

## **Informal Water Vendors and Service Providers in Uganda: The Ground Reality Ganesh Pangare & Vasudha Pangare**

### **Structure of the paper:**

Background  
 Introduction to informal water vending  
 Development of the water supply and sanitation sector Uganda  
 Water for the urban poor  
 Case Studies  
 Findings  
 Emerging points

### **Background**

This paper is a follow-up of the recommendations made in the Desk Study commissioned by the Uganda Water and Sanitation Dialogues (UWSD). The desk study which took inventory of, reviewed and analysed existing research with respect to PSP in Uganda, recommended a study of informal water vending in the country as there was lack of substantial information about this sub-sector. This paper is a beginning or a starting point for further research on the sub-sector and highlights issues for further research, discussion and policy formulation.

The paper is based almost entirely on primary information gathered during 9 days of field work in and around Kampala and several small towns. More than 20 localities, mostly slums, informal settlements and poorer sections of Kampala were visited in order to find out how and from where people obtained water and the price they paid for it. Discussions were held directly with consumers, vendors, government authorities, and NGOs. The other towns and growth centres visited for the study were Seeta, Bombo, Iganga, Namatumba, Mbale, Kiboga, Masaka and Kalangala Island.

### **Classification of towns visited:**

Large towns	Kampala Mbale Masaka Iganga
Small towns	Bombo Kiboga Katakwi Seeta
Rural Growth Centre (recently gazetted as small town)	Namatumba
Other	Kalangala Island

One of the main difficulties encountered during field work was that people were afraid to answer questions as they thought that the researcher was an official who was trying to find out information about them. In the informal settlements, they thought that the researcher would use the information to get them evicted from the area and in the slums they thought that the researcher was an inspector of the NWSC who was trying to find out how much money the informal water vendors were making!

## **Introduction**

Rapid urbanisation is making it more and more difficult for governments to provide adequate piped water services, particularly to the poorer communities and slum settlements located in urban fringe areas. In most countries, population growth in urban centres outpaces the growth of utilities such as water supply. In the absence of piped water systems, communities in these areas meet their water needs through a combination of different sources and means. They either access water freely from public or private protected or unprotected sources and/or purchase water from formal or informal vendors, depending upon the quantity and quality of water available

Water vending is formal when it is undertaken by formal bodies, such as water utilities themselves or registered associations, or by small-scale informal suppliers. Formal vendors generally supply water in tankers and the water is obtained either from treated utility supplies or from registered sources. Informal vendors obtain water from many different sources, protected and unprotected and deliver small quantities of water for domestic use in a variety of ways, from carts and cycles to containers on wheelbarrows, trolleys and animal-drawn or mechanized carts and tanker trucks.

Informal water providers are defined as illicit or semi-licit—not formally recognised or authorised by government. Independent actors in the urban water and sanitation sectors are informal, in the sense of not being formal companies, not being authorised or recognised by government and not paying taxes<sup>1</sup>. The World Bank explains informal vendors as small independent providers, varying from household vendors of water, small network providers, and private entrepreneurs to cooperatives. In some cases they are primary suppliers, and in others they supplement the formal provider<sup>2</sup>. Informal suppliers are called ‘cart carriers intermediaries’<sup>3</sup>, while informal networks are recognised as such informal organizational networks that have no social, legal or political status<sup>4</sup>.

### Comparison of formal and informal water vending<sup>5</sup>

<b>Formal Water Vending</b>	<b>Informal Water Vending</b>
The water utilities or registered associations	Illicit or semi-licit—not formally recognised or authorised small-scale suppliers, varying from household vendors of water, small network providers, and private entrepreneurs to cooperative. Such informal organizational networks have no social, legal or political status
Water usually supplied from treated utility supplies or from registered sources	Water supplied from a range of sources – protected and unprotected, legal and illegal as well as privately owned and public
Water delivered in large volumes	Water delivered in small volumes for domestic use
Water supplied through <ul style="list-style-type: none"> <li>• Piped network (Household connections and public standpipes)</li> <li>• Wells and bore-wells</li> <li>• Provision by licensed tankers</li> <li>• Water kiosks</li> <li>• Negotiation with communities through ‘technical water boards’</li> </ul>	Water supplied through various means such as <ul style="list-style-type: none"> <li>• Carts</li> <li>• Jerry cans</li> <li>• Loaded on animals (donkeys)</li> <li>• Bicycles</li> <li>• Unauthorized or non-licensed tankers</li> <li>• Other means</li> </ul>
At the community level, water supplied through <ul style="list-style-type: none"> <li>• Own individual wells and bore-wells</li> <li>• Piped network (community organisation agreement with local authority or public water company)</li> <li>• Piped network kiosks and taps run by the community with NGO support</li> <li>• Boreholes and kiosks run by the community</li> <li>• Horizontal condominiums</li> </ul>	At the community water supplied through <ul style="list-style-type: none"> <li>• Rainwater harvesting</li> <li>• Water theft</li> <li>• Gifts or paid provision from neighbours</li> <li>• Clandestine connections</li> </ul>

## **Characteristics and types of informal vendors and service providers**

Informal water vendors or resellers effectively extend the coverage of the piped network by reaching those households and localities not covered by the network for various reasons. Without the services provided by these vendors or suppliers, these households and localities situated on the fringes of the city would not be able to access good quality water for drinking and domestic purposes. The localities served by the vendors include those on the fringes of the city, in difficult terrain (steep hillsides and valleys), and in undeveloped infill areas, which are located far from the piped water network.

- Poor urban households in African cities who have irregular incomes are unable to buy connections and set aside money to pay water bills. Informal vendors sell water to these households in small quantities as per the needs of the family on a daily basis.
- Private operators or independent service providers take water from bore wells and distribute it through a network to households and institutions that pay a connection fee and are charged for the volume of water consumed.
- Tankers or water trucks provide water to hotels, schools, private bungalows, building contractors and also to water vendors. They also store water in tanks and sell water in jerry cans. Tankers get their water from overhead tanks constructed by the public utility linked to a filling point or through a household connection / private borehole.
- Standpipe vendors are water resellers who operate standpipes installed by the city water supplier.
- Licensed water resellers are contracted to resell water piped to their homes and who may invest in standpipe installation and network extension investment to do this.
- Unlicensed household water resellers resell water from their household connections illicitly.
- Hand carters and men with carts pulled by donkeys or horses collect water from the standpipes and deliver it door to door.

## **Advantages and disadvantages of informal water vending**

The most important advantage of informal water vending is that households who are unable to buy water connections and set aside larger quantities of money to pay bills are able to purchase small quantities of water on a daily basis according to what they can afford. They are able to decide from where they want to get water from a number of sources on the basis of the amount of money and time available to them. They can get water from household wells, from their neighbors' wells, from springs, from collecting rainwater, from water carriers, hand carters, carters using animal traction, standpipes, and boreholes with manual pumps, or even individual connections to the city water network. The quality of water provided by informal vendors is almost the same as that of piped water supply as in many cases the water is drawn from the piped network itself.

Informal water vending draws attention to the deficiencies of public utilities and emphasises the failure of these utilities to meet the water needs of the population. Also, informal water vending enables a private entity with a profit motive to deliver a public service. Informal water vendors in many cities, re-sell piped water without having any license or legal permission to do so. As a result they are not subject to any kind of regulation either related to price, quality or guarantee of service. In addition, when they draw water from the piped water network in order to re-sell it, they are actually “stealing” the water as they are not authorised to re-sell the water. Because the prices are high in most cases, the poorest cannot afford to buy the water, and have to rely on unprotected sources of water to meet their drinking water and domestic needs. Vendors also extract and sell groundwater, but because they are not “recognized”, their use of groundwater resources is not regulated.

**Advantages and disadvantages of informal water vending**

<b>Advantages</b>	<b>Disadvantages</b>
Households can purchase small quantities of water on a daily basis.	Prices are higher than the public utility charges and are unregulated and there is no tariff structure
Households have greater choice of where to get their water from on the basis of the price and affordability	Poorest cannot afford the price
On days when households do not have the time to fetch the water from the vendor, they can pay for the water to be delivered to them. This costs more but they can use the service when they need it	Service is not guaranteed
Informal water vendors extend the coverage of the public utility when they re-sell piped water to areas which are not covered by the network	It draws attention to the deficiencies of utilities and enables a private entity with a profit motive to deliver a “public service”
The quality of water is almost the same as that of piped water	In many cities or urban areas, piped water which is re-sold by the informal vendors is “stolen” from the piped water supply.
	Informal water vendors are not legally recognised or licensed in many countries and are not subject to any kind of regulation
	Unregulated and unchecked use of groundwater resources

## **Status of Informal Vendors**

The status of informal water vendors varies from country to country and ranges from being completely illegal, to being legal and contractual. In some countries, they are accepted but still do not have a legal status and in some countries they are recognized as meeting an important need but do not operate under contractual arrangements.

### **Illegal:**

- a. Theft from the piped network: Informal vendors often supply “stolen” water from the mains to areas with low pressure or intermittent supply through a piped network. These vendors consider themselves to be in direct competition with the piped system of the public utility and have been known to prevent the piped system from becoming more efficient by indulging in vandalism.
- b. Reselling of piped water: Resellers are households selling water unofficially from their own utility connections to customers who come and fetch the water from them.
- c. Mobile vendors re-selling piped water or water from protected and unprotected sources: Mobile vendors are difficult to regulate. Their number is large and they are difficult to keep track of.

### **Legal:**

- a. Operate within a contract: In some countries, informal water vendors operate standpipes built with public funds. Water is sold by the bucket or jerry can or to distributing, mobile vendors. These vendors have some form of contract which may specify resale prices, hours of operation, terms of payment and conditions of rescinding the contract. These re-sellers are charged a different tariff by the public utility.
- b. Acknowledged but not legally recognized: In some countries, resale of household water is acknowledged but not legally recognized. This means that the households are neither punished nor charged a commercial tariff rate.

## Development of the water supply sector in Uganda

Uganda's water supply targets are to increase access to safe water to 77% of the rural population and 100% of the urban population, by the year 2015. This is in line with and far more ambitious than the Millennium Development Goals (MDGs) undertakings, which aim at halving the percentage of people without access to safe water over the same period.

In order to achieve this objective, the government has undertaken a series of reforms:

### Policy Development: Water Supply<sup>6</sup>

Year	Policy
1995	Human right to water enshrined in the constitution of the Republic of Uganda. Water sector statute enacted in line with principles of the water action plan The Water Act
1997	National Gender Policy
1999	The National Policy established for user management of rural water supplies
2000	Water sector reforms introduced to ensure that services are provided with increased performance and cost effectiveness. These include sector-wide approaches, decentralised service delivery models and the sector's full integration in the PEAP3. National Water and Sewerage Corporation was set up through the NWSC Act The Local Governments Act introduced to decentralize responsibilities for water and sanitation to District Administrations
2001	Introduction of annual joint technical review and annual performance reviews
2002	Adoption of donor financing through national budget support rather than the funding of individual projects
2003	Development of the water and sanitation sector gender strategy. The goal of this strategy is to enhance gender equity, participation, access and control of resources in the water sector
2004	Fiscal decentralisation is introduced and implemented in several districts. Revision of sector investment plan

In consistence with the Constitution and sector policy, the Poverty Eradication Action Plan (PEAP) which is the national planning framework for poverty reduction, recognises the importance of access to clean water and sanitation and provides for it. The PEAP places water supply and sanitation among the priority for poverty reduction under Pillar 2: Enhancing production, competitiveness and incomes (includes water for production and resources management) and Pillar 5: Human Development, which includes water supply and sanitation (provide safe water and adequate sanitation facilities for every one). All sectors specifically provided for under the PEAP are deemed high priority sectors, expected to attract the same priority in funding levels.

Over the past two decades, with the introduction of the privatisation policy in 1998, privatisation has become integral to the water reform policy, and is expected to increase performance and cost effectiveness and decrease the Government's burden while maintaining commitment to sustainability and equitable development. In rural areas, many village-level water supply and sanitation projects are awarded by district governments to private contractors through hundreds of tenders throughout the country. In small towns, too, the private sector is playing a big role. Post 1998 the introduction of a number of change management programmes and the participation of the private sector there has been a tremendous turnaround. Unaccounted for water fell to 37.6% from 51% in 1998.

### **Urban water supply sub-sector**

The urban water supply and sanitation sub-sector is made up of large towns managed by the National Water and Sewerage Corporation, all other small towns and Rural Growth Centres. There are 22 large towns with populations of 15,000 or more, gazetted for operation by National Water and Sewerage Corporation. These are Kampala, Jinja/Njeru/Lugazi, Entebbe, Tororo/Malaba, Mbale, Masaka, Mbarara, Gulu, Lira, Fort Portal, Kasese, Kabale, Arua, Bushenyi/Ishaka, Soroti, Mukono, Malaba, Lugazi, Iganga, Mubende, Hoima, and Masindi. Small towns are all towns with populations of 5,000 to less than 15,000, gazetted district headquarters with populations less than 5,000 and towns with populations greater than 15,000 that are not yet gazetted for water supplies operation under National Water and Sewerage Corporation service areas.

**Water Service Coverage in large towns by NWSC<sup>7</sup>**

<b>Year</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>
<b>% coverage</b>	<b>63</b>	<b>65</b>	<b>68</b>	<b>70</b>	<b>71</b>

By 2007, the access to improved water supplies in urban areas is estimated at 56%. The total urban population in the 171 towns (22 large towns and 149 small towns) is estimated at 4.4 million. Access to water in small towns is estimated at 35% (32% in 2005/6) whereas access to water in large towns is estimated at 71% (70% in 2005/6). Access has been limited to 95% per town so that over-served areas do not compensate for underserved areas in the national figure. The overall coverage of the 22 large towns served by NWSC was 71% as at June 2007. Eight of these (Kampala, Jinja/Njeru, Masaka, Mbarara, Gulu, Kasese, Lira and Fort Portal) have coverage greater than or equal to the NWSC average. The total number of connections is 180,697 as of June 2007.

### Access to improved water services in urban areas<sup>8</sup>

Type of water supply	Number of towns	% of population having piped water supply	% of population with other improved sources	Total % of population covered
Large towns with piped water (NWSC)	22	71	Assumed to be 0	71
Small towns with piped water	94	43	09	52
Small towns with other sources	55	0	09	09

Out of the 149 small towns, 94 towns have piped water supply, while 55 towns do not have piped water supply. For all towns, the maximum percentage of people with access to improved water has been limited to 95%. The average coverage for the 149 small towns monitored is 35%. It may be noted that none of the 55 towns with no piped water are above the average of 35% and that only 16 of the 94 towns with piped water supply are below the same average.

The present management arrangements for the small towns are as follows:

1. 57 towns are managed by private operators and supported by the Water Authorities Division of the Directorate of Water Development. Some of these will be handed over for management by NWSC in the future.
2. 44 towns supported under the South Western Umbrella Organisation management structure.
3. 32 towns registered for support under the new Umbrella Organisations in Eastern Uganda and Rwenzori region.
4. 16 towns where planning and implementation is ongoing under the small towns programmes in DWD. Once completed, these will be managed by private operators and supported by the Water Authorities division of the Directorate of Water Development (i.e. category 1)

#### **Rural water supply sub-sector**

The Rural Water Supply and Sanitation (RWSS) sub-sector covers all rural communities with populations up to 5000. The 2002 population census estimated the rural population at 21.04 million rising to 24.01 million by 2006 and 32.75 million by 2015. The sub-sector considers two divisions of communities, villages with populations up to 1500 and Rural Growth Centres (RGC), which number approximately 850, with populations between 1500 and 5000. Generally RGCs are to be served via mechanised water supply systems that may include pumped supply from one or more sources, treatment, storage and limited distribution. Management of the RGC system is through private operators or community formed associations accountable to the District or Sub-county Government with supervision by the Ministry of Water and Environment. Water supply in smaller communities is generally via point sources, which consist of deep boreholes and shallow wells fitted with hand-pumps,

springs, gravity flow schemes with public taps, and rain water harvesting tanks. The systems are community managed with support from the respective Local Governments and the Ministry. The biggest challenge facing the sector is how to serve the water stressed areas where the traditional rural water supply sources cannot easily be implemented. These districts / Subcounties are lagging behind in coverage and require more expensive technological option which cannot easily be met in the grant.

The national average coverage for rural water supplies is 63%.

**Estimated access to improved rural water supplies as of June 2007**  
**Walking Distance Approach assuming 100% functionality<sup>9</sup>**

<b>Distance to water source</b>	<b>Coverage</b>
1.5 km	59.2 %
1 km	56.1 %
0.5 km	39.0 %

**Percentage of rural people accessing different sources of water<sup>10</sup>**

<b>Sources of water</b>	<b>Percentage of people</b>
Deep bore holes	37.4
Protected springs	30.2
Shallow wells	18.4
Gravity Flow Schemes Taps	8.0
Dug wells	5.7
Rain water tanks	0.2

### Institutions involved in provision of water and sanitation services<sup>11</sup>

<b>National level: Ministry of Water and Environment</b>	
Overall responsibility for setting national policies and standards, managing and regulating water resources and determining priorities for water development and management. It also monitors and evaluates sector development programmes to keep track of their performance, efficiency and effectiveness in service delivery	
Directorate of Water Resources Management	Responsible for managing, monitoring and regulation of water resources through issuing water use, abstraction and wastewater discharge permits.
Directorate of Water Development	Responsible for providing overall technical oversight for the planning, implementation and supervision of the delivery of urban and rural water and sanitation services across the country, including water for production
National Water and Sewerage Corporation	Operates and provides water and sewerage services for 22 large urban centres across the country. NWSC's activities are aimed at expanding service coverage, improving efficiency in service delivery and increasing labour productivity.
Ministry of Health	Hygiene and sanitation promotion in households
Ministry of Education and Sports	Hygiene and sanitation promotion in schools
Ministry of Gender, Labour and Social Development	Gender responsiveness and community development and mobilization
Ministry of Finance, Planning and Economic Development	Mobilises funds, allocates budgets and coordinates development partner inputs
Development partners	ADB, Austria, BADEA, DANIDA, DFID, EU, France, Germany, JICA, UNICEF, Sida
Uganda Water and Sanitation NGO Network (UWASNET)	Umbrella organization coordinating NGOs at the national level largely funded by MWE
<b>District level:</b> Districts, Town Councils, Sub-Counties empowered by the Local Governments Act, 2000, to provide water services	
<b>Private Sector</b>	
Private sector firms	Design and construction under contract to central and local governments
Private handpump mechanics	Maintenance services in rural and peri-urban areas
Private operators	Manage piped water services in small towns and rural growth centres
<b>Community level:</b> Communities are responsible for demanding, planning, contributing a cash contribution to capital cost, and operating and maintaining rural water supply and sanitation facilities. A water user committee (WUC), which is sometimes referred to as a Water and Sanitation Committee (WSC) should be established at each water point	

## Water for the urban poor

In recognition of the need to meet the MDGs for water and sanitation, the NWSC has undertaken strategic activities in order to provide water services to the rapidly increasing urban poor population in the large and small towns. These activities include;

- intensification of the network,
- establishing public stand posts and
- installing yard taps, within these settlements.

NWSC categorizes the following strata of customers as “urban poor”:

- Household incomes of less than Shs.80, 000 (US Dollars 40) per month and in most cases earned on a day-to-day basis i.e. equivalent house hold income of US Dollars 1.33 per day
- Clustered settlements with a high crowding index of 0.25 - 14 people
- Very low levels of water consumption of between 0-20 litres per capita per day
- Customers who do not have own connections

The provision of services to the urban poor population have been streamlined and institutionalised by creating a focal desk and branch in the Kampala area to handle all issues related to this segment. Communities and the private sector have been involved in the planning process so as to ensure stakeholder co-ordination and participation in formulating activities to serve the poor. In addition institutional reforms in Kampala Water of decentralisation and delegation of managerial autonomy to the Branches have made it easier to reach and interface with the urban poor in the slums around Kampala City. Flexibility in technical requirements (waiving of land title requirements, easing construction standards, post-processing of new connection forms) was key to increasing water service coverage in the urban poor communities.

Within the framework of the new water connection policy, the Corporation went an extra mile to provide free connection materials, mobilised the communities through their local councils to do pipeline trenching and backfilling and engaged local contractors to meet the overwhelming demand for the new connections.

The water needs for the urban poor were met by providing water service through kiosks and public stand posts. But due to the high cost of providing and maintaining the public kiosks, the recent trend in the provision of water encourages house connections or yard taps as opposed to public stand pipes. However, stand-posts remain effective within the urban slum areas where there are very few permanent structures.

<b>Trend of Public Stand posts/kiosks installed<sup>12</sup></b>					
<b>Year</b>	<b>2002/03</b>	<b>2003/04</b>	<b>2004/05</b>	<b>2005/06</b>	<b>2006/07</b>
New Kiosks	277	382	269	1,255	122
Total Kiosks	2,962	3,344	3,613	4,868	4,990
% Growth	---	13%	8%	35%	2%

Within the framework of the Kampala Water Supply and Sanitation expansion programme NWSC has now established a Community Management Unit (CMU) operating mainly under the urban poor project. It has been able to document some information such as the number of connections in the urban poor settlements, which number 6,092. It is envisaged that in future, the CMU will evolve to cover all urban poor centres within the Corporation. Another project called Water Supply and Sanitation in Kagugube is on going. The purpose of this project is to improve water supply in the slum areas<sup>13</sup>.

### **Projects for the urban poor<sup>14</sup>:**

#### **NWSC Tariff Structure: Incorporating a Subsidy to the Poor**

The NWSC maintains a uniform tariff policy in all its areas for purposes of ensuring equity. The lower tariff at the stand posts is aimed at ensuring basic supply to the poor as it translates into a price of Shs 13.76 per jerrican.

#### **Kampala Urban Poor Project**

One of the projects to be undertaken to improve the living conditions of the urban population residing in informal settlements in and around Kampala is the Kampala Urban Poor Project. The project is to be funded by the Government of Uganda, NWSC and the German Government. Furthermore, under the Presidential initiative, connections were made in the urban slums of Kisenyi, Katwe, Owino Market, Kagugube, Mengo, Nakawa, Kibuli, Wabigalo, Namuwongo and Nakawa serving about 7,000 people.

#### **Kampala Peri-urban Project**

The NWSC has extended the water network to various peri-urban areas through its own internally generated resources. The purpose was to improve the living conditions of the urban poor in and around Kampala.

**Output Based Aid (OBA)** for small towns involves performance-based subsidies to improve access to basic services for the poor. The Global Partnership on Output Based Aid (GPOBA) is a multi-donor trust fund administered by the World Bank. This specific OBA project aims to improve access to Uganda's poor living in specific small towns and RGCs. Private Operators will be competitively selected to extend and expand existing systems in the case of small towns, or build RGCs. The private operators will be compensated on an output-basis, after designated results have been achieved. The private operators will hold 5 to 10 year contracts with local water authorities to provide sustainable services of agreed quality to paying consumers. A total of 10 small towns and rural growth centres have been selected.

The **Water and Sanitation Development Facility (WSDF)** is a funding mechanism for water supply and sanitation facilities for rural growth centre schemes, small towns piped water supplies and large gravity flow schemes. It intends to promote a demand responsive approach where rural growth centres and small towns to be served must apply through their respective District Water Offices. All applicants will be subject to a selection process. The successful applicant towns/RGCs are assisted by the staff of WSDF to develop piped water supply systems utilising low cost technologies as far as possible. The funding mechanism has been started and piloted in the South West (WSDF–South Western Branch), and if successful will be subsequently rolled out to other areas of the country. A total of 25 small towns and rural growth centres in the 17 Districts of south-western Uganda have been selected and approved for piped water supplies from the facility.

## **Improving Water and Sanitation Conditions for Kampala's Urban Poor**

This Programme, initiated in 2005 by WaterCan, a Canadian Charity and a local NGO, called Community Integrated Development Initiatives (CIDI), aimed to improve water and sanitation conditions in Lubaga area of Kampala city. With an estimated population of 300,000, Lubaga is one of the most densely populated areas in the city. Most residents earn less than a dollar a day and suffer from poor living conditions, poor health, and lack of access to basic social services. About half of the households have access to piped water, which is not very reliable because of low water pressure. The poorest households fetch water from other sources including unprotected wells and distant springs.

The Programme was launched in three of Lubaga Division's most disadvantaged parishes – Kasubi, Nakulabye, and Nateete. The public opinion and support was mobilized through meetings with local leaders and residents and suitable technology options were discussed with them. Local leaders, including councilors representing all 13 parishes of Lubaga Division, were trained in planning, budgeting and resource mobilization.

For water supply, two water kiosks were constructed, connected through high-pressure water lines to the main municipal water supply network. The community contributed with subsidized labour to lay the pipes, which reduced the installation cost considerably. The local landlords permitted to lay feeder pipes on their lands free of cost. Each of these water kiosks is equipped with two taps. The water is charged per jerry can of 20 litres capacity. The kiosk is managed by an attendant who collects water fees and keeps the facility clean. Before closing the kiosks every night, the attendant records the water meter to ensure that the day's water fees match the volume of water sold.

The Programme has been very successful. While earlier, people used to pay 100 Uganda Shillings to fill a 20-litre jerry can, today, residents can purchase three jerry cans of water for the same price. While some poorest residents still favour a pay-as-you-go method, many households now have the option of a monthly user fee. With water more affordable and accessible, residents are able to keep their homes cleaner and bathe and wash clothes more frequently. Small businesses such as restaurants and shops without municipal water connections have also benefited from the programme.

To ensure that this facility is maintained even after the withdrawal of implementing agencies, User Committees were formed. A User Committee, consisting of five members of the community, operates and maintains each site. At least two of the members of the Committees are women. These committees are in turn integrated into local governmental planning bodies, further ensuring the project's long-term effectiveness.

## **Future Plans**

### **Scheme to install pre-paid water meters in Kampala**

The NWSC has begun to install prepaid water meters in the poorest slums of Kampala. The pilot for this scheme is being initiated in Kisenyi slum, where the installation of the prepaid meters is in progress. When the prepaid meters start functioning, people will get 20 litres of water for 16 shillings. At present many of them pay between 100 to 500 shillings per jerry can.

**Case study: Mr. Fred, Kampala<sup>15</sup>**

## **Informal water vending in Uganda**

Various forms of informal water vending can be found in Uganda. Water is sold by private individuals from standpipes which have been provided under schemes for the urban poor. This is a sanctioned activity. Similarly, water sold in tanker trucks by private operators is also a sanctioned activity. Water filling points have been set up from where tanker trucks can be filled. Illegally, water is sold from domestic connections by households to consumers in jerry cans. This type of informal water vending is neither recognized nor acknowledged. Mobile vendors sell water from sanctioned standpipes as well as from illegal sources (such as domestic connections) and unprotected sources such as springs. Tanker trucks also sell water from private sources such as bore holes. In general informal water vending whether sanctioned or not, is unregulated, and there is no legal mechanism or policy framework for monitoring the price and quality of water.

## **Water vending in large towns**

### **KAMPALA**

The National Water and Sewerage Corporation is responsible for water and sewerage services in Kampala and the peri-urban areas around the city limits. The water supply system consists of treatment, pumping, storage and distribution. Although the average water production in Kampala is 117,176 m<sup>3</sup> per day, the capacity utilization is only 59%. According to current figures, the percentage of people who have access to water within 1.5 km in the rural areas is 63% and the percentage of people who have access to water within 0.2 km in urban areas is 56%. Almost all those “not covered” by the NWSC are the urban poor living in informal settlements or slums, located within the city and peri-urban areas outside the city limits. These areas are characterized by high population density, low income households, less access to social services and poor or no public infrastructure. Most people live in rented accommodations and therefore have no long term interest in accessing or maintaining public infrastructure. Under the various projects and efforts made by NWSC to reach the urban poor, public standposts and yard taps have been provided in these areas.

### NWSC Water Production: Million Cubic Meters<sup>16</sup>

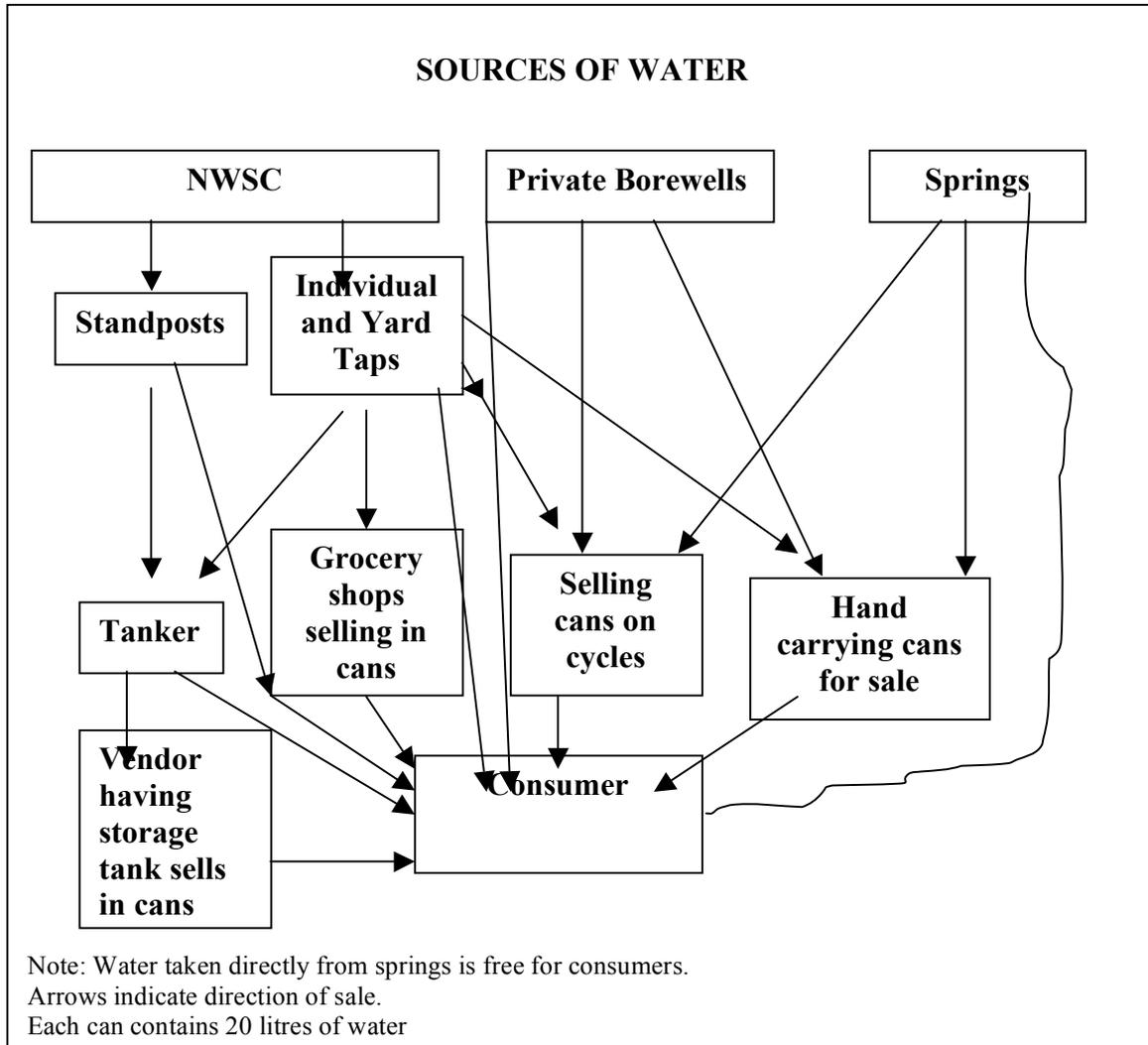
Year	2002-03	2003-04	2004-05	2005-06	2006-07
Kampala	36.5	38.6	41.2	41.2	42.8
Other areas	14.9	16.3	16.5	16.9	17.7
Total	51.4	54.9	57.7	58.1	60.5
Growth %	10%	7%	5%	1%	4%

#### **Water vending**

The following types of water vending are found in Kampala:

- Tankers: NWSC has provided 3 outlets to private contractors in Kampala as filling points for tankers. At present only 2 outlets are in operation. There are more than 30 water tanker trucks in Kampala.
- Water tanks in peri-urban areas: In peri urban areas or areas where NWSC water does not reach or where there are severe shortages, there are water sellers who have large tanks. The water tankers sell water to these vendors who then sell by Jerry Cans.
- Tap owners: These sell water to the vendors as well as directly to the consumers.
- Private bore well owners: These sell water to the vendors as well as directly to the consumers.
- Grocery shops: The grocery shops purchase NWSC water and sell it in cans of 20 liters.
- Vendors on bicycles: Vendors sell water in cans which they transport on their bicycles. These vendors also regularly supply water to certain households, who benefit also from getting water delivered at their doorstep, thus saving them the time and effort of collecting and transporting the water. These vendors mostly sell water from unprotected sources such as springs.
- Vendors hand carrying cans: These vendors help households to collect and transport water to the home at a cost per jerry can. Most of these vendors collect and sell spring water.

**Informal Water Vending Map for Kampala**  
Based on field visits in selected areas<sup>17</sup>



These water vendors by re-selling piped water to the poor who are unable to invest in obtaining a private, or yard tap connection for their households are actually extending the NWSC coverage to the urban poor. As can be seen from the above figure, there are three main sources of water for the informal water vendors, NWSC water supply from standposts and taps, private bore wells and springs. In the low-lying areas of Kampala natural springs can be found. People use this water for drinking and other domestic needs. Water taken directly from the springs is free for the consumer. Informal water vendors sell water to consumers in jerry cans having a capacity of 20 litres.

**Case study: Rapid Water Seller, Kampala<sup>18</sup>**

One of the three outlets provided by NWSC for filling water in tankers is owned by Mr. Kawega James. His business located near the industrial area in Kampala is called Rapid Water Sellers.

Eg. Mr. Basher Kalanji owns a water truck with a capacity of 8000 litres. He bought this truck second hand at a cost of 10 million shillings. He is in the business for 2 years. He pays 10,000 shillings to RWS to fill his truck. All his business is managed through phone calls on his mobile. On an average he makes 6 to 8 trips a day. More trips are made in summer and on days when NWSC water is shut down to certain areas.

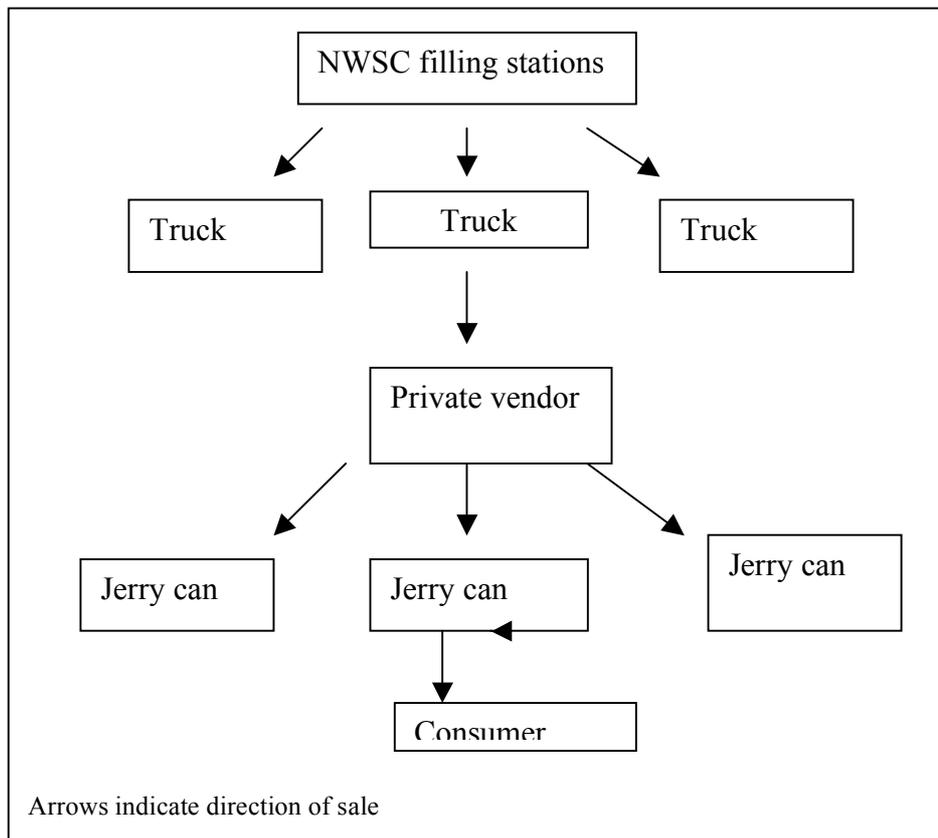
His pricing from customers is

- Upto 3 miles --- 50,000 shillings translates into 125 Ushs per jerry can
- 3 to 10 miles --- 80,000 shillings translates into 200 Ushs per jerry can
- Above 10 miles negotiated price.

His main customers are factories (coco-cola), hotels, schools, big private bungalows, building contractors and water vendors.

A startling revelation made by him was that they also take water many a times from Fire Hydrants. This is also supplied to many large factories.

**Water vending by tanker trucks in Kampala<sup>19</sup>**



## **MBALE**

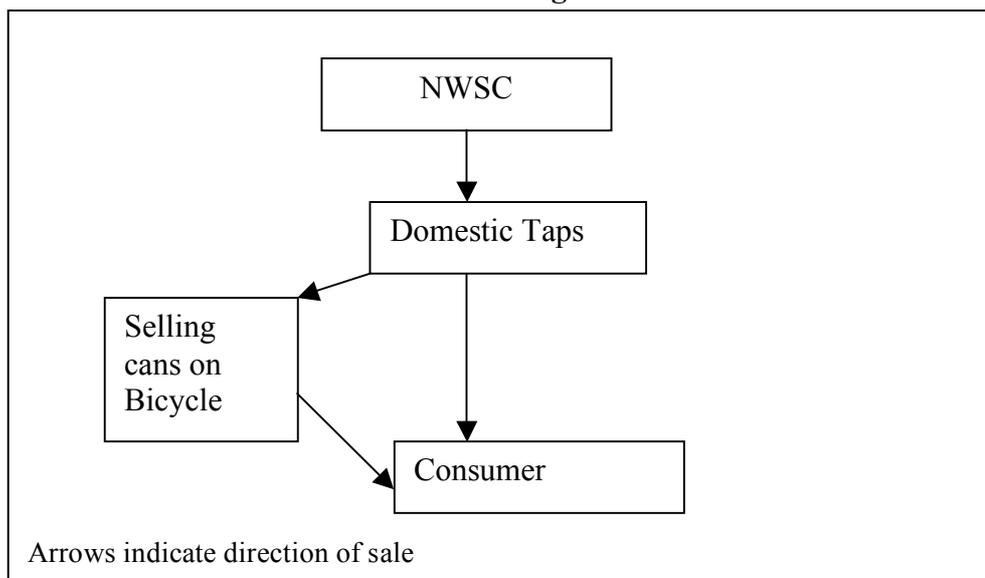
Mbale town is one of the big towns of Uganda situated in the western part of Uganda, about 200 kms from Kampala. The town receives piped water supply from NWSC.

### **Water vending**

Informal water vending here is similar to Kampala. Tap owners resell water to other households. The average selling price per jerry can in the town is 100 shillings. Water sellers who sell by ferrying jerry cans on bicycles sell water for 300 to 500 shillings per jerry can depending upon the distance and stress periods. On an average their price is 300 shillings.

There are also hand pumps and some dug wells in the town and peri –urban areas. One dug well owner does not charge any money from people who take water from his well. More than 200 people come to this well to take water.

**Water vending in Mbale<sup>20</sup>**



## **IGANGA**

Iganga has moved from being a small town to a big town. Today NWSC has started supplying water to the town.

Before NWSC started supplying water, a large percentage of the town depended on informal water vendors for their water supply.

They were around 10 bore well owners. They had motorized pumps by which they would draw water, store in a big tank and then sell the water. Sellers using carts and bicycles would supply water to individual households and small establishments.

The bore well owners would (and some still do) sell water at 25 shillings per jerry can to the cart and bicycle vendors who in turn then sell the water from 100 to 500 shillings depending on the distance to the house

One of the bore well operators said that earlier he would make upto 100.000 shillings per day, but now after NWSC has started supplying water to the city, he does not make more than 15,000 to 20,000 shillings per day. .

There are still parts of the town which is not covered by NWSC. Tap owners re-sell water to households in these areas.

## **MASAKA**

Masaka is one of the big towns of Uganda covered by NWSC. The informal water vending here is similar to Kampala.

### **Case study: Robert, Nyendo area, Masaka<sup>21</sup>**

Robert is a 15 years old boy who sells water for a tap owner. He works from 7.00 am to 06.30 pm, with a short break for lunch. Robert is paid 10,000 shillings per month. He sells around 3000 to 4000 shillings worth of water per day.

## **Water vending in small towns**

### **SEETA TOWN**

Seeta town is situated on the Kampala – Jinja road. Although NWSC has started supplying water to this town, only a few households are connected to the piped water supply, which is highly erratic. Some of the richer people have installed roof water harvesting systems to supplement their water source. But the rest have to go and collect water from the springs in the valley or buy it from shops or bicycle water vendors.

### **Case study: Water vending in Seeta Town<sup>22</sup>**

There are 2 springs in Seeta Town which are the main sources of water for a majority of the population. Long queues can be seen near these springs, with water vendors and children waiting patiently under the shade of a tree for their turn to fill water in their cans. One spring is used by the water vendors to fill their cans, while one spring is used by households, mainly children, to fill water for their homes. All the jerry cans have markings by which the owners can recognize them in the queue. .

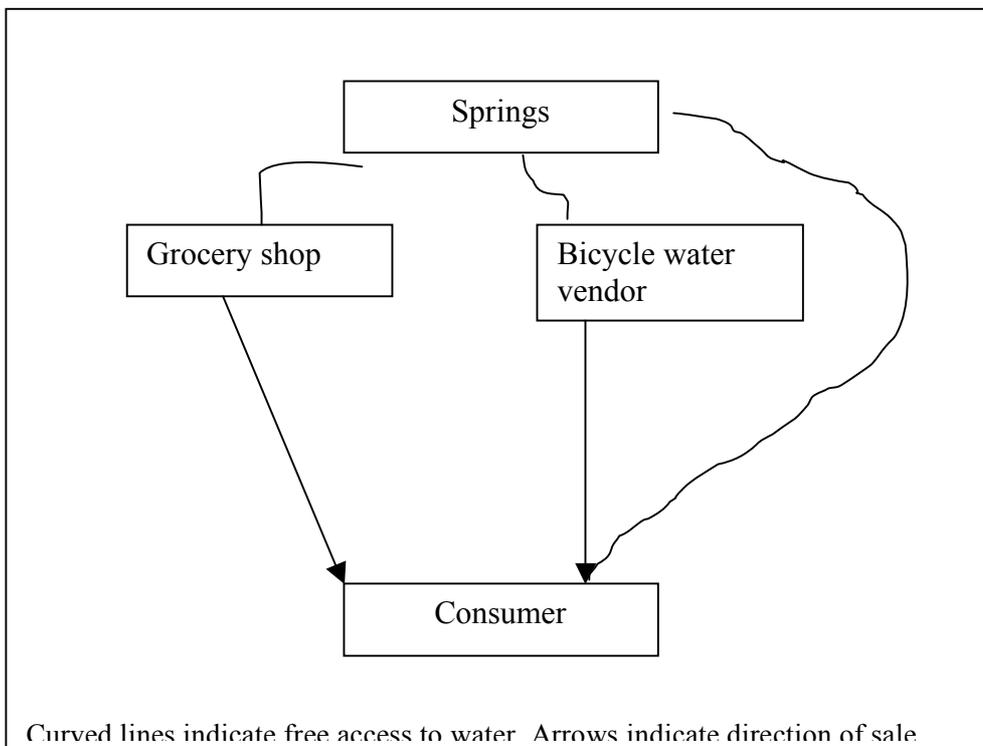
### Water vending

- On the main street in the town, every small grocery shop, (almost 20 in number), sells water in jerry cans. One jerry can is sold for 300 shillings.
- About 7 to 8 vendors, mostly young boys sell water on bicycles at the cost of 300 shillings per jerry can.

#### Case study: Mr. Jhonson, Seeta Town<sup>23</sup>

Mr. Jhonson who is an informal vendor sells about 40 jerry cans of water per day on his bicycle and earns about 12000 Ushs per day.

#### Water vending in Seeta Town<sup>24</sup>



## BOMBO, KIBOGO AND KATAKWI

Bombo, Kibogo and Katakwi are small towns where water is provided by private operators. In these towns private operators pump out water from the boreholes, store it in storage tanks and supply water through network connections to individual households and institutions.

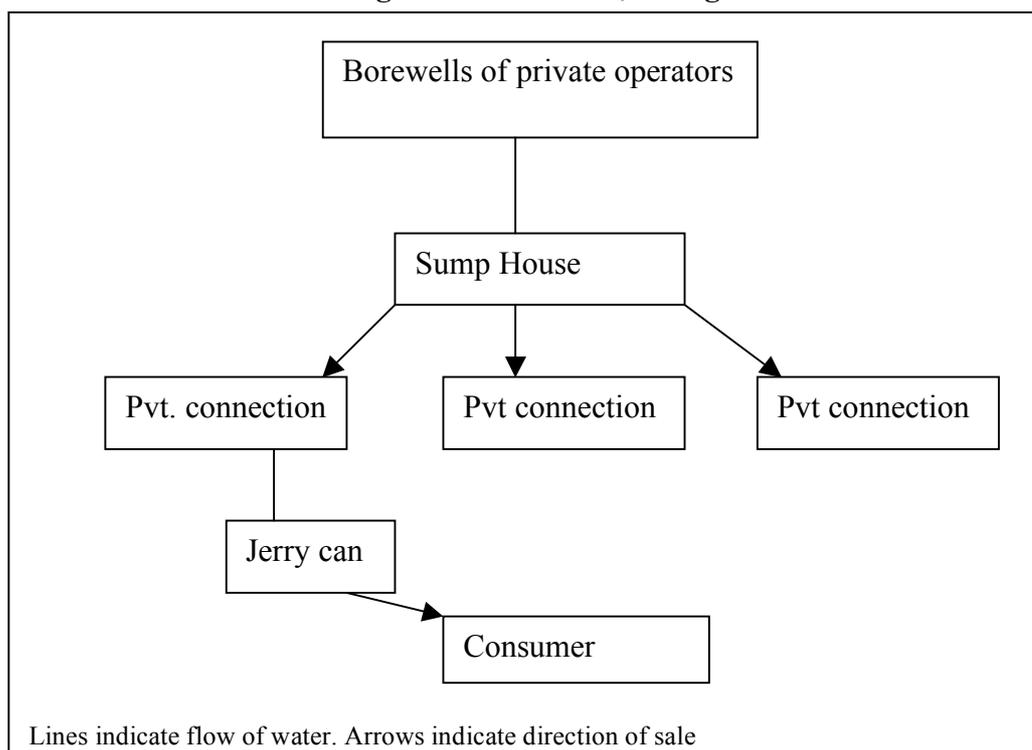
### Details of water supply by private operators<sup>25</sup>

Town	Source of water	Number of connections	Price
Bombo	3 Bore holes	430	1600 Ushs per unit for institutions and 1300 Ushs per unit for domestic supply
Kiboga	Bore holes		
Katakwi	3 Bore holes	158	

### Case study: Able Holdings, Bombo Town<sup>26</sup>

Able Holdings is a private operator who supplies water to households and institutions in Bombo Town through a piped network. Households have to pay 6500 shillings as connection charges and an additional amount for installing the pipeline based on the distance from the house to the water line. The rate per unit of water consumed is 1300 shillings. There are 430 connections. The water is extracted from 3 bore wells, stored in a pump house from where it is distributed.

### Water vending in Bombo Town, Kibogo and Katakwi<sup>27</sup>



### **Problems faced by private operators**

- No regular power supply, too expensive to run generators. No water can be supplied on days when there is no power.
- The pumps have got old and are not in perfect condition.
- The water table is also dropping, thus more pumping energy and no good pumps. In future the water source (shortage) will become a big issue.
- Low/sloping areas get water, but higher areas have a problem to receive water.
- No new connections are being added.

#### **Case study: Jowa Engineering Services, Katakwi Town<sup>28</sup>**

Jowa Engineering Services is the private operator who operates the water supply in Katakwi town. Water is supplied from 3 bore wells to 158 connections. Water is supplied for 2 hours in the morning and 2 hours in the evening, the total amount supplied is around 100,000 litres per day.

### **Informal water vending**

The poor people who cannot afford to get connected to the network of the private operator either collect water from springs and hand pumps. Or they buy water in jerry cans from shops and vendors. In Bombo and Kibogo towns, people who are connected to the network resell the water at the rate of 100 Ushs per jerry can.

In Katakwi town, people buy water resold from stand posts at the rate of 100 Ushs per jerry can. Those who cannot afford this collect water from shallow dug wells and hand pumps.

## **Rural Growth Centres**

### **NAMUTUMBA TOWN**

Namutumba town is around 170 kms west of Kampala town on the way to Mbale. Namutumba was a rural growth center and has been recently gazetted as a 'Town'. However, it does not as yet have any piped water supply system, like hundreds of other growth centres and towns in Uganda.

There are three main sources of water in this town, 4 functioning bore wells, 3 to 4 private dug wells and a spring. Water is collected free from the bore wells and spring.

### **Water vending**

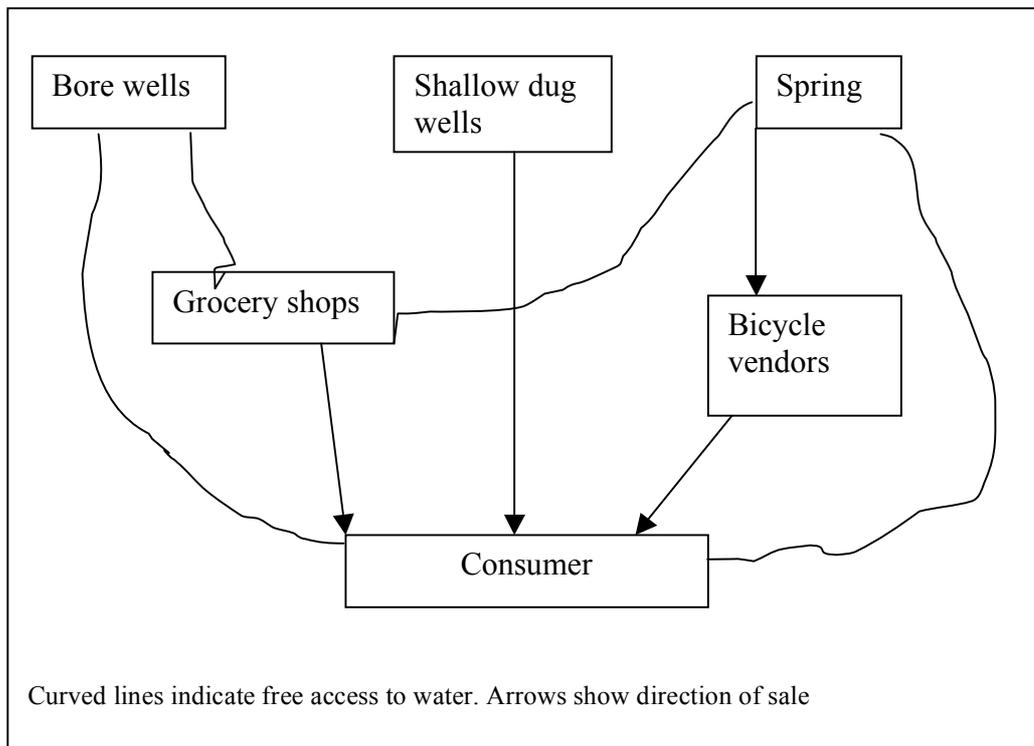
- The dug well owners sell water in jerry cans.
- In the town small shops sell Jerry cans of water for around 300 to 500 shillings per jerry cans.

- Individuals also sell water on bicycles to households. Their cost also ranges from 300 to 500 shillings per jerry can.

**Case study: Ms Muyaka, Namutumba<sup>29</sup>**

Ms. Muyaka owns one of the shallow dug wells. She labours all day drawing water and selling it for 100 shillings per jerry can. She makes around 3000 to 5000 shillings per day

**Water vending in Namutumba Town<sup>30</sup>**



## **KALANGALA ISLAND**

On the beautiful island of Kalangala, an interesting and innovative project for water service delivery is being piloted. Kalangala is about 80 kms by 20 kms in size and is located on Lake Victoria. Other than the small town on Kalangala which is a tourist resort, there are a few fish landing villages on the island. The island has a large palm oil plantation. There is practically no infrastructure here. The roads are of mud. There is no government water supply service and no power supply.

A private operator supplies water to Kalangala town. This supply is irregular as the operator has to use generators as there is no power supply. Recently the town had to be without water supply for a month.

While the town suffers from water stress, two fish landing villages, Mulabana and Kasekulo where a path breaking project is being implemented get good quality water on a regular basis at an affordable price.

Kalangala Infrastructure Limited is funded by IFRACO, a company operating out of London. They plan to provide water, power, road and ferry services on Kalangala island. They became interested in the island because the fishing industry requires treated water to wash the fish at the landing site. Since there is no treated water available on the island, they launched a pilot project to provide clean treated water to two landing sites.

The process involves taking water directly from the lake by suction, passing it through intake filtration, pressurized filtration with fine sand, after which it is chlorinated and pumped to an overhead tank. From there by force of gravity it is distributed in the village. Solar energy is used for suction and pumping the water to the overhead tank. Although the fish processing groups are the main buyer for this water, households are also benefiting by getting good quality water for drinking and domestic use at an affordable cost.

In the two villages, Kasekulo and Mulabana where the pilot is being implemented, storage reservoirs of 20,000 liters capacity each have been built. They have a pumping potential of 40,000 litres per day. In Kasekulo village 660,000 litres of water is sold per month and in Mulebana village, 450,000 litres of water is sold per month. The rate is 2500 shillings per cubic meters. In both the villages the water scheme/plant is operated by one operator.

The company plans to set up similar schemes in 10 other landing sites and also bid for supplying water to Kalangala town.

### **Kasekulo Village**

Kasekulo is a small fishing hamlet on Kalangala island. The private operator supplies water to 10 stand pipes which are being managed by 10 families. These families pay the company 25 shillings per jerry can and they further sell the water to other households in the villagers for 50 shillings per jerry can. Women said that they had never believed that it would be possible to get piped water close to their home until the private operator installed the stand posts.

## **Mulebana Village**

Mulebana is a picturesque village on the shores of Lake Victoria, with a population of around 2000 people. The private operator has installed 10 standpoints with pre-paid meters. Water is dispensed upon inserting a token. One token dispenses 20 litres of water. The tokens are sold in local grocery shops, which purchase them for 25 shillings each from the operator and sell them to the consumers for 50 shillings each.

## **Learning from Kalangala Island**

- The poorest of poor are able to buy clean water if pre-paid meters are installed and managed properly.
- Solar power is being used successfully and this needs to be promoted as an energy source for distributing water.
- Community mobilization is necessary to implement pre-paid meter schemes.
- Community leaders have to be motivated so as to make the community understand that the system should not be vandalized.
- Efforts are needed to educate / prepare people to use clean water

## Findings from the study

1. Households purchase small amounts of water from small, informal water vendors in jerry cans as per their requirements and on the basis of what they can afford.

**Case study: Ms. Angella, Kayongo Zone, Muyenga, Kampala<sup>31</sup>**

Ms Angella lives with her daughter and a maid. She works as a help in a local hotel and earns 1,00,000 shillings per month. On an average, she spends 300 shillings per day to buy water from a tap owner for their daily needs. On washing days she spends 400 shillings a day. She spends about 40 percent of her income on house rent, and 10 percent on water. In addition she also spends money on charcoal to boil the water.

2. The number of people or households dependent upon the connections is far greater than the norms set by NWSC. A comparison of the following tables shows that the number of households who purchase water from these connections is far greater than the number of households each connection is officially supposed to serve.

**Urban water service coverage official norms<sup>32</sup>**

Type of connection	Number of persons per connection
Domestic	6 persons (per household)
Yard taps	24 persons (4 households)
Standpipe/kiosks	150 persons (25 households)
Point sources (protected springs and deep boreholes)	150 (25 households)
Institutions in small towns	24 persons per connection
Institutions in large towns	1000 persons per institution

**Water vending from domestic taps in some areas in Kampala:  
Number of people/households per domestic tap<sup>33</sup>**

Case study Area	Tap/Standpipe/Handpump	Number of households per connection
Muyenga	Tap	40 to 50
Bweyogerere	Handpump	
Namwongo	Standpipe	200
Nsambya West	Standpipe	
Kamwanyi – Nsambya	Standpipe	100
Kitintale Market	Standpipe	40-50
Kibuli	Standpipe	15-20
Kisugi	Tap	15

According to the official norms, each yard tap is expected to serve 4 households and each stand post is expected to serve 25 households. However, informal vendors are selling water to upto 50 households from the taps and upto 200 households from the standposts.

**Case study: Ms Ocheng Bosco, Soweto, Namwongo, Kampala<sup>34</sup>**

Ms Ocheng Bosco owns and operates a public stand post. She sells each jerry can for 50 shillings and makes about 6000 shillings per day. More than 200 households depend upon this tap for water. She still has to pay a huge part of her bill to NWSC. The total bill is 1,018,055 shillings and she has paid 260,000 shillings. She is paying the rest in installments.

3. The tap owner is charged for the water on a progressive tariff structure and runs up huge bills for the water which they re-sell. As can be seen from the above tables, the number of households dependent on each connection is quite high, resulting in high water bills for the owners. This cost is borne by the consumers, who have to purchase the jerry cans at a higher cost.

**Case study: Nsambya West, Kampala<sup>35</sup>**

Ms Nalubega Sarah owns a Public Stand Post here which is provided under the Urban Poor Scheme. Under this scheme she is required to sell 3 jerry cans for 100 shillings, but she sells one jerry can for 50 shillings as she cannot afford to sell them at a cheaper price.

She opens the tap at 7 am and closes it at 10 pm. She makes about 7000 to 8000 shillings per day. People in the area harvest rainwater. Therefore when it rains, she sells less water and makes about 3000 to 4000 shillings per day. She makes a small profit after paying her water bills to NWSC. The main advantage for her is that the water is free for her own household.

4. There is a substantial difference between the price of each jerry can as set by the NWSC and the price at which the vendors sell the can. Also the price of a jerry can home delivered by mobile vendors is higher than the price of a jerry can purchased by the customer directly from a stationary vendor such as a stand pipe operator.

**Comparison of price per 20 litres can between NWSC and informal water vending in Kampala<sup>36</sup>**

Customer Category	NWSC Price per 20 litre can	Price Informal water vendor
Public Standpipe	13.76 Ushs	50 to 100 Ushs per can depending upon location and in scarcity the price goes up to 300 Ushs per can
Domestic	21.28 Ushs	
Institution/government	26.20 Ushs	

According to the NWSC policy, due to the subsidy provided by them, the price of each jerry can is 13.76 Ushs from public standposts and 21.28 Ushs from domestic taps. However the informal water vendors sell the jerry cans at a price of 50 to 100 Ushs per can and the price can go up to 300 Ushs at times of scarcity.

**Case study: Mr. Albert, Muyenga, Kampala<sup>37</sup>**

Mr. Albert lives with his wife and two young daughters. He earns about 90,000 shillings per month and spends about 15,000 to 20,000 shillings per month on water. He himself bathes at his work place in order to save water for his family. When his wife is not well, they have to buy water from vendors who deliver the jerry cans at home for 300 shillings per can. When there is a cut in the water supply, he collects water from the spring.

In Kampala, the average cost of water to a family of 6 is 200 to 600 Ushs per day. On laundry or washing days, this cost goes up to 300 to 900 Ushs per day. In addition the households also spend money on charcoal in order to boil water for drinking purposes. When water is vended from standposts installed by donors or NGOs, the price per jerry can is lower as was found in Kamwanyi-Nsyamba locality in Kampala where a local NGO, CIDI has installed a stand post under a donor funded programme for providing water to the urban poor.

### Cost to family in Kampala in some areas<sup>38</sup>

<i>Area in Kampala</i>	<i>Price as sold by informal water vendor in Ushs per can of 20 litres</i>	<i>Cost to a family of six for an average 6 cans per day in Ushs</i>	<i>Cost to a family of six for an average 5-7 cans on laundry/washing days in Ushs</i>
<b>Muyenga</b>	<b>100 per can</b>	600	<b>800-900</b>
<b>Bweyogerere</b>	<b>100 per can</b>	600	<b>800-900</b>
<b>Namwongo</b>	<b>50 per can</b>	300	<b>450-550</b>
<b>Nsyamba West</b>	<b>50 per can</b>	300	<b>450-550</b>
<b>Kamwanyi-Nsyamba</b>	<b>100 for 3 cans*</b>	200	<b>300-400</b>
<b>Kitintale Market</b>	<b>100 per can</b>	600	<b>800-900</b>
<b>Kibuli</b>	<b>100 per can</b>	600	<b>800-900</b>
<b>Kisugi</b>	50 per can	<b>300</b>	<b>450-550</b>

*\*The stand post has been provided by an NGO.*

### Price per jerry can in other towns<sup>39</sup>

<b>Town</b>	<b>Price per jerry can in Uganda Shillings</b>
Mbale	100 Ushs 300-500 Ushs if home delivered by vendor
Seeta Town	300 Ushs
Bombo	100 Ushs
Kiboga	100 Ushs
Katakwi	100 Ushs
Namutumba	100 Ushs 300-500 Ushs if home delivered by vendor
Kalangala Island	50

5. Informal water vending is not recognized by NWSC and the Ministry in the official data. In the coverage statistics of the NWSC, particularly for the large towns, access from unprotected sources is assumed to be nil. According to NWSC data, 71% of the population is connected to piped water supply. The remaining 29% either purchase NWSC water re-sold to them by informal vendors, or they collect water from springs and other sources.

In Soweto, which is one of the poorest slums in Kampala, people who cannot afford to buy water, collect it from the nearby Kayongoga Spring. The quality of water in the spring is not good as domestic sewage gets mixed with it.

## Emerging Points

- Majority of the water vendors have employed young children or women to man the taps or water selling points. This could be because they can employ them at very low salary.

### **Case study: Ms Namaja, Kisugu area, Kampala<sup>40</sup>**

Ms. Manaja works for a tap owner, Mr. Mulondo David. Water from the tap is filled into a water tank from where the water is sold in jerry cans for 50 shillings per jerry can. Ms Namaja works everyday from 6.30 am to 8 pm. The average income from the sale of jerry cans is 5000 shillings per day. When there is less water in the tap or when neighbouring taps become dry, she increases the cost of the jerry can. Mr. David collects the money from her on the weekend.

Ms. Namaja has never taken a day off for the past 4 years. Mr. David pays her 10,000 shillings per month and she spends this entire amount on buying water for her own house. Ironical as this may be, the income from her job helps her to buy water for her own home and the main advantage of working here is that she gets to take home for free one jerry can of water everyday.

- Services to peri-urban and informal settlements are inadequate and cannot meet the needs of the population. Residents and institutions access water from different sources and at varying costs.

### **Kakajo Zone, Bweyogerere, Kampala<sup>41</sup>**

A household in this area sells water from their tap for 100 shillings per jerry can. They also have installed a rainwater harvesting system. When there is no water in the tap, then they sell the collected rainwater for 300 shillings per jerry can.

In the same locality, there is a school, Church of Uganda School. The school used to have a tap connection, but it was disconnected due to non-payment of bills. The Rotary Club has installed a rainwater harvesting system here. All the water from the roof of the school is collected in one big tank. 700 children and 20 families of staff are dependent on this water. When there is stress they have to buy water from a nearby bore well for 100 shillings per jerry can. In times of drought and stress the price of jerry can goes upto 500 shillings per jerry can!

- NWSC officially reports a coverage of 71% percent for Kampala, but when the resale of NWSC water is taken into account, the coverage would be around 90 percent or more. NWSC could recognize this and facilitate the resale of water by ensuring adequate supply to resellers and negotiate the tariff so that the consumer can buy the jerry cans at a fair price that is as close as possible to the subsidized NWSC rate per jerry can.
- The remaining 10 percent or less get their water from the various springs in Kampala. The quality of water in these springs is deteriorating as sewage is getting mixed with the spring water. NWSC could recognize that there is a small percentage of population who still access unprotected sources of water and use untreated water.
- Connected to the above point approximately 10 percent of Kampala's population (which infact are the poorest section of society) drink highly contaminated water. Monitoring of the springs of Kampala for quality issues should be done.
- In the present situation, the installation of pre-paid meters seems to be the best way forward for providing cheap and clean water to the poor in Kampala. The NWSC has already started to do this. Lessons can also be taken from the Kalangala Island where pre-paid meters are being used successfully. However, community involvement and monitoring of the meters would be crucial for the scheme to succeed.
- The task of collecting water for the households almost entirely lies with women and small children. Installation of pre-paid meters would greatly reduce the burden and drudgery for them.
- When NWSC increases their coverage and efficiency the informal water vendors begin to lose their profits. It would be therefore necessary to recognize the contribution made by them in extending the NWSC coverage to poor localities and involve them in the planning of future schemes. Maybe a role could be found for them in the new schemes also.

Mr. Senoga of Kisugu area laments that his profits have been reduced ever since NWSC increased their coverage in the area. Until recently his was the only tap in the locality, now there are more than 20<sup>42</sup>.

- Small scale private providers operate in a policy vacuum, particularly concerning ownership and accountability. At present the role of private operators is still very important for providing water to the poor. Their concerns need to be taken into account.
- In the small towns, power is a major concern and affects the pumping and distribution of water. The project on Kalangala Island uses solar power to pump the water. Maybe this could be replicated or a way forward in other towns.

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