SMALL SCALE INDEPENDENT PROVIDERS OF WATER AND SANITATION TO THE URBAN POOR

A Case of Kampala, Uganda
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LIST OF ABBREVIATIONS AND ACRONYMS

ADB  African Development Bank
CIP  Commercial Independent Providers
DANIDA  Danish International Development Agency
DWD  Directorate of Water Development
EEC  European Economic Commission
H/Cs  House Connections
IDA  International development agency
IMF  International Monetary Fund
KCC  Kampala City Council
KfW  German Technical Corporation
NGOs  Non-Governmental organizations
NWSC  National Water and Sewerage Corporation
UEB  Uganda Electricity Board
PSP  Private Sector Program
SSiPs  Small Scale Independent Providers
UES  Urban Environmental Sanitation
VIP  Ventilated Improved Pit
WSP-ESA  Water and Sanitation Program - East and Southern Africa
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Foreword

The urban poor constitute the segment of the population that is the most affected by the lack of access to safe water supply and sanitation. Living in overcrowded areas, the urban poor pays the most for water and sanitation services and suffers the greatest in terms of impaired health and lost economic opportunities. Most of the urban poor live in peri-urban and informal settlements that are not served by water and sanitation utilities. Small-scale private operators provide whatever services available to them.

The constraints and incentives under which these Small Scale independent Providers (SSiPs) operate are poorly understood. Often considered part of the problem, they are increasingly recognized as part of the solution.

This report summarizes the findings of a case study conducted in Kampala, Uganda. The Regional Office for East and Southern Africa of the Water and Sanitation Program (WSP-ESA) with the support of the International Research Center in the Netherlands commissioned local consultant to carry out the study. The main purpose was to investigate the potential of SSiPs to improve, expand and sustain urban environmental sanitation (UES) services at affordable cost. The study alongside others conducted in Dar-es-Salaam, Tanzania; and Nairobi and Mombasa, Kenya have helped create a better understanding of the SSiPs. Their diverse types, scale of operations and comparative advantages that enable them to serve up to 90% of the urban poor population in many cities in sub-Saharan Africa is much clearer and well demonstrated.

The studies have documented the institutional and legal context under which the SSiPs operate and identified their strengths and weaknesses. Although the studies were undertaken primarily as fact-finding exercises, they have also suggested ways and means through which the operations of the SSiPs could be enhanced. It is clear that programs to improve services to urban poor will have to recognize them as key actors and potential partners. The study has also shown the need for planners and policy makers to base their work on understanding of the markets for water and sanitation at the level of cities and settlements.

Jean H. Doyen
Regional Manager
WSP-ESA
Executive Summary

Introduction

This report is based on the findings of a case study of small-scale independent providers (SSiPs) in environmental sanitation and the provision of water to the poor people of Kampala, Uganda.

The study was conducted by the Water and Sanitation Program - East and Southern Africa (WSP-ESA) in December 1998 and January 1999. The main purpose of the study was to investigate the potential of SSiPs to improve, expand and sustain urban environmental sanitation (UES) services at affordable costs. The SSiPs study was part of a wider regional project being piloted in seven African cities: Bamako, Mali; Conakry, Guinea; Cotonou, Benin; Dakar, Senegal; Dar es Salaam, Tanzania; and Mombasa and Nairobi, Kenya. The International Water and Sanitation Center (IRC) in the Netherlands funded the case study.

The specific outputs were:
- a greater understanding of the types of service providers and the scale of their operations;
- an assessment of the comparative advantage of independent service providers and why the poor turn to them;
- an understanding of the institutional and legal context in which SSiPs operate;
- the identification of strengths and weaknesses of SSiPs to evaluate the potential for further developing their activities; and,
- The identification of bottlenecks that hinder the development of SSiPs and recommend ways and means through which they can be overcome.

Study Methodology

The study was carried out through review of relevant documents from public institutions (both governmental and non-governmental) and donor agencies. This was followed by questionnaire interviews with key informants; household users, providers and operators, using transect walk method. Focus group discussions were then held with operators. Finally, follow-up workshops helped to synthesize the findings and recommendations and chart out the way forward.

Background to the Study

Kampala, the capital city of Uganda, has a population of about one million people (1991 census). It has an annual growth rate of 6 percent compared to National growth rate of about 4.5 percent.

The city's topography - comprising 21 hills and valleys located at an altitude of 1,250 meters above sea level - poses serious challenges to planners when designing Kampala's social infrastructure expansion programs.

Almost 30 years after civil strife and political instability of the 1970s that demonstrated the country there is a weak enforcement of urban planning regulations and procedures. This has been followed by a breakdown in the delivery of UES services. The situation has resulted in a proliferation of informal settlements throughout Kampala at a rate that has outstripped the capacity of the city administration authority to provide the adequate social services. Formal settlements represent only about 10-15 percent of the total built-up area.

Sector Performance Overview

In the last ten years there has been an increase in donor involvement – mainly the World Bank/IDA, ADB, EEC, DANIDA and KfW – in the rehabilitation of urban water supply and sewerage systems in Uganda.

UES services in Kampala are unsatisfactory. Water and sewerage services have been characterized by low performance efficiencies, with about half the water supply not generating any revenue, low bills collection efficiency
levels of around 70 percent and overstaffing. The NWSC has been unable to finance the extension of services to the peri-urban high density, low-income settlements of Kampala.

The water and sanitation sub-sector has yet to be reformed and liberalized. Consequently, the public enterprises continue to access cheap investment credits at the expense of the SSiPs, despite the fact that both providers are competing for the same market.

**Water supply sub-sector**
The main sources of water supply for Kampala are Lake Victoria, natural springs and boreholes. Only about 30 percent of the city’s population have direct access to piped water. The rest depend on point water sources such as shallow wells, protected and unprotected springs and on SSiPs services. The NWSC water system, which consists of treatment, pumping, storage and distribution facilities, has a capacity of about 100 million litres per day inclusive of leakages and other losses.

**Sanitation sub-sector**
The sewerage network serves only nine percent of the targeted water consumers located mainly in the ‘old town’, which includes Old Kampala, Nakasero, Kololo, the central commercial districts, Mbuyu and Naguru. On-site sanitation technologies, mainly pit latrines serve the remaining 91 percent of the city’s population. About two percent of Kampala’s residents have no access to any form of sanitation service.

**Main Findings**

**Institutional, legal and regulatory framework**
The National Water and Sewerage Corporation (NWSC), a public enterprise under the Ministry of Water, Lands and Environment monopolizes the provision of water and sewerage services in the country. Likewise, the Kampala City Council (KCC) has sole responsibility for service for on-site sanitation as well as solid waste management.

The operation and profitability of SSiPs depend largely on the policies, regulations, tariffs and other conditions imposed by the NWSC. For instance, a recent imposition of US$ 15 dumping charge per trip on all private cesspool operators has greatly slowed down the operations of SSiPs. High water tariffs and frequent disconnection have compelled the SSiPs that operate public flush toilets to supplement their water supply by purchasing pick-ups and water tankers, thus raising their operational costs.

Following many years of inadequate, outmoded and scattered legislation for the water sector, the Government of Uganda formulated a new Water Statute that allows for private sector participation. This subject to clearance from NWSC. This requirement has discouraged the development and operation of private boreholes. Moreover, due to limited publicity of the new regulations, SSiPs are hardly aware of their rights or obligations under the revised legal framework. The Public Health Act and related legal provisions have not yet been revised and updated to accommodate the SSiPs. This means that in reality, all sanitation SSiPs, including those that are contracted by the KCC to manage public toilets, are acting outside the law.

**Characteristics of SSiPs**

**Water supply sub-sector**
Private sector water services in Kampala are in three main categories: kiosk operators, water truckers who transport water in tankers to neighborhoods without municipal water supply, and owners of small water distribution systems connected to boreholes. The price of SSiPs-managed water varies between US$ 0.05 and US$ 0.2 per 20-litre jerrican depending on location and whether the water is vendor-delivered or not.

**Water Kiosks**
Kiosks obtain water from secondary distribution networks constructed by communities or NGOs. The kiosk operators are in two distinct categories: the individual standpoint operator who sells water to 200 to 300 users and the ‘large scale’ operator with a number of kiosks selling water to villages. Registered water kiosks supply only about 20
percent of the total demand within this service category alone. The quantity of water sold through water kiosks is 1,010,000 litres per day; most of which goes to the private sector (640,000 litres). Kiosks sell their water at an average price of US$ 3.6 per 1,000 litres. The cost of constructing a water kiosk, including plumbing is US$ 290. Water vending by bicycle is mainly found in neighborhoods outside the municipal boundaries.

**Water tankers**

There are eight water tankers in the city operating two trips per day on average, working for a total of 350 days a year. They draw water from the NWSC water distribution network and deliver it to the fringe areas of Kampala outside the network. Each truck of 10,000 litres capacity initially costs an average of US$ 7,250 and lasts up to ten years. The trucks purchase water at US$ 1.08 and sell at US$ 4.34 per 1,000 litres.

**Independent primary operators**

One entrepreneur manages five private water systems countrywide, two of which are in Kampala serving an estimated total population of 600 people. ThisSSIP offers both coin-operated kiosks and in-house connection services. The entrepreneur, a professional engineer, reported a pre-tax corporate turnover of US$ 120,000 in 1998.

**Sanitation sub-sector**

The liquid waste SSiPs are in two categories: the cesspit emptying services and management of public toilets.

**Cesspool emptier operators**

There are five private trucks offering cesspool emptier services in Kampala. They operate an average of one trip per day working for a total of 350 days a year. The NGOs operate two trucks through the city council's public health department. The charge for cesspit-emptying services varies from US$ 15 for NGO-managed services to US$ 60 for privately run operations. A private cesspool truck costs US$ 32,000 including renovation, license, tax and company registration.

**Managers of public toilets**

An entrepreneur has been contracted to operate public flush toilets managed by the KCC. Before starting operations, the company invested US$ 38,000 to rehabilitate the facilities (as per contractual requirement). The charge per visit of SSiPs-managed toilets ranges from US$ 0.05 in the suburbs to US$ 0.1 in the city center.

**Factors for success**

SSiPs thrive due to the inability of the monopolistic public enterprises to respond to the dynamics of market demand. Consequently, as long as the urban population continues to grow and economic activities become more sophisticated, the demand for better urban environment services delivery will rise. The potential for strengthening and expanding the SSiPs industry in Kampala is therefore very strong.

The study found that the most important factors in the success of SSiPs are that they:

- have the ability to access peri-urban areas not covered by the public sector enterprises, which consider these settlements to be commercially weak and hence risky investment options.
- are commercially oriented operations that are based on private enterprise and designed to make money. The profit motive compels innovative approaches to resolution of difficulties, which in turn ensures sustainability of service.
- can easily access high population density communities through provision of standpipes and kiosks, which in turn are able to respond to the needs of the peri-urban service market.
- operate other businesses in addition to provision of urban environmental services. This permits reallocation of resources whenever necessary to keep the entire group of companies operational.
Constraints
The main constraints to the expansion of small scale providers of UES services were identified as:

External
- Poor infrastructure in informal, low-income settlements discourages the municipal utilities from investing in social services, hence limiting accessibility to SSiPs customers.
- Poverty limits the viability of heavy investments in certain areas.
- The poor construction standards used in some of the public facilities have caused problems in maintenance and development needed to handle a growing population.
- There is poor law enforcement in the urban environmental service sector, which frustrates the good job done by SSiPs.
- Low literacy levels among the urban poor makes them slow to adjust to new ideas from SSiPs.
- The taxation system favors the public utilities, creating negative feelings in the private sector. This results in poor bookkeeping, no auditing and evasion of taxes by SSiPs.
- Slow implementation of the liberalization process making SSiPs operate illegally.
- Poor access to credit due to lack of information on the existence of appropriate private sector development programs in the country like the DANIDA Private Sector Program (PSP).
- A haphazard legal system that favors monopolistic impositions of non-commercial transaction costs by the municipal entities on SSiPs. These impositions tend to erode the profitability of the SSiPs since there is no mechanism of recovering the charges from the final consumers, who are the poor.

Internal
Failure by the SSiPs to form associations, thus precluding a forum for the exchange of views on generic difficulties, and more importantly denying them the strength of a unified approach in dealing with non-commercial institutional and financial impositions by public enterprises and local authorities.

The Way Forward
The main strategic issues and recommendations for scaling-up and sustaining water and sanitation services offered by small scale providers are:

Areas of intervention
- Review of the Country Private Sector Support Programs with a focus on possibilities for SSiPs support in order to identify opportunities for investment schemes that could provide technical assistance for improved management and support for purchase of better equipment.
- Accelerate the liberalization of water and sanitation sub-sectors in order to level the playing field between all UES providers and thus create an atmosphere of fair and equal opportunities in provision of UES services.

Issues for scaling-up
- Focused capacity building to assist the SSiPs access funds as well as technical assistance in enterprise management.
- Enhanced campaigns to accelerate public awareness of sanitation and hygiene related diseases and how the SSiPs are assisting the public to reduce their impact.
Introduction

Background

Uganda is a landlocked country with a total area of 237,000 sq. km of which 44,000 sq. km is lakes and rivers. The 1991 Population and Housing Census estimated the country's population at 16.7 million with a growth rate of 2.7 percent of which 90 percent are small holder farmers. Uganda's favourable climate supports a wide range of agricultural activities that form the base of a predominantly agrarian economy.

Uganda historically enjoyed a fairly high standard of living with one of the strongest and most promising economies in sub-Saharan Africa prior to the political turmoil of the 1970s that ruined the economy over a period of 15 years. The economic and social progress declined tremendously to the extent of heavy loss of lives and complete destruction of the social infrastructure.

Following the establishment of a broad-based government led by Yoweri Museveni in 1986 and improvements in security, efforts have been geared towards the achievement of an integrated and self-sustaining national economic order. This is being realized through the expansion of productive capacity in a mixed economy, where public and private enterprises co-exist. The economy has also improved dramatically since the government presented its Rehabilitation and Development Plan and signed the first Structural Adjustment Facility with the IMF in June 1987. Since then Uganda has co-operated with the IMF, the World Bank and an increasing number of bilateral donors who are supporting a vigorous economic recovery program.

The establishment of the Uganda Investment Authority as a "one stop shop" to local and foreign investors simplifying internal investment procedures has resulted in increased industrial production. Much of the registered growth accrues from the manufacturing sub-sector as a response to the current extensive rehabilitation program countrywide. Per capita economic growth has exceeded 6 percent per annum since 1993. The agricultural sector has responded vigorously to improved incentives as the currency and trade regimes were gradually liberalized.

City Profile

Kampala's topography of 21 hills and valleys necessitates the installation of a sewage drainage system that consists of two networks, the low and high level networks. The high level network drains effluent originating from the high areas while the low level system serves the low lying zones of the city. Sewage from the low level has to be pumped to join the high level stream in order to reach the treatment plant. There are three such pumping stations in Kampala.

Until about 1992, developments in Kampala had largely been informal even in the low population density high-income areas. This was because enforcement of urban planning regulations and procedures had greatly weakened during the period of social unrest that followed immediately after the Idi Amin military coup of 1971. This period saw an unprecedented repatriation of capital by foreign investors that greatly affected the supply of capital financing for private sector operations including real estate development. The breakdown in the delivery of urban environmental delivery affected the low-income earners worst.

Like all large cities in developing economies, Kampala has a significant rural urban population located mainly in largely informal settlements that have little access to urban social services. However, unlike other cities in similar income brackets, the formal settlements in Kampala represent only about 10–15 percent of total built up area. The rest is a mix of high and low-income dwellings informally co-existing side by side.

Water sources

Uganda lies in the River Nile basin and all her water resources are part and parcel of the transboundary watershed. Kampala's water supply is obtained from three main sources: Lake Victoria, natural springs and boreholes supplying mainly industries. The lake water supply managed by the NWSC is the most important both in quality as well as
volumes distributed. It is extracted through two conventional water treatment and pumping systems, which supply 100 million litres per day. The water is pumped to reservoirs and then transmitted to distribution networks, in case of elevated areas, via in-line booster stations.

The NWSC follows the conventional approach to utility development and operation. This means that secondary water as well as sewerage infrastructure is constructed in gazetted road reserves and municipally-recognized social service lanes. This approach precludes the provision of primary water infrastructure in informal settlements, as these do not meet the minimum municipal planning requirements for such installations. Consequently, piped water is supplied to these settlements through tertiary "spaghetti" networks constructed by individuals or communities with NGO support. Most low-income city dwellers reside in informal settlements located in low-lying areas of the city, which are also well endowed with perennial springs and wells.

**Evolution of SSiPs**

There are diverse reasons for the start-up of the different SSiPs, ranging from goodwill service to the people, the availability of a market, to inability of the municipal body to provide full coverage. The other factors are related to the fact that SSiPs are better able to respond to market demand than the large monopolistic providers are.

The private sector started participating in the water and sanitation sub-sectors in mid 1970s when urban services delivery capacities of public institutions started to deteriorate. However, the political instability, which followed immediately after stifled further growth in PSP. SSiPs growth then accelerated in the 1990s following demand for UES services and improvements in the economy. The same period has also witnessed liberalization of the management of public toilets and latrines in the city thus providing opportunities for SSiPs involvement in the sub-sector.

PSP growth in the sanitation sub-sector has accelerated in the 1990s when KCC divested itself from the management of public toilets in the city. All the public toilets in the city are now pay facilities managed by a private company.
Sector Performance Overview

Water Supply sub-Sector

The Ministry of Water, Lands and Environment is primarily responsible for the water supply and sewerage sector through the Directorate of Water Development (DWD); and the NWSC.

Water and sewerage works in the major towns were mostly installed and expanded in the 1950s and 1960s, but little investment and maintenance was carried out in the sector during the 1970s. Since then, there has been increasing donor involvement in the sector mainly by World Bank/IDA, ADB, EEC, DANIDA and KfW. The main emphasis has been in the rehabilitation of urban water supply and sewerage systems.

Investment planning since the early 1980s has been determined by the Rehabilitation Program of 1982/83-1986/87 which was revised periodically. During that period, the investment in the sector averaged about US$ 14 million per year with a split between urban and rural areas of 75 percent and 25 percent, respectively. Investment by government has been limited to about 5 percent.

The main criteria for selecting water supply and sanitation projects have been:
- water rehabilitation in preference to new systems;
- emphasis on major population centers;
- preference for urban centers with administrative status and potential for industrial and commercial development;
- disease control in areas where epidemics have occurred; and,
- alleviation of water shortages in drought-prone areas.

There has been a lot of effort in the provision of water services both in rural and urban areas in the past ten years. As a result, urban water systems have been re-established to the pre-1980 capacities in the larger urban centers with new supplies being constructed in the smaller towns.

The NWSC was established in 1972 to develop and operate water supply and sewerage systems in any specified area of Uganda on a self-supporting basis. The Ministry of Water and Mineral Development has direct responsibility for overseeing its activities. A board heads NWSC and its membership consist of public officials and government representatives. As of June 30, 1998, the Corporation was responsible for the water supply and sewerage systems of eleven towns countrywide, including Kampala.

In Kampala, water and sewerage services are the responsibility of the NWSC. The water supply area extends beyond the statutory limits of the city into the rural–urban settlement and largely rural neighborhood. It is a conventional water supply system, consisting of treatment, pumping, storage and distribution works. The gross capacity of the system is estimated at about 100 million litres per day, inclusive of leakages and other system losses. No other organization is engaged in this business on this scale at the moment.

Financing of the water sector is heavily dependent on foreign aid and often the city’s priority water needs have not been addressed adequately and in a timely way. This is partly because donations often come along with philosophies that do not necessarily meet the needs of the beneficiaries. Consequently, water and sewerage services are concentrated in the core urban center, leaving the peri-urban high density, low-income settlements largely unserviced.

The NWSC has invested about US$ 120 million in water and sewage services over the last 12 years. About US$ 80 million of this amount has been invested in Kampala water service area alone. As a result the practical water production capacity of the city is now 100 million litres per day. This production represents a theoretical capacity to satisfy a demand of one million people who are served through approximately 40,000 water connections.
Between 300,000 and 350,000 people are estimated to be on direct supply, representing only about 30 percent of the city's population. The population without direct access to the network and therefore has to be served from standpoints is about 528,000 to 578,000 people. The services have also been characterized by low performance efficiencies with high levels of non-revenue water averaging 49 percent, low bills collection efficiency levels of around 70 percent, and thus an accumulation of arrears. This is worsened by over-staffing to a level of 40 staff per 1,000 water connections. The situation has affected the ability of NWSC to finance both minor and major capital works, and extend the service to peri-urban Kampala.

The scope for private sector involvement in water operations in Kampala is limited to distribution of whatever supply is made available by the NWSC. The SSIPs therefore concentrate their efforts in the high-density population, low income areas that have difficulties in accessing social services, mainly due to poverty and the fact that most inhabitants live in rented accommodation, hence have no long-term interest in the local infrastructure development requirements.

The total number of registered water kiosks in Kampala is 528. These dispense approximately 1,090 litres per day. This supply represents about only 20 percent of the total demand within this service level category alone. At a minimum demand rate of 20 litres per person per day and an average household size of 4.2 persons and a normal usage of 200-300 persons per outlet, the additional number of kiosks required to meet current demand is estimated at 2,800 standpoints. The existing outlets therefore only represents just about 15-20 percent of the unsatisfied demand.

Sanitation sub-Sector

Sanitation in Kampala was better managed in the 1960s than it is today. The preventive health framework has since broken down both in rural as well as in urban areas, the Public Health Act is no longer applicable due to changed circumstances; and home and environment campaigns are no longer being undertaken. Since the 1960s the sanitation sub-sector has not received the attention needed to sustain service delivery at the required levels. Consequently, planning and implementation of social interventions have weakened in the sub-sector at serious socio-economic cost to the country.

The institutional responsibility for sanitation is fragmented. Several government ministries and agencies all appear to play some role in this sub-sector. For instance, in large urban areas NWSC is responsible for on-site sanitation services. The KCC is the agency responsible for on-site sanitation management activities of the city. The Ministry of Health working through the Ministry of Local Government is responsible for the "co-ordination" of rural sanitation. Legislation is also scattered in various Acts and Decrees. In the final analysis, neither government ministry nor agency is accountable for sanitation in Uganda.

Although there has been significant improvement in capacity of urban authorities to provide environmental sanitation services, the social infrastructure is not yet benefiting the poor. One major cause is the backlog of social needs. The other probably more important reason is the low incentive for public institutions to operate commercially, especially when providing services on a monopolist basis.

Sewerage

The sewerage network serves only nine percent of Kampala's population located mainly in the "old town" which includes Old Kampala, Nakasero, Kololo, the central commercial districts, Muyenga and Naguru. Septic tanks and other on-site sanitation technologies, principally pit latrines serve the rest of the city's residents.

About 10 percent of the on-site sanitation user population is served by septic tanks, mainly in high and middle income housing areas like Muyenga, Busiga and Makindye which are not served by the NWSC sewer network. Some houses and even industries in areas served by sewers use septic tanks because of unfavourable gradient to the nearest sewer, or because the cost of connection to the nearest sewer being unaffordable as the house owner is required to meet the cost of the lateral sewer line.
The KCC provides a septic tank emptying service at a fee of about US $57 per trip. In addition, NWSC owns vacuum tankers, although these are not generally available for septic tank emptying due to the prior need to undertake sewer maintenance work.

The operation of septic tanks is not always satisfactory. For example, in swamplike areas, effluent flows over ground and in high population density areas, there is often inadequate room for the necessary soak-away making for a very unsanitary household environment.

Pit latrines - of which 12 percent are private and 67 percent shared - serve about 79 percent of the population. In the more sparsely populated suburban area, they are in generally good condition. Each latrine normally serves one household. In the densely populated areas like Katwe, Kifumbira and Kivulu however, where the facilities are more likely to be shared, the latrines are heavily loaded and only marginally maintained. In locations where the water table is high, like in parts of Ndeeba and Kamwokya, the pits are rarely more than two meters deep. Some resourceful designs even include "pits" above ground. This is the "upstairs" toilet popularly found in most low-lying areas of the city.

Currently, only the private sector and PAPSCA project provides community support to the urban poor on management of pit latrines. No authority regulates planning and construction as well as operation of pit latrines. Consequently, these facilities are neither professionally constructed nor properly used. Cesspool tank operators therefore usually avoid emptying pit latrines because of the danger they present to equipment. The density of development frequently rules out space for new latrines, so that once the existing facility is full, sanitary disposal becomes impossible.

The sanitation situation in Uganda consistently deteriorated between 1974 to 1994 with latrine coverage, for instance, dropping from 95 percent to 43 percent respectively. The socio-economic consequences of this problem are quite disastrous. Mortality rates have increased, sanitation-related diseases now account for up to 50 percent of reported outpatient complaints nation-wide, and morbidity rates from sanitation-related ailments have risen, accounting for millions of lost workdays.

Environmental degradation, especially in urban areas have accelerated. A survey carried out by both KCC and NWSC in the wake of the cholera crisis in 1997 revealed that 98 percent of all springs are fecal contaminated. Epidemic outbreaks like dysentery (Kamwokya II 1996) and Cholera (Gaba, 1997) are frequent.

Given the hilly topography of Kampala that compels the installation of expensive sewage pumping stations and siphon sewers, it is unlikely that NWSC will be able to expand the sewer network to cover the entire city in the foreseeable future.

**Institutional, Legal and Regulatory Framework**

The overall policy objective of government for the water resource management sub-sector is: "To manage and develop the water resources of Uganda in an integrated and sustainable manner, so as to secure and provide water of adequate quantity and quality for all social and economic needs with the full participation of all stakeholders so as not to leave the future generations any worse off than ourselves".

For many years the legislation and regulation of the water sector was inadequate, outmoded and scattered under different decrees and acts. Provisions were therefore difficult to locate, which sometimes led to illegal action. Government thus initiated a water sector legislation study, which led to the formulation of a new Water Statute. However, efforts to publicize the new regulations among key stakeholders have been limited by financial constraints. Consequently, SSIPs are hardly aware of their rights or obligations under the revised legal framework, leaving room for public enterprises to impose unfavorable conditions upon them.
The NWSC remains the monopolistic primary provider of water and sewerage services in Kampala. Consequently, the operation and profitability of SSiPs depends largely on the policies, regulations, tariffs and other conditions imposed by this public enterprise. For instance, a recent imposition of a US$ 15 dumping charge per trip on all private cesspool operators has greatly slowed down the operations of SSiPs. The high water tariffs and frequent disconnection imposed by the NWSC have compelled operators of water-borne public toilets to purchase pick-ups and water tankers to ensure water supply for the public toilets, thus raising operational costs of SSiPs.

The Public Health Act and some other related legal provisions - like the regulation that provides KCC with absolute monopoly over the management of sanitation are yet to be revised and updated. Theoretically, therefore all sanitation SSiPs - including those that have signed contracts with the KCC itself for the management of public toilets in the city - are acting outside the current law.

The water and sanitation sub-sector has yet to be reformed and liberalized. The public enterprises will continue to enjoy access to cheap investment credits at the expense of the SSiPs, irrespective of the fact that both providers are competing for the same market.

Law prohibits development of private water schemes within the city boundaries without prior clearance from the NWSC. Most applications for the development and operation of private boreholes are usually rejected by the NWSC.

The social impact of the structural adjustment policies of the government has exacerbated poverty to the extent that in some extreme cases, even where services exist at subsidized rates, the people still use unapproved sources of water. The market for SSiPs is therefore still fragile, being limited especially by socio-economic difficulties of peri-urban dwellers.

The main weaknesses of existing institutional arrangements could be summarized as:

- Lack of clearly defined corporate policies and of medium and long-term investment planning.
- Low collection efficiencies leading to inadequate cost recovery, which has resulted in unsatisfactory standards of operation and maintenance.
- Divided responsibility for production and financial management functions with overlapping and inadequate coordination.
- Inadequate decentralization of various core functions.
- Inadequate integration in the approach to the provision of water.
- Supply sanitation and health education.
- Development of projects without due consideration to appropriate service standards and affordability; and
- Over-staffing, aggravated by absence of a comprehensive manpower policy.
Characteristics of SSiPs

Water Supply sub-Sector

Water Tanker Operators

Kampala currently has eight privately operated water tankers. The trucks are each operated by a driver and assistant who are paid an average monthly wage of US$ 108 each. The trucks are invariably acquired second-hand, typically from oil companies. They are then refurbished and converted to water bowsers. Bulk water sales by tanker delivery was necessitated by the chronic water shortages in Kampala in the wake of the 1979 war of liberation that overthrew the Idi Amin regime. The tankers draw water from three municipally designated filling stations connected to the NWSC water distribution network. The filling stations are manned privately by attendants who pay a tariff of US$ 0.36 to NWSC and re-sell to the water tankers at US$ 1.10 per 1,000 litres.

The general operational background of these trucks is as follows:

- The average initial cost of each truck of capacity 10,000 litres is US$ 7,250. This type of truck lasts up to 10 years if regularly maintained.
- The demand for truck-delivered water services is in the fringe areas of Kampala with no NWSC supply network. Both residences and construction sites are customers.
- The market is seasonal with highest consumption being registered during the dry season, which lasts for about seven months a year, working six days a week. Consumption during peak demand is three truckloads per day per vehicle.
- Off-peak supply during the wet season when most access roads are only marginally usable together with rainwater harvesting interferes with the tanker operations, and results in about one trip per week per truck.
- The trucks purchase water at US$ 1.08 and sell at US$ 4.34 per 1,000 litres.

Balance Sheet per Year (in US$)

Costs per Year

<table>
<thead>
<tr>
<th>Depreciation</th>
<th>Cost of Truck (10 Yrs)</th>
<th>750</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operational costs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wagee</td>
<td>2,592</td>
<td></td>
</tr>
<tr>
<td>Maintenance</td>
<td>4,200</td>
<td></td>
</tr>
<tr>
<td>Repairs</td>
<td>2,000</td>
<td></td>
</tr>
<tr>
<td>Licensing</td>
<td>600</td>
<td></td>
</tr>
<tr>
<td>Taxes and Fines</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Purchase of water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peak season</td>
<td>5,443</td>
<td></td>
</tr>
<tr>
<td>Off-peak</td>
<td>216</td>
<td></td>
</tr>
<tr>
<td>Sub-Total</td>
<td>16,001</td>
<td></td>
</tr>
</tbody>
</table>

Sales

| Peak Season | 21,874 |
| ft-peak | 858 |
| Sub-Total | 22,722 |

Net balance per truck | 6,741 |

Net balance 8 trucks | 53,928 |
Constraints

- Existence of several non-commercial operators like the police, fire department, foreign embassies and oil companies, which create market distortions that tend to limit the clientele available to the private operators.
- Accessibility to the markets is made difficult due to poor road network in the urban fringe where most customers reside. This is partially responsible for the high operating costs as the vehicles tend to breakdown more often.
- Lack of investment capital to purchase new trucks limits operators to second-hand vehicles that are prone to frequent breakdown, thus reducing operational time input. Weak revenue bases tend to undermine the operators' capacity and chances for business development.
- The non-commercial trucks, which are normally in better mechanical condition and therefore make more trips under poor road conditions, do not pay taxes apart from the ones that belong to the oil companies. This gives these operators a large unfair advantage over the private operator who must pay all taxes prior to being permitted to operate (see Profile A as an annex).

Water kiosk operators

Projects for rehabilitation and expansion of water supplies in Kampala have so far focussed on strengthening the water production, storage and transmission infrastructure. The strategy has been optimal utilization of existing secondary and tertiary water network capacities while consolidating the financial position of the NWSC. Although it is expected that the NWSC would ultimately be in a position for sustainable installation of the secondary infrastructure from its internal revenue, this capacity has not yet been achieved.

Communities in the urban fringe areas of Kampala therefore have no access to pipe-distributed water supply unless secondary networks are constructed either with support of NGOs or directly by the communities themselves. The provider installs secondary distribution networks from which connections for in-house, yard tap and kiosk supplies are made.

- All the kiosks are commercially operated and allocated to applicants on a 'first come first serve' basis with particular affirmative action being reserved for the elderly and women groups. The tertiary supply lines, including the mains connections are installed by the NWSC (on request), who charge the service to various water consumers.
- There are a total of 542 kiosks in the Kampala WSA. Of these up to 80 percent are active and the rest are off supply for reasons ranging from non-payment of account to ownership issues. In addition to these are several suppliers not necessarily registered as standpoints, but who do sell water regularly and therefore operate as providers. These account for less than 5 percent of the total capacity.
- According to NWSC records, the total amount of water supply dispensed through these outlets is 1.09 million litres per day distributed as follows:

<table>
<thead>
<tr>
<th></th>
<th>'000 litres per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private sector</td>
<td>640</td>
</tr>
<tr>
<td>NGOs</td>
<td>34</td>
</tr>
<tr>
<td>Institution</td>
<td>80</td>
</tr>
<tr>
<td>Community Groups</td>
<td>336</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,090</strong></td>
</tr>
</tbody>
</table>

The quantity of water sold through kiosks is therefore 1,010 litres/ day.

- The NWSC tariff at the kiosks including taxes is US$ 0.36 per 1,000 litres. The kiosks sell the water to users at an average price of US$ 0.01 per 20-litre container. This amount is equivalent to US$ 3.6 per 1,000 litres. The amounts actually charged vary from US$ 0.05 -0.2 per 20-litre container.
depending on location. Areas with inadequate water resources (e.g., few springs) attract a relatively higher price for water than areas of plentiful alternative sources of supply.

- The charges to the ultimate consumer also vary according to whether the consumers draw the supply directly or are supplied by pushbike vendors. Vendor-supplied water is more costly. The research resources available could not permit a standard survey to determine the frequency distribution of the prices charged within the water supply area. Transect surveys among both operators and consumers indicate that the price charged increases with distance from the city center. In the core area, where connection densities are high, the vendor charges are on average US$ 0.150/20 litres. In the peripheral, poor, densely populated areas, the charges build up to US$ 0.3 for 20 litres. The vendor market has not been investigated because the service they provide is only supplementary to kiosks.

- The cost of constructing a water kiosk including plumbing is US$ 290. The operators are required to pay a deposit of US$ 109 to the NWSC before supply is connected. The average selling price is US$ 0.01 per 20-litre jerrican. This works out at US$ 3.6 per 1,000 litres. The kiosk owners employ relatives - invariably without pay - to operate the systems.

**Balance Sheet per Year (in US$)**

<table>
<thead>
<tr>
<th>Costs per Year</th>
<th>Amount (in US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depreciation</td>
<td>30,624</td>
</tr>
<tr>
<td>Cost of construction (5 years)</td>
<td>57,552</td>
</tr>
<tr>
<td>Deposits</td>
<td>23,760</td>
</tr>
<tr>
<td>VAT</td>
<td>143,226</td>
</tr>
<tr>
<td>Purchase of water from utility</td>
<td>1,369,600</td>
</tr>
</tbody>
</table>

**Sales**

| Retail sales (US$ 0.09 per 20 litres) | 8,056,463 |

**Net Balance**

| 6,431,701 |

The kiosks operate in the following categories:

i) Community-based outlets usually linked to Local Council network.

ii) Institutional outlets catering for schools, markets, etc.

iii) Profit-driven private sector providers.

Profile B (see annex) shows how the community in Bweyogerere, a suburb located 7 kilometers from the city center, installs and manages their kiosk network.

**Constraints**

- The NWSC has recently imposed a deposit of US$ 125 on all applications for new connections, irrespective of the ownership of the local distribution network. This means that low-income applicants are further constrained by this burden.

- The NWSC sometimes connects new consumers to the network without prior community clearance, thus causing financial loss in form of pipes to the Water Users' Groups.

- The market of water vendors, who used to sell water on bicycles from wells and springs prior to this project, has greatly diminished. Consequently, they have resorted to destroying the newly laid pipes in order to deny the communities access to cheaper water services.

- Urban poverty has also led to some villages like Bbutto being left out of the network because the population is too poor to buy this water even if it was provided.
Pioneer of Private Water Systems

One entrepreneur, Kalebu Ltd. has pioneered the development and management of private water systems in Uganda. The proprietor currently manages five such systems countrywide, two of which are in Kampala serving an estimated total population of 600 people. This SSIP offers both coin-operated kiosk and in-house connection services. It reported a pre-tax corporate turnover of US$ 120,000 in 1998.

The typology is private conventional small water supply systems in various localities of the city where NWSC has no network. The SSIP proprietor is a civil engineer with special training in geo-technical and structural operations. High yield boreholes powered by electric energy are installed in the community areas. Water is pumped to storage tanks from where it is distributed through a pipe network to in-house connections and kiosks.

Kalebu Ltd. identified a market niche in rural-urban sections of large towns, which could not be reached by the public enterprises. The original idea was to supply water through kiosks from powered boreholes with overhead tanks. The strategy shifted to house connections. Alternative supplies did not affect the business, once established. Coin-operated systems - that were hooked on to NWSC networks - were first established in Kibuye.

The Kireka System cost US$ 56,000. This was financed using rollover funds from savings of the first investment at Seguku of US$ 50,000. The rollover has slowed down because overhead and operational costs have risen.

Kalebu Ltd. is able to create new supplies targeting communities of at least 300 people. A rapid feasibility study, which is paid for up-front precedes investment for project sites. Coin-operated kiosks are used to cut back on operational costs and provide a 24-hour supply. Standard utility billing procedures are applied in management of these systems. The supply is mainly for domestic, institutional and industrial use.

Demand for Kalebu's services is steadily growing. Profit motivates Kalebu to achieve better services for its clientele, thus providing an option to public utilities. The Kalebu System is currently operational in over seven locations, two of which are in Kampala. A balance sheet estimating the financial operations of Kalebu Ltd. follows:

**Balance Sheet per Year (in US$)**

<table>
<thead>
<tr>
<th>Costs per Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Depreciation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cost of System (30 years)</td>
</tr>
<tr>
<td></td>
<td>Replacement of 3 vehicles (5 years)</td>
</tr>
<tr>
<td>Operational Costs</td>
<td></td>
</tr>
<tr>
<td>Rent</td>
<td>3,600</td>
</tr>
<tr>
<td>Vehicles</td>
<td>7,830</td>
</tr>
<tr>
<td>Wages</td>
<td>73,913</td>
</tr>
<tr>
<td>System Maintenance</td>
<td>9,600</td>
</tr>
<tr>
<td>Taxes</td>
<td>8,000</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td>109,690</td>
</tr>
<tr>
<td>Revenue</td>
<td>121,740</td>
</tr>
<tr>
<td><strong>Net Balance</strong></td>
<td>12,050</td>
</tr>
</tbody>
</table>

**Constraints**

- Erratic power interrupts water supply and sometimes damages equipment. Pump mortars for the Kireka System have been replaced three times in one month due to UEB fluctuations.
- Public utilities access investment finance at concessionary interest rates, yet SSiPs supplying the same market do not. This causes market distortions especially in the pricing of services.
Historical socio-economic circumstances have created low living standards, which tend to cause difficulties in affordability and delays in payment of water bills. Low awareness of the need for safe drinking water makes people slow to switch over from traditional sources to piped supplies.

Profile C (see annex) shows the operational position of Kalebu Ltd.

A profile (F) has been included for a group of youths that have formed an association called KAPA, which among other operations, manufactures and sells sanitation slabs. It was not possible to generate a balance sheet of KAPA's operations due to lack of records.

**Sanitation sub-Sector**

*Public toilet operators*

SSIPs provide all public toilet services in Kampala. The facilities (about 105 in total) range from modern water-borne flush toilets found mainly in the commercial district to community-managed VIP latrines in the peri-urban fringe settlements. Of these, 33 are located in the city core area including the newly constructed facilities at the main city market, "Owino Market". The rest are found in the peri-urban fringe.

The key characteristics of these facilities are:

- In the town core area, they were built by the KCC and are private-sector managed. The attendants provide customers with toilet paper, soap and water for hand washing. The toilets are clean, well maintained and pleasant to use. The cost per visit is US$ 0.07.
- In the city core area, an eight-stance facility (four males and four females) serves about 70 clients per hour for an average of 11 hours a day. Business opens at 5:30 a.m. and closes between 6:00 and 10:00 p.m., depending on location. Although the facilities remain open on Sundays and on public holidays, the demands for public toilet services are practically zero on these days. The practical number of business days in a year is therefore 295.
- The operators have a big problem with the NWSC in terms of high tariffs as well as unreliable water services. The managers of these facilities therefore ferry water in bulk from alternative sources to the toilet facilities using drums loaded on pick-ups. This has eliminated payments to NWSC in addition to guaranteeing that water for flushing is constantly available. The water tariff is US$ 2 per 1,000 litres. Water consumption is 16,000 litres per toilet per day.
- The management contract compels the operators to rehabilitate the facilities to KCC standards as a pre-condition for managing them. This costs about US$ 3,500 per facility.
- The management contract between the operator and KCC allows for a three-year period of grace in which the operator pays no fees to KCC. After this period a rental charge of US$ 1,000 is payable to KCC by each operator for all the facilities per month.
- Since the takeover of the management of the public toilets by SSIPs, their hygiene has improved tremendously, hence more people are now using the toilets.
The balance sheet below indicates the financial operations of the 33 facilities that are found in Kampala's commercial district.

**Balance Sheet per Year (In US$)**

<table>
<thead>
<tr>
<th>Costs per Year</th>
<th>Depreciation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of Rehabilitation (3 years)</td>
<td>8,811</td>
</tr>
<tr>
<td>Cost of operations vehicle (? years)</td>
<td>4,290</td>
</tr>
<tr>
<td>Consumables (toilet paper, soap)</td>
<td>61,065</td>
</tr>
<tr>
<td>Fuel</td>
<td>15,045</td>
</tr>
<tr>
<td>Wages</td>
<td>80,640</td>
</tr>
<tr>
<td>Rental</td>
<td>36,000</td>
</tr>
<tr>
<td>Taxes</td>
<td>27,000</td>
</tr>
<tr>
<td>Maintenance</td>
<td>72,000</td>
</tr>
<tr>
<td><strong>Sub-Total</strong></td>
<td><strong>137,527</strong></td>
</tr>
</tbody>
</table>

**Revenue** | **524,717**

**Net Balance** | **219,866**

**Note**
- SSIPs usually understate the revenues accruing from UES operations.
- Tax figure is an estimate of what the SSIPs would have paid if the operation were assessed for income tax liability.

**Constraints**
- The high tariff imposed by the NWSC compels operators of water-borne public facilities to resort to alternative sources of supply in order to break-even. This has necessitated the purchase of pick-ups and water tankers by the SSIPs for additional water supply.
- Toilets that were built for a population of about 300,000 people now have to serve a daytime population of 1.2 million, creating excessive demand on the facilities, thus increasing maintenance costs.
- In most cases, the users are not conversant with water-borne toilet technology. This leads to misuse, resulting in blockages and high operational costs.

Profile D (see annex) shows how Mr. Kaweesa Ahmed, proprietor of KKM Ltd. manages half the city's core area public toilets.

**Cesspool emptier services**
The sanitation profile of Kampala City is given as follows:

- Water-borne sewerage coverage | 9 percent
- Septic tank coverage | 5 percent
- Pit latrines coverage | 84 percent
- Population with no toilet facilities | 2 percent

On-site facilities require hygienic disposal of sludge for them to provide long-term useful service. Cesspool emptier tanks are used to remove sludge from VIPs and septic tanks. The sludge is then transported to a dumping site provided by NWSC at a fee of US$15 per trip. The capacity of cesspools is on average 8,000 litres. The charge of cesspool emptying varies between US$ 150 and US$ 15, depending on the ownership of equipment and the grade of housing. The average charge per trip is US$ 60.
The cesspool trucks are either purchased locally from government agencies or imported second hand. However, some refurbishment is always necessary like the replacement of engine, tyres, etc. This brings the ultimate cost to about US$ 20,000. This amount includes purchase of vehicle, licensing for commercial use, payment of income tax and registration of the company. These trucks usually have a useful economic life of about 10 years.

The clients pay for the service at the time their waste is picked up. The pick-up costs range between US$ 50 and US$ 70 per trip. There are three commercially-run cesspool emptiers in Kampala.

The number of trips registered at the NWSC sewage intake facility at which all cesspool emptiers dump their sludge, is on average five per day. This includes trips made by non-commercial operators like PAPSCA and the Ministry of Defense which account on average for two trips per day. Assuming that all operators dump sludge at the NWSC sewage works, the average number of trips made by the commercially-operated trucks per day is one. A balance sheet approximating the operations of commercially-managed cesspool emptiers in Kampala follows:

**Balance Sheet per Year (in US$)**

<table>
<thead>
<tr>
<th>Costs per Year</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Depreciation of truck (10 years)</td>
<td>6,000</td>
</tr>
<tr>
<td>Operational Expenses</td>
<td></td>
</tr>
<tr>
<td>Wages</td>
<td>12,600</td>
</tr>
<tr>
<td>Rent</td>
<td>7,200</td>
</tr>
<tr>
<td>Maintenance</td>
<td>10,800</td>
</tr>
<tr>
<td>Disposal charges</td>
<td>49,275</td>
</tr>
<tr>
<td>Others</td>
<td>4,212</td>
</tr>
<tr>
<td><strong>Sub-Total</strong></td>
<td>90,087</td>
</tr>
<tr>
<td>Revenue</td>
<td>189,000</td>
</tr>
<tr>
<td><strong>Net Balance</strong></td>
<td>98,913</td>
</tr>
</tbody>
</table>

Profile E (see annex) shows the operational status of D & M agencies, one of the successful cesspool emptier operators in Kampala.
Enabling Factors, Constraints and Threats

The focus group discussions with the selected group of SSiPs operators indicated that the main factors constraining these enterprises from expansion could be divided into two broad categories. The external factors outside the control of SSiPs and internal factors, which are a direct result of internal operational weaknesses inherent to subsistence businesses. These factors notwithstanding, the fact that these enterprises are able to sustain these operations at all, is itself testimony to the resilience of the markets which support them. It indicates that when certain adjustments in the external environment are made, these enterprises may be in a strong position for sustained engagement in the sector.

Enabling Factors

The law specifies that two public institutions provide urban environment services: NWSC and KCC. The services provided by the SSiPs were initially in the form of "public good". However, with the current liberalization trends there has been an opening for the SSiPs to join at a more commercial level.

- **Liberalization**
  The newly adopted liberalization of services has given firm ground to the independent providers. However, SSiPs still have a long way to go to achieve an equal footing. The big providers still enjoy economies of scale that the SSiPs have not yet achieved.

- **Performance of public bodies**
  Inability of the public bodies to reach certain areas has created a vacuum in which SSiPs can operate. It is in these places that they have based their operations, tapping fresh markets.

- **Economic indicators**
  Kampala is urbanizing at a very fast rate, which provides a good environment for the growth of SSiPs. This process requires better quality sanitation services than what the monopoly bodies can offer.

- **Political situation**
  A good political atmosphere is what the SSiPs needed to develop their resource network. This has now been provided, unlike during previous regimes. The sustainability of SSiPs depends on such stable conditions to maintain the facilities. The Ministry of Health has taken on a health awareness campaign in the wake of many hygiene-related diseases like cholera. This has helped highlight the benefits of SSiPs and further stressed their importance in maintenance of a clean city.

- **Financial assistance**
  An increased interest in sanitation and water provision by various donors portrays a bright future for the sector and for everybody concerned with it. For example, the inspiration derived from projects like PAPSCA (sponsored by the World Bank) has provided an insight of the benefits of quality sanitation services. This in turn broadens the market of SSiPs like cesspool emptiers.

- **Market forces**
  SSiPs are more flexible to market forces as opposed to the monopolistic enterprises providing the same service. This gives the SSiPs a competitive advantage over the public enterprises.
Constraints

External Constraints

- **Poor infrastructure**

Typical SSiPs provide services in the informal low-income settlements, which the utilities usually avoid because they are perceived as marginal revenue zones of the city, and therefore bad investment areas. In addition, these settlements are often considered under municipal regulations as illegal, therefore not eligible for provision of social amenities. This limits accessibility to customers and creates market distortions by introducing unfair competition.

- **Poverty levels**

Low levels of income further limits the viability of heavy investments in certain areas. This has been highlighted in Bweyogerere where the village of Bubo has been intentionally left out of the project area due to the high level of poverty, which makes it unprofitable to develop the scheme.

- **Infrastructure planning**

Poor construction standards applied in some of the public facilities of Kampala have caused some problem in development. This can be witnessed in the city flush toilets, which were built in an era when population was small. The facilities are now overstretched.

- **Administrative**

There is poor law enforcement in the UES service sector in Kampala, which frustrates the good job done by the SSiPs. Lack of penalty for poor disposal allows people to behave unhygienic manner and get away with it. This laxity allows people to drain toilets in floodwater and dispose solid waste in major drainage channels, leading to massive blockages and pollution of water catchment areas.

- **Education**

Literacy levels of the majority of urban fringe dwellers are low. This is determined by income status. Since the SSiPs market is mostly within this group, they face a problem of conservatism and unwillingness by the people to adjust to new ideas. SSiPs therefore must double their efforts to convince the people to use them rather than public utilities.

- **Taxation System**

The taxation system in Uganda is also biased to favor the public utilities. This has created a negative feeling within the private sector otherwise known as taxphobia. The result is improper book keeping, no auditing and evasion of taxes. When caught, the SSiPs have to pay such a high sum that they almost incur losses.

- **Policies**

The liberalization process, although underway, is taking long to be implemented, therefore most SSiPs are operating illegally.

Internal Constraints

- **Competition**

The various SSiPs are profit-driven and this in turn creates suspicion among them. They cannot therefore join to form an association to fight unfair policies. This further makes it difficult to get any information regarding business from individual SSiPs, no matter the motive.

- **Advertisement**

All the SSiPs in this study did not use any kind of advertisement. This has contributed to their remaining relatively unknown.
• **Record Keeping**

The system of record keeping is viewed with a lot of suspicion especially since tax is evaluated using this system. The few records that are kept are mere estimates and not true statements of operations.

**Threats**

• **Legal**

The Legal Instrument most relevant to sanitation is the Public Health Act of 1964. Part 2, section 7 of this act provides local authorities with administrative powers to:

- take all lawful, necessary and reasonable practicable measures for preventing the occurrence of, or for dealing with any outbreak or prevalence of any infectious, communicable or preventable disease; and
- safeguard and promote the public health and to exercise the powers and perform the duties in respect of public health conferred or imposed by this act or any other law/*

One major and urgently needed review of the act is in respect to penalties (fines) levied against non compliance with the Act. The fines were set in 1964. At the time, one US$ was equivalent to UGShs. 7. Today the dollar is equivalent to UGShs. 1,000. The fines are so ridiculous that their deterrence value are virtually not felt. For example, the fine for discharge of sullage into the street is UGShs. 2 for which there is no denomination unit to effect payment (the lowest unit being UGShs. 5). Other grounds for a review is the possibility that the body of knowledge that provided the basis for the laws could have been superceded by updated knowledge.

In addition to the Public Health Act, the process of decentralization has transferred function, powers and responsibilities from central to local government and from higher local government to lower local government councils so that government decisions are taken as close as possible to those involved. This implies that local councils, at whatever level, and acting within their areas of jurisdiction, have powers to exercise all the political and administrative authority and to provide services, as they deem fit. They can formulate and review development plans, initiate development of basic infrastructure and provide municipal works and services. All councils can make and enforce by-laws as long as they are not inconsistent with higher (national) legislation.

The Decentralization Statute also provides councils at any level with judicial powers "to hear such cases as may be provided for under any written law and shall, when hearing such cases, follow such procedure as may be prescribed under any written law".

The Health Environment Division of the Ministry of Health is in the process of revising the National Sanitation Guidelines. The proposed guidelines provide detailed information on types and designs (including drawings) of excreta disposal facilities under various circumstances e.g. hard rock, high water table and loose soil. It also gives guidance on solid, liquid and gaseous waste management. These current guidelines provide recommendations on household sanitation facilities, latrines slab sizing, and plans and sections of various types of latrines. It also explains health issues concerning residential units, kitchens, bathrooms and houses for animals.

• **Administrative**

The larger monopolistic service providers of water and sanitation treat the SSIPs as competitors and not complementary bodies. This has led to intense competition and frustrations within the sector, which has not been good for the growth of the business.
The Way Forward

Strategic Issues
The strategic considerations that ought to be made in trying to support the growth of SSiPs and their sustained engagement in the sector are highlighted below. The actual programs and work plans for this initiative will become pertinent only after agreement has been reached on the strategies suggested.

Water supply sub-sector

* Water tankers
  - Strict and better supervision of their water tankers by the embassies, the fire department and by oil companies to ensure that their truck drivers do not engage in unauthorized deliveries of water to private individuals.
  - Focused capacity-building initiative, which affords the tanker owners access to investment financing together with technical assistance in enterprise management, designed to strengthen these SSiPs to deliver services in a more sustained way.

* Water kiosk operators
  - The water utility should be encouraged to facilitate the installation of secondary infrastructure in peri-urban areas. Interested kiosk operators should then be provided with incentives like a waiver of the connection deposit, in order to encourage them to install kiosks.
  - The use of computer-aided card operated kiosks ought to be piloted and if found suitable, the technology should be introduced in order to gradually replace the current manual system. In addition to reducing kiosk operational costs, this system would compel accountability as dispensing cards are pre-paid and centrally loaded.

Pioneer private water systems

Reform and liberalization of the sector is likely to remove the present market distortions. This is the only way in which the commercial operational ground can be leveled between the current public enterprises and pioneers like Kalebu Limited.

Sanitation sub-sector

* Public toilet operators
  - The KCC ought to earmark suitable locations in the city for the construction of additional public facilities. The new facilities should be built by the KCC and handed over to the SSiPs for operation. If the KCC does not have the resources necessary for this initiative, then they ought to make an arrangement with the SSiPs to construct the facilities on their behalf. The KCC would then have to waiver rental charges on the facilities for the period necessary to permit the SSiPs to recover their investments.
  - NWSC ought to adjust the water tariff with respect to public toilets to reflect more sensitivity to environment as well as public health considerations. The commercial tariff currently being applied could for instance be replaced by the kiosk category.
  - Focused capacity-building initiative, which would assist the SSiPs access investment financing together with technical assistance in enterprise management, be designed to strengthen these SSiPs to deliver services in a more sustained way.


ANNEXES: Profiles of SSiPs

Profile A: Water Tankers

Service Provider: Rapid Water Sellers
Typology: Commercial standpoint
Funding: Individual investment.
Technical assistance: Individual innovations.

Key features:

Services: The provider took over a 100 mm-dia fire hydrant-water tanker filling station originally operated by NWSC. The facility is categorized as a regular individual.

Service area: Main city center and areas of middle to high-class residences outside the city core area.

Technologies: The kiosk is connected to a 100-mm water connection, with a large hosepipe, which is used to reach the water tankers. The trucks that queue up from Mugalu Road to fill up at the kiosk use a concrete service platform provided with drainage for run-off.

Costs and financing: The initial investment of US$ 2,000 was obtained from the operator’s own savings. It covered connection fee of US$ 1,200, purchase of materials, construction of kiosk, lavatory and a customer waiting shed. The provider pays an average of US$ 750 as monthly payment to NWSC. He sells about 50,000 litres per day. He purchases water at US$ 0.5 per 1,000 litres and sells it at about US$ 1 per 1,000 litres.

Key innovations: The truckers fill a part of the present gap between what NWSC can supply and the needs of the market. Their strength is derived from a city where piped water services are unreliable, with frequent disconnections.

Key constraints:

Market: The water vendors complain of limited market due to urban poverty. This tends to slow down business and affects profitability. The rainy season is also a major hindrance to this business as it provides a free supply to customers and further cuts through an already small market base.

Administrative: NWSC billing procedures are highly questionable in most of the city. This is on top of the high tariff imposed on connection and reconnection fees. This makes it hard to realize a profit. Poor infrastructure affecting most parts of the city makes those areas with good market prospects inaccessible thus limiting the truckers’ catchment area.

Market characteristics: The clientele for this business is major organizations (government and private sector) who need large supplies of water, which NWSC cannot provide on a regular basis. In addition, the truckers target high-class earners not connected to the NWSC network.

Background: This particular connection was made in 1996 after the original operator (Kalebu Ltd.) was disconnected for non-payment. He subsequently lost his service contract with NWSC.

Rapid Water Sellers replaced Kalebu Ltd. However, since then a number of other organizations like Fresh Water Ltd., Safe Water Ltd. have entered the market with the same service and within the vicinity.

Sustainability: If financial constraints continue to prevent NWSC from reaching certain areas, and fluctuation of water pressure remains a problem to big consumers in the core area, the provision of kiosks to fill mobile water tankers will always remain the simple solution to these problems. Rapid Water Sellers will therefore always have market.
**Replicability:** Many places would welcome this service but the question is "how will people pay the high tariffs imposed by NWSC?". Rapid Water Sellers, Fresh Water Ltd., etc. call out for lowering of this tariff which would enable replication of this service elsewhere in the city.

**Key dates:** Kiosk operators of this category were only liberalized in early 1990s prior to which the diafirehydrant used to be run by NWSC.

**Ownership and net worth:** Individual companies like Rapid Water Sellers own kiosks. This company also owns a truck for serving the city with water. The business position is summarized as follows:

<table>
<thead>
<tr>
<th><strong>Years in business</strong></th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total number of employees</strong></td>
<td>2</td>
</tr>
<tr>
<td><strong>Total revenue per day</strong></td>
<td>US$ 800</td>
</tr>
<tr>
<td><strong>Average number of domestic clients</strong></td>
<td>10</td>
</tr>
<tr>
<td><strong>Charges per truck</strong></td>
<td>US$ 10</td>
</tr>
</tbody>
</table>

**Contact:** Mr. Simon Nsubuga  
P.O. Box 467  
Tel: 346585  
Kampala
PROFILE B: Water Kiosk Operators

Service Provider: Bweyogerere Community Water Project.
Typology: Permanent partners with the NWSC whose water they distribute.
Funding: Given by individuals and the community which lays and maintains the distribution pipes. NWSC provides, installs and maintains the water meters at each standpipe and kiosk. NWSC also reads the meters, prepares and sends the bills.
Technical assistance: NWSC, private plumbers and the water committees.

Key features:

Services: The provider installs secondary distribution networks from which connections for in-house, yard tap and kiosk supplies are made. All kiosks are commercially operated and allocated to applicants on a 'first come first serve' basis with affirmative action being accorded to the elderly and also to women groups. The tertiary supply lines, including the main connections are installed by the NWSC who charge the service to various water consumers individually. Thereafter, no new connection is to be made on the network without permission of the community water committee.

Service area: Initially started with one village in Bweyogerere area, the service now covers nine village councils, each with a sub-chairperson at zonal level.

Technologies: The kiosks are all supplied through a distribution network of plastic pipes.

Costs and financing: The initial 1 km of pipeline was financed through community contributions of US$ 6,000. Thereafter, pipes "contributed" by new consumers have enabled network extension. New consumers who wish to obtain in-house water connection have to contribute one roll of 100 m of 50 mm and PVC pipe before the water committee clears them to apply for a service line from NWSC.

Key innovations: The community through their own initiative has been able to meet their water needs. The network has grown from 1 km to 17 kms. through a self-financing innovation. Since the bulk of the supply is on basis of commercial kiosks, the service is self-sustaining. Recently, water supply to the area was boosted by connection to a large main diameter transmission, which was laid through the area leading to a newly gazetted industrial site (Namanve) Industrial Park.

Key constraints:

Administrative: The NWSC has recently imposed a deposit of US$ 125 on all applications for new connections irrespective of the ownership of the local distribution network. This means that low-income applicants are further constrained by this burden.
The NWSC sometimes connects new consumers to the network without prior community clearance, thus causing a financial loss in form of pipes to the Water Users' Groups.

Economic: Water vendors, who used to sell water on bicycles prior to this project, have resorted to destroying the newly laid pipes in order to deny the community access to cheaper water services.

Environmental: Urban poverty has also led to some villages like Bbutto being left out of the network because the population is too poor to buy this water even if provided.

Market characteristics: The NWSC has not been able to serve the community of Bweyogere and the surrounding villages.

Background: Started as a community initiative which took advantage of original water supply line dedicated to a major sports center development within the locality. The community caused political pressure to bear on the water company to permit the extension of the dedicated line to the support initial five standpoints for the local residents. Supply has since grown to 35 kiosks of which six are commercial and 29 are private, in addition to many in-house connections within a period of four years. Commercial kiosks are operated on a 24-hour basis. The private kiosk
operators sign contracts directly with the NWSC after clearance from the project. The Water User Group extends the distribution network themselves.

Future Plans: The project plans to extend its network in areas not yet supplied through its private connection sustainability plan. However, in areas like Bbutto where urban poverty has hindered progress, there is a plan to protect the available wells and provide more boreholes, an alternative that is cheaper.

Sustainability: The provider has set clear rules permitting network expansion, hence attracting new consumers. Provided that the existing consumers continue to pay the NWSC for the service, project sustainability is guaranteed.

Replcability: Limitations are brought about by the inability of NWSC to implement a bulk supply policy, where primary infrastructure would be laid in new supply zones and commercial independent providers (CIP) encouraged to install secondary networks onto which consumers would hook tertiary service lines. Supply to the CIP from NWSC would then be on a bulk supply tariff permitting the CIP to grow and recover costs.

Key dates:
1992: Primary infrastructure to Namboole Sports Complex
1993: Formation of community Bweyogerere Community Water Project
1994: Construction of kiosks commenced
1996: Devolution of project kiosks to private operators

Progress of the project was as follows: 1994 - 1998
1994: First village, Bweyogerere central
Extension of supply to village II, Ntebetebe
Extension of supply to village III, Kigandazi
Extension of supply to village IV, Kakajo
Extension of supply to village V, Kazinga
Extension of supply to village VI, Kireka
Bbutto (left out due to high rate of poverty)
Extension of supply to Kirinya Parish.

Ownership and net worth: The distribution network belongs to the community through the Bweyogerere Community Water Project. The individual tertiary connections are privately owned.

The total net worth of the system is US$ 90,000 excluding pipes contributed through private home connections. The business position is summarized as follows:

<table>
<thead>
<tr>
<th>Years in business</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of standpipes</td>
<td>35</td>
</tr>
<tr>
<td>Average number of domestic clients per standpipe</td>
<td>50</td>
</tr>
<tr>
<td>Connection fee</td>
<td>US$ 125</td>
</tr>
</tbody>
</table>

Contacts: Mr. Mugerwa Momento
LC I & II Chairman Bweyogerere
P.O. Box 1195
Tel: 077 50116
Kampala
PROFILE C: Pioneers of Private Water Systems

Provider Name: Kalebu Limited.

Typology: Private conventional small water supply systems in various localities of the city where NWSC has no network.

Funding: Individual investment.

Technical assistance: The SSiPs proprietor is a professional engineer capable of undertaking appraisal studies as well as technical designs.

Key features

Services: High yield boreholes powered by electric energy are installed in the community areas. Water is pumped to storage tanks from where it is distributed through a pipe network to in-house connections and kiosks. The kiosks are coin-operated as a standard feature.

Service area: Seguku has four kiosks and three house connections.

Kireka has two kiosks with 45 H/Cs and in Mukono there is a hotel with consumption of 50,000 litres per day and 20 H/Cs plus three kiosks. Eight coin-operated kiosks in Kampala are supplied from the NWSC system.

Technologies: High yield boreholes powered by electric energy. Water is pumped to storage tanks from where it is distributed through a pipe network to in-house connections and coin-operated kiosks.

Costs and financing: Kireka cost US$ 56,000 using a roll over from savings of the first investment at Seguku. A total of US$ 50,000 had earlier been invested at Seguku. The roll over has slowed down because overhead and operational costs have risen.

Key innovations: Kalebu Ltd. is able to create new supplies targeting communities of at least 300 people. A rapid feasibility study precedes investment for project sites. This is paid for in advance of start up. Coin-operated kiosks are used to cutback on operational costs and provides a 24-hour supply. Standard utility billing procedures are applied for management of these systems.

Key constraints:

Erratic power supply.

No access to suitable funding.

Poverty among the consumers tends to delay payment of water bills.

Low awareness of the need for safe drinking water.

Historical socio-economic circumstances have created low living standards.

Market characteristics: The occupancy rates of rented accommodation rise in the project areas as soon as investments in water supply are completed. The supply is mainly for domestic and institutional sediment and industrial use.

Background: Identified a market niche in rural urban sections of large towns, which could not be reached by the public enterprises. Original idea was to supply water through kiosks from powered boreholes with overhead tanks. The strategy shifted to house connections. Alternative supplies did not affect the business, once established. Coin-operated systems - that were hooked on to NWSC systems - were first established in Kibuye. Entrepreneur is a civil engineer with special training in geo-technical and structural operations, with wife who has marketing training and works as administrator.

Sustainability: Demand for Kalebu's services is steadily growing with expansion of occupancy in the city. Profit motive gives Kalebu a drive to achieve better service for his clientele making him a better option to public utilities. Kalebu is in other businesses, so pools resources for sustainability purposes.
Replicability: System is now operational in over seven locations.

Key dates:
September 1994: started partnership with NWSC
February 1995: Seguku
June 1995: Mityana
November 1995: Mukono
March 1996: Kireka
August 1998: Nkokonjeru

Ownership and net worth: Mr. Kalebu's operations can be summarized in the table below

<table>
<thead>
<tr>
<th>Years in business</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of employees</td>
<td>16</td>
</tr>
<tr>
<td>Average number of employees/year</td>
<td>12</td>
</tr>
<tr>
<td>Average no. of house connected clients</td>
<td>80</td>
</tr>
<tr>
<td>Total annual revenues</td>
<td>US$ 96,000</td>
</tr>
<tr>
<td>Wages per year</td>
<td>US$ 4,500</td>
</tr>
<tr>
<td>Fuel</td>
<td>US$ 1,500</td>
</tr>
</tbody>
</table>

Contact: Mr. Kalebu
P.O. Box 642
Entebbe
PROFILE D: Managers of Public Toilet Facilities

Provider Name: K.K.M. All Services Ltd.
Typology: Operator of public toilets in Kampala.
Funding: Individual own investment obtained from odd jobs in Sweden.

Key features

Services: Mr. Ahmed Kaweesa is the pioneer of this project in Kampala where he is contracted to operate public flushing toilets originally managed by KCC.

Service area: Entebbe Road, Upper Nakasero Market, Constitutional Square, Old taxi Park, Wandegeya Roundabout, New Mulago Hospital, Centenary Park, Jinja Road, Kibuye Jubilee Park and Meat Packers, at old Port Bell Road.

Technologies: All public toilets are standard water-borne facilities that are connected to the NWSC water supply network. The operator had to fully rehabilitate these facilities as a pre-condition in his management contract.

To supplement NWSC water supply, Mr. Kaweesa resorted to pumping his own water from a well in the Old Taxi Park in 1993. He has also acquired a water truck to further distribute water to the toilets, which are far away from the well.

Costs and financing: It cost K.K.M. a total of US$ 38,000 to rehabilitate the facilities prior to commencement of operation. Customers pay US$ 0.08 per visit. K.K.M. Ltd. also pays a rental fee of US$ 1,000 to KCC per month. Daily expenditure includes toilet paper at US$ 42, Fuel - US$ 17, Labor - US$ 6, Detergents - US$ 27.

Key innovations: K.K.M. is a unique provider of water-borne toilets in Kampala City. These toilets had been destroyed mostly during the 1979 war and were poorly maintained by the KCC.

Due to the high water bills that had accumulated over time (1979 – 1992), K.K.M. could not go on depending on NWSC for water without risking disconnection, so the company rehabilitated a well in the Old Taxi Park and bought a water pump.

K.K.M. also bought a water tanker to help in transporting water to various facilities, thus reducing dependency on NWSC supply.

K.K.M. introduced a system of servicing the manholes around the public toilets every Sunday to avoid blockages, which although are the responsibility of NWSC, are not readily attended to.

Key constraints:

Administrative: After the tariff-free start-up period of three years given to K.K.M. elapsed, KCC introduced a tariff of US$ 1,000 per month as rental fees. This figure is still too high for K.K.M. since some of the toilets are not strategically located and hence generate very little money.

Environmental: Rural-urban migration has created excessive demand on the few old toilet facilities such that maintenance is high and costly. The population is also not very well versed with the usage of water-borne toilets. This leads to misuse which results in blockages. This is especially common with people from rural areas who are used to pits and VIPs.

Market characteristics: K.K.M. handles a mixed population irrespective of class. However, the majority are low-income earners who come to the city by public transport in search of odd jobs or are passing through to other destinations.

Background: Mr. Kaweesa of K.K.M. All Service Ltd. is of Muslim faith, in which cleanliness is emphasized. This helped Mr. Kaweesa realize the poor state of toilets in Kampala.
Mr. Kaweesa made a proposal through the Minister of Local Government, Hon. Jaberi Bidandi Ssali to reconstruct and manage these public toilets. In May 1993, after successful rehabilitation of four stations to working order, Mr. Kaweesa signed a contract for the rest of the public stations he runs and was given a probation period of three years (1992 – 1995) in which to recover his investment costs without paying rent to K.C.C. This, however, was not possible and probation was not extended.

**Sustainability:** With a profit of US$ 50 per day, the project is self-sustaining. The profit has been greatly reduced by the rental tariff imposed.

**Replicability:** Subject to availability of land from KCC, this service can be replicable in many more areas of the city. Mr. Kaweesa has requested for planning permission from KCC for construction of more public facilities in the following places: Railway Station, Arua Park area, Veterans Market, Nakivubo Stadium.

**Key dates:**

June 28 1991: Introduced to KCC by late Ssesanga Mivule.

February 16 1992: Started operating four stations (Hussein, Old Taxi Park, Nakasero Market, City Square).

1993: Allowed to pump own water from well.

May 1993: Signs new contract for running five other stations (New Mulago, Kibuye Jubilee Park, Meat Packers, Wandegeya round about, Centenary Park, Jinja Road).

February 1995: Probation period ends and rental charges introduced.

**Ownership and net worth:** The toilet facilities belong to KCC who have signed a management contract with K.K.M.

**KKM business position as of November 1998:**

<table>
<thead>
<tr>
<th>Years in business</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total number of employees</strong></td>
<td>28</td>
</tr>
<tr>
<td><strong>Average no of employees per year</strong></td>
<td>15</td>
</tr>
<tr>
<td><strong>Average annual revenue</strong></td>
<td>US$ 91,800</td>
</tr>
<tr>
<td><strong>Average no of domestic clients per day</strong></td>
<td>2,550</td>
</tr>
<tr>
<td><strong>Wages per year</strong></td>
<td>US$ 26,880</td>
</tr>
<tr>
<td><strong>Fuel per year</strong></td>
<td>US$ 6,000</td>
</tr>
<tr>
<td><strong>Rent per year</strong></td>
<td>US$ 12,000</td>
</tr>
<tr>
<td><strong>Maintenance/year</strong></td>
<td>US$ 24,000</td>
</tr>
<tr>
<td><strong>Others (license)</strong></td>
<td>US$ 4,800</td>
</tr>
</tbody>
</table>

**Contacts:**

Mr. Kaweesa Ahmed
Plot 6 Blue Room (Nakivubo Rd.)
P.O. Box 30355
Kampala
Tel: 075-655789
PROFILE E: Cesspool Emptier Operators

Provider Name: D&M General Merchandise
Typology: Cesspool emptier.
Funding: Individual investment.

Technical assistance: Dumping site provided by NWSC, whereby the sewage is treated.

Key features

Services: Carries waste from septic tanks and VIPs located within the city center.

Service area: D&M generally works within city center and in the urban fringes including the slum area of Makerere Kivulu, Kisenyi and Kibuli.

Technologies: Cesspool is used to suck out the sludge from the VIP and this is then transported to a dumping site provided by NWSC at a fee of US$15 per trip. The capacity of the cesspool is 8,000 litres.

Costs and financing: The cesspool truck was purchased at a cost of US$750 as scrap. It however needed various parts like engine and tyres, which came up to a total cost of US$32,000. This amount included purchase of vehicle, licensing it for commercial use, payment of income tax and registration of the company. The clients pay for the service at the time their waste is picked up. The pick up costs range between US$50 and US$70 per trip.

Key innovations: D&M offers an extra hand in the main city and urban fringes where there are few functioning cesspools. D&M only empties septic tanks and VIPs, yet the majority low-income earners construct pit latrines which cannot be emptied because the sludge forms into a cake which strains the suction pumps.

Key constraints:

Administrative: Beginning August 1998, NWSC introduced a dumping fee of US$15 per trip. This is rather expensive, especially for low-income earners who have to be charged highly by D&M in order to cover such expenses.

Environmental: The densely populated areas, which need this service on a more regular basis, are found in slum areas with narrow motor ways making them inaccessible.

VIPs constructed away from the main routes would necessitate a longer hosepipe to reach. A pipe is sold at a price of US$100, way out of reach for such small companies.

NWSC cesspool truck drivers undercut private entrepreneurs. This is especially beneficial to them because they do not pay dumping charges, government does maintenance and fuel is free. This results in people demanding for smaller fees equal to that of NWSC, yet the working conditions are not the same.

General construction of pit latrines is cheap compared to VIPs; however, this is the most used technology but cannot be emptied by cesspool.

Market characteristics: The company handles institutions like schools and government/private organizations. The majority of its individual clients are middle to high-class income earners.

Background: The liberalization process in the country gave Mr. Mawanda an opportunity to buy a cesspool shell in 1997 initially owned by Ministry of Housing and Urban Planning. The cesspool needed a number of replacement parts like the engine.

D&M offers other services for solid waste disposal, in the process of which they survey through questionnaires, whether the customers need other urban environmental services.

Prior to this, Mr. Mawanda took a course in waste management as part of his Masters degree program and this has helped him organize this business.
**Sustainability:** Although the tariffs are high, D&M still realizes a profit, however marginal. This is especially due to uncertain market forces.

NWSC's inability to maintain all its vehicles leaves a high demand with low supply and opens the market for companies like D&M.

Training given to the proprietor has also helped him perform in a professional way enabling him to keep the business adjusting to market forces.

**Replicability:** D&M can only be one of many needed to maintain a clean city. As long as populations are high waste accumulates. In an ever-growing city, urban environment services should be emulated everywhere.

**Key dates:**

January 1993: Cesspool bought.

June 1994: Operation started.

August 1998: Dumping fee introduced.

**Ownership and net worth:** Mr. Mawanda owns all equipment.

His operations can be summarized as follows:

<table>
<thead>
<tr>
<th>Years in business</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of employees per year</td>
<td>5</td>
</tr>
<tr>
<td>Average annual revenue</td>
<td>US$ 28,728</td>
</tr>
<tr>
<td>Average number of domestic clients</td>
<td>576</td>
</tr>
<tr>
<td>Wages per year</td>
<td>US$ 4200</td>
</tr>
<tr>
<td>Fuel per year</td>
<td>US$ 5172</td>
</tr>
<tr>
<td>Rent per year</td>
<td>US$ 2400</td>
</tr>
<tr>
<td>Maintenance/year</td>
<td>US$ 3600</td>
</tr>
<tr>
<td>Disposal charges/year</td>
<td>US$ 6300</td>
</tr>
<tr>
<td>Others</td>
<td>US$ 1404</td>
</tr>
</tbody>
</table>

**Average number of trips for last 4 months**

<table>
<thead>
<tr>
<th>Months</th>
<th>Total trips of D&amp;M</th>
<th>Total trips registered</th>
</tr>
</thead>
<tbody>
<tr>
<td>November</td>
<td>34</td>
<td>176</td>
</tr>
<tr>
<td>September</td>
<td>55</td>
<td>142</td>
</tr>
<tr>
<td>August</td>
<td>45</td>
<td>200</td>
</tr>
<tr>
<td>June</td>
<td>37</td>
<td>159</td>
</tr>
</tbody>
</table>

**Contact:**

Nowembabazi James  
D&M General Merchandise  
P.O. Box 12155  
Kampala  
Tel: 250276
PROFILE F: Katwe Allied Progressive Association (KAPA)

Provider Name: Katwe Allied Progressive Association (KAPA)
Typeology: Manufacturers of concrete latrine slabs, manhole covers and drainage pipes.
Funding: World Bank under the Katwe Urban Pilot Project (KUPP) initially funded this group in late 1994.

Technical assistance: This was given by KUPP in the various workshops that were organized to equip these groups with technical skills, business management and health education.

Key features

Services: The project is engaged in manufacture of drainage pipes, manhole covers and toilet slabs for VIPs and base slabs for construction of drainage channels.

Service area: KAPA serves slum areas of Kampala and a few commercial areas in and around the city.

Technologies: The products made by KAPA are all concrete and are made using masons tools like spades to mix the cement, hammers and iron rods. These are constructed and left for two weeks to cure before they are ready to be sold.

Costs and financing: The members provided the initial investment for the group themselves. They purchased carts to help in the cleaning of local markets and they also purchased working tools.

KUPP identified KAPA as an ongoing concern and provided them with materials and training through various workshops to introduce the skills to them.

KAPA products vary in prices according to specification. Drainage pipes range from US$ 30 for 300 mm to US$ 70 for the largest diameter of 900 mm in width. Toilet slabs also vary in size and prices; they range from US$ 30 to US$ 70.

Key innovations: KAPA is an initiative of 25 members who pay a monthly contribution of US$ 4 and an annual subscription fee of US$ 0.8 per head to help in the daily running of this project. Profits are equally shared among members on monthly basis after purchase of operational inputs. The money collected is also used in a loan scheme for members. If one has a problem he/she is able to get this money on loan and pay back on an agreed schedule.

Key constraints:

Environmental: The products of KAPA are all concrete which necessitates having a constant supply of water. However, the fabrication yard has no water connection. This makes operations very expensive especially as both mixing and curing of toilet slabs need a minimum of 20 jerricans.

Transportation of materials is another hindrance because KAPA does not have a truck of its own; materials have to be transported at a very high price.

Market characteristics: KAPA serves a small percentage of the population around the city. Its services are limited to clients who might bump into their workshop.

Background: KAPA was formed with a motive of improving local urban environmental services.

The presence of KUPP in the Katwe area provided an opportunity for advancement especially since KAPA was already an organized group.

In late 1994, with assistance from KUPP, KAPA was able to start manufacturing products related to sanitation like manhole covers, drainage pipes and toilet slabs. To this they have added other concrete items like flowerpots and concrete crosses made for graves.
**Sustainability:** With the right funding for purchase of machinery, this project has a bright future especially since the group has already been equipped with the required skills. The presence of many NGOs funding many water and sanitation projects helps guarantee sustainability of KAPA because they can be sub-contracted to supply pipes and toilet slabs.

**Replicability:** The financial aspect is a major hindrance to such projects. Funds are used to purchase modern machines, land for operators and advertisement. In a city where drainage's are always blocked or burst and need replacement, KAPA's services are greatly needed.

**Key dates:**

1992: attended the NRM Political Education Cadre Training Course
1993: formed KAPA
1994: got funding from KUPP

**Ownership and net worth:** All equipment belongs to KAPA. Their business operations can be summarized as follows:

<table>
<thead>
<tr>
<th>Years in business</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of employees</td>
<td>27</td>
</tr>
<tr>
<td>Charges</td>
<td>15</td>
</tr>
<tr>
<td>Pipes 300 mm</td>
<td>US$ 30</td>
</tr>
<tr>
<td>Pipes 450 mm</td>
<td>US$ 45</td>
</tr>
<tr>
<td>Pipes 600 mm</td>
<td>US$ 55</td>
</tr>
<tr>
<td>Pipes 900 mm</td>
<td>US$ 75</td>
</tr>
</tbody>
</table>

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