Civil society in urban sanitation and solid waste management: The role of NGOs and CBOs in metropolises of East Africa

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Thesis

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Abbreviations

CBO	Community-Based Organizations
KCC	Kampala City Council
KEWASNET	Kenya Water and Sanitation Network
KICHWA	Kisenyi Community Health Workers Association
MCDA	Multi Criteria Decision Analysis
MDG	Millennium Development Goals
NGO	Non-Governmental Organization
PHAST	Participatory Hygiene And Sanitation Transformation
PPP	Public Private Partnerships
PROVIDE	Partnership for Research on Viable Environmental Infrastructure Development in East Africa
SFR	Strategic Framework for Reform
SSWARS	Sustainable Sanitation and Water Renewal Systems
TAWASANET	Tanzania Water and Sanitation Network
UN	United Nations
UNDP	United Nations Development Program
UNICEF	United Nations Children's Fund/ United Nations International Children's Emergency Fund
UWASNET	Uganda Water and Sanitation Network
VIP	Ventilated Improved Pit Latrine
WHO	World Health Organization

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CHAPTER 1: INTRODUCTION

"With almost 884 million people living without access to safe drinking-water and approximately three times that number lacking basic sanitation we must act now as one global community to ensure water and sanitation for all," Ms Clarissa Brocklehurst, UNICEF Chief of the Water, Sanitation and Hygiene (WASH) (WHO, 2010).

1.1 Background and problem statement

It is staggering to realize that a decade into the 21st century, when man has managed to walk on the moon and breathtaking technologies are being developed, nearly half of the world's population lacks basic sanitation. Today urban sanitation and solid waste management in developing countries are among the most significant development challenges (cf. Evans et al., 2009). These challenges not only affect the poor but also contribute to increased poverty due to the resultant increased vulnerability and reduced productivity (Practical Action, 2009). It is the poorest people who suffer most, particularly the poor children who pay the price through illness, distress and thousands of early and preventable deaths (Evans et al., 2009). The severity of these challenges also trickle down to other development interventions in the education, health and urban development sectors (see Peal et al., 2010: VII).

This intolerable state of affairs is caused by a number of factors. Traditionally the sanitation sector in developing countries has been characterized by poor funding, fragmentation and disorganization (see UNU-INWEH, 2010), a trend that continues to exist even today. Cultural and attitude issues also come into play. The word "sanitation" is often sanitized, perpetuating ancient taboos about discussing human waste (UNDP, 2006:112). But the efforts to address these challenges have received remarkable attention internationally through the Millennium Development Goals (MDGs), which aim at halving the proportion of the population without access to sustainable basic sanitation – including improved sanitation – by 2015 as well as achieving a significant improvement in the lives of slum-dwellers by 2020 (MDG Goal 7). Improved solid waste management has also been recognized as relevant for achieving the MDGs and targets (see Table 1.1).

However, today, with less than five years and ten years to these targets of the MDG Goal 7 respectively, Africa compared to other developing continents is lagging behind in meeting the MDGs. Specifically, the East African region has not shared in the global success

in improving sanitation (Figure 1.1), solid waste management and hence the lives of the poor which have profound effects on progress of achieving the MDGs. The situation is worst in the cities which have the highest prevalence of slums often as a result of a high population growth rate; high urbanization rate and widespread poverty (cf. MDG report, 2010).

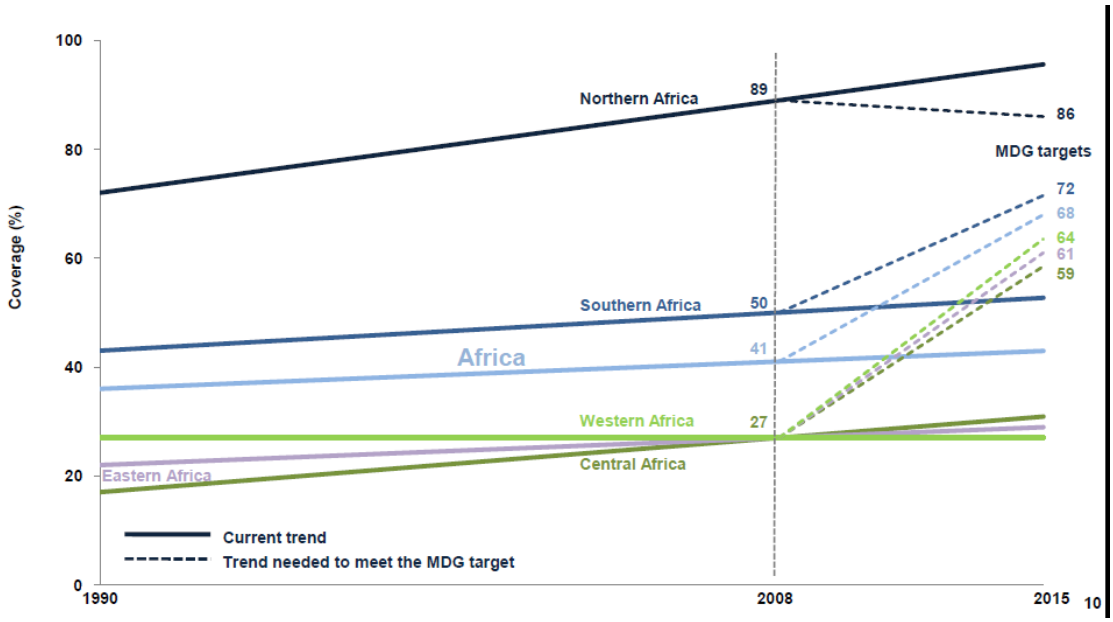

Figure 1.1. MDG Target for Africa (Source: AMCOW, 2010)

As the MDGs target deadlines draw close, there is renewed call for effective action to promote and sustain improved sanitation and solid waste management (see Box 1). But what can and should be done? This thesis is placed within the current debates on how to accelerate progress towards achieving the MDG targets related to sanitation and waste management; and most importantly how to eventually achieve the vision of universal access to these services. It explores some of the possible solutions, their impact and sustainability. Case studies are presented to show the situation, the challenges, the opportunities and the solutions. These case studies on the one hand convey imminent challenges and opportunities and on the other exemplify a suitable panorama where new ideas can be discussed and tested.

Table 1.1. Relevance of improved Solid Waste Management to the Millennium Development Goals

MDGs	Achieving MDGs through improved sustainable waste management
1. Eradicate extreme poverty and hunger	Informal-sector self-employment in waste collection and recycling currently provides sustainable livelihoods to millions of people who would otherwise have no stable source of income and would be most susceptible to extreme poverty and hunger. City authorities can both promote recycling and create more opportunities for the informal sector to provide waste collection services in unserved areas and thereby help eradicate extreme poverty and hunger.
2. Achieve universal primary education	Waste management activities contribute indirectly to education through income generated by the parents. Many waste-pickers earn sufficient income to send their children to school and do so with pride. The poorest waste-pickers do engage their children for picking and sorting waste; but in instances where NGOs are involved, classes are organized for these children, after their working hours, and parents are informed about the need and the benefits of primary education.
3. Promote gender equality and empower women	A substantial percentage of informal-sector waste collectors and waste-pickers are women. Efforts to improve solid waste empower women management services and enhanced recycling can include improvement and equal working conditions for men and women by creating financial and other arrangements that build capacity and empower women.
4. Reduce child mortality	Effective solid waste collection and environmentally sound disposal practices are basic public health protection strategies. Children living in households without an effective waste collection service suffer significantly higher rates of, for example, diarrhoea and acute respiratory infections, which are among the main causes of childhood deaths. Cooperation with informal sector waste collectors and recyclers will improve their livelihoods and reduce child labour and, hence, direct contact of children with the wastes.
5. Improve maternal health	Almost all women waste-pickers have no maternal healthcare available to them. Enhanced recycling may directly/indirectly improve maternal health through achieving improved living standards among households engaged in the sector.
6.Combat HIV/AIDS, malaria and other diseases	Originally, municipal waste management activities started due to public health concerns. The reasons are almost self-evident: diseases uncollected waste clogs drains, causes flooding and provides breeding and feeding grounds for mosquitoes, flies and rodents, which cause diarrhoea, malaria, and various infectious and parasitic diseases. Mixing healthcare wastes with municipal solid waste and its uncontrolled collection and disposal can result in various infections, including hepatitis and HIV. Reliable and regular waste collection will reduce access of animals to waste and potential for clogging of drains. Proper waste management measures can practically eliminate risks associated with healthcare waste.
7. Ensure environmental sustainability	Few activities confront people with their attitudes and practices regarding sustainability as waste management does. Reduce, reuse, recycle is yet to realize its full potential as a guiding principle for environmental sustainability through conservation of natural resources and energy savings, as well as through reduction of greenhouse gases (GHGs) and other emissions.
8. Develop a global partnership for development	Through cooperation and exchange, developed and developing countries can develop and implement strategies for municipal services and job creation where unemployed youth will find decent and productive work and lead a dignified and good life.

Sources: Gonzenbach et al., 2007; Coad, 2006; Hickman et al., 2009

Box 1.0. Calls for more action from the international community

"We all recognize the vital importance of water and sanitation to human health and well-being and their role as an engine of development. The question now lies in how to accelerate progress towards achieving the MDG targets and most importantly how to leap a step further to ultimately achieve the vision of universal access", Dr Maria Neira, WHO Director for the Department of Public Health and Environment (WHO, 2010).

"We need to not only focus on reaching the water and sanitation MDG targets but also on achieving them with equity, ensuring that the most vulnerable groups and those hard to reach share in the successes achieved elsewhere," Dr Tessa Wardlaw, UNICEF's Chief of Statistics and Monitoring (WHO, 2010).

The next sections of this introductory chapter briefly describe the research context and research questions the thesis aims to answer, and the study conducted to answer these questions and potential solutions to the sanitation and solid waste management challenge. Section 1.2 first explores the larger project in which this thesis is placed. The proceeding section 1.3 introduces the main components of this study. The guiding research questions are outlined in section 1.4 and the study area is outlined in section 1.5. Section 1.6 gives a summary on the different chapters.

1.2 Approaches to urban sanitation and solid waste management improvement

1.2.1 Contrasting approaches to urban service provisioning

Approaches to urban sanitation and solid waste management can be characterized by a number of "dimensions of environmental infrastructures" as portrayed in Figure 1.2 below.

Analysis of the dimensions reveals two major approaches: a centralized approach characterized by large scale centrally managed systems often with very limited involvement of end users. This is the system often found in developed countries. The other is decentralized approach characterized by low cost, flexible system with decentralized management and high involvement of users.

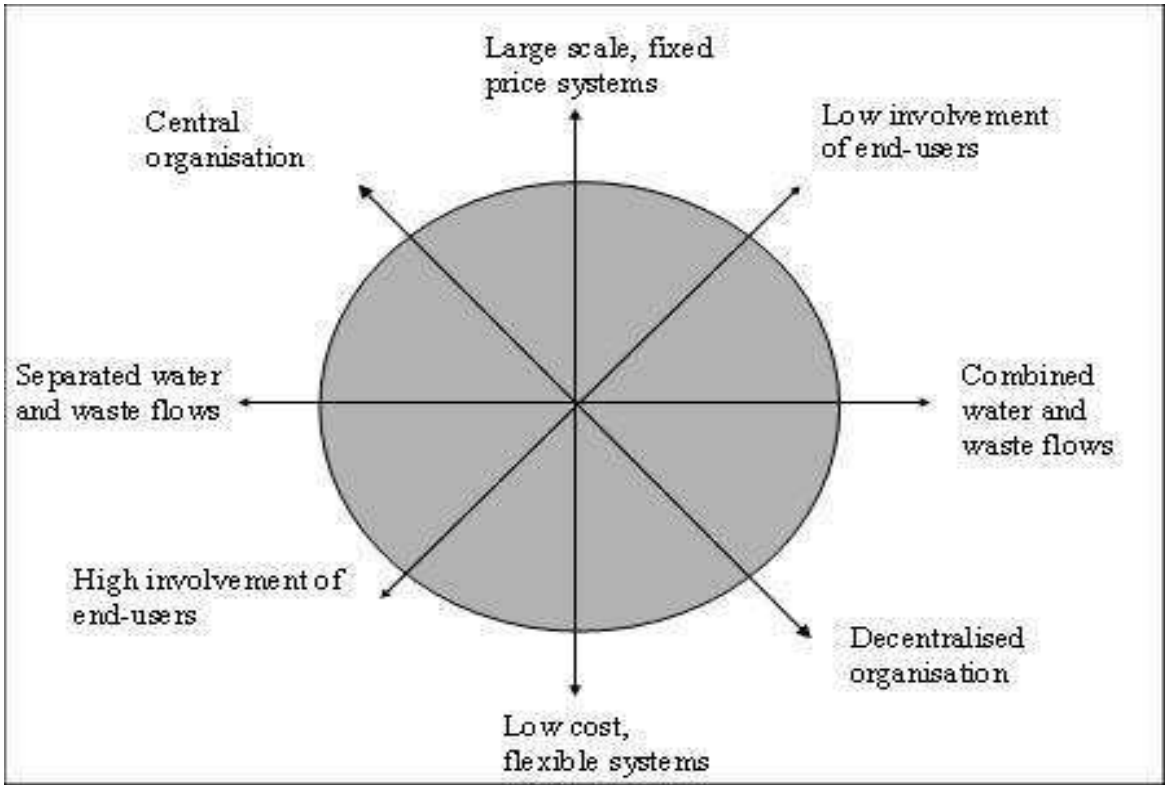

Figure 1.2: Dimensions of environnemental infrastructures (Spaargaren et al., 2006)

A big part of the problem facing sanitation and waste disposal in developing countries is their failure to adopt successful solutions developed in and for the developed world without regard to adapting these solutions to the local realities, political systems, cultural and social norms and economic conditions. A typical example is the replication of largely centralized sanitation systems of developed countries' cities, which have proven to be inappropriate for and largely failed in cities of developing countries (cf. UN-HABITAT, 2010; Spaargaren et al., 2006). Instead, these systems are a major contribution to the increased poverty, reinforced inequity in distribution of basic services, strained budgets of already poor countries and increased mortality and morbidity in developing country cities where they have been adopted.

Developing countries are increasingly aware of the futility of adopting developed-world solutions. Despite this realization, the governments of most African countries have not put in place plans and regulation for feasible alternative infrastructure development or improvements for the entire populace (cf. Okot-Okumu and Oosterveer, 2010). As a result of the costs and failures of centralized systems adopted from the developed world as well as the limited capacity of the governments to address sanitation and solid waste management issues,

decentralized systems are taking root in some developing countries. These decentralized systems are often set up and managed by non state actors often called Non-Governmental Organizations (NGOs) and Community Based Organizations (CBOs). In fact these NGOs/CBOs have been acknowledged for their significant contributions towards increased access to basic services including sanitation (see MWE report, 2010) and solid waste management over the years.

Sometimes the involvement of NGOs or CBOs is strongly endorsed by the state, but at times the activities of CBOs and NGOs are emerging bottom-up from local communities that start themselves to organize sanitation and solid waste management services. Occasionally, CBO and NGO involvement is heavily supported and even co-organized by foreign donors, practically bypassing conventional governmental roles and activities in environmental service provisioning. In all these modes, the NGOs and CBOs take up new roles and create new balances in public-private arrangements in sanitation and solid waste management. More than incidentally, these NGOs and CBOs develop into company-like structures, where significant amounts of finances are handled and thus threatening their philanthropic tendencies. The ability (flexibility) of NGOs and CBOs to adjust in case of changes in local (economic, political, natural, demographic) conditions of the area in which they operate is considered an important contributing factor to their attractiveness.

However, information about NGOs and CBOs involvement in urban service provisioning is archetypical for developing countries, with little data on the numbers and types of NGOs and CBOs; the communities they serve; the kind of sanitation and solid waste activities they are engaged in; and their effectiveness and funding mechanisms. Besides anecdotal evidence little systematic knowledge exists of the actual contribution from NGOs and CBOs to sanitation and solid waste improvement. This leads to a messy understanding of the exact role of these organizations and their actual or potential contribution to the sanitation and solid waste sectors. Therefore, the growth and diversity of the NGO and CBO initiatives require a more in depth review of their contributions to sanitation and solid waste management. This thesis is therefore an attempt to dissect and understand the work, impact and sustainability of these NGO and CBO actors within the context of emerging approaches that aim to overcome the challenges of centralized or decentralized systems in developing countries. The thesis aims to go beyond the implicit evidence or information that has been

portrayed by various discussions in a number of countries on the role and impact of these actors.

1.2.2 Modernized mixture approach to urban sanitation and solid waste management

In an effort to address the sanitation and solid waste management challenges in urban centres of East African countries, some scholars have recently started to work on ideas of what they label a modernized mixtures approach (MMA). This is an approach that takes the best features out of both decentralized and centralized systems and combines them into hybrid solutions which better fit specific local (socio-economic, ecological, technological and political) situations (e.g. Spaargaren et al., 2006; Van Vliet, 2006; Hegger, 2007; Oosterveer and Spaargaren, 2010; Scheinberg and Mol, 2010) - (Figure 1.3). The modernized mixtures approach tries to distance itself from the debate on central versus decentralized systems; where proponents and opponents of either system support an absolute choice and yet none of the systems is completely preferable against the other (Hegger, 2007). This modernized mixtures approach looks at the degree of user (actual/potential) involvement and inclusion; levels of technological advancement and robustness; degree of centralization/decentralization of management; level of decision-making for implementation; and payment systems. In addition, the MMA also looks at how actor/institutional arrangements best fit the physical and human systems. With respect to the latter feature, modernized mixture scholars argue for the need for less rigid institutional arrangements that govern and run these urban services, and adapting the preferred institutional structure to the specific conditions prevailing in the area to be served.

The resultant alternative models are then assessed against different three sets of criteria: sustainability, accessibility (particularly for the poor) and flexibility. The sustainability criteria are divided into two: institutional sustainability concerns the extent to which a new system becomes embedded in existing socio-political and cultural systems at the local level while improving performance; and ecological sustainability refers to the environmental achievements in terms of prevention of waste reaching the environment. Accessibility refers to the extent to which users are included or excluded from receiving sanitary infrastructures and services due to financial, physical or cultural reasons. Especially accessibility of the poor to these service systems is relevant. Flexibility points at the way in which sanitation system

can fit within the local conditions of the planned areas and the way the system behaves in times of economic, political and cultural instability or resistance. Hence it refers to both technological and institutional flexibility of the systems.

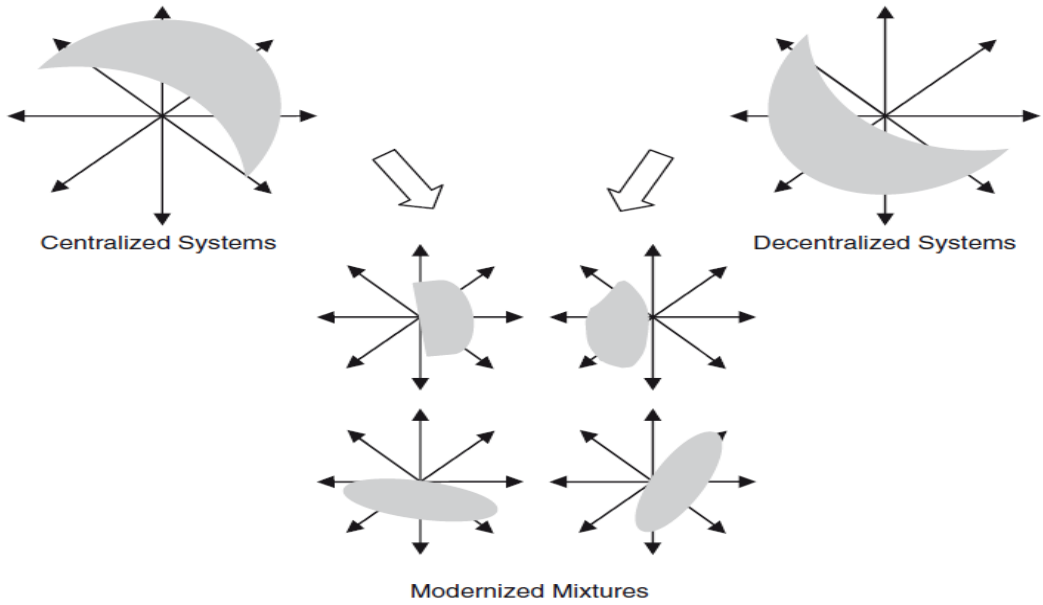

Figure 1.3. Modernized mixtures (MM) as alternatives to centralized and de-centralized systems (following Spaargaren et al., 2006; Oosterveer and Spaargaren, 2010).

In order to test and further develop the MMA for sustainable, accessible (pro-poor) and flexible sanitation and solid waste management systems, an integrated data base was proposed combining efforts and expertise of specialists from different disciplines, such as technological, environmental and social sciences. To this effect an interdisciplinary programme Partnership for Research on Viable Environmental Infrastructure Development in East Africa (PROVIDE) started in 2006. The programme aimed to develop socio-technical infrastructures which are environmental and socially sustainable in East Africa. This programme involved collaboration of environmental policy experts dealing with issues of management, (local) governance and accessibility of the urban poor under which this thesis is placed; environmental technology experts dealing with sustainability in terms of environmental performance, technological design and maintenance; and development economists dealing with accessibility in terms of prices, economic dimensions of privatization, issues of sunk-costs for large technical systems and urban infrastructures and the economic consequences of internalizing external costs; and environmental system analysts

for integration of the various aspects in a system design. In this way, the modernized mixtures concept provided a framework for bringing the contributions from different disciplines together in a productive manner.

As part of the PROVIDE programme this thesis attempts to assess the contributions and relevancy of NGOs and CBOs for improving the sanitation and solid waste management situation for the urban poor in East African cities. As earlier stated, NGOs and CBOs are selected for this study because of their increasing involvement in the development and implementation of large numbers of concrete activities on sanitation and solid waste management in urban contexts in East Africa (which includes Uganda, Kenya and Tanzania). These organizations are assessed using the above MMA criteria and other relevant models and theories on NGOs and CBOs.

1.3 NGOs and CBOs: theories and perspectives

In the field of sanitation and solid waste there is growing appreciation of institutions that are distinct but interact with the private companies and the government. Such institutions and organisations are generally referred to under a mixture of labels such as civil society, third sector, and NGOs/CBOs. This sector and its organisations and institutions have been acknowledged as contributing to the improvement of the environment and alleviation of social problems, both in the developed countries of Europe and North America and in the developing countries in Africa, Asia and elsewhere. In developing countries, this third sector is increasingly seen as generating and providing innovative approaches to sustainable development, emphasizing grassroots involvement and 'assisted self reliance' (Hailey and James, 2004; James, 2004; Gibbs et al., 1999; Salamon and Anheier, 1996; Farrington et al., 1993).

This sector covers a diverse group of organizations ranging from CBOs, churches, workers associations or institutions, environmental organizations, consumer organizations to donor organizations. There is some debate in development studies literature on the definition of these organizations, with scholars placing them under different categories such as relief and welfare agencies, technical innovation organizations, public service contractors, popular development organizations, grass root development organizations, international NGOs, advocacy groups and networks, and intermediary organizations (Hailey and James, 2004; Gibbs et al., 1999; Hulme and Edwards,1997; Turner and Hulme, 1997; Farrington et al.,

1993; Fisher, 1993; Carroll, 1992; and Fowler, 1990). Some scholars (Barr et al., 2005) contend that the heterogeneity within this sector has made it a difficult topic for investigation and generalizations. The main focus in this thesis is on the two important types of organizations in the third sector or civil society – NGOs and CBOs. In this thesis, NGOs are defined as not-for-profit organizations that provide or promote social or economic services over a larger area. CBOs are seen as not-for-profit grassroots organizations that work to develop social or economic services within and for their own communities.

Studies on NGOs in developing countries are limited not only with respect to the object of study (against the background of a diverse civil society) but also in the methodologies used to gather empirical evidence. Barr and colleagues (2005) report that there are three main methods of inquiry regarding NGO studies in developing countries: legal studies (e.g. ICNL, 1995), historical studies (e.g. Salamon & Anheier, 1996; Salamon et al., 1999) and case studies (e.g. Goldsmith, 2002; Belshaw and Coyle 2001; Johnson, 2001; Edwards and Hulme, 1995; Farringhton et al., 1993; Riddel et al, 1995). A number of theories have also been put forward to explain the drivers that lead to the emergence, functioning and relevance of these organizations, some of which can be used to explain factors that may seem to persuade or impede the growth and involvement of NGOs/CBOs in public service delivery.

One of the most common theories put forward that explains the growth of these organizations is based on the classical (often economic) theories on government failure/market failure. This theory explains the existence of non-profit organizations as a result of the persistent market and government failures to provide the 'collective goods' which should be accessible to all the citizenry, regardless of whether they have to pay for them (cf. Nissan et al., 2009; Salamon and Anheier, 1996). The government/market failure theory portends an enormous outburst of this group of organisations, where some scholars (Salamon and Anheier, 1996) refer to this outburst as an 'associational revolution' that has opened up new opportunities, demands, and responsibilities for this sector. Indeed in developing countries, specifically in sub-Saharan Africa, there is an increasing reliance on NGOs and CBOs to shoulder the burden of poor public service, resulting from the vacuum created by the inability of the government as well as the market to provide services, especially to the urban poor. NGO and CBO organizations are perceived as having transaction costs that are lower than those of the government, are closer to their clients, engender ownership

through participation, and are more effective in delivery of basic services to the poor who may not be reachable through direct public service (EHP Report, 2004; Frederickson and London, 2000).

Social capital theory has also been used to explain the drivers of non-profit organizations' involvement in a number of public services such as education, health, economic development as well as on commercial activities (see Nissan et al., 2009). The social capital theory is being undermined by "modernization" of the non-profit organizations, driven by new donors who apply business principles and practices to achieve social change (Eikenberry and Kluver, 2004). This is leading to a shift in the NGO/CBO philanthropy paradigm from one based on social capital to one of "venture philanthropy". Indeed this later model of philanthropy has been widely adopted by the non-profit sector, with some scholars (Salamon, 1997) referring to it as the "marketisation" of the non-profit organisations. Under the marketisation approach the strong social networks that led to the long term survival and sustainability of nonprofit organizations as well as for mobilizing collective action and addressing social problems are now less needed to build strong relationships with the traditional key stakeholders such as private donors, NGO/CBO members, community volunteers, and communities (Backman and Smith, 2000). Instead, the stakeholders become "consumers or clients and the focus of the organization shifts from creating networks of trust to creating opportunities for selling more products or services to individuals" (Eikenberry and Kluver, 2004: 137).

Theories such as resource-dependence theory and institutional theory have been used to explain this episode of marketisation of the non-profit organisations. The former theory posits that relationships with public and private funders in a resource constrained environment leads to the adoption of "market strategies (such as, commercial revenue generation) to deal with resource constraints" (Eikenberry and Kluver, 2004: 133). The later theory assumes that "organizations are best understood as embedded within communities, political systems, industries, or coordinative fields of organizations" (Feeney, 1997: 490). Within the institutional environment, there are "rules and requirements to which individual organizations must conform if they are to receive support and legitimacy" (Scott and Meyer, cited in Jaffee, 2001: 228). As a consequence Eikenberry and Kluver, (2004: 133) assert that "to understand the internal attitudes and behaviours of non-profit organizations, one must understand the

external environment and its pressures on an organization which compels non-profit organizations to take on the methods and values of the market (such as, compete for contracts or practice social entrepreneurship)". In line with these theories, scholars argue that the non-profit sector's increased reliance on profit-making causes a shift from services targeted to the poor (Salamon, 1993) and those who are difficult to serve (Rosenman, Scotchmer, and VanBenschoten, 1999), to those able to pay. Hence, they suggest a movement away from serving larger societal/public issues to serving individual demands or needs (Eikenberry and Kluver, 2004: 136). Eikenberry and Kluver (2004:132) further argue that "although marketisation may benefit the non-profit organizations in the short term, it may have long-term negative consequences that may harm democracy and citizenship because of its impact on non-profit organizations' ability to create and maintain a strong civil society".

Another important theory that is helpful in understanding and analyzing the emergence and functioning of NGOs and CBOs – also vis-á-vis government and market organizations –is the social network theory. Theorists of social networks argue that conventionally non-profit organizations are more capable of forming social norms of trust, cooperation, and mutual support due to their non-coercive character and appeals to charitable and social motives than government or market organizations (Backman and Smith, 2000: 362). The influence of social network ties on the success of those organisations is widely acknowledged. For instance, Forrest and Kearns (2001) and Konings and colleagues (2006) reveal that weak social (neighbourhood) ties increase the transaction costs for turning a neighbourhood into an effective social force. Also weak social ties lead to mistrust, antagonism and uncooperative arrangements and in such situations these organisations may not be seen as a true representative of local populations, specifically the urban poor (Nelson and Wright, 1995). The social network perspective therefore, enables researchers to study social actors and their beneficiaries as well as the social relations between them and the implications of these relationships on, for instance, the provision of and access to services (see Galaskiewicz and Wasserman, 1994).

Nonetheless, what is lacking in most of these theories is significant – that is: more than anecdotal – empirical data that underpin these theories. Are these theories indeed helpful in understanding the role, competence, scope, financing mechanisms and the potential of these NGOs and CBOs for shouldering the demands placed upon this sector (c.f. Salamon and

Anheier, 1998). This lack of empirical data makes it difficult for policy makers, but also the general public, to understand the actual and potential role that these organisations play and can play. Instead, perceptions of this sector are often fogged up with a variety of myths, some of which are ideologically based. These perceptions and beliefs, hence, distort and confuse efforts at understanding the actual roles and contributions of CBOs and NGOs, often leading to misguided policies and unrealistic expectations and assumptions. Therefore, this study aims to set a step forward to putting some of these theories on the non-profit sector to the test by generating empirical evidence on the role and function NGOs and CBOs play in the provisioning of urban services.

1.4 Research questions

From the preceding discussions and from the literature, NGO/CBO organisations are increasingly appreciated for the role they (can) play as alternative for the failed government/market service delivery. However, it is also clear that empirical research on their actual role is still in its infancy. Also, little information is given on the linkage between the NGO/CBO institutions and organizations on the one hand and other (market and state) institutions and organizations on the other, as well as on the drivers that propel or hinder NGOs and CBOs from delivering urban sanitation and solid waste management services to the urban poor.

Specifically, this thesis attempts to shed more light on the actual and potential roles of NGOs and CBOs as well as their limitations in urban sanitation and solid waste management for the urban poor in East African cities. The ultimate aim of this study therefore, is to contribute to an improved understanding of the contributions of NGOs and CBOs particularly for the urban poor and the consequences of their involvement and non-involvement in service provision. The thesis looks at the NGO/CBO roles and ability to carry out these roles, as well as to the hindrances they encounter. To achieve the aim of the study, two main questions are addressed:

1. In what ways are NGOs and CBOs participating in the development and implementation of sanitation and solid waste management and what are the key factors influencing their participation?

2. How and to what extent are the sanitation and solid waste management activities of NGOs and CBOs sustainable; accessible to the poor; and flexible and resilient under changing socio-political, institutional and economic conditions?

1.5 The study area: Kampala and other East African metropolises

For purposes of the study, a country had to be selected that has the "perfect storm" factors of high population growth rate, high urbanization rate and widespread poverty with attendant low levels of sanitation and solid waste management. Uganda, one of the East African countries fits these criteria perfectly. Uganda has the second highest population growth rates in the world of 3.56% (CIA, 2011) and one of the highest urbanization rates of 5.1% (MFI, 2010). At a GDP per capita of $1200 (CIA, 2011), Uganda is one of the poorest countries in the world. Further, the Human Development Index places Uganda at 0.422 (UNDP, 2010), which is quite low. In terms of sanitation and clean drinking water, the World Bank development indicators rank Uganda at a very low level in the world. One in five Ugandans is having no access to any kind of sanitary facility, a major cause of environmental pollution (cf. Yap, 2007) and sanitary diseases. Uganda also has some historical factors that make it an interesting study: The country faced political and civil strife throughout much of the 1970s and the 1980s with low economic growth, the breakdown of law and order, leading to total chaos (cf. Nuwagaba, 1999). This political and social instability brought about, on the one hand, decay of social services and infrastructure and on the other hand greatly affected the planning and creation of new infrastructure.

Recognizing that the challenge to reach the MDG 7 targets is greatest in urban centres, the capital of Uganda was selected as the focal point of the study. Kampala is the capital city of Uganda and is the source of its economic power. It is located close to the equator and covers approximately 195 sq km. It is situated about 8km away from the northern shores of Lake Victoria, with its centre located approximately 45km north of the equator. It stands on 24 hills with an average altitude of 3,910ft above sea level and is covered by extensive papyrus swamps and perennial streams. Kampala is chosen as the main study area for assessing the role of NGOs/CBOs in urban sanitation and solid waste management because of its high population growth, large poor informal settlements (slums), current sanitation and solid waste management situation (see Figure 1.4), as well as high degree of NGO/CBO

institutional presence. Today the city accommodates approximately 4.5 million day time population and about 1.8 million night population and about 60% of its population lives in slums (cf. UN HABITAT, 2008). Within the slums, sanitation facilities coverage is estimated at 30-50% (Ministry of Water and Environment, 2011) and solid waste service coverage is almost non-existent. Often this leads to catastrophic consequences resulting from sanitary diseases such as diarrhoea and cholera. The impediments to access services include affordability, inaccessibility, and lack or poor social networks (cf. UN HABITAT report, 2008). Despite the realization of the above impediments, there is limited enthusiasm for making service delivery pro-poor. Lwase and Kadilo (2010: 31-32), contend that "the current responses to overwhelming needs of the urban poor are characterized by ad hoc approaches to service delivery involving a number of different actors; civil societies, individuals, households, as well as development aid bodies" escalated by the unpreparedness of the city authorities to grip the decentralisation process (cf. UN HABITAT, 2008), which requires urban authorities to regulate and control these services.

Figure 1.4. Sanitation and solid waste management situation in some of the study areas in Kampala.

This study also attempts to compare the contributions of NGOs/CBOs in Kampala with that of two to some extent similar East African metropolises: Nairobi (the capital of

Kenya) and Dar es Salaam (the capital of Tanzania). A comparative study was deemed fit because it has advantages over the independent in-country studies, as it has the possibility to put national experiences in a comparative perspective, resulting in better understanding of the country particularities and extending the generalization of results. The three metropolises were relevant for a comparative study because they: (1) face similar problems with providing sanitation and solid waste management services for a large population with significant numbers of poor people, (2) have comparable socio-economic situations, and (3) have high proportions of informal-settlements by accommodating over 60% of the urban populations (see Penrose et al., 2010; Gulyani et al., 2010). And finally (4) there is participation of the civil society organizations in the sanitation and solid waste management sector in all three cities, be it not to the same extent and in the same way (Ministry of Water and Environment, 2010; Schouten and Mathenge, 2010; ILO, 2007; Kassim, 2006; Karanja, 2005; Ikiara et al., 2004).

General country level overview studies on NGOs and CBOs involvement in sanitation and solid waste management have been carried out in some of these cities (for example Nairobi - Schouten and Mathenge, 2010), but little is known about their actual performance on the ground. These country level NGO-CBO studies give indications that the importance, role and performance of these civil society organizations in urban service provisioning differ significantly between Tanzania, Uganda and Kenya. This is surprising as the three countries have significant similarities. This comparative research aims to portray and understand the differences and similarities in sanitation and solid waste management in the three East African cities. And hence it gives us a better idea of how generalisable our findings from Kampala are for East Africa.

1.6. Outline of the thesis

The study is composed of six chapters including this general introductory chapter. This section presents the contents of each chapter. Chapters 2 through 5 address the research questions outlined in section 1. 4.

Chapter 2 explores the contribution of NGOs and CBOs in various public–private-partnerships to improving urban sanitation and solid waste management. This chapter presents a theoretical framework for understanding the modernization process of sanitation and solid waste management in East Africa, and the role of partnerships in supporting further

developments in this field. Empirically, the chapter focuses on the contributions of the NGOs and CBOs to sanitation and solid waste management, partnerships involving NGOs and CBOs, and finally the general constraints and challenges faced by these organizations. Kampala is the main area of studying these CBOs and NGOs.

Chapter 3 provides insights on the key factors that influence access of the urban poor to sanitation and solid waste services provided by NGOs/CBOs. To this effect, it presents first the theoretical reflections on the potential key determinants of access, followed by the methodological approach (basically a large scale household survey in three divisions in Kampala). Special emphasis is put on analysing the role of social proximity, in comparison with more conventional (spatial proximity, performance perception and socio-economic) factors, in explaining access of the poor to urban services in Kampala, Uganda's capital city.

Chapter 4 improves our understanding on households or users participation in decision making about the feasible sanitation options provided by NGOs and CBOs. In this chapter a participatory decision making tool for increased user participation in designing urban service provisioning schemes is developed, based on the local contexts and after review of other methods. This tool is empirically tested on community users in one of the geographical slum areas in Kampala that is served by NGOs and CBOs.

Chapter 5 consists of a comparative study into the role of NGOs and CBOs in servicing poor households in Kampala, Dar es Salaam and Nairobi through a survey among households, a survey among NGOs and CBOs involved in sanitation and solid waste management, and in depths interviews with staff members of such organizations. The chapter improves our understanding on why in some settings NGOs/CBOs are quite successful in organizing urban sanitation and solid waste management (especially for the poor), while in almost comparable socio-economic situations such models seem to work less successfully.

Chapter 6 finally highlights the main findings of the study and presents the main conclusions that can be drawn from the preceding chapters. The chapter, first, summarises the main findings from the empirical chapters, and second, gives the general discussion and policy implications of the study. Lastly, the chapter also draws and discusses the major limitation of the study and suggestions for future research.

CHAPTER 2: CIVIL SOCIETY PARTICIPATION IN URBAN SANITATION AND SOLID WASTE MANAGEMENT IN UGANDA♦

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Abstract

The inability of local governments to provide basic environmental services in African urban centers often results in the involvement of other actors in urban sanitation and solid waste provisioning, such as Non-Governmental Organizations (NGOs), Community-Based Organizations (CBOs) and private companies. Although NGOs and CBOs are becoming increasingly engaged in urban service provisioning, little systematic knowledge exists on the kind of activities they take up and the results of these activities. This paper reviews the role of NGOs and CBOs in sanitation and solid waste management in Kampala, the capital city of Uganda. Against the background of a Modernised Mixtures Perspective and the Partnership Paradigm, an assessment is made of NGOs and CBOs in provisioning these environmental services. Data were gathered through a survey, face–to–face interviews, and the use of scientific literature, official reports and informal documents. Over 40 NGOs and CBOs were found to be actively involved – often in partnership –in the implementation and development of sanitation and solid waste activities. Their results are however seriously hampered by financial, policy and political challenges in implementing successful sanitation and solid waste collection projects.

Keywords Africa: CBO; NGO; environmental services; sanitation; solid waste management

2.1 Introduction

This study has been produced in the context of the project Partnership for Research on Viable Environmental Infrastructure Development in East Africa (PROVIDE), which focuses on and contributes to the improvement of urban sanitation and solid waste management in East Africa (Kenya, Uganda, and Tanzania), with an emphasis on the Lake Victoria Region. The project seeks to identify and assess viable options for improving the sanitation and solid waste situation in East Africa and for realizing the Millennium Development Goals (MDGs). An important and successful model for implementing health programmes, including those of sanitation and solid waste services, in urban poor areas (slums) is to work through existing NGOs and CBOs (Environment and Health Project Report, 2004). In developing countries the efforts of NGOs and CBOs are often directed towards the informal settlements, which accommodate the majority of the poor urban dwellers (Mwanza, 2001). In some African countries like South Africa, Zimbabwe and Zambia these settlements are considered illegal, leaving most of the burden for provision of both infrastructure services to NGOs and CBOs (Mulenga et al., 2004).

The aim of this paper therefore is to identify and assess the contribution of NGOs and CBOs in various Public-Private-Partnerships (PPP) to improving urban sanitation and solid waste management. This paper borrows the World Bank definition of NGOs as not-for-profit organisations that pursue activities to relieve the suffering, promote the interest of the poor and provide basic services. In this paper CBOs are seen as not-for-profit grassroots organisations with local membership that work to develop their own communities. In understanding the contribution of NGOs and CBOs in sanitation and solid waste management the capital of Uganda, Kampala, is taken as a research site.

Uganda is one of the countries that the UN-Habitat identified as priority area in achieving the Millennium Development Goals (MDG) of halving the number of people without access to safe drinking water and sanitation by 2015, and improving the lives of at least 100 million slum dwellers by 2020. In Kampala, poor sanitation and solid waste management are among the most pressing and challenging environmental problems. The poor situation of sanitation and solid waste management in Kampala came into existence in the mid 1990s. In the late 1980s and early 1990s, the population in Kampala was less than one million people (774,241). There were limited cases of outbreak of sanitary diseases and the city was

relatively clean. The government was the main provider of sanitation and solid waste management services. However, improvement in security led to a high influx of rural migrants to the already congested urban centres (divisions) in Kampala. This put a constraint on government services (sanitation and solid waste), which were free of charge at that time. The increased pressure on and deteriorating quality of governmental services not only cause poor environmental conditions but also threaten the health and quality of life of the urban population. In order to achieve the Millennium Development Goals, targets for sanitation access for households in Kampala were set at 92% for 2006/2007 and 100% for 2014/2015. However, no reliable data are available regarding the achievement of the 2006/2007 target, nor regarding the percentage of urban households with access to improved sanitation as of 2007 (Government of Uganda, 2007).

The government of Uganda recognized the weakness of public authorities in sanitation and solid waste service delivery (especially in Kampala), which led the Kampala City Council (KCC) in 1997 to design a policy program, the so-called Strategic Framework for Reform (SFR). One of the main elements of SFR is to shift service delivery activities to the private sector, with KCC concentrating its efforts on planning, specification, supervision and monitoring to ensure quality service delivery and adequate coverage. Subsequently, an Action Plan for municipal solid waste management was developed in 1999. Among the objectives of this action plan was the identification of opportunities for the private sector and for community-based and non-governmental organizations (CBOs and NGOs) to participate in urban waste management and planning. This plan was implemented with the introduction of a new solid waste ordinance in 2000. The importance of NGOs and CBOs in urban service delivery had also been acknowledged in the 1995 Constitution, in the 1997 Local Government Act, in the 1997 Kampala Declaration on Sanitation[1], as well as in various sanitation and solid waste management projects (Pfammatter and Schertenleib, 1996; Anschütz, 1996; and El-Karawy, 2006). This call for and acknowledgment of private sector involvement in urban service delivery is not a specific Ugandan phenomenon, but more widely proliferated throughout the African continent.

Besides anecdotal evidence little systematic knowledge exists of the actual contribution from NGOs and CBOs to sanitation and solid waste improvement in Uganda.

[1] The Kampala declaration on Sanitation was endorsed by all five Kampala districts and urges the government to create an enabling environment to facilitate the provision of urban services through NGO and CBO participation.

Have these CBOs and NGOs really become heavily involved in urban sanitation and solid waste management? What tasks have they been performing, and with what success? This paper aims to gain more systematic knowledge on the actual role of NGOs and CBOs in sanitation and solid waste management in the poorer areas of Kampala, as well as to assess the challenges they meet. The paper starts with outlining a framework for understanding the modernization process of sanitation and solid waste management in East Africa, and the role of partnerships in supporting further developments in this field. The third section reports the results from an empirical survey among Ugandan NGOs and CBOs, followed by an overview of the various arrangements they are participating in. Subsequently, the main challenges for successful CBO and NGO involvement in sanitation and solid waste are analyzed. The last section provides the conclusions.

2.2 NGOs and CBOs as modernizing agents: models and methods

There is a wide literature on the role of NGOs and CBOs in developing countries, focusing on a variety of sectors and activities, including environmental services (Barr et,al., 2005; Mitlin, 2001; Edwards and Gaventa,, 1998; Mitlin, 1998; de los Rios Bernardini, 1997; Gaye and Diallo, 1997; Harper, 1997; Howes, 1997; Hulme and Edwards, 1997; Khan, 1997; Stewart, 1997; UNCHS, 1996; Edwards and Hulme, 1992; Murphy, 1990; Hasan, 1990; and Gorman, 1984). In developing countries NGOs and CBOs are increasingly becoming engaged in community development and environmental management activities, including sanitation and solid waste management. These organizations are emerging as effective actors, whose activities and resources either complement those of the state and the private sector, cooperate with those of the state and the private sector in partnership arrangements, or incidentally also replace them (Karanja, 2005; Ikiara *et al*., 2004; ADB, 2002; Muller and Hoffman, 2001). The success and role of NGOs and CBOs in sanitation and solid waste management differs among the various countries in the developing world, depending on the financial, material, and institutional constraints of the organizations and the specific institutional context of the countries they work in.

The growing attention for NGOs and CBOs in urban environmental service upgrading should be understood against the background of years of experiences of failures in modernizing environmental services in urban centers of developing countries. These failures have resulted in the search for new – more successful – practices and models of how existing

sanitation systems and solid waste management arrangements can be improved in a more sustainable way. Various models have been put forward in the modernization of environmental services. The modernized mixtures and partnership perspectives are two recent ideas/models that give NGOs and CBOs a larger role and responsibility in urban environmental services upgrading. Upgrading the provision of sanitation and solid waste services should be understood as the development of so-called modernised mixtures (Spaargaren et al., 2005; Hegger, 2007; Scheinberg and Mol, 2009).

In improving sanitation and solid waste management in African urban centres one should not so much take as reference western models of highly centralized, advanced technological, costly, unsustainable and fully privatized systems. Nor should the focal point be the continuation of existing local decentralized, community-based and low-technological practices and systems. Rather, the idea of modernized mixtures is to develop and implement intelligent, context dependent combinations of western systems and successful local practices and arrangements. This requires a consistent optimisation of sanitation and solid waste technologies, management arrangements, actor involvements and supporting policies. The actual system(s) to-be-used is dependent on the specific local – physical, economic, political and social – context. In most of the African urban centres this context requires a strong involvement of non-state actors in sanitation and solid waste improvement.

Sanitation and solid waste management in Africa is no longer a monopoly of state authorities or the government, if it ever was. Nor do we witness successful sanitation and solid waste services fully run by private companies. It is widely felt that successful sanitation and solid waste management in African urban centres cannot be achieved by one single (collective) actor. In such situations the partnership paradigm (Poncelet, 2000; Linder and Rosenau, 2000; Glasbergen et al., 2007) offers a useful (though sometimes confusing, Linder, 1999) framework to understand and study how various actors collaborate and partner in the provisioning of (collective) goods. The partnership paradigm and theory argues that, in partnership there is a tendency to collaborate in order to solve emergent societal issues, among which environmental ones have been most prominent (cf. Glasbergen et al., 2007). Partnerships are believed to have bounced on the scene globally because many nation states failed in providing basic services (such as sanitation and solid waste services), in particular to the poor (cf. Baud, 2004). Thus partnerships have been seen to promote the expansion in the

quantity and quality of public services beyond levels possible under pure private or pure public arrangements (Ayee and Crook, 2003; Jones, 2000). In addition, some authors claim that a combination of different actors is more likely to meet the variation in demands from the population living under different circumstances (Muller and Hoffman, 2001). The United Nations Development Program (UNDP) also believes that partnerships increase access of the urban poor to basic services (sanitation and solid waste management) through the NGO and CBO participation, and hence contribute to the achievement of the MDGs. In such partnerships, NGOs and CBOs can act as new modernising agents, working together with governmental agencies and private companies in upgrading sanitation and solid waste management.

But in analyzing partnerships in the area of sanitation and solid waste management in Africa, UNDP notices that these have mainly emerged between government and the large private companies. Notwithstanding the rhetoric, often NGOs and CBOs have been excluded from the formal partnership arrangements in sanitation and solid waste. They have played a role in more informal projects and practices of sanitation and solid waste management in poorer urban settlements (cf. Wilson et al., 2006), but the dominant mode of partnerships in solid waste management – and to a lesser extent sanitation – has been to contract large scale private companies by the government. From a modernized mixtures model this is not necessarily the most preferred model; and the practice of Kampala and other urban centres in East Africa seems to illustrate that these market models with large-scale private companies do not solve the urban solid waste and sanitation problems, especially not those of the poor. The call for wider partnerships, also involving CBOs and NGOs, is heard more widely recently, building on a number of successful experiences. But evidence of the involvement, problems and successes of NGOs/CBOs in sanitation and solid waste remains rather fragmented and little systematic. Against this background, this paper aims to review more systematically what the current involvement of NGOs and CBOs is in sanitation and solid waste management in Kampala.

Research methods

A full inventory was carried out between August 2007 and July 2008 among NGOs and CBOs in Kampala, and 62 of these organizations were found to be currently and/or in the

past active in the development and implementation of sanitation and solid waste management. Subsequently, a survey was implemented among these 62 organizations. In addition, over 25 face-to-face interviews were held with key informants from these NGOs and CBOs, from relevant ministries, from local councils or municipalities, and from other government agencies that had links with the NGOs, CBOs and NGO-umbrella organisations. Direct observations were made for identifying some of the major weaknesses and innovative approaches applied in solving problems of sanitation and solid waste management. Annual reports, project and program progress reports, and evaluation reports – both internal and external – on NGOs and CBOs were collected and reviewed. Also collected were reports from the relevant government ministries, departments and agencies.

2.3 Improving sanitation and solid waste through NGOs and CBOs

2.3.1 The NGO/CBO landscape

In total 62 NGOs and CBOs were identified, which (had) carried out sanitation and/or solid waste management activities in the five divisions of Kampala. Over 44 (70%) of the identified NGOs and CBOs were found to be still participating in activities related to sanitation and solid waste management. The other 18 (30%) had stopped their activities in this environmental service sector, mostly because of financial constraints. Of the 44 active NGOs and CBOs, 41 (92%) were involved in other activities besides sanitation and solid waste management. Most of the active NGOs and CBOs were local ones (15 and 17, or 34% and 39%, respectively), while a few were local branches of international NGOs (12, or 27%) that enjoyed varying degrees of autonomy. The international organizations (local branches) carried out a larger diversity of activities (see the section below) than the local NGOs and especially the CBOs (see Table 2.1). The international organizations had funds that enabled them carry out the activities they so wished to support. Local NGOs and CBOs lacked funds for implementation of all planned activities for sanitation and solid waste management.

NGOs and CBOs had varying degrees of geographical coverage of their services. Of the NGOs and CBOs 16 (41%) claimed to provide their services in one division of the city, while 8 (18%) serviced more divisions in Kampala and another 16 (41%) (especially the local branches of international NGOs) serviced more places throughout the whole country (beyond Kampala). Most of the local NGOs and CBOs (30 or 94%) claimed that they chose to serve certain localities, because they aimed to attract a specific category of households, who were

mainly poor and living in unplanned settlements (slums). Most NGOs and CBOs involved in sanitation belong to Uganda Water and Sanitation Network (UWASNET), an umbrella organization that helps with coordination and updating member NGOs and CBOs with information on sanitation. This umbrella organization also contributes to the formation of partnerships among its members.

2.3.2 NGO and CBO activities

NGOs and CBOs in Kampala were involved in a number of sanitation and solid waste management activities as shown in Table 2.1.

Table 2.1. Sanitation and solid waste management activities of NGOs and CBOs (in %)

Activities	International NGOs (local branches) (N= 12)	Local NGOs (N=15)	Local CBOs (N=17)
Advocacy services	9	2	0
Capacity building	12	6	1
Community sensitization & mobilization	12	14	13
Recycling	4	9	11
Construction of latrines	8	5	0
Garbage collection	1	6	12
Support to other NGOs and CBOs	9	1	0
Advisory services	9	1	1
Monitoring services	9	4	0
Cleaning of drainage	3	10	7

Source: survey

About three quarters of all NGOs and CBOs were involved in community sensitization & mobilization. This activity ranked highest among international NGOs (local branches) and local NGOs. These NGOs aimed at changing the behavior of the people towards proper sanitation and solid waste management. For example, Envirocare Initiative, a local NGO, trained over 220 community leaders on proper waste disposal and management in Kawempe division in 2007. This organization also trained 240 volunteers in 2006 to reach out to the communities. Sensitisation of communities was realized mainly informally through local meetings, posters, music and drama. In addition, all the international NGOs (local branches) carried out capacity building, especially for local NGOs and CBOs. And, indeed, all local

NGOs and CBOs indicated that they had followed training from more than one international NGO (local branch). Important areas of training included sanitation and solid waste policy monitoring, ecological sustainable technologies (ecosan toilets and organic recycling), and business skills. Living Earth Uganda, for example, had imparted technical skills in recycling to local NGOs and CBOs. It had trained NGOs and CBOs in sustainable urban agriculture and business skills, such as designing business plans and marketing.

About three quarters of the international NGOs (local branches) carried out advocacy, advisory, and monitoring activities, and provided support services. This was possible because these NGOs had enough financial resources to intensively lobby for policy changes, focusing especially on the solid waste ordinance that was believed to have major shortcomings. The main point advocated was to allow NGOs and CBOs in the overall tendering process for garbage collection contracts. Especially in poor neighborhoods, NGOs and CBOs are believed to operate more effectively than the new private companies. International NGOs (local branches) also monitored activities of local NGOs and CBOs, whom they were supporting. International NGOs such as Concern Worldwide Uganda and Water Aid Uganda assisted local CBOs and NGOs in the implementation of development and management plans for sanitation and waste management facilities, not unlike what many international NGOs in other developing countries do (Pfammatter and Schertenleib, 1996). They also provided local CBOs grants to buy equipment, such as wheelbarrows, spades, sacs, forks and masks for garbage collection.

International NGOs and local NGOs (about two thirds and one third respectively) constructed toilets for individual households and communities. A number of sanitation technologies are implemented by these organizations, mostly ecosan, twin alternating and VIP toilets[2]. These organizations usually contributed 90% of the costs of building toilets, while communities or individuals paid 10%. For extremely vulnerable groups such as widows, HIV-

[2] These three systems are onsite sanitation technologies that are pro-poor and also offer similar benefits and user convenience as the conventional systems. The systems require less water, which is a scarce commodity in those areas, and can be built and repaired with locally available materials. The systems also have low capital and operation costs and claim to be suitable for all types of users. Ecosan toilets are ecologically sustainable because they separate feaces and urine, which allows feaces to dehydrate and be treated to an appropriate level that is safe to use in agriculture. Urine can be recovered. It is suitable for Kampala because of the high water table. The VIP toilets have an external vertical vent pipe with a fly screen at the top, which reduces feacal odor and minimizes fly breeding. However, the ecological sustainability of the VIP toilets and alternating pit latrines is debated, especially given the nature of the local conditions in Kampala, which are marshy and with a high water table.

infected persons, elderly and orphans, NGOs contributed 100% of the toilet construction costs. For example, Sustainable Sanitation and Water Renewal systems (SSWARS) a local NGO, constructed alternating twin pit latrines which are suitable for areas with high water tables and unplanned areas where most poor people are living (slums). The main advantage of this system is that one part of the toilet is used at least up to one year before switching to the next. A loose slab is placed on each toilet side, which can be easily removed when emptying the toilets. When one part of the toilet is filled, it is closed and left to decompose. SSWARS encouraged and sensitised communities on the benefits of using the manure for compost. SSWARS built 10 toilets for communities and the beneficiaries of these toilets contributed 10% of the construction costs. SSWARS remained involved in monitoring the toilets after construction.

According to Kampala City Council about 1500 tonnes of waste is generated daily and of this only less than half (600 tonnes) is collected and taken to the dumping site (Kitazi). These 1500 tonnes of waste contain 170 tonnes of plastic waste, of which only 2% is collected for recycling. According to the National Environmental Management Authority about 3000 tonnes of plastics waste remains uncollected in the city streets. The overwhelming amount of uncollected waste has attracted a number of actors, such as NGOs and CBOs, that seek to improve the situation through better collection rates and more recycling.

Garbage collection and solid waste recycling was primarily an activity of local NGOs and CBOs, but their involvement in solid waste collection is diminishing. Solid waste collection services initially carried out by the local NGOs have been greatly affected by the introduction of privatization. Under privatization, KCC gives contracts for garbage collection only to medium-sized and large private companies. While working reasonably well in the planned, richer areas, these companies often fail to satisfy poor communities in the unplanned settlements. The large trucks used by these companies cannot access these settlements and payments for waste collection are often too high for the poor. While the solid waste ordinance advocates equal involvement of private companies and NGOs/CBOs in solid waste collection services, NGOs and CBOs feel they have been sidelined. For example, KCC requires bank guarantees of 5 million Uganda shilling (US$3000) and access to trucks for transporting waste in order to enter the solid waste tendering process. Hence, most of the local CBOs

collecting the garbage have to work with the large private companies contracted by the local government (cf. Table 2.2).

Table 2.2. Partnerships involving NGOs and CBOs (%)

Collaboration with:	International NGOs (local branches) (N=12)		Local NGOs (N=15)		Local CBOs (N=17)	
	N	%	N	%	N	%
Government	10	83	15	100	17	100
Private company	1	8	4	27	10	60
other CBOs or NGOs	11	92	14	93	17	100

Source: survey

In contrast to waste collection, recycling activities by CBOs and NGOs are not (yet) affected by unfavorable state policies. Recycling activities are important because they reduce the amount of waste reaching the dump site, reduce the accumulation of waste in homes and neighborhoods, and generate income. Uncollected plastic waste deteriorates the living environment and blocks water channels, accelerating flooding in various neighborhoods in Kampala. Some NGOs, such as Envirocare Initiative, have been successful in organizing recycling activities. In both 2006 and 2007 over 7 tons of deposited plastic and polythene waste was collected from the communities in Kawempe division and taken to recycling industries in Nakawa. While the amount of plastic waste collected for recycling appears small compared to the total amount of plastic waste, it contributes greatly to the 2% of plastic waste that is collected for recycling in Kampala as mentioned above. Other recycling activities included the production of organic manure, making of crafts, roofing tiles, fencing poles (from plastic waste) and charcoal briquettes.

In conclusion, those activities that require significant resources (monetary resources, fixed capital/equipment, knowledge and information, and access to politics) are predominantly carried out by (local branches of) international NGOs, while the domestic local NGOs and CBOs are more and more pushed towards sensitization, waste recycling, drainage cleaning, and garbage collection.

2.4 NGOs and CBOs in partnerships

As mentioned above in the introduction, as early as the mid-1990s the government of Uganda recognized the limited capability and capacity of Kampala local authorities to provide

adequate sanitation and solid waste to all the urban communities, and especially to the poor. In order to increase the provision of sanitation and solid waste services the government actively involved NGOs, CBOs and private companies through various partnerships. This is in line with what is observed more generally: most recent interest in partnership in the environmental field is related to partnership where civil society is present (Mol, 2007: 219). Indeed, all the NGOs and CBOs in our survey participate in some form of partnership (often in more than one partnership) with government, private companies and other NGOs and CBOs (cf. Table 2.2).

2.4.1 Partnership with governmental authorities

All the local NGOs and CBOs and over three quarters of the international NGOs (local branches) were in some form of collaboration with governmental authorities in sanitation and solid waste management. Despite the widely perceived shortcomings in sanitation and solid waste management policies of KCC among these organizations, the NGOs and CBOs continued cooperating with KCC. KCC also affirmed their priority to work with NGOs and CBOs in promoting good sanitation and solid waste management, especially in the poorer neighborhoods. The forms of collaboration and the level of formalization and institutionalization of that collaboration, differed widely. For some NGOs and CBOs involved in garbage collection, KCC provided trucks once a month for transporting garbage to the dump site. International NGOs (local branches) collaborated – often not very systematic and planned – with KCC in the provision of toilets to poor communities. Other modes of collaboration take a more formal, institutionalized form, such as annual contracts given by KCC to NGOs and CBOs to sweep parts of the city. While this collaboration aimed at improving sanitation and solid waste management, it also created employment to the members of local NGOs and CBOs. Kisenyi Community Health Workers Association (KICHWA), a local NGO, had 211 members participating in street sweeping contracts at a monthly fee of 75,000 Uganda shillings (approximately US$45). NGOs and CBOs involved in such collaborations have been able to sustain themselves through deducting a fee of 10% from the street sweepers' allowance.

Donor projects in other developing countries such as India advocated for effective partnerships between government, NGOs, and CBOs to ensure access of the urban poor to

environmental services (USAID FIRE D Project, 2002). In Uganda such projects have not yielded much and generally collaboration between government authorities and NGOs/CBOs in Kampala is in need of further formalization and institutionalization. The existing institutional framework is not conducive to enhance collaboration, provides NGOs and CBOs no formalized role and enables governmental authorities to neglect NGOs and CBOs, even if they are already involved in for instance donor projects or local activities in sanitation and solid waste management. This results in actual and potential future conflicts in the roles of government and NGOs/CBOs in sanitation and solid waste provisioning. In addition, in partnerships of NGOs/CBOs and government the roles of the government and the NGOs/CBOs are often not well defined and hence do not address issues of responsibilities and accountability. There is need for further institutionalization and formalization of cooperative efforts to realize their potential and their objectives. Hence, the role of NGOs and CBOs should be formalized in policy documents and laws, in order to get collaborations better institutionalized. Only then can such partnerships improve public service delivery, as we see in other developing parts of the world (cf. Anschütz, 1996; Serageldin et al., 2000).

2.4.2. Partnership with private companies

Partnerships with private companies are predominantly found with CBOs and in garbage collection and recycling activities. Some foreign private companies provide funds for purchasing equipment for garbage collection and for the construction of demonstration sites for recycling. Other private companies, especially plastic recycling industries, also support community mobilization and sensitization activities of local NGOs and CBOs. Incentives – in the form of basic necessities such as sugar, soap, salt – were provided to local communities involved in recycling activities, through local NGOs and CBOs. International NGOs (local branches) hardly collaborated with private companies. For the few NGOs that developed a partnership with private companies, it was mainly in the area of toilet construction for individuals as well as for communities.

Private companies contracted by the government to collect garbage face challenges from communities who fail to pay for their services (cf. Broekema, 2004). In various cases government authorities have involved NGOs and CBOs to assist private companies with sensitization of communities on issues of garbage collection and the fees involved. But such

collaboration often fails, also in Kampala, especially in cases where private companies set fees higher than the initial fees of the government or of NGOs/CBOs. Only when CBOs/NGOs were involved from the start of garbage collection contracting, such partnerships proved successful.

2.4.3. Partnership with other NGOs and CBOs

Almost all NGOs and CBOs are engaged in collaborative relations with other NGOs and CBOs in sanitation and solid waste management. International NGOs (local branches) provided financial support and capacity building to local NGOs and CBOs. The Uganda Water and Sanitation Network (UWASNET), to which most NGOs and CBOs working in sanitation belong, helps with coordination and sharing information on sanitation, thereby also contributing to the formation of partnerships among its members. Partnerships have increased access of the urban poor to basic services such as sanitation and solid waste, and have expanded the quantity and quality of public services beyond levels possible under pure private or pure public arrangements (Ayee and Crook, 2003; Jones, 2000). While Uganda acknowledges the importance of partnerships in solving the sanitation and solid waste situation, these partnerships are yet to yield results in terms of improved quantity and quality of the urban poor sanitation and soil waste management. For instance despite the collaborations between NGOs, CBOs and government, 38 (or 86%) of the NGOs and CBOs judged partnership collaborations as neither preferential nor as a barrier for successful sanitation and solid waste systems. This lack of trust and confidence in partnerships or collaborations is a hindrance to solving problems of sanitation and solid waste management.

2.5 Constraints and challenges for NGOs and CBOs

In working on sanitation and solid waste issues in the Kampala divisions, NGOs and CBOs experienced a number of challenges, of which the three most important and widely mentioned are outlined in Table 2.3.

Table 2.3. Challenges/constraints met by NGOs and CBOs in sanitation and solid waste

Challenges	International NGOs (local branches) (N=12)	Local NGOs (N=15)	Local CBOs (N=17)
Inadequate finances	All	all	all
Policy shortcomings	All	all	all
Politics	All	all	15 (88%)

Source: survey

2.5.1 Financial Constraints

The current local government procurement guidelines do not have a provision for NGOs and CBOs to access the available government funds for sanitation and solid waste management. Consequently, NGOs and CBOs in Uganda have experienced difficulties in accessing government funds for implementing their sanitation and solid waste management activities, and are dependent on donor funding or on their own income sources (Government of Uganda, 2007; interviews). Indeed, almost all studied NGOs and CBOs were donor dependent and received funds mainly from international NGOs and local branches of international NGOs. They see it as their challenge to reduce their donor dependency, as it was often perceived as problematic, undesirable and not sustainable. Donors and international NGOs have too much external influence on the agenda and activities of local NGOs and CBOs. Most of the international NGOs and donors have local branches within the country through which funds and support for the local NGOs and CBOs is channeled. They monitor closely the activities of the local NGOs and CBOs and ensure that they are in their interest. While this influence has been largely positive, it did result in a failure of CBOs and NGOs to stand on their own and behave more independently.

Partly related to the donor dependency NGOs and CBOs faced the problem of inadequate funds to provide services to all the communities within their territory of operation. The common approach to access more financial resources was through increased recycling activities and through membership fees. However, the revenues collected through recycling were too little and membership fees proved often unaffordable for the poor. For example, Living Earth Uganda, an international NGO (local branch), trained local NGOs and CBOs to be self-sustaining. They did this through imparting business skills to these organizations, training them to look at waste as a business opportunity. In the developed business models the production of organic manure, making of crafts, charcoal briquettes production, and selling

collected plastic waste to plastic companies are key income generating activities. A side-effect is, however, that CBOs start competing with the private companies for clients in the more affluent areas, while ignoring the poor communities they originally served. This dilemma is not unique to Kampala; similar cities in developing countries face this problem (cf. Kaseva and Mbuligwe, 2003). There are two ways out of this dilemma of donor dependency. A further upgrading and diversification of strategies/activities for acquiring income by NGOs and CBOs, so that they become self-sustaining. Or government contracting of sanitation and solid waste services to these organizations (see below). Both strategies result in civil society organizations that increasingly take up business characteristics.

2.5.2 Policy Constraints

One of the major constraints identified by NGOs and CBOs is related to the current sanitation and solid waste policies. Although current policies fully recognize the value of NGOs and CBOs and include them formally under the private sector, all the work is contracted out to large-scale formal private companies. This situation is similar to Cairo (El-Karawy, 2006; Wilson et al., 2006), where the city authorities contract out waste management to international companies and neglect the position of the civil society organizations in sanitation and solid waste. But other major urban centers show contrasting practices. Dar es Salaam has adopted new sanitation and solid waste approaches, by giving contracts to local NGOs and CBOs (Kaseva and Mbuligwe, 2003; Bhatia & Gurnani, 1996; Post, 1999; Karanja, 2005). The solution for Kampala would not be very complicated. Privatisation of solid waste management resulted in the requirement that all involved parties have trucks for garbage collection and transport, although the poor unplanned urban areas lack roads to accommodate these trucks. A policy change to allow the replacement of trucks by wheel barrows and other equipment, which can access unplanned neighbourhoods, would take away one of the most significant current barriers for NGO/CBO involvement. More structurally, NGOs and CBOs would need to become involved in all stages of the waste and sanitation policy-making process, to prevent such barriers in the future. For this to happen there is a need to harmonize more effectively sanitation and solid waste policies in order to provide an enabling environment for the involvement or participation of NGOs and CBOs.

2.5.3 Politics

Close to all civil society organizations in this study experience local political interference as a major constraint, especially close to and during elections. NGOs and CBOs are more than incidentally accused by politicians to be political mobilizers, rather than genuinely carry out sanitation work. This perception by politicians hinders their activities. The inability of local NGOs and CBOs to sustain their activities in sanitation and solid waste management and shifts in their goals in times of financial shortage, contribute to that suspicion by politicians. More transparency and further involvement of all stakeholders in their work is seen as key strategy to overcome these political constraints.

2.6 Conclusion

NGOs and CBOs are no longer standing on the sidelines of sanitation and solid waste management, waiting to be called to take up the leftovers of conventional urban service provisioning; they are already fully involved. By the same token, these civil society organizations move beyond just implementing marginal projects in poor neighborhoods. In that sense we see a kind of modernized mixture model emerging, where the conventional advocates of large-scale, privatized, and high technological sanitation and solid waste services become mixed with civil society organizations whose activities and agendas initially remained limited to small projects in poor unplanned neighborhoods. It becomes increasingly accepted that effective sanitation and solid waste management in African cities can only be achieved through collaboration of governmental authorities and agencies, NGOs and CBOs, and the private sector (Oosterveer, 2009). Hence the idea of environmental partnership is widely shared and supported.

But the successful implementation and operationalization of, and the division of tasks, responsibilities and power in, such partnerships proves far from easy and comes along with major hurdles and constraints. Hence, the involvement of NGOs and CBOs has been hampered by, among others, shortage of resources, donor dependencies, central policies that favor the formal large-scale private companies, and lack of government recognition. While policies formally advocate for involvement for NGOs and CBOs, these policies have not been very helpful for civil society organizations in practice because of the official conditions included. Therefore, for NGOs and CBOs to successfully become partner in the

implementation and development of sanitation and solid waste services, a reform is necessary of the policies, the policy-making process as well as the policy enforcement. This asks for a further rethinking of the role of the public and private actors in urban service provisioning. Can we have just partnerships in implementation of service provisioning, while leaving the policy design and the enforcement in the hands of the state? Most likely not. And if we widen the partnerships in urban services beyond the execution of government policies, what is the key and specific role of the state in such public-private partnerships (cf. Mol, 2007)? Is it just one among the many partners or does the government continue to have primacy in regulation, monitoring, enforcement and execution? Hence, the often quoted solution of partnerships for the problem of ineffective sanitation and solid waste management in African cities, raises a number of new, challenging issues.

CHAPTER 3: ACCESS OF URBAN POOR TO NGO/CBO-SUPPLIED SANITATION AND SOLID WASTE SERVICES IN UGANDA: THE ROLE OF SOCIAL PROXIMITY♦

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Abstract

Inadequate urban sanitation and solid waste management in Uganda has prompted policy reforms in the two sectors. As part of this reform, non-governmental organizations (NGOs) and community-based organizations (CBOs) have increasingly become involved in improving the sanitation and solid waste situation in poor urban informal settlements. This paper investigates whether social proximity influence access of the urban poor to sanitation and solid waste services provided by NGOs and CBOs. Using a sample of 337 households from 12 poor informal settlements in Kampala, social proximity in addition to other conventional factors proved relevant in explaining access of the poor to NGO and CBO solid waste and sanitation services.

Keywords: sanitation, solid waste, urban poor, NGO, CBO, social proximity

3.1 Introduction

Notwithstanding the impressive improvements in Uganda's economic performance over the past decade (as evidenced via indicators of the United Nations Statistics Division and World Bank), the number of poor people has not significantly reduced. The African Development Bank still estimates that about 51% of Ugandans live on less than US $1 per day. Poverty has probably even accelerated due to the recent financial crisis (2008/2009), which has led to high inflation and unstable exchange rates. Estimates further indicate that Uganda's population will be 68 million people in 2035 with 30% of the population living in urban centers, representing an urban total population of 20 million people (Oketch, 2010). This means that poverty will continue to reign in urban centers such as Kampala, if the needs of the current population are not met.

Urban poverty is a multidimensional phenomenon which should not only be associated with low income but also with lack of access to basic services (The Millennium Development Goals Report, 2008). Lack of access to basic services such as drinking water, sanitation and solid waste management is not only a consequence of poverty but it also "increases vulnerability and reduces productivity" (Practical Action, 2007). Moreover when people have no access to adequate and affordable sanitation and solid waste management services, it denies them the decent standard of living to which they are entitled as a human right (cf. WHO, 2003). The connection between poverty and lack of access to urban services is acknowledged internationally through the Millennium Development Goal number 7, targets 3 and 4: halving the number of people without access to safe drinking water and sanitation by 2015, and improving the lives of at least 100 million slum dwellers by 2020.

Inadequate access to sanitation and solid waste services has detrimental effects on human and environmental health, which weighs heavily on the urban poor. In spite of large investments in the urban sanitation and solid waste management sector by the government, the private sector, NGOs, and the international donor community (see Water and Sanitation sector Performance Report 2009 of Uganda; UWASNET, 2009), the access of urban poor to sanitation and solid waste services in Uganda still remains marginal. The government of Uganda recognizes that improved access to sanitation and solid waste management could immensely contribute to improving health and reducing poverty (see its Poverty Eradication Action Plan, Pillar 5), but it has been unable to increase performance in these areas. Even

international recognition through the MDGs of these basic services and rights as essential to eradicate poverty and improve health, did not change much in urban centers of Uganda.

Among others, NGOs and CBOs in Uganda have also acknowledged the inability of the government to meet the needs of the urban poor in this respect and the high costs involved in private service provision make these services unaffordable for the urban poor. Consequently NGOs and CBOs have come on board to supplement governmental and private efforts, and their role and contribution may be paramount as they work closely with poor communities. Recent studies on urban sanitation and solid waste management have emphasized the importance of NGOs and CBOs as actors that are filling the gaps left by government service provision (Karanja, 2005; Tukahirwa, Mol, & Oosterveer, 2010). During a previous study on civil society participation in urban sanitation and solid waste management in Uganda (Tukahirwa et al., 2010), NGOs and CBOs were found to be actively involved in the development and implementation of sanitation and solid waste management services and facilities, particularly in poor areas. Despite the involvement of a large number of the previously mentioned organizations, the sanitation and solid waste management situation for the urban poor continues to worsen. Additionally little systematic knowledge exists on the actual access of the urban poor to these NGO and CBO services and facilities. For instance, the Water and Sanitation sector Performance Report 2009 of Uganda puts overall access to urban sanitation and solid waste management at 73% and about 38% respectively, but it does not differentiate between the urban poor and the rich, or between the providers of these services. It is therefore not clear who exactly serves the urban poor and to what extent.

One of the remedies to the situation of the urban poor would be to identify key factors that influence access of the urban poor to sanitation and solid waste services provided by NGOs and CBOs. To that end, this paper empirically investigates the determinants of access of the urban poor to services provided by these organizations in Kampala, Uganda's capital city. In studying access we are especially interested in factors related to social proximity, as - compared to conventional spatial proximity, socio-economic and perception factors - little is known on these social proximity factors. Uganda was chosen as a developing country example because of the major role civil society organizations play in urban service provision especially for the poor. The paper starts by exploring the theoretical background of the

possible determinants of access. Subsequently the methodology of this study is outlined, followed by a presentation and analysis of the results. The paper finishes with a conclusion.

3.2 Factors determining access to sanitation and solid waste services

There have been several attempts to define access in studies on health and environmental services intended to support the poor (such as Penchansky & Thomas, 1981; McLafferty, 2003). Despite their attempts to define the concept of access, these authors acknowledge that the concept is used in different ways throughout the literature and has often been ill-defined. In this paper access refers to the ability to use sanitation and solid waste services. Scholars have categorized factors determining access in various ways. Barton (2003), for instance, shows that actual access may be influenced by factors such as predisposition, needs and enabling factors. Predisposition factors include individual characteristics such as age, gender, and education, while need factors relate to demand and enabling factors to physical and socio-economic abilities to access, such as income and cost. In our research we make a slightly different categorization in factors determining access of household to these services. This research investigated three common set of factors determining access (spatial proximity, performance perception and socio-economic factors) and one less commonly investigated sets of factors (social proximity). Compared to spatial proximity, performance perception and socio-economic factors, social proximity has hardly been investigated. In addition, we controlled access for individual characteristics of age and gender.

3.2.1 Perception factors

Perceptions of service users on service providers can influence access to these services. Cronin and Taylor (1992) argue that performance perceptions are proxy variables for the evaluation of service quality. Perceptions on performance (or service quality) could influence access to the service. Such perceptions of service quality have been described as attitude that results from the comparison of expectations with actual performance (Bolton & Drew, 1991a; Parasuraman, Zeithaml, & Berry, 1988 in Cronin & Taylor, 1992: 56). We thus expect attitudes of households to NGO/CBO services to be correlated to the perceptions of the quality of their services, and in that way influential in actual access of households to

sanitation and solid waste services. Perceptions of competence of a service provider is another important factor that may determine access, as suggested by Price, Arnould, and Deibler (1995) and Spreitzer (1995). Perceptions of incompetent service providers contribute to negative feelings about the service and service quality, inhibiting access.

3.2.2 Socio-economic factors

Socio-economic factors such as income and service costs have been widely suggested as main drivers to access services (e.g. recently by Moe & Rheingans, 2006; Montgomery & Elimelech, 2007; Wan & Francisco, 2010). There is sufficient evidence that these factors play a significant role in the access of urban residents to services of sanitation and solid waste collection. Nonetheless, especially in more homogeneous neighborhoods (such as poor slum areas) and with not-for-profit organizations as urban service providers economic factors might not be the only or even the main factors determining access of these poor residents to urban services. Education is also often seen as an important determinant for access to public services. We further investigate the extent to which these household socio-economic factors matter for accessing NGO/CBO services.

3.2.3 Spatial proximity

Few scholars (e.g. Allard, 2004; Allard, Tolman, & Rosen, 2003) have studied the influence of spatial proximity on access of the urban poor to social services. These scholars argue that proximity to social service providers increases the likelihood of service utilization of individuals in need of care or assistance. Allard et al. (2003: 3) further point out that, "spatial proximity to social service providers is an important condition for adequate access to governmental and non-governmental service providers, as low income individuals who are not proximate to service providers will face greater obstacles to receiving assistance than low income individuals living near service providers". Furthermore, individuals are believed less likely to have information about service providers outside their immediate geographical area, reducing the likelihood that they seek services from these less proximate, but potentially helpful, providers. Some have argued that neighborhood residents may view a nearby NGO facility as inaccessible if it is located beyond their (socially defined) neighborhood boundary (Montgomery, Stren, & Cohen, 2003). Others have suggested that the activities of NGOs are

spatially organized (James, Schulz, & van Olphen, 2001), and that spatial proximity of network members may be a requirement if they are to provide one another with day-to-day assistance. We therefore hypothesize that spatial proximity is a relevant factor in urban poor accessing sanitation and solid waste services. Hence, we studied the spatial proximity of poor households to both NGO/CBO offices and to the facilities they provide, to determine whether proximity influences actual access.

3.2.4 Social proximity

Social proximity refers to the dense interactions and 'bonding' of social relations in social networks. Social relations are fundamental elements for our every day existence and often studied through social networks which in general terms are composed of a set of nodes or actors (individuals or organizations) mutually connected by a set of social relationships with specific kinds of interdependencies such as shared values, cultures, visions, or ideas (Barnes, 1954; Brass, 1992). The social network perspective enables researchers to study the social actors (see Galaskiewicz & Wasserman, 1994) and their beneficiaries as well as the social relations between them and the implications of these relationships on, for instance, the provision of and access to services. Some scholars (e.g. Bendapudi & Berry, 1997; Lovelock, 1983) have indicated that many services by their very nature require ongoing membership, and that even when membership is not required, customers may seek on-going relationships with service providers to reduce the perceived risk in assessing service credibility properties. Bendapudi and Berry (1997) further suggest that, interaction between the customer and the service provider has the potential to strengthen, weaken or even destroy the relationship between them. They explored the frequency of interaction between the customer and the service provider and proposed that the more the customer interacts with the service provider the more opportunities the customer has to evaluate the service. And when interactions are satisfactory, frequency would lead to greater trust (Bendapudi & Berry, 1997: 26). Also other scholars (Krishna, 2004; Bowles & Gintis, 2002; Nyangena, 2008) argue that social networks can foster cooperative behavior and ease coordination problems which in our case could ease access to NGO/CBO services. Morgan & Hunt (1994 in Berry, 1997) also point out that cooperation requires an active participation in the relation to achieve mutual benefits and others define it as working together to achieve mutual goals (Anderson & Narus, 1990 in

Bendapudi & Berry, 1997). To this effect (Rahman, 2004), found cooperation was essential in resolving conflicts, sensible issues and crises in NGO water and sanitation projects in third world poor urban areas.

Access of the urban poor to sanitation and solid waste services is complex and demanding because of the nature and vulnerability of this group of people. While this group of people is economically poorly equipped to deal with their issues of solid waste management, they have strong social bonds that could help them deal with such issues. As some authors (Pargal, Huq, & Gilligan, 1999) put it, solid waste servicing is an activity where individual action does not have much impact and therefore collective action, which is a function of social proximity, is necessary. This study thus investigates the extent to which social proximity in networks around NGOs/CBOs matter in access of the poor to NGO/CBO-run services. Can we expect that the urban poor that are within social networks of NGOs/CBOs have more/better access to their services, than those who are not within the core of their social network? To analyze this we have to study (strong or weak) ties between actors in these social networks. Likewise we anticipate that social proximity is not the only set of factors that may influence access of the urban poor to services provided by the NGOs/CBOs, but that spatial proximity, perception and socio-economic factors also help in explaining access.

CBOs versus NGOs

In most studies on poor households in developing countries NGOs and CBOs are treated as one category of actors, as both are non-profit organizations, both belong to civil society and both have similar objectives in working for the poor. For example, Hearn (2007) reports that as NGOs and CBOs work together especially on donor funded programs the distinction between the two becomes less clear. Although the aim of this paper is not to distinguish between NGOs and CBOs, it is important to be receptive on the differences between the two, because it may result in different factors being relevant in explaining access of the poor to the services they provide. As CBOs originate from within a community and are usually led by community leaders, they have a more in-depth understanding of their local community, engage actively and frequently with community members and hence are in a better position to prioritize problems within their contexts. NGOs have a wider scope of

activities and a wider knowledge of various communities, which enables them to learn across communities from best practices and failures. Although both are membership organizations, the type, 'bonding' and active participation of members of NGOs may differ from that of CBOs. In assessing the factors that determine access of poor households to sanitation and solid waste services we will distinguish between CBOs and NGOs.

3.3 Empirical Strategy and Data Collection

To analyze the influence of perceptional and socio-economic factors as well as the social proximity on access of urban poor to sanitation and solid waste services in Kampala a survey was conducted between May 2008 and July 2009 in 12 selected poor neighborhoods (slums), distributed over three divisions[3] (Kawempe, Makindye, and Central). These 12 neighborhoods were purposively chosen as being together representative for the major poor neighborhoods in Kampala city (Fig. 1). Within each neighborhood 35 households were selected using a random sampling strategy following a list of residents provided by the local leaders. If the targeted respondent was not available or not interested to take part, the next household on the list was chosen, in order to attain the desired sample size. Following scarce studies on spatial proximity (or the role of distance) in the access of households to healthcare facilities (Cromley & McLafferty, 2002; Higgs, 2005; Higgs & Gould, 2001), geographic information systems (GIS) were used to relate the location of NGO/CBO offices and facilities such as toilets to poor households. Global positioning systems (GPS) were used to collect data on the actual locations of NGOs/CBOs offices, their facilities and the individual households. Distances were automatically generated using the point distance proximity tool in ArcToolbox.

A total sample size of 420 households was drawn following the above mentioned sampling frame. However, ultimately 337 respondents were actually included in our study, a final response rate of 80% (caused by constraints of time and budget). The pretested questionnaire was divided into three parts. The first part consisted of questions on social, demographic, and economic characteristics of the selected households. The second part contained questions about the household's access to NGO- and CBO-supplied services and

[3] The study was carried out in three divisions which were purposively selected because of the presence of large numbers of poor neighborhoods (slums) which NGOs and CBOs claim to serve (Fig. 3.1).

their perceptions about the previously mentioned services. The final part consisted of questions about the household's social proximity. Social proximity factors such as trust are difficult to address empirically because 'people carry it inside their heads' (cf. Krishna, 2004: 296). To measure trust the survey asked questions about its determinants of trustworthiness, empathy, reliability and promptness measured on a Likert scale of disagree (1) to agree (3). Responses on these determinants were highly correlated with one another and they all loaded highly on the single common factor of the trust indicator of social proximity using factor analysis. Additional sources of information were interviews with key informants from the community, with employees from NGOs and CBOs as well as with local authorities.

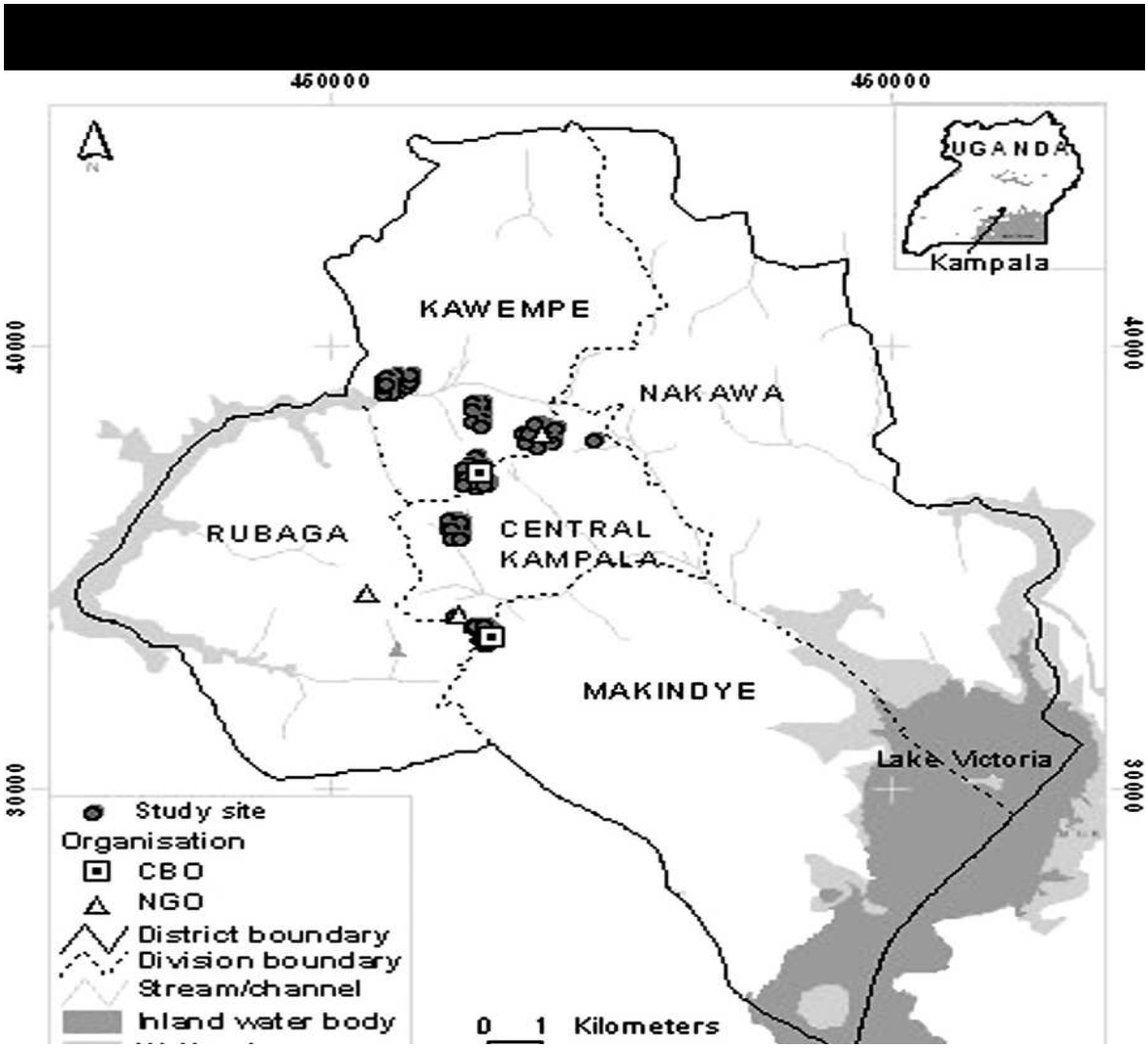

Figure 3.1. Map showing location of study sites in Kawempe, Central and Makindye divisions in Kampala district.

Survey data were coded and analyzed using STATA. Simple descriptive statistics, non-parametric techniques and the logit model were applied to examine the four categories of factors that may explain access of poor households to services. We added age and gender as control variables to see whether these make a difference. The two-sample Wilcoxon rank-sum (ManneWhitney) test was used to compare differences between poor households that accessed and those that did not access NGO/CBO services. We use the logit model to estimate the factors that determine access to sanitation and solid waste services. The relevant empirical specification is a binary logit that describes the probability that access is realized, given certain spatial proximity, social proximity, perceptional and socio-economic factors. For this purpose, four equations are specified as below. The first equation stands for the access to solid waste services provided by NGOs (ANGOSW). The second equation relates access to solid waste services provided by CBOs (ACBOSW). Equation (3) represents the access to sanitation services provided by NGOs (ANGOSAN) and finally equation (4) relates to sanitation services provided by CBOs (ACBOSAN).

$$ANGOSW = \beta_0 + \beta_1 SPF + \beta_2 PF + \beta_3 SNF + \beta_4 SEF + \varepsilon \quad (1)$$

$$ACBOSW = \beta_0 + \beta_1 SPF + \beta_2 PF + \beta_3 SNF + \beta_4 SEF + \varepsilon \quad (2)$$

$$ANGOSAN = \beta_0 + \beta_1 SPF + \beta_2 PF + \beta_3 SEF + \varepsilon \quad (3)$$

$$ACBOSAN = \beta_0 + \beta_1 SPF + \beta_2 PF + \beta_3 SEF + \varepsilon \quad (4)$$

where, SPF is a vector of variables representing spatial proximity (distance), PF stands for perception related factors, SNF for social proximity factors, and SEF standing for socio-economic factors. Finally, ε represents all potential residual factors of the model (as our goal is not to build the best predictable model, this value can be substantial). Table 3.1 gives the definition and the expected impact of the explanatory variables considered for the three equations above.

Table 3.1 Definition and expected impact of explanatory variables

Explanatory Variable	Cate-gory	Description	Expected impact
Age		Age of household head (in years)	+/-
Gender		Male head (equals 1) and 0, if female.	+/-
Education	SEF	Years of formal education of the household head	+
Income	SEF	Monthly income of the household head (in UG shillings)	+
Cost	SEF	Cost of services (in UG shillings)	-
Trust	SNF	Trust of NGO/CBO services a measure of the following; trustworthiness, empathy, reliability and promptness measured on scale ranging from totally disagree (equals 1) to totally agree (equals 5).	+
Membership	SNF	Membership to an NGO/CBO, coded 1 if the respondent is a member of an NGO/CBO providing service and 0, if not	+
Cooperation	SNF	Working together with an NGO/CBO to improve the sanitation and solid waste situation coded 1 if the respondent cooperatives with NGO/CBO providing service and 0, if not	+
Attitude	PF	A measure of positive or negative feelings of a household towards the quality of NGO/CBO services. It is measured on a range from negative (equals 1) to positive (equals 5)	+
Competence	PF	The perceived capability and efficiency of the NGOs/CBOs to provide satisfactory services measured on scale ranging from total disagree (equals 1) to totally agree (equals 5)	+
Distance to office	SPF	Proximity of households to NGO/CBO office in km	-
Distance to toilet	SPF	Proximity of household to toilet provided by NGO in km	-

Source: survey

3.4 Results and interpretation

From the survey about 65% of the households accessed sanitation services and only 56% accessed solid waste services. However, a significant number of slum dwellers did not have access to any of the two services (see Table 3.2). Of those that accessed sanitation services, about 28% received them from NGOs and only 6% from CBOs. Of those that accessed solid waste services, about 22% obtained them from NGOs and about 30% from CBOs.

The mandate to provide sanitation and solid waste services is with the government which then decides which actors to contract the services to. For the case of solid waste services the government contracts services only to private companies and sometimes government works with a few NGOs and CBOs in sanitation service provision to the urban poor (Tukahirwa et al., 2010). However, the results in Table 3.2 show that more urban poor access solid waste services of NGOs/CBOs compared to the contracted private companies. The results also indicate that access to solid waste services provided by CBOs is comparable

Table 3.2. Household access to service providers and none access to services (N=337)

Services / **Providers**	Sanitation	Solid waste
NGOs	61	39
CBOs	15	53
Government	113	53
Private companies	20	24
Others	11	10
None	117	158
Total	337	337

Source: survey

to that of government. Government is still not only the main sanitation service provider but also quite a number of the urban poor do access NGO services. Despite the engagement of all the three actors, the results show that quite a number of urban poor households still lack access to sanitation and solid waste services. We specifically try to analyze why some households access services from NGOs/CBOs while others in the same locations are without access to any service providers (government, private companies, or NGOs/CBOs).

3.4.1 Access of poor households to NGO/CBO solid waste services

Although our sampled respondents were all selected from poor informal settlements we expect differences between the recipients of NGO/CBO services and those who never received any institutionalized service. Significant differences between recipients of NGO/CBO solid waste services and non-recipients of solid waste services are observed for distance between home and NGO office, membership to NGO, cooperation with NGO, trust in NGOs, positive attitude of the respondent to NGO-provided services, and competence of NGOs (all significant at 1% level) (see Table 3.3). For CBOs, significant differences are observed for the distance between home and CBO office, membership to CBO (both significant at 5% level), trust in CBO services, cooperation with CBOs, positive attitude toward CBOs providing services, and competence of CBOs (all significant at 1%). In addition, older people seem to have more access to CBO solid waste services than younger people (significant at 5% level).

Table 3.3. Comparison of households receiving solid waste services by NGOs/CBOs, with those receiving no services at all.

Explanatory Variables	NGO			CBO		
	Access Mean	No-access Mean	z statistic	Access Mean	No-access Mean	z statistic
Age	33.25	34.90	- 1.017	38.17	34.07	2.040**
Gender	0.59	0.63	-0.540	0.57	0.64	-1.033
SNF						
Trust	0.72	0.28	5.400***	0.85	0.24	8.659***
Membership	0.28	0.10	3.166***	0.23	0.10	2.446**
Cooperation	0.69	0.20	6.567***	0.49	0.21	4.193***
PF						
Attitude	3.00	2.03	4.845***	2.83	2.01	4.729***
Competence	0.64	0.26	4.925***	0.81	0.20	8.832***
SEF						
Education	5.03	3.86	0.316	4.42	3.92	1.551
Income	128744	128829	-1.677	139830	126757	0.266
Cost	935.89	728.00	1.000	630.19	834.4	-1.417
SPF						
Distance to office	1.35	2.71	-4.566***	1.88	2.68	-2.034**

Note: *, ** and *** significant at 10%, 5%, and 1% levels, respectively

While there are some main differences between those who access and those who do not access NGO/CBO services it is not obviously clear which differences in the descriptive statistics might explain access. To understand and determine the exact explanatory factors that might influence solid waste management we turn to the logit model.

We estimate two equations ANGOSW and ACBOSW (see above) for access of solid waste services provided by NGOs and CBOs respectively. The purpose is to examine which factors determine access to services of the previously mentioned organizations, with a special focus on spatial proximity. Obtained coefficients are based on robust and clustered standard errors at household level and the marginal effects of explanatory variables are computed at their sample means (Table 3.4).

Table 3.4. Determinants of access to NGO and CBO solid waste services

Explanatory Variables	Access to NGO		Access to CBO	
	Est. Coefficient (Robust std. error)	Marginal effect	Est. Coefficient (Robust std. error)	Marginal effect
Age	-0.009 (0.021)	-0.001	0.024 (0.017)	0.004
Gender	0.470 (0.461)	0.053	-0.592 (0.524)	-0.108
SNF				
Trust	0.663 (1.742)	0.079	5.566 (2.083) **	0.977
Membership	0.170 (0.609)	0.021	-0.668 (0.724)	-0.103
Cooperation	2.098 (0.575)***	0.301	-0.726 (0.584)	-0.121
PF				
Attitude	0.757 (0.204)***	0.090	0.272 (0.188)	0.048
Competence	-0.420 (0.678)	-0.050	1.005 (0.573) **	0.174
SEF				
Education	0.071 (0.041)*	0.008	-0.071 (0.043)*	-0.012
Income	-0.581 (0.232)**	-0.069	0.132 (0.316)	0.023
Cost	0.001 (0.000)*	0.000	-0.001 (0.000)**	-0.000
SPF				
Distance to Office	-0.386 (0.141)**	-0.046	-0.101 (0.133)	-.0176
Number of observations	172		172	
Wald chi2(17)	40.93		40.11	
Prob > chi2	0.0000		0.0000	
Pseudo R2	0.3074		0.2725	
Log Likelihood (LR)	-63.766347		-77.282619	

Note: *, ** and ***: significant at 10%, 5%, and 1% levels, respectively

Table 3.4 presents results from the analysis of access to solid waste provided by NGOs (ANGOSW) and by CBOs (ACBOSW). Our findings suggest that some of the measures of spatial proximity, social proximity, perception and socio-economic factors increase the likelihood of accessing services of NGOs/CBOs. Beginning with spatial proximity, we find that distance to NGO offices matter in accessing services of the NGOs by poor households. Larger distances between NGO offices and households discourage access of these household (significant at 5%). Possible explanations lie in the incapacity of these organizations to provide services to large areas, prompting them to work at a small scale. This argument is similar to that of Baud (2000:8), who reported that NGOs in India involved in urban environmental activities operated on a local and small scale. It is likely that households far from the offices of NGOs may lack information about those organizations, lessening the likelihood of seeking their services (compare Allard, 2004).

The coefficient of cooperation suggests a positive influence of cooperation (significant at 1% level) on accessing NGO services. Cooperation also has the highest marginal effect implying that the higher the level of cooperation with a NGO, the more an individual household is likely to access services offered by the aforementioned organization. This outcome is consistent with our expectation: given the complex nature of poor informal settlements continuous cooperation with service providers is required for successful service delivery and cost efficiency (Rahman, 2004). On the other hand, membership is not significantly associated with accessing services provided by NGOs. We offer two possible explanations for this. First, perhaps some NGOs provide services at a fee, which enable also non-members to access their services (be it at some costs). This would reduce the discriminations between members and nonmembers. And second, NGOs may be philanthropic in nature and by that aim to improve the situation for all the urban poor, irrespective of their status to the organization. Although NGOs by their very nature require on-going membership to support their organization, this has not hindered access of non-members to their services.

Our empirical evidence further indicates that positive attitude is key (significant at 1%) for accessing NGO solid waste services, implying that the greater the attitude of a household to services of an NGO, the more loyal that household is likely to be toward its services. Coefficients of socio-economic characteristics of education, income and cost of service were significant but with different directional impacts. The sign for education suggests that households with higher education levels increase the probability of accessing NGO services. This can be explained from the fact that those who have attained a minimum number of years of formal education may have a sense of judgment toward the effects of poor solid waste management as well as the service provided. As expected low income households access more services of NGOs and this can be explained from the relationship between these organizations and poorer households. This may also result from the consumption and discard habits of low income households. Although few goods and commodities may be purchased by these households, the type of commodities (mostly organic) they consume result in high disposal levels of waste. The positive and significant (1%) finding for the cost estimate implies that access is associated with high cost of the service. This indicates the dilemma that the poor households face of paying more because of lack of solid waste services. Our findings

(although different for income) are similar to those of recent studies (Moe & Rheingans, 2006; Montgomery & Elimelech, 2007; Wan & Francisco, 2010) that found income and cost to be among the main drivers to access services. Although they found access to services to be correlated to high income, the reverse was true for the urban poor access to solid waste services provided by the NGOs.

We now turn our next attention into the factors that influence access to CBO services. Trust as part of the social proximity is conducive (positive and significant at 5%) and has the highest marginal effect for accessing CBO services. This, therefore, means that the higher the trust a household has in services of a CBO, the more it is likely to access the services of that organization. The possible explanation for trust can be deducted from personal delivery factors similar to those used by Coulter and Coulter (2002) such as trustworthiness, empathy, reliability and promptness. Furthermore, our findings echo with Doney and Cannon (1997 in Gummerus, Liljander, Pura, & van Riel, 2004). They suggest that use of a service requires some degree of trust in the providers' ability to perform the desired task. While CBOs by their very nature are membership organizations, access to services of these organizations is independent of membership, suggesting that these organizations also (and almost equally) serve households that are non-members. To our surprise the variable cooperation has no statistically significant relation to access of CBO solid waste service provisions. Perceived competence of CBOs proves key to accessing services (positive and significant at 5% level). This implies that the more capable and efficient the CBO is perceived to be, the more likely households are accessing solid waste services of that organization. The variables education and cost have a negative influence on access (significant at 10% and 5% levels, respectively), suggesting that formal education and costs negatively affect the probability to access CBO services. These findings are similar to those of recent studies (e.g. Moe & Rheingans, 2006; Montgomery & Elimelech, 2007; Wan & Francisco, 2010) that found cost to be among the main barriers to access such services.

Although we expected, the access determinants of NGO and CBO solid waste services to be similar, the results show otherwise. This is an indication that these two service providers are considered different by service users. Unlike the CBOs, NGO service providers need to be geographically close to the households in order to be accessed. Second, because NGOs are not considered part of the poor communities they serve, cooperation with households is essential

if those households are to access their services. Third, NGOs are often started by an elite group of people, which is less the case with CBOs who often originate from local leaders living in the poor communities (Tukahirwa et al., 2010). Hence, NGOs attract more educated people compared to the CBOs, as shown by our results. Such people are also more willing to pay for services of such organizations.

3.4.2 Access of poor households to NGO/CBO sanitation services

Results in Table 3.5 show the differences between those who access NGO/CBO sanitation services and those who do not access sanitation services at all. With respect to NGOs significant differences between the two groups are observed for membership of NGOs (significant at 10% level), distance between home and NGO office (significant at 5%), distance between home and the toilet, trust in NGOs, cooperation with NGOs, and attitude toward NGO performance (all significant at 1% level). For CBOs the main differences are observed for the social proximity variables trust and cooperation (both significant at 1% level).

Table 3.5. Comparison of households receiving sanitation by NGOs/CBOs with those receiving no services at all

Variables	NGO			CBO		
	Access Mean	No-access Mean	z statistic	Access Mean	No-access Mean	z statistic
Age	36.70	34.28	1.372	31.20	34.88	-1.198
Gender	0.64	0.63	0.183	0.733	0.62	0.854
SNF						
Trust	2.68	2.40	8.276***	2.71	2.47	3.503***
Membership	0.26	0.12	2.170*	0.00	0.02	-0.556
Cooperation	0.84	0.28	7.278***	1.00	0.41	4.285***
PF						
Attitude	3.00	2.15	5.270***	2.467	2.29	0.581
Competence	2.80	2.65	1.357	2.5	2.71	-0.844
SEF						
Education	4.13	4.01	0.520	3.467	4.06	-0.974
Income	149901.6	129031.6	0.460	150666.7	131986.6	0.581
Cost	100.00	99.40	0.633	100.00	99.54	0.275
SPF						
Distance to office	2.69	2.82	-2.170**	2.57	2.79	-0.280
Distance to toilet	0.278	0.37	-2.629***	0.32	0.34	-0.005

Note: *, ** and *** significant at 10%, 5%, and 1% levels, respectively

Similar to solid waste services, we turn to the logit model results estimated from two equations, ANGOSAN and ACBOSAN, to understand and determine the explanatory factors that might influence access of sanitation services provided by NGOs and CBOs.

Table 3.6. Determinants of access to NGO and CBO sanitation services

Explanatory Variables	Access to NGO		Access to CBO	
	Est. Coefficient (Robust std. error)	Marginal effect	Est. Coefficient (Robust std. error)	Marginal effect
Age	0.027 (0.022)	0.004	-0.051 (0.030)*	-.001
Gender	-0.170 (0.494)	-0.025	0.945 (0.790)	0.017
SNF				
Trust[1)]	7.014 (1.352)***	1.010	9.029 (1.706)***	0.173
Membership	-0.509 (0.614)	-0.065	-	-
PF				
Competence	0.396 (0.412)	0.057	-0.991 (0.504)*	-0.019
Attitude	0.717 (0.187)***	0.103	-0.177 (0.268)	-0.003
SEF				
Education	0.042 (0.061)	0.006	-0.033 (0.076)	-0.001
Income[2)]	0.060 (0.238)	0.009	-0.474 (0.412)	-0.009
SPF				
Distance to office	0.084 (0.114)	0.012	-0.004 (0.170)	-0.000
Distance to toilet	-4.390 (1.744)***	-0.632	-0.489 (1.897)	-0.009
Number of observations	192		189	
Wald chi-square (10)	192		47.38	
Prob > chi2	0.000		0.0000	
Pseudo R2	0.4381		0.2631	
Log pseudo likelihood (LR)	-67.438828		-36.774819	

Note: *, ** and *** significant at 10%, 5%, and 1% levels, respectively
[1)] The variable cooperation was highly correlated with trust; hence we only used trust
[2)] The variable cost was highly correlated with income; hence we used income only

Table 3.6 reports the results for the estimated determinants of accessing sanitation services provided by NGOs and CBOs, based on equations (3) and (4). In addition to the estimated coefficients in the table we also present the marginal effects of the explanatory variables to further determine their impact. The estimated coefficients suggest that high levels of trust significantly enhance the likelihood of access to sanitation services provided by NGOs and CBOs. The marginal effect of trust in explaining access is the highest among all included variables for the two. The result suggests that having trust in NGOs and CBOs increases the likelihood of accessing their sanitation services. With high levels of trust,

households will rely on these organizations as alternatives for failed or inadequate government or private services.

Those who accessed sanitation services from CBOs, considered these organizations less competent. Here it is not so much service providers considered encampment have higher likelihood to be accessed by these household, but rather that households served by these CBOs were very aware of the poor status of the toilets provided. Our field research revealed that these CBO toilets were ecologically and humanly unsustainable, and surrounding households complained of the health threat they posed. This was less clear with the sanitation services provided by NGOs. Their better technical skills, capacities and resources resulted in better facilities and prevented such a negative relation with competence. Rather the opposite relation can be seen: households with a positive attitude toward NGOs accessed more NGO sanitation services. This is in line with the positive relation with respect to trust. As expected distance to toilets was key (negative and significantly, at 5% level) for accessing the services provided by NGOs. Distance had a relatively high marginal effect, indicating that households that accessed NGO sanitation services were close to the toilets. For CBO-provided services we did not find a significant relationship with spatial proximity, for unclear reasons. With a negligible marginal effect, age was significantly related to accessing CBO sanitation services. Young people we more likely to access CBO sanitation service, probably because they were more involved in formulation and cooperation with CBOs compared to the older generation.

3.4.3 No access to NGO/CBO sanitation and solid waste services

The - large number of - households that did not access any sanitation (n = 117, 35%) or any solid waste (n = 150, 45%) services (see Table 3.1) were asked to indicate their interest in accessing the NGO/CBO facilities within their neighborhood, their willingness to pay for such services, perceptions toward NGO/CBO services and the relevance of social and spatial proximity factors on (not) accessing NGOs/CBOs services.

All households who had never accessed sanitation service were interested to do so. About 40% of them preferred sanitation services from NGOs/CBOs, indicating a high recognition of these organizations and the sanitation services they provide. Almost all the households that never accessed sanitation services indicated that the toilets provided by the NGOs were located far from their households and therefore, were not conducive for their use

(which is in line with reported spatial proximity relations above). In addition, a large share of these households (about 54%, n=63) also indicated that NGOs/CBOs were not doing a very good job in providing (sanitation) services for the poor. An even larger number of households (about 85%, n= 100) did not fully trust the NGOs providing the sanitation and only very few(about 20%, n= 23) were willing to cooperate with these organizations. However, despite the negative perceptions overall about 77% (n= 90) of households agreed that sanitation services provided by NGOs/CBOs should continue. We also see a relatively high level of preference for NGO sanitation services among households that never accessed any of these services. This is an indication that these organizations, more than CBOs, are recognized as important actors in sanitation service provisioning.

Partly similar results were found for solid waste provision. A large percentage of households (almost 90%, n= 134) that never received a solid waste service indicated that NGOs/CBOs do not do a good job in providing solid waste services. An even larger number of these households (almost all, n = 147) indicated that services of these two organizations were unreliable and about half of that group considered the services infrequent. Trust in these organizations and their services and willingness to cooperate with these organizations were small among the non-users. Nonetheless, 68% (n = 102) agreed that solid waste services provided by these two organizations should continue. However, for those who had never received solid waste services few preferred services provided by NGOs (14%, n =21) and/or CBOs (20%, n = 30). The low preference for solid waste services from these organizations is an indication that they are not well recognized, or are not known as service providers, and that these organizations need to improve and become more visible in this area.

About two-thirds of the above households willing to access services of NGOs/CBOs were willing to pay for these services, if the costs were significantly below the current charges of 100 and 500 Uganda shillings for sanitation and solid waste, respectively. The other third, justified their unwillingness to pay by arguing that, first, they could not afford to pay the amount required, or even a lower amount, for the service. Second, for sanitation, large households said the amount charged per toilet visit was unaffordable. And finally, according to these households in principle NGO services should be free. Beside cost-related arguments, households mentioned also the reliability, frequency and distance (as reported above) as arguments for not being willing to pay for such services.

3.5 Conclusion

In this study we investigated access of the urban poor to sanitation and solid waste services provided by NGOs/CBOs, and estimated the determinants of access to these services. The results reveal that indeed some of the poor households in Uganda's capital Kampala realize their access to sanitation and solid waste services through the active intervention from NGOs and CBOs. Although the contribution from NGOs and CBOs to servicing the poor may not be as big as that from governmental authorities, it is comparable to that from the private sector. Without the involvement of NGOs and CBOs more urban poor would suffer from inadequate sanitation and solid waste services and the related health impacts.

This study contributes to the on-going discourse of improving access of the urban poor to sanitation and solid waste services. An important insight is the influence of social proximity to access, in addition to conventional spatial proximity, socio-economic and perceptional factors. Social proximity showed to be one of the major factors explaining access of the poor to NGO- and CBO provided sanitation and solid waste services. Cooperation between households and these organizations is important in providing solid waste services, and trust is an essential factor explaining access to sanitation. One way to ensure access of the urban poor to both sanitation and solid waste services provided by NGO/CBO service providers is to ensure the functioning of social networks and to build trust for those organizations and their services. It is also in that area that non-accessing households have to be convinced: through offering reliable, timely and high quality services. Our results have also shown that with respect to CBO services spatial proximity of households to facilities and offices is, in contrast to common thinking, not always relevant as explanatory factor for urban poor access to sanitation and solid waste services. However, it proved important in explaining access of the poor to NGO provided toilets and solid waste services thus should be considered when planning sanitary and solid waste services for the poor. This finding is important, not only for the service providers but also for policy makers who often ignore distance to facilities in planning sanitary and solid waste services for the poor. Surprisingly, while we did find a significant influence of costs and income for access to solid waste services, this was not the case for access to sanitation. We expected a strong contribution of these socio-economic factors in explaining sanitation access, but perhaps the differences in household income were not large enough. But poor households that did not access any sanitation services clearly

indicated the relevance of their income and service costs in failing to access these CBO and NGO services.

The results of this study contribute to our understanding of how urban poor access to NGO/CBO services can be improved. Some factors are in the hands of NGOs/CBOs and awareness of these determinants can improve NGO/CBO programs for access of the poor to services of these organizations. Other insights (such as the role of education in solid waste) can be helpful for policy makers. This study shows that NGOs and CBOs provide these services along with other service providers and one way to enhance their activities and effectiveness toward the urban poor is to work together with other service providers. To be precise, improving urban poor access to sanitation and solid waste services is hardly an objective that the NGOs and CBOs will be able to realize on their own. While these civil society organizations will remain important in service provisioning to the poor, they are by no means the only players in achieving the Millennium Development Goals.

CHAPTER 4: PARTICIPATORY DECISION-MAKING FOR SANITATION IMPROVEMENTS IN UNPLANNED URBAN SETTLEMENTS IN EAST AFRICA; PROACT 2.0 AN INNOVATIVE MULTI CRITERIA DECISION ANALYSIS METHODOLOGY[♦]

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Abstract

Solving the problem of inadequate access to sanitation in unplanned settlements in East Africa needs to combine social and technical dimensions in such a manner that they fit the local context. The Modernized Mixtures approach offers an analytical framework for identifying such solutions, but this approach requires effective methods for participatory decision-making. This article intends to contribute to filling this gap by identifying and further elaborating an appropriate multi-criteria decision-making tool. The multi criteria decision analysis methodology Proact 2.0 offers an adequate solution as it creates the possibility to connect knowledge, experiences and preferences from scientists, experts, and policy makers with those of the end-users. We show in particular that users not always prefer the most optimal sanitation system, defined from an 'expert' point of view. This paper concludes that using Proact 2.0 can lead to substantial improvements in decision-making in the field of sanitation in unplanned settlements in East Africa.

Keywords: multi criteria decision analysis, Proact 2.0, user involvement, participatory decision-making, Modernized Mixtures, sanitation, East-Africa, unplanned settlements

4.1 Introduction

The United Nations declared 2008 to be the International Year of Sanitation by explaining that: “Improving sanitation represents one of the best options to really accelerate health, social and economic development. Sanitation is not the topic of the Millennium Development Goals (MDGs) or of the International Year of Sanitation because it is a problem, but because it is a solution and yet sustainable solutions for dense urban slums remain elusive.”(UN, 2008). Today, over 2.6 billion people still lack access to adequate sanitation facilities. At current rates of progress the world will not achieve the Millennium Development Goal sanitation target: “halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation”, which equals a reduction by almost 1.4 billion people. However, realizing this MDG does not mean the end of the sanitation challenge. Even then some 1.4 billion people will still not have access to improved sanitation facilities (WHO/UNICEF, 2010). Moreover in less than 30 years these numbers are set to double because of the rapid urbanization (UN Millennium project, 2005).

Poor sanitation and solid waste management are among the key factors affecting not only the health of urban dwellers but also contributing to high poverty levels in developing countries. The worldwide focus on sanitation generated by the UN’s Year of Sanitation has definitely led to increased attention for making sanitation facilities available to the urban poor. However, the challenge does not merely lie in the quantitative expansion of sanitation facilities in slum areas, but also in ensuring that these facilities fit the conditions of the slums. In the past too often newly constructed sanitation facilities were ignored by the urban poor, the potential users, because they did not fit their daily lifestyles, their religious beliefs, their cultural habits or their economic capacity. Filling the sanitation gap is therefore not only a matter of constructing more toilets, water points and sewerage systems, but also to make sure these infrastructures fit with the practices, concerns and capacities of their users (Schouten and Mathenge, 2010; Isunju et al., 2011; Black and Fawcett, 2008).

Hence, both the technical and the social-economic dimensions of sanitation solutions need to fit the local context. The Modernized Mixtures approach (Spaargaren et al., 2006; Oosterveer and Spaargaren, 2010; Scheinberg and Mol, 2010; Scheinberg et al., 2011) offers an analytical framework for identifying and designing infrastructure solutions (among which sanitation) that are adapted to the specific local contexts, through more flexible combinations

of socio-technical system elements at multiple levels of scale. Not the characteristics of the technical (sanitation) system are the starting point, but the characteristics of both the social contexts and technical systems themselves are combined in an optimal way. This is why the Modernized Mixtures approach differs from the modern, grid-based centralized systems in the developed world as well as from decentralized on-site systems that are common in developing countries. Hence, the Modernized Mixtures approach represents a new paradigm that helps us to overcome conventional dichotomies in system design, such as those between large-scale and small scale systems, advanced and low technological systems, centralized and decentralized systems, and consumer exclusion and involvement (cf. Spaargaren et al., 2006). This is attractive when designing a sanitary system in unplanned settlements (van Buuren, 2010), where sanitation systems have to be adapted and designed to fit specific local circumstances and context, instead of implementing existing ill-fitting turn-key systems. In order to do so, however, the modernized mixture framework has to be complemented by approaches and tools for bringing especially social characteristics and dimensions into the design and implementation process as well. Many of these characteristics are only to be found among the multiple specific stakeholders related to new sanitation systems and cannot be standardized. Hence, assessing different socio-technological solutions to sanitation problems on multiple criteria should allow for the active involvement of different stakeholders.

This article therefore aims to contribute to the further operationalization of the Modernized Mixtures approach by developing and testing a multi criteria decision analysis method with a strong user involvement, in order to close the gap between technological innovation and user acceptance. Or, to put it more specifically: how can potential users of sanitation facilities living in urban slum areas be involved in the design and decision-making process in order to realize sanitation facilities that are of good technical quality and will also be accepted by them because these facilities fit their specific social-economic and cultural situation?

With this objective, this paper starts by further developing the argument that user acceptance of sanitation facilities is fundamental to achieve a sustainable impact, which makes participatory decision-making methodology an essential component of the system of design and implementation. The third section reviews different participatory multi criteria decision-making methods, and then identifies and further revises a method that may be

expected to offer promising perspectives for concrete application. The fourth section reports on the testing of this method, Proact 2.0, in the practical conditions of Katanga, a slum area in Kampala, the capital of Uganda. Finally, we conclude on the perspectives of Proact 2.0 as a participatory multi criteria decision-making tool to identify sustainable sanitation facilities that bridge the gap between technological optimization, financial limitations, environmental conditions and user acceptance.

4.2 Stakeholder involvement in Modernized Mixture approach

Lack of sanitation is among the main causes of health problems among urban dwellers in African cities, and is widely considered to contribute to poverty (Tukahirwa, et al, 2010& 2011). Hence, for many years initiatives from a variety of local, national and global actors have been taken to increase levels of access to sanitation in the poorer urban communities in African cities. In recent years, following the emphasis on sustainability, a number of innovative sanitation alternatives – the ecosan toilets being the most recent one –have been installed by technological experts, often following initiatives from NGOs and CBOs. Yet, increasingly there are indications that the urban poor tend to ignore these innovative sanitation systems, blaming NGOs and CBOs – and other sanitation promoters – for being led by their own ideas and agendas instead of solving the concrete problems of the urban poor. This resulted in many failed initiatives aimed at the introduction of ecosan toilet systems (see Kaggwa et al., 2003). Such results reflect a broader tradition, where sanitation facilities were identified and implemented on the basis of expert assessments, ignoring the users' perspectives and the local social conditions (Pahl-Wostl, 2002). Such 'expert-based' or 'expert-led' approaches stress the importance of sanitation optimization from a technological and/or economic point of view and result in a one-directional flow of recommendations, from experts to governmental and NGO/CBO decision-makers. Hence, sanitation solutions are often defined by experts and imposed upon local communities, while these communities may not necessarily perceive the solutions as beneficial as the experts for social, cultural or even economic reasons. It has been widely recognized, but not yet widely applied in practice, that decision-making on sanitation improvement for the urban poor should involve community members; that is, households that are the ultimate users of proposed sanitation solutions. The consequence of this is quite radical: recognizing the importance of user and stakeholder

involvement means that technological optimization can no longer be the dominant criterion in decision-making and a tradeoff between public acceptance and technical quality (Beierle, 2002) may be necessary. Hence, more varied and flexible responses to the present sanitation challenges are required, particularly in the context of African cities where financial resources are limited and the pressure for finding rapid solutions high.

The Modernized Mixtures approach (Spaargaren, et al, 2006; Oosterveer and Spaargaren, 2010; Scheinberg and Mol, 2010) offers a conceptual framework for identifying more adequate solutions to the current sanitation problems in the context of urban Africa. This approach is developed to identify sustainable urban environmental infrastructures by combining various levels of scale, with different degrees of involvement of end-users, of separation or mixture of water and waste flows, of level of technological advancement and of centralization of infrastructure and decision-making, all in order to establish better connections between the possible infrastructural solutions and the social-economic context where they are applied (Oosterveer and Spaargaren, 2010). For this the Modernized Mixtures approach argues for the inclusion and integration of technical and social scientific knowledge when designing sanitary solutions in specific settings. Hence, views and contributions from experts, decision-makers and end-users need to be included and combined into (hybrid) solutions. The rationale behind this approach is the need for creating a 'fit' between different potential sanitation options and the prevailing (perceived) socio-economic, ecological and technological circumstances. Involved users are invited to identify preferred sanitation solutions among those that are realistically (that is: technologically and economically) feasible in their particular user-context. This implies that each community may identify a specific sanitation solution, as the specific user-context may differ. Using this Modernized Mixtures framework means therefore, promoting a modular approach to sanitation problems, rather than aiming for a one-size-fits-all solution.

The Modernized Mixtures approach has determined three key criteria to design and assess adequate sanitation solutions, including ecological sustainability, accessibility (particularly of the poor) and technological flexibility (van Vliet, Spaargaren, Oosterveer, 2010). Ecological sustainability refers to the environmental profile of sanitation solutions, in terms of minimizing pollution (e.g. waste), minimizing natural resource use (e.g. water), and reusing valuable resources (nutrients). Accessibility relates to the extent to which all

households in poor communities can make use of sanitary infrastructures and are not prevented from doing so for financial, physical or socio-cultural reasons. Technological flexibility points at how sanitation systems function and 'behave' in times of economic, political, and climatic variability, extremes and instability. Although entailing a promise for designing more sustainable sanitation systems, the Modernized Mixtures approach is in need of further elaboration particularly on how stakeholders can participate in designing and assessing sanitation options and systems in concrete situations. Hence, we need to extent this Modernized Mixture framework with a methodology of participatory decision-making on sanitation.

4.3 Participatory decision-making methodologies

Nowadays, stakeholder support is recognized as essential for successful implementation of many (environmental) policies and programs. Since Arnstein described the ‘ladder of participation’ in 1969, it is known that significant degrees exist in stakeholder involvement and participation and that the extent of their influence during decision-making processes is a crucial factor in determining their future stakeholder (Arnstein, 1969; Beierle, 2002; Kasemir et al, 2003; Jonsson et al, 2007). This general argument is not different for sanitation policies and programs. Also in sanitation knowledge, experiences and ideas of specialists and official decision-makers should be coalesced with those of the community, the users, who are affected by sanitation system (Addo-Yobo and Njiru, 2006; Jonsson , 2005; Irvin and Stansbury, 2004; Kasemir et al, 2003). This means that the focus of experts in sanitation policy making has to change from a preoccupation with only scientific expertise to one with wider contributions in order to accommodate the needs and demands of different stakeholder groups. At the same time, involving local community members in sanitation planning needs further elaboration. The main problem is that involvement of end-users in decision-making processes can add considerable complications, as their knowledge, experiences and preferences do not automatically synchronize with the most optimal sanitation solution(s) from an ‘expert-based’ (technological-economic) view. Most users do not have the expertise to judge which innovations in sanitation are technologically feasible for their community.

In addition, there is not one single best sanitation solution that fit all stakeholder groups equally, as they often differ in economic means, social preferences and cultural

practices. Hence, end-users are often portrayed as incapable of overseeing the full complexity of technical innovations and as providing their input only on the basis of private interests (Devas and Grant, 2003, Williams et al, 2001). Recognizing the importance of incorporating an end-user perspective in decision-making on sanitary infrastructures, should not make us naive regarding the capacity and capabilities of end-user to (co-)decide in such processes. But it does mean that the established procedures need to be carefully reconsidered to give end-users a place in the process of planning and decision-making. Hence, we are in need of methodologies that give experts and local stakeholders a justified role and position in planning and decision-making on sanitation

4.3.1 Participatory sanitation planning tools

Over the last decades many participatory decision-making tools have been developed, some specifically for sanitation policy but many others destined for more general use in environmental decision-making. NETSAFF (2008) provides the most encompassing recent overview of various frameworks for participatory planning tools in the domain of sanitation. Table 4.1 presents the summary of this inventory and shows that these tools all divide the planning process in a different number of phases.

The different participatory sanitation planning tools with multiple stakeholder involvement as presented in Table 4.1 all have their specific characteristics and focus. The Participatory Hygiene And Sanitation Transformation (PHAST) approach is designed to promote hygienic behavior, sanitation improvements and community management of water and sanitation facilities, building on people's ability to address and resolve their own problems. Decision-making with PHAST is, among other things, based on the principles that 'those who create decisions will be committed to follow them through' and 'every community understands its own situation best'. Community involvement is believed to result in higher levels of effectiveness and sustainability than could be expected from externally imposed solutions (WHO & UNDP/World bank Water & Sanitation Program, 2000). The PHAST approach relies heavily on extension workers, who organize workshops for the community and guide community members through the different steps of the sanitation planning process. While the focus is on hygienic behavioral change, this approach also stimulates improvements

in the sanitary conditions of these communities by encouraging them to set up their own systems for monitoring community behavior, based on the criteria they identified themselves.

Table 4.1. Participatory Sanitation Planning Tools with multiple stakeholder involvement (Netsaff, 2008).

	Participatory Sanitation Planning Tools				
Phase	Participatory Hygiene & Sanitation Transformation (PHAST)	Open Planning of Sanitation Systems	Household Centered Environmental Sanitation Planning Approach	Sanitation 21	Multi Criteria Decision Analysis Systems
1	Problem identification	Problem identification	Request for assistance	Institutional mapping	Problem definition, goals & objectives
2	Problem analysis	Identification of boundary conditions	Launch of the planning & consultancy process	Interests/ Objectives	Definition of criteria
3	Planning for solutions	Terms of requirement	Assessment of the current status	External factors	Definition of alternatives
4	Selecting options	Analysis of possible solutions	Assessment of user priorities	Capacity	Definition of preferences
5	Planning for new facilities & behavior change	Choice of the most appropriate solution	Identification of options	Sanitation elements	Decision-making
6	Planning for monitor & evaluation		Evaluation of feasible service combinations	Management	
7	Participatory evaluation		Consolidated plans for study area	Evaluation	
8			Implementation		

What the PHAST approach has in common with the Open Planning of Sanitation Systems and the Household Centered Environmental Sanitation Planning approach is a stakeholder analysis, which is included in the first phase of problem identification. All three approaches emphasize that the probability of success will increase if the users are seen as

participants in the planning process and therefore, they need to be involved right from the start. All three approaches claim that involving the users of sanitation facilities in every step of the planning process is essential for a successful end-result. During the Terms of Requirements phase in the Open Planning of Sanitation Systems approach a distinction is made between primary and practical functions. Primary functions can be environmental protection or resource conservation and practical functions can relate to reliability and affordability. After identifying the criteria for these two functions at least three alternative solutions should be compared, before a final choice for a particular sanitation system can be made by all stakeholders (Schönning and Stenström, 2004). The Household Centered Environmental Sanitation Planning approach combines PHAST and the Open Planning Sanitation Systems in a ten-step planning process.

Sanitation 21 aims at closing the gap between households and urban sanitation systems. The focus of this decision-making tool is an analysis of the different technical options that are relevant within a sanitation system that covers all levels of the urbanized area, including households, neighborhoods, districts, the city and beyond. Multi Criteria Decision Analysis (MCDA) constitutes an approach that is nowadays used in environmental projects to support multiple stakeholder involvement. It provides an ordering of alternatives – from the most preferred to the least preferred ones – based on different technological, economic, social and ecological criteria. The involvement of multiple stakeholders is crucial in MCDA, but it can be organized in different ways, such as focus group meetings, workshops, interviews or surveys. This methodology is widely applied during participatory decision-making processes on complex problems (Chowdhury and Rahman, 2008). MCDA methods aim at supporting complex decision-making processes by providing a framework for collecting, storing and processing all relevant information from experts and end-users. The core of the MCDA method is a decision-making model, which is a formal specification of how to combine different kinds of information to reach a shared solution (Lahdelma et al, 2000).

A MCDA methodology can be – and has been – used to identify a single most preferred option, to rank different options or to distinguish acceptable options from unacceptable ones (Ngim et al, 2004). Compared with conventional decision-making and different alternative participatory decision-making tools, the advantage of using the MCDA methodology is its contribution to increased transparency in judging and deciding on

alternatives, to enhanced stakeholder participation, and to better optimized solutions by applying and combining several criteria in the decision-making process. The method is also easily adaptable to specific local conditions (Netssaf, 2008). Another advantage of the MCDA methodology is the possibility to connect expert-knowledge, knowledge of authorities and user-knowledge in order to make a decision that is most likely acceptable for all stakeholders. This is particularly important in the field of sanitation, where decisions have substantial consequences: selected sanitation options remain present for a long term and affect many people, while mistakes are not easily remedied because of the costs involved. It is for these reasons that among the different participatory tools for planning on sanitary infrastructures, MCDA gains a growing popularity.

4.3.2 Proact: a Multi Criteria Decision Analysis method for sanitation policy

Proact (Hammond et al, 1999) is a MCDA method that matches very well with the goal of initiating a multi-phase stakeholder dialogue to arrive at decisions in the field of urban sanitation. The Proact-method consists of five phases: the PRoblem analysis, the setting of Objectives, the selection of Alternatives, the assessment of the Consequences and the Tradeoffs between different alternatives. The *Problem* analysis phase focuses on the identification of the problem and on the determination of the decision-making context. Scientists, experts, policy-makers and users need to develop a common understanding of the problem, of the decision that has to be made and of the criteria by which such decision is to be judged and evaluated. If an issue is not understood or considered to be important by one of the stakeholders, it will be difficult to get this stakeholder involved. By the same token, it is important to engage a wide group of stakeholders as early as possible, particularly in analyzing and defining the problem. The *Objectives* are to be set in order to reach a common understanding of the problem. Subsequently, the problem definition leads to the formulation and selection of *Alternative* solutions and to a decision on the various criteria to be considered when comparing them. The criteria for decision-making on alternative sanitary solutions typically consist of indications for technical feasibility, cost-effectiveness, social impacts and various environmental impacts. It is important that all stakeholders have the opportunity to actively participate in this phase to allow inclusion of all different perspectives and points of view in the process (Lahdelma et al., 2000). All alternatives are screened by assessing the

Consequences for each of them. In the *Trade off* phase these alternatives are ranked in the order of preference and scored against the criteria that were set in an earlier phase. Each of these criteria has been assigned a particular weight within the final decision-making process as a reflection of their relative importance. The weight and the scores on the criteria are combined for each alternative in order to derive their overall value. Finally, the best alternative can be determined.

According to Hammond and colleagues (1999) applying Proact means involving all stakeholder groups throughout the decision-making process. Table 4.2 emphasizes that Hammond and colleagues do not make any distinction between the roles of different stakeholder groups in the different phases of the process.

Table 4.2. Phases and stakeholder participation in Proact (Hammond et al, 1999).

	Phases in Proact				
Stakeholders	PRoblem Analysis	Objectives	Alternatives	Consequences	Trade offs
All stakeholder groups	X	X	X	X	X

Note: X means that participation of this particular stakeholder group is important

In other models, however, distinctions made between the roles different stakeholders can and should play in the various phases of a MCDA: stakeholder groups are assigned different responsibilities in distinctive phases of the process than others, such as experts, planners or decision-makers, are. For instance, Lahdelma et al. (2000) make a difference between four stakeholder groups and each of them is involved in two to four of the six different phases (see Table 4.3). Van Buuren and Hendriksen (2010) follow Ladehlma et al (2000) by making a distinction between the different stakeholder groups and their contribution in different phases of the planning process on sanitary infrastructures. But they consider especially the phases of problem analysis and objectives vital in the decision-making process, while these phases are absent in the sanitation planning process of Ladehlma et al.

Table 4.3. Phases and stakeholder participation in environmental multi criteria decision making processes (Ladehlma et al., 2000).

Phases in MCDA	Define alternatives & criteria	Make measure-ments	Choose decision aid	Provide preference information	Form draft solutions	Make final decision
Stakeholders						
Decision-makers	X		(x)	X		X
Interest groups	X			(x)		
Experts	X	X				
Planners	X	(x)	X		X	

Note: X= participation of this particular stakeholder group is important; (x) =participation is less important.

Therefore, Van Buuren and Hendriksen (2010) designate this multi criteria decision analysis methodology, Proact 2.0, so to underline the continuities and innovations compared with the previous use of this method. Van Buuren and Hendriksen combine the division of the Proact phases according to Hammond et al (1999), with the division of the stakeholder groups as developed by Ladehlmaet al (2000) (see Table 4.4).

Table 4.4. Phases and stakeholder participation in Proact 2.0

	Phases in Proact 2.0				
Stakeholders	PRoblem Analyses	Objectives	Alternatives	Consequences	Trade offs
Scientists	X	X	X		
Technological experts	X	X	X		
(Local) policy makers	X	X			X
Users	X	X		X	

Note: X= participation of this particular stakeholder group is important

Proact 2.0 considers the involvement of all stakeholder groups important especially in the first phases of the planning and decision-making process: problem analysis and the formulation of objectives. In these phases it is essential that the problem is considered from as many different angles as possible and that all stakeholder groups agree on a number of common objectives. However, in the phase of elaborating alternative solutions, there is no need to involve the end-users or the policy makers/local authorities. During this phase,

scientists and experts on sanitation are much better placed and equipped to determine the feasible options in a given context. When all feasible options are identified, end-users have to select their personally preferred option among them. For policy makers, this will lead to a better understanding of the eventual positive and negative commitment of end-users for certain options, which is important in the final decision-making process. Hence, in including stakeholders in decision-making processes on improvements in sanitation, adjusting their participation to the different phases in the multi-criteria decision analysis process is vital in order to optimize both the process and the contributions from stakeholders. The Proact 2.0 method offers practical support in optimizing user involvement to reach feasible and sustainable sanitation improvement. Two phases are particular important in realizing this: problem analysis and consequences.

Identifying and involving all stakeholders at an early phase of the policy process helps to build up mutual trust and allows for a common understanding of what the problem is and how it should be defined, while it also facilitates the joint formulation of objectives against which alternative solutions should be assessed. These objectives should be defined in terms of social needs rather than in the technical solutions to be put in place (van Vliet, 2006). When the consequences of all feasible alternatives are discussed, users are also to be actively involved. As the end-users should benefit from the new sanitation improvements, it is crucial that they are involved in discussing all options before decide on their final preference. This phase of discussing consequences of all feasible alternatives should be based on a deliberative approach to decision-making, whereby participants listen to each other's arguments and preferences and generate group choices after due consideration of each possible option. In contemplating on and arguing for what they consider to be the best solution, participants (different groups of end-users) ought to try to convince one another by offering arguments that are acceptable by others. Even if this phase of deliberative participation does not result in one clear recommendation, it can still serve as a stage where user values become discernable and identifiable (Forsyth 2007, Fung & Wright 2001).

In order to evaluate the practical use of the Proact 2.0 methodology developed in this manner, we have applied this method in sanitation upgrading in Katanga slum in Kampala, focusing especially on the phases of problem analysis and consequences.

4.4 Testing Proact 2.0 in Katanga Slum, Kampala

Katanga Village is one of the major informal settlements in Kampala. Its growth can be attributed to its location close to the central business district allowing for easy access to informal jobs. It is one of the many informal settlements where the majority of the urban poor in Kampala are accommodated. It is common knowledge that among the multiple problems related to poverty in these areas, sanitation is one of the most prevalent ones.

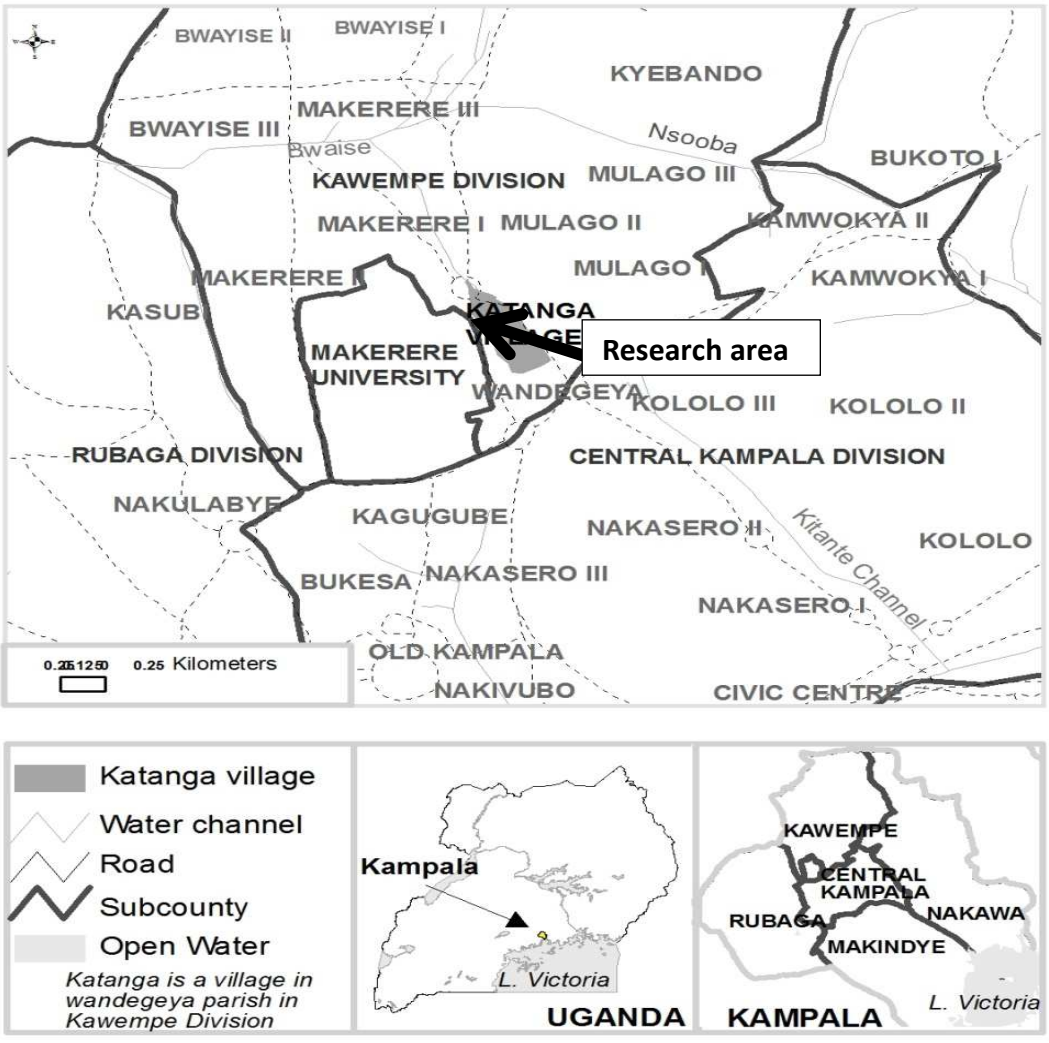

Figure 4.1: Administrative map of Central Kampala, Uganda

Previous efforts made by local NGOs and CBOs to improve the sanitation situation among the urban poor had not resulted in sustainable solutions (Mabasi, 2009; Okot-Okumu and Oosterveer, 2010). A number of innovative and ecologically sustainable options had been established, such as ecological sanitation (ecosan) toilets and composting plants to improve

their health and environmental conditions. For instance, in Katanga, several ecosan toilet blocks had been installed, allowing the separation at source of urine and feces. This separation facilitates the reuse of valuable components from urine and feces and reduces water loss. Hence, it protects public health, prevents pollution and returns valuable nutrients and humus to the soil. From a technological and environmental sustainability point of view, ecosan toilets are therefore an attractive solution. Yet, in Katanga slum local leaders explained that these ecosan toilets are used by only a very few poor households because the majority of the potential users are convinced that these ecosan toilets are not hygienic. As a result most human waste is still disposed of indiscriminately, together with solid waste, leading to all the hygienic problems coming along. Here the expert dilemma is felt: knowing solutions without knowing the problem (see van Buuren and Hendriksen, 2010). The decision to introduce ecosan toilets was made by technical experts on technical grounds, and its failure underlines the necessity of involving end-users in the process of developing and implementing alternative solutions.

In order to translate this aim in concrete practice, the Proact 2.0 methodology was tested here and two workshops were organized for the different stakeholder groups involved in sanitation upgrading in Katanga. The first workshop was organized with the participation of representatives from all stakeholder groups engaged in sanitation around Katanga. The first workshop was jointly organized by environmental scientists from Makerere University, Kampala, and Wageningen University, the Netherlands, who together work on viable options for improving the sanitation situation in Uganda and as such have an overall picture of the different organizations involved in sanitation activities in Katanga slum. Hence, experts were invited from the Uganda Water and Sanitation Network, an umbrella organization working towards achieving universal access to safe water and improved sanitation by coordinating and informing their member non-governmental and community-based organizations on sanitation. Representatives from the Kampala City Council, which is mandated by the local government act 1997 to provide numerous services including sanitation upgrading, attended the workshop. In addition local policy makers and local leaders living in Katanga were invited. During this first workshop twelve stakeholders with a variety of expertise were asked to discuss the present situation in order to develop a common understanding of the problem. The second

workshop was organized to screen the different feasible alternatives for their user preference and acceptance.

4.4.1 Screening: selecting feasible alternatives for sanitation improvement

During the first workshop, scientists and technological experts gave presentations on sanitation problems and solutions to inform policy makers and local authorities. Subsequently, all stakeholder groups interacted to define the problem, to formulate alternative solutions and to identify the various criteria that should be considered when comparing alternatives. Technological, social-cultural, economic, environmental and health criteria were included. Taking alternative solutions into consideration and comparing them is essential as there are usually several options technologically and economically feasible, but there may also be local conditions that rule out certain options. The process of distinguishing feasible and unfeasible options for sanitation in Katanga was called screening. This screening process was carried out together with a group of diverse technical experts. During the screening phase these specialists took into consideration the defined set of criteria, as well as site-specific conditions of Katanga slum. The implementation of this phase in the decision-making process by implying only experts was in line with Proact 2.0: not all stakeholders have to be involved in all phases of the decision-making process. Non-experts in sanitation technology cannot be considered capable of making the complex technological decisions needed for identifying feasible options for sanitation and expert knowledge is indispensable for making an informed selection in this stage. However, in order not to become trapped or locked in specific technological trajectories, it proved to be essential to have sufficient diversity in this expert group. Too often, individual experts have their own technological preferences, based on their specific training, knowledge, institutional affiliation or on other interests. It is vital that screening technological alternatives is an open process among distinct technological experts and expertise.

As a result of this screening process several feasible alternatives were selected for improving the sanitation situation in Katanga slum. Some the pro-poor onsite sanitation technologies were not suitable for this context. For instance, as unplanned slum it was not easily accessible for emptying facilities. Field observations in Katanga revealed that pit latrines, often promoted by NGOs, were technically not suited to the local environmental

conditions. The areas where these toilets had been constructed were marshy and hence had a high water table. As most of the latrines were constructed without protection from the groundwater, this creates a serious health risk. At the same time, conventional pit latrines, an assorted collection of facilities with poorly understood health impacts, were still the main sanitation technologies the urban poor had to rely on. Therefore, despite the serious problems, the pit latrine was included among the feasible options to be investigated by stakeholder.

The other feasible sanitation options identified by experts were the double pit latrine, the waterless system with the alternating pit, the pour flush sanitary system and the urine diverting dry toilet (better known as ecosan). The double pit latrine is an improved version of the single pit latrine. A second pit is added to allow continued use, while the stored fecal material can settle and later be used as a soil conditioner. The waterless system with alternating pit collects stores and treats excreta in the pit itself so the generated compost can be removed and transported for use or be manually disposed of. In pour flush systems treatment of sludge is on-site but the system can also be connected to an anaerobic biogas reactor where gas can be produced for use when cooking. The last identified feasible option was the urine diverting dry toilet, which separates feces and urine to allow feces to dehydrate and to recover urine for beneficial use.

4.4.2 User acceptance

Many failures of initiatives to improve sanitation conditions in urban slums can be attributed to a large extent to the lack of in-depth understanding of slum life (Isunju et al., 2011; Jenkins and Curtis, 2005). Therefore, during the second workshop the stakeholders were invited to further screen the different feasible alternatives on their end-users preference and acceptance. Hence next to the local leaders as the representatives of different end-user groups from the Katanga communities but also inhabitants of Katanga were invited.

A group of 50 inhabitants of Katanga was invited to participate in a one-day workshop and they were challenged to screen the five technical options for sanitation improvement that resulted from the first workshop and the screening process. The participants were selected on diversity and representativeness. Table 4.5 lists some key data on the background of these participants.

Table 4.5. Background variables for participants in Katanga workshop

Age in years		Gender		Education		Marital status		Children		Religion	
						Percent (%)					
≤ 20	25	Male	55	Primary	25	Single	55	0	30	Muslim	63
21≤ 40	60	Female	45	Secondary	55	Married	37.5	1-4	50	Catholic	18
41≤ 60	15			College	20	Divorced	5	5-10	20	Christian	11
						Widowed	2.5			Protestant	8

Source: survey

The participants were split into five diverse subgroups to discuss the feasible sanitation options. Each subgroup was assigned one potential sanitation improvement and was asked to consider this option by doing a SWOT-analysis, without any pre-given criteria for such an assessment. The results from each subgroup were presented to all participants and followed by a plenary discussion on their conclusions. During this part of the workshop the principle of deliberative decision-making was followed, whereby participants were able to listen to each other, invited to exchange and discuss arguments and encouraged to bring up different points of view.

Discussing the different alternatives during the workshop resulted in an interesting overview of the different criteria used by the participants when assessing options for improving the sanitation situation in Katanga. With regard to the single pit latrine negative arguments dominated the discussion. Users considered the single pit latrine a primitive option, not hygienic, a potential danger for infection, not safe for pregnant women, scary for children, without access for emptying when filled up, a dump place for waste and only suitable as a temporary solution for underdeveloped areas. Most of these negative arguments were also expressed when discussing the double pit latrine, but some positive considerations were mentioned as well: both the single and the double pit latrines fit into the local conditions, are cheap to build, while the double pit is considered less primitive as it does not get blocked, is less polluting because of the process of natural decomposing, and when used well it is easier to keep clean. An active discussion followed after the presentation of the waterless system with alternating pit. All arguments were nullified by the fact that a waterless sanitation facility is unacceptable for Muslims and this applied to the ecosan option as well. Other arguments against the introduction of ecosan systems were that the construction is expensive, leads to an easy spreading of diseases, produces a bad smell, users need shoes for entering it, and because

urine and feces should be diverted, it is impossible for females to make use of such toilets. The discussion about the pour flush toilet system was the most balanced in terms of strengths and weaknesses. It was considered to fit in every place and easy for use by everyone; it saves space, is long lasting and hygienic; and it is seen as a dream because every family would like to have its own toilet. Yet, it is expensive to build, requires special care to be kept clean, is rapidly blocked and not easy to maintain.

The choice to include a SWOT-analysis when asking end-users to assess feasible options seems to provide an effective basis for open discussions on their respective advantages and disadvantages and gave extensive insights in the end-user expectations, ideas, hopes and fears. The aim of the SWOT-discussion was not to come to a consensus among users, but to bring all considerations, experiences, values and user behavior-patterns to the fore in order to establish commitment, understanding and a broader perspective. This was important because during the plenary discussion the policy makers and local authorities were also present. This broad exchange of views resulted in better and more complete insights in the diversity of user views and arguments related to the different sanitation alternatives. The plenary discussion constructed a list of criteria that Katanga inhabitants consider relevant when assessing sanitation improvements, classified in five main categories.

These main categories: technological, economic, social/cultural/religious, environmental and health, cover the broad range of social, economic and technological considerations that end-users deem relevant when judging sanitary infrastructures. After consensus was reached on these categories, further refined into 15 specific criteria, all participants were asked to individually rank the different feasible options for sanitation improvement in Katanga in their order of preference. This approach allowed the ranking to be better based on arguments than would have been the case without group discussions, SWOT presentations, exchange of arguments and criteria construction. After the individual ranking, the option that was identified by the users together as the ‘best’ option was determined and communicated to all participants and also to the other relevant stakeholder groups (see Figure 4.2).

These results show that most of the users chose the pour flush as first, the single pit as second and the double pit as third preferred option when they applied the technological and economical selection criteria. Under the category of social/cultural/religious criteria they

opted again first for the pour flush, while they ranked the single pit together with the double pit and the waterless system as the second preferred option. When applying the environmental and health criteria, the end-users preferred the pour flush toilet with the double pit rated as second and the single pit as third preferred option.

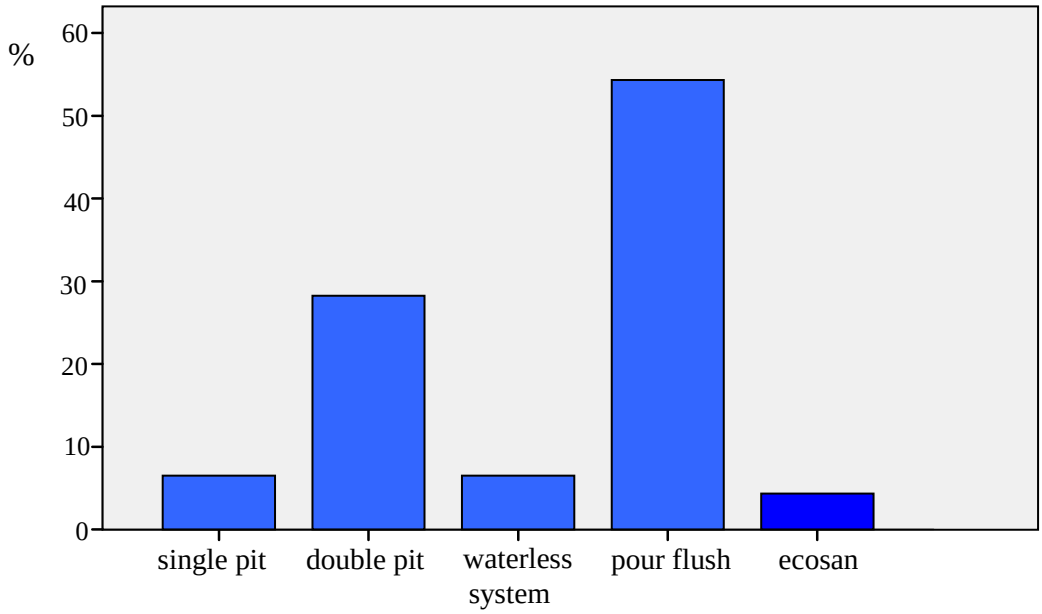

Figure 4.2: Preferred options for sanitation improvement (in percentages)

4.4.3 Evaluation: lessons learnt

The Proact 2.0 methodology seems to fit extraordinary well within the framework of the Modernized Mixtures approach. Where the Modernized Mixtures approach focuses on the integration of socio-technical systems and the relation with their users in a specific context, Proact 2.0 seems to be capable of closing the gap between technological innovation and user acceptance by identifying various stakeholder groups and making a distinction between these stakeholder groups and their contribution in the different phases of the planning process on sanitary improvements.

The Proact 2.0 methodology proved a useful Multi Criteria Decision Analysis method for multiple stakeholder involvement in decision-making on sanitation improvement in Katanga. Compared with the original Proact method, two major adaptations made the revised, 2.0 version more realistic and feasible. The first major adjustment was the insertion of the screening phase, where most stakeholder groups were left out due to their limitations in technical expertise when assessing technological innovations. By relying on qualified, independent experts and ensuring sufficient diversity in technological expertise a lock-in effect, whereby only few alternatives would be considered, was prevented.

The second major adjustment was introduction of the SWOT analysis of the feasible options by the end-users only. Considering the consequences of these feasible technical alternatives for sanitation improvement in Katanga proved the most important phase for end-user involvement. Open discussions where users expressed up their considerations and views resulted in a better understanding among users and between users and policy makers, so ultimately to better decision-making. During this second workshop only users participated but in the end they presented and discussed their conclusions to the policy makers at a plenary session. It would have been of more added value if the technical experts and scientist would also have attended this session. The results from the SWOT analysis proved very relevant, because disagreements between users and between users and experts often have little to do with the technology per se, but rather with the importance of user considerations, such as convenience and religious habits. Increased insights in end-user views allow for a better understanding of why the adoption of technological improvements in practice differs from what experts expect (and/or hope).

During the tradeoff phase, users ranked the feasible sanitation options individually, often only as ‘best’ and ‘worst’ options. Interestingly, there was no visible and identifiable connection with the list of criteria they developed before, so the individual ranking provided little additional information about user views. For example, during the discussion about pour flush toilet systems the users concluded that a pour flush toilet is an expensive option and not easy to maintain. Still, the individual ranking showed that users ranked the pour flush toilet system as cheap to build and with low maintenance costs. Confronted afterwards with their ranking the users explained that they wanted to make very clear that the pour flush toilet system was their number one choice. After the plenary discussion about the consequences of

each option no new information was brought up. Therefore, user involvement proved most relevant in the phases of problem analysis and of the formulating and identifying consequences, while technological expertise was crucial in the screening phase.

4.5 Conclusions

Current improvements in sanitation facilities for the urban poor are facing a number of challenges, including lack of user acceptance of innovative technologies, but this factor tends to be ignored by technical experts and municipal decision-makers. Providing effective sustainable sanitation solutions in slum areas requires however, in-depth understanding of life and preferences among the inhabitants of these informal settlements. This can best be achieved by engaging the future end-users in the decision-making process on improving sanitary infrastructures. Realizing this would result in identifying feasible sanitation options that are more sustainable, flexible and accessible for the poor, because technological and social dimensions are combined and end-user expectations taken into account. This article developed Proact 2.0 as a methodological tool to make the participation of different stakeholder feasible and most effective in particular phases of the decision-making process. Compared with other multi criteria decision analysis methods, Proact 2.0 differs because end-user involvement proves most important in the phase of problem analysis and in the phase of the consequences while technological expertise is crucial in the, intermediary, screening phase. Proact 2.0 has shown to be a useful method for participatory decision-making on improving sanitation facilities, because (i) it combines the information, knowledge and 'expertise' from experts, policy makers and users;(ii) it balances these various sources of input, to ensure that none dominates; and (iii) it excludes stakeholder groups from phases where they have little to contribute, making the participatory process more efficient and feasible.

Applying Proact 2.0 will result in information gathered from different stakeholders during the different phases of the decision-making process and this may be expected to contribute to realizing options that will effectively improve the sanitation situation of the urban poor. This is fully in line with the objectives of the Modernized Mixtures approach and therefore the Proact 2.0 methodology succeeded in adding the appropriate methodological mixture to the Modernized Mixtures approach.

CHAPTER 5: COMPARING URBAN SANITATION AND SOLID WASTE MANAGEMENT IN EAST AFRICAN METROPOLISES: THE ROLE OF CIVIL SOCIETY ORGANISATIONS·

· A version of this chapter has been submitted to *Cities - The International Journal of Urban Policy and Planning* as: Tukahirwa, J.T., A.P.J. Mol and P. Oosterveer. Comparing urban sanitation and solid waste management in East African metropolises: The role of civil society organizations.

Abstract:

Sanitation and solid waste management systems have recently received major attention through the Millennium Development Goals (MDGs). Increasingly, the role of civil society organisations – most notably Community Based Organisations (CBOs) and Non-Governmental Organisations (NGOs) – in providing sanitation and solid waste management services to underserved, marginalized, poor or hardly accessible areas and communities is widely celebrated, as fully public and fully private schemes are thought to be less capable and willing to serve these areas and groups effectively. But little is known about the actual performance of NGOs and CBOs in urban environmental service provisioning in East African cities. This study explores and compares to what extent and how successful civil society organisations provide urban sanitation and solid waste services for the poor in the capitals of Kenya, Tanzania and Uganda. Using ideas of modernized mixtures and institutional pluralism we clarify the particular role of civil society institutions among a plurality of urban environmental service arrangements in East African cities. Moreover, within similar settings (poor informal settlements of metropolises in East Africa), there are major differences in CBO/NGO involvement in sanitation and solid waste provisioning, in the socio-economic characteristics of NGO/CBO service recipients and non-recipients, and in levels of appreciation of these systems.

Keywords: East African Metropolises, poor informal settlements, sanitation, solid waste management, NGOs, CBOs

5.1 Introduction

Sanitation and solid waste management systems are among the public services in developing countries that have received noteworthy attention lately through the Millennium Development Goals (MDGs). Significant improvements in these systems need to be made if the MDGs are to become in reach in African countries. Since the introduction of the economic liberalization policies in the early and late 1990s sanitation and solid waste management systems have undergone significant reforms in many African countries. East African countries such as Uganda, Kenya and Tanzania have embraced these liberalization reforms and the outlook of these initially public services have changed considerably: a shift from the public sector as the sole provider to a diversification of provisioning schemes and responsible actors. Hence from the 1990s onwards we see a variety of public schemes, private schemes and all kinds of public-private mixes in sanitation and solid waste management in East African Cities. Among the reasons mentioned for this change in provisioning of urban services in East Africa are the increase in urban population growth, increased poverty, weak governmental institutions, lack of implementation and enforcement of policies, lack of public finances and economic liberalization policies (e.g. MDGs, 2010; Tukahirwa et al., 2010).

This diversification did not only bring private companies to the centre of sanitation and solid waste management provisioning in East African cities, but also increased the role of civil society organisations, most notably CBOs and NGOs. These organisations have been widely recognized as actors that are philanthropic in nature, often motivated by noble aspirations to improve the poor solid waste management and sanitation conditions of communities through direct service provision or through advocating activities that can improve the situation (Klundert and Lardinois, 1995; Beall 1997; Schübeler, 1997; Ahmed and Ali, 2004; Rathi, 2006; Ahmed and Ali, 2006; Joseph, 2006). Especially, the role of NGOs and CBOs in providing sanitation and solid waste management services to underserved, marginalised, poor or hardly accessible areas and communities is widely celebrated, as fully public and fully private schemes are thought to be less capable and willing to serve these areas and groups effectively.

Country level overview studies on NGOs and CBOs involvement in sanitation and solid waste management in East Africa have been carried out (for example Tukahirwa et al., 2010; Schouten and Mathenge, 2010), but little is known about their NGO/CBO actual

performance in East African cities. In addition, these country level NGO-CBO studies give indications that the importance, role and performance of these civil society organisations in urban service provisioning differ significantly between Tanzania, Uganda and Kenya. This is surprising as the three countries have significant similarities, for instance in socio-economic situations. Hence, this study explores to what extent and how civil society organisations are involved in urban sanitation and solid waste services in Kenya, Tanzania and Uganda and why in some settings NGOs/CBOs are quite successful in organizing urban sanitation and solid waste management (especially for the poor), while in most comparable socio-economic situations such models seems to work less successfully.

In order to do so we provide a comparative analysis of three metropolises in Eastern Africa: Kampala, Nairobi and Dar es Salaam. These three large cities face similar problems with providing sanitation and solid waste management services for a large population with significant numbers of poor people. Our comparative research is aimed at understanding and explaining the differences, but is also instrumental in suggesting solutions to improve urban sanitation and solid waste management through NGOs/CBOs involvement. Following this introduction, the next section elaborates on the perspective of institutional pluralism. Section 3 introduces the NGO/CBO sector in the three East African countries and elaborates on the methodology. The subsequent two sections report and discuss the empirical results. The final section draws conclusions.

5.2 Analyzing institutional diversification

One of the main dilemmas of urban sanitation and solid waste management in the large cities of East Africa is the failure and weaknesses of both the large scale centralised systems that have run relatively successfully in the urban centres of developed countries, and small scale decentralised systems that are well-adapted to the more remote rural areas in developing and transitional countries. Recently scholars have started to work on ideas of what they label modernised mixtures, an approach that takes the best features out of both decentralised and centralised systems and combines them into hybrid solutions which better fit specific local (socio-economic, ecological, technological and political) situations (e.g. Spaargaren et al., 2006; Oosteveer and Spaargaren, 2010; Scheinberg and Mol, 2010; Scheinberg et al., 2011). This modernized mixtures approach looks at the degree of consumer/client involvement, technological advancement and robustness, degree of centralization, level of decision-making

for implementation, but also at fitting institutional arrangements. With respect to the latter feature, modernized mixture scholars argue for the need for less rigid institutional arrangements that govern and run these urban services, and for adapting the institutional structure to the specific conditions prevailing in the area to be served. The concept of institutional pluralism provides us the tools to analyze varieties in and combinations of institutions involved in specific issue areas.

In its most concise form institutional pluralism refers to situations where individuals or organisations act within multiple institutional spheres. Individuals and organizations are then confronted with two or more sets of 'rules of the game' at the same time, and hence are subject to and have to cope with multiple regulatory regimes and multiple normative orders. The classical examples with respect to developing countries refer to the formal governmental regulatory regime as well as a more 'traditional 'regulatory regime, both regulating land use or property rights (e.g. Fitzpatrick, 2006). Many studies use the notion of institutional pluralism in a slightly different way, especially when studying alternatives for the institutional monopoly of the (central) government or of the market in the provisioning of goods or services (e.g. Blair, 2001; Claassen, 2009). Institutional pluralism then refers to multiple institutions that provide through different strategies services and/or goods at the same time for a specific group of customers/clients in a specific area, often ranging from private firms to community groups, faith based organizations to political parties, and governmental institutions to non-governmental organizations. This comes together, among others, with different systems of payment, different systems of accountability, different allocation mechanisms, and different relations between provider and consumer.

This latter interpretation, which will also be followed here, brings institutional pluralism close to the literature on how goods and services can be best provided: through the government, through the market, through civil society or through any combination or partnership of these sectors (e.g. Glasbergen et al., 2007). Especially when public goods and services are at stake debates on institutional preferences are vibrant, such as those on the much disputed government delegation of public service to private firms and NGOs in Africa (Cohen and Peterson, 1999). Some scholars argue that institutional pluralism on public good provisioning can enhance effectiveness and legitimacy of the state, as the state can concentrate on other tasks and is no longer solely accountable for these services and goods

(Esman and Uphoff, 1984; Esman, 1991). Esman and Uphoff (1984) also found that 'multiple tiers of organizations with smaller units at the base yielded greater solidarity, scale and specialized services than the higher levels of organizations acting alone'. Others perceive institutional pluralism as an alternative to failed past decentralized efforts and a means to solve the new economic, social and political problems of the twenty-first century, by adopting a mix of central, non-central, private sector and NGOs relationships for implementing public sector tasks through market approaches that enhance greater accountability (Cohen and Peterson, 1999). Seldom analyses and debates are politicized through qualifications of neo-liberalization, especially when privatization and markets are involved.

Institutional pluralism studies in the area of public service provisioning pay relatively little attention to the role of civil society organisations and institutions. Especially in developed countries the contribution of civil society to sanitation and solid waste is usually marginal. Coston (1998), among others, has analyzed the role of civil society organizations and institutions in institutional pluralism, and identified five possible types: contracting, third-party governance, cooperation, complementarity, and collaboration. Blair (2001) emphasizes that the breaking of state monopoly can also introduce competition in the provision of public goods and services, and sees this as a sixth model type of institutional pluralism. When we see civil society institutions emphasized in urban sanitation and service provision it is usually related to marginal/peripheral areas and groups: slums and the poor.

Hence, when studying civil society involvement in urban service provision we are interested in the degree of involvement and amount of service provision, the question to what extent civil society service provision is focused on or limited to the poor, and the competition and (kind of) collaboration with the institutions of state and market.

Figure 5.1 sketches (potential) institutional models based on arguments above. Subdivisions 1, 2 and 3 portray institutional monopolies where the state, private companies and the NGO/CBO institutions operate independently. Subdivision 4, 5 and 6 show institutional pluralism involving only two institutions in service delivery. The mixture could be between government and private companies (4) or between NGOs/CBOs and government (5), or between NGOs/CBOs and private companies (6). The most full institutional mixture is between all the three institutions (7).

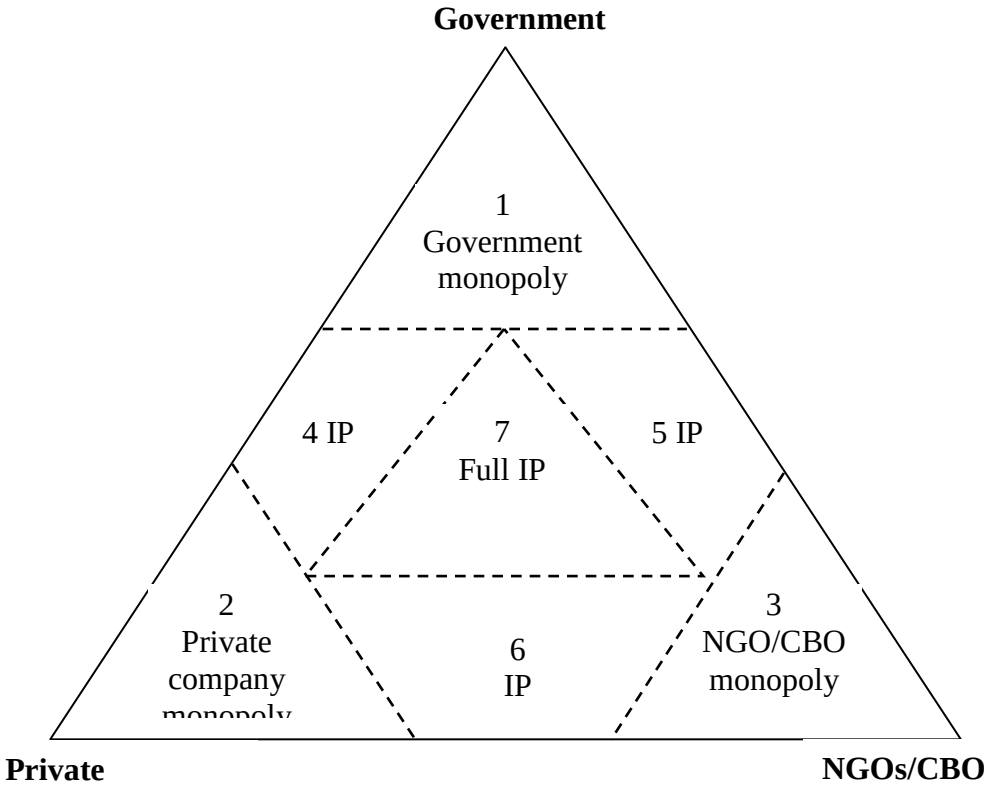

Figure 5.1. Institutional pluralism triangle on urban environmental services (IP = Institutional pluralism)

5.3 NGOs and CBOs in East Africa

NGOs/CBOs as we know them today are a relatively recent phenomenon in East Africa and did not play a significant role in the three countries before the early 1990s. NGOs/CBOs involved in sanitation and solid waste servicing are part of wider civil society networks in the three cities/countries, and in understanding similarities and differences among the three cities we have to take the history of these organizations in the three countries into account.

5.3.1 East African NGOs and CBOs in historic perspective

During the colonial period and until the early 1980s, there was a relatively small NGO sector in Uganda dominated by charity and evangelistic organisations providing services such as schools and medical care (see Makara, 2000). During that period, these organisations were not regarded as significant alternative service providers to the (often failing) state. The

political and social instability (that led to death of many people opposing government polices) gave little room for the free organisation of people outside state structures. “Freedom of association was highly circumscribed and associational groups were held suspect by the state” (Makara, 2000). However, the coming into power of the Museveni government in 1986 gave people more freedom to organize themselves, and to discuss and form opinions of their own. This led to a significant growth of the NGO sector. However, these NGOs have been required to exercise a significant amount of self-control to avoid conflict with government, and the government has often been accused of impeding activities of these organisations (Okuku 2002).

Although there was limited political and social instability in post-colonial Kenya, the (colonial and post-colonial) authoritarian character of the state and the assault to civil society (see Okuku, 2002; Ndegwa, 1996) did hardly allow for freedom of association in the 1980s. For instance, the state head then (president Moi) set about dismantling civic and political organizations and networks of patronage that had served previous regimes, because he felt these had the potential to undermine his power (cf. Throup 1987; in Ndegwa 1996: 26). Resulting was a single party state under which a limited number of civil society organisations operated, mostly adhering to the state rules of that time. Increasing (domestic and international) pressure and suspension of foreign aid led to opening up of space for NGOs, but these organizations remained targets of direct state control through the 1990 NGO Coordination Act. The introduction of the Act further weakened the already sore NGO-state relationship, with NGOs resisting control by the state. The persistent resistance by the NGOs resulted into opening up space of a political multiparty system (Ndegwa, 1996) that allowed NGOs to operate freely and independently from the state. Resulting from this was an explosion of NGO numbers growing from 500 in the 1990s (Ndegwa, 1996) to over 3000 by 2004 (Gugerty, 2008: 113).

Tanzania has not witnessed serious political and social instability following independence. Today, Tanzania is still considered a peaceful and stable country which has successfully built a strong national unity (Kayombo, 2010: 3). The socialist state sought to bring all non-governmental organisations – both for-profit and non-profit ones – under its control (Havnevik, 1993; Mercer, 1999: 248). This successfully crushed many independent organisations (Mercer, 1999) and participation was possible only through the state (Tripp,

1992; Mercer, 1999: 248). However, the economic and political liberalisation of the mid 1980s led to the adoption of economic adjustment programmes and opened up space for a political multiparty system that encouraged NGO participation in provisioning of social services (Mercer, 1999: 249). The state still remains suspicious of independent NGO activities and their space continues to be constrained and manipulated. The government does have an active policy of co-opting the NGO sector in social service provision through establishing collaborations.

Notwithstanding the growth and expansion of the NGO sector in Uganda, Kenya and Tanzania over the last two decades, their governments have been - and often still are - suspicious of NGOs, and consider NGO activities politically sensitive and/or beyond government control. Bratton (1989) and Okuku (2002) indeed see NGOs in Kenya and Uganda as resourceful organizations with a growing autonomy from the state. During economic hardship (e.g. the 1990s) the governments saw donors channelling funds increasingly to NGOs, and the state's diminishing development resources threatened to undermine the state's capacity for political patronage and legitimisation (Ndegwa, 1996; Clapham 1996). The increasing involvement of NGOs in urban service delivery further challenges African governments, as NGO service provision (often funded through donors) competes with and challenges the poorly funded government-run services (Gurgerty, 2008). Hence they articulate legitimacy problems for the state institutions, when operating in the same area of service delivery.

In addition, there have been mixed reactions from scholars about the growth and authenticity of these organisations. Flower (1995), for example, reports that NGOs in East Africa are not so much bottom-up organizations but are created by civil servants who lost their job. Decklitch, (1998) points to the so called briefcase NGOs, created by an elite with the aim of self-enrichment rather than improving the lives of the poor people. Titeca (2005) reports on frank interviews with directors of Ugandan NGOs who saw NGOs first of all as business opportunities for personal survival. The popular perception on NGOs among the local citizens in these African countries is that of ‘organising in order to gain a benefit from donor organisations’ (Makara, 2009: 178), as well as for personal benefit. This would make the distinction between NGOs and commercial enterprises less sharp and less clear.

5.4 Methodology

We analysed NGO/CBO involvement in sanitation and solid waste management in parallel with the other two main service provisioning institutions, governmental schemes and private/market arrangements. Sanitation service refers to safe excreta disposal through both hardware (such as provision of toilets) and software (such as community sensitisation, capacity building, advocacy, and monitoring) activities. Solid waste management services mainly comprise of safe collection, recycling and disposal of waste, as well as carrying out sensitisation activities.

This study entailed collection of data on NGOs/CBOs and on potential users of NGO/CBO services. An inventory was carried out between August 2007 and July 2008 in Kampala; July 2008 and April 2009 in Nairobi; and September and December 2009 in Dar es Salaam. Data was gathered using a pre-tested questionnaire on selected NGOs/CBOs. In addition, face-to-face interviews were held with key informants from these organizations, from relevant ministries, from local councils or municipalities, from government agencies, and from local and international organizations that linked with the NGOs and CBOs. Direct observations were made for identifying some of the major weaknesses and innovative approaches applied by these organizations in sanitation and solid waste management. Annual reports, project and programme progress reports, and evaluation reports – both internal and external – on NGOs and CBOs were collected and reviewed. Also evaluated were reports from the relevant government ministries, departments and agencies.

During the same period household surveys were conducted in 12, 6 and 4 (Kampala, Nairobi and Dar es Salaam, respectively) purposively selected informal settlements with the highest number of urban poor and with the most serious problems of sanitation and solid waste management. Within each neighborhood of Kampala and Nairobi 35 households were selected using random sampling criterion following a list of residents provided by the local leaders, while 50 households were selected for Dar es Salaam because of the large nature of the informal settlements. A total valid sample size of 420 (Kampala) and 210 (Nairobi and Dar es Salaam each) households was drawn. However, ultimately total sample sizes of 337, 206 and 200 households were realized for Kampala, Nairobi and Dar es Salaam, respectively. Kampala was our main study area and hence the disproportionality in the sample sizes. Date was collected on different aspects such as; respondents characteristics, their access to

NGO/CBO services, as well as their experiences and opinions regarding services of NGOs/CBOs.

5.5 Comparing sanitation and solid waste service institutions

Sanitation and solid waste management in the three cities consist of plural systems with a multitude of institutions, both formal and informal. The multiplicity of institutions in the sanitation and solid waste systems has been accelerated by the governments' incapacity to provide adequate services to all citizens as well as by the neoliberal policies that facilitated privatization of most public service. Details of the systems in the three cities are further expounded below.

5.5.1 Kampala

Following government failure and the adoption of neoliberal policies the government of Uganda privatised urban sanitation and solid waste services and developed regulatory frameworks to guide and enforce the privatization process. The privatisation processes brought a number of challenges which accelerated the growth of multiple institutions in both systems. The sanitation system in Kampala is heavily dependent on donor funding and together with the neoliberal policies as well as increased donor demands, government has increasingly recognized NGOs/CBOs in the water and sanitation sector. Government's recognition of the NGO/CBO institutions is witnessed in the support of the establishment of Uganda Water and Sanitation NGO network (UWASNET). UWASNET is an umbrella organisation which coordinates, builds capacity, and ensures collaboration among the water and sanitation NGOs/CBOs (and other stakeholders including government). It also carries out advocacy and lobbying, research and development, and ensures good governance of its members. Government cooperates closely with UWASNET through engaging it in the water and sanitation sector planning, monitoring and information sharing, while at the same time allowing it to pursue its activities independently but within the water and sanitation regulatory framework. UWASNET ensures compliance of its members with governmental water and sanitation policies, guidelines and regulatory framework.

However, government's interests and priorities are more on rural than on urban water and sanitation service improvement and this has also influenced the NGO/CBO activities

towards rural service provision. Nonetheless, NGOs/CBOs with support from donors are attempting to provide services to the urban poor independently from other institutions, resulting in NGO/CBO institutional monism (subdivision 3, Figure 5.1). In other situations government engages NGOs/CBOs in donor funded projects for sanitation service delivery for urban poor, leading to cooperation between the two institutions (subdivision 5, Figure 5.1). In addition, governmental agencies also provide services to the urban poor independently (subdivision 1, Figure 5.1). Therefore, in sanitation service delivery there is a typical combination of institutional collaboration and monism, involving government and NGOs/CBOs.

Solid waste management in Kampala is governed through the Kampala City Council 'Solid Waste Management Ordinance 2000', that promotes institutional pluralism in service delivery. It mentions NGOs/CBOs as potential institutions for service delivery although it does not have a clear strategy for including them (c.f. Tukahirwa et al., 2010). As a result solid waste service provision is contracted out to only large private companies (subdivision 4, Figure 5.1). However, these companies have hardly been able to provide services in urban poor informal settlements (see Figure 5.2). The inadequacy of these services in the poor urban settlements has prompted a large growth of NGOs/CBOs trying to fill the gap. These organisations work independently in solid waste management without formal government recognition and predominantly service the urban poor (Figure 5.2). The contribution of these organisations is hampered by government obstruction. Governmental agencies also try to serve the poor in informal settlements through the provision of trucks that can only be accessed by the few households living close to the routes taken by the trucks. Hence, solid waste service delivery for the urban poor is fragmented, with institutional arrangements working almost independently (subdivisions 1 and 3, Figure 5.1), leaving major parts of the urban poor without access to solid waste services (see Figure 5.2).

5.5.2 Nairobi

Similarly to Kampala, solid waste management is primarily contracted out to large private companies which have failed to provide services to all neighborhoods. As a result the city authority in Nairobi allows open competition where qualified independent small private companies freely compete for solid waste collection services. The increase in the number of private companies has not solved the problem of inadequate services especially for the urban

poor. The short-falling services of private companies has led to the infiltration of others, including NGOs/CBOs. These organizations work informally, but follow largely similar rules and principles as privates companies and some have evolved into private companies to be able to obtain licenses. NGOs/CBOs also provide services at a lower fee that has enhanced access of the urban poor (see Figure 5.2). In poor urban settlements there is almost NGO/CBO institutional monopoly in the solid waste service delivery (subdivision 3, Figure 5.1).

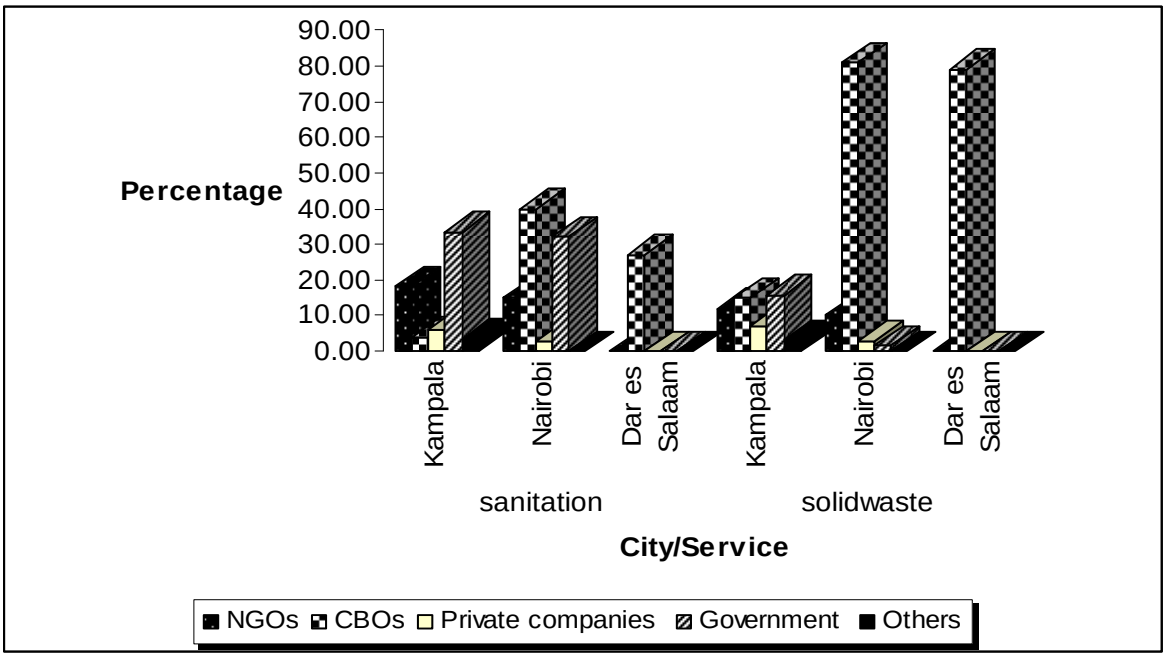

Figure 5.2. Urban poor access to sanitation and solid waste management (source: survey)

Nairobi is the only city with a sanitation policy, called 'Environmental Sanitation and Hygiene Policy 2007', which advocates for a people-centred and national participatory approach to sanitation and recognises NGOs/CBOs as important actors. Government and NGOs/CBOs engage in policy dialogue and government also recognises the NGO/CBO umbrella association Kenya Water and Sanitation Network (KEWASNET). However, the two hardly cooperate in service delivery. In association with KEWASNET NGOs/CBOs autonomously carry out their activities with support from donors and they are the main sanitation service providers in the poor urban settlements. Governmental agencies provide sanitation services independently from civil society organizations. Sanitation service delivery for the urban poor is a disconnected pluralism between government and NGO/CBO institutions (subdivisions 3 and 1, Figure 5.1).

5.5.3 Dar es Salaam

Similarly to Kampala, Dar es Salaam lacks a sanitation policy and relies on the National Water Policy 2002. The policy recognizes NGOs/CBOs as partners in the sanitation sector. However, implementation of sanitation for the poor in informal settlements is weak with little cooperation and collaboration between government and NGOs/CBOs. The Tanzania Water and Sanitation Network (TAWASANET) is still in its infancy, and with a preference for water and sanitation improvement in rural areas. Compared to Kampala and Nairobi less sanitation service delivery is observed in poor informal settlements, all of which is CBO organized (see Figure 5.2). The absence of government (and private company) institutions in sanitation provisioning for the poor is striking and a reflection of the low governmental priority attached to sanitation services.

Unlike urban sanitation, to improve solid waste management Dar es Salaam city embraced institutional pluralism, formally regulated by the solid waste management by-laws. Solid waste services are franchised to private companies and CBOs by the local governments and municipalities. The system specifies the roles and responsibilities of each franchisee (similar to institutional pluralism proposed by Cohen and Peterson, 1999), ensuring equal service to all clients. Hence, Dar es has various institutional mixtures involving government, private companies and CBOs. The allocation of specific institutions to specific locations has resulted in high levels of service delivery in the city, including the poor urban settlements. The monopoly of direct service delivery (primary waste collection) in poor, not easily accessible urban settlements is given to CBOs, and this has resulted in large access of the urban poor (Figure 5.2). However, these organisations cooperate with government and the private companies through the utilisation of their transport means.

Comparison

Different from the formalized institutional pluralism in Dar es Salaam, solid waste service delivery for the urban poor in Kampala and Nairobi is dominated by institutional fragmentation with limited regulation as well as limited recognition and cooperation with NGOs/CBOs. This is exacerbated by the governments' suspicion in the two cities over the legitimacy, lack of transparency and the informal nature of these NGOs/CBOs. The authenticity of these organisations is questioned because many give the impression of being

briefcase organizations that are out to fulfil personal needs (cf. Schaub-Jones et al., 2006; Decklitch, 1998). Hence, the government mainly contracts out services to private companies. Rudimentary institutional pluralism is present in the sanitation service delivery for the urban poor in the three cities. This is propelled by inadequate sanitation policies (Kampala and Dar es Salaam), as well as by poor implementation of the existing policies and legislation (the three countries). Increased NGO/CBO involvement in sanitation service delivery for the urban poor has also been boosted by donor influence.

Nonetheless, the contribution of NGOs/CBOs to sanitation and solid waste service delivery to the urban poor across the three cities is significant. Except for sanitation in Kampala, the contribution of these organisations to serving the poor is higher than that of governmental and private sector institutions. Despite the exclusion of NGOs/CBOs from formal service delivery in Nairobi, their contribution to solid waste service delivery is comparable to that of Dar es Salaam.

5.6 Opening up the NGO/CBO black box

5.6.1 NGO/CBO structures and organization

The NGO/CBO institutional structures and organisation vary across the three cities, with respect to membership orientation, professionalism, formalisation and funding. There is variation in numbers and types of organisations involved in sanitation and solid waste management. Large numbers of NGOs/CBOs were found in Kampala and Nairobi, but with variations in nature. A total of 44 NGOs/CBOs engaged in sanitation and/or solid waste were captured in Nairobi and the majority (43) were CBOs. These numbers are based on data collected during our field work in the reported period. It was also not easy to capture information on the local branches of international NGOs in Nairobi, because of the protocols involved. The actual number of CBOs and NGOs in each of the three cities is higher. There exists no complete registry or database in any of the three cities of CBOs and/or NGOs. Hence, it is also not easy to estimate what proportion is captured in our inventory and how large external validity. Likewise Kampala had a total of 44 NGOs/CBOs and the largest number (12) of local branches of international organisations (see Tukahirwa et al., 2010). Dar es Salaam had only 8 NGOs/CBOs, most of them providing services to the largest administrative division Kidondoni. Among these were three local branches of international

NGOs and the rest were CBOs. The large number of NGOs/CBOs in Kampala and Nairobi is an indication and a result of the fragmented institutional pluralism, inadequate governmental services as well as the opening up of space for NGO/CBO involvement in service delivery. In addition, almost all the NGOs/CBOs captured in our inventory in Kampala and Nairobi are donor dependent and this may also explain the large number of NGOs/CBOs. The low numbers of NGOs in Dar es Salaam can be explained from the limited space for NGO activities, due to the state's continued suspicion of these organisations (see also Mercer, 1999), and from the formalized institutional pluralism that left little room for mushrooming organisations aiming to fill the gap in service delivery, as is the case with the two other cities.

There is a clear trend of NGO/CBO evolution across the years. In Kampala, the local NGOs evolved from CBOs with the aim of serving more communities and for increasing access to donor funds. However, the change in trend from donor funding to only registered NGOs, to requirements of increased commitment to engage in the community, has encouraged more unregistered CBOs. Most CBOs are started by community leaders or an elite group within the community, who mobilize the youth to improve the poor sanitation and solid waste management situation. NGOs, especially those that did not start as CBO, are established by a group of elite men and women, such as graduate professionals (e.g. civil engineers) and social workers with a trained background in sanitation and waste management and community development, respectively. The local branches of international NGOs are made up of professionals, both local and expatriates. A few NGOs/CBOs are membership organizations, composed of both the founding members and ordinary citizens. Membership is open to the general public but entails a small fee to help run the organization. Even so, compliance to payment of membership fee is a challenge and in most cases a fee is paid only once during inception of the organisation.

The majority of CBOs in Nairobi started out as informal solid waste pickers that charged a small collection fee for their services. A few were started by an elite group of people. A number of these CBOs have undergone capacity building in sanitation and solid waste management. The NGOs/CBOs involved in sanitation are mostly donor dependent and a few are also membership organisations made up of founding members and ordinary members. The founding members are mostly local leaders, executive members of community committees, or professionals, joined by family, colleagues and friends.

The NGOs in Dar es Salaam are mostly local branches of international organizations with both local and expatriate professionals. These NGOs are donor dependent and mostly implement governmental programs. CBOs started often as a (women) group that sought to improve the poor solid waste situation. The services of these groups were initially free, which enhanced the trust from local people and the government. Some CBOs registered formally and are among those awarded the solid waste franchise by the local government. CBOs in Dar es Salaam normally have undergone capacity building with support from government and the international organizations such as ILO. These larger CBOs are membership organisations, but membership is limited to founding members and they are less open to community membership. They are not donor dependent, although occasionally they write proposals for funding in recycling activities.

5.6.2 NGO/CBO clients, activities and finances

There is variation in the geographical coverage and target population of NGO/CBO services in the three cities. Some organizations (especially in Nairobi and Dar es Salaam) serve all categories of households (poor/low, middle and high income) located in different neighborhoods, while those of Kampala provide services mostly to poor and a few middle income households in informal settlements (Table 5.1). The diversity in NGO/CBO clientele in Dar es Salaam can be explained from the adopted institutional pluralism, which allows equal participation of institutions in solid waste service delivery. The diversity in Nairobi is a result of the fragmented institutional pluralism that promotes competition among the different service providers.

Garbage collection is the most prominent activity of these organisations as well as community sensitisation. The main form of garbage collection is the door-to-door system using wheel barrows and push carts, although the drop off system is used in some areas especially in Nairobi and Kampala. Recycling activities are also prominent in the three cities with activities ranging from compositing (mostly in Nairobi), to plastic, paper, glass and scrap recycling. Most of the organizations involved in recycling activities have acquired training for specific recycling activities. For instance, some NGOs in Kampala acquired training in briquette making as well as making construction materials from waste from NGOs/CBOs in Nairobi.

Table 5.1. Characteristics of sampled NGOs and CBOs across the three cities

	Kampala			Nairobi		Dar es Salaam	
Characteristics	L/INGOs (12)	LNGOs (15)	CBOs (17)	LNGOs (1)	CBOs (43)	L/INGOs (3)	CBOs (5)
Activities							
Garbage collection	1	6	12	-	34	-	5
Providing communal toilets	8	5	0	-	24	-	1
Recycling	4	9	11	-	25	-	3
Community Sensitization	12	14	13	1	28	-	5
Monitoring	9	4	0		-	-	-
Advocacy	9	2	0		-	-	-
Support to other NGOs/CBOs	9	1	0		-	-	-
Source of finance							
Donors	12	10	13	-	8	3	-
Membership fees	-	7	5	-	6	-	3
Loans	-	-	-	1	4	-	-
Formal solid waste collection	-	-	-	-	-	-	3
Informal solid waste collection	-	6	12	-	34	-	2
Recycling activities	-	9	11	-	25	-	2
Clients							
Poor/ low income	12	15	17	-	33	3	5
Middle income	2	2	6	-	30	0	5
High income	-	-	-	-	6	0	5

Source: Inventory
Note: L/INGOs refer to local branches of international organisations and LNGOs to local NGOs.

The NGOs/CBOs involved in sanitation carry out similar soft- and hardware services across the three cities. The software services include community sensitisation, and capacity building. Advocacy and monitoring activities are most prominent in Kampala and supported by the local branches of international organisations. The hard ware services include pro-poor technologies (both individual and communal toilets). The toilets provided by the CBOs in Dar es Salaam are mostly ordinary pit latrines. More advanced and arguably more ecologically sustainable pro-poor technologies are communal biogas generating latrines in Nairobi (cf. Schouten and Mathenge, 2010), which combine treatment of human waste with biogas production. NGOs in Kampala provide so-called Ecosan toilets that are also more ecologically sustainable (see Tukahirwa et al., 2010). The difference in the hardware services between the three cities is a result of donor influence. NGOs/CBOs in Kampala and Nairobi have considerable donor support in sanitation activities.

There are similarities and variations among NGO/CBO financing schemes across the three cities (see Table 5.1). Generally all the NGOs/CBOs involved in sanitation services are donor dependent, and activities commence only when funds are available. Hence, reliance on donor money is a major weakness and danger for sustainable service delivery. NGOs/CBOs in Kampala argue that sustainable sanitation delivery requires government funding; especially in areas they have expertise such as pro-poor technologies and approaches. With respect to solid waste management NGOs/CBOs depend more on membership fees, recycling activities and collection fees. In Kampala the finances from solid waste service are inadequate due to lack of payment by (potential) clients (the urban poor). The urban poor argue that NGO services should be free and therefore they are not keen on paying for services. In Nairobi, the solid waste collection fees vary depending on the areas served and the fees are determined by the NGOs/CBOs based on the quality of service, frequency of waste collection, neighbourhood and local conditions. CBOs in Dar es Salaam have overcome the donor dependency syndrome due to the favourable solid waste service delivery franchise system. The fees for solid waste collection vary according to the area served (low, middle or high income) and the fees are pre-determined in the byelaws.

5.6.3 NGO/CBO service delivery to poor informal settlements

From our survey in poor informal settlements, no respondent indicated receiving services from NGOs in Dar es Salaam, a reflection that their space continues to be constrained. But for Kampala and Nairobi the NGO service recipients are somewhat similar, both for sanitation and solid waste management. In terms of CBO services, Nairobi residents receive the most sanitation services, while Kampala residents received the least. For solid waste services, the majority of the Nairobi and Dar es Salaam respondents receive CBO services (see Table 5.2 below).

Table 5.2. Number of respondents accessing NGOs/ CBOs services in percentages (N in parentheses)

Service	NGO			CBO		
	Kampala	Nairobi	Dar es Salaam	Kampala	Nairobi	Dar es Salaam
Sanitation	18% (61)	15% (31)	-	4% (15)	40% (83)	27% (53)
Solid waste	12% (39)	10% (21)	-	16%(53)	81% (166)	79% (158)

Source: Survey

5.6.4 Comparing NGO/CBO service recipients

Although our sampled respondents were all selected from poor informal settlements we expect some differences between the recipients of NGO/CBO services, recipients of governmental services, recipients of private market services and those who never received any institutionalised service. To analyze differences between households accessing NGO/CBO services, recipients of state/private market services, and non-recipients, for sanitation and solid waste in each city, three statistical tests were used (see Tables 5.3, 5.4 and 5.5). To assess the influence of household size and education, we used the Wilcoxon Rank sum test (or Mann-Whitney U Test), because it does not assume normality and data on the two attributes was mostly ordinal. For gender and employment attributes, which are categorical, we used the chi-square test to test for differences. To capture the employment status, household heads were asked to mention their type of employment which were later categorized into formal employment (for instance working for private, public or non-governmental organizations), informal employment (such as home-based workers, street vendors, scavengers) and not employed. Therefore, a household head was categorized as employed if he/she was either formally or informally employed. A t-test was used to analyse differences in age and income characteristics, which are continuous and assumed to be normally distributed. Household heads were asked to indicate their daily, weekly, monthly and annual income. Because of the variations in income, we use monthly income for consistency.

In Kampala, households accessing sanitation services from NGOs/CBOs did not significantly differ from those having no access to sanitation services at all (see Table 5.3), indicating homogeneity in household characteristics between the two groups. The situation is only slightly different for access to solid waste services, with differences observed only on household size between recipients of NGOs/CBOs services and non-recipients of solid waste

services (at 1% level). Recipients of NGO/CBO solid waste services had larger household sizes, which are prone to generate more waste and thus may be compelled to seek solid waste services.

Compared with households accessing governmental and private market sanitation services, those accessing NGO/CBO services only differed significantly in having smaller household sizes (at 5% level) and fewer employed household heads (at 1% level). Further investigation is needed to determine the exact cause of this result. The differences in employment levels can be explained from the philanthropic nature of NGOs/CBOs who target the most vulnerable in the community (c.f. Hailey and James, 2004; Gibbs et al., 1999) including the less employed. There are no significant differences between recipients of NGO/CBO solid waste services and those accessing government and private sector solid waste services.

Table 5.3. Comparison of households in Kampala receiving sanitation and solid waste services by NGOs/CBOs, by other service providers, and receiving no services

	Access NGO/CBO services and those without access to services						Access to NGO/CBO services and access other service providers					
	Sanitation			Solid waste			sanitation			Solid waste		
Characteristics	NGO/CBO (N=76)	No Access (N=117)	test	NGO/CBO (N=92)	No access (N=158)	test	NGO/CBO (N=76)	Other providers (N=144)	test	NGO/CB0 (N=92)	Other providers (N=87)	test
	Means(standard deviations)											
Age (years)[a]	35.6 (11.9)	33.4 (9.9)	1.425	36.1 (12.3)	34.0 (10.5)	1.417	35.6 (11.9)	35.3 (11.3)	0.170	36.1 (12.3)	34.5 (10.5)	0.896
Monthly Income (US$) [a]	91.0 (114.1)	75.1 (63.3)	1.153	86.3 (94.2)	76.4 (88.1)	0.793	91.0 (114.1)	78.5 (73.5)	0.940	86.3 (94.2)	80.1 (46.6)	0.527
Education (years)[b]	4 (4.6)	3.3 (3.7)	0.763	4.7 (5.0)	3.5(4.0)	1.655	4.0 (4.6)	4.6 (5.0)	-0.542	4.7 (5.0)	4.1 (4.7)	0.816
Household size[b]	4.1 (2.4)	4.5 (2.6)	-0.759	5.1 (2.8)	4.3(2.5)	2.549***	4.1 (2.4)	4.8 (2.6)	-2.368**	5.1 (2.8)	4.6 (2.3)	1.110
	Percent											
Gender [c]												
– male	65.8	59.8	0.696	57.6	63.3	0.791	65.8	64.0	0.078	57.6	67.8	1.989
– female	34.2	40.2		42.4	36.7		34.2	36.0		42.4	32.2	
Employed [c]												
– yes	88.2	85.5	0.285	91.3	88.6	0.454	88.2	96.5	5.848***	91.3	94.2	0.577
– no	11.8	14.5		8.7	11.4		11.8	3.5		8.7	5.8	

Notes: [a, b and c] denote characteristics analyzed by the t-statistics, two-sample Wilcoxon rank-sum (Mann-Whitney) test, and chi square test, respectively. *** and ** represent significant differences at the 1% and 5 % levels, respectively.

Table 5.4. Comparison of households in Nairobi receiving sanitation and solid waste services by NGOs/CBOs, by other service providers, and receiving no services

Characteristic	Access NGO/CBO services and those without access to services						Access to NGO/CBO services and access other service providers					
	Sanitation			Solid waste			sanitation			Solid waste		
	NGO/CBO (N=114)	No Access (N=20)	test	NGO/CBO (N=187)	No access (N=10)	Test	NGO/CBO (N=114)	Other providers (N=72)	test	NGO/CB0 (N=187)	Other providers (N=9)	test
	Means(standard deviations)											
Age (years) [a]	40.3 (10.4)	33.1 (6.3)	2.979***	39.9 (9.1)	33.7 (5.8)	2.156	40.3 (10.4)	40.8 (6.5)	-0.3205	39.9 (9.1)	42.7(10.6)	-0.864
Monthly Income (US$) [a]	138.1 (55.4)	63(43.9)	5.720***	161.2(170.4)	80.8(46.2)	2.855**	138.1 (55.4)	212.8 (250.5)	-2.970***	161.2 (170.3)	172.8(18.2)	2.093
Education (years) [b]	9.8 (3.6)	9.6 (3.3)	0.248	10.4 (3.7)	11.2 (4.0)	-0.832	9.8 (3.9)	11.8 (3.2)	-3.937***	10.4 (3.7)	11.1 (2.8)	-0.379
Household size [b]	6.9 (2.3)	6 (1.9)	1.622	6.7 (2.1)	5.3 (1.41)	2.185**	6.9 (2.3)	6.5 (1.8)	0.770	6.7(2.1)	7.7 (1.9)	-1.472
	Percent											
Gender [c]												
– male	69.3	75.0	0.264	70.6	50.0	1.899	69.3	72.2	0.181	70.6	100.0	3.679**
– female	30.7	25.0		29.4	50.0		30.7	27.8		29.4	0.0	
Employed [c]												
– yes	93.0	100.0	1.492	95.7	100.0	0.446	93.0	100.0	5.279**	95.7	100.0	0.401
– no	7.0	0.0		4.3	0.0		7.0	0.0		4.3	0.0	

Notes: [a, b and c] denote characteristics analyzed by the t-statistics, two-sample Wilcoxon rank-sum (Mann-Whitney) test, and chi square test, respectively. *** and ** represent significant differences at the 1% and 5% levels, respectively.

In Nairobi there is a very clear and significant relation between income and access to both sanitation and solid waste services. Households with no access to any service had significantly lower incomes to those having access to NGO/CBO provided services, while those accessing governmental and private services had again significantly higher incomes that those accessing NGO/CBO service. This clear relationship in Nairobi – while it was not very clear in the other two cities – relates to the heterogeneity of economic status of inhabitants of poor informal settlements in Nairobi (see K'Akumu and Olima, 2007; Huchzermeyer, 2008). The lack of affordable housing compels the majority of the middle and poor income individuals to occupy the relative cheap houses in informal settlements, making income levels in Nairobi informal settlements more diverse than those in the other two cities. The situation is different for Kampala and Nairobi where housing facilities within the city periphery are cheaper and affordable to middle income earners and this may explain the absence of middle income earners in the city poor informal settlements.

Similarly to Kampala, households with larger families accessed significantly more NGO/CBO solid waste services, but numbers are quite small, so we should be cautious with interpretations. The same caution is valid for the gender difference between NGO/CBO recipients and the recipients of market and governmental services.

Recipients of sanitation services provided by government and private market providers have significantly more years of education and are more employed. Together with their higher incomes (see above), it explains that these households both can afford and find it important to have more expensive and reliable private and public sanitation services. Compared to those who access no sanitation services, the households head with NGO/CBO sanitation services are significantly older, which correlates with income levels.

Table 5.5. Comparing households in Dar es Salaam receiving sanitation and solid waste services by CBOs with those receiving no services

Household characteristics	Sanitation			Solid waste		
	CBO Access (N=53)	No access (N=147)	test	CBO Access (N=158)	No access (N=42)	test
	Means(standard deviations)					
Age (years) [a]	42.2 (13.7)	43.3 (14.0)	-0.468	41.5 (13.4)	48.6 (14.2)	-3.051***
Monthly income (US$) [a]	90.0 (116.5)	75.9 (86.2)	0.819	80.1 (99.4)	77.5 (48.2)	0.100
Education (years) [b]	7.8 (3.1)	7.0 (2.8)	2.127**	7.3 (2.7)	6.6 (3.7)	1.317
Household size [b]	4.6 (4.1)	3.9 (2.2)	0.804	4.2 (3.0)	3.7 (1.9)	0.512
	Percent					
Gender [c]						
– male	64.2	64.0	0.001	68.35	47.62	6.192***
– female	35.8	36.0		31.65	52.38	
Employed [c]						
– yes	84.6	74.8	2.102	88.54	35.71	52.829***
– no	15.4	25.2		11.46	64.29	

Notes: [a, b and c] denote characteristics analyzed by the t-statistics, two-sample Wilcoxon rank-sum (Mann-Whitney) test, and chi square test, respectively. *** and ** represent significant differences at the 1% and 5% levels, respectively.

In Dar es Salaam no governmental or private market sanitation and solid waste services were received by our respondents in the poor informal settlements. For solid waste services, absence of the two institutions reflects successful institutional pluralism in solid waste services, where specific locations are allocated to each franchisee. For sanitation services, it rather reflects the low priority of government and the private market to sanitation in poor settlements. Recipients of CBO sanitation services had significantly more years of education compared to household heads have no access to sanitation services. For solid waste services statistically significant differences are observed in age, gender and employment status, where household heads with CBO services are younger, male and more often employed.

Overall, our results indicate that within similar settings (poor informal settlements of metropolises in East Africa), there are differences and similarities in socio-economic characteristics of NGO/CBO service recipients and non-recipients. In settlements with homogenous income levels, as in Kampala and Dar es Salaam, no major income differences were found between recipients and non-recipients of NGO/CBO services. In Nairobi, however, with larger income difference in informal settlements, access to CBO/NGO

sanitation and solid waste services differed among income categories. Employments status has two effects: recipients of NGO/CBO sanitation services are less often employed than those receiving government and market services (Kampala and Nairobi), reflecting the philanthropic nature of the former; and those receiving CBO solid waste services are more often employed than those without access to solid waste service (Dar es Salaam). The influence of age, education, gender and household size may varies across the three cities as well as between accessing sanitation and solid waste services of NGOs/CBOs.

5.6.5 Recipients opinion on NGO/CBO services

Although NGOs/CBOs are increasingly playing an important role in providing sanitation and solid waste services to the urban poor the perceptions of the urban poor receiving these services are hardly known. To assess these perceptions on and intentions to continue using NGO/CBO services, respondents were asked to rate different perceptional factors using a 5 point Lickert scale, ranging from strongly agree (1) to strongly disagree (5). Table 5.6 and 5.7 report on the perceptions of current NGO/CBO services and household intentions to continue using NGO/CBO services, based on the summation of 'strongly agree' and 'agree' (1 and 2 levels).

Table 5.6. Percentages of households having positive perceptions on NGO/CBO sanitation services (actual numbers between brackets)

Factors	NGO provisioning		CBO provisioning		
	Kampala (N=61)	Nairobi (N=31)	Kampala (N=15)	Nairobi (N=83)	Dar es Salaam (N=53)
Trust in service	82% (50)	71% (22)	73% (11)	77% (64)	75% (40)
Reliability	72% (44)	61% (19)	73% (11)	72% (60)	83% (44)
Participation	92% (56)	55% (17)	93% (14)	70% (58)	92% (49)
Satisfaction	59% (36)	100% (31)	40% (6)	96% (80)	49% (26)
Anticipated future use	92% (56)	81% (25)	47% (7)	89% (74)	85% (45)

Source: survey

There is generally high trust (>70%) among recipients in sanitation services provided by NGOs/CBOs. Those who lack trust mentioned shortcomings related to gender, religion and distance. Similarly over 60% of the recipients agree that the services of these organizations are reliable, although a minority allege failure to maintenance of sanitary facilities (especially in Kampala and Nairobi). Participation between households and the civil society service

providers is lowest among respondents in Nairobi. NGOs/CBOs in Nairobi often provide services without consultation and involvement and only ask citizens to pay for the services. Household satisfaction levels are low in both Kampala and Dar es Salaam. Across the three cities, except for CBOs in Kampala, there is high anticipation for continuous and future utilisation of NGO/CBO sanitation services.

Table 5.7. Percentages of households having positive perceptions on NGO/CBO solid waste services (between bracket in actual numbers)

Factor	NGO provisioning		CBO provisioning		
	Kampala (N=39)	Nairobi (N=21)	Kampala (N=53)	Nairobi (N=166)	Dar es Salaam (N=158)
Trust in service	59% (23)	48% (10)	38% (20)	72% (119)	84% (132)
Reliability	56% (22)	33% (7)	26% (14)	64% (107)	87% (137)
Participation	69%(27)	33% (7)	49% (26)	64% (106)	100% (158)
Satisfaction	41% (16)	90% (19)	53% (28)	98% (163)	63% (100)
Anticipated future use	62% (24)	62% (13)	81% (43)	93% (155)	100% (158)

Source: survey

Perceptions on solid waste services contrasted at various points with those on sanitation. Notable is the overall low appreciation of NGO (in Nairobi) and CBO (in Kampala) solid waste services. The main reasons are the invisibility of these organizations, the infrequent service provision, unreliability and low community involvement. As expected, CBO services in Dar es Salaam are highly valued, although with lower levels of satisfaction as recipients consider services of some CBOs infrequent and expensive. Overall, expectations of continued future use of these services are higher among CBO provisioning than on NGO provisioning in the three cities.

5.7 Conclusion

What can we learn and conclude from NGO/CBO service delivery in the three metropolises of East Africa? Our study shows that sanitation and solid waste service delivery in the three cities consists of pluralistic systems, in which NGOs/CBOs have their place, besides other institutional arrangements. Also across the two systems (sanitation and solid waste management) there are variations in institutional mixtures that serve urban citizens. But

the citizens in poor informal settlements in the three cities are not always served through plural institutions.

In Kampala and Nairobi, privatisation increasingly determines how solid waste management services are run across the city. The privatised and rigid institutional arrangements fail to provide adequate services to the poor in informal settlements. This has accelerated the growth of NGO/CBO arrangements in solid waste in these settlements, often working independently and unregulated from governmental and private solid waste management institutions. In some cases, boundaries between private and NGOs/CBOs solid waste management institutions got blurred, with the latter changing their orientation and servicing only those who can afford to pay. In such situations the plural institutions get disconnected, leaving too many poor inhabitants without services (especially in Kampala). And this is reflected in perceptions of the urban poor in the functioning of NGO/CBO run solid waste services. In Dar es Salaam, CBO institutions are formally included in solid waste services by the government, resulting in clear allocations of solid waste services for the different institutions. Although the latter model does not necessarily result in higher levels of access (comparing Nairobi with Dar es Salaam), it does seem to result in more positive perceptions of households accessing sanitation services.

Similar trends of institutional pluralism are observed for sanitation service delivery systems in the three cities. This is propelled by inadequate sanitation policies (Kampala and Dar es Salaam), by low governmental priority for sanitation, and by poor implementation of the existing policies and legislation (all three cities). Increased NGO/CBO involvement in sanitation is boosted by donor influence, which has led to significant NGO/CBO contributions to sanitation service delivery to the urban poor across the three cities. Again, Dar es Salaam provides a formalised and legalised model of institutional pluralism, where CBO institutions have a major role (especially - but not only - serving informal settlements and the poor) but are connected to other institutions through a general framework.

There are differences and similarities in socio-economic characteristics between recipients of NGO/CBO services and either non-recipients of services, or recipients of services provided by government/the private market. In more homogeneous poor informal settlements differences are less prominent, while in informal settlements with significant socio-economic differences among its inhabitants (Nairobi) we see more differences.

The differences in informal settlement inhabitants, in connections and coordination among the different sanitation and solid waste institutional arrangements, and in historical background makes it also unwise to strive to harmonize the involvement of civil society institutions in urban services across the three countries. Let alone to one uniform (best) model of institutional pluralism in these two urban sectors. But that is not to say that the three cities cannot learn from each other in governing urban environmental services across different institutions. For instance, what can be learned from Dar es Salaam is how CBOs are fully included into the formal urban service provisioning system and are contracted to provide solid waste and sanitation services. This seems all the more relevant as, compared to developed countries where civil society contribution to sanitation and solid waste is marginal, NGO/CBOs will remain major institutions in the urban environmental service provisioning, not in the least regarding the urban poor.

CHAPTER 6: DISCUSSION AND CONCLUSION

6.1 Introduction

It is clear, as discussed in the introduction to this thesis that sanitation and solid waste management continue to be development challenges for many developing countries. The challenges are more severe in the cities of these countries including in East Africa. Governments are struggling to meet the costs of providing sanitation and solid waste management services. The adoption of developed-country-style centralized systems is beyond the financial and technical and organizational/institutional capacity of developing country governments. This necessitates a rethinking of solutions and approaches to sanitation and solid waste management to which this thesis contributed.

The thesis posits that such solutions will involve all actors and especially non-Governmental Organizations and Community-Based Organizations within the context of creating sustainable, pro-poor solutions in the provision of sanitation and solid waste infrastructures and services. The focus on NGOs/CBOs is informed by the fact that these organizations are key players in the provision of sanitary and solid waste disposal services in developing countries and yet their work has not been critically assessed. As such, the thesis goes beyond the hypothetical evidence or information that has been portrayed by various discussions in a number of countries on the role and impact of these actors. The empirical focus on NGOs/CBOs is not only relevant because of the current discourse on how to accelerate sanitation and solid waste management for all (including the urban poor), but also because they play crucial roles in poverty reduction and global equity related to sanitation and solid waste management in many developing countries.

Potential solutions for better sanitation and solid waste management were examined by considering the urban poor living in slums in cities of East Africa, in particular in Kampala, the capital of Uganda, and to a lesser extent also Nairobi and Dar es Salaam. Kampala was selected because of its high population growth, large poor informal settlements (slums), the current sanitation and solid waste management situation, as well as the high degree of NGO/CBO institutional presence. Nairobi and Dar es Salaam were added to increase the external validity of the findings. The research also focused on the emerging Modernized Mixtures Approach (MMA) as a strategy for improving the disastrous sanitation and solid waste management situations in cities of East Africa. The strength of the approach lies in the proposition that a diversity of stakeholders need to be involved in developing and

implementing pro-poor sustainable socio-technological systems and tools, which fit the local contexts. Only then there is an opportunity for accelerating the widespread access to sanitation and solid waste management services. Therefore, the research is also an attempt to determine if MMA can help us in finding feasible solutions for the urban poor through the activities and interventions of NGOs and CBOs. The research was carried out as part of the larger PROVIDE project that attempts to analyse and improve the sanitation and solid waste management situation for the urban poor in East Africa cities.

In short, this thesis analyzes the work, impact and sustainability of Non-Governmental and Community-Based Organizations (NGOs/CBOs) in sanitation and solid waste management in developing countries. The research focuses on two key questions:

1. In what ways are NGOs and CBOs participating in the development and implementation of sanitation and solid waste management and what are the key factors influencing their participation?
2. How and to what extent are the activities of NGOs and CBOs sustainable, accessible to the poor, flexible and resilient under changing socio-political, institutional and economic conditions?

The conceptual framework developed for answering these research questions centred around the MMA and other theories that have been put forward to explain the drivers that lead to the emergency, functioning and relevance of NGOs and CBOs. Some of these theories (such as partnership paradigm, social network theory and institutional pluralism) were used to explain key factors influencing the participation of these organisations in sanitation and solid waste service delivery. Specifically, the MMA was used to study the institutional arrangements that govern and run these urban services, particularly analysing the role and position of NGOs and CBOs under such arrangements. The position and role of these organisations under the existing arrangements were assessed against three different sets of criteria: sustainability, accessibility (particularly for the poor) and flexibility. Nevertheless, successful sanitation and solid waste management in African urban centres cannot be achieved by one single (collective) actor. In such situations the partnership paradigm offered a useful framework to understand and study how various actors collaborate and partner in the provisioning of sanitation and solid waste services. Also the concept of institutional pluralism provided tools to analyze varieties in and combinations of institutions involved in specific

issue areas. In studying civil society involvement in sanitation and solid waste service provision the study focused on the degree of involvement and the amount of service provision, as well as the extent to which civil society service provision is focused on or limited to the poor, and the competition and (different forms of) collaboration with the institutions of state and market. The social network perspective facilitated the study of the social relations between NGOs/CBOs and their beneficiaries and the implications of these relationships for the provision of and access to sanitation and solid waste services.

The following section presents and discusses the research findings which attempt to directly answer the research questions. Section 6.3 assesses and reflects upon the role of NGOs and CBOs in sanitary and solid waste disposal services in comparison with the concepts discussed in the introduction chapter. Section 6.4 discusses the contributions of this research to the wider PROVIDE project, of which it is a part. Section 6.5 discusses the effectiveness and impact of NGOs and CBOs in providing sanitary and solid waste disposal services. The final section gives reflections on upshots, implications and lessons learnt.

6.2 Evidence-based conclusions from the chapters

6.2.1 Participation of NGOs/ CBOs

Chapters 2 and 5 show that indeed NGOs and CBOs are no longer standing on the sidelines of sanitation and solid waste management, waiting to be called to take up the leftovers of conventional urban environmental service provisioning; they are already fully involved. Even in situations where these organizations are not formally recognized by the state, like the case of Kampala, their contribution, although not as big as that from governmental authorities, is comparable to that from the private sector. Hence, without the involvement of NGOs and CBOs more urban poor would suffer from inadequate sanitation and solid waste services and the related health impacts. While initially restricting their activities and agendas to small projects in poor unplanned neighborhoods, these civil society organizations have since moved on to become important players providing sanitation and solid waste services to large urban populations and settlements. For instance over 90% and 75% of respondents in Nairobi and Dar es Salaam, respectively, indicated that, they receive solid waste services from these organizations. Although, the figures for Kampala were

smaller, they were still comparable to those accessing government solid waste services and even higher than those accessing services from the private companies.

The research reveals that the idea of environmental partnership is widely shared and supported. Empirical evidence gathered from this study shows a kind of modernized mixture model emerging, where the conventional advocates of large-scale, privatized, and high technological sanitation and solid waste services partner with NGOs and CBOs either formally as the case with Dar es Salaam or informally as in the cases of Kampala and Nairobi. However, the successful implementation and operationalization of informal mixtures, and particularly the division of tasks regarding responsibilities and power therein, proves far from easy and comes along with major hurdles and constraints. The involvement of NGOs and CBOs has been hampered, in particular, by shortage of resources, poor policies and excessive donor dependency.

Especially the issue of poor policies requires attention. Government policies favor the formal large-scale private companies at the expense of NGOs and CBOs because of the official conditions included as shown in the cases of Kampala and Nairobi. In such situations, the research contends that for NGOs and CBOs to successfully become involved in the implementation and development of sanitation and solid waste services, a reform is necessary of the policies, the policy-making process as well as of the policy enforcement procedures. Hence, CBOs and NGOs should not only be involved in service provision but should participate in the policy making process and policy enforcement as well, instead of leaving these latter two in the hands of the state alone. The evidence gathered in Dar es Salaam suggests that this is possible, through formal recognition, partnership and mutual engagement.

6.2.2 NGOs/CBOs and access to sanitary and solid waste services

The research contributes to the ongoing debate about improving access of the urban poor to sanitation and solid waste disposal services. This issue is discussed mainly in Chapter 3 of this thesis. To that end, the research empirically investigated the determinants of access of the urban poor to sanitation and solid waste services with a focus on the NGOs and CBOs in Kampala. This study found that access to sanitation and solid waste services is driven by aspects of both NGO and CBO institutions and the urban poor. An important insight was the influence of social proximity, in addition to conventional spatial proximity, socio-economic and perceptional factors. Social proximity was shown to be one of the major factors

explaining access of the poor to NGO- and CBO-provided sanitation and solid waste services. Cooperation between households and these organizations proved important in providing solid waste services, whereby trust proved an essential factor in explaining access to sanitation. The research demonstrated that an important way to ensure access of the urban poor to sanitation and solid waste services provided by NGOs/CBOs is to facilitate the functioning of social networks and to build trust in those organizations and their services. It is in this area that non-accessing households have to be convinced about the relevance of these organizations: through offering reliable, timely and high quality services and establishing close social ties between NGOs/CBOs and the non-accessing households. Physical distance to facilities or spatial proximity - a factor that is often ignored by the service providers and policy makers in planning sanitary services for the poor - proved important as well in explaining access of the poor to NGO-provided toilets and solid waste services. Thus spatial proximity should be considered when planning sanitary and solid waste services for the poor. The research also confirms, unsurprisingly, that costs and income have a significant influence on access to solid waste services. Perceptional factors are also key determinants of accessing NGO/CBO services, such as the perceived competence of NGOs/CBOs and their activities. For instance, the more capable and efficient the CBO is perceived to be, the more likely households are accessing the solid waste services of that organization. Empirical evidence further indicates that positive impressions are key for accessing services, implying that the more positive the impression of a household to services of an NGO, the more loyal that household is likely to be towards its services.

Therefore, some factors determining access of the poor are in the hands of NGOs/CBOs and awareness of these determinants can improve NGO/CBO programs their access to the services of these organizations. Other factors rather depend on the users or clients such as socio-economic factors, but more information and awareness about these can be equally important for improving access.

6.2.3 User acceptance of technological innovation

User acceptance of innovative technologies was found to be a key factor in the bid to improve sanitary facilities for the urban poor in Kampala. Previous efforts to improve the sanitation situation among the urban poor made by local NGOs and CBOs had not resulted in

sustainable solutions. In Katanga for instance, a number of innovative and ecologically sustainable options had been established, such as ecological sanitation (ecosan) toilets and composting plants intended to improve the health and environmental conditions of these slum inhabitants. In reality, however, these facilities are used by only very few poor households because the majority of the potential users are convinced that these ecosan toilets do not fit their socio-cultural practices. As a result most human waste is still disposed of indiscriminately, together with solid waste, leading to sanitation problems. Here the expert dilemma is felt: knowing solutions without knowing the problem. Therefore, improving sanitation facilities for the urban poor is faced with a lack of user acceptance of proposed innovative technologies – a factor that tends to be ignored by technical experts and municipal decision-makers and thus leads to a gap between user acceptance and technological innovation. Closing this gap is important for decision makers and for service providers. To start off, providing effective sustainable sanitation solutions in slum areas requires an in-depth understanding of the lives and preferences of the inhabitants living in these informal settlements. Closing the gap between user acceptance and technological innovations is best achieved by engaging the future end-users in the decision-making process on improving sanitary infrastructures. Realizing this would result in identifying feasible sanitation options that are more sustainable, more flexible and more accessible for the poor, because technological and social dimensions are combined and end-user views and expectations taken into account. While the Modernized Mixtures approach offers an analytical framework for identifying suitable solutions, it is limited by the absence of participatory decision-making considerations. To overcome this limitation, Chapter 4 identified, tested and further elaborated an appropriate multi-criteria decision-making tool- PROACT 2.O

PROACT 2.0 establishes procedures that give end users a place in certain phases of the planning and decision-making process. During the testing of the methodology, as reported in Chapter 4, two major adaptations made this revised 2.0 version more realistic and applicable. The first major adjustment was the insertion of a screening phase, where most stakeholder groups are left out due to their limitations in technical expertise when assessing technological innovations. By relying on qualified, independent experts and ensuring sufficient diversity in technological expertise a lock-in effect, whereby only few alternatives would be considered, was prevented. The second major adjustment was the introduction of

the SWOT analysis of feasible options by the end-users only. The results from this SWOT analysis proved very relevant, because disagreements between users and between users and experts often have little to do with the technology per se, but rather with the importance of user considerations, such as convenience and cultural-religious aspects. Increased insights in end-user views allow for a better understanding of why the adoption of technological improvements in practice differs from what experts expect (and/or hope).

PROACT 2.0 thus proved to be a useful method for participatory decision-making on improving sanitation facilities because (i) it combines information, knowledge and 'expertise' from experts, policy makers and users, (ii) it balances these various sources of inputs, to ensure that none dominates, and (iii) it excludes stakeholder groups from phases where they have little to contribute, making the participatory process more efficient and feasible. The strength of this method is that it is not specific for NGO/CBO sanitation solutions but can be used to increase access of solid waste services and other public services promoted by all service providers. This method therefore, is one of the innovations that can increase usage of improved sanitation and solid waste services by the urban poor and hence improve access.

6.2.4 Answering the research questions

Empirical evidence in this thesis shows that sanitation and solid waste service delivery in the three cities consists of a mixture of different systems and practices, in which NGOs and CBOs have their place besides other institutional arrangements. But the citizens in poor informal settlements in these three cities are not always served through these mixtures. In some situations, for instance in Dar es Salaam, CBOs have a monopoly in the poor informal settlements. This has been propelled by the formalisation and government recognition of these organisations resulting in clear allocations of solid waste services between the different institutions in different geographical areas. In other situations, for instance in Kampala and Nairobi, the involvement and emergency of NGOs and CBOs is the result of failed government service delivery and the monopolistic privatisation tendencies favouring only the larger private companies which fail to provide adequate services to the poor in informal settlements. This has accelerated institutional mixtures involving NGOs/CBOs which often work independently and unregulated from governmental and private solid waste management institutions. In some cases, the boundaries between private-based and NGO/CBO-based solid

waste management institutions get blurred, with the latter changing their orientation and servicing only those who can afford to pay. In such situations the different institutions get disconnected and leave too many poor inhabitants without services (especially in Kampala). This is reflected in perceptions such as; trust, satisfaction, and attitude of the urban poor towards the functioning of NGO/CBO-run solid waste services. Similar trends of institutional pluralism are observed for sanitation service delivery systems in the three cities. This is propelled by inadequate sanitation policies (in Kampala and Dar es Salaam), by low governmental priority for sanitation, and by poor implementation of the existing policies and legislation (all three cities). Increased NGO/CBO-involvement in sanitation is boosted by donor influence, which has led to significant contributions from NGOs/CBOs to sanitation service delivery to the urban poor across the three cities. This donor dependence of course endangers continuity as these financial sources may fall away unexpectedly.

This study has shown that NGOs and CBOs are contributing to ecological sustainability through minimization of pollution by participating in sanitation and solid waste management service provision. Apart from the waste collection, the recycling activities performed by these organizations are also key for realizing ecological sustainability. However, some of their activities and technologies (such as toilets) are not ecologically sustainable yet and this is an area that these organizations need to improve. But ecological performance also depends upon the cultural-religious and financial preferences of their clients, emphasizing the relevance of awareness raising and education programs of these NGOs/CBOs. This study has also revealed that some of the urban populace especially the poor, realize access to sanitation and solid waste management through the intervention of NGOs and CBOs. However, in cities (for instance Kampala) with rigid institutional arrangements and unrealistic privatization processes that do not favor NGO and CBO institutions, full access of all the urban poor to NGO/CBO services is obstructed. Empirical evidence presented in this thesis also shows that most NGOs and CBOs are embedded within the local communities they service which are important for improving access to sanitation and solid waste management because of the resultant social networks and compassion towards improving the services of their communities. These attributes make these institutions withstand the challenges brought about by economic, political and cultural instability or resistance because the communities recognise them as their own and thus easily relate with

them. In addition, NGOs and CBOs adapt and survive under unfavorable and changing conditions because of their flexibility and resilience. For instance in Nairobi, some of these organizations evolved into company-like structures under emerging neoliberal policies and privatization processes. This evolution enables them to withstand the intense pressure that comes along with competition from the private sector and their at times unsustainable (foreign) funding.

6.3 Contributions to PROVIDE

The PROVIDE research program has especially investigated whether new approaches to the challenges of sanitation and solid waste service provisioning for the urban poor in sub-Saharan Africa can be designed. These new approaches – labeled Modernized Mixtures – would then be intelligent combinations/reconfigurations of existing paradigms, fitting the specific local context of the urban poor in sub-Saharan Africa. In contributing to this program, this research has especially looked into the potential contributions from NGOs and CBOs designing, implementing and managing such services, alone or in partnership with other actors/service providers.

This research has shown that indeed NGOs and CBOs are involved in key sanitation and solid waste management activities for the poor, most of which are insufficiently executed by the government and the private sector such as community sensitization and mobilization, waste reduction, and reuse and recycling activities. Community sensitization and mobilization is key in improving the poor urban sanitation and solid waste management situation through changing the behavior of the people towards proper sanitation and solid waste management. Waste reduction, re-use and recycling activities carried out by these organizations are important because they reduce the amount of waste reaching the dump site, reduce the accumulation of waste in homes and neighborhoods, and generate income. This makes these organizations indeed vital in the improvement of sanitation and solid waste management services, especially for the urban poor who are too often insufficiently served by the dominant utility institutions of the public and private sector. Therefore, the present institutional structures in especially in Nairobi and Kampala, which formally exclude these NGOs and CBOs in solid waste management and sanitation provisioning, as revealed in this research, need reconsideration. The civil society institutions that are at the core of this research do need

to be formally included in the modernized mixtures that can provide urban environmental services for the entire urban populations of the metropolises of East Africa. These civil society organizations are key agents for community sensitization and mobilization and for recycling, in addition to direct service provision to the poorer households and neighborhoods that are now left too often unserved. This is one of the key contributions of this research to the PROVIDE research program and the Modernized Mixtures conceptual framework.

This research also found a number of additional reasons why NGOs and CBOs are crucial in pro-poor sanitation and solid waste management service delivery. First, many NGOs and CBOs are embedded within the local communities they service which is important for improving access through the resultant social networks formed between these organizations and the surrounding poor communities. As a result these organisations are often more trustworthy among the poor than private or state providers. Second, NGOs and CBOs have proved to be significant for channeling foreign funds, because of their considerable credibility among donor organizations and their close proximity to the poor. The sanitation systems, and to a lesser extent also the solid waste management systems, in the three metropolises under study are heavily dependent on donor funding and NGOs and CBOs are increasingly seen by these donor organizations as preferable partners, also in achieving the Millennium Development Goals.

NGO and CBO activities however, require significant resources (monetary resources, fixed capital/equipment, knowledge and information) which is still a challenge in all the three cities. This is amplified by the privatised and rigid institutional arrangements in some cities (Kampala and Nairobi) that complicate service provision to the poor, but which have led to the emergence of large numbers of these organisations. As a result of resource constraints and privatisation these organisations have adopted market strategies for survival. Under such circumstances (Nairobi), the boundaries between private- and NGOs/CBOs-based solid waste management institutions get blurred, with the latter changing their orientation and servicing only those who can afford to pay, leaving a number of poor inhabitants out. The adaptation of this market strategy often leads to a transformation from their altruism and community-servicing to self-interest and profit making. Although empirical evidence in this research shows that the marketization strategy has advantages for these organisations as it promotes the development into a kind of sustainable institution that is more donor independent, the

disadvantages of such a strategy may be larger because of the introduction of selective service provision to only those who can afford to pay for the services. Therefore, in some situations these organisations should not always be seen as just philanthropic but equally as the market actors they often are, having their own interest rather than just representing the common good or the poor. We can no longer make an automatic one-to-one relation between pro-poor service provisioning and NGOs/CBOs, both in terms of actual service provisioning for the poor as in terms of institutional arrangements for desirable service provisioning to the poor. This research has shown that there is a kind of emerging/existing mixtures of philanthropy and marketization in the sanitation and solid waste management service delivery of NGO/CBO institutions across the three cities. This has resulted into a wide variety of dynamic, flexible and adaptive NGO/CBO-based institutions capable of surviving under different and constantly changing circumstances, but also with varied degrees of servicing the urban poor. This mix as hypothesized by the concept of Modernized Mixtures appears to be necessary for the survival of these organisations, but further research is needed to understand what this now means for maintaining pro-poor servicing. Still, we can conclude that these modernized mixtures of NGO/CBO-based provisioning works better for the poor than the conventional state and private market-based modes of operation.

In addition, some of these NGOs and CBOs are also key players in implementing and disseminating sustainable innovations in the field of urban services, for instance by providing innovative pro-poor sanitary technologies (Nairobi) that are ecologically sustainable. What this research also contributed to the Modernized Mixtures framework is the essence of participation in implementing and disseminating ecological innovations. Inclusion of end-users in the particular decision-making steps of service provisioning is essential for the acceptance of innovative technologies around sanitary facilities, and the participatory decision-making tool, PROACT 2.0, can play a major role in that process.

This research proves that the Modernized Mixtures Approach is a viable analytical framework that can be applied for identifying and designing infrastructure solutions that are adapted to the specific local contexts. This Modernized Mixtures Approach can help to overcome conventional dichotomies when planning systems, such as those between large-scale systems and small-scale systems, advanced- and low-technological systems, consumer-exclusion versus client-involvement, but also private versus publicly run systems. As

discussed in section 2 above, there is a kind of modernized mixture model emerging and NGOs and CBOs are part of this mixture, be it in very different ways and to a different extent in the two sectors (solid waste and sanitation) and within the three cities. The research shows that one way to enhance the activities and effectiveness of NGOs/CBOs towards supporting the urban poor is to work together with other service providers, both state and non-state ones. At the same time, the present diversity among the different sanitation and solid waste institutional arrangements makes it unwise to strive to harmonize the involvement of civil society institutions in urban services across the three countries. Let alone to suggest one uniform (best) model of institutional mixture for these two sectors of urban environmental services. But the three cities and the two sectors can learn from each other in governing urban environmental services through different institutions. Combinations/configurations that bring the strongest of all institutions together in specific localities will get the best results: in terms of protecting the environment, of servicing the poor, and of promoting resilient systems.

6.4 The effectiveness and impact of NGOs and CBOs in service provisioning

Considering (the perception of) the philanthropic nature of NGOs/CBOs and the fact that they are seen as alternatives to the conventional top-down governmental and private market sector approaches to sanitation and solid waste management, there are high expectations by the urban poor from these organizations. However, empirical evidence from this study shows that in some cities (for instance Kampala) NGOs and CBOs are not always effective and their impact is rather minimal. Some of the identified factors that affect NGO/CBO effectiveness and their impact include policy limitations, the sociopolitical climate and the funding base of the organizations. These three factors are considered in more detail below.

6.4.1 NGO/CBO legitimacy

One of the impediments to NGO/CBO involvement in the sanitation and solid waste management sector is the policy and enforcement environments that these organizations have to operate in. Although legal recognition and appreciation is pragmatically granted in some cities (for instance Dar es Salaam for solid waste management), considerable barriers do exist in cities with limited formal recognition of NGOs and CBOs regarding service provisioning.

In cases where the legal or policy arrangements obstruct the full involvement of these organizations, their activities are seriously hampered, to the extent that more and more of such organizations evolve into private-like structures, which is a development that is rather financially than socially motivated. This evolution leads to conflicts with private companies which are generally contracted to provide services and with the government institutions that issue such contracts.

When NGOs/CBOs are not recognized as potential service providers by the government, this often justified by questioning their legitimacy. The historical development of NGO and CBO as institutions in East Africa continues up until today, with significant government suspicion about their legitimacy, the lack of transparency these civil society organizations display, and their often informal nature. The authenticity of these organizations is questioned by governments and other actors, claiming that many organizations give the impression of being out there to fulfill the personal needs of staff or initiators. Further, NGOs and CBOs are accused of secrecy and lack of sincerity about their activities, leading the government (but also others sectors of society) to conclude that their activities are self-centered and not necessarily aiming at improving the sanitation and solid waste management situation of the urban poor (see Chapter 5). Following these arguments, the government considers them to be a legitimation to mainly contract out services to private companies, as is witnessed in Kampala and Nairobi. This preference for private sector providers corresponds with and is enforced by the adoption of the more overarching neo-liberal policies that favor privatization. Solid waste privatization and the resultant rigidity in the preferred institutional arrangements result in NGOs and CBOs working independently and unregulated from the other (government and private) institutions. All this has also brought negative consequences to the effectiveness of these organizations. In some situations, such as in the case of Kampala, the contribution from NGOs and CBOs has been very minimal, with very few households accessing their services. In such situations, the NGO- and CBO-client relationship has also been hampered. As a consequence, negative perceptions of these organizations from their clientele have been generated as well. For instance, clients in Kampala did not consider CBO services reliable, cooperative and satisfactory. The main reason given was the invisibility of these organizations, the infrequent service provision and the low community involvement.

Under such conditions, perceptions of NGOs/CBOs who are mainly oriented to fulfill their own need arise easily.

Under policies with a formalized and legalized model of institutional pluralism, where NGO and CBO institutions are given (and take) the opportunity to play a formal major role (as is the case with Dar es Salaam), the contribution from these organizations to urban environmental service provisioning has been significant, with almost all the urban poor accessing services supplied by these organizations. In such situations these organizations are effectively generating positive perceptions from the households accessing these services more easily. Therefore, it is in the area of formalization and legalization of NGOs/CBOs that sanitation and solid waste management policies could be enhanced for improving the legitimacy of these organizations, and with that also their effectiveness in service provisioning.

6.4.2 NGO/CBO and donor dependency

Almost all studied NGOs and CBOs that work with sanitation were donor dependent and received funds mainly from international NGOs and local branches of international NGOs. Most NGOs and CBOs see it as a challenge to reduce their donor dependency, as this is often perceived as problematic, undesirable and not sustainable. Most of the international NGOs and donors have local branches within the country through which funds and support for the local NGOs and CBOs is channeled. Donors and international NGOs have a major influence on the agenda and activities of local NGOs and CBOs, persuading them to promote their (donor) interests rather their own (NGO/CBO) interests and those of the communities. For instance, in Kampala a number of NGOs/CBOs involved in sanitation and solid waste services often shift their focus following changes in donor programs, such as a focus on HIV, and with that they completely neglect their existing services and the needs of their clients as initially defined by NGOs/CBOs. Through donor resources NGOs and CBOs have also grown and developed an interest in continuity of their organizations, making them increasingly dependent from these donor resources. Thus while this donor influence has brought in significant amounts of resources and allowed NGOs and CBOs to increase their impact on serving the poor, this often also resulted in a failure by these organizations to continue with

their pre-planned activities because they could no longer stand on their own and thus behave independently.

Partly related to this donor dependency, NGOs and CBOs face the problem of inadequate funds to provide services to all the communities within their territory of operation. This is especially the case in those cities and communities where they are not given formal contracts by the government. The common approach found among these NGOs and CBOs to access more financial resources was increasing their recycling activities and by raising their membership fees. However, the revenues collected through recycling are often too small and membership fees proved often unaffordable for the poor. This study has hypothesized that there are two ways out of this dilemma of donor dependency and lack of domestic funding. The first strategy is a further upgrading and diversification of CBO/NGO strategies/activities for acquiring income, so that these organizations can become more self-sustaining. The second strategy is that the government formally recognizes the legitimacy and importance of these organizations in service provisioning and contracts sanitation and solid waste services to these organizations, as happens in the case of Dar es Salaam. This latter approach, however, depends on enacting appropriate policies and on building trust between NGOs and the government.

6.4.3 The effect of government strategies and neoliberal policies

One of the major constraints identified by NGOs and CBOs is related to the current government preferences and policies. For instance, although current solid waste management policies in Kampala and Nairobi fully recognize the value of NGOs and CBOs and include them formally under the private sector, all the work is contracted out to large-scale formal private companies only. With respect to sanitation, we saw on the one hand that government policies as well as increased donor demands further enhanced government recognition of NGOs/CBOs participation in the water and sanitation sector in Kampala. While on the other hand governments' interests and priorities have discouraged these NGOs and CBOs from providing sanitation services to the urban poor. Nonetheless, with support from donors NGOs/CBOs are continuing their attempts to provide services to an increasing number of urban poor independently from these other institutions. The sanitation situation is slightly different in Nairobi and Dar es Salaam. Although the sanitation policies recognise

NGOs/CBOs as important actors, NGOs/CBOs hardly engage in service delivery in these two cities. Implementation of sanitation services especially for the urban poor in informal settlements is weak and little cooperation and collaboration exists between government and NGOs/CBOs. In both cities, government provides sanitation services independently from civil society organizations.

Selective neoliberal policies and the lack of government support discussed above have promoted a kind of institutional pluralism in which NGOs/CBOs have their place, besides other institutional arrangements. But these organizations often operate independently from and uncoordinated and unregulated by government institutions and this has an impact on the effectiveness of NGOs/CBOs as well as on the overall service delivery to urban poor. In some cases, the boundaries between private and NGOs/CBOs solid waste management institutions get blurred, with the latter changing their orientation and servicing towards only those who can afford to pay for their services. In such situations many poor inhabitants are left without services (especially in Kampala). However, this thesis proves that a clear and enabling policy makes it easier for these organisations to work effectively as is the case of solid waste management in Dar es Salaam. In such situations NGO/CBO institutions are formally included by the government, resulting in clear allocations of services and their effective delivery.

6.5 Final reflections

The discussion in this section goes beyond the empirical findings presented in the previous chapters. It aims to open up a productive debate on the role of the NGO/CBO sector in the sanitation and solid waste management sectors, particularly as we approach the year designated as moment for attaining MDG 7. This discussion is important because of the increased acknowledgement of such organizations as alternatives to other service providers for the poor, because of their non-profit character as well as their close proximity to the poor. The section is also relevant for a wider constituency of urban centers in developing countries than only the three that were central to this study.

6.5.1 Shift from public to NGO/CBO goods

What is evident from this study is that in developing countries sanitation and solid waste services are increasingly being transformed from public goods to private goods that

benefit only those few that can afford them. At the same time, there is also a transformation process going on turning these services into ‘NGO/CBO goods’, and within these 'NGO/CBO goods' from freely accessible goods to priced ones that can be accessed in essence only by the urban poor who can afford and are willing to pay. The shift of services from public to private and/or eventually to priced 'NGOs/CBOs goods' has had a number of consequences for the urban poor in the large urban centers of East Africa. In these situations, the creation of 'NGO/CBO goods' has encouraged market orientations resulting from the neoliberal policies that favor those who can pay for the goods. These tendencies have also opened up competition between NGOs/CBOs and the private companies using the conventional business approach of ‘win-or-lose’, in which the parties compete not only to win but to ensure that others lose. This competition has also impacted the access of those urban poor who are not among the clients competed for, as is the case with Nairobi. Hence, with the creation of priced NGO/CBO goods and the growing competition between these civil society organizations and the private sector we see a group of poor people emerging that remains un-served.

However, these complexities can be dealt with as proven in the case of Dar es Salaam. The institutional arrangement in Dar es Salaam has moved from the old conventional methods of doing business as usual (win-or-lose) to ensuring a win-win situation where all actors from the three sectors are formally included in the whole system, but where different institutions serve different sectors of society. This was made possible through government coordination, policy reforms and enforcement that gave equal opportunity for all competing parties as well as consideration for the entire population, including the urban poor. This has not only increased the vibrancy of these organizations but has also led to their sustainability. The system of organizing solid waste services in Dar es Salaam forms a lesson that can be replicated in other cities with the aim of catering for the entire population, including the poorest of the poor who may not be able to afford such services. This also brings into play the philanthropic character of NGOs/CBOs, where these organisations provide free services to the most vulnerable individuals in the communities, such as the families headed by orphaned children, the elderly and terminally ill individuals (as is done in Dar es Salaam). In addition, NGOs and CBOs could co-opt the unemployed families in their service delivery for the community, in return for free services. This exemplary system is not yet, but could be, extended to sanitary facilities, especially to those that are donor provided.

6.5.2 NGOs/CBOs: Are they part of the modernization models?

The successes and failures of sanitation and solid waste service delivery in the East African cities have to a large extent also to do with the modernization models adopted. Some of these models favor large private centralized systems. For instance, the solid waste management systems adopted in the cities of Kampala and Nairobi are the unidirectional implementation of purely public-private models excluding NGOs/CBOs. These models do not fit the local context of the urban poor because they start from the (unjustified) assumption that the city is homogeneous with respect to its social, economic and building environment. The divergence of such models from the reality of the city contexts has led to inequality in solid waste services, mushrooming of appropriate as well as inappropriate alternative service providers (including NGOs/CBOs), increased illegal dumping both by the potential clients and the service providers, as well as to a negative attitude among the potential service providers and the clients.

Nonetheless, in both the modernization models that more (Dar es Salaam) or less (Kampala and Nairobi) support NGO/CBO involvement, these organizations govern and run such urban services. They are involved in service provisioning for the urban poor, and hence contribute to their access. Of course, their contribution is comparatively high where the modernization model is less 'rigid', and where politicization of sanitation and solid waste wastes is avoided through the integration of other potential and socially legitimate institutional partners that consider the wellbeing of the poor. However, even under unfavorable conditions (such as neoliberal policies, politicization, privatization, and changing institutional climates) these organizations have proven their flexibility by acquiring and developing means of adaptation and survival. The flexibility and resilience of these organizations enable them to survive and adapt, even within such 'hostile' and non-enabling environments (such as contemporary Kampala and Nairobi). Therefore, there is a kind of modernized NGO/CBO institution that can thrive and blossom also under unfavorable conditions, sometimes working together with governmental agencies and private companies (either formally or informally) in upgrading sanitation and solid waste management, especially for the urban poor.

6.5.3 Last but not least …

This research has shown that indeed NGOs and CBOs can improve basic service delivery for the urban poor. Despite the numerous external and internal forces putting pressure on these organizations, they are fully involved in service provision.

What clearly come out of this research are the failed government and market models of provision of sanitation and solid waste services to the urban poor. This is in conformity with the theories put forward in chapter one, which explain the government and market failure drivers that lead to the emergence, functioning, growth and involvement of NGOs and CBOs in public service delivery. As a result there is an increasing reliance on NGOs and CBOs to shoulder the burden of providing sanitation and solid waste services to this neglected urban population, which can hardly afford these basic services.

But our research also has shown that the picture is much more complex. NGOs/CBOs are involved in markets, they are not just philanthropic organization but have an interest on their own, and thereby they also serve the not-so-poor, while offering services for free often does not result in their functioning in a sustainable and enduring way, also not for the poor. While some sections of the urban poor prefer services from these organisations as better and/or cheaper than those from the government and the private companies (for instance in Kampala), others have no option but to access services of such organisations regardless of their (high) costs and their (poor) performance (for instance Nairobi). In other instances, governments manage to provide decent services to the urban poor, by differentiating payments in accordance with income levels.

This opens the debate on the future relevancy of these civil society organizations in the two systems: whether, to what extent and under what conditions will they matter and where will be their strong and weak points when delivering services to the poor. The role and function of NGOs and CBOs in service provisioning to the poor are no longer taken for granted or beyond discussion, not by the urban poor, nor by the local and national authorities, or the international donors. And, for the future, we can expect more debates on their legitimacy, credibility, and performance. The Modernized Mixture model can play a useful role in these debates, by preventing monolithic and simple solutions, and by bringing in the relevance of considering contextuality, institutional diversity and the key criteria for assessing alternative service delivery arrangements.

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Appendices

Appendix 1: Questionnaire for Managers of a Selected NGO/CBO

1) Type of Organization	2) Name	3)Years of existence	4) Location

5. What is your level of education? ……..……
6. Is your organization located in the community you serve?
5. How many persons work for the organization (including yourself)? ..... person(s)
6. Who make up your organizations? *(YOU CAN TICK MORE THAN 1 ANSWER)*
a) community members
b) community leaders
c) causal laborers
d) professionals
e) other, specify ……...……..
5. What is the average earning of your employees?
a). per month ……
b). per annum ……...
6. Does your organization carry out;
i). sanitation services? a) yes b). no
ii). Solid waste services? a) yes b) no
7. if yes, mention the services
i). Sanitation
……
……
ii). Solid waste
……
……
8. Is your Organization donor dependent?
a). yes b). no
9. If yes, who are the donors? *(YOU CAN TICK ONE OR MORE ANSWERS)*
a). government
b).international organizations
c).private companies
d) other, please specify ……..……..
10. If no, where does your organization get funding to run the organization?
……
……
11. What's the fee of solid waste collection services of your organization compared to the fee of government?

(TICK ONLY 1)

a). Much higher fee
b). Higher fee
c). Equal fee
d). Lower fee
e). Much lower fee

12 What's the fee of solid waste services of your organization compared to the fee of private companies?

(TICK ONLY 1)

a). Much higher fee
b). Higher fee
c). Equal fee
d). Lower fee
e). Much lower fee

13. What's the fee of sanitation services of your organization compared to the fee of government?

(TICK ONLY 1)

a) Much higher fee
b). Higher fee
c). Equal fee
d). Lower fee than
e). Much lower fee

14. What's the fee of sanitation services of your organization compared to the fee of private companies?

(TICK ONLY 1)

a) Much higher fee
b). Higher fee
c). Equal fee
d). Lower fee than
e). Much lower fee

15. Please specify fee

a) Solid waste service ……..
b) Sanitation services ……

16. What determines the fee of sanitation and solid waste services?

(YOU CAN TICK MORE THAN 1 ANSWER)

a). The quality of services
b). The government
c). the equipment
d). privatization
e).Other answer, namely.....

17. On which characteristics does your organization differentiate from government?

(YOU CAN TICK MORE THAN 1 ANSWER)

a). Local conditions
b). Neighborhoods
c). Financial
d). Technology
e). Other answer, namely.....

18. On which characteristics does your organization differentiate from private companies? *(YOU CAN TICK MORE THAN 1 ANSWER)*

a). Local conditions
b). Neighborhoods
c). Financial
d). Technology
e). Other answer, namely.....

19. Who are the clients of the organization? *(YOU CAN TICK MORE THAN 1 ANSWER)*

a). Poor: number:….. customer(s)
b). Middle class: number:….. customer(s)
c). High class: number:….. customer(s)
d). Consumers: number:….. customer(s)
e). Others, namely: …… number:….. customer(s)

20. Where does your organization provide its services?

a). In one place (division or city)
b). In more places within one city
c). In more places in more than one city
d). In more places throughout the whole country

21. What is the most important reason for choosing the areas where you serve? *(CAN TICK MORE THAN ONE)*

a). It attracts a specific group of clients
b). It is situated close to the organization
c). It attracts a big group of clients
d). The organization wants to make profits
e). Other answer, ...

22. Which methods does your organization use to increase the sanitation and solid waste services in areas served by government and private companies? *(YOU CAN TICK MORE THAN 1 ANSWER)*

a). Free service
b). Bonus
c). Presents
d). Deliver a high quality service
e). No methods
f). Other answer, namely.....

23. Which transport do you use to dispose the wastes? *(YOU CAN TICK MORE THAN ONE ANSWER)*

a). No transport
b). Own transport
c). Make use of transport private company
d). Government

24. It is not always possible to provide your services at a reasonable fee. Does it ever occur that people may not pay for your services or that you have to provide services for a reduced fee?

a). Yes
b). No, never

25. Does your organization collaborate with other organizations and/or did you sign any contracts?

a). Yes

b). No, *continue with question 28*

26. With which organizations does your organization collaborate with? *(YOU CAN TICK MORE THAN 1 ANSWER)*

a). Government

b). Private companies

c). Other NGOs/CBOs

d). Other answer, namely.....

27. How does your organization experience this collaboration**?**

a). Very pleasant

b). Pleasant

c). Neither pleasant, nor unpleasant

d). Unpleasant

e). Very unpleasant

f). I don't know

28. Can you rank the degree of success of your organization in sanitation and solid waste management?

	not successful at all						very successful
Sanitation	1	2	3	4	5	6	7
Solid waste	1	2	3	4	5	6	7

29. What type and range of technological options are promoted by your organization in; i) sanitation ……..

……..……

ii) solid waste management?

……..……

……..……

30. Have you imparted Knowledge and skills required to use the selected technologies to households concerned?

……..…….

31. How does your technology fit in with the local conditions?

……..…….

32. What problems, opportunities, observations or challenges you have experienced with regards to sanitation and solid waste management service provision since you started.

i) sanitation

a) opportunities ……

……..…….

…….

b) problems/challenges…….

……..……

……..……

……..……

ii) solid waste
a) opportunities ……
……..…….
……..…….
b) problems/challenges…….
……...……
……...……
……...……
……
Thank you very much for your valuable time

Appendix 2: Household Questionnaire

Identification
Enumerator Name _____
Interview start _____ interview end
_____Date_____
Name of respondent/household head _____
GPS reading for house _____
GPs reading for toilet_____
GPS reading for NGO Office _____
GPS reading for CBO Office _____
1. Location of household.

	Division	Parish	Village)
Name of			

2. Characteristics of household heads

Name of household head	Gender a). Male b). Female	Age	Education (in years)

3. What's your family size?

	Males	Females	Total
<5 years			
5 through 12 years			
13 through 17 years			
18 through 64 years			
65+ years			

4. Are you currently employed?
a). Yes
b). No
5. What is the occupation of the principal income earner in the household?
a) Formal–employment
b) Informal– employment
c) Self employed
d) Retired
e) Other Please specify ……
6. What's your gross family income?

	Income/Week	Income/Month	Income/Year
Gross income			

Solid waste Management

7. Do you receive any solid waste services?
   a) yes
   b) no
8. If yes, who provides the service?
   a) NGO
   b) CBO
   c) private company
   d) government
   f) other please specify ……
9. What kind of service do you receive? You can answer more than one
   a) garbage collection
   b) sensitization
   c) bag/sacks for garbage collection
   d) training on waste recycling and use (such as weaving)
   e) other please specify ……..……
10. Do you receive any sanitation [new latrines, drainage system (cleaning) etc] service?
   a) yes
   b) no
11. If yes, who provides the service?
   a) NGO
   b) CBO
   c) private company
   d) government
   f) other please specify ……..……
12. what kind of service do you receive?
   a) individual toilet construction
   b) community toilet construction
   c) drainage construction
   d) sensitization
   e)other please specify ……

13. If you receive sanitation and solid waste services from any NGO or CBO can you please name the Organization and type of service received?		14. Do you pay for service received a. Yes b. No)	15. If yes, how much do you pay per each service received
Name of NGO/CBO	Service received		

16. To whom do you pay for these services?
  a) government
  b) NGO
  c) CBO
  d) private company
  e) any other specify
17. Who determines the fee for the service?
  a) NGO
  b) CBO
  c) government
  d) private company
  e) receiver of the service
  f) i do not know
  g) other please specify ……...……..
18. Do you have a contract with the named service provider?
  a) yes
  b) no
19. For how long is this contract?
  a) 1-2 weeks
  b) 1- 6 months
  c) 6 months - 1 year
  d) over one year
20. How often are these contracts changed?
  a) weekly
  b)monthly
  c) annually
  d) other please specify ……...…….
21. For how many years, have you been using this service?
  a) Less than 1 year
  b) More than I year
  c) More than 5 years
  d) Other please specify……
22. If you never heard of and never received sanitation and solid waste services from an NGO or CBO would you like one?
  a). yes
  b). no
23. If yes, are you willing to pay for the services?
  a). yes
  b). no
24. If no, why don't you want to pay? You can choose more than one
  a) Can't afford to pay for the full cost
  b) Don't see that the service is reliable
  c) Don't consider the service important enough to pay for
  d) Believe the general taxes should cover the cost of this service
  e) Have other alternatives
  e) Other Please explain……..

25. How big is your preference for services from the below organizations? 1 = no preference, ‘5 = big preference

	no preference				big preference
NGO	1	2	3	4	5
CBO	1	2	3	4	5
Government	1	2	3	4	5
Private company	1	2	3	4	5

26. Please give reasons for your preference (name the preference first)
a) Cheaper
b) Reliable
c) Convenient
d) offer jobs to the local community
e) own by persons known to us
f) are the only ones we know
g) Other please specify …….

27. What’s the fee of sanitation services of NGOs/CBOs compared to the fee of government?
a). Much higher fee than government
b). Higher fee than government
c). Equal fee
d). Lower fee than government
e). Much lower fee than government
f). I don’t know

28. What’s the fee of solid waste collection services of NGOs/CBOs compared to the fee of government (KCC)?
a). Much higher fee than government
b). Higher fee than government
c). Equal fee
d). Lower fee than government
e). Much lower fee than government
f). I don’t know

29. What’s the fee of sanitation services of NGOs/CBOs compared to the fee of private companies?
a) Much higher fee than private companies
b). Higher fee than private companies
c). Equal fee
d). Lower fee than private companies
e). Much lower fee than private companies
f). I don’t know

30. What’s the fee of solid waste collection services of NGOs/CBOs compared to the fee of private companies?
a) Much higher fee than private companies
b). Higher fee than private companies
c). Equal fee
d). Lower fee than private companies

e). Much lower fee than private companies
f). I don't know

31. Can you indicate your attitude towards NGO/CBO providing sanitation services?

negative 1 2 3 4 5 positive

32. Can you indicate your attitude towards NGO/CBO providing solid waste services?

negative 1 2 3 4 5 positive

33. Can you indicate your satisfaction towards NGO/CBO providing sanitation services?
low 1 2 3 4 5 high
34. Can you indicate your satisfaction towards NGO/CBO providing solid waste services?
low 1 2 3 4 5 high
35. Can you indicate your total judgment about these organizations?
bad 1 2 3 4 5 good
36. Can you indicate your total judgment about their services?
not attractive 1 2 3 4 5 attractive
37. If you are not satisfied with the service, would you state your primary concern?
a) The service is not reliable
b) The service is expensive
c) The workers are not polite
d) Other please specify……..
38. How do you convey your complaints to the service provider?
a) We report to the community leader
b) We report to the Municipality
c) We report to the management of the service provider
d) We report to the Law enforcement agency
e) Other please specify …….
39. Can you indicate, by circling a number, in which way you agree with the below statements?
The higher the number you circle, the more you agree with the statement.

	I totally disagree					I totally agree
	1	2	3	4	5	
NGO and CBO solid waste services are regular and prompt	1	2	3	4	5	
I greatly appreciate the services of NGOs and CBOs	1	2	3	4	5	
NGOs and CBOs providing solid waste services are competent	1	2	3	4	5	
NGOs and CBOs providing sanitation services are competent	1	2	3	4	5	

It is always best to pay for services of NGOs and CBOs	1	2	3	4	5
Despite the fact that it will probably cost me more in the long run, I prefer services of NGOs	1	2	3	4	5
I have acquired knowledge and skills required to use technologies promoted by NGOs and	1	2	3	4	5
NGO and CBO services should continue to exist	1	2	3	4	5
Sanitation services promoted by NGOs and CBOs are easier to use than those promoted by	1	2	3	4	5
Sanitation service promoted by NGOs and CBOs are similar to those of government and	1	2	3	4	5
Sanitation and solid waste services promoted by NGOs and CBOs are relevant and	1	2	3	4	5
NGOs and CBOs do not do a good job	1	2	3	4	5
NGOs and CBOs sanitation services are reliable	1	2	3	4	5
NGOs and CBOs solid waste services are reliable	1	2	3	4	5
Services of private companies are preferred to those of the private companies	1	2	3	4	5

40. Any suggestion or comments regarding the sanitation and solid waste services.
……
……

Part B

These questions are for only households receiving services from NGOs or CBOs

1. How did you come to know about the NGO/CBO? ……
2. For how long have you known the NGO/CBO saving you?
   i. Sanitation ……. ii. Solid waste ……..
3. Do you trust NGOs and CBOs in providing,
   i. sanitation? a. Yes b. No
   ii. solid waste services? a. Yes b. No
4. Are services reliable of the NGO/CBO providing you,
   i. sanitation? a. Yes b. No
   ii. solid waste services? a. Yes b. No
5. Do you appreciate services of the NGO/CBO providing you,
   i. sanitation? a. Yes b. No
   ii. solid waste services? a. Yes b. No
6. Are you a member of NGOs/CBOs providing you,
   i. sanitation? a. Yes b. No
   ii. solid waste services? a. Yes b. No
7. If yes for how long have you been a member?
   i. sanitation? ……
   ii. solid waste services? ……

8 . How did you become a member?

i. sanitation? ……..

ii. solid waste services?.....

9.Are you friends with the NGO/CBO providing you,

i. sanitation? a. Yes b. No

ii. solid waste services? a. Yes b. No

10.Do you cooperate with the NGOs/CBOs providing you,

i. sanitation? a. Yes b. No

ii. solid waste services? a. Yes b. No

11.Do you receive any incentives from the NGOs/CBOs providing you,

i. sanitation? a. Yes b. No

ii. solid waste services? a. Yes b. No

if yes specify ……..

12.Has your environment been improved by the NGO/CBO providing you

i. sanitation? a. Yes b. No

ii. solid waste services? a. Yes b. No

13.If yes how? ……

Thank you very much for your valuable time!

Appendix 3: End-user criteria for selecting feasible options for sanitation improvements

Criteria		**Feasible Options sanitation improvement**				
		Single pit	Double pit	Waterless system with alternating pit	Pour flush	Ecosan
Technological	Easy construction					
	Safe					
	Fits in the area					
Economic	Cheap to build					
	Maintenance costs					
	Water costs					
Social/cultural /religious	Convenient					
	Safe					
	Accessible					
Environmental	Contamination					
	Natural decomposing					
	Little space					
Health	Hygienic					
	Healthy					
	Use of water					

Summary

Urban sanitation and solid waste management are among the most significant factors that affect the poor in developing countries and contribute to their sustained poverty. It is the poorest people, particularly children, who suffer most from weak or non-existent services, through illness, distress and many early and preventable deaths. This intolerable state of affairs is caused by a combination of political, socio-economic, cultural, and technological aspects. In recent years, sanitation and solid waste management receives increasing attention as shown in the Millennium Development Goals (MDGs), which aim at halving the proportion of the population without access to sustainable basic sanitation by 2015 and at achieving significant improvements in the lives of slum-dwellers by 2020 (MDG Goal 7). Today, with less than five and ten years to fulfill these targets, when compared to other developing continents, Africa is lagging behind and there is need for effective action to address this challenge.

This thesis is placed within this debate and tries to contribute to achieving the aim of universal access to sanitation and solid waste management services. The focus is on the role of NGOs/CBOs because these organizations are considered key players in the provision of sanitary and solid waste disposal services in developing countries and its acceleration and yet their work has not been critically assessed. Their potential contribution to better sanitation and solid waste management was examined in urban slums in East Africa, in particular in Kampala, Uganda.

This research is part of a wider interdisciplinary programme Partnership for Research on Viable Environmental Infrastructure Development in East Africa (PROVIDE) which started in 2006. This programme aims to develop socio-technical urban infrastructures in East Africa which are more environmentally and socially sustainable.

The thesis looks at the NGO/CBO roles and their ability to carry out these roles, as well as to the hindrances they encounter. To achieve this aim, two main questions were addressed:

1. In what ways are NGOs and CBOs participating in the development and implementation of sanitation and solid waste management and what are the key factors influencing their participation?

2. How and to what extent are the sanitation and solid waste management activities of NGOs and CBOs sustainable; accessible to the poor; and flexible and resilient under changing socio-political, institutional and economic conditions?

The conceptual framework developed for answering these research questions was based on the Modernized Mixtures Approach and several other theories (such as partnership paradigm, social network theory and institutional pluralism) that serve to explain key factors influencing the role of NGOs and CBOs in such activities.

The main methods applied to answer the research questions included; inventories and surveys carried out among NGOs and CBOs; household surveys among users in Kampala, Nairobi and Dar es Salaam; GIS to collect data on the locations of NGOs/CBOs offices, their facilities and the individual households in Kampala; face-to-face interviews with key informants; two workshops with different stakeholder groups in Kampala.

Urban sanitation and solid waste management improvement through NGO/CBO Intervention

This thesis confirmed that NGOs and CBOs are no longer on the sidelines of sanitation and solid waste management, waiting to be called to take up the leftovers of conventional urban environmental service provisioning; they are fully involved. Even in situations where these organizations are not formally recognized by the state, like is the case in Kampala, their contribution, although not as big as that from governmental authorities, is comparable to that from the private sector. Hence, without NGO and CBO involvement more urban poor would suffer from inadequate sanitation and solid waste management and the related health impacts.

This research also showed that environmental partnership is widely shared and supported idea. The empirical evidence gathered showed a modernized mixture model emerging, where the conventional advocates of large-scale, privatized, and high-technological sanitation and solid waste services partner with NGOs and CBOs. Either formally as is the case in Dar es Salaam or informally as in the cases of Kampala and Nairobi. However, the successful implementation and operationalization of informal mixtures, and particularly the division of tasks regarding responsibilities therein, proves far from easy and comes along with major hurdles and constraints. The involvement of NGOs and CBOs has been hampered, in particular, by shortage of resources, poor policies and excessive donor dependency.

This study has shown that NGOs and CBOs are contributing to ecological sustainability by participating in sanitation and solid waste management service provision. However, some of their activities and technologies (such as toilets) are not fully ecologically sustainable yet, often due to the cultural-religious and financial preferences of their clients, and in this area these organizations need to improve.

Urban poor access to NGO/CBO-supplied services

This research also found that access to sanitation and solid waste services is driven by both NGOs/CBOs and the urban poor in collaboration. Social proximity is important, next to the conventional factors of spatial proximity, socio-economic characteristics and perception of the perceived competence of NGOs/CBOs.

User acceptance of innovative technologies was found to be a key factor when trying to improve sanitary facilities for the urban poor. Previous efforts had not resulted in sustainable solutions because the majority of potential users was convinced that the proposed solutions (i.e. ecosan toilets) did not fit their socio-cultural and religious practices. Closing the gap between user acceptance and technological innovations is best achieved by engaging the future end-users in the decision-making process on improving sanitary infrastructures. This thesis identified, tested and further elaborated an appropriate multi-criteria decision-making tool: PROACT 2.0, which gives end-users a place in certain phases of the planning and decision-making process.

Contributions to PROVIDE

This research has shown that indeed NGOs and CBOs are involved in community sensitization and mobilization, waste reduction, and reuse and recycling activities. This makes these organizations vital in their improvement.

This research also found that when NGOs and CBOs are embedded within the local communities they service they are considered more trustworthy among the poor than private or state providers. NGOs and CBOs have proven to be significant for channeling foreign funds, because of their considerable credibility among donor organizations and their close proximity to the poor.

This research proved that the Modernized Mixtures Approach is a viable analytical framework that can be applied for identifying and designing infrastructure solutions that are adapted to the specific local contexts.

Conclusion

This research has shown that despite the numerous external and internal forces putting pressure on them, NGOs and CBOs are fully involved in service provision for the urban poor. However, this research also showed that to enhance their activities and effectiveness they should be well-embedded in local communities and work together with other, both state and non-state, service providers.

Samenvatting

Het management van sanitatie en vast afval behoort tot de belangrijkste factoren die het leven van de stedelijke armen in ontwikkelingslanden beïnvloeden en bijdragen aan hun voortdurende armoede. Het zijn de armen, vooral de kinderen, die het meest lijden onder de gevolgen van zwakke of niet-bestaande voorzieningen, door ziekte, nood en vele vroegtijdige en vermijdbare gevallen van overlijden. Deze onacceptabele stand van zaken wordt veroorzaakt door een combinatie van politieke, sociaaleconomische, culturele en technologische factoren. In de afgelopen jaren heeft het management van sanitatie en vast afval toenemende aandacht gekregen in de politiek zoals duidelijk blijkt uit de Millennium Development Goals (MDGs), die streven naar een halvering in 2015 van dat deel van de bevolking dat onvoldoende toegang heeft tot duurzame elementaire sanitaire voorzieningen en tevens naar een significante verbetering van het leven van de slum-bewoners in 2020 (MDG Goal 7). Op dit moment, met minder dan vijf en tien jaar respectievelijk om deze doelen te bereiken, is het duidelijk dat Afrika achterblijft in vergelijking met andere continenten. Er is behoefte aan effectieve actie om deze uitdaging aan te gaan.

Deze thesis is gepositioneerd in dit debat en probeert bij te dragen aan het bereiken van universele toegang tot sanitatie en vast afval voorzieningen. De focus ligt hierbij op de rol van de NGOs/CBOs omdat deze organisaties worden beschouwd als onmisbare spelers in het verbeteren van de organisatie van sanitatie en vast afval voorzieningen in ontwikkelingslanden, terwijl hun rol nog onvoldoende kritisch is onderzocht. Hun potentiële bijdrage aan een verbeterd sanitatie en vast afval management is daarom onderzocht in stedelijke slums in Oost-Afrika, in het bijzonder in Kampala, Uganda.

Dit onderzoek is deel van een groter interdisciplinair onderzoeksprogramma ‘Partnership for Research on Viable Environmental Infrastructure Development in East Africa (PROVIDE)’, dat van start ging in 2006. Dit programma streeft naar het ontwikkelen van socio-technische urbane infrastructuur in Oost-Afrika die ecologisch en sociaal duurzaam is.

De thesis bestudeert de rollen van NGOs/CBOs en hun vermogen om die rollen te vervullen en eveneens naar de problemen die zij daarbij ondervinden. Om dit doel te bereiken zijn twee centrale onderzoeksvragen geformuleerd:

3. Op welke manieren nemen NGOs en CBOs deel aan de ontwikkeling en implementatie van het management van sanitatie en vast afval en wat zijn de sleutelfactoren die hun participatie daarbij beïnvloeden?
4. Hoe en in welke mate zijn de activiteiten van NGOs en CBOs rond het management van sanitatie en vast afval duurzaam; toegankelijk voor de armen; en flexibel en veerkrachtig onder de veranderende sociaal-politieke, institutionele en economische condities?

Het conceptuele raamwerk dat is ontwikkeld om deze onderzoeksvragen te beantwoorden is gebaseerd op de Modernized Mixtures Approach en verschillende andere theorieën (zoals het partnership paradigma, sociale netwerk theorieen institutioneel pluralisme) die dienen om de sleutelfactoren te verklaren die de rollen van NGOs en CBOs in deze activiteiten beïnvloeden.

De belangrijkste onderzoeksmethoden die zijn gebruikt om deze onderzoeksvragen te beantwoorden omvatten inventarisaties en surveys uitgevoerd onder NGOs en CBOs; surveys onder huishoudens in Kampala, Nairobi en Dar es Salaam; GIS om data te verzamelen over de locaties van NGOs/CBOs kantoren, hun faciliteiten en de individuele huishoudens in Kampala; face-to-face interviews met sleutelinformanten; en twee workshops met verschillende stakeholder groepen in Kampala.

Verbetering van urbane sanitatie en vast afval management door interventies van NGO/CBO

Deze thesis bevestigt dat NGOs en CBOs niet langer aan de zijlijn staan bij het managen van sanitatie en vast afval, wachtend op een oproep om de restanten van de conventionele service voorziening op te pakken; zij zijn volledig betrokken. Zelfs in situaties waarin deze organisaties niet formeel erkend zijn door de overheid, zoals het geval is in Kampala, is hun bijdrage, hoewel niet zo groot als die van de officiële autoriteiten, vergelijkbaar met die van de private sector. Zonder de betrokkenheid van NGOs en CBOs zouden meer stedelijke armen te lijden hebben onder inadequate sanitaire en vast afval voorzieningen en de gerelateerde gezondheidsimpacts.

Dit onderzoek toont ook aan dat milieu-partnership een wijd verspreid en ondersteund idee is. Het verzamelde empirische bewijs laat zien dat een gemoderniseerde mix kan ontstaan, waar de conventionele voorvechters voor grootschalige, geprivatiseerde en hoogtechnologische sanitatie en vast afval voorzieningen samenwerken met NGOs en CBOs.

Dit kan formeel gebeuren zoals het geval is in Dar es Salaam of informeel zoals in de gevallen van Kampala en Nairobi. Echter, de succesvolle implementatie en operationalisering van informele mixen, en in het bijzonder de taakverdelingrond de verantwoordelijkheden daarbij, blijkt verre van eenvoudig en gaat samen met belangrijke hindernissen en beperkingen. De betrokkenheid van NGOs en CBOs wordt in het bijzonder gehinderd door een tekort aan financiële en personele middelen, zwak beleid en een excessieve afhankelijkheid van donoren.

Deze studie heeft aangetoond dat NGOs en CBOs bijdragen aan ecologische duurzaamheid door deel te nemen in het management van voorzieningen voor sanitatie en vast afval. Echter, sommige van hun activiteiten en technologieën (zoals toiletten) zijn nog niet volledig ecologisch duurzaam, veelal vanwege de cultureel-religieuze en financiële preferenties van huncliënten, en op dit terrein moeten deze organisaties zich dan ook verder verbeteren.

Toegang van de stedelijke armen tot voorzieningen verstrekt door NGOs/CBOs

Dit onderzoek heeft ook aangetoond dat toegang tot sanitatie en vast afval voorzieningen wordt aangestuurd door zowel de NGOs/CBOs als de stedelijke armen. Sociale nabijheid is daarbij belangrijk, naast de conventionele factoren van ruimtelijke nabijheid, sociaaleconomische kenmerken en de perceptie van de waargenomen competentie van de NGOs/CBOs.

Acceptatie van technologische innovaties door de gebruiker bleek een sleutelfactor te zijn bij pogingen de sanitaire voorzieningen voor de stedelijke armen te verbeteren. Eerdere pogingen hebben niet tot het gewenste resultaat geleid omdat de meerderheid van de potentiële gebruikers er van overtuigd was dat de voorgestelde oplossingen (i.e. eco-toiletten) niet pasten in hun sociaal-culturele en religieuze praktijken. Het overbruggen van de kloof tussen technologische innovaties en acceptatie door de gebruiker wordt het best gerealiseerd door de toekomstige gebruikers te betrekken in het besluitvormingsproces rond het verbeteren van de sanitaire infrastructuur. Deze thesis identificeerde, testte en ontwikkelde een aangepast multi-criteria beslismodel, PROACT 2.0, dat de eindgebruikers een rol geeft in bepaalde fases van het plannings- en besluitvormingsproces.

Bijdragen aan PROVIDE

Dit onderzoek heeft bevestigd dat NGOs en CBOs betrokken zijn in het bewustmaken en mobiliseren van de lokale gemeenschappen, afvalreductie,–hergebruiken recycling. Dit maakt deze organisaties essentieel in processen gericht op verbetering van de situatie.

Dit onderzoek heeft ook aangetoond dat wanneer NGOs en CBOs goed ingebed zijn in de lokale gemeenschappen waarin zij opereren, zij door de armen worden beschouwd als betrouwbaarder dan de private of publieke dienstverleners. NGOs en CBOs hebben laten zien dat zij belangrijk zijn bij het kanaliseren van buitenlandse financiële steun door de aanzienlijke geloofwaardigheid die hen door donor organisaties wordt toegekend en hun nauwe betrokkenheid bij de armen.

Dit onderzoek bevestigt dat de Modernized Mixtures Approach een bruikbaar analytisch raamwerk is dat kan worden gebruikt voor het identificeren en ontwerpen van infrastructurele oplossingen die zijn aangepast aan de specifieke lokale context.

Conclusie

Dit onderzoek laat zien dat ondanks de talloze externe en interne krachten die zij ondervinden, NGOs en CBOseen integraal onderdeel vormen van de dienstverleningrond sanitatie en vast afval aan de stedelijke armen. Echter, om hun activiteiten en hun effectiviteit te versterken, moeten zij goed ingebed zijn in de lokale gemeenschappen en samen werken met andere, zowel overheids-gebonden als niet-overheids-gebonden, dienstverleners.

About the Author

Judith Tumusiime Tukahirwa was born on 11th November 1974 in Kampala Uganda. She obtained her BSc Education – Biology and Chemistry (1999) and an MSc Environment and Natural Resources (2004) both from Makerere University, Kampala, Uganda. She started her career at one of the best leading boys schools - St Mary's College Kisubi as a student teacher (1998) and proceeded to head the Biology and Chemistry Department at one of the best international schools – Vienna College Namugongo (both schools in Uganda). At the end of her first year of Masters study, she won a fellowship from the MacArthur foundation under the African Tropical Biodiversity Program a cooperative training programme between Makerere University Institute of Environment and Natural Resources and the Field Museum of Natural History, Chicago and John D. and Catherine C. MacArthur Foundation, Chicago. In 2004 she worked as a researcher with the Lake Victoria Environmental Management Project - a World Bank Project under the Ministry of Water, Lands and Environment. In 2006 she embarked on her PhD study at Wageningen University, Environmental Policy Group under the Partnership for Research on Viable Environmental Infrastructure Development in East Africa (PROVIDE) Project. Results of her PhD research have been presented at several international conferences, and published as discussion papers and journal articles. In 2008 she worked as an Environmental Specialist and consultant (2009) with Research Triangle Institute International (RTI) implementing environmental monitoring and assessment programs for the USAID funded Indoor residual spraying (IRS) projects in Uganda, Ethiopia, Mozambique and Zambia. In 2011, she was selected on the Technical Taskforce to support the transformation from Kampala City Council to Kampala Capital City Authority as a Solid Waste Management Consultant. She has won a number of highly competitive awards including: the Marie Curie grant (2010) for the Summer School "Architectures for Earth System Governance – the Distributional Implications of Environmental Change and Governance"; Grant (2010) by Wageningen University and Research Centre to participate in the 2nd Executive Education Course on Sustainable Development Diplomacy (SDD) course; Fiscal Year 2008 Annual Award from the International Development Group and RTI International for best performance; INREF Fellowship of Wageningen University 2006; and the MacArthur Foundation Fellowship 2002.

Training and Supervision Plan

Annex to statement
Name Judith Tumusiime Tukahirwa
PhD candidate, Wageningen School of Social Sciences (WASS)
Completed Training and Supervision Plan

Name of the activity	Department/Institute	Year	ECTS*
A) Project related competences			
Proposal writing	Mansholt Graduate School	2007	4
PROVIDE Introductory Course	WUR	2007	3
Extended literature study (PROVIDE)	WUR	2007	1
Inter-disciplinarity in Research Practice, Royal Netherlands Academy of Arts and Science	Amsterdam	2007	Attended
B) General research related competences			
Mansholt Introduction course	Mansholt Graduate School	2007	1.5
Research methodology I: From topic to proposal	Mansholt Graduate School	2007	4
Social Theory and the Environment. Introduction into Ecological Modernisation Theory	Mansholt Graduate School/SENSE	2007	6
Information Literacy Course	Wageningen UR Library	2006	0.6
Techniques for writing and presenting scientific paper	Wageningen UR	2007	1.2
Environment & Development (ENP 33306)	WUR	2007	6
Workshop: Building Sustainable Livelihoods	WASTE, Gouda	2007	Attended
Advanced Statistics: Quantitative research methodology and statistics MAT 22306	WUR	2007	Attended
Marie Curie Training Course on the Human Dimension of Global Environmental Change. Architectures for Earth System Governance. The Distributional Implications of Environmental Change and Governance	Freie Universitat Berlin	2010	4
C) Career related competences/personal development			
Project & Time management	Wageningen UR	2010	1.5
17th International Programme on the Management of Sustainability (IPMS)	Zeist	2010	Attended
Executive Education Course on Sustainable Development Diplomacy	WUR	2010	Attended
International Environmental Policy (ENP 30306)	WUR	2007	6
Super Powers in Global Environmental Politics: China and the U.S	WUR	2007	3
Presentations at Conferences			
Access of Urban Poor to NGO/CBO-supplied Sanitation and Solid Waste Services in Uganda	Mansholt Graduate School	2010	1

Assessing the (potential) roles of NGOs and CBOs in public-private arrangements in urban sanitation and waste management	PROVIDE workshop Kisumu	2007	1
Participatory decision-making for sanitation and solid waste management improvements in unplanned urban settlements in East Africa	Arusha	2008	1
Access of the urban poor to sanitation and solid waste management in Uganda.	Kampala	2009	1
Participation of NGOs and CBOs in urban sanitation and solid waste management in Uganda	Wageningen	2008	1
Legitimacy and Effectiveness of NGO/CBO involvement in sanitation and solid waste provisioning in the modern epoch of governance.	Berlin Germany	2010	1
Urban Poor Access to NGO/CBO Services in Public-Private Arrangements in Solid Waste Management.	Philadelphia, PA USA	2010	1
Total			**48.8**

*One ECTS on average is equivalent to 28 hours of course work

* PROVIDE - Partnership for Research on Viable Environmental Infrastructure Development in East Africa