



UPSCALING SANITATION THROUGH BUSINESS

Winnie K Sagwe (1540821)

Kofi Annan Business School



UPSCALING SANITATION THROUGH BUSINESS:

Analysis of the business environment of pit
emptying businesses in Nakuru, Kenya

Winnie K Sagwe (1540821)

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Kofi Annan Business School, Hogeschool Utrecht: University of Applied Sciences

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Supervising Lecturer: Mr Menno de Lind van Wijngaarden

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GLOSSARY OF TERMS

DEFINITION OF TERMS

Sanitation- for the purpose of this paper sanitation refers to the provision of facilities and services from the safe disposal of human urine and faeces

Micro-entrepreneurs- for the purpose of this paper, micro-entrepreneurs are defined as self employed individuals who run the businesses by themselves with help from the family or employ fewer than 5 regular employees

Ecological sanitation is a sanitation approach that treats human excreta as resources in an ecological loop. In ecological sanitation, urine and faeces are separated at source. This separation makes it easier to recover and recycle the nutrients in human waste. The urine is, after processing and diluting is directly applied to the soil as fertiliser since in most cases it is sterile. However, the faeces have to be sanitized before being used again.

LIST OF ABBREVIATIONS

ISSUE	Integrated Support for Sustainable Urban Environment
MCN	Municipal Council of Nakuru
MDG	Millennium Development Goals
NAWASSCO	Nakuru Water and Sanitation Services Company
NEMA	National Environment Management Authority
ROSA	Resource Oriented Sanitation concepts
SPA	Sanitation for Peri-urban Areas
UDDT	Urine Diversion Dehydration Toilet
UNICEF	United Nation Children's Fund
WSSCC	Water Supply and Sanitation Collaborative Council

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EXECUTIVE SUMMARY

Millennium Development Goal (MDG) 7, target 3 aims to halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation. Current progress shows that the world cannot meet the target and sub-Saharan Africa is making the least progress. Despite the benefits that improved sanitation has on human health, overall economic development, and equity, the issue of sanitation is not receiving as much attention as water supply.

With increasing urban populations and limited resources, the conventional approach to sanitation which involves sewer lines is failing. As a result on-site sanitation has become a norm rather than an exception in most urban areas including Nakuru Municipality. On-site sanitation is solely a function of households and the local authorities do not contribute to these systems. This has led to the involvement of the private sector in the provision of services needed in the construction and maintenance of the facilities. By and by, the importance of on-site sanitation is being realized and as a result a number of programmes are being established to advocate for this system. These programmes mainly focus on the construction of the toilet but fail to include maintenance advice or support for the facilities. This means the pit emptiers who are vital for the continued use of the facilities are being neglected. There is very little understanding of the business environment in which these small scale providers operate and their business needs. The main purpose of the research, which uses a qualitative approach, is to gain a better understanding of how pit emptying businesses in Nakuru work, their challenges and needs. The main research question of the study is:

What do micro-entrepreneurs in the pit emptying business in Nakuru, Kenya need in order to strengthen their businesses?

Data collection is done mainly through in-depth interviews, observation and desktop study.

The main findings show that the entrepreneurs are of varying age with secondary level education.

The main challenges facing the entrepreneurs include:

- Lack of appropriate entrepreneurial/business management skills like basic book keeping
- Negative attitudes towards pit emptying as a business both by society and by the entrepreneurs themselves
- Expensive registration procedures
- Harassment from local authorities as some of the manual emptiers are arrested while emptying toilets since their activities are classified as nuisances by the MCN
- Misuse of pit latrines by households as they throw household waste in the pits. This makes it hard for vacuum trucks to exhaust the pits.

There is no clear regulatory framework within the local authorities as regards to on-site sanitation and this has led to sanitation being a grey area; no man's responsibility. Despite all this, the local authorities want to involve the private sector in service provision though there are concerns that residents will be exploited by them [private sector] as their motive is to make profit. So as to reduce chances of exploitation of residents, the MCN is considering setting a price ceiling for the pit emptying service.

It is also clear that there is a disconnect among the various stakeholders as they were not aware of each other activities and how they could affect them. Credit facilities are available though the entrepreneurs have not been able to utilise them since they lack information on the available options. In an effort to create an enabling environment and allow the businesses to develop further, the following recommendations are made:

- ✓ Provide basic financial management tools and training to help entrepreneurs keep track of their costs and revenues
- ✓ Provide the entrepreneurs with information about business opportunities within the sector for example re-use of human excreta in agriculture and new sanitation technologies such as ecological sanitation that provide a new market for the pit emptiers
- ✓ Increase community sensitization campaigns so as to reduce the misuse of facilities hence facilitating the work of vacuum exhausters
- ✓ Provide entrepreneurs with information on available financing options such as available products and conditions to be met for one to get financing.
- ✓ Establishment of a clear regulatory framework as regards on-site sanitation. This will allow for the clarification of roles and responsibilities of the stakeholders especially those within the Municipal council.
- ✓ In addition to this, the MCN should conduct a cost-benefit analysis of privately operating a sanitation [pit emptying] business before deciding on the whether a price ceiling is the best approach to protect the consumers from exploitation and if yes, what amount it should be.
- ✓ Development of a forum that will allow the various stakeholders to come together and start an ongoing dialogue.

CHAPTER 1: INTRODUCTION

Sanitation is one of the focus areas of the Millennium Development Goals. The target is to halve by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation. Statistics show that with the current rates of progress the world is not on track to meet the target. Sub-Saharan Africa shows the least progress in meeting the target with merely an increase of 5% coverage in the period between 1990 and 2006 (UNICEF; World Health Organization, 2006).

The conventional approach to sanitation, which is the centralized sanitation system making use of sewer lines, is failing to serve most of the residents in the developing regions. On average, less than 15% of the citizens in African cities are connected to the sewer network with most of this network being found in the central districts (Schaub-Jones, 2005). The centralized system is in most cases the charge of the public sector and with the rapid urbanization these public bodies are not able to expand the network fast enough and this can be attributed to the following:

- The costs of building, operating and maintaining the sewer systems are too high
- The technical know-how as regards these systems is not readily available
- Sewer networks need water in their functioning and not all the places have water coverage

With the failure of the conventional approach to satisfy the sanitation needs of most urban residents, on-site sanitation has become commonplace in most urban areas, especially among the poor. Options available in on-site disposal include: Ventilated Improved toilets, Double vault composting latrines, Pour flush toilets, Septic tanks, Urine Diversion Dehydrating Toilets (UDDT) (UNICEF, WHO, WSSCC, 2008). Despite the great number of people relying on on-site sanitation in urban and peri-urban areas, it [on-site sanitation] is given more consideration by authorities when it comes to programmes aimed at improving sanitation in non-reticulated rural areas. In urban areas more emphasis is given to the development of infrastructure and reticulated connections. This has resulted in on-sanitation in urban areas being a 'grey area' with little or no intervention from the local authorities. This has led to a lot of urban residents seeking other alternatives as the responsibility of household sanitation is left to them. As a result many people are turning to 'non-state providers' so as to meet their various sanitation needs (Eales, 2008). On-site sanitation is categorised into three segments: provision of facilities, maintenance/ emptying of facilities and treatment of waste. Most of the non-state providers that are serving residents in urban areas can be found in the first two segments that is, provision/ construction of toilet facilities and pit emptying.

This report looks into the sanitation business in Nakuru, Kenya and specifically the pit emptying businesses. The focus is on pit emptiers since this is a section of the sanitation that has not been studied in terms of the needs of the entrepreneurs and the business environment that they are in. It is also a section of the sanitation chain that is mostly neglected by programmes and policies aimed at improving and expanding the coverage of on-site sanitation in urban areas. This is in spite of the great role that these entrepreneurs play in ascertaining the success and sustainability of these programmes since they ensure that the facilities built can be used over a long period of time. The findings are based on desktop and field study. The field study lasted 6 weeks and was carried out in Nakuru town and made use of semi-structured in-depth interviews and field observations. The purpose of the study is to gain a better understanding of how pit emptying businesses in Nakuru work, their challenges and needs. With this knowledge, efforts can be made to address the existing gaps so as to ensure the continued growth and operation of the businesses. In order to achieve this, the main research question for the study is:

What do micro-entrepreneurs in the pit emptying business in Nakuru, Kenya need in order to strengthen their businesses?

This report is useful to government planners, NGOs involved in sanitation in developing countries, researchers and potential entrepreneurs interested in the sanitation sector. It is useful for planners as it highlights the needs of the entrepreneurs which can be instrumental when making sanitation policies so as to ensure that they are supportive for the entrepreneurs. It will help entrepreneurs as it presents the business environment that sanitation entrepreneurs operate in so it will enable them to make informed decisions on whether or not to start ventures in this sector. It will enable NGOs to identify gaps in the sector which they can be able to fill.

The report has seven chapters. Chapter 2 presents some literature that explains the sanitation situation in a developing context. Chapter 3 presents the methodology of the research while the fourth chapter provides a short description of Nakuru town. This is followed by the findings and a discussion in the fifth and sixth chapters respectively. The final chapter provides recommendations based on the findings of the study.

CHAPTER 2: CURRENT SANITATION SITUATION IN NAKURU

2.1 BACKGROUND

Nakuru is the 4th largest town in Nairobi and is located to the north-west of the capital city Nairobi. It is situated at an altitude of 1859 meters above sea level and lies within the Great Rift Valley region and owing to this Nakuru has a unique natural structure. Nakuru town is sandwiched between Menengai Crater to the North, Lake Nakuru to the South, pre-historic Hyrax Hill to the East and Mau Ridges to the West. It was founded in 1904 as a railway post and gained its municipal status in 1952.



Figure 1: Nakuru's geographical location

Source: (Otieno, *An Integrated Approach for Selection of Ecosan Options for Nakuru Kenya, 2005*)

Nakuru has an annual growth rate of 7% and its population at the moment is estimated to be about 500,000 with average household size estimated at 3 to 3.4. Population size is projected to increase to 953,898 by 2020 (Muchiri, 2010). Population density for the entire town was estimated to be 881persons/km² in 2001 (ROSA Team, 2007) Population is highly concentrated within the following areas: the CBD, Racecourse, Freehold, Shaabab and Langalanga residential areas, as well as company and cooperative land areas of KwaRhonda and Kaptembwa. The industrial zone in the East, Free Area and Kiratina housing estates have also recorded high population. The peri urban wards such as Kiamaina, Dundori, Mbaruk, Kiambogo and Ol-Rongai as well as the Lake Nakuru/National Park are sparsely populated. Nevertheless population is expected to increase substantially in the peri-urban areas as they become more urbanized and less agricultural (ROSA Team, 2007)

The economy of Nakuru relies heavily on agriculture, commerce, tertiary services and tourism, with informal activities such as hawking becoming a common feature in the town especially around the bus terminus and on the street in the CBD (Muchiri, 2010). The area around Nakuru has a lot of agricultural potential due to its fertile soils. The natural attractions that are found in Nakuru such as Lake Nakuru National Park, Menengai crater and Hyrax Hill attract tourists from all over the world.

2.2 EXCRETA MANAGEMENT IN NAKURU

2.2.1 Institutional and legal framework

Until June 2004, the responsibility for provision of water and sanitation services was vested in the Nakuru Municipal Council (MCN, 1999). With the execution of the Water Act 2002¹, Nakuru Water and Sanitation Services Company Limited (NAWASSCO) has taken over this service. NAWASSCO is a separate company that is owned by the MCN. The company is responsible for the operation and maintenance of sewerage systems and the two treatments plants within Nakuru and also water supply within the municipality. Its mandate does not include the construction of new water and sewerage services as this is the mandate of the Rift Valley Water Services Board. In addition to the national policies in place, Nakuru municipality has its own by-laws that steer the solid waste and waste water management efforts

2.2.2 Sanitation systems

In Nakuru, the sanitation systems consist of water-borne sewer systems and on-site sanitation. The water-borne sewer systems are the responsibility of NAWASSCO while on-site sanitation is the charge of the Department of Public Health of the MCN. Only 19% of the built up areas is connected to the sewer system with the rest making use of on-site sanitation. 11% of those in areas not covered by the sewer system are connected to septic tanks and 85% use pit latrines. In low income areas, where pit latrines are the commonest form of sanitation, sanitation facilities are overstretched with a high number of people sharing a few toilets. In KwaRhonda and other nearby estates, it is common for more than 15 people to share one latrine. This is in spite of municipal by-laws requiring one latrine be provided for each family or a group that does not exceed 10 people. In some of the areas (KwaRhonda and Lakeview), residents are unable to use the toilets at night due to safety concern resulting in either open defecation or using 'the flying toilet' at these times. (ROSA Team, 2007). Despite having poor sanitation facilities, residents in the low income areas would

¹ "The Water Act 2002 stipulates the creation of two autonomous institutions in management of water and sanitation but largely concentrates on framework of improving water supply dealing with sanitation as a sub clause in conservation of water supplies." (ROSA Team, 2007)

rather invest more money in increasing their water supply rather than improve their sanitation facilities (Otieno, 2005; Mwangi, 2002).

2.2.3 On-site sanitation service delivery chain

On-site sanitation is the dominant type of sanitation within the MCN and the focus of this paper. Eales presents the on-site sanitation chain as consisting of three segments each with a different set of providers. The segments are: provision of access/construction of the sanitation facilities, emptying of the facilities and treatment of waste (Eales, 2008). These segments are evident in Nakuru in the many areas that utilise on-site sanitation. Construction of the toilets is the responsibility of the households using/ planning to use them. In Nakuru, households hire masons to build the toilets for them. Once the pits are full, it is again the responsibility of the households to empty them. In instances where sanitation facilities are shared, as is the case in rental houses, pit-emptying is commissioned by the landlord. In the case of single household facilities, the household is in charge of arranging for the pit-emptying. The residents have the following options when it comes to emptying their pits:

- Manual emptying which entails the removal of faecal sludge by hand using buckets and shovels. In most cases, the waste removed from the pits is buried in a hole dug within the courtyard. In other cases, the waste is buried on road reserves which is considered illegal. Unlike in Nairobi², discharge of sludge into the sewer systems through manholes is illegal. Most manual emptiers are unemployed individuals who do odd jobs.
- Mechanical emptying-involves use of vacuum trucks and other vehicles with pumps and storage tank to remove faecal sludge. In Nakuru, there are two privately owned exhauster trucks that serve the residents. The MCN also used to provide emptying services but since 2008 their exhauster truck has been grounded as they could not get the spare- parts needed to maintain it. The trucks transport the waste to the treatments plants.

Treatment of the waste, which is the third segment of the chain, is done at the two treatment plants in Nakuru namely, Old Town and Njoro. These two plants have a capacity of 16, 200 m³/day but at the moment only about 50% of this capacity is being utilized for the greater part of the year (Otieno, 2005). The treatment plants are the responsibility of NAWASSCO.

² In Nairobi, manual emptiers are allowed to empty the sludge into manholes once they take it out of the pits. The pit emptiers have to get a permit from an official of the local authorities which in most cases is the Chief which will allow him to empty the waste into a manhole

2.2.3.1 Involvement of the private sector in sanitation

In the case of Nakuru, it is clear that there is a lot of private sector involvement in two of the three segments, that is in the provision of facilities and emptying of the pits. Construction of the toilets is done by the local masons. None of the local masons exclusively build toilets but they see it as an extra source of income. Collection and transport of faecal sludge is done by manual emptiers and vacuum trucks. Among the private sector participants in sanitation, the pit emptiers are a marginalised group. Earlier projects carried out in Nakuru [ROSA] saw 48 local masons trained on toilet construction. ISSUE2³, another project, has enabled landlords and households to take loans so as to fund the construction of the toilets. Thus there are clear efforts to improve the sanitation coverage within MCN. Nevertheless, the second segment is not getting as much attention not only from sanitation programmes but also the local authorities and other relevant actors. This was observed during an exploratory visit to Nakuru, whereby the municipal officials did not know who had been emptying the pits latrines since their truck was grounded yet the residents were getting serviced. Nonetheless, this group of service providers is vital for the sustainability and effectiveness of the [on-site sanitation] system because they ensure that the facilities built remain usable. This gap (lack of focus on the pit emptiers) has provided the focus for this study which is part of the SPA program initiated by WASTE, Netherlands. Within the program, a lot of emphasis is placed on the operations of the private sector since it is evident that the public bodies are not able to cater adequately to the poor urban on matter pertaining sanitation. For the sustainability of the on-site sanitation system, these private providers, just like any entrepreneur, need to be supported so as to ensure their continued existence. Support mechanisms that can be successful in achieving this are those that take into consideration how the businesses operate, their challenges and needs and their relationships with the various actors, in other words, the business environment.

³ ISSUE 2 is the second rollout of the ISSUE programme run by Waste in Nakuru

CHAPTER 3: METHODOLOGY

A qualitative approach was taken for the research which was case specific as it studied the sanitation business in Nakuru, Kenya only. The research was limited to Nakuru as it is the town in Kenya where WASTE is running projects. The research was done as part of the Sanitation for peri-urban Areas (SPA) project which is a new project and Nakuru is being considered as one of the towns where the project will be implemented⁴.

3.1 SAMPLING

The study population for the research consisted of micro-entrepreneurs in sanitation, local authorities and financial institutions. For the purpose of this research two methods of sampling were applied namely purposive and snowballing sampling. Snowballing was mainly used in the selection of the micro-entrepreneurs who were interviewed. This was due to the fact that sanitation micro-entrepreneurs are a 'hidden' group of entrepreneurs. This was established during the exploratory visit since there were no official records of any private operators in sanitation yet the municipal council was not able to offer services to users of on-site sanitation. Nonetheless, the residents had somehow been serviced which was a clear indication that there was the involvement of independent service providers albeit informally. During the preliminary visit two sanitation entrepreneurs were identified and their social networks were thereafter used to find more micro-entrepreneurs.

Purposive sampling was used in the selection of participants from the local authorities and financial institutions. This was so as there was a pre-selected criterion when it came to these groups.

Participants from the local authorities had to be in departments that dealt with sanitation issues and the financial institutions chosen were those that offered micro-credit facilities.

3.2 DATA COLLECTION

For the research, data was collected through desktop study and a field study and made use of both primary and secondary data. The desktop study encompassed the study of publications and journals on the internet and in the WASTE library, laws and policy documents and reports provided by some of the key contact persons.

The field study was conducted in Nakuru within the Nakuru Municipality. The field study was 6 weeks long but before the six week period a preliminary visit was conducted so as to familiarize with the region and set up initial contact in an effort to establish a rapport⁵. During fieldwork, data was collected using observation and in-depth semi-structured interviews⁶. The field work was carried

⁴ At the moment, Waste is running ISSUE2 in Nakuru which is a second rollout of the ISSUE programme.

⁵ The preliminary visit lasted two weeks.

⁶ See appendix one for checklist for the interviews.

out so as to identify the sanitation entrepreneurs in Nakuru and get a better understanding of how they work and their needs. In addition to the entrepreneurs, financial institutions and local authorities' officials were also interviewed. Data collected during the field study was recorded in the form of field notes, pictures and observations by the researcher.

3.3 DATA ANALYSIS

Data analysis was done both during and after interviews. The analysis started with impressions formed during interviews or when observing the participants while they carried out their daily activities. These observations helped interpret the data received from the personal interviews. The field notes made during the field study were summarised on a daily basis. In addition to that summaries of interviews and observations were made on a daily basis. These summaries were analysed further by reading and re-reading them in an effort to establish patterns and grouping the data according to similarities or differences. This process went till there was a more compact summary which served as a description of a business environment in which these entrepreneurs operate and provided profiles of the micro-entrepreneurs in sanitation.

3.4 SCOPE OF RESEARCH AND LIMITATIONS

This study dealt with the business environment of the pit emptying segment of the sanitation chain. The manual emptiers that were interviewed in-depth were those whose main source of income was pit-emptying. Other pit emptiers, that is, those who do it part-time, were only observed while out in the field. There were only two exhauster trucks involved as they are the only ones operating within MCN.

There was limited time for the field work. Identification of the entrepreneurs was time consuming process since their whereabouts were not known to the key contact persons in the area of study. As a result there was heavy reliance on social networks to meet them and this took a lot of time as a lot of trust was needed for the locals to give information to persons they considered strangers. Nevertheless, once trust was established, new contact persons emerged and so did some issues that had not been within the scope of the study. I was able to meet a number of people and as the field study continued, more issues would arise that would have been interesting to investigate for example the community context in terms of usage of sanitation facilities which greatly affected the work of the entrepreneurs.

CHAPTER 4: FINDINGS

Through the help of social networks earlier established, five entrepreneurs were identified and interviewed in-depth. There were other pit-emptiers who were also observed. Of those interviewed two owned vacuum trucks while the remaining three were involved in manual pit emptying.

All the entrepreneurs interviewed were male and they were of different ages, the youngest being 24 years and the oldest being 64 years. Interviewees from the local authorities included municipal council and the sewerage company officials while those from the banks were drawn from the credit department of the bank⁷.

4.1 Internal environment

As mentioned earlier all the entrepreneurs interviewed were male of varying age. Even those who were observed while in the field were all male.

Perception of their work

Two of the manual emptiers saw their work as a stop gap until something better came along while two other providers, one an exhaust truck owner and the other a manual emptier, saw their work as careers and viable sources of income. The last entrepreneur, a truck owner, saw it as a valuable addition to his core business which was construction work.

Legal status of enterprises

Four of the five enterprises involved were not formally registered. The only registered enterprise, an exhauster truck, was registered as a limited liability company but not independently as a vacuum truck. The truck was part of the construction company. The other vacuum truck owner had not yet registered his venture since it was too expensive while the manual emptiers could not register as their activities were considered an offence as per the municipal by-laws hence could not be registered. The manual emptiers would however like to be acknowledged by the MCN as a vital group in the provision of sanitation services.

Education

All of them had received primary education with two of them having completed secondary education and the remaining three dropped out of secondary school. The lowest educational level among those interviewed was form 2. In addition to the secondary education, one of the interviews had received vocational training in mechanics.

⁷ See Appendix 2 for a list of people interviewed

Previous experience

Before venturing into the pit- emptying business, only one of the respondents had already started another business venture that was successful. He owned a construction company. The rest started their businesses due to their previous experiences. Two of them has worked in the government and were involved in sanitation, one as a mechanic maintaining the department exhauster truck and the other as a pit emptier within the MCN. The other two were apprentices of older manual pit emptiers. They ventured into the business after acquiring the necessary skills since they could not find formal employment.

Motivation to venture into sanitation

Four of the five entrepreneurs started their businesses since they did not have any other source of income yet they needed to earn a living. Three of these were manual emptiers and only one owned a vacuum truck. The other truck owner had bought the truck for his own personal use but later on saw an opportunity as residents were having a hard time having their pits emptied as the municipal truck was not efficient. He then started providing services to some of the clients from his construction company.

Financing

All the entrepreneurs started out their ventures using either their own personal savings or those from family. One of the truck owners used his savings and a loan from his brother to buy his truck while the other used profits from his construction company to fund the purchase of the truck. The manual emptiers mainly used their own savings to purchase the equipment needed, that is, buckets, gloves, gumboots, ropes and masks.

None of the entrepreneurs had taken a loan for their sanitation enterprise. This was mostly because they felt that they were able to cover all their costs and were pleased with their current position hence did not need extra investments at the moment. However two, one exhaust truck operator and a manual emptier expressed interest in taking loans but had not done so since they did not know how to go about it and this lack of information made them hesitant.

Organisation and operations

All the entrepreneurs communicated with their clients through their mobile phones and all the contacts of the clients could be found in the cell phones of the operators. The entrepreneurs did not plan their activities since they did not have regular demand. They operated on a wait and see

approach, whereby they would start each day not knowing who they would serve and as soon as they received a call they would service the client who called.

The manual emptiers worked as a crew with one person as the leader. This was the person who communicated directly with the clients whenever there was a job. The crews in most cases consist of about 6 people excluding the leader. Even so, not every crew member was involved in all the jobs hence the crew members are not regular employees. The size of the job would determine how many people were needed though the leader worked in all the jobs. For a small job for example a single pit would involve 3 people (2 crew members and the leader) while for a big assignment for example emptying a large septic tank, seven people would be involved. One of the manual emptiers interviewed did not have a crew and he worked alone. He did this to avoid having to pay for labour hence a higher profit margin.

The vacuum truck required only two people in the pit exhaustion. Both would be involved in the emptying work with one doubling as the driver.

Only one of the entrepreneurs kept a record of their transactions, as a result most of them did not really know how much profit they made monthly and the volume of work done. The lack of records also meant that there was no separation of business and personal accounts. Of these entrepreneurs, only one expressed the desire to start keeping financial records as he was intending to separate the business and his personal accounts so as to better manage his business.

Pricing

The prices for the exhauster trucks took into consideration the following: salary of the employee, fuel prices, disposal fee and profit. Within the municipality one of the trucks charged Kshs 3,150 while the other charged Kshs 3,500. Outside the municipality, the price would vary depending on the distance to be travelled to the site and disposal point.

The manual emptiers were flexible with their prices and each of those interviewed charged very different amounts though one thing they had in common about their pricing is that the price varied according to the size of the job hence a small jobs cost the least. According to these manual emptiers, their prices took into consideration: wages for labourers, equipment costs (gloves, masks, ropes etc) and a profit margin. However on further analysis of the costs and their prices it became apparent that that their prices only took into consideration labour prices and profit⁸. For all the

⁸ Profit was perceived by the manual emptiers to mean the difference between the price charged and the cost of wages.

entrepreneurs, the price was decided without taking into consideration what the customer was willing and able to pay.

Customers and marketing

The service providers were not restricted to any specific place within the municipality. Most of the customers are loyal to the service providers. Marketing was mainly done through word of mouth. When the service providers started offering the service, their initial clients were those they got from their previous experience and their social networks. For example the government employees who used to work in the pit-emptying sections were able to use the contacts they established while there while another used his client portfolio in his construction company as a client base for his vacuum trucks. One of the truck owners only served septic tanks. This was because in the beginning he encountered difficulties serving pit latrines as people would throw their household waste in these latrines hence making it hard to exhaust. This means that most of his clients are middle-income households as they are the ones who use septic tanks the most when not connected to the sewer network. The rest of the respondents were not selective and they served people with pit latrines and also those with septic tanks both in low income and middle income areas.

Future plans

Two of the manual emptiers wanted to diversify their services with one expressing an interest in garbage collection and the other had already ventured into the transport sector as he had bought a motorbike that he was using in transporting locals. The remaining respondents wanted to remain in the same business they were doing only they were looking for ways to increase their effectiveness and efficiency. One of them, who already owned an exhaust truck, wanted to identify and acquire trucks that had a bigger capacity and more powerful so that they could be able to serve more clients per trip. The other one, who is a hand emptier, wanted to purchase a truck with a small tank to help him in emptying the toilets faster and also allow him to transport the waste to a treatment plant.

Table 5.1 below gives a summary of the internal environment of the sanitation service providers interviewed:

Entrepreneurs Categories	Mbugua	Waruhiu	Nyagah	Nducha	Kamau
Age	56	58	64	36	24
Type of enterprise	Vacuum truck	Vacuum truck	Manual emptier	Manual emptier	Manual emptier
Years in operation	2 years	2 years	10 years	13 years	6 years
Perception of their work	A career and viable source of income	A value adding service	A career and viable source of income	Stop gap before something better comes along	Stop gap before something better comes along
Legal status	Not formally registered but has a business permit	Truck part of his construction company that is registered as a limited liability company	Not registered	Not registered	Not registered
Education level	Vocational training in mechanics	Secondary school-Form 2	Secondary school	Secondary school	Secondary school-Form 3
Previous experience	Worked as mechanic in the Ministry of Public	Owens a construction company	Worked as a pit emptier in the MCN	Worked with his father who used to empty pits	Learnt from an older manual emptier

	Works and serviced the exhauster truck			and unblock sewers	
Motivation to start venture	Necessity	Realization of opportunity	Necessity	Necessity	Necessity
Initial capital	His own saving and a loan from his brother	Profits from construction company	Personal savings	Personal saving	Personal savings
Organisation and operations	Works with his son	Has hired a driver and an assistant to operate his truck	Works with a crew of about 6 members (excluding him)	Works with a crew of 6 members (excluding him)	Works alone
Pricing	Kshs 3500 within the municipality. Outside the municipality charges per kilometre travelled	Kshs 3150 within the municipality. Outside the municipality charges per kilometre travelled	Negotiates with client. Minimum charge Kshs 2,500 and maximum Kshs 20,000 ⁹	Charges Kshs 4500 to empty a septic tank and Kshs 3500 to empty a pit latrine	No information on pricing given
Customers and marketing	-Empty pit latrines and septic tanks Word of mouth marketing	-Empty septic tanks only -Word of mouth marketing	-Empty both pit latrines and septic tanks -Word of mouth marketing	-Empty both pit latrines and septic tanks. Pit latrines have to be lined ¹⁰ -Word of mouth marketing	-Empty both latrines and septic tanks -Word of mouth marketing

⁹ This is the price charged to hotels and schools that hire him

¹⁰ He prefers to served lined pit latrines since then he does not face the risk of having himself or crew buried alive in case the wall of the pit collapse.

Future plans	Buy a new truck since the one he has is very old	Conduct research on improved pit emptying technology	Purchase a smaller truck	Venture into garbage collection	Already ventured into the transport sector
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Table 1: Summary of the internal environment

4.2 External environment

Political/ legal condition

The sanitation business is something that is very new to the municipal council. They do not even have information on the existing entrepreneurs. The development of these sanitation businesses is currently not a priority in the council and this can be attributed to the fact unlike solid waste, sanitation does not have a clear regulatory framework hence no one wants to take responsibility for it. At the moment, the MCN is not going to interfere with these businesses as they do not have an action plan or any tools that will help them deal with them. However, the MCN is trying to establish a framework within which they will license the vacuum trucks. The conditions that are to regulate the enterprises are to be determined jointly by the MCN, NAWASSCO and NEMA. In addition to regulating the vacuum trucks, the department of environment of the MCN, is looking to establish a new enforcement team. The new team will be trained on the environmental by-laws and how to handle various situations that may arise. With this new enforcement team in place, work will become much easier for the private operators as the general population will be more sensitized on proper use and construction of sanitation facilities.

Even though the MCN is willing to integrate the micro-entrepreneurs in the service provision there are a number of concerns as regards their operations. One of the concerns is whether the entrepreneurs will actually meet all the conditions set by the council. This is a concern that stems from how they are currently operating. At the moment they are not allowed to dispose off their waste at any other place other than the treatment plants. Nonetheless some of them are at times discharging the effluent into the sewer lines causing blockage. Another concern is the pricing of their services. There is apprehension that the exhausters may charge prices that may exploit the clients since most of them would be profit motivated.

It was also clear that the MCN does not support the work of manual pit emptiers. This is a group that they do not even acknowledge and do not include in any of their plans to develop the sanitation subsector. If anything it is a group whose operations are greatly discouraged. There have been times that the manual emptiers have been arrested and charged for offences against the public health by-laws which state *'Any owner, or occupier of any premises who deposits or permits to be deposited in or on such premises elsewhere than in approved latrine provided for the purpose any night soil, or urine, so as to cause, or be likely to cause a nuisance, shall be guilty of an offence'*

During the interview the Chief Public Health Officer did not acknowledge the existence of the private entrepreneurs saying that it was not the function of the department to identify the existing entrepreneurs and look into the operations of these exhausters as this was the role of Nakuru Water

and Sanitation Services Company (NAWASSCO)¹¹. However he acknowledged the fact that these trucks cause a nuisance and it was the work of the department to control such nuisances which thus makes the operations of the truck exhausters a concern of the department. So it is clear that the department does not want to own/ take responsibility for the operation of these exhausters even though they should, as per their mandate.

Financial condition

The financial institutions in Nakuru have products that can be accessed and meet the needs of the sanitation entrepreneurs. This was ascertained by visits to three banks in town namely Equity Bank, Family Bank and K-Rep Bank where employees in the credit departments were interviewed. These institutions were targeted as they place a strong emphasis on community lending and micro-credit.

Despite the banks having various products aimed at providing credit to the low-income residents, only Family Bank has a product that specifically targets waste management¹². This is so since the sanitation business is relatively new and has mainly been in the domain of the public sector hence the lack of focus on the sector. Even though Family Bank has such a product, they have not yet lent to any sanitation entrepreneur. They are currently lending to households that want to build sanitation facilities. This is mainly the case as the bank does not really know who the entrepreneurs are hence cannot market the product to them. All their clients have been referred to them by Practical Action. The situation is similar within the other banks, that is, the banks do not know who these entrepreneurs are. In addition to this most financial institutions are marketing their products among their current clients only thus as a result most of the people who are account holders in other banks have no information on available products hence can't utilise them.

One very important thing about their operations is that when lending to businesses they work with registered enterprises only.

Socio-cultural conditions

Currently, a lot of awareness is being raised about the importance of sanitation and good hygiene. Projects such as ISSUE by WASTE, Netherlands that finance sanitation have enabled people from low income areas to build toilets. There has also been a population increase in Nakuru over the few years which in turn has led to an increase of number of people relying on on-site sanitation systems.

¹¹ The Department of Public Health is mandated to cater for on-site sanitation as per the by-laws and the National Health and Sanitation Policy.

¹² The product is called the Waste Venture Loan and it is a loan given to both individuals and business entities that want to use the finances to improve the waste management situation. The product has a flat interest rate of 9% and no processing fee.

The impact that these efforts are having on the sanitation situation in Nakuru is being downplayed by misuse of the facilities. People are throwing household waste some of which is not biodegradable into the pit latrines. This makes the pits fill up faster as the waste does not decompose hence reducing volume which necessitates frequent emptying. However, with the solid waste in the pits vacuum trucks cannot do their work effectively as the solid waste blocks the pipes.

When it comes to relations with the private service providers, members of society do not respect the pit emptiers so much. This has a lot to do with the perception that it is dirty work and that human excreta should not be handled. In addition to this, some of the residents report the manual emptiers to local authorities as they do not like the work they do since it results in bad smells and eyesores in the areas they work in. These reports often lead to the arrest of the manual emptiers.

As pertains the re-use of human waste, it was observed that there was a positive attitude towards the use of treated excreta and urine as fertilizer among the farmers. Some of them were even making their compost using urine as a raw material. The residents were also willing to consume products grown from sanitized human excreta.

CHAPTER 5: DISCUSSION

An analysis of the findings shows that the business environment in sanitation in Nakuru is not so enabling. The micro- entrepreneurs are faced with a similar set of challenges as those in other sectors such as:

- Lack of appropriate entrepreneurial/business management skills
- Negative attitudes towards pit emptying as a business both by society and by the entrepreneurs themselves
- Expensive registration procedures
- Harassment from local authorities as was the case of manual emptiers who would be arrested when found emptying pits

Even though the entrepreneurs cited lack of access credit as one of their obstacles, further investigation of showed that access was not the problem but rather lack of information on available financing options. Since most of the entrepreneurs did not know the specifics of the credit products available, they were hesitant to take loans. A problem that was specific to the vacuum trucks was the misuse of toilets with households disposing off their household waste in pit latrines making them inexhaustible. At the moment the businesses are flourishing but this has to do with the fact that there is not much competition.

Entrepreneurs could be classified in two groups, that is, necessity-based entrepreneurs and opportunity based entrepreneurs. For those encountered in this study, Four of them (three manual emptiers and one truck owner) could be classified as necessity based entrepreneurs since they started operating out of necessity while the remaining entrepreneur is an opportunity based entrepreneur. None of the necessity entrepreneurs were registered and they did not express the desire to take risks and venture outside their core business. All of them were satisfied with their current technology and did not want to seek other innovative options. These are just some of the features that were identified among necessity entrepreneurs by Olomi (2006). On the other hand, the opportunity based entrepreneur was seeking funding so that he could do research on better methods of emptying pits and was looking to introduce a new product that when put in the pits helped in decomposition and loosening of the waste hence making it easier to exhaust the pit. He was also looking to introduce an inspection service whereby once a client calls for his/her pit to be emptied, someone would first go and inspect the pit before sending the truck to the site. This would cut down on fuel costs as sometimes the truck would travel long distances only to find out the pit could not be exhausted. This entrepreneur can be described as an opportunity seeker and innovative which are some of the features associated with opportunity based entrepreneurs.

It was observed that the younger respondents viewed their pit emptying job as a stop gap until they found something better to do while the older respondents saw it as a career and viable source of income. The younger respondents would rather have salaried jobs rather than be involved in self employment as it was more prestigious. This difference in perceptions has had an influence in the future plans of the entrepreneurs. With the younger people, their future plans were to diversify into other sectors that were considered more dignified, for example the transport sector and garbage collection while the older people who were more satisfied with their work wanted to become more efficient in their current ventures. This goes to support Shapero's model of entrepreneurial event which links perceptions to behaviour. An area that could be researched further is the relationship between age and perceptions about sanitation business that was noted in this study.

There was a general concern presented by the local authorities that the private sector might exploit the residents due to their motivation to make profit and are considering placing a price ceiling. However, the concerns were based on their assumptions that the private sector will always exploit residents. This is an assumption that arose from comparison of the prices that the MCN charges for the pit emptying service and that of the private sector. They fail to take into consideration that there are extra charges that these private entrepreneurs have such as license fees and taxes which the MCN does not have to incur so as to provide the service. It was also clear that with the price the MCN was charging when they were providing exhauster services, they were not making much of a profit and in some instances they made a loss¹³. This means that the MCN needs to do a cost analysis first before deciding that the prices the entrepreneurs charge are too high.

The general view point from literature is that society's perception about entrepreneurship plays a major role in encouraging or discouraging entrepreneurship. If society does not look upon a certain trade as something positive then people are less likely to venture into that specific trade. This has held in most cases to be true. However in the case of the sanitation business this was not completely true. Engaging in the pit emptying service provision is not looked upon positively among the residents and people who do this kind of work are considered abnormal. This did not deter the service providers encountered from engaging in this sector. In any case, the number of pit emptiers has increased in the last ten years as observed by one of the pit emptiers. Instead of giving in to society they have been able to make some people respect them and their families have accepted the work they do. For a trade that is not completely supported by society's attitude it is thriving providing income for a sizeable number of people. This discrepancy presents a knowledge gap that

¹³ At the moment the unfair competition presented by the lower tariff that the MCN charged is not an issue since the municipal exhauster truck no longer operates and efforts to get a new exhauster truck are not paying off as funds are limited.

should be examined further. Efforts should be taken to look into the relationship between the community's perception of the pit emptiers and their reaction to this perception.

CHAPTER 6: RECOMMENDATIONS

The research question for this study was **“What do micro-entrepreneurs in the pit emptying business in Nakuru, Kenya need in order to strengthen their businesses?”** From the literature it is clear that the business environment, both internal and external should be conducive for these ventures to flourish.

So as to ensure the continuous operation and growth of these enterprises, a number of recommendations are given:

Recommendations for the MCN

- ✓ The Municipal Council and other local regulating bodies need to establish a clear regulatory framework as regards on-site sanitation. This will create a sense of responsibility as it will be clear what role each party has to play in sanitation and especially on-site sanitation. This framework should not only touch on the relation between the municipal council and the entrepreneurs, but it should also make provision for the relationship between the locals and the entrepreneurs.
- ✓ In addition to developing a regulatory framework, the requirements for operating in the sanitation business as decided by the local authorities should be communicated clearly to the entrepreneurs.
- ✓ They should also do a cost benefit analysis of running a sanitation business before fixing prices.
- ✓ They should carry out more sensitization programs on the proper use of sanitation facilities. This will help reduce the incidences of misuse of facilities hence make the work of the pit emptiers, particularly vacuum truck exhausters.

Recommendations for financial institutions

- ✓ Financial institutions should more information on available financing options to entrepreneurs. In the case of Nakuru, lack of credit is not much of an issue as there are credit facilities targeting small and micro-enterprises but how these products are suitable for sanitation entrepreneurs and how and what is required of them so as to access the facilities is what is not clear to the entrepreneurs.
- ✓ They could also provide financial management training to the entrepreneurs. This will not only help the entrepreneurs use the loan properly but it will improve the general situation of the business.

Recommendations for Waste

- ✓ With the introduction of ecological sanitation in Nakuru, new business opportunities are arising for the current entrepreneurs though most of them are not aware of these developments. This provides an area of intervention for Waste. They could provide information on the new developments, places where this new type of sanitation has been implemented and what the new technologies could mean for them such as allowing them to diversify by collecting waste from the UDDTs as selling it to farmers in Nakuru.
- ✓ Waste can be involved in the development of a forum that will allow the various stakeholders to come together. Such a forum is necessary since the various stakeholders in the sanitation business in Nakuru are not connected.

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APENDICES

APPENDIX 1: CHECKLISTS

CHECKLIST- Entrepreneurs

1. Age: years
2. Gender
3. Living conditions
4. Educational level:
5. How they perceive their current work status
6. Average income (per month)
7. How many years is your current business venture in operation and why waste management?
8. Form of registration of current business venture.
9. What geographical area do you serve?
10. Have you had any other business venture other than the current one?
11. Is it still in operation and for how long?
12. Kind of family and community support received is setting up and running of the business
13. Daily operations of the business
14. Challenges and actions/plans to overcome them
15. How do identify your customers?
16. What are your future plans for the business?
17. What does the municipal council and financial institutions contribute to your business?
18. What kind of networks have you established?
19. Are you aware of how to go about registering your business and getting financing?

CHECKLIST- Financial institutions

1. What kind of micro-enterprises do they deal with and why those?
2. How do they deal with micro-entrepreneurs?
3. What are their expectations and perception of these entrepreneurs?
4. What tools do you have that can serve to improve/ support these enterprises?

CHECKLIST- Municipal Council of Nakuru

1. Do you acknowledge the existence and role of micro-entrepreneurs in sanitation?
2. How many of these micro-entrepreneurs are registered?
3. What tools do you have that could help them develop further?

APPENDIX 2: LIST OF PEOPLE INTERVIEWED

NAME	ORGANISATION	POSITION
Francis Mbugua	Mbugua Sanitary Services	Owner
William Waruhiu	Waruhiu Construction Ltd	Managing Director
John Nyaga		Manual emptier
Nducha		Manual emptier
Kamau		Manual emptier
Sammy Kimani	MCN	Director Department of Environment
James M Kamau	MCN	Cleansing Superintendant
Stephen Kimani	MCN	Chief Public Health Officer
Francis Mburu	Nakuru County Council	Employee Department of Environment
P Kihumba	NAWASSCO	Sewerage superintendant
Benson Gachanja	Equity Bank	Credit Manager
Francis	Family Bank	Credit officer
Paul Nyagah	K-Rep Bank	Credit officer

APPENDIX 3: FINANCIAL TOOLS FOR MICRO-ENTREPRENEURS

It was apparent from the study that the entrepreneurs needed to learn how to manage their money. Seeing that most of them did not have any business training it is important to ensure that tools developed to help them manage their finances are simplified. Since all of their transactions are cash transactions a good starting point to improved financial management is making use of a simple cash book to record daily transactions and a monthly cash flow plan. These simple tools will go a long way in showing them how much money their business ventures actually use and what they get back. This can help them set their prices as the costs are now explicit. The two tools presented below were not tested due to lack of time.

Cash book- for daily transactions

DATE	DETAILS	MONEY IN	MONEY OUT	BALANCE

Cash flow plan- monthly records

		JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT
CASH IN	Cash at the start of the period									
	Cash from sales									
	Other cash in									
	TOTAL CASH IN									
CASH OUT	Cash out direct costs									
	Cash out indirect costs									
	Loan repayment									
	Any other cash out									
	TOTAL CASH OUT									
BALANCE										