for specific decisions or customers' complains desk. Communication and assistance are built on the informal exploitative vertical social capital which is basically who knows you and what do you have. It is part of what I call formal *vis-à-vis* informal norms.

*On policy and legal arrangements*, at national level there is no stand-alone SWM policy or framework. SWM issues are loosely addressed in the various policies, Acts and by-laws. Even with loose attachment the greatest challenge has been weak enforcement on the ground. Ignorance to the laws and regulations among actors, poor enforcement mechanisms and meager resources are only one dimension of the problem. The problem extends into social issue known by Arushans as “*undugunisation*”.<sup>9</sup> It is a social relationship built on kinship and family relations and most important voters. Laws are not enforced because the person to whom we are closely related will suffer, we are from the same clan or family, or they are my voters, so keep a soft-hand on him/her/they. An example is a SW conflict in Kimandolu where a client utters to the revenue collector that, ‘*I will not pay...is there anything that you can do? Report me anywhere...sue me anywhere*’ (Observation, August 28, 2010).

About *formal vis-à-vis informal norms*, the main issues are monitoring and evaluation mechanism, corruption as well as absence of mutual trust among actors. There are no performance indicators, measurable standards or any form of appraisal stated in the contract or anywhere else. I wonder where municipality gets the audacity to use previous performance and experience in sanitation as one of the criteria for awarding tenders. There is also corruption and absence of mutual trust whereby contractors bribe to get certain areas which are profitable and after winning 10% is set-aside for maintaining social relations and getting rid of troubles easily in case anything happens. In one of the wards (anonymous), minimum support and

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<sup>9</sup> *Ndugu*: A Swahili phrase used to refer to a relative. Therefore, *undugunisation* is used to refer to the organisation of relatives, or intimate friend circles whose activities are for their own benefits only.

marginalisation of the local leaders from user fee collection is due to the fake, undelivered promise which the contractor (anonymous) promised. This is what I call "*local level protectionism policy*" at its best: contractors and contracting authorities are protecting each other for continuous survival in the business, no wonder contractors can over-charge user fee and officials are quiet because it is where 10% comes from. Kironde & Yhdego (1997) and Kironde (1999) have also highlighted corruption problem in a SWM study in Dar es Salaam.

Marginalisation of the households in decision making regarding sanitation issues in many places of the study is another participation challenge. One of the residents comments that, '*they came here with their own prices and they do everything on their own. They are here for implementation of what they have decided*' (Household interview, September 08, 2010). This is the one of the sources of SWM conflicts in Daraja II, Unga Limited, and Kimandolu wards.

Finally on governance failures, *politics (deception, conspiracy for power and power control)* has been an important tool in initiating and implementing *one-off* donor-dependent sanitation projects, emergency cleaning campaigns, and politics of priorities in urban services delivery. The so-called politics of belly has surpassed long-term investment in public services. The politically tiny SWM do not stand a chance to convince political leaders to invest on it when weighed against education, roads, water supply, and hospitals which can easily earn them votes.

The power of politics in the sanitation is also visible when there are summits like the East African Community summit (Arusha is the headquarters), Sullivan Summit (June 2008), when US President Bill Clinton paid a visit in 2000, or when President Jakaya Kikwete is in town for political campaigns or other state visits. I am a witness to all these political moves in sanitation just for the visitors' sake.

### 8.3.2 Economic Challenges

Major issues under economic bottlenecks are user fee payment, inadequate facilities and labour, and insufficient true competition.

The most common problem among all contractors is the *user fee payment*. To begin with, criteria used to determine user fee are not clear, it is subjectively assessed; and very weak legal enforcement in user fee issues. For instance, Kivesi Investment dropped from Levolosi ward because of the user fee problem. Kivesi's letter to the municipal director dated October 16, 2009 called for assistance in revenues (TZS33.3M [22,000USD] arrears accumulation) but nothing happened. User fee payment challenge is more pronounced in areas where CBOs are working and where customers' satisfaction levels are low, therefore resisting to pay user fee. In a place like Unga Limited user fee is a question of affordability, the issue of income poverty in general amidst competing household expenditures. I witnessed several times Unga Limited ward administration procuring and disbursing food stuff to the so-called hungry and powerlessness households. I could not establish immediately who was funding the food programme.

*Inadequate equipments and labour* among all contractors is highly contributed by weak economic muscles to purchase new or extra equipments and pay labour costs. Waste trucks are also few, old, in poor mechanical conditions and with high maintenance costs. CBOs are the most ill-equipped when compared to PCs. Poorly equipped contractors contribute to the inadequate coverage in primary collection which is the most problematic SWM element, hence reduced efficiency. For example, with manual loading, high loading height and human compaction, the time taken to load an Isuzu open tipper is very long. Therefore serving a small area takes longer time than necessary.

Efficiency is also hampered by the *insufficient of true competition* at the municipality level. Competition is stiff in few places only which are promising in terms of revenue returns. Competition is not keen enough to make contractors fully accountable. There are few actors who keep on repeating year after year for tenders for the same places. There are only 3 companies for waste collection and disposal, one company for plastic and paper recycling, and CBOs monopoly in their service zones. It does not make any sense when the municipality award tenders on annual basis in the name of fostering competition and service delivery efficiency.

### **8.3.3 Socio-Cultural Challenges**

Even though coverage by conventional management system is inadequate, still users' little awareness, behaviour, attitude toward waste, and arrogance contributes to the widespread crude dumping. Waste challenge is greatly in the minds of the people. The hygiene culture is not well embedded into majority of the users. For instance, among 30 households I interviewed, twenty-one (21) household members do not know where their refuse is dumped, only nine (9) knew. For the households, where waste is dumped is not a big deal, but rather removal of garbage from their surroundings as soon as possible, and as far as possible by any means.

Other households are not aware that there are costs incurred by someone somewhere to collect, transport and dispose waste that he/she has generated. Just because something is already waste according to him/her, does not mean that even paying for it is waste as well. One of the service users states that, '*what is a waste, why should I pay for it?*' (Household interview, August 30, 2010). There is a long way to go in changing peoples' mindset, attitude, and behaviour through public awareness and sensitisation in a long-term basis.

### **8.3.4 Infrastructures and City Planning Challenges**

There is a huge problem of infrastructures and accessibility in the peri-urban settlements hampering waste collection and transportation and contributing to poor service efficiency. About 75% of the municipality's residential areas are non-planned where more than 80% of population lives, and it is where about 80% of the uncollected waste is found. There are no roads but many narrow paths which overlap, located between walls of different houses. In some places the narrow path lead into someone's house corridor or pit latrine. I am the witness because I get lost twice in Unga Limited and Kijenge when conducting interviews and field visits.

Muriet dumping site has poor infrastructures as well. Navigation roads inside the site are poor, there is no electricity connection, half of the wire-mesh fence is down, there are multiple entrances and there is no weigh-bridge despite of the long-term political promises. During rainy season trucks offload outside the site because of the poor infrastructures and nature of the soil

(extensive black cotton soil locally known as *mbuga* around the site which shrinks during dry season developing cracks up to 50mm wide and 1.5 deep).

#### **8.4 Summary**

The future of HSWM is uncertain as municipality assumes that privatisation is a panacea, and at the same time contractors' plans are highly fragile along with hesitation to incur huge investment costs. Key challenges are greatly within the realm of governance failures taking us back to square one: SW governance. The major impediments are mutually interconnected and linked: governance failures, economic, socio-cultural and infrastructures and city planning.

## CHAPTER NINE: CONCLUSION AND WAYS FORWARD

### 9.1 Key Findings

Privatisation of the SWM service in Arusha municipality emanates primarily from gross failure of the government to deliver service adequately. Private sector and civil society stepped-in to develop alternatives for sanitation. Inception of the Sustainable Cities Programme (SCP) in 1992, and subsequent implementation of the Sustainable Arusha Project (SAP) was very significant in the transition from government monopoly to non-state actors led service provision. At national level the Structural Adjustment Policies (SAPs) were already running. Therefore pressure to privatise in the name of increased efficiency and reducing government's burden came from different angles.

Private companies are involved in municipal HSWM through national competitive tendering process, while CBOs enters into service agreement with ward administration with an approval from the municipality. Most of the current CBOs involved in HSWM were originally sanitation and environmental conservation volunteers. Due to absence of any other option for SWM in most of the peri-urban areas, CBOs were later formalised so as that they can operate legally.

Municipal HSWM system is broadly under Public-Private-Partnerships between government, private sector and civil society. The service is under government ownership but with the private sector and civil society led service provision. Waste is by and large composed of organic matter with variations in generation rate among households influenced by affluence and culture. Collection is on door-to-door basis, secondary transportation is done by using motorised movements, non-motorised or both. Waste is dumped crudely at the municipal's main site. Contractors charge customers directly. Institutional arrangement is composed of structures from central to local levels, policy and legal framework are loosely addressing SWM issues, and there is great influence of local socio-economic, cultural and political issues on HSWM.

Actors involved have different interests and roles they perform. AMC, a key coordination node, administer tenders and monitor partners' activities in informal ways. Private companies and CBOs deliver direct service, the informal sector, donor community funding sanitation projects,

and the households who are service recipients and payers. An asymmetrical power relation is the common feature inherent among actors.

SWM privatisation outcomes cannot be generalised throughout the municipality as there are differing experiences in different places. There are experiences of widened service coverage and improved waste collection efficiency, elimination of the illegal mini-dumps, and consolidation of the informal sector as an alternative in the peri-urban settlements. Other areas primarily served by CBOs are experiencing privatisation deceptions. The state of physical infrastructures, functioning of other urban systems and contractor's capacity are highly influential factors.

Major differences in service delivery between private companies and CBOs are in terms of preferences on service areas and service itself, like where and who the contractor is serving; waste collection system and transportation modalities; and variation on user charge rates. Majority of the interviewed service users are not satisfied with the service, and they are solely in the areas served by CBOs, where also privatisation has not been successful. Customers served by private companies show their satisfaction levels as moderate and high. Reasons for customers' satisfaction or dissatisfaction are frequency and waste collection schedule consistencies, service coverage, user charge rates, state of sanitation in the neighbourhood, and kind of language used by waste and revenue collection crews. Highly influential reasons for variations in the level of service satisfaction are contractors' capacity, the state of infrastructures, and households' socio-economic status.

Key challenges facing municipal HSWM are within the realm of governance failures, and socio-economic and cultural issues and infrastructures and city planning. SW governance turned-out to be the most outstanding. As usual people and plans are thinking of SW collection and disposal only, with very little on recycling or waste minimisation.

Finally, is the link between theoretical framework underpinning the study and the practice. The study has shown that an actor oriented approach is still useful in analysing and accounting for actors' lived experiences, behaviour, acts, and prevailing circumstances and myriad coping strategies which develop. Structure and agency co-exists, and continuously shape and re-shape each other. A stakeholder analysis approach is useful primarily for mapping and analysing stakeholders but it is narrow in accounting for stakeholders' everyday life experiences.

## 9.2 The Ways Forward

Without fundamental structural and institutional reforms from down to top so as to address broad governance failures, socio-cultural and economic issues, the state of sanitation will continue to deteriorate day after day. For instance, the PMO-RALG and all its sub-sections should be removed from the Prime Minister's Office (PMO) to form a fully-flagged independent Ministry of Local Governments. It will ease local governments' administrative task throughout the country and lessening unnecessary bureaucracies. At the municipality level, I would like to remind AMC that privatisation alone is not enough, and its roles have not been completely erased, but only transformed. Sanitation improvement is an endless long-term continuous process. It is not a short term one-night-stand project. Before thinking of high-tech solutions, there is a need to redefine SWM and setting priorities down at the local level where waste is generated, where crude dumping is rampant, and where waste is misconceived. Improvement initiatives will be realised depending on how all concerned stakeholders will fully participate, coordinate and play their roles effectively including resources mobilisation.

Being a key node, the municipality needs to come-out where it is hiding from and scale-up its role in creating enabling environment. With the private sector and civil society led service provision, the municipality needs to re-orient on how it handles, manage relationships and perform its duties in connection with formal and informal sectors. Therefore any success or blames for failures are directed to the municipality, though there are cases were municipalities have been used by central government as *raison d'être* for failures.

Specific recommendations are as follows:

- Extension of the PPP approach to embrace informal sector actors and households. For example CBOs and PCs can be partners with *informal contractors* in order to facilitate primary collection, reduce crude dumping, and stimulate sorting and materials recovery at the source point. It is possible given the fact that informal sectors' pro-poor waste management activities are supported by the locals. The current HSWM system needs major reconstruction so as to accommodate, acknowledge and recognise all actors equally

of which are not easy tasks. This will require key negotiations among stakeholders and striking of an equal bargaining power which is again tricky.

- Scaling-up of the enabling environment. It is not the role of the AMC alone even though it is broadly under government in a neo-liberal Tanzania. Enablement in terms of facilitating contractors' equipments and facilities like tax relief/subsidy for the trucks which are meant exclusively for waste. Others are favorable policy, legal and regulatory mechanisms, infrastructures upgrading in the peri-urban and at the dumping site.
- Substantial investment in public health education and awareness creation campaigns. Entry points are like in primary schools, door-to-door sensitisation, *mtaa* meetings, utilising media potentials, and setting-up prizes or awards at local level. It is possible if all stakeholders will effectively work together at all levels, combined by political willingness to invest in the sanitation sector.
- People, plans and the municipality should widen scope of the SWM definition from collection and disposal to embracing opportunities for waste minimisation, re-use, and recycling. It will reduce the amount of the waste collected and subsequent disposal challenge. Entry points includes supporting *Maendeleo Plastic and Paper Limited* activities, embracing of the informal sector, and attaching monetary value to the organic waste like what is going on in the lucrative metal scrap business, and waste integration into urban agriculture.

Finally, potential areas which future researches can further explore includes: waste generation and analysis; users' participation, preferences, taste, and satisfaction.

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## APPENDICES

### Appendix 1: Semi-structured Interview Guide (Private Companies and CBOs)

Dear respondent,

I am Edward Ezekiel, Master's degree student pursuing MA. Urban Development and Urban Challenges in East Africa (Norwegian University of Science and Technology, Norway & Addis Ababa University, Ethiopia). The purpose of this interview is on academic grounds only with the aim of generating information for understanding involvement of the private companies and Community-Based Organisations (CBOs) in municipal Household Solid Waste Management (HSWM) in Arusha municipality. Anonymity and confidentiality are highly guaranteed.

#### A. Personal Profile

Name and Position.....

Sex .....

Education .....

Work experience (duration worked with the organization) .....

Semi-structured interview number.....

Date, place and time .....

#### B. Company/CBO Profile

1. Name of the organisation and address
2. Background of the organisation
3. Type of the organisation
4. Who owns the organization?
5. Organization's Administrative structure
6. What was the initial and current capital? [facilities]
7. Funding sources and percentage of each source
8. Total number of employees (males & females)

### **C. Solid Waste System**

9. Which area(s) of the municipality do the organization operates? Why?
10. Which type(s) of solid waste does you organization collects?
11. How refuse collection and transportation is done?
12. How and where do you dispose the collected refuse?
13. How many trips are made per day from collection point to disposal site?
14. How old are the vehicles in the fleet? Carrying capacity of the vehicle?
15. Where, who and how sorting and material recovery activities are done?
16. Do you pay disposal fee? If yes, how do you pay it? How much? Who and how determines the fee?
17. How do you monitor and/or evaluate performance in the service?

### **D. PERSONNEL**

18. What is the number of permanent employees, daily/casual employees and contract employees? (Males and females separately in each category).
19. How solid waste management activities are distributed among the employees?
20. What is the average number of crew in each fleet?
21. Which measures are in place to ensure workers' health and safety when on job?

### **E. INVOLVEMENT OF THE PRIVATE SECTOR**

22. How did your organisation ended in collecting household waste in this area/neighbourhood?
23. From your experience, how do you evaluate state of sanitation in the municipality/this area before and after privatisation?
24. How do you assess contribution of the private sector in the management of solid waste?
25. How does your organisation collaborate with local government/municipality and the community you are serving?
26. Who are the other stakeholders you are working with in solid waste activities?

27. How much is the user charge and who determines it? By using which criteria? Who collects user charges and how?
28. What are the major challenges that your organisation encounters in the daily solid waste activities?
29. In your opinion, what should be done so as to improve the situation?
30. What is the organisation's future plan with regard to solid waste management activities?
31. Is there any other observation or experience or lesson that you have learned about private sector system in solid waste management in the municipality?
32. Do you have any question to ask me?

**Thank You for Your Cooperation and Valuable Contributions**

## Appendix 2: Key Informant Interview Guide

Dear respondent,

I am Edward Ezekiel, Master's degree student pursuing MA. Urban Development and Urban Challenges in East Africa (Norwegian University of Science and Technology, Norway & Addis Ababa University, Ethiopia). The purpose of this interview is on academic grounds only with the aim of generating information for understanding involvement of the private companies and Community-Based Organisations (CBOs) in municipal Household Solid Waste Management (HSWM) in Arusha municipality. Anonymity and confidentiality are highly guaranteed.

Name .....

Institution/Organisation and Department.....

Position/Title .....

Contacts .....

In-depth key informant interview number.....

Date, Place and Time.....

1. What is the estimated amount of solid waste currently generated and managed in the municipality?
2. When and who introduced privatisation of the solid waste management in Arusha municipality? Who were involved?
3. Why and how privatisation of the solid waste activities was introduced? How was the transition from Arusha municipality monopoly to formal non-state actors?
4. Which areas of the municipality were first to be privatised? Why?
5. What is the coverage of the private sector in solid waste management in the municipality?
6. Which privatisation approach(s) is currently used by the municipality? Why?
7. Which solid waste management activities have been privatised? Why?
8. How do you evaluate the state of sanitation before and after privatisation?
9. How is the solid waste management activities organised/carried-out in the municipality?
10. Are there any municipal by-laws, policies, or strategies which govern solid waste management activities?
11. Which processes are involved in awarding tender/contract to the private organisations?

12. Which ways are used by the municipality to monitor and evaluate performance of the private sector?
13. What is the role of Arusha municipality in ensuring sustainable management of the solid waste?
14. Of the Arusha Municipality budget, which percentage is for solid waste management? Funding sources?
15. Are there any benefits that municipality has accrued following privatisation of solid waste management?
16. How does municipality collaborate with the private sector, and the community with regard to solid waste management?
17. What are the most crucial challenges that municipality is facing in relation to solid waste management?
18. What should be done in order to improve the situation?
19. What are the future plans with regard to solid waste management in the municipality?
20. Is there any other observation, experience or lesson that municipality has learned about private sector system in solid waste management?
21. Do you have any question for me?

**Thank You for Your Cooperation and Valuable Contributions**



### Appendix 3: Household Interview Guide

Dear respondent,

I am Edward Ezekiel, Master's degree student pursuing MA. Urban Development and Urban Challenges in East Africa (Norwegian University of Science and Technology, Norway & Addis Ababa University, Ethiopia). The purpose of this interview is on academic grounds only with the aim of generating information for understanding involvement of the private companies and Community-Based Organisations (CBOs) in municipal Household Solid Waste Management (HSWM) in Arusha municipality. Anonymity and confidentiality are highly guaranteed.

#### General

Name (optional).....  
Sex .....  
Household size .....  
Ward .....  
Street and House number.....  
Household Interview number .....  
Date, place and time .....

1. For how long have you been living in this area?
2. How do you store refuse in your household? Where and for how long?
3. Who collects and dispose waste from this area/neighborhood? How?
4. How many times per week do you empty your collection bin?
5. Do you know where refuse collected from your household is disposed?
6. When did you begin using private sector (name of the company/CBO)? [Before municipality introduced them or after?] Why?
7. Before introduction of the private sector, how were you managing your household waste?
8. What do you do with the waste separated out of waste?
9. How much do you pay as service fee? How do you pay it? For how long have you been paying?
10. Is there any change in user fee for the past 2 years?
11. Is the service provided by the private sector affordable to you and willing to continue paying?

12. Are you satisfied with the level of service offered by the private sector? (a) very low (b) low (c) medium (d) high (e) very high. What are the main reasons?
13. How do you assess state of sanitation before and after privatisation of the solid waste activities in the municipality?
14. How is your household participating in decision making with regard to refuse management in this area?
15. What are the challenges with regard to solid waste management in this area?
16. What do you think should be done in order to improve situation?
17. Is there any other observation or experience or lesson that you have learned about private sector system in solid waste management in the municipality
18. Do you have any question to ask me?

**Thank You for Your Cooperation and Valuable Contributions**

#### **Appendix 4: An Observation Guide**

1. Solid waste chain – from households, collection, transportation, disposal, materials recovery, who is doing what, how, when and possible reason(s) behind each scenario
2. Household solid waste composition: main contents and quantity at household level according to socio-economic status, or in different neighbourhoods.
3. Storage: how solid waste is stored at household level before collection, equipments and types of equipments used, location.
4. Collection: collection system, primary & secondary collection; collection points and transfer stations, frequency of collection, collection system 'network', containers, equipments, labour, fleets, state of fleets and tools, equipments, challenges.
5. Transportation – modalities, fleets, how, why, where, payment, weigh bridge at the disposal, distance from city-centre in km, travel time in minutes, capacity of fleets, labour/collection crew
6. Recycling, re-use, material recovery
7. Physical challenges and possible opportunities

**The End**