

Kenya Case Study

Approximately 20% of Kenya's population of 31 million live in urban centres, with three million people living in Nairobi alone. Current estimates show that 60% or 1.8 million Nairobi residents live in informal settlements, which are characterised by poor basic services such as water, sanitation and shelter.

The Nairobi water supply network has been expanded over many years, but it has failed to keep pace with demand. Informal settlements offer a huge potential market for the water utilities, yet these areas have not been supplied with legal connections. It is estimated that unaccounted for water accounts for 51% of the bulk water supply to Nairobi, due to leaks, illegal connections, and poor billing and revenue collection. The high percentage of unaccounted for water both reduces the amount of water available to customers and deprives the water utility of revenue.

In Kenya the Government has recently given Water Services Boards (WSBs) responsibility for ensuring equitable water service provision locally, including in informal settlements, which had previously been ignored. The principal motivation for improving water services has come from both donor agencies and the Government of Kenya, following recognition that provision of water and sanitation is key to alleviating abject poverty. Another motivating factor for the utility is to reduce the amount of unaccounted for water.

The Nairobi City Water and Sewerage Company Limited (NCWSCL) has, until recently, been reluctant to work in informal settlements because of security issues. NCWSCL have now begun constructing secure meter chambers close to existing water mains, just outside of informal settlements. Kiosk owners and other customers can obtain metered water supplies by connecting pipelines to these, although they are still responsible for buying and installing pipes. Individuals may be reluctant to invest in a new pipe, so most new pipes serve kiosks. Pipes are often of poor quality, and laid at shallow depth, to minimise capital costs. This increases the likelihood of accidental or deliberate damage to pipes, with kiosk operators needing to spend time and money making repairs.

Currently NCWSCL staff are spending time building up good relationships with local people and community leaders in informal settlements. Improved opportunities to obtain legal water connections are being introduced in parallel with actions to disconnect illegal connections, on the basis that people generally prefer to operate within the law. NCWSCL have also made billing and revenue collection simpler since installing meter chambers, to improve the working environment for kiosk owners.

Policy changes to improve legitimate supplies of water to informal settlements in Nairobi are being introduced gradually. There is currently still some rivalry between groups of kiosk operators who share a common interest, which can lead to violence, creation of cartels, and tampering with legal or illegal water pipes. The utility, with support from local people, is gradually overcoming these problems.

The utility has demonstrated its willingness to improve relationships with kiosk operators, and is taking positive action to establish good relationships with communities in informal settlements. A change of relationship between the water utility staff and local residents (including kiosk operators) is necessary to establish partnerships, and achieving this will take time.

Key recommendations

The introduction of partnership arrangements between water utilities and SWEs will inevitably require changes in attitude and behaviour by all concerned. Historically, these groups have not worked closely together, so relationships of mutual trust need to be developed and strengthened. Specific details of any partnership arrangements need to suit local conditions, constraints and circumstances. Some general recommendations of good practice can be identified to help strengthen these arrangements:

Ensure good communication and transparency

- The various actors seeking partnership arrangements need to change perceptions within the local community. It is important that all are well motivated to work together to achieve common objectives. There therefore needs to be ongoing and regular dialogue between staff from the water utility, kiosk operators and community representatives.
- Lack of transparency leads to suspicion and mistrust; it is therefore essential to publicise the planned approach, and keep all stakeholders well informed of activities. Different actors enter into partnerships for different reasons, and compromises may be necessary to reach agreement.
- Utilities and SWEs work in the formal and informal sectors respectively. Management practices may need to be adapted to enable effective working practices. Policies and plans should be agreed by all stakeholders prior to implementation, to ensure that they consistently communicate positive messages.

Agree clear roles and responsibilities

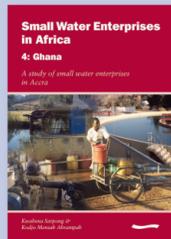
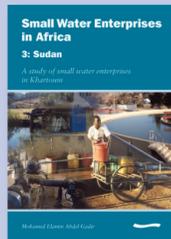
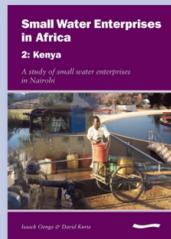
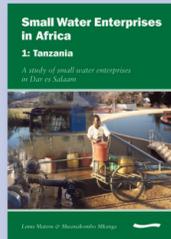
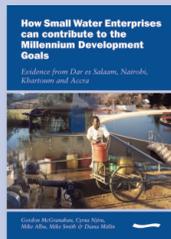
- All stakeholders need to be aware of and agree to their responsibilities (for billing arrangements, tariffs, maintenance and repair of pipes, and reliability of water supplies). Formal contracts may be appropriate or partnerships may be simply based on mutual trust. It may be necessary to form associations and committees for groups to cooperate for mutual benefit.
- Stakeholders should consider establishing a suitable arbitration mechanism to resolve any grievances, where they cannot be resolved informally. Contractual agreements could evolve as levels of trust between the kiosk operators and the utility develop, to include issues such as complaints procedures and providing water quality information.

Provide incentives for legal behaviour

- Law abiding people sometimes resort to illegal behaviour if they perceive that different groups are treated more or less favourably, or when illegal behaviour appears to be rewarded. Appropriate tariffs should encourage SWEs to provide water locally, and to regularise illegal connections. Policies that encourage legal behaviour motivate people to report illegal activities, especially if they can do so anonymously.

Respond to local wishes

- Local people are likely to take a positive attitude to changes in water supply arrangements if they perceive that their views are valued. A wide range of opinions should be sought about the location, design, and operating and contractual arrangements to be adopted. In addition, kiosk operators may request guidance on the implications and responsibilities associated with formal contracts. Local wishes should be respected and accommodated wherever possible.



How Small Water Enterprises can contribute to the Millennium Development Goals

Evidence from Dar es Salaam, Nairobi, Khartoum and Accra
Gordon McGranahan, Cyrus Njiru, Mike Albu, Mike Smith & Diana Mitlin
ISBN ISBN 1 84380 091 8
Price: £14.95

Other publications in this series of outputs are listed below.

For centuries, Small Water Enterprises (SWEs) have supplied a large share of the water market in the urban centres of most low-income countries. Such SWEs have proved themselves economically viable, and often operate in competitive conditions. They extend water services to informal settlements that have little prospect of being supplied with piped water from the local utility. Unfortunately, they attract comparatively little investment, and even less support from governments. The incremental but critically important improvements they can provide tend to be overlooked by governments and international agencies. In international statistics any household that gets its water from vendors is defined as lacking access to improved water supplies.

This book is one of the outputs from a project designed to identify and test out ways of improving the water services delivered to the urban poor through SWEs. As such, it will prove an invaluable resource for water utility managers and policymakers. The book includes accounts of fieldwork undertaken in a number of African cities: Dar es Salaam (Tanzania); Nairobi (Kenya); Khartoum (Sudan) and Accra (Ghana). Even in these cities, where dependence on SWEs is high, the services provided by these SWEs have been poorly documented until now.

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Linus Materu & Mwanakombo Mkanga
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Isaack Oenga & David Kuria
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This Briefing Note considers Small Water Enterprises in relation to the operation of water kiosks, identifying key components for their success and recommendations based on good practice.

It is based upon findings from a project designed to identify and test options for improving water services to the urban poor. Phase 1 of the project included field work in Ghana, Kenya, Sudan and Tanzania to identify constraints, opportunities and strategies to supply acceptable water services to low-income customers living in informal settlements.

The evident potential for improving services delivered by SWEs led on to Phase 2 of the project, in which research teams in Tanzania and Kenya further developed constructive working agreements with water utilities in Dar es Salaam and Nairobi.

Further details of the project are available at: http://wedc.lboro.ac.uk/projects/new_projects3.php?id=61

Key references

McGranahan, G., Njiru, C., Albu, M., Smith, M. and Mitlin, D. (2006) *How Small water Enterprises can contribute to the Millennium Development Goals: Evidence from Dar es Salaam, Nairobi, Khartoum and Accra*. WEDC, Loughborough University, UK.

Action Aid (2004) *Turning off the taps: donor conditionality and water privatization in Dar es Salaam*. Dar es Salaam, Tanzania.

Njiru, C. (2005) *How Small Water Enterprises can contribute to MDGs for water*. WELL Factsheet, <http://www.lboro.ac.uk/well/resources/fact-sheets/fact-sheets-htm/Small%20water%20entprises.htm>

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How water kiosks can improve access to water for the urban poor

Headline facts

- In locations where water utilities wish to develop working relationships with Small Water Enterprises (SWE's), a promising initiative is the extension of services to the urban poor through installing water kiosks (a specific type of Small Water Enterprise) in informal settlements.
- Provision of kiosks can improve water services to the urban poor living in informal settlements by increasing their access to water from piped networks.
- Good relationships between utilities and kiosk operators are needed for such partnerships to be successful. The utility needs to be sufficiently flexible to recognise the value of services provided by SWEs; and kiosk operators and utility staff need to work closely together to extend legal piped water services into informal urban settlements.
- All groups of stakeholders can benefit from kiosks:

- Utilities can reduce the quantity of non-revenue water lost through leaks and illegal connections, meet new demands for water, and collect payments for water sold from kiosks.

- Kiosk operators can earn livelihoods, and other local SWEs can have better access to water of good quality.

- The cost of water to customers can be reduced, and they can have greater confidence in the quality of water supplied.

Introduction

In many low-income towns and cities, large numbers of people live in informal settlements that are not served by a formal piped water network. Historically, they have been served by unofficial service providers, known as Small Water Enterprises (SWEs), which have not been seen as having legitimate status by government agencies.

However, there are emerging opportunities for the development of thriving and economically efficient SWE systems. Kiosk operation is a form of SWE that offers good potential for expansion, providing improved, reliable services at reduced costs, with increased assurance of water quality.

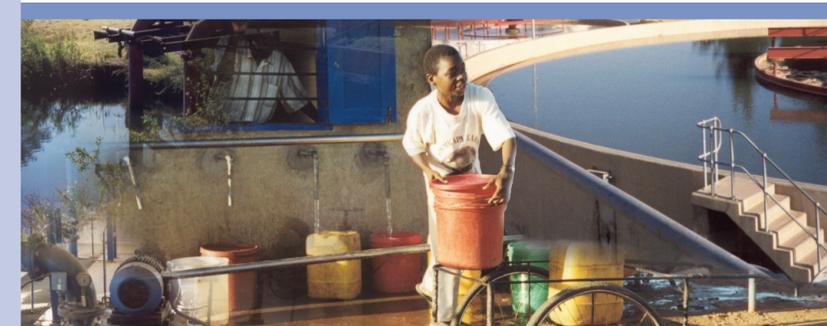
A water kiosk is a fixed installation, with taps connected to a water distribution system, from which customers can purchase water, using their own containers. The kiosk operator pays the water utility for the water used and sells it on at a profit that covers operating, maintenance and salary costs.

No single model exists for allocating responsibilities between utilities and kiosk operators (for tariff setting, funding kiosk installation and pipe repairs). Developing models appropriate for the local context requires utility staff and kiosk operators to be willing to try out different options, to take a broad view of different needs and priorities, and to understand how each other works.

Although the aim of improved service through SWEs is not to supply piped water to every home, nevertheless they can make a significant difference by raising the standard of water supply available to low-income customers in informal urban settlements. Incremental improvements are possible which can result in:

- better bulk supply to informal settlements;
- more secure agreements between SWEs and utilities, and better investment in pipes and kiosks;
- improved monitoring of impact on the poorest people; and
- a commitment on the part of utilities to work with SWEs.

This Briefing Note considers Small Water Enterprises in relation to the operation of water kiosks, identifying key components for kiosks to operate successfully and recommendations based on good practice.



Mike Smith with contributions from Diana Mitlin, Mike Albu, Gordon McGranahan, Cyrus Njiru, Tim Ndezi, Isaack Oenga & Julie Fisher



Key components of effective water kiosk services

For improvements to services provided by SWEs to take place, attitudinal changes by SWEs, utilities and governments are needed. Inevitably, change is likely to be slow, based on discussions, negotiation and constructive engagement processes.

A particularly promising approach is to extend services to the urban poor through kiosks that rely on the local utility for their water supplies. Kiosks are most suitable in locations close to existing distribution pipelines, to keep installation costs to a minimum. The capital costs of laying a connecting pipe to a kiosk increase with its distance from the nearest existing pipeline, affecting the affordability of kiosks within a community. As the length of connecting pipeline increases, so too do the potential maintenance costs, and the risk of accidental or deliberate damage to the pipe.

Where kiosks are considered an appropriate way of improving water services from SWEs, the various physical, institutional and other components detailed below are necessary for the kiosks to operate successfully. Changes are likely to be gradual, as relationships of trust are developed between utility staff and SWEs.

Bulk water supply

The utility should have sufficient resources to meet the demand for piped water supplies, and be able to maintain acceptable and reliable supplies of water to kiosks. The provision of kiosks aims to improve service levels to informal urban settlements; any failure to maintain adequate supplies to the kiosks may encourage customers to use alternative supplies, which can be more expensive and of poorer quality. The reliability of water supplies affects the business viability of kiosks, with potential entrepreneurs being discouraged from investing if the profitability of kiosks is compromised by unreliable water supplies.

Critical considerations when assessing the capacity of a utility to deliver water are the water pressure and flow rate in the pipeline supplying a kiosk, and the number of hours of supply possible. The quantity of water that can be supplied to a kiosk on a daily basis then needs to be compared to the likely demand for water from that kiosk. Even for distribution systems that are able to meet water demands, a water storage tank may still be necessary at the kiosk. This ensures continuity of supply to customers and a reliable income for the kiosk operator, when supplies are intermittent and during periods of high demand.

Engagement of the water utility

A utility needs to recognise the benefits of supplying water to kiosks, and be motivated to engage with SWEs and enter into partnerships for the construction and operation of kiosks. Incentives may come from a variety of drivers: from the international or national political environment, encouraging pro-poor initiatives; through encouragement from an intermediary organisation, such as an NGO; or due to commercial considerations, such as reducing the volume of unaccounted for water produced.

Recognition of the need to enter into dialogue with SWEs needs to be followed by changes in attitude on the part of the utility towards SWEs and people living in low-income urban settlements. Formal and informal community representatives can encourage dialogue between the utility and local residents, cultivating relationships built on trust.

What are Small Water Enterprises?

More than half of the urban population in some parts of Africa, Asia and South America obtain their water services from suppliers other than the official water utility. These unofficial service providers, referred to here as SWEs, are usually operated by small-scale, private entrepreneurs (usually having less than 50 employees).

SWEs typically provide alternative or supplementary services, where the utility supply is inadequate or unreliable. Although customers may include all income groups, it is often the poor who are the worst served by the utility and are therefore most dependent on SWEs.

SWEs may obtain their water from natural sources (e.g. wells) or from the piped water network (either formally or illicitly). Three broad categories of SWEs are:

- wholesale vendors (e.g. tanker operators) who obtain water from a source and sell it on to customers and distributing vendors;
- distributing vendors who obtain water from a source or wholesale vendor and sell directly to consumers, via door-to-door sales (and sometimes small piped networks); and
- direct vendors, who sell water direct to consumers who collect it at source. Household resellers and water kiosk operators belong to this category.



Photograph 1. A kiosk operator and customer in Hanna Nassif, Dar es Salaam



Photograph 2. A kiosk in Hanna Nassif, Dar es Salaam

The utility needs to be sufficiently flexible to move into new areas of activity, supplying water to a new type of customer. In order to accommodate the various changes required, the utility needs to assess its commitment and institutional capacity to undertake such new initiatives. Management competencies are necessary for the utility to enter into dialogue with SWEs or intermediary organisations, to reach agreement on suitable plans and policies, and to liaise with those living in settlements where kiosks are planned. In addition, the utility needs the technical capacity to design, install and maintain additional pipes, extending the existing distribution network into new areas, while also locating and sealing-off illegal connections in those areas.

Functional kiosk infrastructure

Local people and their representatives should be encouraged to suggest suitable locations for kiosks, and the features that they would like to see included in their designs, such as a water storage tank, a shaded area for the operator, and a ledge to assist women and other vulnerable groups to lift heavy loads of water. A functional and attractive design will also encourage people to collect their water from the kiosk.

A functional reticulation system

Provision of kiosks assumes that there is already an existing water distribution system, capable of supplying water to the kiosks along new connecting pipes.

When a new connecting pipe is laid to a kiosk from an existing pipeline, clear ownership boundaries should be agreed. The kiosk operator and utility also need to reach agreement on where the water meter should be installed, and to establish a clear understanding about who has responsibility for maintaining each section of the connecting pipe. Both the utility and the kiosk operator will seek to minimise the risks from damage to pipes, and loss of water from pipes for which they have responsibility. The community may be expected to help protect the pipeline from damage, in return for the benefits that they receive from the water supply.

Investment costs depend on the length of the connecting pipe to a kiosk. Depending on the local situation, capital costs may be funded by the utility, NGOs or CBOs, or by international funding agencies. Where there are different potential sources of funding, co-ordinated planning is necessary to ensure that resources are used effectively. Selling water is generally profitable, but entrepreneurs may be reluctant to make significant investments in kiosks if they have uncertainties about the long-term profitability of the business. The anticipated financial return



Photograph 3. Vendors waiting for water at a kiosk in Kimara, Dar es Salaam

is therefore an important factor influencing investment; and joint investment to share financial risks may therefore be desirable. Joint investment by the water utility and kiosk operators, however, requires confidence in the relationship between stakeholders, and strong mutual trust. To keep capital costs down, people may be tempted to use cheap, poor quality materials. Agreement between the utility and kiosk operators on acceptable technical standards for pipe laying, materials and kiosk design is desirable, while keeping costs within the available budget.

In situations where several kiosks are to be constructed close together, water pressure can be maximised and pipe-laying costs reduced by laying a single shared pipe that then branches out to supply the individual kiosks.

Leaking pipes and illegal connections are likely to exist in informal settlements where kiosks are planned, and it is likely that non-revenue water will continue to be lost in the future. Policy on tracing and reducing illegal connections needs to be clear for all concerned. Cutting off illegal pipelines communicates a negative message unless improved pipes are provided in their place. It is therefore important to regularise illegal connections while at the same time improving legal supplies of water to the community.

Effective utility management

If close co-operation between the formal sector (the utility) and the informal sector (SWEs) is to be encouraged, change needs to be made to utility management policy and practice. In particular, utility staff need to recognise the value of the services provided by SWEs, to regularise relationships with them and foster ongoing partnerships with kiosk operators. Provision of kiosks, in parallel with cutting off illegal connections, is likely to increase utility revenue, allowing them to expand water provision more rapidly. In order to capitalise on these changes, the utility needs to ensure that an efficient metering and billing system is maintained. Regular meter readings and billing should be made at intervals that are acceptable to the kiosk operators, who may wish to make frequent payments.

Kiosk business viability

Local surveys should be conducted to establish the viability of kiosks, based on a consideration of buying and selling prices for water, and the sales necessary for the operator to earn a livelihood. It is in the interest of both the operator and utility that a kiosk should operate as a viable business. Kiosk operators need reassurance that they can earn a living and that they have security of tenure. They should be free from political exploitation, and should not be charged rent on either the kiosk or the pipeline that serves it. Similarly, the utility or funding agency will expect to see some cost recovery for any investment in a kiosk.

Water services may be extended beyond the immediate vicinity of kiosks by distributing vendors, who can earn a livelihood by purchasing water from the kiosks and selling it to customers.

Local discussion between interested parties (local residents, SWEs, and utility staff) about competition should lead to decisions about the number of kiosks to be provided. Utility staff, operators and local residents need to have confidence in their relationship, and that the decision-making process is fair and transparent. Installing several kiosks may encourage competition, offering customers greater choice and improved access to water, while discouraging kiosk operators from

investing in a competitive business which may not be profitable. Ultimately a balance needs to be struck between the needs and expectations of customers and investors.

Contracts and agreements between the utility and a kiosk operator should be both fair and enforceable, and should identify the responsibilities of both parties. Informal agreements may work well, but can be open to abuse. Decisions on the relevance and importance of formal agreements should be taken locally. Any formal agreements that exist should be fair to all parties; however they may be inappropriate or irrelevant in some situations.

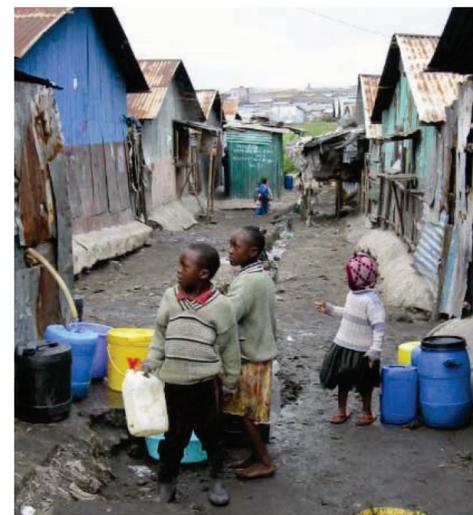
Kiosk operators are unlikely to understand complicated water bills, and a clear, simple and accurate billing system is needed, omitting any information that is not directly relevant, while presenting relevant information clearly.

Accountability to the poor

Implementation of pro-poor initiatives is a significant driver for the introduction of kiosks. The poorest people living in informal urban settlements are unlikely to have a voice to express their opinions, and mechanisms are therefore necessary to protect this group of people. One of the roles of the utility should be to monitor water prices to ensure that water is affordable to the poorest members of settlements where kiosks are provided.

Kiosk operators may form formal or informal associations to negotiate on contractual issues, resolve disagreements and have a common voice. One danger of such associations is that members may form cartels to raise and control the price of water sold from kiosks. Safeguards could therefore be developed to prevent this, and to limit the price of water sold from kiosks. Local leaders, community elders and councillors could play an important role in monitoring water prices, and in reporting any concerns to the utility.

Utility staff also need to include water kiosks as part of their routine water quality monitoring, to ensure that water sold from kiosks has not been contaminated, and is of acceptable quality.



Photograph 4. Children waiting at a water kiosk in Mukuru, Nairobi

Tanzania Case Study

Dar es Salaam, Tanzania, has a population of approximately 2.5 million, in three municipalities (Ilala, Temeke and Kinondoni). Approximately 70% of the population live in more than 50 informal settlements scattered across the city, most of which have a high population density and poor infrastructure services.

The water distribution system in Dar es Salaam is old and in a poor state of repair. Recent estimates suggest that only 26% of the water entering the distribution system is billed for, with leaks accounting for another 60%, and further losses through unauthorised use, illegal taps and supplies to non-paying customers (Action Aid, 2004). Piped water connections are intermittent and poor quality, although most residents of informal settlements do not use them, instead buying water from kiosks, water vendors or neighbours.

National policy in Tanzania considers that a water utility has an obligation to provide water services to informal settlements. This has provided an incentive for the water utility (Dawasa) to engage with SWEs, and to work with them to extend the existing water services. Additional incentives have been increased investment opportunities, and a desire to address past restrictions on the number of legal connections which in turn encouraged illegal ones.

Different kiosk management models have been tested in Dar es Salaam, including those that are privately-managed, community-managed (through water committees or CBOs), utility-managed, and those using household re-sellers. Each model has advantages and disadvantages, and its suitability depends upon the local conditions, resources and support available. In Dar es Salaam, various designs of kiosk have been developed, with budget restrictions influencing the quality of materials and workmanship. Features that are considered important include a storage tank (10,000 litre capacity), an enclosed room from where the kiosk operator sells water and conducts other business, and a ledge to help customers lift their water containers.

The viability of kiosks is dependent on the level of competition between them, their number and location, and the buying and selling prices. Kiosk operation in Dar es Salaam appears to be a viable business, assessed by the volume of water currently sold by them.

The utility and kiosk operators in Dar es Salaam have developed a draft contract which includes the selection of kiosk operators; roles and responsibilities of the water utility, kiosk operator and consumers; and guidance on water pricing. A contract makes the relationship between the utility and SWEs more formal. Less formal arrangements may be appropriate elsewhere.

Experience suggests that the utility, SWEs and residents of informal settlements favour the introduction of more kiosks, and the extension of the water supply system to improve access to water. The utility and SWEs have voluntarily entered into mutual working relationships, with levels of trust improving as they explore ways of working together and identify and implement appropriate management models. Local residents are involved in the selection of kiosk operators, and decisions are made in a transparent manner by the utility, SWEs and representatives of local residents.