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Do pro-poor policies increase water coverage? An analysis of service delivery in Kampala's informal settlements

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Acknowledgements

This report was led by Mukami Kariuki, Sector Leader, the World Bank. It was compiled by Guillaume Patricot, WSP consultant, with input from Rosemary Rop, Task Team Leader within the Water and Sanitation Program, Sam Mutono who managed the data collection, field work and liaison with the client, and Midori Makino who was the initial Task Manager within the World Bank. Within the National Water and Sewerage Corporation Eng. Alex Gisagara, the then acting Managing Director, Mr. J. B. Otema, Urban Pro Poor Manager, Eng. Paddy Twesigye Project Manager for Planning and Capital Development, Eng. Jude Mwoga, Senior Manager of Design, Monitoring and Evaluation provided input, data and quality assurance of the output and messages. The authors gratefully acknowledge the role of Joseph Gadek, Xavier Chauvot de Beauchene and Michael Webster for their useful guidance and insight as peer reviewers. Anjali SenGupta, editor, Catherine Njeri designer and Toni Sittoni, regional communications specialist in WSP are gratefully acknowledged for their support to the final production process.

Foreword

Since the late 1990s, Uganda has been undertaking an ambitious program to reduce national poverty, emphasizing pro-poor service delivery and promoting equitable economic growth. The urban water sector, specifically, has been the focus of wide-ranging reforms targeted at reaching the poor.

At the institutional level, the national public water authority responsible for service delivery in Uganda's towns and cities - National Water and Sewerage Corporation (NWSC) - has been implementing a raft of policies explicitly focused on improving delivery of services to the urban poor.

This study examines the extent to which these reforms have increased water coverage within Kampala City, specifically in informal settlements where the majority of poor households reside.

This collaborative effort by the World Bank and NWSC seeks to identify and document what works and what does not in reform measures aimed at reaching the poor, and highlights the gains and challenges of making service delivery pro-poor and managing service delivery reform to improve effectiveness and accessibility.

We hope that this knowledge will contribute more insights to guide reforms aimed at improving access to basic services by the poor, and enhance the effectiveness of pro-poor mechanisms employed in the urban water sector.

Jamal Saghir
Director
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Executive Summary

Background

The Government of Uganda (GoU) has undertaken a wide range of reforms in the urban water sector since the inception of the Poverty Eradication Action Plan (PEAP) in 1997 (updated in 2000 and 2004).

The PEAP provided a framework for development of multisector targets and investment programs at national, district, and local levels. Implementation of the PEAP included the development of detailed sector strategies and programs which were supported by the GoU's development partners, including the World Bank, via Poverty Reduction Strategy Credits.

In 2004, the Ministry of Water and Environment (MoWE) unveiled a policy to expand water supply services to the poor in urban as well as rural areas. This was updated in 2006. The policy set the target of 100 percent coverage for water supply and sanitation (WSS) services in urban areas by 2015.

In response to the policy, in 2004 the National Water and Sewerage Corporation, (NWSC) which is responsible for service delivery in Kampala, undertook a series of measures to implement the pro-poor policy in urban areas.

This case study assesses the impact of pro-poor measures implemented by NWSC in Kampala since 2004, identifies the key factors that affected the outcomes of these policies and strategies, proposes areas for improvement, and identifies lessons that can be learned and shared from the experience in Uganda. The primary purpose of the case study is to expand the scope and increase the effectiveness of NWSC's pro-poor policy which is described below.

Description of Pro-poor Measures

i. *An Affordable Connections Policy*, to increase coverage in all NWSC areas (in particular, the poor settlements) by lowering the cost of the connection fee for any customer (domestic and non-domestic) living within 50 meters of the water mains. This policy was to be funded through an 11 percent surcharge in the average water supply tariff, to be collected and ring-fenced into a New Connections Fund.

ii. *A Pro-Poor Tariff Policy*, which shifted the uniform tariff structure for all consumers to a differentiated structure for (i) domestic (ii) non domestic customers, and (iii) public water points (PWPs). This means that there is a specific tariff for each of the NWSC's customer categories across all water supply areas: industrial and commercial, government and institutional, and domestic. An additional tariff was developed specifically for PWPs. The MoWE considers that the differentiated tariff structure per customer category ensures equity in the supply and pricing.[1]

iii. *A Pro-Poor Targeting Project*, which the NWSC is implementing since 2008 with support from the Global Partnership for Output-Based Aid (GPOBA) to subsidize water supply connections (including shared yard taps and prepaid PWPs/ kiosks) in specific poor settlements of Kampala.

To deliver these policies, the NWSC adopted two main delivery mechanisms: first, it established a pro-poor branch and, second, it provided

[1] MoWE. 2011. Uganda Water and Environment Sector Performance Report 2011.

multiple levels of service. An Urban Pro-Poor unit was set up and staffed in 2007 to promote, plan and support water supply and sanitation service expansion in poor unserved settlements of Kampala. Multiple levels of service were provided to new domestic customers, including a choice of individual house connections, PWPs/kiosks, and shared yard taps. In 2008 the NWSC started pilot-testing prepaid PWPs/kiosks. Community participation and demand creation for shared yard taps and prepaid PWPs/kiosk pilot-tested in the GPOBA project have now become the NWSC's approach to expanding services in all unserved areas.

On the whole, the pro-poor policy and program have led to a rapid expansion of services to poor households. Specifically, 2,405 new yard taps and 663 PWPs serving an estimated 81,000 people were realized. A number of difficulties and challenges, nevertheless, emerged during implementation. The World Bank, the Water and Sanitation Program and the NWSC collaborated in preparing this case to draw lessons from this experience, and inform replication of good approaches at scale.

Summary of Key Challenges Identified

i. The discounted cost of household connections at UGX59,000 or $35 in 2004 is still considered a significant barrier to access for poor households, as it represents 74 percent of the average monthly income of poor households and is therefore beyond the reach of some households.

ii. The water tariff is affordable for poor households, but the level of subsidy reaching the poorest is very low. It is estimated at UGX2,600 ($1.3) per capita per annum for users of PWPs, compared to UGX10,300 ($5.1) per capita for house connections. This is mainly due to the fact that poor households share connections and use relatively low volumes of water (average consumption is 20 liters per capita per day).

iii. Nonpayment of water bills by households and PWP/kiosk operators is causing a significant number of disconnections: 21 percent of yard taps and 53 percent of PWPs. Although it is being addressed by the NWSC's Urban Pro-Poor Branch, this significantly undermines any effort by the NWSC and its partners to expand services into poor settlements at scale using yard taps and PWPs.

iv. The NWSC did not set up a dedicated and adequately ring-fenced New Connection Fund in spite of the fact that this was a key element of its Affordable Connections Policy. As a result, the funds collected for the Affordable Connection Policy through an 11 percent tariff surcharge were diverted to the funding of regular operational activities.

v. Water mains extensions in poor settlements were, and are still, carried out on a piecemeal, project by project basis because Kampala Water has no clearly defined strategic business plan that identifies total investment needs and revenue/funding requirements over the long term.

Summary of Key Findings

Overall, in spite of the these challenges, the case study finds that the pro-poor policy has largely been successful due to the following factors:

i. Improved financial sustainability: The NWSC's broad-based policy has allowed the utility to significantly improve access to services, while also improving its financial viability through the more than doubling of connections and tripling of revenue between 2004 and 2010. Achieving financial sustainability is essential

for utilities to realistically serve poor households at scale. However, utilities also need to undertake targeted programs to reach the poor.

ii. Improved operational efficiency: Increased efficiency of operations has enabled the NWSC to plan for, procure, and manage services for a growing number of customers. This entailed employing more and better trained staff; setting key performance contracts with staff and with internal independently managed water supply operations; applying for and obtaining an effective tariff structure; installing a new customer billing and revenue management system; improving community liaison and customer care; and improving procurement and works management systems.

iii. More affordable connections: The Affordable Connection Policy increased the number of connections in Kampala across the board. Although it was designed to increase coverage in poor, unserved areas, the NWSC broadened coverage of the Affordable Connections Policy to non-poor domestic, government and industrial customers as well. As a result, NWSC's rapid increase in connections from 59,000 in 2004 to 146,000 in 2009, (on average 14,700 new connections per year), led to an increase from 64 percent to 72 percent increase in water supply coverage. 2,500 yard taps and 660 PWPs were installed in poor settlements due to the policy.[2] This represents approximately 4.3 percent of the total new connections made between 2004 and 2010.[3] These new, predominantly shared connections have benefited 21 percent of the 466,000 additional people served through the policy.

iv. Increased access to PWPs: The poorest consumers in Kampala are currently served by PWPs/kiosks. The National Service Delivery Survey (NSDS, 2008) showed that 26 percent of the population was served by a public tap (PWP/kiosk, Presidential taps) in 2008. The three-fold increase in the number of public taps, as well as expansion of shared connections (predominantly yard taps) in poor areas, therefore, helped increase access by the poor. This also led to a reduction in the number of privately managed water points, selling water at a significantly higher price.

v. Creation of a pro-poor branch: The creation of an organizational structure and institutional mechanism to initiate, facilitate, continuously monitor and promote pro-poor initiatives, update MIS, and coordinate the activities of different interest groups (including the NWSC's own operational branches) and organizations was a very positive step. This allowed dedicated personnel of the NWSC to concentrate on pro-poor activities, a focus that the organization lacked earlier. The pro-poor branch was directly responsible for improving the effectiveness and efficiency of the NWSC's programs in poor settlements by reducing the proportion of inactive PWPs and yard taps from 40 percent in 2007 (when the pro-poor branch was created) to less than 10 percent in 2009.

vi. An affordable tariff: The tariff was made more affordable to poor households by introducing three different measures: First, different rates were set for all customer groups; a specific rate for standposts which was also applied to yard taps, if these are shown to serve more than three households. Second, a cross-subsidy

* [2] In total 6,000 yard taps and 1,000 public standposts were constructed in poor settlements from 2004 to 2010. However, approximately 700 yard taps and 60 PWPs were already being constructed every year before the policy. These baseline figures have not been included in the estimate of the additional connections that can be attributed to the Affordable Connections Policy only.

[3] If the baseline number of new connections per year had been included the total number of connections made in poor settlements would represent 9.5 percent of the total number of connections made since the Affordable Connections Policy was implemented (that is, over the period 2004–09).

between different customer categories (for example domestic, government/ institutional and commercial/industrial. The third was the 11 percent surcharge in the tariff to fund new connections.

vii. Geographical targeting: With support from GPOBA, output-based subsidies are being provided against delivery of prepaid PWPs and yard taps. Although progress has been slow, the approach shows that geographical targeting of poor households and performance-based subsidies offer significant opportunities to increase coverage (including volumes of water sold and thus financial sustainability) in poor, unserved, areas. The GPOBA project is expected to connect 400,000 of Kampala's poor.

viii. Prepaid water metering: A careful and well-thought through introduction of prepaid water meters at PWPs has led to its widespread acceptance by consumers, politicians, nongovernmental organizations (NGOs), and even the press. This has largely eliminated the middlemen in water supplies and made water affordable at the official NWSC price. Currently only 4,500 people have access to prepaid meters but the NWSC's intention is replicate their adoption at scale, eventually reaching 75 percent of the poor.

Recommendations on measures to address challenges and build on the above findings are presented below:

Recommendations

Recommendations are divided into the following categories: measures which NWSC can implement on their own; those they can implement with the support and/or approval of the government; and those that are beyond NWSC's direct control or influence.

I. Recommendations that the NWSC can implement on its own:

i. The NWSC and its partners should develop a long-term strategic business plan: Investments in network expansion have, to date, been piecemeal and on a project-by-project approach due to the lack of a long-term strategic business plan for Kampala. A long-term business plan which coherently identifies needs, specific schemes, and funding sources for expansion and sustaining of services to the whole of Kampala, in particular the poor and underserved settlements, is required. This would catalyze the NWSC, GoU, customers and development partners and would ensure that pro-poor initiatives are brought to the forefront at the corporate level and are large scale.

ii. Pro-poor targets should be set at company, branch, and individual staff contract level: Although the NWSC's objectives include expanding services in unserved areas, these are not clear targets, nor are these mentioned in the Internally Delegated Area Management Contracts (which the head office has set up with each of the towns under the NWSC's jurisdiction) and staff contracts. It is considered that specifying clear targets for expansion of services in unserved areas would incentivize NWSC, Kampala City Council (KCC), and the Department of Water Development to prepare detailed investment plans and strategies, and thereafter deliver these. These detailed targets would need to be included at Business Plan level (see point above).

iii. A New Connection Fund: Revenues raised through the 11 percent surcharge in the water tariff should be sequestered into a properly ring-fenced New Connection Fund, to improve the effectiveness and

efficiency of these operations, and give the NWSC's management a clear view on what rate of new connections can realistically be achieved. This should be supported by a clear view of the water supply investment needs—to be included in the Business Plan above. Use of the Fund could be audited by the GoU and development partners.

iv. Improve marketing and availability of prepaid tokens (and customer training on how to use them). Alternatively, new payment arrangements (for example, use of cell phones) can gradually be introduced.

II. Recommendations that the NWSC can implement with the support and/or approval of the GoU:

i. Legal constraints faced in getting new connections should be eased: For a new connection the NWSC insists on production of a land title document, a lease document or permission of the landowner or lease holder. In the present land tenure system many people don't have such land documents and getting a water connection is thus not possible for them. Documents such as voters lists, municipal identification, community group guarantees, ration card, and so on, have been tried in other countries. Such an approach would potentially lead to more rapid expansion into unserved areas.

ii. Size (and scope) of the cross-subsidy between different categories of customers should be rationalized to maximize total revenues: Poor households are indeed benefiting from a differentiated flat tariff structure. However, the level of subsidy appears to be relatively low given that domestic, industrial, and institutional consumers are only charged twice the rate charged at PWPs.

iii. Effectiveness (and benefit) of the cross-subsidy should be improved: Poor households are not purchasing enough water from the NWSC and are therefore not benefiting as much as they should be from the cross-subsidy. In fact, average consumption has reduced from 1.3 m^3/day to 0.6 m^3/day for all customer categories, due to a combination of water supply capacity restrictions (although continuity of service is officially reported to be at 24x7) and the use of alternative sources of water. It is noted that water supply tariffs are more affordable to poor households when water resale does not take place.

iv. Tariff structure to be improved: Whilst the benefits of the differential flat tariff structure are recognized, the flat tariff for domestic customers is not conducive to water saving. Therefore, it is recommended that an increasing block tariff be set for (nonpoor) domestic customers. In addition, it is considered that the automatic tariff increase should be waived for public standposts. Any revenue shortfall could thus be funded via the increasing block tariff.

v. Water tariffs in slums (at PWPs) to be equalized (normalized): The differentiated tariff rates for water for PWPs/kiosks (UGX867/m^3) and Presidential Pledge taps (UGX784/m^3) should eventually be standardized.

III. Recommendations that are outside the NWSC's control or influence:

i. Barriers to access caused by the existing land tenure system should be addressed by the KCC: The Mailo/private land tenure system remains a barrier of access to these services in poor settlements. As owners cannot be forced to provide basic urban infrastructure services (including water, sanitation, roads, and so on) this

limits the utilities' ability to expand the network into unserved areas. While special rights can be obtained from relevant public authorities, including the KCC and the Ministry of Lands, this is not a simple process.

ii. Options for managing unsafe, alternative sources of water in Kampala's poor settlements should be decided. The availability of alternative, unsafe sources of water in poor settlements (which provide up to 50 percent of all water demand in the poor settlements) limits the NWSC's ability to expand consumption. Average individual consumption in these settlements is less than 20 liters per capita per day. In addition, many of these alternative sources of water are unprotected and therefore unsafe. Thus, it is important that the GoU and KCC adopt a clear policy for closing and/or rehabilitating all of these sources. This needs to be complemented with a detailed analysis of remediation works and management options.

Acronyms and Abbreviations

AFD	Agence Française de Développement, a French development agency
AFTU1	Urban Development and Services Practice 1
APC	Area performance contracts
CIDI	Community Development Initiatives (an NGO)
CPI	Consumer Price Index
DWD	Directorate of Water Development
DWRM	Directorate of Water Resources Management
GPOBA	Global Partnership for Output-Based Aid
GIS	Geographic information system
IEC	Information education and communication
IDAMC	Internally delegated area management contracts
KCC	Kampala City Council
KIEMP	Kampala Integrated Environment Planning and Management Project
KfW	KfW Entwicklungsbank, a German development bank
KUSP	Kampala Urban Sanitation Program
lpcd	Liters per capita per day
MDG	Millennium Development Goal
MoLHU	Ministry of Land, Housing, and Urban areas
MTEF	Medium Term Expenditure Framework
MoWE	Ministry of Water and Environment
MoWLE	Ministry of Water, Lands, and Environment (now MoWE)
NGO	Nongovernmental organization
NSDS	National Service Delivery Survey
NWSC	National Water and Sewerage Corporation
OBA	Output-based aid
O&M	Operation and maintenance
PEAP	Poverty Eradication Action Plan
PRSC	Poverty Reduction Support Credit
PRSP	Poverty Reduction Strategy Paper
PWP	Public water point
SWAp	Sector-Wide Approach (to Planning)
UBOS	Uganda Bureau of Statistics
UGX	Uganda Shillings
UNDP	United Nations Development Programme
UNHS	Uganda National Household Survey
W&S	Water and Sanitation
WHO	World Health Organization
WSS	Water Supply and Sanitation
WUA	Water User Association

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1 Introduction

1.1 Background

1.1.1 Country and Economic Data

Uganda is one of the poorest countries in Africa with a gross national income (GNI) per capita in 2010 of US$500 compared with the sub-Saharan regional average of $1,170. Uganda's population growth of over 3 percent per year, one of the highest in the world, puts a considerable strain on public sector service delivery, not just for water and sanitation but also in other areas such as health, education, and transport.

Despite being one of the poorest countries in the world Uganda has, since the late 1990s, developed a coherent poverty reduction strategy which focuses on strong governance, economic growth, human development, and participation of all individuals in the development process. Only 12 percent of its population lives in urban areas. A selection of development indicators for Uganda (2010) are summarized in Table 1.

Table 1: Development Indicators for Uganda (2009 and 2010)

Country overview	
Population, total (millions)	33.42
Population growth (annual %)	3.2
Surface area (sq. km) (thousands)	241.0
Poverty headcount ratio at national poverty line (% of population)	24.5
GNI, Atlas method (current US$) (billions)	16.55
GNI per capita, Atlas method (current US$)	500
GNI, PPP (current international $) (billions)	41.49
People	
Income share held by lowest 20% (2009)	5.8
Life expectancy at birth, total (years) in 2009	53
Fertility rate, total (births per woman) in 2009	6.2
Adolescent fertility rate (births per 1,000 women ages 15-19) in 2009	141
Mortality rate, under-5 (per 1,000)	99
Ratio of girls to boys in primary and secondary education (%) in 2009	99
Prevalence of HIV, total (% of population ages 15-49) in 2009	6.5
Economy	
GDP (current US$) (billions)	17.01
GDP growth (annual %)	5.2
Inflation, GDP deflator (annual %)	9.1
Global links	
Total debt service (% of exports of goods, services and income) in 2009	2.0
Workers' remittances and compensation of employees, received (current US$) (millions)	778
Foreign direct investment, net inflows (BoP, current US$) (millions)	789
Net official development assistance and official aid received (current US$) (millions)	1,786

Source: www.worldbank.org/data/wdi

1.1.2 Water Resources

As a whole, Uganda has more than enough freshwater. Estimates indicate 66 km^3 of renewable water resources per year, which correspond to approximately 1,974 m^3 per person per year. However, the distribution of the resource is uneven both in spatial and temporal terms. Furthermore, freshwater is increasingly exploited through population growth, urbanization, agriculture, and industrialization.

The rivers, lakes, and wetlands cover about 18 percent of Uganda's total surface, including Lake Victoria, Africa's largest freshwater lake and one of the major sources of the Nile River, the longest river of the world. Almost the entire country lies within the Nile basin. Rainfall contributes most to the country's surface and groundwater. The average annual rainfall ranges from 900 mm in the semi-arid areas of Kotido to 2,000 mm on the Sese Islands in Lake Victoria. Although there is a lack of information on the sustainability of groundwater recharge, it is considered that groundwater recharge in Ugandan towns meets the current abstraction volumes. In addition, although the water level in Lake Victoria has receded by 3 percent of its volume between 2003 and 2006 (due to a combination of a decline in rainfall and overexploitation), it is considered to provide enough raw water, despite additional investments required to extend raw water intakes for Kampala, Entebbe, and Jinja (and other large cities located around the lake, for example, Kisumu in Kenya, and so on).

1.1.3 Water Supply and Sanitation

The Ugandan water supply and sanitation (WSS) sector has made spectacular progress in urban areas since the mid-1990s, with substantial increases in coverage as well as in operational and commercial performance.[4] Sector reforms in the period 1998–2003 included the commercialization and modernization of the NWSC operating in cities and larger towns, as well as decentralization and private sector participation in small towns.[5] These reforms have significantly improved the performance of the urban water sector, and thus attracted significant international attention.

However, 40 percent of the population still had no access to an improved water source and 57 percent had no improved sanitation in 2004.[6] Low access to urban sanitation and wastewater treatment, compared to the progress achieved on urban water supply, remains a key area of concern for the sector.

The water and sanitation sector has been recognized as a key area under the 2004 Poverty Eradication Action Plan (PEAP), by the then Uganda's main strategy paper to fight poverty.[7] A comprehensive expenditure framework was introduced to coordinate financial support by external donors, the national government, and NGOs.[8] The PEAP estimated that from 2001 to 2015, about US$1.4 billion, or US$92 million per year, are needed to increase water supply coverage up to 95 percent.[9] Since 2010 the PEAP has been replaced by the National Development Plan (NDP).

Whilst much has been achieved, significant investments are required to maintain and replace existing infrastructure, in particular in small-town systems and rural areas. Anticipated public funds are inadequate to deal with these dual demands of expansion and replacement. The considerable finance gap that exists for water and sanitation means that the positive gains of the past may plateau.[10]

* [4] Mugisha, Silver, and Sanford V. Berg. November 2006. Struggling State-Owned Enterprises: NWSC's Turnaround in Uganda.
[5] UN-Water, World Water Assessment Programme. 2006. National Water Development Report: Uganda. Prepared for 2nd UN World Water Development Report, "Water, a shared responsibility".
[6] MDG target for urban water supply coverage in Uganda: 100 percent by 2015.
[7] Republic of Uganda, Ministry of Finance, Planning and Economic Development. Poverty Eradication Action Plan (2004/5–2007/8).
[8] Ministry of Water and Environment (Uganda). September 2006. Water and Sanitation Sector Performance Report 2006.
[9] Rural areas: US$956 million; urban areas: large towns (US$281 million) and small towns (US$136 million). Republic of Uganda, Ministry of Finance, Planning and Economic Development. Poverty Eradication Action Plan (2004/5–2007/8).
[10] WSP et al. 2010. Water Supply and Sanitation in Uganda: Turning Finance into Services for 2015 and Beyond. An AMCOW Country Status Overview.

1.1.4 Water Supply Services to Poor Households

In this climate of urban water supply sector performance improvement, serving the poor has received increased attention not only at the political level but also at the utility level. This has meant that Uganda's urban water sector has been able to attract increased financial support from development partners.

The NWSC proposed and implemented a strategy in 2004 for increasing coverage in unserved areas (including poor and nonpoor urban areas in the country), called the Affordable Connections Policy. The policy stipulates that the NWSC will connect all customers (including domestic and nondomestic) for free if these are located within 50 meters of the NWSC's water mains at the time of application, and will share the cost of connection above 50 meters with these customers. However, domestic customers are expected to pay 50,000 as a connection fee (about $20 in 2004). In addition to this strategy, the NWSC has implemented a number of options for serving poor households that could not be connected to the water mains. These include a range of community kiosks and water points.

It is widely considered that this strategy has had a significant impact on urban water supply coverage and financial sustainability of the NWSC, and that the lessons that can be learned from the progress of the urban water sector and the improvement in services to all customers, including poor households, in Uganda, can be of real value to sector practitioners and development partners worldwide.

1.2 Study Objectives

The aim of this study is to assess the impact of the pro-poor policies introduced by the NWSC between 2004 and 2010, by analyzing the effectiveness, efficiency, and equity of these policies and strategies implemented by the GoU and NWSC to increase coverage of urban water supply services in poor settlements. The study focuses exclusively on the area of Kampala city, the capital of Uganda, as this constitutes the largest service area of the NWSC—with approximately 60 percent of its connections and 64 percent of its revenues. The objective is to undertake a detailed assessment of the workings and implementation of the policy and strategy, to identify key lessons that can be learned from these approaches, and to provide concrete recommendations on how these might be improved.

In addition, the study seeks to address the following:

- Analyze the institutional arrangement for delivery of water to the poor areas and assess its impact on different stakeholders. In particular, identify the potential barriers to access that prevent poor households from obtaining safe and cost-effective water supply services.
- Put the reform challenges in perspective by reviewing lessons learned.
- Analyze the effect of the program on the whole population and particularly the poor, and determine whether the policy has produced the intended benefits and if resources have been spent effectively and efficiently.
- Make recommendations regarding policies, strategies, and design in the distribution and management of water supply in informal settlements and low income areas.

1.3 Methodology Used and Data Collected

The assessment of the impact of the pro-poor policies on the poor in Kampala is based on an analysis of the effectiveness, the efficiency, and the equity of these policies since 2004. The

Box 1: Assessing efficiency, effectiveness, and equity of service provision to the poor

Impact assessment criterion	Description
Effectiveness	• Primarily related to assessing the number of new connections made in poor settlements versus the intended number of connections. • Indicators: increased coverage.
Efficiency	• Primarily related to assessing whether the approach and the service delivery mechanisms chosen to increase coverage were the right ones. The approach taken is to determine whether the blanket approach to targeting the poor achieved the intended increase in connections from poor households. • Indicators: increased coverage, NRW, time saved.
Equity	• Primarily related to assessing whether the poor are getting a similar quality of services than the nonpoor. • Indicators: increased quantity of water available to poor households, affordability.

degree to which each of the indicators above contributes to assessing efficiency, effectiveness, and equity is summarized in Box 1.

Specifically, the study assessed the following:

i. Whether access to water supply services had increased in poor settlements. This was calculated by determining the total number of new connections that were made in poor settlements, compared with the total number of new connections made throughout Kampala.

ii. Whether the NWSC had increased the quantity of water sold to poor households. This is expressed as average unit consumption at yard taps, PWPs, and prepaid PWPs.

iii. If increasing coverage had led to a reduction in the waiting time that poor households spend in obtaining/fetching water. This is expressed as distance to supply and collection time. Estimations of this were secured from survey data from the Uganda Bureau of Statistics (UBOS).

iv. Whether the cost of connection and the water tariff constituted barriers to access for poor households. This was done by measuring the cost of connections and the tariff as a percentage of the average household income in poor areas, also using data from UBOS.

v. Whether the level of nonrevenue water had reduced following the increased number of customers connected to the network in Kampala. The NWSC's adoption of customer service lines was also examined as a means of measuring efficiency. Focus group discussions (FGDs) were undertaken with customers and local stakeholders to assess customer satisfaction both with the levels of service provided and with the processes involved in providing these services.

1.4 Data Collected

The following data is collected and analyzed:

- Primary data from NWSC on 17,000 domestic customers in areas of Kampala that are considered to be poor (principally consumption and billing data). This was obtained from the Billing and Commercial division of NWSC with support from the Urban Pro-Poor Branch.

- Secondary data, that is reports from the UBOS, Department of Water Development (DWD), KCC, NWSC and the recent GPOBA funded project in Kampala. This included poverty data as well as financial and economic cost and sector performance data from NWSC Annual Reports.

- Data obtained from the NWSC's GIS department to identify the location of the water mains and low income settlements.

- Qualitative data obtained from focused interviews with customer representatives, NWSC senior management, DWD staff and local NGOs (including Community Development Initiatives or CIDI, and Concern Worldwide). A total of 18 FGDs were undertaken in 17 parishes and 76 key informants were interviewed. A variety of stakeholders and consumers were interviewed, including domestic and PWP users, male and female users, protected and unprotected spring users, as well as water resellers and vendors, community water organizers, community leaders, local water business entrepreneurs, and politicians.

1.5 Structure of the Report

The report is divided into the following six Chapters:

- Chapter 1 (this chapter) is the introduction of the report and presents the objectives and methods used.

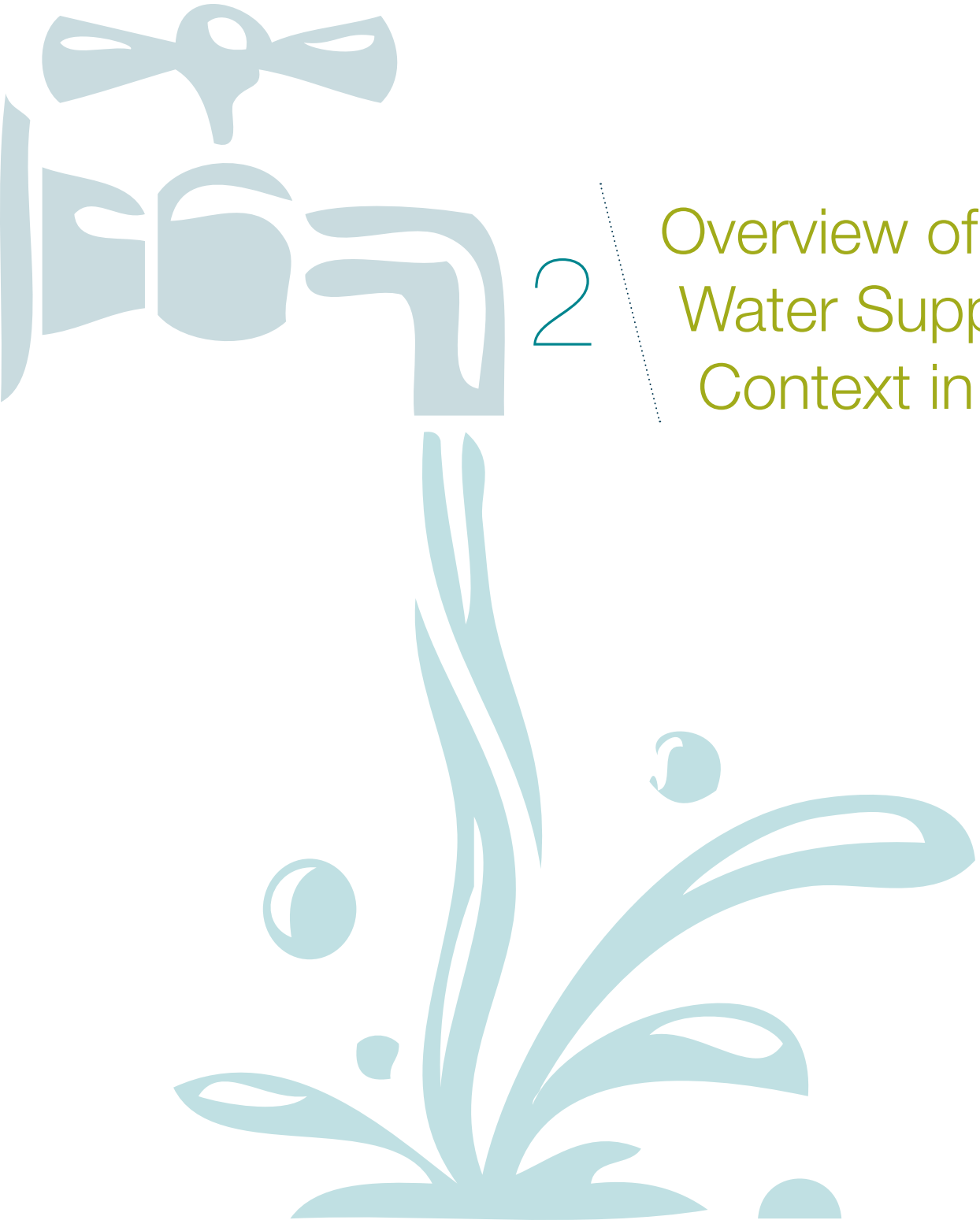
- Chapter 2 presents an overview of the water sector in Kampala, including the legal, institutional, and regulatory framework, a definition of poverty in Kampala and what this means for poor households. Chapter 2 also provides the baseline situation (as at 2003/04) against which the assessment of the impact of the Affordable Connections Policy is made.

- Chapter 3 describes the urban water sector policy and the strategy developed by the NWSC to expand services and improve financial performance. This Chapter also presents the policy components and delivery mechanisms implemented to serve domestic households in Kampala, including the creation of a dedicated pro-poor unit, the pilot testing of geographical targeting of poor households via an output-based subsidy from GPOBA, and prepaid PWPs.

- Chapter 4 analyzes in detail the impact of NWSC policies and water supply delivery mechanisms on services to poor households in Kampala. The assessment considers coverage, consumption, distance to and waiting time at water sources, affordability of new water services, and impact on NRW. Chapter 4 includes specific recommendations for improving the effectiveness, efficiency and equity of the social connection policy. These can be used by other utilities in Africa who are planning to implement a social connection policy.

- Chapter 5 contains the conclusions of this study.

- Chapter 6 contains recommendations for further analysis which could be undertaken by the NWSC, GoU, and/or the World Bank.



2 Overview of the Water Supply Context in Kampala

2.1 Legal, Institutional, and Regulatory Framework

The urban water supply sector in Uganda is dominated by the Ministry of Water and Environment (MoWE), which is responsible for setting policy and overall sector direction, and the NWSC, which is a government-owned parastatal responsible for service provision in all urban areas of Uganda.

The reforms in the water and sanitation subsector were carried out between 1998 and 2005 with the objective of ensuring that services are provided and managed with increased attention to performance and cost effectiveness, to decrease the government burden (due to low cost recovery) while maintaining the government's commitment to, and investments in, equitable and sustainable provision of services in the country.

The underlying policy reforms framework for the WSS sector includes a shift to community demand for services; decentralized implementation and management of services; government facilitation; regulation and quality assurance; and delivery of goods and services by the private sector.

For the urban subsector, the reforms emphasized the need for separation of asset ownership and operations; commercialization of service delivery; establishment of an effective regulatory framework; and engagement of the most appropriate form of private sector participation.

This Section provides an overview of the legal, institutional, and regulatory frameworks which led to and underpinned the water sector reform process in Uganda.

2.1.1 Legal Framework

The legal documents most relevant to the urban water sector include:

(i) *The National Water Policy (1999)*:

The objectives of the National Water Policy of Uganda are:

- To manage and develop the water resources of Uganda in an integrated and sustainable manner, so as to secure and provide water of adequate quantity and quality for all social and economic needs of the present and future generations with the full participation of all stakeholders.

- To provide safe water and hygienic sanitation facilities within easy reach based on management responsibility and ownership by the users to 75 percent of the population in rural areas and 100 percent of the urban population by 2015, and to ensure that 80 percent–90 percent of these facilities are effectively used and remain functional.

(ii) *The National Water and Sewerage Corporation Act (2000*), which sets out the roles and responsibilities of the NWSC and describes the institutional framework within which it operates, including the substantial autonomy which the utility benefits from.

2.1.2 Institutional Framework

The MoWE has three directorates:

- The Directorate of Water Development (DWD);
- The Directorate of Water Resources Management (DWRM); and
- The Directorate of Environment Affairs (DEA).

The DWD is 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. However, the NWSC is responsible for water supply service provision in

the 23 large urban centers across the country, including Kampala, Entebbe, and Jinja.

The DWD has also established 95 performance-based contracts with Water Authorities in small towns that are outside the NWSC's control. As such, the DWD's structure includes a Performance Contract Review Committee.

2.1.3 Regulatory Framework

There is no independent regulator for the urban water supply sector in Uganda. Instead, the DWD monitors the quality of service provided by the NWSC through specific targets and key performance indicators (KPIs) such as coverage, financial and operating efficiency, unaccounted for water, and customer service indicators.

Since 2009, regulation of water services is carried by out the Regulatory Unit of Urban Water Supply Department within the DWD. This department was set up after extensive consultations among key stakeholders. The previous mode of regulation was by contracts (as there was no regulator). The functions of the Regulation Unit include the following:

- Setting standards for services provided to consumers, including targets in relation to asset management, technical inputs and operational performance, and promotion of pro-poor service delivery,
- Monitoring operational performance of service providers (including NWSC) against set targets, and ensuring compliance with contractual obligations among the parties to the performance and management contracts, imposing penalties or remedies for substandard performance, and creation of comparative competition in the market,
- Reviewing requests and proposals for new tariffs, adjustment of existing tariffs for approval, and ensuring that only approved tariffs are applied,
- Keeping stakeholders informed about service performance and activities of the service providers through information dissemination.

Other relevant regulatory functions such as abstraction licensing, water quality surveillance, and permits for wastewater discharge are held by other departments within the DWD. The independence of the regulation unit can be questioned; the sector is, however, planning for gradually establishing an independent regulator.

The structure of the institutional and regulatory framework is illustrated in Figure 1.

2.2 NWSC Internal Reforms

The GoU initiated the reorganization of NWSC in 2000 by amending the NWSC Statute and Act. This provided substantial operational autonomy to the NWSC to operate services on a financially and commercially viable basis. The Corporation's debt service obligations ($100 million prior to 2000) were temporarily suspended by the GoU on the condition that the NWSC makes significant financial and operational improvements. The government also gave the NWSC the political mandate to implement pro-poor reforms.

2.2.1 Key Elements of the Internal Reforms

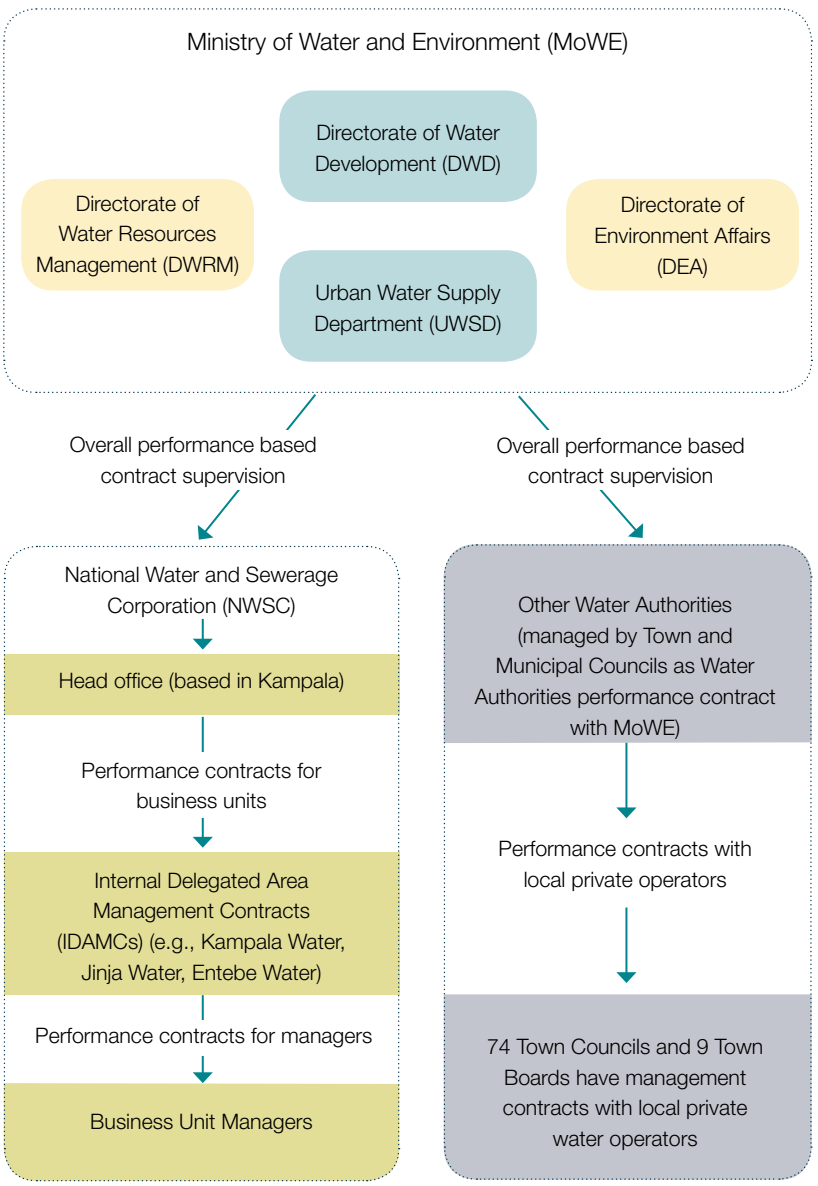
The key elements of the turn-around of the NWSC, designed to create an efficient and financially sound organization, were:

i. Clear goals set by the government, including more autonomy (less interference) and support provided to the NWSC including additional CAPEX, budget, tariffs, internal policies, and strategies.

ii. Strong leadership by NWSC management with the long term vision of being one of the leading water utilities in the world.

iii. Focusing on strengthening the financial credentials of the Corporation, including cutting costs, reducing operational inefficiencies, improving billing and revenue collection through improvement of customer metering and reduction of illegal connections, and increasing the number of registered connections/customers.

Figure 1: Institutional and regulatory framework for urban water supply services in Uganda



iv. Creation of a professional incentive-based structure (at organization, business, and staff levels) and associated internal monitoring and evaluation systems.

v. Benchmarking performance with international best practice.

vi. Creation of a customer-oriented culture, with the NWSC's current motto: "The customer is the reason we exist".

vii. Improved donor coordination through sectorwide approaches to planning, and use of donors for expanding the knowledge base of the corporation.

It is clear from the above that in 2000 there was no deliberate focus on expanding services to the poor. Instead, the focus was on improving commercial performance and financial autonomy, and on reducing operational inefficiencies.

2.2.2 Focus on Performance and Performance Benchmarking

The sector reform process included significant changes within the NWSC. To increase accountability and performance, the Corporation created and set up Internally Delegated Area Management Contracts (IDAMC) between the head office and each of the urban areas in its area of service. These internal branches of the NWSC are all financially independent, with managers appointed through individual staff performance contracts, which mimic the typical performance clauses (including bonuses and penalties) of private sector participation contracts. The head office is, thus, overseeing the performance of 23 IDAMCs, including that of Kampala which is the largest.

The Kampala IDAMC is itself subdivided into nine water supply and sewerage branches. The managers of each of those branches are also contracted through individual staff performance contracts. Typical targets (at branch and at business level) include:

- Increase sales—including billing and revenue collection.
- Reduce unaccounted for water.
- Increase the number of customers—and therefore sales.
- Increase productivity—and cut costs.
- Increase and ensure customer satisfaction.

Expansion of services to poor areas is not considered as a contractual KPI—either at business level or at branch level, although the construction of water points is one of the many activities undertaken by each of the branch engineers/operators.

2.2.3 Autonomy for Setting Tariffs

The NWSC's autonomy to set its own tariffs (to be reviewed and approved by the MoWE) came in 2004, when the Corporation was able to implement a differentiated and flat tariff structure. This means that there is a specific flat rate tariff for each of the NWSC's customer categories across all water supply areas: industrial and commercial, government and institutional, and domestic. An additional flat rate tariff was developed for PWPs. The MoWE considers that the flat tariff structure (per customer category) ensures equity in supply and pricing.[11]

Although the tariff structures are reviewed and approved by the DWD and MoWE, the tariff levels have, since 2004, been subjected to automatic annual indexation against the domestic Consumer Price Index (inflation), exchange rate, foreign price index, and electricity tariffs. This was designed to protect the company's financial equilibrium and to maintain real value for the tariff. These automatic adjustments help ensure that the NWSC is able to recover all its operating and maintenance costs and to make provision for depreciation.[12]

To this date, the NWSC is one of the only utilities in the African region that has adopted automatic (annual) tariff adjustments. However, tariffs do not yet allow the NWSC to service old debts or cover the costs of commercial borrowing. To enable loan servicing the tariff would have to be increased by about 60 percent (according to PEAP, 2004).

2.3 Definition and Incidence of Poverty in Kampala

2.3.1 Definition of Poverty

Poverty in Uganda is measured in absolute terms by measuring the level of income against the expenditure needed to secure basic food and nonfood items. This is determined through a national household survey. The trends in poverty show a decline in poverty at the national level from 55.7 percent in 1992 to 31.1 percent in 2005–06 (Uganda National Household Survey, UNHS, 2005). In urban areas, the level of poverty came down to 13.7 percent in 2005–06. In the Central Urban region in which Kampala city falls, the number of poor households is estimated to be 127,755. This number is growing.

To appreciate the extent of poverty in its supply areas (in particular Kampala), and to develop concrete plans to provide these households with sustainable services, the NWSC has developed its own definition of poverty. This is based on four parameters:

- Poor households have monthly incomes of less than UGX80,000 ($48), which is about one-third of the individual house connection fee (at $125) and 14 percent of the average cost of connection ($350).
- Poor households live in clustered settlements with a high crowding index of up to 14 persons per household (although

[11] MoWE. 2011. Uganda Water and Environment Sector Performance Report 2011.
[12] World Bank. 2010. Uganda Poverty Reduction Support Credits (PRSCs 5, 6, and 7): Implementation Completion and Results Report.

the average household size is reported by Uganda Bureau of Statistics as six).

- Poor households have very low water consumption of 0–20 liters per capita per day (lcpd) which equates to 3.6 m^3/month for a household of six), as they use this water mainly for drinking and cooking.

- Poor households do not have their own house connection and mainly use PWPs (including kiosks).

2.3.2 Incidence of Poverty in Kampala

The incidence of poverty in Uganda in general, and Kampala in particular, is difficult to assess because the last population Census was undertaken in 2002 (a new population Census will be undertaken in 2012). However, a number of studies have been carried out since the last one, which provide some guidance on the relative percentage of poor households in urban areas and in Kampala.

Kampala has grown very rapidly in the last two decades. It has experienced a rapid population growth of nearly 4 percent per annum from 774,241 in 1991 to 1,189,142 in 2002 (last Census). This is summarized in Table 2. The population forecast for 2010 uses a growth rate of about 4 percent per annum.

The main reasons for this high rate of population growth are increased demand for employment, land for housing, as well as social services and infrastructure that have stimulated spatial urban development and industrialization and, as a consequence, a high rate of rural to urban migration. Additional demographic factors include high fertility, the decline in mortality, internal migration, and immigration. New informal settlements have emerged while others are expanding, thereby increasing both the number and the size of unserved (informal) areas.

Civil infrastructure has not kept pace with this explosion of population. This means that the living environment of the urban poor can be characterized as follows: poor sanitation, inadequate housing and urban infrastructure, poorly managed solid and human waste, and increased environmental pollution.

The challenge with identifying the number and size of Kampala's informal settlements is their fast and ever-changing nature. In 2002, the United Nations Human Settlements Programme (UN-Habitat) estimated that 44 percent of the population of Kampala lived in slums.[13] This corresponds well with the 2002 Census which stated that approximately 120,000 households in Kampala were poor. These informal settlements cover up to 25 percent of the total area of the city. Sixty-five percent of the city's population has

Table 2: Population growth in Kampala (1980 to 2010)

	1980	1991	2002	2010 (projection)
Kampala population	458,503	774,241	1,189,142	1,597,800
National urban population	938,503	1,889,622	2,921,981	3,992,180
National urban growth rate p.a.		4.88%	3.98%	3.98%
Kampala as % of national urban Population	48.85%	40.97%	40.69%	40.02%

Source: UBOS Census 2002 data (selected).

[13] UN-Habitat. 2002. Addressing the urban water challenges in Kampala.

access to clean and safe piped water, the rest gets water from unhygienic and highly polluted/ contaminated sources.

Several sources converge on the estimation that more than half the population of Kampala lives in slums. A study undertaken by the Ministry of Lands, Housing and Urban areas (MoLHU) in 2008, for example, estimated that 64 percent of the population of Kampala lived in slums (an increase of 20 percent over six years), adding to approximately 170,000 households. The MoLHU's findings are echoed by the World Health Organization (WHO) (2010) which states that 60 percent of the population of Kampala lived in slums and lacked access to utilities and amenities. Likewise, UN-Habitat (2007) states that over 60 percent of the population of Kampala lives in slums.[14]

The NWSC has developed a map of the city of Kampala divided into 500m by 500m block maps—117 of these block maps have been identified (and are considered) as being poor. The map showing the extent of the distribution network and the location of known poor settlements in Kampala is included in the Appendixes.

2.4 Land Tenure and Its Impact on Services to the Poor

The region in which Kampala is located has a complex land tenure system. One system is 'mailo.' The basic unit of the mailo system is a square mile, hence the derivation of mailo, which is also equivalent to 640 acres. The term is used in Uganda to describe a land tenure system that came into effect when the Kingdom of Buganda signed an agreement with the British-administered Uganda Protectorate there in 1900. Other systems are freehold, leasehold and customary tenure. The Kingdom of Buganda owns 52 percent of the land in Kampala. The system is described as a significant challenge for the orderly development not only of slums but of Kampala City in general.[15]

The main issue with the land ownership system is that approximately 50 percent of Kampala[16] is held under a freehold (or similar, Mailo) system in which KCC and the central government are unable to plan, control, and enforce orderly urban development. Freehold (and Mailo) landowners (including absentee landlords and secondary, illegal, owners) cannot be forced to provide infrastructure services to the informal residents that have settled on this land. As such, development in these areas is haphazard and continues to be informal.

This has huge impact on the NWSC's ability and incentive to provide sustainable water supply and sanitation services in Kampala, as the Corporation expects to see documentary proof of land ownership, or a sale agreement. Thus, squatters are not recognized as potential customers. The only way forward for the utility is to provide PWPs on private land (where the landlord often becomes the PWP/kiosk operator) or to provide services on land which is not under Mailo/freehold ownership, such as that which is likely to be on the outskirts of the poor settlements. Rigid water supply connection requirements based on formal land tenure are preventing poor households from accessing improved levels of service.

2.5 2002 Baseline of Urban Poor Coverage Areas in Kampala

2.5.1 Background of Water Supply Services in Kampala's Poor Areas

The terrain of Kampala is hilly and has many natural springs. The poor have settled in the low lying swampy areas, which were less

* [14] See: "Situation Analysis of Informal Settlements in Kampala - Cities without Slums Sub-regional Programme for Eastern and Southern Africa" (Series title) (this is a report prepared in partnership with Kampala City Council). The report focuses in particular on two parishes: Kivulu (Kagugube) and Kinawataka (Mbuyu 1).
[15] UN-Habitat. 2007. See Footnote 14.
[16] Kampala Urban Sanitation Project (2006).

attractive and therefore cheaper than the areas located higher up the hills. A study of 160 springs in Kampala by Chemiphar (2006) in 35 urban poor parishes indicated that 80 percent of the inhabitants in these urban poor parishes obtained domestic water from springs (protected or unprotected); that 79 (49 percent) of these sources were totally unfit for drinking, another 79 (49 percent) could be used for drinking once the water was boiled, and that only two sources (1 percent) were actually safe to drink (but were not chlorinated).

The study also confirmed that other sources of supply were available (not counted in the Chemiphar study), including hand dug wells and protected springs made by charitable individuals and/or organizations, and a limited number of PWPs. As a consequence, and further exacerbated by low competition (and perhaps collusion), the cost of piped water to poor households was expensive due to significant reselling (and little real competition). The survey also showed limited access to water points, unaffordable prices charged at the existing water points, and the perception from poor households that the alternative sources could provide drinking water.

Field visits also found that many of the sources had not been labeled as unfit for human consumption, as was the accepted practice by KCC staff. In addition, many of the 307 PWPs and 59 protected springs built by the KCC with support from the French Development Agency (AFD) between 2002 and 2006 (following cholera outbreaks in the late 1990s) had become dysfunctional due to poor operation and maintenance (O&M). The main reason was found to be the backlog of huge arrears accumulating from nonpayment of PWP/kiosk operators to the NWSC.

This meant that the NWSC had to disconnect those nonpaying PWPs and kiosks (in total between 5 percent and 10 percent of these were disconnected). In addition, field surveys undertaken in 2011 showed that the so-called protected springs had been constructed upon—sometimes with—latrines, rendering these so-called protected springs unsafe.

2.5.2 Water Supply Coverage

The typology of water supply services provided by the NWSC to domestic customers is described in Box 2.

Box 2: Typology of water supply connections in Kampala

- House connection: Individual metered house connection to the water supply network where the point of supply is inside the house, and therefore associated with internal plumbing, showers, taps, sinks, storage tanks, and so on. A house connection is always associated with some kind of drainage system (network, pit, and so on).
- Yard tap: Similar to the individual house connection except that the point of supply is in the yard and is usually shared between a small number of households (usually two to three). A yard tap is not usually associated with internal plumbing or a drainage system.
- Public water point: Metered connection which is typically a battery of taps fed by one connection and recognized as such by the NWSC. Public water points are usually managed directly by the NWSC or someone appointed by it (for example, a community group, an individual, and so on).
- Kiosk: Typically, a battery of taps developed by a private individual (operator or community-based organization) to sell water to the public. Kiosk operators usually charge a mark up on the normal tariff. A kiosk implies a formal structure and attracts the preferential public water point/kiosk tariff.

According to the 2002 Census, 98 percent of households in Kampala had access to safe drinking water sources (tap/piped water, borehole, spring water, gravity flow, and rain water) while 2 percent used water from unsafe sources. Additional data from the National Service Delivery Survey (2004) suggest that access to improved water sources was also high (but not as high), but that there was seasonal variation and significant use of alternative sources of water. This data are summarized in Table 3. Key observations are that:

- Only a limited number of households in urban areas (NWSC-wide) had individual house and/or yard connections (22 percent). This is consistent with NWSC data that show that only 20 percent of households in Kampala had house connections in 2002 (this includes a house connection and/or a yard tap).[17]

- About 35 percent of households, presumably the poorest, obtain water from boreholes, protected springs, and gravity schemes (40 percent in the wet season). It is considered that as much as 50 percent of households used these alternative sources.

- As many households obtain water for drinking from safe sources as they do water for other uses than drinking from unsafe (unimproved) sources. This could mean that demand for NWSC water is potentially only half of total average

Table 3: Sources of water in urban areas (National data, NSDS, 2004)

	Dry season		Wet season	
Water source (urban only)	Water for drinking	Other uses	Water for drinking	Other uses
Piped water in dwelling	9%	9%	9%	9%
Piped water in compound	13%	13%	12%	13%
Piped water outside compound	27%	27%	24%	23%
Borehole, protected spring, gravity flow scheme	39%	33%	33%	26%
Rain water	0%	0%	13%	16%
Unprotected source	8%	11%	6%	8%
Lake, river, stream, pond, dam	3%	6%	2%	5%
Other	1%	1%	1%	1%
Total	100%	100%	100%	100%

Breakdown (improved /unimproved)				
Water source (urban only)	Water for drinking	Other uses	Water for drinking	Other uses
Improved	88%	82%	91%	86%
Unimproved	12%	18%	9%	14%
Total	100%	100%	100%	100%

[17] The Poverty Eradication Action Plan (2004) mentions urban water supply coverage of only 18 percent with house connections and/or yard taps.

Table 4: Distance to nearest water source (Kampala slums, 2002 Census)

Name of parish/division	On premises	% on premises	Up to 1 km	% up to 1 km	1 to 5 km	% 1 to 5 km	5 km and over	% 5 km and over	Total
Naguru II/Nakawa	2,342	37%	3,906	62%	24	0%	-	0%	6,272
Banda/Nakawa	220	7%	3,084	93%	7	0%	1	0%	3,312
Kisenyi II/Central	854	31%	1,943	69%	3	0%	-	0%	2,800
Kamwokya II/Central	1,165	26%	3,320	74%	12	0%	9	0%	4,506
Katwe I/Makindye	390	15%	2,150	83%	35	1%	-	0%	2,575
Wabigalo/Makindye	730	15%	4,252	85%	20	0%	-	0%	5,002
Bwaise III /Kawampe	430	14%	2,544	85%	16	1%	1	0%	2,991
Mulago II/Kawampe	699	17%	3,404	83%	3	0%	1	0%	4,107
Nakulabye II/Rubaga	1,015	17%	4,666	79%	197	3%	8	0%	5,886
Ndeeba/Rubaga	706	14%	4,245	85%	57	1%	1	0%	5,009
Total	8,551	20%	33,514	79%	374	1%	21	0%	42,460

Note: There is no breakdown of distance for less than 1 km

demand—particularly in unserved/poor settlements.

- A significant number of households use rainwater for drinking (13 percent) and for other uses (16 percent) during the wet season.

Table 4 provides some additional insight as it shows the distance to the nearest water point for households in the same parishes as above (also based on the 2002 Census). These are shown in Figure 3.

The Census 2002 data (see above) show that 79 percent of the population in the poor areas of Kampala obtained water (drinking water) from water points located up to 1 km from their homes, and implies that households that do not have access to water on their premises are able to access this water from another piped source such as a PWP/kiosk.

The 2002 Census also does not comment on whether the number of PWPs/kiosks provided in these poor settlements was sufficient. There is thus little information available on the level of suppressed/unmet demand in poor settlements.

There are some difficulties with providing water supply services to poor households in Kampala. These are described in more detail below.

2.5.3 Income and Expenditure Review (Affordability and Willingness to Pay)

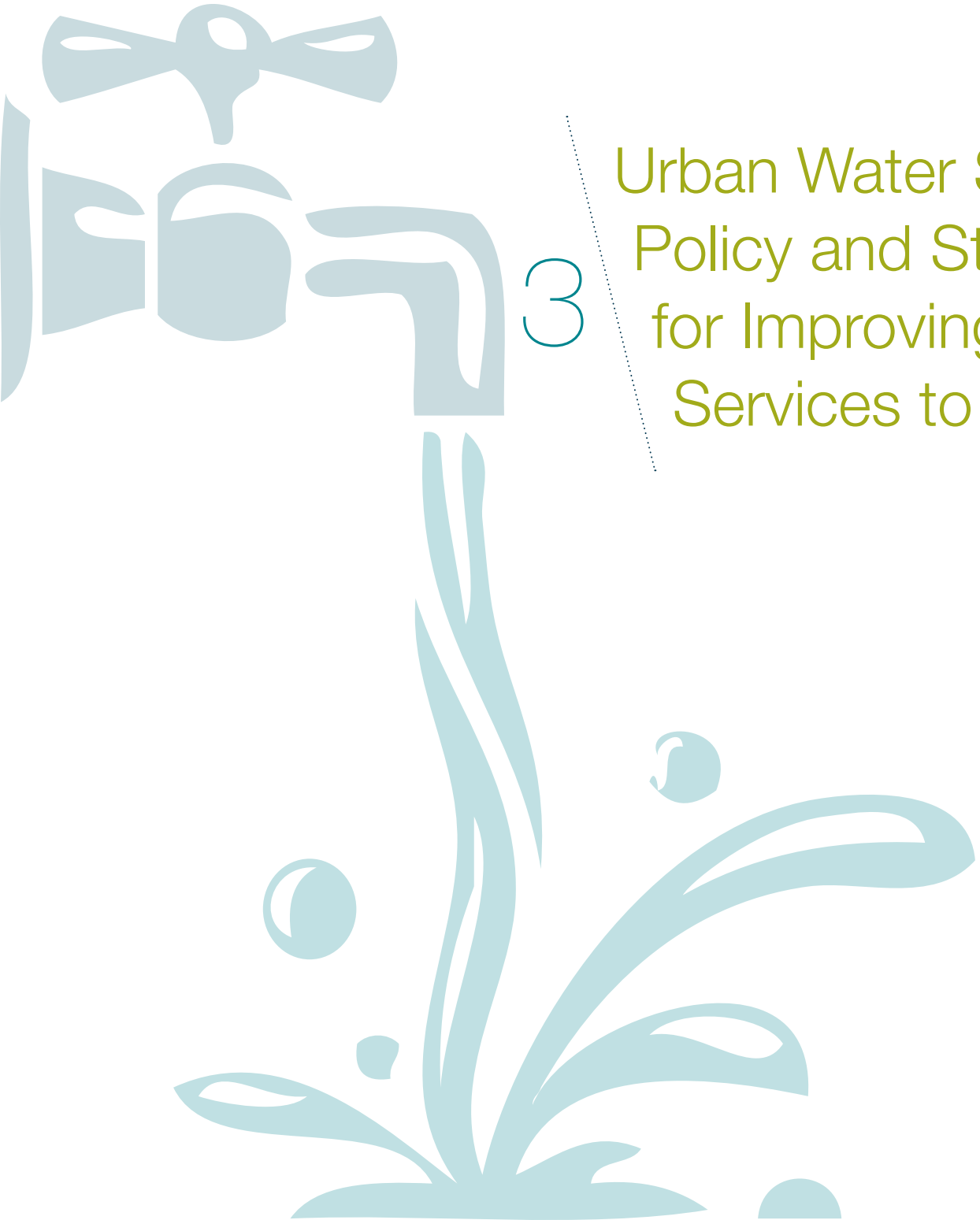
The 2002 Census, the 2004 NSDS survey and household surveys as well as studies by a number of consultants have indicated that the willingness to pay for improved water services was high among poor households. Generally, households were ready to pay the official NWSC rates for water, but there remained a significant proportion of households who cited the cost of water (or perhaps the cost of access the water, that is, the cost of connection) to be high. These households may also have been commenting on the high cost of water obtained from water vendors (or owners of PWPs) who have applied significant mark ups.

The weekly expenditures in 2004, for water in three large poor parishes Kisenyi I, Kisenyi II, and Ndeeba with large informal settlements, were in the range of UGX1,000 to 5,000, or 4,000 to 20,000 per month (Beller Consult, 2006), which represents 5 percent to 25 percent of average monthly income for poor households. This is confirmed by PEAP (2004) which mentions that households in the bottom 20 percent income quintile (who chose to use and pay for NWSC water) devoted as much as 22 percent of their income to purchase water from PWPs/kiosks.

In addition, 69 percent to 76 percent of the households surveyed were ready to pay for improved water services. Since this price level was already higher than that of NWSC standpost rates of supply, it can be assumed that the households would welcome domestic connections for clean water supply (Sanitation Strategy and Master Plan for Kampala, 2004).

The cost of connection in Kampala prior to 2004 included a connection fee of UGX125,000 ($75). In addition to that, customers were expected to pay for the full cost of connection (service line) from the NWSC's water mains to their customer meter. This represented a total of $275 to $375 which was not affordable to poor households and meant that these very households were incentivized to overlook the quality of materials and workmanship used to construct their service lines. In turn, this caused significant losses to the NWSC from these poorly constructed service lines.

The NWSC management, therefore, discussed and implemented a number of strategies to address the low coverage and high levels of losses. These strategies are discussed in more detail in the following Section.



3 Urban Water Sector Policy and Strategy for Improving Services to the Poor

This Chapter presents the different elements of the pro-poor policy of the GoU, and describes the pro-poor strategy that was implemented in 2004 by the NWSC.

The GoU's first focus on the poor came with the Poverty Eradication Action Plan (PEAP), which lead to developing and informing the Poverty Reduction Strategy Papers (PRSP) and Poverty Reduction Strategy Credits (PRSC) and specific amendments to policies and government Acts. Thus, the PEAP is the cornerstone of all pro-poor interventions in the country.

3.1 GoU's Poverty Eradication Action Plans

In 1997 Uganda was the first country to prepare a comprehensive and participatory national development strategy, the PEAP. One of the main objectives of the GoU, as declared in its successive PEAPs, is to improve the equitable distribution of water resources in the urban areas, and thus to improve coverage and the volume of water available to households, in the spirit of "less for all rather than all for some". This Section outlines the objectives and pillars of the PEAPs as well as the national planning framework that they supported.

The first PEAP outlined a basic change in the government's strategy to deliver basic services to the poor by recognizing the multidimensional nature of poverty and adopting a multisectoral approach for its eradication. Under this plan, Uganda is being transformed into a modern economy in which people in all sectors can participate in economic growth.

Priority actions for the water sector are identified in PEAP (2004) as follows:

- Review the water sector targets in light of the Long Term Expenditure Framework (LTEF) projections.
- Prioritize provision of water and sanitation services to the rural population and the urban poor.

The GoU also pointed out that the financing of urban water was a public responsibility and that the investment plan would be difficult to finance within the GoU's existing available budget/envelope. The PEAP was, therefore, used as a key input into the World Bank's PRSP and associated PRSC. The strategy for achieving PRSC targets for the urban water sector was based on the following components:

- Sector-Wide Approach (SWAp) to planning.
- Autonomous management of service provision by professionals.
- Emphasis on commercialization, financial viability, cost recovery, and operational efficiency.
- Use of the private sector in construction and management of water supply schemes.
- Ownership of assets vested in the public sector.
- Independent regulation.
- Sustainability and replicability of approaches.
- Pro-poor approaches.

The overall national framework supported by the first PEAP (1997) lead the GoU to develop a number of sector specific policies and strategies, including the National Water Policy (1999) and the Pro-Poor Strategy of the Ministry of Water and Environment (2004). These are described in more detail here.

3.2 The Government's Pro-Poor Water Policies and Strategies

Following the preparation and review of PEAPs, sector stakeholders managed to find little evidence of water supply and sanitation service delivery to poor households in urban areas. With support from budget support grants and

credits from the corresponding PRSCs, the GoU developed the National Water Policy (1999) and later the Pro-Poor Strategy of the MoWE in 2004.

3.2.1 National Water Policy Targets and MDG Goals

The National Water Policy of 1999 was developed to provide further guidance on the objectives, targets, and processes envisioned in the first PEAP. The National Water Policy also lays down the timeline for the water and sanitation sector as follows:

"*Sustainable provision of safe water within easy reach and hygienic sanitation facilities, based on management responsibility and ownership by the users to 77 percent of the population in rural areas and 100 percent of the urban population by the year 2015, with an 80 percent–90 percent effective use and functionality of facilities*" (MoWE, 2004).

It is noted here that the GoU's water supply coverage target of 100 percent in urban areas by 2015 is more ambitious than the Millennium Development Goal (MDG) target of halving the proportion of people without sustainable access to safe drinking water and improved sanitation by 2015.

As per the 2008 National Service Delivery Survey, rural water supply coverage was about 67 percent, and the urban water coverage was 94 percent, making it a combined national coverage of 71.6 percent, thus meeting the United Nations Development Programme (UNDP)-assessed MDG target of 62 percent, but still falling short of the final PEAP/ministry targets.

Although the national target was set at 100 percent there was no specific policy and strategy on how to expand services to unserved (poor) settlements, nor were any investment programs identified to deliver such services. The MoWE carried out an assessment of past policies and strategies in 2004, and published an updated strategy in 2006. This is described in more detail below.

3.2.2 GoU's Pro-Poor Policy

A review of the pro-poor performance of current policies, strategies, and practice by the DWD (undertaken in 2004) revealed that, while water sector policies were generally committed towards improving the social and economic conditions of all Ugandans, the policies had a weak orientation towards improving actual services to the poor and were generally unclear about the role of the GoU and implications of these previous policies on the poor.[18] The DWD's assessment found that flat tariffs charged at PWPs were not benefiting the poor because of significant mark-ups charged by middlemen (for example, kiosk operators) and that the intended consumption subsidies embedded in the tariff were actually benefiting customers who were already connected to the network, and not the poor.[19]

The government's policy for serving the poor (2004) therefore emphasized the following points:

i. To ensure equitable allocation of subsector budget.

ii. To improve overall sector performance.

iii. To enhance access by increasing the density of network/points and expanding to unserved areas.

iv. To target vulnerable groups such as women, people with disabilities and HIV/AIDS.

v. To improve sanitation and hygiene practice.

vi. To monitor the impact of water supply and sanitation services on the poor: This led to

[18] DWD/MoWE. 2004. Pro-poor strategy of the water and sanitation sector. The assessment was undertaken in 2004 by the DWD (Finance Thematic Subsector Working Group) but the actual policy was written in 2006. The full report is included in the Appendixes.

[19] These were common weaknesses of consumption subsidies in sub-Saharan Africa.

the monitoring and evaluation process of the MoWE's Sector Performance Report.

vii. To encourage participation of the poor and giving them a voice, through mechanisms such as Water User Associations (WUA).

viii. To establish more PWPs in poor settlements.

ix. To create a pro-poor tariff structure: Set up cross-subsidies between different customer categories.

x. To subsidize yard connections serving as authorized PWPs: An arrangement where the water authority would work with existing yard tap owners to use the yard taps as designated PWPs, managed by the respective owners on behalf of the authority.

xi. To recognize that the poor only benefit from the consumption subsidies if they are connected to (or have access to) the network. This policy is supported by specific activities designed to increase water supply coverage

xii. To continuously monitor water quality.

Following this new policy, the NWSC developed its own pro-poor strategy and pro-poor service delivery mechanisms.

3.3 NWSC's Pro-Poor Policy and Instruments

The NWSC's specific approach for providing services to unserved (poor) settlements was developed in 2004 and officially published in 2006 to follow the MoWE's Pro-Poor Water and Sanitation Sector Policy.

However, the NWSC's approach for serving poor households is not enshrined in a specific pro-poor strategy. Rather, NWSC management developed and implemented a number of activities that were considered to have significant positive impacts on the quality and sustainability of services to poor households. The main components of the NWSC's pro-poor strategy were:

- Component 1: An Affordable Connections Policy[20] which helps all customers, including the poor, to connect to the network by subsidizing the cost of the connection. The policy is supported by a New Connection Fund which is funded through an 11 percent surcharge in the water tariff.
- Component 2: A differentiated flat tariff structure which allows for consumption subsidies to be targeted to poor households, and a certain level of cross subsidy between industrial and commercial customers on the one side, and domestic customers on the other.
- Component 3: A Pro-Poor Targeting Project which the NWSC has been implementing since 2008 with GPOBA support. This project is providing yard taps, PWPs and prepaid PWPs in targeted poor settlements of Kampala, and is therefore a shift from the Affordable Connections Policy which is not specifically targeting the poor.

The NWSC used different delivery mechanisms to implement its pro-poor strategy. These include:

- Mechanism 1: Setting up a dedicated pro-poor unit (called the Urban Pro-Poor Branch) in Kampala.
- Mechanism 2: Giving customers a choice levels of service:
  - PWP/kiosks;
  - Presidential Pledge taps;
  - Yard taps; and
  - Prepaid connections—only implemented in 2008.

[20] The policy is actually called "The New Policy of Providing and Maintaining Service Lines to Customers", but for ease of reference shall be referred to as Affordable Connections Policy throughout this report.

These components and mechanisms for delivering pro-poor services are described in more detail below.

3.4 Principal Components of the Pro-Poor Policy

3.4.1 Component 1: The Affordable Connections Policy

The NWSC's Affordable Connections Policy was adopted on July 1, 2004. The principal objectives of the policy were to:

- Increase the number of connections for all customer categories (domestic and nondomestic), thereby making water accessible to the population, especially the urban poor.
- Ensure standardization in the quality of materials used for connection, and thus contribute to reducing technical losses due to leaks and bursts within the service lines. Previously consumers were responsible for paying for their own connection to NWSC mains, and therefore had an incentive to use cheaper/nonstandard materials which led to leakages and loss of water.

Highlights of the policy include:

- The connection fee for a standard half-inch connection was reduced from UGX125,000 ($75) to 59,000 ($35). Rates were similarly cut across the board for other sizes of connections (and nondomestic customers).
- The NWSC should meet all the costs of connections within a radius of 50 meters from the NWSC supply point. Thus the NWSC mobilized and provided all materials (pipes and fittings) and labor (trenching and pipe laying) for construction of the service line up to the customers' meter. The NWSC estimated that this represented an annual investment of UGX4 billion[21] ($2 million).
- The costs of constructing connection lengths greater than 50 meters were shared between the customer and the NWSC. In addition, the cost of reconnection (for example, following disconnection or illegal connections) was reduced to UGX75,000 or $45 (with the same policy based on length of connection).

The NWSC recognized that, to be financially sustainable, the connections policy needed to be internally funded. Therefore:

- The Affordable Connections Policy was funded via a 10.7 percent tariff surcharge applied to domestic, commercial/industrial, and institutional/government customers,[22] with most of the subsidy coming from commercial and industrial customers and government institutions.
- Revenue from the tariff surcharge was to be ring-fenced in a dedicated New Connections Fund and used exclusively for new connections in line with the policy.

The Affordable Connections Policy is derived from the following policy documents (NWSC Board Paper 571 of 2004):

- The NWSC Corporate Plan: 2003–2006 Strategic Goals, in which it is stated that "the NWSC is to create funds for maintenance, new connections, and network extensions as part of its strategy to ensure that investments and new connections are implemented on a timely basis".
- The Performance Contract with the GoU: 2003–2006, which states that "*The NWSC will undertake the introduction of a "New Connection Fund" mechanism in the tariff policy that will help accelerate provision*

[21] The breakdown as estimated by the NWSC is shown in the Appendixes.

[22] However, large industrial consumers using more than 1,500 m^3 per month were not included in the 10.7 percent tariff surcharge (and therefore were not included in the cross-subsidy pool).

of services to the poor and also curb the incidence of unaccounted-for water".

- The Poverty Reduction Support Credit (PRSC IV) targets which provide that within the period April 2004 to March 2005, the NWSC will develop a water tariff structure aimed at encouraging new connections through the establishment of a Connection Fund. This would also address the access of safe water to the poor.

The Affordable Connections Policy developed and implemented by the NWSC since 2004 was not based on a detailed assessment of needs, capital investments, and funding sources by water supply zone or area in Kampala per se, but rather on the Corporation's estimate of the number of new connections it considered it could deliver annually and on its ability to raise enough funding for new connections through a tariff surcharge.

In addition, the Affordable Connections Policy enabled the NWSC to plug a major loophole in the institutional and operational framework as it agreed to adopt, and therefore operate and maintain, all customer service lines between the NWSC mains and the customer meter. Previously (that is, before the change in ownership and management responsibility) the NWSC was not responsible for these lines—and neither were the customers. That meant that losses from bursts and leaks on these lines remained relatively uncontrolled and explains the NWSC's high level of unaccounted for water in 2004 (at more than 40 percent of water produced).

3.4.2 Component 2: Differentiated and Pro-Poor Tariff

A key element of the NWSC's pro-poor policy was a differentiated tariff structure that allowed for different flat rates for different types of customers (essentially domestic, institutional/government, and commercial/industrial). This was implemented in 2004. However, the NWSC went a step further and also implemented a water tariff specific to public water points—as a means to subsidize water consumption to poor households.

Thus PWPs/kiosks were given the lowest water rates, followed by domestic connections and commercial tariffs (which were the most expensive). The tariff was designed such that large consumers, including domestic customers, government/institutions, and commercial/industrial customers using up to 500 m^3/month cross subsidize the water supply tariff at PWPs. It was considered that industrial consumers using more than 1,500 m^3/month should not be included in the tariff surcharge—as they might decide to develop their own sources of water and thus no longer use the NWSC's.

The water tariff has been indexed on the Consumer Price Index and on fuel and energy prices also since 2004, so as to protect the NWSC's ability to recover its O&M costs from collected revenue.[23] The water tariff for 2008–09 is shown in Table 5.

With these automatic increases, the NWSC is one of the very few African utilities that is able to protect its revenue generation from a large increase in operational costs, for example, due to rising electricity prices.

Yard taps are considered as domestic connections and therefore charged the domestic tariff. However, the NWSC analyzes the average monthly consumption at the yard taps to determine whether these are shared between many families and thus used as PWPs. In that case, the NWSC automatically informs the household under whose name the yard tap is registered that they will be charged the PWP tariff. Therefore, yard taps that are used by two or three households are charged the domestic tariff.

The effectiveness of the tariff structure on services the poor is discussed in Chapter 4.

[23] However, NWSC data on operational costs and collected revenues showed that the Operating Cost Coverage Ratios (OCCRs) for 2004, 2005, and 2006 were 77 percent, 76 percent, and 83 percent, respectively, suggesting that the NWSC required significant external subsidies to cover basic operation and maintenance (O&M) costs. However, these increased to 134 percent, 124 percent, and 134 percent in 2007, 2008, and 2009, respectively.

Table 5: Kampala water prices in 2008–09

Type of connection	Water tariff/m³ (UGX)	Water tariff/m³ (US$)
Presidential Pledge (no service charge)	784	0.31
Public water points (PWP)	867	0.34
Domestic (individual household) connection	1,341	0.53
Institutional/government	1,651	0.65
Commercial less than or equal to 1500 m³/month	2,085	0.82
Commercial greater than 1500 m³ /month	1,697	0.67
Average weighted water tariff	**1,561**	**0.61**

3.4.3 Component 3: Pro-Poor Targeting

Given the need to continue to improve service provision (and coverage expansion to meet the MDGs) to poor settlements in Kampala, and given that the Affordable Connections Policy implemented by the NWSC since 2004 was not deliberately focused on poor households, the NWSC has developed a new way of targeting poor households with support from the GPOBA, a World Bank administered trust fund (see Box 3). This project was initiated in 2008. A description of the approach is included to illustrate the continued improvements made to the NWSC pro-poor strategy.

Box 3: Geographic targeting of poor households

The NWSC, with support from the GPOBA, is currently pilot testing a geographically targeted program in which subsidies are provided to the Corporation on the basis of the provision of agreed number of outputs, including public and domestic yard taps in the areas where the poor live, with the added condition that they should be working at the end of 12 months of service. The project was initiated in 2008 to demonstrate that performance-based subsidies are an efficient demand-based financing mechanism to extend services to the poor in designated (geographically targeted) areas.

The target is to provide 19,070 yard taps, 205 conventional PWPs, and 615 PWPs with prepaid meters in different slum areas. Increasing the access of piped water to the poor will lead not only to economic benefits by reducing the opportunity cost of water but also result in better health and hygiene for the poor.

The project uses a grant of $2.85 million and will reimburse 60 percent of the amount spent on the project in the form of OBA subsidies (upon successful delivery of outputs), while 10 percent is paid for by the beneficiaries as user contribution, and the remaining 30 percent will be financed by the NWSC. However, the NWSC has to prefinance all investment costs (that is, 90 percent of the total cost), consistent with OBA principles. The Corporation is also responsible for funding all new network reinforcements or secondary network extensions.

To date 6,000 of the intended yard tap connections have been made as the poorest households (targeted by the subsidy mechanism available to the NWSC through the GPOBA) are living amongst nonpoor or less poor households (for which no subsidy is available). Given the difficulty with conventional PWPs, the NWSC is going to continue implementing yard taps and prepaid PWPs only. The likely benefit to poor households is expected to be high as the project is specifically targeting poor households in designated settlements of Kampala.

3.5 NWSC's Pro-Poor Strategy Delivery Mechanisms

3.5.1 Mechanism 1: Pro-Poor Unit

Following the implementation of the Affordable Connections Policy, there was limited coordination of the NWSC's activities in the unplanned and unserved settlements. In fact, a situational analysis report undertaken as part of the German Development Agency (KfW) funded project in Kisenyi-Ndeeba by Beller Consult (2006) states that:

- The NWSC was focused then only on commercial efficiency and profit.

- There was no specific pro-poor policy.
- The poor are perceived as risky customers for a number of reasons including vandalism, low consumption, need for watermains extensions, and difficulties with land tenure certificates.

With support from donors and development partners, the NWSC established an Urban Pro-Poor Branch in 2006 to address the following objectives:

- Develop and implement tangible pro-poor policies, procedures, indicators, and targets.
- Facilitate provision of adequate infrastructure in informal settlements.
- Set up strategic alliance with stakeholders and increase networking with development partners.
- Implement a pro-poor approach in NWSC structures and provide an internal formal feedback mechanism.

The NWSC's Urban Pro-Poor Branch was set up to promote, plan, coordinate, and manage service provision to unserved (poor) settlements throughout the NWSC's 23 service areas. The unit/branch is set up as an individual internal advisory business and therefore has internal targets, both at business and staff levels.

The Urban Pro-Poor Branch has a limited number of seven staff, including O&M engineers, billing and revenue collection specialists, socioeconomists, and customer care staff. The team is led by a socioeconomist.

Since its inception, the Branch has become a coordination point for the organizations (including donors, local authorities, and NGOs) working for the poor and takes up the issues of the poor with the commercial branches. The branch coordinates and oversees the pro-poor mechanisms deployed by NWSC (see paragraphs 3.5.2-3.5.4)

3.5.2 Mechanism 2A: Public Water Points and Kiosks

PWPs and water kiosks were the initial response by the NWSC and the KCC to the challenge of delivering water services to slums. They constituted the first refuge of the slum population when they were afflicted with diseases such as cholera and diarrhea. The establishment of PWPs and kiosks helps in expanding access of water services to the poor as they generally cannot pay for connections due to high costs or legal difficulties associated with land tenure (discussed earlier in the report). Initially, a PWP is supposed to cater for 25 households, serving between 150 and 200 people. The NSDS survey of 2008 shows that 26 percent of the people in urban areas obtain water from public taps, which includes PWPs, kiosks, Presidential taps and prepaid taps.

The initial trend of construction of kiosks was started by the KCC in the 1990s with the help of donor agencies and the connections were provided by the NWSC but, as the trend caught on, the number of kiosks increased fast. Other agencies and NGOs also started to make their own kiosks. All these are connected by the NWSC and provided with a water meter.

Often kiosks are managed by a private individual (or kiosk operator), who is generally the person who has donated the land, or his/her agent. The operator generally sells water at the market price (not the NWSC price) but this is not regulated, and the usual unit of water is a 20-liter jerrican.

Field visits revealed that the price charged per jerrican of water ranged from UGX50 to 300[24] ($0.02 to 0.12 per jerrican, or between $1.0 and $6.0 per m^3)—depending on availability. The price is highly influenced by continuity of water (that is, interruptions), seasonal variations (and presence of alternative sources), and competition from other water sellers). The average price charged per jerrican was between UGX50 to 100 ($1 to

[24] This equates to $0.02 to $0.12 per 20-liter jerrican, or $1.0 and $6.0 per m^3.

$2 per m^3), compared with the NWSC's tariff at PWPs/kiosks of UGX867 per cubic meter ($0.35) or UGX17 ($0.007) per jerrican. **Thus the poor were charged a disproportionate amount for purchasing water at privately managed kiosks, and were not benefiting from the intended consumption subsidy available at PWPs/kiosks through the differentiated tariff structure.**

3.5.3 Mechanism 2B: Presidential Pledge (Yellow Water) Taps

Another delivery mechanism was launched during the presidential election campaign in Uganda (2006), called the Presidential Pledge taps (yellow in color).

Presidential Pledge taps are similar to PWPs/kiosks in all respects except that they are exempt from service (meter rental) charge (but not basic water charge). Thus, one cubic meter of water costs UGX784 ($0.31) as compared with UGX867 ($0.34) at a conventional PWP managed on behalf of the NWSC. However, it is not clear why the meter rental charge was dropped only for Presidential Pledge taps and not across the board in poor settlements.

According to the NWSC, the Presidential Pledge (yellow) taps were obtained following recommendations by political (elected and not elected) leaders in the communities. The "PP" denomination is only visible on the NWSC's customer database according to the date at which the PP tap was applied for and made.

3.5.4 Mechanism 2C: Yard Taps

There are two types of yard taps: domestic yard taps are those used only by a household or a few families; shared yard taps are similar to PWPs and thus shared by many more households. Effectively shared yard taps are the same as PWPs in that they are used by many households, but they are still located in someone's yard rather than on the street or on public land like PWPs. The NWSC considers that the ratio of shared to individual yard taps is approximately 50:50.

A domestic connection is supposed to cater for a household of an average of six persons. However, a yard tap is usually used by up to 15 people. Most of the connections are located outside the house and water from these is sold to the citizens at the prevailing market rate.

The NWSC is able to monitor the consumption of yard taps and can decide, based on this level of consumption, whether the yard tap is actually used by a large number of people or not. This assessment is followed by a site visit by a representative of the Urban Pro-Poor Branch. If it is deemed that the yard tap is, in fact, being used like a PWPs (that is, it serves more than just two or three households), then the NWSC automatically applies the PWP tariff so that the intended consumption subsidy reaches the poor.

3.5.5 Mechanism 2D: Public Water Points with Prepaid Water Supply Meters

Given the difficulty in collecting revenue from some of the PWPs/kiosks (whether these are community taps or yard taps), the NWSC started pilot-testing the use of approximately 300 prepaid water supply PWPs/kiosks in July 2008.

This was carried out with funding and technical assistance from KfW under the Kampala Water and Sanitation Program phase 1. The premise is that customers have to obtain electronic tokens and ensure that these are credited, in exchange of which they can redeem this credit for drinking water at designated prepaid PWPs/kiosks.

Early results show that the prepaid water supply system, whilst more expensive than a conventional PWP, offers significant benefits both to NWSC and poor customers. An early assessment of these prepaid supplies

indicates that the supply is available 24x7 to poor households and that they are an effective means of transferring the consumption subsidy to poor households, by removing the middle man effect. Security and cleanliness of the apron is ensured by NWSC staff in conjunction with representatives of the communities within which the prepaid supplies are installed. The exact arrangements are, however, still being tested.

More commentary on the perceived strengths and weakness of the prepaid metering system is included in Chapter 4.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4 Analysis of the Impact of the Pro-Poor Policies on the Poor in Kampala

This Section presents the findings of the assessment of the impact of the pro-poor policies on the poor in Kampala, including an assessment of the following: coverage increase, unit consumption, distance to supply and waiting time, affordability, NRW, and socioeconomic impact.

Whilst the NWSC was able to exceed the targets it set out in the Affordable Connections Policy Document (see below), it has been unwilling or unable to set up the dedicated and ring-fenced New Connections Fund, probably because it was not receiving sufficient revenue from customers to cover all O&M costs, but also because it was not forced to do so by the MoWE. In addition, whilst the number of new PWPs and yard taps has exceeded their initial targets, the NWSC is still facing a huge issue with nonpayment in poor settlements, so much so that the Corporation is now planning to retrofit all PWPs to prepaid water supply PWPs. This is discussed in more detailed later in this Section.

Where appropriate, recommendations are made at the end of the Section on how the NWSC and GoU could improve the effectiveness, efficiency, and equity of the various elements of the pro-poor strategy such that more benefit accrues to poor households.

The methodology used and data collected for analysis are presented in Section 1.3 of this report.

4.1 Assessment of Coverage Increase

The NWSC's Affordable Connections Policy provides yearly targets for increasing the number of connections, by customer category. This is shown in Table 6, for the whole of the NWSC service area.[25]

4.1.1 Overall Growth in Total Connections and Population Served

Overall there has been a significant increase in the total number of connections (including individual house connections, PWPs, and yard taps) throughout Kampala: from 59,000 in 2004 to 146,000 in 2010. This is a significant achievement and is a testimony to the NWSC's ability to adapt the size and management of its operations to increasing numbers of customers, improve billing and revenue collection, and manage larger operations (a larger network with more bursts, greater losses, and more maintenance work). The Corporation increased the size and the efficiency of its operations in parallel with increasing the number of customers.

Table 6: Yearly connection targets of the Affordable Connections Policy (2004)

Customer category	Number of new connections	New connections as % total
Public water points	280	2%
Domestic	11,900	85%
Government/institutions	420	3%
Commercial/industrial	1,400	10%
Total	14,000	100%

Note: No specific targets are included for yard taps as these are considered to be similar to domestic connections. In practice, therefore, the number of yard taps will be included in the total number of new domestic connections.

[25] Note that no specific data is available for Kampala only.

It is considered that the organizational structure of the NWSC (with IDAMCs and individual staff performance contracts) has contributed to these improvements.

The growth of NWSC connections from 2002/03 to 2009/10 in Kampala area is shown in Table 7, in parallel with a population growth of about 4 percent (except between 2007 and 2008 where it exceeded 10 percent). Coverage of piped water supply has increased from 62 percent to 74 percent during this period, and has remained stagnant at 74 percent since 2008, despite the significant increase in connections. This may be due to high population growth or to the fact that fewer households are sharing connections.

However, in net terms this means that the NWSC has managed to increase coverage at a rate of 8 percent points greater than population growth.

This data is presented in Figure 2. The graph clearly shows the increase in total water supply connections from 2004/05, which is directly due to the Affordable Connections Policy. The rate of increase in connections from 2004 onwards is double that of the pre-2004 period (14,500 and 7,000 new connections per annum, respectively).

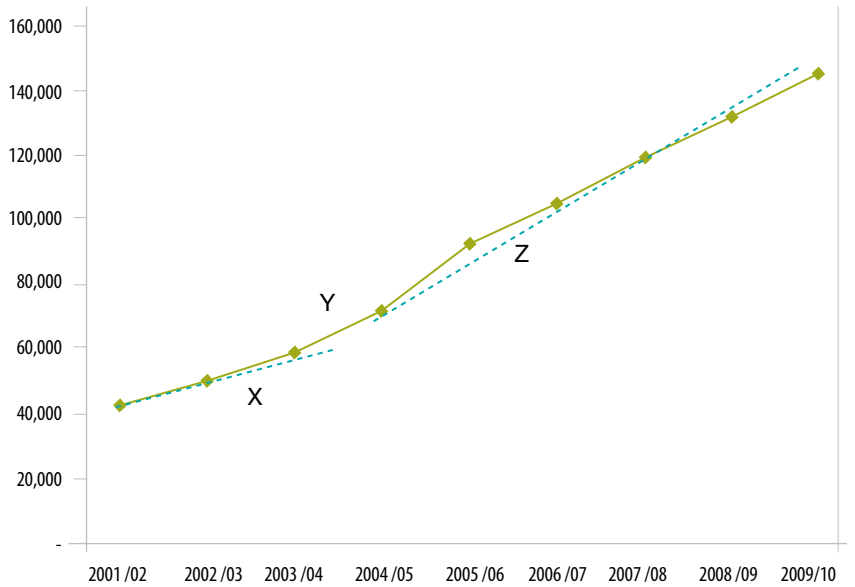
However, the rate of increase is dependent on demand and the NWSC's ability to implement these new connections, both from the technical (procurement, construction, availability of sufficient water supply in the area) and financial (mostly the availability of funds in the new connection fund) aspects. NWSC management set (and therefore limited) yearly targets of approximately 10 to 15,000 new connections per year (post-2004). This is considered prudent given the limitations on the water network and water production capacity, as well as the NWSC's own ability to carry out these connections. In addition, it is considered that much higher rates of connections would have been achievable if there had been large scale investment programs for mains rehabilitation, mains extensions, and water supply capacity increases—in parallel with the new connections. This is discussed in Section 4.2.

Table 7: Growth in NWSC connections in Kampala (2002/03 to 2009/10)

Year	Total no. of connections	Total population	% growth in population	Population served	% growth in population served	Water supply coverage
2002/03	50,302 (*)	1,208,544		749,297		62%
2003/04	59,022	1,255,341	17%	810,865	4%	65%
2004/05	72,231	1,302,138	22%	872,433	4%	67%
2005/06	93,305	1,351,619	29%	946,133	4%	70%
2006/07	105,531	1,402,981	13%	999,892	4%	71%
2007/08	119,897	1,554,818	14%	1,150,565	11%	74%
2008/09	132,882	1,635,744 (*)	11%	1,177,735 (*)	5%	72%
2009/10	146,109	1,716,669	10%	1,277,407	5%	74%
Increase in population served (2004-2010) =				466,542		

Note: * Data obtained from NWSC's Annual Report 2009/10, calculated average between two successive periods.

Figure 2: Total water supply connections in Kampala (2002 to 2010)



X Rate of new connections (pre 2004): 7,000 per year

Y Implementation of the Affordable Connections Policy (2004)

Z Rate of new connections (post 2004): 14,500 per year

Before 2004, the NWSC used to charge 125,000 Shillings (US$75 at the then exchange rates) as the basic connection charge and request users to pay for and undertake their own length of connection. This would cost another $200–300, thus amounting to a total cost of $275 to $375. It is considered that the NWSC's customer base grew only slowly prior to 2004 because of these large costs.

As the charges for the basic half-inch (standard domestic) connections were reduced from UGX125,000 to 59,000 (basic charge of UGX50,000 + 18 percent VAT, representing US$35), the most important result of this Affordable Connections Policy was that a large section of those consumers who could not pay one time (upfront) connection charges, could now afford safe on-premise piped water. This led to a doubling of the number of connections over the period 2004 to 2009.

Table 8 and Figure 3 summarize the results of the National Service Delivery Survey which was undertaken in urban areas[26] of Uganda by the UBOS in 2008. Overall, compared to the same survey that was prepared in 2004 prior to the start of the pro-poor policy, it seems that:

- The proportion of households using unimproved sources of water in urban areas has reduced—both during the dry and wet season.
- The proportion of households using piped water in their dwellings (that is, house connections and/or yard taps) has reduced—from 9 percent in 2004 to 5 percent in the dry and wet seasons of 2008, respectively.
- The proportion of households that have access to water in their compounds has increased from 13 percent to 15 percent in 2008. Similarly there has been a significant increase (+16 percent) in the proportion of households with access to water "outside their compound": this is interpreted as PWPs/kiosks.
- The proportion of households using alternative sources of water (unimproved) has been reduced by half, from 12 percent in 2004 to 6 percent in 2008, with less marked difference between the dry and wet season.

The following Sections present a more detailed assessment of coverage increase from yard taps, PWPs, and prepaid water supply PWPs.

[26] Neither the NSDS of 2004 nor that of 2008 presents results for Kampala only.

Table 8: Sources of drinking water in urban areas for dry and wet seasons (NSDS, 2008)

National Service Delivery Survey	Dry season		Wet season	
Water source (urban only)	Water for drinking	Difference since 2004	Water for drinking	Difference since 2004
Piped water in dwelling	5%	-4%	5%	-4%
Piped water in compound	14%	2%	13%	2%
Piped water outside compound	16%	16%	15%	15%
Public tap	26%		24%	
Borehole, protected spring, gravity flow scheme	31%	-8%	24%	-9%
Rain water	0%	0%	12%	-1%
Unprotected source	4%	-4%	3%	-3%
Lake, river, stream, pond, dam	1%	-2%	1%	-2%
Other	1%	1%	1%	1%
Total	100%		100%	

Breakdown (improved/unimproved)				
Water source (urban only)	Water for drinking	Difference since 2004	Water for drinking	Difference since 2004
Improved	94%	5%	95%	4%
Unimproved	6%	-5%	5%	-4%
Total	100%		100%	

4.1.2 Growth in Domestic Yard Taps and PWPs

Data were obtained from the NWSC's Billing and Commercial Department on the number and type of new connections in each of the 117 known poor areas of Kampala from 1998 to 2011—as a means to assess the average rate of new connections in poor settlements before and after the pro-poor policies. The data included the date of installation of each connection (installation dates older than 1998 are shown as having been made in 1998).

As shown in Table 8, over the period 1998–2011, the NWSC carried out 16,198 connections in the poor settlements of Kampala: 14,668 yard taps and 1,530 PWPs. Between 2004 and 2010, however, 6,793 yard taps and 1,032 PWPs were constructed; see Table 8 and Figure 3—both show that the rate of new connections almost doubled in 2005–06 when the Affordable Connections Policy was rolled out. However, from 2009 the rate of new connections fell back to its pre-2004 level although the total number of new connections in Kampala (domestic, industrial, and institutional) increased rapidly year on year. In fact, the annual target of 280 new PWPs in poor settlements projected by the Affordable Connections Policy has been met only over the period 2005–09 and has since then fallen back to pre-2004 levels, to about 70 PWPs par year. Table 8 and Figure 3 also show that the NWSC at the time was already connecting about 700 yard taps and 60 PWPs per annum.

Table 9: Total number of new connections (per annum and cumulative) from 1998 to 2011 in Kampala

Year	Total number of yard taps per annum	Total number of PWPs per annum
1998	3,271	103
1999	499	27
2000	581	69
2001	700	69
2002	585	56
2003	758	65
2004	728	57
2005	1,269	129
2006	1,538	430
2007	1,303	240
2008	1,063	91
2009	851	66
2010	769	76
2011	753	52
Grand total	14,668	1,530
From the ACP	2,405	663

Thus, the Affordable Connections Policy has directly led to the construction of approximately 2,400 yard taps and 660 PWPs between 2004 and 2010. This means that approximately 4 percent of total new connections over the period directly benefited poor households—or potentially approximately 144,000 persons.

Table 10 shows the average number of new connections per annum from 2004 to 2010. The Table also shows that the NWSC's targets (shown in Table 6) have consistently been met and/or exceeded, for all customer categories.

However, the figures shown in Table 10, in particular for PWPs, hide the difficulty which the NWSC faces with providing working solutions in poor settlements in Kampala. Figure 4, which is based on NWSC billing data, shows that as of end of 2010 a noticeable proportion of new connections in the poor settlements were inactive: 21 percent of yard taps and 53 percent of PWPs.

Although the percent of inactive connections is reducing from one year to the next due to the fact that apparent debts are written off by the NWSC, the percent of inactive PWPs has frequently been greater than 60–70 percent in 2005–06 (and up to 80 percent in earlier years, for example, 1999 and 2000). This highlights the difficulties faced by the NWSC in the management of PWPs and, therefore, extending water supply services to low income settlements via PWPs in Kampala.

The main challenges faced by the NWSC when providing PWPs is the nonpayment of the monthly water bill, which leads to immediate disconnection while the accounts stay on the customer database until the debt is deemed irrecoverable and written off.

Figure 3: Total number of new connections (per annum and cumulative) from 1998 to 2011 in Kampala

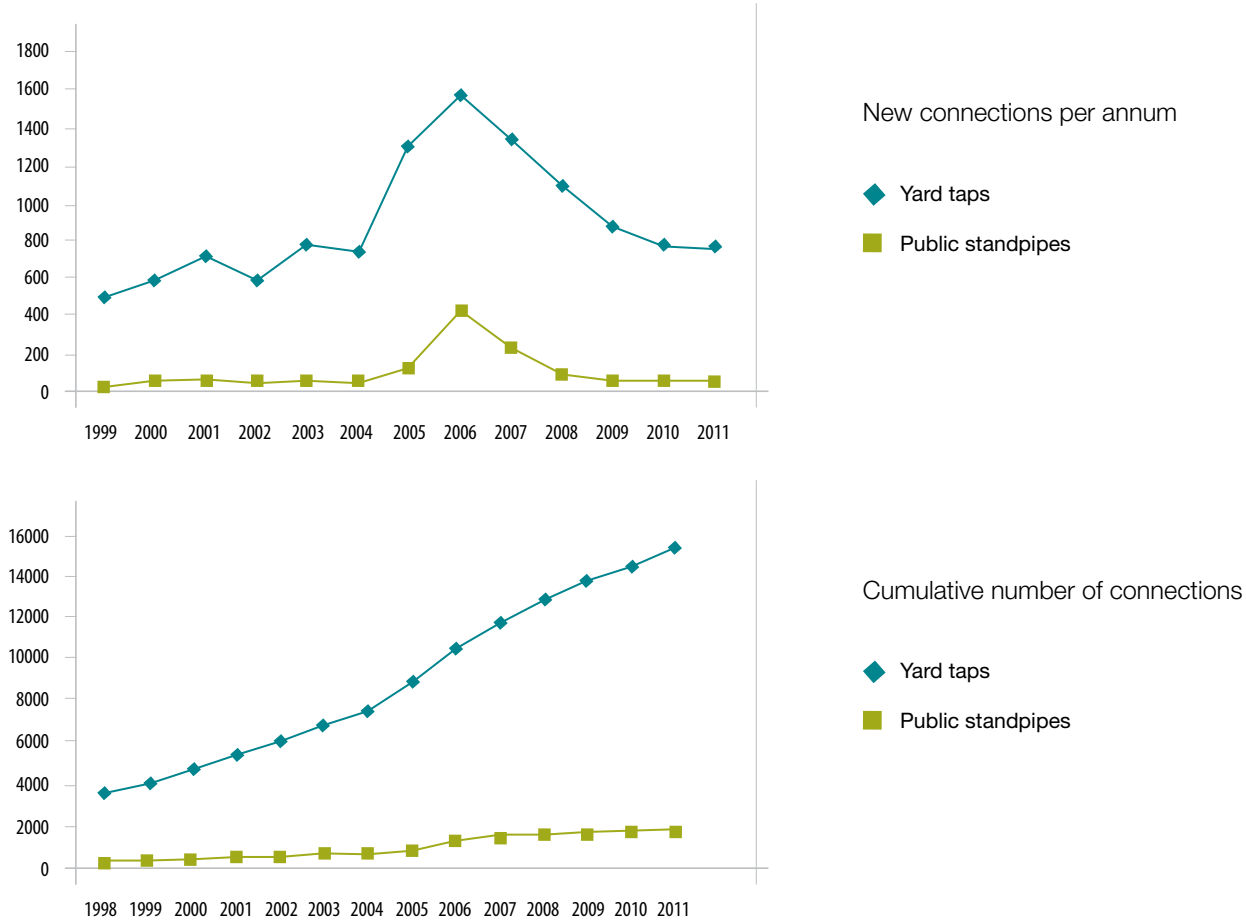


Table 10: Actual number of new connections per annum (2004 to 2010) for NWSC

Connection category	Target/year			Actual 2004–10		
	Number of new connections	New connections as % total	Number of connections, 2004	Number of connections, 2010	Rate per year	New connections as % total
PWPs	280	2%	3,114	7,748	772	3%
Domestic	11,900	85%	85,717	194,848	18,189	77%
Government/institutions	420	3%	4,261	6,686	404	2%
Commwercial/institutions	1,400	10%	11,850	36,977	4,188	18%
Total	**14,000**	**100%**	**104,941**	**246,259**	**23,553**	**100%**

Note: Based on NWSC Annual Reports (although data for 2004 were extrapolated). The total number of connections relates to the whole of NWSC's service area.

Figure 4: Number of inactive connections in Kampala (1998 to 2011)

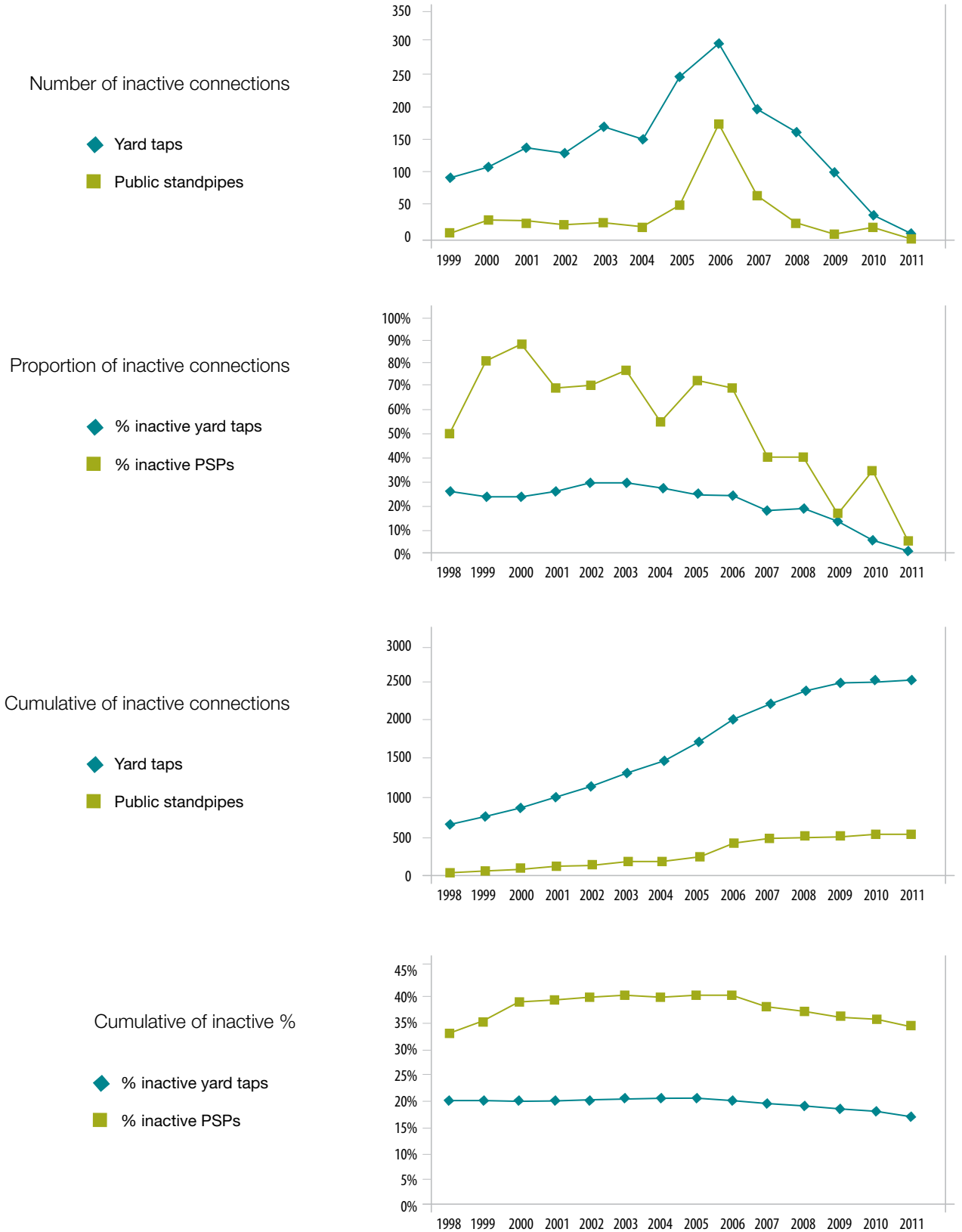


Table 11: Estimate of the total number of poor beneficiaries of the Affordable Connections Policy (2004–10) in Kampala only

Level of service	Increase from 2004 to 2010	% inactive	People served	Beneficiaries
Yard taps	2,405	18%	18	35,498
PWPs	663	36%	150	63,648
			Sub-total=	99,146
Total increase in population served (see Table 7)				466,542
Total % poor beneficiaries over total beneficiaries				21%

Table 11 shows an estimate of the total number of beneficiaries of new PWPs and yard taps in poor settlements since 2004. The estimate takes into account the fact that the NWSC was already providing approximately 700 yard taps and 60 PWPs per annum before the Affordable Connections Policy was implemented.

Thus Table 10 before this shows that, whilst only 4 percent of the new connections provided in Kampala via the Affordable Connections Policy were made in poor settlements, 21 percent of the beneficiary population was in fact in poor settlements.

It is considered that had so many PWPs and yard taps not been disconnected/were inactive due to nonpayment, the impact of the Affordable Connections Policy in poor settlements may have been much bigger (at about 31 percent of the total beneficiaries).

The assessment concluded that the marked slow-down in the rate of new connections in poor settlements after 2009 is due to a combination of the following:

- Reduced willingness from the NWSC to provide PWPs without more involvement from the community (for example, socioeconomic surveys, ATP and WTP studies, customer education, and community participation). However, since 2007 and the setup of the Urban Pro-Poor Branch, the Corporation is spending more time planning for the provision of PWPs. This has been followed by a significant reduction in the number and proportion of inactive accounts (see Figure 4).

- Inadequate network coverage in the poor settlements, which means that the number of yard taps and PWPs is also low in these areas. The new connections need to be supported by corresponding water mains extensions and/or water supply capacity increases that are not materializing as quickly as anticipated/needed.

- Difficulties with providing poor households in informal settlements with connections—yard and/or PWPs, because of the unavailability of suitable land.

In view of these challenges, the NWSC is currently piloting prepaid water supply systems with a view to replicating these at scale—and gradually replacing all yard taps and PWPs with prepaid water supply PWPs.

4.1.3 Prepaid Water Supply PWPs

The NWSC is currently pilot-testing the installation and use of, as well as customer satisfaction with, prepaid water supplies, mainly in Kisenyi I and II, and Ndeeba. This new approach started in 2008. To date, 300 prepaid water supply PWPs have been installed. This is

very slow progress and is attributed (in part) to the long lead line in procuring (importing) prepaid water supply meters. Prepaid water supply PWPs have principally been installed in areas where there was limited number of yard taps and a high number of inactive conventional PWPs.

Although it is too early to analyze the impact of these prepaid water supply PWPs, some lessons are appearing. The advantages of the prepaid PWPs include:

- The system is convenient and more customer-friendly as it eliminates the need for an operator who is likely to apply a mark-up on the NWSC tariff, and who is unlikely to work 24x7. Therefore, the prepaid PWPs ensure that poor households really benefit from the consumption subsidy embedded in the tariff.
- It virtually eliminates disconnection of the community due to nonpayment of a single individual (for example, the kiosk operator), thus making it a favored option for the NWSC. From the point of view of the consumer it eliminates the fear of inflated bills, or paying bills in arrears. In the daily cash economy of the poorest of the poor, prepaid water supply systems are considered as a relief by consumers as captured from the FGDs.
- For the NWSC it represents an opportunity to achieve 100 percent collection efficiency which is a significant improvement on the poor performance of conventional PWPs. The NWSC is considering using the prepaid approach with large government and institutional customers—to improve cash flow from these customers.
- Finally, it is considered that the prepaid supply systems encourages water demand management on a daily basis in the household and discourages wasteful use of water.

However, the study consultations on the prepaid water supply system highlighted a number of challenges, including:

- The major drawback is the very high price of each of the prepaid water supply systems (about $1,350 compared to $380 for a PWP and $170 for a yard tap) and the need to fund them through grants (that is, the cost of the prepaid meters cannot yet be recovered through the pro-poor tariff). In the long run a suitable funding mechanism is required if the prepaid water supply PWPs are to be used at scale.[27]
- Difficulty to locate the prepaid PWPs on suitable land. Due to the private nature of land in most slums, it was not always possible to find a willing landlord who would offer free land for establishing a prepaid PWP. This may have been due to the fact that the initial prepaid PWPs were not seen as usable given that the number of tokens was limited. In addition, they may have been considered as lost income—since they are not managed by individuals. Later as the number of tokens increased the reluctance of landowners to part with land reduced.
- Difficulty with setting up the supply chain of tokens such that these are sold en masse at a large number of locations/retail outlets.

The initial success of prepaid PWPs has been such that the contractual outputs of the GPOBA-funded project has been recast to support more prepaid PWPs. The project is now going to establish 2,300 PWPs with prepaid meters, estimated to serve in total 350,000 poor people in Kampala. As a comparison, the project is also going to provide 6,000 new yard tap connections (serving 90,000 people) and 200 new PWPs (serving 30,000 people). This is summarized below.

[27] However, the GPOBA-funded project is showing that prepaid PWPs are more cost effective than yard tap connections: average of $5.5 per capita for prepaid PWPs against $7 for shared yard taps.

Outputs	Initial OBA outputs	Progress made in 2010 in the target areas (2010)[28]	Revised OBA outputs since 2010
Yard taps	19,000	119	6,000
Public water points	400	7	200
Prepaid public water points	400	3	2,300

4.1.4 Effectiveness of the New Connections Fund

NWSC senior management indicated that the New Connections Fund had not been ring-fenced, and that revenues collected through the surcharge were not necessarily utilized for expansion of connections. The Corporation reports that the funds were not earmarked for new connections because the approach met with competing demands of a commercial nature, including assets renewal (buying pumps), rising cost of chemicals, electricity, and inflation.

It is precisely because utilities always have competing needs for available resources (especially when the utility is not recovering all its operating costs from customer's bills—as was the case with the NWSC from 2004 to 2006) that the fund needed to be ring-fenced. The NWSC is expected to have collected approximately $12 million from 2004 to 2010.

The fact that the NWSC had identified an opportunity of collecting an additional UGX4 billion (about $2 million) per annum from tariffs alone meant that the size of the fund (in real terms) reduced from one year to the next due to the rising cost of materials. Thus the amount of funds available to pay for connections may have reduced from one year to the year precisely due to inflation—whereas the discounted cost of connection was kept at $35 (for domestic customers).

Had an effective working New Connection Fund been established, the number of new connections may have been significantly larger, particularly in poor settlements. However, it is difficult to quantify how much more could have been achieved given that the number of new connections (of all types), and the ability of the NWSC to deliver these, are linked to water network characteristics (coverage, condition, and performance—affecting flow) and treatment capacity (affecting volume).

The effectiveness of the Affordable Connections Policy may also have been improved had adequate financial support been earmarked sufficiently early on in the process to expand the water distribution network to poor (unserved) settlements, although increasing the number of connections would have undoubtedly contributed to increasing revenue and stabilizing financial performance.

Initial lessons learned from this process are:

- To ensure that new connection funds (once agreed by government) are set up and properly ring-fenced, and that clear procedures (including third party counter approval for and monitoring and reporting of their use) are agreed, in particular when the utility has competing needs for available resources.

- Once adequately set up and ring-fenced, ensure that a mechanism exists for protecting the value of the fund against inflationary increases in the actual cost of connection, as this will lead to the net reduction of the number of new

[28] Data on progress are obtained from the Mid-Term Report on the Impact and Management of Piped Water Services in Uganda (GPOBA, 2010).

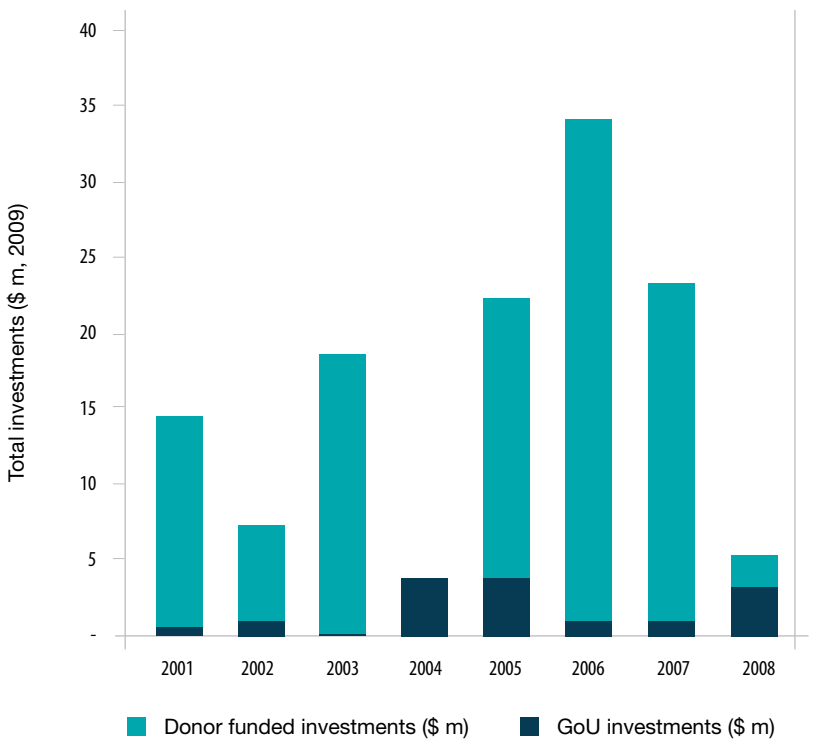
connections that can be made per annum. Two cases appear:

* Protecting the value of the surcharge collected via the tariff—by indexing the tariff on inflation. This the NWSC had implemented as a means to protect its ability to recover its operating costs from customers' bills
* Protecting the value of the funds against increases in the cost of connection—which the NWSC had not implemented.

- The NWSC could also have stimulated customer demand, in particular in poor settlements, by offering a discounted cost of connection for a time limited period.

- Ensure that the utility is already in a financially stable position before any new connection fund is operationalized—to prevent the managers of the fund from having to subsidize basic utility operations instead of planned expansion.

Figure 5: Water sector investments in Kampala (2001 to 2008)



Source: NWSC

4.1.5 Capital Investments in the Water Sector of Kampala

To be effective, any new connection fund needs to be complemented by a capital investment program to construct new infrastructure/water mains.

This Section therefore looks at the different capital investment projects that were implemented in the water sector in Kampala since 2004 to provide some indication on whether these were sufficiently mobilized (in focus and in scope) to support the Affordable Connections Policy and services to the poor in particular.

In urban areas the strategy of the government is to increase the coverage of population with improved water sources and provide money for investment in increasing capacity and distribution while stressing the commercial viability of the utility services. However, in large towns, the government found that there was extra capacity and the priority was to invest in distribution networks rather than extra capacity. As the situation in the urban water sector has improved over the years, the priority of the government has shifted to the rural areas and the annual funding in the urban water supply has started to decline for the past two years. The annual financial outlay of the government in the water and sanitation sector and in grants to the NWSC since 2001–08 are shown in Figure 5.

The NWSC estimated (also in Board Paper 571 of 2004) the potential costs of connecting all customers (domestic and nondomestic) within a 50-meter radius on either side of distribution mains. However, these costs estimates were not matched with a detailed assessment of the level of investments required to extend the network to unserved areas. This assessment came later and was mostly undertaken through donor assisted projects. These are listed in Table 12.

Table 12: Schedule of water sector investment projects in Kampala (2002–10)

Project name	Period	Funding source	Funding amount (US$ million)
Kampala Urban Pro-Poor Project	2002–2007	KFW and GoU	3.3
Kampala Peri-Urban project	2002–on-going	NWSC	1.5
Kampala Network Rehabilitation Project	2003–on-going	KFW	4.4
Mukono Water Supply Project	2003–2008	NWSC	11.1
Kampala Transmission Mains	2006–2009	KFW, NWSC and GoU	11.6
Mukono Water Supply Project (phase 2)	2008–2009	NWSC	7
Urban Pro-Poor Project (Kisenyi, Ndeeba)	2008	KFW and NWSC	2.7
Urban Pro-Poor Project (Kagugube)	2009	AfDB	1.2
Kampala Network Restructuring Project	2009–2010	NWSC and KFW	N/A
Gaba Offshore Intake Pipeline Project	2009–2010	AFD and NWSC	7
OBA Water Supply to the Urban Poor	2008–on-going	GPOBA, NWSC	4
Kampala Water (Lake Victoria) Water and Sanitation Project	2011–2016	NWSC, EIB, AFD, KFW, EoU and EU African Water Facility	250 (212m euros)

Source: Data from NWSC Corporate Planning division.

The specific pro-poor investments above were geared at increasing coverage in the poor settlements using PWPs/kiosks as principal delivery mechanisms. According to Table 12, the investments in water mains expansion (to unserved settlements) were mobilized in 2007—three years after the start of the Affordable Connections Policy.

4.1.6 Summary of Findings on Assessing Increased Access

The NWSC delivered 16,198 new connections in poor settlements of Kampala between 1998 and 2011. However, the real impact from the Affordable Connections Policy was 2,500 new yard taps and 660 new PWPs. Of the 466,542 who gained access between 2004 and 2010, however, it is considered that 21 percent, that is, 99,146 of them, were in poor settlements.

The relatively low number of additional connections in poor settlements is based on a number of factors including:

i. The fact that poor households cannot afford individual connections and thus share access to yard taps and/or PWPs.

ii. Difficulties with the high level on nonpayment in poor settlements, which resulted in 18 percent of yard taps and 36 percent of PWPs having to be disconnected. This is considered to significantly affect any effort by the NWSC to increase coverage in these settlements.

iii. The NWSC's incentive to connect as many high consuming and able paying customers, rather than the poor first. The total number of connections in 2004 was low, with many government, industrial, and domestic customers not yet connected.

iv. The lack of adequate water supply networks supplying low income settlements. This is coupled with the fact that actual investments in new

watermains, and funding to deliver additional yard taps and/or kiosks/PWPs came only in 2007. The total number of pro-poor connections may also have a reached a plateau given that additional funding for network expansion stopped in 2009 and that additional water supply capacity was required (this capacity issue, however, is being addressed).

v. The focus on expanding services to poor (unserved) settlements is still considered only on a project-by-project basis instead of at a corporate level. A long-term strategic business plan is good practice, and would enable the NWSC to plan for the whole of Kampala for both water supply and sanitation needs. Such a plan would also enable coordinated and sectorwide development support to the NWSC, in particular for poor settlements.

vi. The NWSC's decision to not set up and use a properly ring-fenced New Connections Fund principally because the additional revenue collected through the tariff surcharge was being used to subsidize basic operations (in particular between 2004 and 2006 when the NWSC was recovering only 80 percent of its operational costs). In addition, the size of the fund seems to have excluded any provision for inflation, meaning that the actual number of new connections was being eroded by increasing cost of materials, and so on.

vii. Difficulties with using PWPs as a sustainable delivery mechanism for water supply services in poor settlements, principally due to the fact that these PWPs are privately registered and that NWSC experienced a significant level of nonpayment of bills. As a consequence a large proportion of PWPs were disconnected (80 percent in 2000 before the Policy, 40 percent in 2007 and 2008, 30 percent in 2010, and 10 percent in 2011). NWSC's current strategy is now to replace all the PWPs with prepaid water supply PWPs.

viii. Difficulties with connecting poor households due to the complicated land tenure system. However, in order to be more effective, the NWSC and GoU should have tackled these obstacles much earlier as these are common issues linked to the extension of services in informal settlements, where most people live.

4.2 Impact on Financial Viability

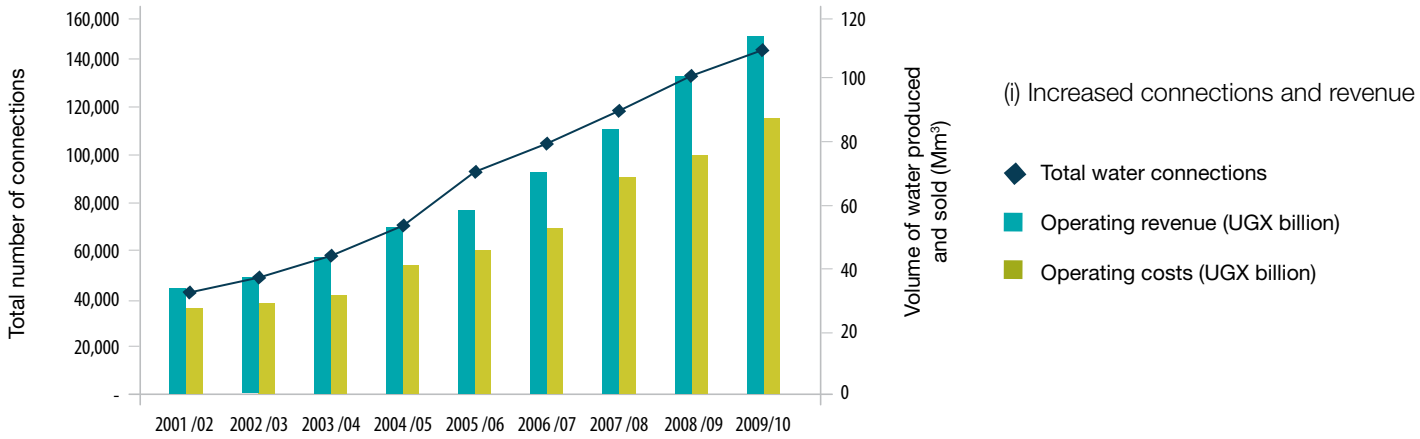
Over the period 2004 to 2010, the NWSC managed to significantly increase the total number of customers which, in turn, positively impacted revenue generation. For example, from 2004 to 2010, revenues rose from UGX54 to 113 billion (equivalent to US$27 million to $56 million in 2010 exchange rates. This resulted in a corresponding doubling of operational costs from UGX41 to 86 billion, or $20 million to $43 million in the same period.

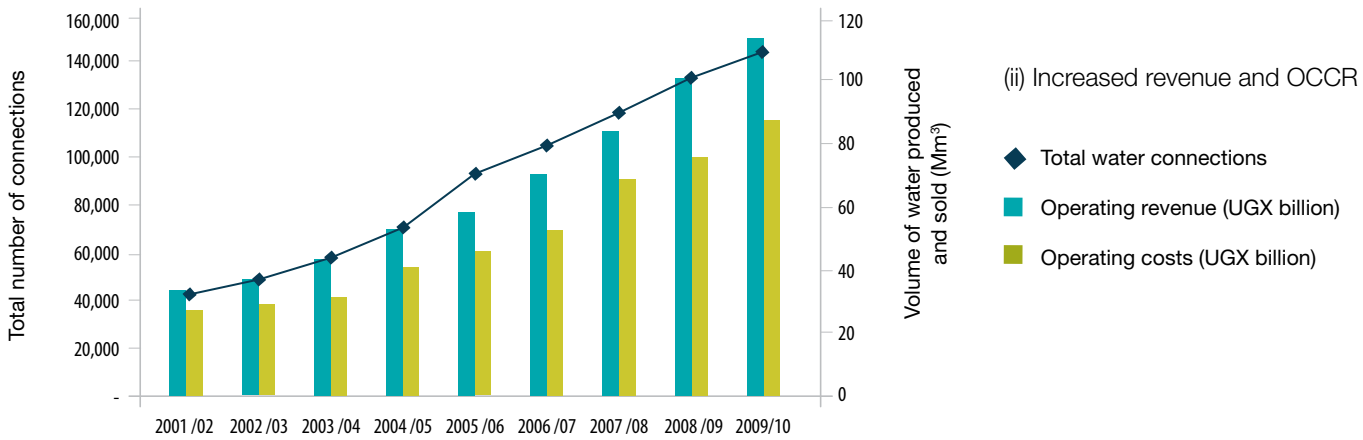
However, given that the NWSC did not set up a ring-fenced New Connection Fund it is difficult to comment on how much of the additional 11 percent tariff surcharge was (a) kept as revenue; (b) used to fund new connections; or (c) reused in operations.

This significant revenue increase is due to the increase in new customers, but also in large part due to the fact that the water supply tariff was set to ensure an appropriate level of cost recovery, and that it was kept in line with sector price indices and inflation through yearly and automatic price increases. This has also meant that the NWSC's operating cost coverage ratio has remained more or less constant at around 130 percent.[29] This is shown in Figure 6.

[29] This is excellent performance as the internationally accepted benchmark for OCCR is between 130 percent and 160 percent, meaning that the utility's revenue covers between 130 percent and 160 percent of its operating cost, thus allowing the utility to adequately maintain and rehabilitate the infrastructure.

Figure 6: NWSC financial data (2002–10)





This means that the NWSC is more and more able to focus on expanding and providing sustainable services to the poor.

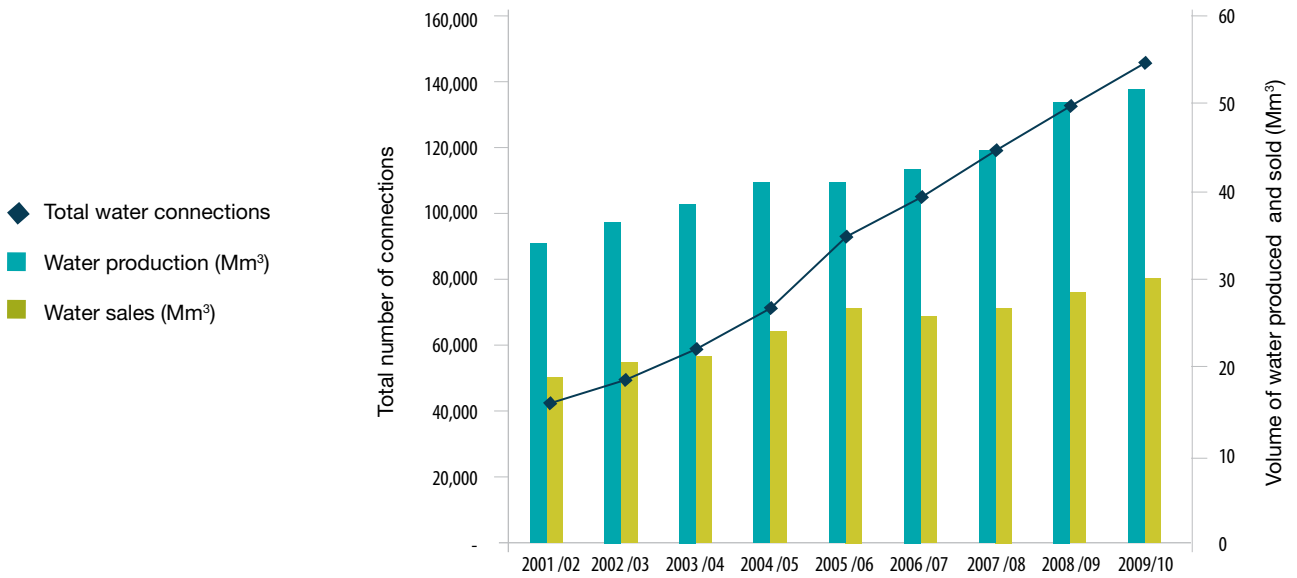
4.3 Individual Consumption

One of the tenets of the government's policy is to equitably provide services to all households (some for all rather than all for some). It is thus important to assess the range of individual domestic consumptions and to identify what factors appear to be limiting demand.

4.3.1 Overall Reduction in the Unit Consumption of Water

Figure 7 shows the total volume of water produced and sold, and the total number of connections since 2002.

Figure 7: Volumes of water produced and sold vs. total number of connections in Kampala (2002 to 2010)



It appears from the above that water sales have increased at a much slower pace than new connections between 2003/04 and 2009/10, suggesting that whilst some additional water was provided, the bulk of the water has been distributed amongst a greater number of customers. However, it is difficult to comment on whether this has reduced illegal connections or commercial losses. Therefore, this means that the average unit consumption per connection has reduced since 2004. In fact, the average unit consumption (all connections included) has reduced by half from 36.4 m^3/month to 17.3 m^3/month between 2002 and 2010.

The graph also shows that whilst there has been a significant increase in connections, which have continued to be provided at a discounted price by the NWSC (within 50 meters of the mains) and constructed by NWSC staff, NRW is still an issue in Kampala, despite the two recent network rehabilitation projects in Kampala (in 1994–98 with $18.5 million funding from Austria, and 2003–ongoing with $4.4 million from KfW). NRW is discussed in more detail in Section 4.5.

The rate of network expansion and new connections is constrained by the capacity/availability of water. It seems that this situation will start improving post-2012 with the improvements to the Gaba I and II water treatment capacity, as well as the extension of the Gaba offshore intake pipeline.

4.3.2 Unit Consumption by Customer Category

This Section considers unit consumption at individual house connections (poor and nonpoor), PWPs/kiosks and yard taps. This is illustrated (for the whole of the NWSC's operations) in Table 13.

The Sections below present and discuss NWSC data on unit consumption at yard taps and PWPs. It is considered that none of the households in the poor settlements of Kampala has an individual house connection.

Table 13: Average unit consumption per customer category (NWSC, 2010)

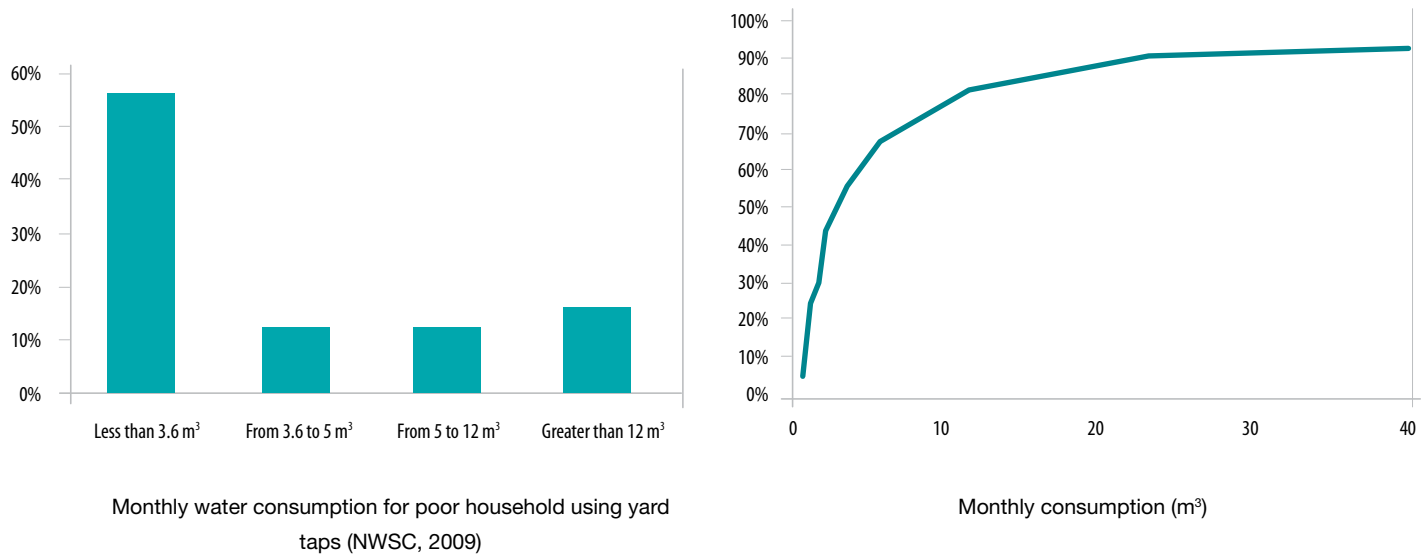
Customer category	Number of connections	% total connections	Volume of water billed (m^3)	% total billed	Average unit consumption (litres/day)
Public water points	7,748	3.1%	2,210,307	4.7%	781
Domestic (incl. yard taps)	207,350	83.7%	22,966,603	48.9%	303
Institutional/government	5,664	2.3%	9,781,786	20.8%	4,731
Industrial/commercial	27,088	10.9%	11,992,093	25.5%	1,213
Total	**247,850**	**100.0%**	**46,950,789**	**100.0%**	**519**

Note: This data is for NWSC as a whole.

4.3.2.1 Unit Consumption at Yard Tap Connections

The average monthly water consumption of poor households using yard taps in Kampala is shown in Figure 8. The graph also shows the cumulative frequency distribution of monthly consumption for pro-poor household connections.

Figure 8: Average monthly consumption of poor households using yard tap connections

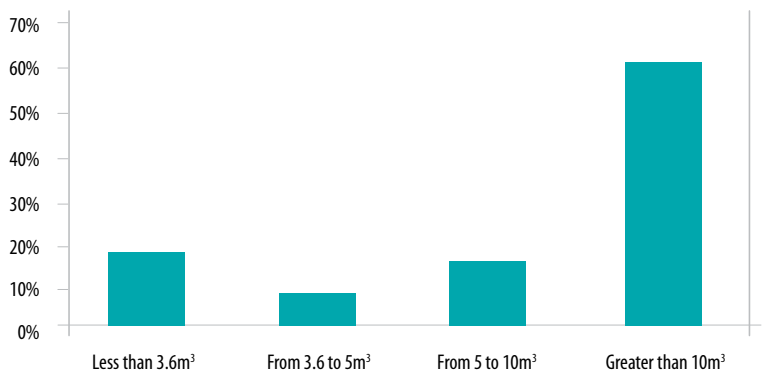


Source: NWSC customer database (2009).

From the above, it appears that 57 percent of poor households that have a yard tap connection use less than or equal to 3.6 m^3 per month—this equates to 20 liters per capita per day (lcpd) for a family of six.[30] If 20 lcpd is the minimum recommended daily water consumption then this data show that poor households are able to access the minimum volume of water recommended by the WHO. However, this also shows that poor households using yard taps are restricting their water demand to 20 lcpd. Approximately 20 percent of households use more than 10 m^3 per month, suggesting that many of these households are also reselling water.

Low consumption can be attributed to a number of reasons, including the cost of water, network pressure, interruptions, and the availability of alternative, less expensive sources of water, as well as the lack of internal household plumbing for customers using yard taps which in turn limits water used for flushing and bathing. The NWSC reports adequate network pressures and 24x7 supply, which suggests that customer demand is fully met. Poor households are therefore using the amount of water that they need and can afford. This corresponds to approximately 120 liters per day for a household of six.

Figure 9: Unit consumption at public water points in Kampala (2009)



Monthly consumption for poor households using public water points (NWSC, 2009)

4.3.2.2 Unit Consumption at Public Water Points

Only 18 percent of the PWPs show consumptions of less than 3.6 m^3 per month (20 lcpd for a family of six), because they are shared between a large number of households. This explains why 60 percent of PWPs report consumptions greater than 10 m^3 per month (55 lcpd). Unit consumption is summarized in Figure 9. These figures show that whilst individual household consumption might not be high, the low consumption at PWPs is due to the fact that these are shared.

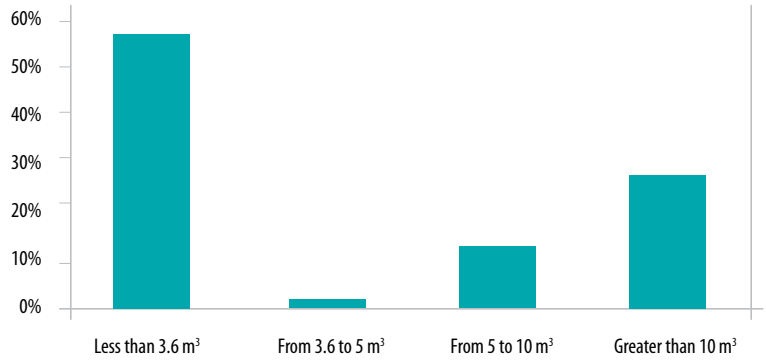
4.3.2.3 Unit Consumption at Prepaid Public Water Points/Kiosks

The NWSC is gradually replacing all PWPs/kiosks operated by private individuals with prepaid (therefore unmanned) kiosks as a means to ensure that consumption subsidies that are embedded in the tariff structure actually benefit the poor. Prepaid PWPs also improve the NWSC's bottom line by achieving virtual 100 percent revenue collection efficiency. Previously, as described in earlier Sections of the report, private PWP/kiosk operators used to charge significant mark-ups on the PWP/kiosk tariff.

The unit consumption at PWPs/kiosks is shown in Figure 10.

[30] In addition, 80 percent of households use less than 10 m^3, and 90 percent less than 20 m^3.

Figure 10: Unit consumption at prepaid public water points/kiosks



Monthly consumption for poor households using prepaid PSP/kiosks (NWSC, 2009)

The profile of unit consumption at prepaid PWPs/kiosks and yard taps is markedly different.

Similar to yard tap connections, 57 percent of the prepaid PWPs report consumptions of less than 3.6 m^3 per month—which equates to 20 lcpd for a family of six (120 liters per day per household). This is low given that the prepaid PWPs are shared between many households, but may be due to the fact that the prepaid water supply PWPs are still at the pilot scale and thus not yet fully integrated within the communities they serve.

However, close to 30 percent of prepaid PWPs report consumptions greater than 10 m^3 per month (55 lcpd for a family of six), similar to normal PWPs.

One factor that may impact on individual consumption at prepaid PWPs is the availability of tokens to purchase water from these PWPs, and the ease with which users are able to keep the tokens topped up with credit. Individual consumption at prepaid PWPs may actually be higher once more such PWPs and more tokens are provided.

In addition, it is considered that low unit consumption at PWPs is due to the presence of a large number of alternative sources of water which are free or cheaper than the NWSC's piped drinking water. Thus, if individual household consumption at PWPs is low—it is only reflective of the volume of water which households purchase for drinking and cooking. Other uses, including washing and ablution, are met with other sources of water, including but not limited to wells, boreholes, springs, and public ablution blocks (for example, public and private Sulabh toilets/showers).

Pictures 1 and 2 illustrate prepaid public water points/kiosks and yard taps in Kisenyi, a low income but formal settlement in Kampala. The technology used for yard taps and prepaid PWPs can be the same: the only difference is in the location of the yard tap/PWP (public thoroughfare or gated private land), or the number of people using it, and under what name the yard tap/PWP is registered with NWSC.

1 Picture 1: Prepaid public water point/ kiosk in use in Kisenyi, Kampala (2011)

2 Picture 2: Prepaid private yard tap in use in Kisenyi, Kampala (2011)

3 Picture 3: Unprotected shallow well in Kisenyi (Kampala, 2011)

Note: In this case the unprotected shallow well was 4–5 meters in diameter and 3 meters deep, acting like a below-ground storage reservoir. The water level was 2.5 meters deep.

4 Picture 4: 'Protected' but unsafe spring in Kisenyi (Kampala, 2011)

Note: In this case the spring is deemed unsafe due to the presence of houses and latrines directly on top of the spring catchment.

5 Picture 5: Public and private Sulabh toilets in Kisenyi (Kampala, 2011)

Note: Above left is a public Sulabh toilet, which comprises separate toilets and showers for men and women. Above right is a private Sulabh toilet which is shared by 14 families. The building comprises a toilet and a shower, shared between men and women.

Pictures 3, 4, and 5 illustrate some of the alternative sources of water in Kisenyi (Kampala).

The NSDS survey of 2008 states that the average water availability in urban areas is 70 liters per day for a household; this corresponds to 2.1 m^3 per household per month, or less than 20 lcpd for a family of six.

Some parishes or subcounties have become better connected to improved water sources, while others lag behind. Branchwise analysis of variation within Kampala of estimated domestic consumption by the poor of improved water sources in informal settlements is shown below.

The average monthly domestic consumption for the poor differed between branches and ranged from 4.98 to 19.40 m^3 per household. Higher unit consumption confirms the extent of water resale, in particular in the City Centre, Kansanga and Nakulabye areas. The lowest unit consumption was encountered in the Nansana and Mukono areas located on the outskirts of the city, in areas where watermains coverage is the lowest.

4.3.3 Summary of Findings on Assessing Unit Consumption

The NWSC's significant expansion program was not supported by an equally significant capital investment program to increase water supply capacity, despite some significant investments being committed in 2011. This means that average unit consumption has reduced from 36 m^3/month to 17 m^3/month (including all customer groups).

Unit consumption at yard taps seems to be the same as that at PWPs. This would suggest that the only difference between yard taps and PWPs is proximity to dwelling (and thus convenience). In both cases the majority of households (about 60 percent) seemed to be using 20 lcpd, which is the minimum amount of water per capita per day proposed by the WHO.

It is considered that alternative water supply sources in Kampala (most of which are not safe, see Section 2.5.1) are providing a significant disincentive for households to purchase treated water from the NWSC (treated water that is used for uses other than drinking, that is, washing clothes, and so on), and therefore an equally important disincentive for the NWSC to provide anything other than PWPs to the poorest households.

It is recommended, therefore, that clear policy direction be given regarding the future of all available nonpiped drinking water sources in Kampala. This needs to take into account the negative health impact of poor households using these sources, as well as a realistic estimate of the cost of either physically closing or rehabilitating (including protecting the source catchment) all these sources.

4.4 Distance and Time Spent

Distance to supply and collection time are two important socioeconomic factors in water supply services as they generally affect the livelihood of only one type of customers: women and girls. The NSDS 2008 confirms that 65 percent of individuals who carry water from the PWPs to the house are women. Distance to supply and the time spent waiting in the queue at the PWP therefore prevent individuals, and women in particular, from entering into an economic activity. Reducing the time taking to fetch water is, therefore, intimately linked with reducing poverty.

4.4.1 Distance to Water Sources

The NSDS 2008 survey provides useful, although limited, information on the average time and distance to supply in urban areas in Uganda (not Kampala specifically). The report states that the average distance to a water sources was 0.9 km and 0.6 km during the dry and wet seasons, respectively. This is assumed to exclude

all households with individual connections and/or yard taps, that is, the poorest households. In 2004 a similar assessment showed that the average distance was 1.1 km and 0.9 km, respectively. The slight increase during the dry season confirms that households are able to use alternative and seasonal sources at different times of the year, and that consumption at the NWSC's points of supply (in particular at PWPs which individuals have to walk up to) is seasonal.

The distribution of households by distance to water source is shown in Table 14.

The fact that 7 and 4.2 percent of individuals in urban areas walked up to 3 km to a water source in 2004 and 2008, respectively, confirms that there are some pockets with only limited, or nonexistent, water supply. Individuals in these areas can only walk up to 3 km to obtain their water. The situation has somewhat improved though but would illustrate that there is a need to increase the number of water mains extensions in urban areas in general.

4.4.2 Collection Time for Water

The NSDS 2008 survey provides useful information on average collection times for water in urban and rural areas. However, no data is available for Kampala only. Water collection time is proportional to distance and to the number of individuals that are sharing a particular access point (for example, a water point). Table 15 estimates the total water collection time based on (a) waiting time at source; and (b) time taken to and from the water source.

Table 15 shows that there has been a significant reduction in the total water collection time between 2004 and 2008, in both dry and wet seasons: this has been halved. However, time spent at the water sources has reduced the most: 60 percent in the wet season and 42 percent in the dry season. This suggests that whilst the number of water points has increased, the pressure (and therefore the convenience) of water available at these water points may also have increased. Whilst this is not an outcome of any of any of the pro-poor approaches implemented by the NWSC, it may be the result of improved operational efficiency in the system.

Table 14: Distribution of households by distance to water sources during the dry season (urban areas)

Distance in km	2004	2008
Less than 0.5 km	75.1	86.5
0.5 to 1km	14.0	8.3
1 km to 1.5 km	1.7	0.3
1.5 km to 3 km	7	4.2
Greater than 3 km	2.6	0.8
Total	100%	100%

Table 15: Average collection time for drinking water in urban areas

Waiting time (in minutes)	2004		2008	
	Dry season	Wet season	Dry season	Wet season
At water source	38	25	22	10
Time taken to and from water source	22	17	13	10
Total water collection time	60	42	35	20

4.5 Affordability

This Section considers affordability of the discounted connection fee and the water tariff, and discusses the impact of the consumption subsidy on the poor. The World Bank reference document for assessing the targeting efficiency of connection and consumption subsidies was published in 2005 (Komives et al.).[31] It considers the following:

[31] Komives, K., V. Foster, J. Halpern, and Q. Wodon. 2005. "Water, Electricity and the Poor: Who Benefits from Utility Subsidies?" Published in *Directions in Development*, by the World Bank.

i. Benefit incidence, which measures how well the subsidy instrument benefits the poor versus nonpoor households.

ii. Beneficiary incidence, which assesses whether poor households actually receive the subsidy, and the degree to which poor households (that could benefit) are excluded.

iii. Materiality, which measures the value of the subsidy received by the poor as a percentage of household income.

However, assessing these indicators requires more information than is available in this case study, including the number of households (poor and nonpoor) that live within 50 meters of the water mains and thus have access to the subsidy, and the number of households (poor and nonpoor) that, once they had access, actually connected to the water mains.

This Section assesses the affordability of the connection fee, expressed as a percent of monthly income, and of the tariff, expressing the monthly expenditure on water as a percent of monthly income.

4.5.1 Affordability of the Connection Fee

The average monthly income of poor households in Kampala is $48 (or UGX80,000), according to the NWSC and GPOBA.[32] The NWSC charges domestic customers UGX59,000[33] which is 74 percent of the average monthly income of poor households. This is a significant proportion of monthly household income and a significant barrier to access to water supply services—in particular individual connections and yard taps.

The NWSC, therefore, has to pay all the additional cost increases for pipes and materials due to inflation. Whilst the NWSC has protected itself against increases in operational costs, the fixed discounted connection fee is proving costly to administer and may explain that the rate of new connections in poor settlements has reduced since 2008, as the actual unit cost of connection (that is, the additional length of service line) increased from year to year with inflation.

4.5.2 Affordability of the Water Tariff

According to the NSDS (2008) survey, the average monthly household expenditure on water in Kampala is UGX10,960. However, the report also states that the people were willing to pay only UGX5,610 per month. The NSDS 2008 did not present any findings relating to average monthly income and/or expenditures, so it is not possible to comment on affordability from the NSDS 2008 report.

However, according to the UNHS (2005–06) report, the average monthly household expenditure in Kampala in 2005–06 was UGX333,704 which, using a CPI inflation rate index of 128 percent (from 2005 to 2009), corresponds to an average monthly income/expenditure of UGX425,803 per household. This in turn corresponds to an average household expenditure on water of 2.6 percent of monthly income/expenditure. This is considered to be an acceptable level of expenditure.

The analysis of the prepaid data shows that at the lowest official rates of water that is, UGX867 per month, for achieving this minimum average of 20 liters/day a household has to pay UGX3,121 ($1.56) per month. For an average poor family living below the minimum poverty level of $1.25/day, this constitutes 3.9 percent of the monthly expenditure. This is also considered to be an acceptable level of expenditure, although the level of consumption is low (20 liters per capita per day).

However, there are only a limited number of prepaid meters. This means that poor households are continuing to purchase water from PWPs that are managed by private individuals who charge significant mark-ups, particularly when water is scarce. A survey of the slum areas of Kisenyi I and II and Ndeeba, undertaken by Beller Consult in

[32] This equates to daily income of $0.26 per capita per day assuming a household size of six.
[33] This is equal to UGX50,000 plus 18 percent VAT.

2006, revealed that the poor spend UGX4,000–20,000 per month on water. Thus those below the poverty line spend up to 5–25 percent of their monthly incomes on water. This is confirmed by the NSDS (2008) survey results: 41.3 percent of the urban households in Kampala reported high costs to be a major constraint limiting access to safe water, probably because they are being charged mark-ups by middlemen.

This is acting as a further incentive for poor households to continue to use alternative sources of water that are not safe.

The NWSC is planning to replace all privately managed PWPs by prepaid meters—to ensure that poor households can benefit from the pro-poor consumption subsidy embedded in the tariff structure.

4.5.3 Impact of the Consumption Subsidy on Poor Households

The differential tariff has had a positive result in two respects. The first is that the intended tariff subsidy is passed on to the poor consumers, and the second is that additional revenue was collected and reinvested into a self-funded new connections program.

However, the cross-subsidy in the case of the NWSC is not significant as large commercial/industrial and government/institutional consumers are only charged twice the PWP tariff.[34] This is further compounded by the fact that poor households use a minimum amount of water.

NSDS (2008) shows that 26 percent of the urban population uses PWPs or kiosks. These PWPs constitute 4.7 percent of the total volume of water consumed and account for 2.2 percent of the total revenue of the NWSC (Annual Report 2009/10). This is summarized in Table 16.

Given the data below, it is considered that poor households are unlikely to make the most of the intended public health benefits of the consumption subsidy as they are only consuming a minimum amount of water. This is explained in more detail in Box 4.

Box 4 shows that the poor, who are purchasing water from PWPs, capture a significantly smaller subsidy than households that are connected individually, including normal house connections and yard taps. Furthermore, the subsidy that accrues to poor households is limited by the small volume of water that they use (on a per capita basis).

Table 16: Water market segmentation and individual consumption (2010)

Customer category	Number of connections	% total connections	Volume of water billed (m^3)	% total billed	Revenue collected (UGX '000)	% total revenue
Public standposts	7,748	3.1%	2,210,307	4.7%	2,682,881	2.2%
Domestic	207,350	83.7%	22,966,603	48.9%	45,487,035	37.3%
Institutional/government	5,664	2.3%	9,781,786	20.8%	31,706,781	26.0%
Industrial/commercial	27,088	10.9%	11,992,093	25.5%	42,072,459	34.5%
Total	**247,850**	**100.0%**	**46,950,789**	**100.0%**	**121,949,156**	**100.0%**

* [34] For comparison: the ONEA in Burkina Faso has a subsidy factor of five between industrial customers and public standpipes. But the ONEA is reported to have exclusive right to the use, and management, of water resources in a dry environment, whereas NWSC customers can obtain water from alternative sources, if this becomes more economical.

Box 4: Assessment of the quantity of subsidy that targets poor households

Using NWSC data presented in Table 16, it is possible to estimate the total quantity (in UGX) which goes to poor households, making an assumption that the proportion of yard taps over domestic customers is similar in the NWSC's service area as it is in Kampala. By calculating the average tariff per customer category (using total revenue/customer category divided by volume billed) it is possible to estimate the flow of funds that customer categories receive or contribute. Thus it is possible to estimate the level of subsidy that poor households receive—per annum. This is summarized below.

Customer category	Average tariff including service charge	Flow of funds (from volume sold & average tariff)	Subsidy per connection per annum
Public water points	1,214	3,058,131,641	394,699
Domestic	1,981	14,166,016,880	68,319
Institutional/government	3,241	(6,299,741,581)	(1,112,243)
Industrial/commercial	3,508	(10,924,406,940)	(403,293)
Total	**2,597**	-	-

The table suggests that PWPs receive on average UGX395,000 per annum subsidy, or UGX2,631 per person per annum (assuming one PWP serves 150 people). Whilst it is not possible to estimate the average subsidy received for yard taps compared to nonpoor connections, the average subsidy for connections is UGX68,319 per annum or UGX10,295 per capita (assuming a weighted average of 6.6 people per connection), which is nearly four times as much. The consumption subsidy thus unequally favors nonpoor households instead of the poor (PWPs and yard taps). This is due to the fact that they only use a small amount of water and that they are not connected.

Furthermore, it is considered that a flat rate tariff structure does not provide any signals to consumers (all categories) to conserve (and not waste) water.

To ensure that more of the consumption subsidy goes to poor households, the NWSC would need to ensure either that (a) the poor are able to purchase a greater volume of water; or (b) the differential tariff for high consumers is increased, or both. Increasing the tariff charged to industrial and commercial customers may lead to their developing their water supply systems, and thus no longer contributing to the total subsidy amount. However, government/institutional customers may be forced to contribute more to the total amount of subsidy.

The most likely option for helping the poor use more water may be to simply improve the quality of drainage and sanitation in poor settlements—an important aspect which the GoU and NWSC have completely sidelined.

4.5.4 Summary of Findings on Affordability

The simple assessment of affordability has showed the following results:

i. Despite the significant discount offered by the NWSC on its connection fee, the discounted connection fee (UGX59,000 or $35) is still a major hurdle for the poorest households to access water supply services within their premises, as it represents 74 percent of average monthly incomes of poor households. Options for improving this situation may include (a) making the fee payable in monthly

installments; and (b) giving customers a time-limited window of opportunity to connect at a cheaper cost for the poorest. This might incentivize increased connections—provided households have access to a water network.

ii. The differential and flat rate water tariff, in particular the specific PWP tariff, is affordable for poor households as it represents about 3–4 percent of their monthly income/expenditure. However, this consumption subsidy is only affordable for poor households because they use, on average, 20 liters per day per capita.

iii. The targeting of the consumption subsidy on poor households, despite the limits on available data, has been found to be very poor—precisely because poor households use only 20 liters per capita per day. As such the greatest beneficiaries of the consumption subsidy are the nonpoor domestic customers that can also use a flat rate tariff structure which encourages liberal usage of water. Poor households that use PWPs benefit from a subsidy of about UGX2,600 per capita per annum (only $1.3), whereas domestic customers on average benefit from about UGX10,300 per capita per annum ($5.15). However, given that the total number of yard taps (10,993 as per NWSC data) represents only 5 percent of the total number of connections, the difference is likely to be much greater.

iv. Options available to the NWSC to improve subsidy targeting include:

- Increasing the degree of cross subsidy to poor households, either from nonpoor domestic, industrial and governmental or a combination of the above; or
- Ensuring that poor households use more water. This may be achieved by improving the sanitary conditions in poor settlements—and therefore permitting households to use more water—and limiting the availability of alternative sources of water, or a combination of the two.

4.6 Social Impact Analysis

This Chapter presents the results of FGDs that were undertaken with stakeholders and key informants, including consumers, water vendors and NGOs. Interviewees were asked to provide some feedback on the positive and negative impacts of the NWSC's pro-poor policies and strategies.

The group representing domestic customers acknowledged the increase in water availability in their settlements as well as the overall reduction of the price of water charged at PWPs. Although the increase in the number of connections in the poor settlements directly attributable to the pro-poor policies and strategies implemented by the NWSC is only 4 percent of the total number of new connections (as demonstrated earlier), increasing the number of PWPs has had a significant impact on poor households' expenditure on water, and can be considered to have directly impacted the poor. In addition, the analysis of unit consumption at PWPs and yard taps suggests that poor households use, on average, 20 liters per capita per day—whether they purchase water from PWPs or yard taps. This is a significant finding from this study and is confirmed through the social impact analysis and group discussions. Discussions also showed high customer satisfaction with the prepaid PWPs, despite the initial difficulties with launching the pilots.

The assessment also confirms a number of already documented concepts that are still very relevant to urban pro-poor water sector practitioners, including:

- The social connection program generated a lot of demand from poor households, in particular, households that had an illegal connection.

- Customers fetching water, most of whom were women and young children, felt reassured that many of the PWPs and kiosks were managed by women.

- One of the principal drawbacks of PWPs is that they are usually not available after working hours. This confirms one of the key strengths of prepaid PWPs (which are unmanned and thus available 24hx7).

- Water vendors and existing kiosk operators are likely to see their water revenues reduce if water supply coverage is increased in the poor settlements within which they work. To prevent them from potentially vandalizing the new infrastructure, it is important that they (as well as other more formal community structures) be involved early on in the process

These are presented by customer category/group in Table 17.

4.6.1 Impact of Pro-poor policy on other utility Priorities

One of the stated objectives of the Affordable Connections Policy was to reduce NRW, including technical (leaks) and commercial losses (metering, customer billing, and revenue collection). This Section considers the reduction of technical losses only.

The Affordable Connections Policy has had an undeniably positive effect on the NWSC's operations and on customers, but NRW is still a key issue for the Corporation, in particular in Kampala.

As the number of connections and the volume of water supplied increased and water became more freely available, the prices of resellers came down until a large number of them were driven out of business. Further, all the pipes became the property of the NWSC and the use of standardized materials for connection reduced NRW from 37.6 percent (Kampala 44.7 percent) in 2003–04 to 33.5 percent (Kampala 40 percent) in 2008. NRW is shown below in Figure 11, expressed in percent of water (produced) lost and in m^3 per km per day.

Whilst the Affordable Connections Policy has provided a large number of well built (and therefore leak-free) connections, water losses are potentially not coming from leaking connection pipes but from distribution and transmission mains. To this effect the Corporation is implementing water network rehabilitation programs. Commercial losses are also being incurred through PWPs that have been disconnected due to nonpayment, and thus becoming inactive. However, overall, this is considered to have a minimal effect on the NWSC's operations as less than 5 percent of the volume of water sold in Kampala is supplied to the poor settlements.

Commercial losses have been reduced significantly through the installation of a modern customer billing and revenue collection system. This is further likely to be improved if the NWSC is able to replicate prepaid PWPs in poor settlements. In addition, it is understood that the GoU wants all institutional and government customers to receive water on a prepaid basis. This is likely to be implemented in 2012.

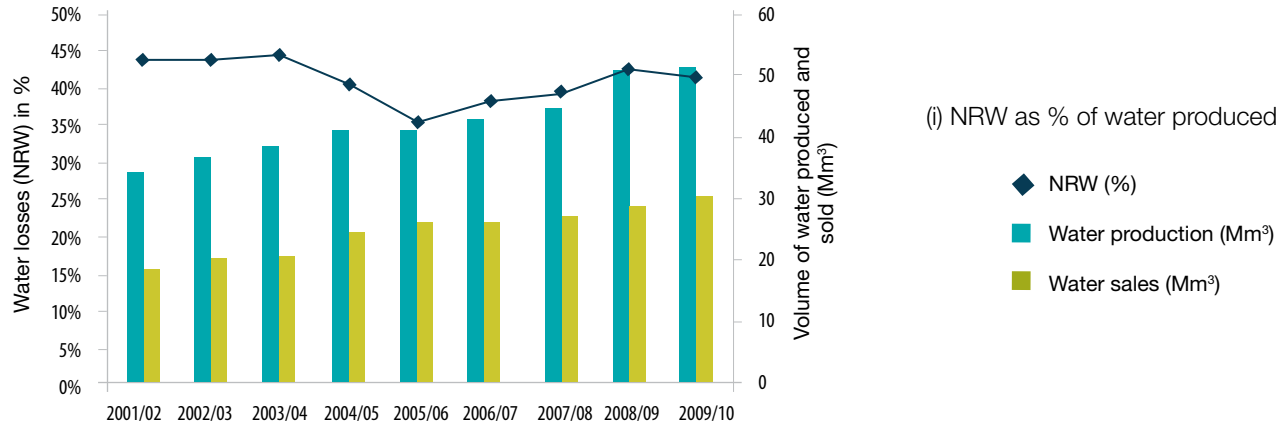
Improvements in NRW for Kampala (in particular, the level of technical losses) are expected to improve when the old network, especially in the Kampala city centre, is refurbished. This is expected to happen when the project under way supported by the European Investment Bank, KfW, and the European Union (EU) is implemented from 2012 to 2016.

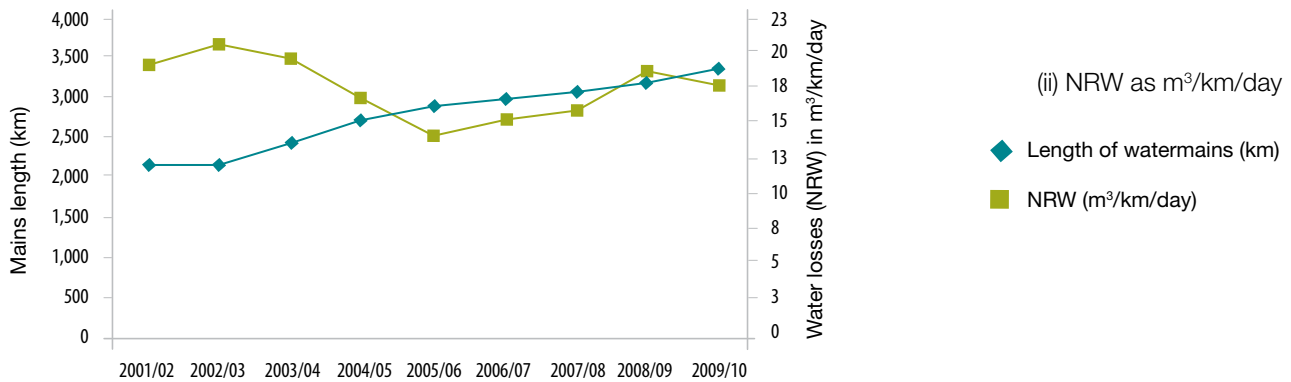
Table 17: Summary of FGD on impacts of NWSC pro-poor policy

Views and opinions of stakeholders	Positive Impacts	Negative Impacts
Domestic consumers	• New connections (domestic) have led to an increase in water availability and a reduction in monthly expenditure. • When additional kiosks were provided this, first, reduced the unit price of water (supply/demand) and also limited the historical seasonal increase in tariff to UGX50–100 instead of UGX100–300 in more distant (and less well served) areas. • Significant improvements in customer satisfaction from all newly connected poor households; some mentioned that the new water supply connections provided some legitimacy to the household. • **The social connection policy generated a lot of demand from households that were either poor and/or had an illegal connection to the mains.** • Increase in number of connections helped in saving women's and girls' walking, queuing, and waiting time to collect water. • Customers were very satisfied with prepaid water kiosks/PWPs. • **The presence of a majority of female kiosk operators (43 percent of kiosk operators are women) increases the acceptability of collection points to the majority of water carriers who are still women and children.**	• No assessment of sanitation conditions in newly connected households which are able to use and purchase a lot more water (and hence generate proportionately volumes of wastewater). • Consumers living on the outskirts of the city, where there are fewer watermains as the network had not yet been expanded to reach these areas, where network pressure is low (for example, hilly areas) or service is discontinuous, may not have benefited from the pro-poor policy. • In all the above, the unit tariff for water (for example, per 20-liter jerrican) is likely to have increased. • Some of the connected customers (who did not benefit from the free connection policy) were critical of the tariff increase, although general dissatisfaction was low as the monthly water bills were still very affordable. • Some households which consumed a lot of water (and/or were reselling water) complained about being charged a substantially higher rate by the NWSC (Domestic rate: UGX1,341) as compared with the PWP rate of UGX867, although they were also providing service. • Increasing the number of PWPs/kiosks and Presidential Pledge taps, with two different tariff structures, leads to a lot of confusion. • Some of the new PWPs/kiosks were not available outside of normal working hours (and this is a strong reason for promoting prepaid, unmanned, PWPs/kiosks). • Major issue with prepaid water kiosks/PWPs was the poor availability of tokens—both in total number and in selling/purchasing points: some customers reported that the unavailability of tokens led to their being sold at higher prices (completely distorting the intention and impact of the new system). • Social connection policy works only where there are existing watermains or where extensions can be built. It is not a solution for illegal settlements. • Social connection policy (free connections, and so on) needs to be accompanied by a strong campaign to prevent households from using unsafe (unprotected) sources, in particular when these sources are available (as is the case in Kampala).

Other consumers (for example, industrial)	• No positive impacts mentioned, although approximately 10,000 new industrial connections were made from 2004 to 2009.	• The level of cross-subsidy has increased (from industrial to domestic) and some industrial customers are considering developing their own water resources (and thus stop being NWSC customers). • This could significantly affect the sustainability of the whole urban water sector, in particular in areas where there is a significant proportion of such high-paying customers (Kampala, Entebbe. and Jinja), and is a major risk in the development and setting up social connection policies where new connections are funded directly from an increase in the water tariff (cross-subsidies across customer categories).
Vendors and kiosk operators	• The role of the operators was very crucial to the success of the PWP/kiosk scheme. These operators were generally poor people and were often appointed as operators as they had donated the land on which the PWP was located. They would work for more than 10 to 12 hours per day or, if their houses were located next to the kiosk, almost round the clock. In most areas they were given stiff competition by the domestic yard tap owners in slum areas. Most of the domestic yard tap owners (more than the 50 percent assumed by the NWSC) were found to be selling water in the informal settlements. • Water resellers constituted an important part of the distribution system and increasing the availability, albeit at a price. In certain areas the vendors used to carry water from distances as far as 1 km and then sold it at UGX300 per jerry can.	• Vendors and kiosk operators will be losing revenue, in particular in areas where customers are able to obtain free (discounted) new domestic connections. • This may lead to, or increase, vandalism.
Community-based and nongovernmental organizations	• The NWSC had used community organizers for promoting prepaid systems, who were highly effective in locating the areas with water deficits and convincing communities in drafting the applications for a PWP. • Most of the NGOs were found to be small in capacity and could take only small operations in the area. However, generally, they were appreciative of the change in the water situation, and of prepaid PWPs in particular.	
Vendors of prepaid tokens	• Prepaid token vendors are a key link in the system as they recharge the prepaid tokens of the consumers by remaining mobile in the area. However, as there are only eight vendors and their place of business not fixed, the accessibility of these vendors was a key issue as many customers could not meet them in times of need.	

Figure 11: Nonrevenue water expressed in % of water produced and in m³/km/day (2004-2010)





4.7 Summary of Achievement of the GoU's Objectives

This Section makes an assessment of the degree to which the GoU sector policy has been achieved. Each of the components of the GoU's and NWSC's pro-poor policies and strategies are commented on, in the order in which they have been discussed (in Section 3.2.2 of the report). Comments are provided on the achievement of each of the components of the GoU's and NWSC's policy. Where relevant, recommendations have also been made on how each of the policies and strategies could be met and/or improved.

The findings are presented in Table 18 in the same order as they were presented in Section 3.2.2.

Table 18: Achieving the components of GoU and NWSC policy

GoU policy	NWSC policy measure	Comments
1. Equitable allocation of subsector budget.	Affordable Connections Policy.	Allocation of sector budget to poor households has improved but is not considered equitable yet as the NWSC still has much lower per capita budget for poor households than nonpoor (and nondomestic). In addition, the amount of subsidy captured by the poor is much lower than normal domestic connections (including yard taps). This could be corrected if the NWSC developed a detailed business plan that covers all areas of Kampala, especially the poor settlements, and if a strategy is developed to help poor households get more water.
2. Improve overall sector performance.	Cut costs, improve revenues.	Overall sector performance has been improved: the NWSC has significantly increased its customer base, has an appropriate (indexed) tariff structure, and is collecting much more revenue.
3. Enhance access by increasing the density of network/points and expanding to unserved areas.	Not part of the NWSC's policy but linked to the Affordable Connections Policy.	Access in poor settlements has improved but significant mains extensions are still required, in particular in the poor areas that are on the outskirts of the city (where the poor also live). This could be corrected if the NWSC developed a long term business plan for improving water supply (and sanitation) services in the whole of Kampala. This business plan would identify specific needs, schemes, and secure funding sources.
4. Target vulnerable groups such as women, and people with disabilities and HIV/AIDS.	No special policy of preference to these groups.	See the point above. The pro-poor policy was initially targeted to serve the poor. Whilst it did benefit the poor, the majority of beneficiaries of the Affordable Connections Policy were, in fact, nonpoor domestic and other nondomestic categories (as evidenced by the fact that 4 percent of the new connections are directly attributable to the connection policy). This was recognized by the NWSC and its partners and led to the implementation of the Po-Poor Targeting Project with support from the GPOBA.
5. Monitoring impact of W&S services on the poor.	Pro-poor service delivery mechanism: Setting up the Urban Pro-Poor Branch.	The Urban Pro-Poor Branch was set up in 2007 to promote, plan, and improve service provision to the poor settlements of Kampala. This report is, however, the first assessment of the impact of water supply policies and strategies on services to the poor. The Ministry of Water and Environment has instituted large scale and broad-based monitoring and evaluation processes called the MoWE's Sector Performance Reports.

GoU policy	NWSC policy measure	Comments
6. Encourage participation of the poor and give them a voice.	Pro-poor service delivery mechanism: Setting up the Urban Pro-Poor Branch.	The Urban Pro-Poor Unit was set up in 2007 and has been encouraging participation of poor men and women since then. However, to increase the impact of the Affordable Connections Policy on the poor, additional investments are needed both in water supply capacity and water network expansion.
7. Establishing public water points.	Affordable Connections Policy.	Although a large number of PWPs were constructed. it is considered that as much as 50 percent of them are inactive. These are disconnected because private operators do not pay the monthly bill to the NWSC. This is having a negative impact on poor households (who continue to use expensive PWPs or alternative sources of water) despite the NWSC's recent testing of prepaid PWPs. The Corporation is gradually going retrofit all PWPs to prepaid as a way to prevent disconnection of a community due to nonpayment of an individual.
8. Pro-poor tariff structure.	Pro-Poor Tariff.	The differentiated flat rate tariff is allowing poor households to access water from PWPs and yard taps. The NWSC has set up a system that automatically considers yard taps with high consumption as PWPs. However, domestic customers are capturing a large amount of the subsidy that was in fact designed to help the poor, because of the limited volume of water sold to poor households (total of less than 5 percent per annum for about 50 percent of the population).
9. Subsidizing yard connections serving as authorized public water points.	Pro-Poor Tariff.	There has been a significant increase in the number of yard taps. However, this has been limited in time as the number of new yard taps has reduced post-2007 (to pre-2004 levels). This is considered to be due to the lack of water network coverage and water supply capacity. The unmet additional demand from yard taps is considered to be significant and can only be met with additional and equally significant capital investment programs.
10. Subsidy policy.	Pro-Poor Tariff.	The cross-subsidy could be improved, as it is currently low—with government, institutions, and commercial customers paying twice the unit rate charged at water points/kiosks. In addition, the poor are not benefiting as much as they could from the subsidized consumption subsidy because they are not using much water. The GoU and NWSC to address alternative sources.
11. Continuous monitoring of water quality.	Regular monitoring of water quality.	Water quality at the NWSC's taps is considered to be adequate. However, poor households are not able or willing to use more than the minimum amount of 20 lcpd and thus use alternative sources that are unsafe. This is considered to be a significant public health risk as well as a disincentive for the NWSC to serve them until clear policy guidance is given on the future of all alternative sources.

4.8 Review of Results and Lessons Learned

This Section is divided into two subsections: a description of the elements of the policy which have been successful, and elements which could be improved.

Each subsection is subdivided into the following Sections: general comments on overall utility performance; comments on the Affordable Connections Policy; comments on the differentiated and pro-poor tariff; comments on pro-poor targeting; and finally, comments on the four delivery mechanisms (pro-poor unit, PWPs/kiosks, Presidential Pledge taps/PWPs, yard taps and prepaid PWPs).

4. 9.1 Elements of the Pro-Poor Policy Which Have Been Successful

The pro-poor policy was successful due to the following factors:

General:

i. Financial sustainability as a key requirement for serving poor households: It is considered that the NWSC's broad-based policy has allowed the utility to significantly improve its financial sustainability (tripling revenue between 2004 and 2010), and that this is a key requirement for utilities before they can realistically serve poor households.

ii. NWSC's improved operations: The NWSC has had to significantly increase the efficiency of its operations (both technical and financial) to plan for, procure, and manage the increase in customers. This has required employing more and better trained staff, setting up key performance contracts with staff and with internal independently managed water supply operations, applying for and obtaining an effective tariff structure, as well as installing a new customer billing and revenue management system.

Component 1: Affordable Connections Policy

Increasing the number of connections across the board: The Affordable Connections Policy was an intelligent move to increase the domestic consumer connections base of the NWSC—it led to economies of scale and increased revenue and infrastructure investments in the long term. The policy was implemented through a reduction in connection fees by more than 50 percent while reducing reconnection fees by 75 percent. These new connections were funded by a 10 percent surcharge on the water tariff. It is considered that 4 percent of the new connections that were made through the social connection policy between 2004 and 2009 actually went to poor households, but that 21 percent of the beneficiaries were the poor.

Component 2: Differentiated and pro-poor tariff/cross-subsidy in tariffs: Three types of cross-subsidies were utilized: differential tariff rates with lower rates for the poor; cross-subsidy across different areas; and subsidizing of new connections with the 10 percent surcharge in tariff.

Component 3: Pro-poor targeting

Geographical targeting: The recent project implemented by the NWSC, with support from the GPOBA, is proving that geographical targeting of poor households offers significant opportunities to increase coverage (volumes of water sold and thus financial sustainability) in poor, unserved areas, and demonstrates that performance-based subsidies are an efficient demand-based financing mechanism to extending services to poor households in designated areas.

Delivery Mechanisms

i. Creation of a pro-poor branch in the NWSC: Creation of an organizational structure and institutional mechanism to initiate, facilitate, and continuously

monitor pro-poor initiatives, update MIS and coordinate the activities of different interest groups (including the NWSC's own operational branches) and organizations was a very positive step. This allowed NWSC dedicated personnel to concentrate on pro-poor activities, a focus that the organization lacked earlier.

ii. **Prepaid water system**: A careful and well-thought out introduction of prepaid PWPs has led to its widespread acceptance by consumers, politicians, NGOs, and even the press. This has largely eliminated the middlemen in water supplies and made water affordable at the official price of the NWSC. However, these still need to be replicated at scale.

4.9.2 Recommendations for Improving the Pro-Poor Policy

General:

i. **Development of a long-term business plan**: The NWSC and its partners serve the poor on a piecemeal and project-by-project basis. Instead, a long term business plan is required which coherently identifies needs, specific schemes, and funding sources for expansion of services to the whole of Kampala. This would catalyze the NWSC, GoU, customers and development partners.

ii. **Setting pro-poor targets for decentralized units and individual staff level**: Although the NWSC has objectives to expand services in unserved areas, these are not clear targets, nor are these mentioned in the IDAMC and staff contracts. It is considered that specifying clear targets for expansion of services in unserved areas would incentivize the NWSC, KCC and the DWD to prepare detailed investment plans and strategies, and thereafter deliver these. These detailed targets would need to be included at business plan level (see point above). Such pro-poor targets could then be monitored and reported on at Sector Performance Report level by the MoWE and (eventually) the new independent water sector regulator (to be created).

iii. **Remove barrier to access caused by the existing land tenure system**: The Mailo/private land tenure system in which owners cannot be forced to provide basic urban infrastructure services (including water, sanitation, roads, and so on) is acting as a major barrier of access in poor settlements. It is considered that a special law should be obtained from relevant public authorities, including the KCC and the Ministry of Lands. Some countries, for example, Casablanca in Morocco, have created a specific legal status for the "households with no status", whereby a household without property title demanding service and committing to paying the monthly bill (and some of the connection costs) can be contracted by a service provider. The Municipality in this case enters into a contract with the service provider and the household and commits to pay the service provider in case the household defaults. In practice, after five years of implementation, the collection rates are above the service provider's average and there has hardly been any default. Such an approach could have made the poor greater beneficiaries of pro-poor policies.

iv. **Determine the future of alternative sources of water in poor settlements**: the availability of alternative sources of water in poor settlements (up to 50 percent of drinking water demand) is considered to be a significant disincentive for NWSC to provide new house connections. In addition these alternative sources of water are often unprotected and unsafe. Thus it is considered that GoU and Kampala City Council adopt a clear policy for closing

and/or rehabilitating all these sources. This needs to be complemented with a detailed analysis of remediation works and management options.

Component 1: Affordable Connections Policy

v. Proper ring-fencing of the New Connections Fund: Revenues raised through the 10 percent surcharge in the water tariff should be sequestered into a properly ring-fenced New Connections Fund, as this would greatly improve the effectiveness and efficiency of these operations, and would give NWSC management a clear view on what rate of new connections can realistically be achieved. This is to be supported by a detailed understanding of the water supply investment needs—to be included in the business plan above. The New Connections Fund can only realistically be set up once the utility is already financially stable (to prevent funds from being used for basic operations) and needs to be protected against inflationary price increases as this will lead to the net reduction of the number of new connections that can be made per annum.

vi. Legal constraints faced in getting new connections: For a new connection the NWSC insists on production of a land title document, a lease document or permission of the landowner or lease holder. In the present land tenure system many people don't have such land documents and getting a water connection is not possible for them. The liberalized NWSC connection policy has started to take advantage of kibanjas (land without titles) for connection, yet it does not meet the requirements of the poor. Documents such as voters lists, municipal identification, ration cards, and so on, have been tried in other countries. Such an approach would lead to faster results.

vii. Cost of connection fees for the poor: A number of options can be implemented to better help poor households obtain water connections. For example, payment of the connection fee can be made in installments (instead of paid upfront) which are reimbursed via a separate system through the water bill. This may be applicable to individual connections and/or yard taps. Alternatively, the NWSC may also propose a connection subsidy that is time-limited, to incentivize connections. Even if the total number of applications became too high for the NWSC to manage, the subsidy could be made available until the Corporation is able to connect households that have already expressed their interest.

Component 2: Differentiated and pro-poor tariff

viii. Improvement of the size of the cross-subsidy: Poor households are indeed benefiting from a differential and flat tariff structure. However, the level of subsidy appears to be relatively low given that domestic, industrial and institutional consumers are only charged twice the PWP rate. In addition, it appears that large industrial customers who use more than 1,500 m^3/month are not included in the cross-subsidy.

ix. Improvement of the effectiveness of the cross-subsidy: Poor households are not purchasing enough water from the NWSC and are therefore not benefiting as much as they should be from the cross-subsidy. This is due to a combination of water supply capacity restrictions and the availability of alternative sources of water. It is considered that water supply tariffs are affordable to poor households except when water reselling takes place.

x. Improvements to the tariff structure: Whilst the benefits of the differential flat tariff structure are recognized, it is considered that the flat tariff for domestic customers is not conducive to water saving. Therefore, it is recommended that an increasing block tariff be set up at least for domestic customers. In addition, it is considered that the automatic tariff increase should be waived for public standposts. Any revenue shortfall could thus be funded via the increasing block tariff.

xi. Unequal water tariff in slums: The differential tariff rates for water for PWPs/ kiosks (867/m^3) and Presidential Pledge taps (784/m^3) are not equitable for poor households. It is considered that the current PWP/Presidential Pledge tariffs be normalized.

Delivery Mechanisms

i. Improve marketing of, and customer training on how to use, prepaid tokens: Prepaid meter are proving to be very successful in Kampala (both with the utility and its customers). A mixture of conventional and prepaid connections seems to be the way out for many slum areas of Uganda.

ii. Increase the market for retail of credits for prepaid meter tokens: In parallel with improving marketing of, and training on how to use, prepaid tokens, the market for retail of credits for prepaid meter tokens needs to be increased.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5 Conclusions

Since 2004, the NWSC has implemented a large-scale new connections program targeting all customer categories in Kampala, including the poor. To do that the NWSC has also had to improve the efficiency of its operations (technical and financial), invest in network rehabilitation and expansion projects, create a bespoke Urban Pro-Poor unit, and set up performance-based contracts with the government and with its own staff. However, both the NWSC and GoU have not ensured that a ring-fenced New Connection Fund was set up. It is considered that the pro-poor policy may have had a much bigger impact on the poor had the Fund been set up and used.

Overall, the Affordable Connections Policy and the differentiated and pro-poor tariff structure have had a positive impact on poor households in Kampala. While 21 percent of the beneficiaries lived in poor settlements, this policy was eventually used to broaden coverage across the board. There are opportunities to continue to learn from the lessons in implementing the Affordable Connection Policy, and to improve the planning and implementation of service expansion in unserved areas.

Water supply coverage has increased significantly over the period, from 62 percent to 74 percent, despite a population growth rate of 10 percent. The total number of connections in Kampala has increased from 59,000 in 2004 to 146,000 in 2010. Whilst most of the beneficiaries have been the nonpoor (and industries), this increase has had positive impacts on the poor by leading to a reduction in the price of resold water. However, the rate of new connections in poor settlements has sharply reduced from 2009 onwards. This is considered to be due to the fact that 18 percent of yard taps and 36 percent of PWPs are inactive. This has prompted the Urban Pro-Poor Branch, with support from development partners (principally the KfW and GPOBA) to look for innovative service delivery mechanisms, including prepaid PWPs. This new approach is expected to generate significant benefits to unserved areas and the NWSC, providing that it is coupled with a commensurate increase in water supply capacity and availability (mains).

Unit consumption over the period has reduced which suggests that, while there was some increase in water production and water sold, the bulk of the water was distributed among more customers. The assessment found that approximately 60 percent of the poor are using less than 20 lcpd, and that they are purchasing this water from PWPs. The NWSC is currently developing additional water supply, transmission, and distribution capacity.

Alternative sources of water are widely available in Kampala ad are used to supplement NWSC supply. Coupled with a complicated system of land tenure, this acts as a disincentive for the NWSC to provide anything other than shared connections in poor settlements as unit consumption is low. There is a need for clear policy, customer education campaigns, and concrete actions to remediate all springs, boreholes, and wells in poor settlements, and for realistic management arrangements.

The differentiated tariff structure (including the PWP tariff) is considered to be affordable even to the poorest households. However, poor households are using low volumes of water for drinking and are therefore not benefiting from the cross-subsidy as much as they could.

The level of the discounted cost of connection is considered to be unaffordable for the poorest households as it represents up to 75 percent of the average monthly income. Options to improve the level of uptake of connection, once adequate supply capacity is provided to unserved settlements, include paying for the connection fee (of $20 for the poor) in installments.

Finally, this assessment confirms that utilities which want to expand water supply services to unserved areas first need to focus on improving the efficiency of their operations. NRW continues to be a key issue for he urban water sector in Uganda, and Kampala in particular, with a stagnant 40 percent of water produced lost, from 2004 to 200. This is in spite of NWSC taking ownership of service lines and paying for and undertaking all connection works. It is considered that major network rehabilitation works, coupled with investments to increase total supply capacity, are required.

The report demonstrates that large scale connection programs in poor settlements can be funded directly through a tariff surcharge once a sufficient number of large consumers are able to contribute to the cross-subsidy mechanism. However, utilities need to be able to invest in additional water supply capacity and distribution networks, and also need to develop specific programs that specifically target poor households. Ultimately, these strategies and programs need to be detailed in a strategic business plan which financiers, public and private, can help implement.

6 Recommendations for Further Study

This Section of the report presents options for undertaking more detailed research on specific aspects of the planning, funding, and implementation of the pro-poor policy:

i. Options to overcome land barriers to water connections; the complicated land tenure system locks out investment for poor urban households. Policy options on how these land barriers can be overcome need to be further explored.

ii. More detailed analysis of actual water use by source and consumption patterns to inform targeting. It is important to understand the impact of the alternative sources of water on customer demand and on the NWSC's incentive to serve poor areas. More detailed assessment of customer demand in poor settlements, with guidance on how unit water consumption in poor settlements may be improved to ensure the expected health benefits.

iii. Models for token distribution and circulation for automated prepaid PWPs; as described, one of the challenges observed with the automated prepaid systems were adequate distribution and circulation of tokens. It will be important to develop a model to understand how these challenges can be overcome to inform scale up of prepaid PWPs.

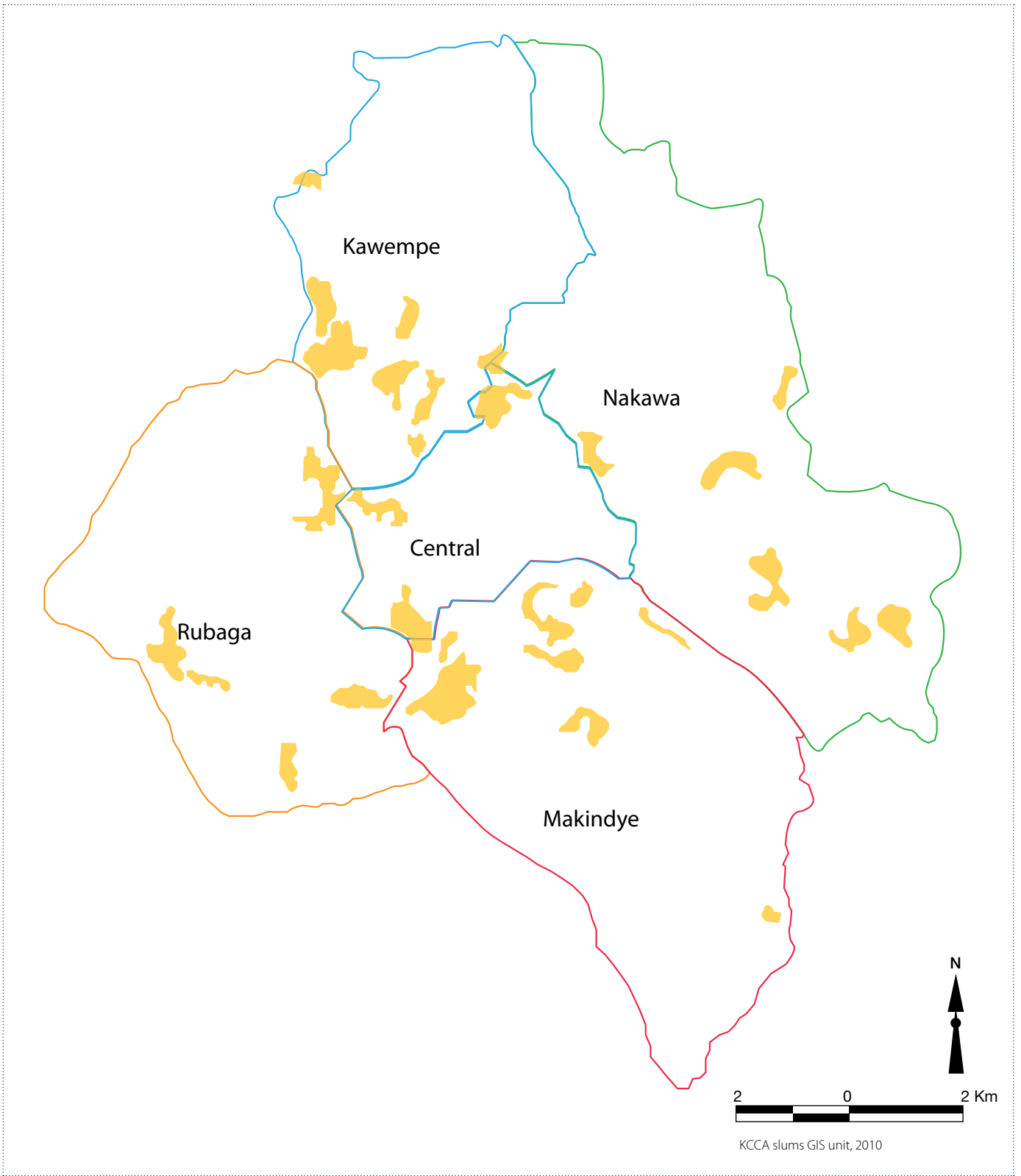
iv. Detailed review of new connection applications versus new connections undertaken since Affordable Connections Policy was implemented—to be able to determine whether specific areas of the network/customers were not connected, or were deliberately connected at a later stage (for example, once the major customers were connected).

v. The analysis of benefit incidence, beneficiary incidence, and materiality of consumption subsidies.

Appendices

1. Pro-poor Services Areas in Kampala
2. NWSC Pro-Poor Strategy (2004)

Appendix 1: Pro-poor Services Areas in Kampala



National Water and Sewerage Corporation Information paper dated 19th July 2004 The new policy of providing and maintaining service lines to customers

1.0 Introduction

This paper provides clarification on the new policy of providing and maintaining service lines to all NWSC customers. The policy was approved by the Hon Minister of Water, Lands and Environment in a statutory instrument to be published shortly and takes effect from 1st July 2004.

As you are aware, until now, the policy of connecting a new customer is that the customer pays a connection fee and is also responsible for supplying all materials such as pipes and fittings necessary for connection between the supply line and the meter.

Under the new policy, the customer shall only be required to pay the normal connection fee, while the NWSC shall ensure that the customer is connected by purchasing all the pipes, fittings and carrying out trenching and pipe laying up to the customer's meter.

The principal objectives of the new policy are to:

- Increase the number of customer connections thereby making water accessible to the population especially the urban poor.
- Reduce the level of unaccounted for water by reducing the incidence of leaks and bursts within the service lines.
- Ensure standardization in the quality of materials.

This policy is in line with the Millennium Development Goal (MDG) of halving the number of persons without access to clean water by the year 2015; and improving efficiency in service delivery. The proposal is also in line with the principle of "some for all and not all for some".

2.0 The basis for the new policy

The policy of providing and maintaining the service lines to customers was derived from the following policy documents:

- The NWSC Corporate Plan: 2003–2006 Strategic Goals: in which it is stated that "the NWSC is to create funds for maintenance, new connections and network extensions as part of its strategy to ensure that investments and new connections are implemented on a timely basis"

- The Performance Contract with the GoU: 2003–2006: which states that "The NWSC will undertake the introduction of a "new connection fund" mechanisms in the tariff policy that will help accelerate provision of services to the poor and also curb the incidence of unaccounted for water"

- The Poverty Reduction Support Credit (PRSC IV) targets which provides that within the period April 2004 to March 2005, the NWSC will develop a water tariff structure aimed at encouraging new connections through the establishment of a connection fund. This would also address the access of safe water to the poor.

3.0 Rationale for providing and maintenance of service lines to customers

Water is both an economic and social good. Hence a balance needs to be established between access and costs of service delivery. The following are the main reasons behind the policy for providing and maintaining customer service lines.

i) The need to increase access of services to all consumer categories including the following:

- The Urban poor. A study carried out by Maxwell and Stamp in 2002[35] established that the poor did not actually benefit from the subsidized rate at the stand posts due to the middle man effect. As a consequence it was recommended that a strategy be developed to reduce reliance on water points and encourage domestic connections by which the poor will get water at the true NWSC rates. The policy therefore aims at increasing the number of yard taps and domestic connections.

- The industrial sector which is one of the key drivers in ensuring continued industrialization, urbanization, and growth of the country's economy. The implementation of the policy is expected to facilitate access of water services to the industrial sector.

ii) Need to curb the high levels of unaccounted for water (UfW) of which a significant proportion has been attributed to poor materials and workmanship by customers when carrying out new connections.

iii) Need to standardize materials for connection.

iv) Need to adequately maintain service pipes up to the meter and thus continually improve the system network.

v) The policy for providing and maintaining service lines to customers is widely accepted as best practice in service delivery and has been adopted by a number of countries including South Africa, Ivory Coast, Senegal and Tanzania.

4.0 The cost of providing and maintenance of service lines to customers

The NWSC currently makes an average of about 14,000 new water connections per annum according to the following breakdown:

* [35] Utility Reform Unit Ministry of Finance Planning and Economic Development. 2002. Poverty Impact Assessment of Private Sector Participation in the Water Sector, Kampala, Uganda.

Table showing estimated number of new connections per annum

Connection category	Number of new connections	New connections as % total
Public water points	280	2%
Domestic	11,900	85%
Government/institutions	420	3%
Commercial/industrial	1400	10%
Total	**14,000**	**100%**

4.1 Cost implications:

Based on cost scenarios generated and presented for different lengths of service pipes, the Board accepted the average distance of 50 meters from NWSC's service point as ideal in terms of cost implications.

Cost per connection:
The cost break down for a typical domestic water connection based on the distance of 50 meters is given in the table below:

Estimated cost per connection (typical domestic ½" connection)

Item	Measurement	Unit cost (shs)	Total cost (shs)
Pipe size 15 mm and less (DN 15,PN 10)	50 meters	600 shs/ meter	30,000
Fittings, tees, bends etc		30,000	30,000
Saddle	6 inch	150,000	150,000
Labour	50 meter	660 shs/meter	33,000
Total			**243,000**

The average cost per connection of a ½ inch pipe supply is therefore estimated at Shs 243,000. This cost does not include the cost of a meter which has always been an NWSC cost.

Based on the model for the domestic cost estimate, the cost for the other customer categories were estimated as follows:

Water points/standpipes: Shs 400,000
Government Institutions: Shs 350,000
Commercial Industrial: Shs 450,000

The following table indicates the estimated annual cost of providing service lines for 14,000 new connections based on the mean distance of 50 meters from the NWSC service point.

Table Showing Annual Cost of Service Lines Within A Distance Of 50 Meters From NWSC Service Point.

Connection category	Number new connection	Average cost of new connection Shs (000)	Total cost Shs (000)
PWP	280	400	112,000
Domestic	11,900	243	2,891,700
Government Institutions	420	350	147,000
Commercial Industrial	1400	450	630,000
Total	**14,000**		**3,780,700**

From the table above, the total costs to cover the provision and maintenance of service lines to customers within a distance of 50 m would be about Shs. 3.78 billion.

5.0 Implications on the tariff

In order to raise the Shs. 3.78 billion for the provision and maintenance of service lines, the tariff has been increased by an average of about 10% as shown in the table below. It should be noted that in line with the policy of re-balancing of the tariff, large industrial customers (consuming over 500 cu.m of water per month) have been excluded from the tariff increase.

Table Showing Implications on Tariff

Customer category	Water tariff 2003/04	Water tariff 2004/05 after 5% indexation	Water tariff 2004/05 after adjustment	% Increase
Standpipes	449	471	521	10.7%
Domestic	693	728	806	10.7%
Government Institutions	854	897	993	10.7%
Commercial/ Industrial				
Up to 500 m^3/month	1187	1,246	1,379	10.7%
500 – 1,500 m^3/month	1,421	1,421	1,421	0%
Above 1,500 cu.m/month	1,324	1,324	1,324	0%
Average tariff	836	873	957	10%

It should be noted that the change in tariff is solely due to the transfer of responsibility of providing and servicing consumer lines from the user to the Corporation. For purposes of clarification, the table below shows the impact of the change on the price of a 20 liter jerrican of water.

Change in Price per Jerrican

Change in Water bills/Jerrican/Household: Coverage 50 meters

Band	Current cost per jerrican 2003/04 tariff	Cost/jerrican Cu.m with indexation Shs	Cost/jerrican after fund Shs	Typical bill 30 (D)/200 (C) cu.m per month Current tariff Shs	Typical bill 30 (D)/200 (C) cu.m per month after indexation Shs	Typical bill 30 (D)/200 (C) cu.m per month after adjustment
Stand pipe	8.98	9.42	10.42	13,470	14,130	15,630
Domestic	13.86	14.6	16.12	20,790	21,840	24,180
Comm< 500m^3	23.74	25	27.6	237,400	249,200	275,800

6.0 Implementation

The Board in its two sittings on the 18th and 24th June 2004 approved the implementation of the new policy based on the following tenets:

- The policy covers only water connections.
- The policy will cover all customers within a distance of 50 meters from the NWSC service point. All materials and other costs including road reinstatement to be met by the Corporation.
- The cost in excess of 50 meters to be met by applicant.
- Customers will continue to pay the connection fee (e.g. shs 50,000 for domestic customers) as a commitment and contribution to the service.
- The tariff is to be adjusted by an average of 10% to defray the additional costs of providing and maintenance of service lines up to the customers meter.
- As in the case of the electricity industry, all service lines will henceforth belong to NWSC. This will allow more consumers to be connected to the service lines.

Following the Board approval, the Hon Minister of Water, Lands and Environment assented to the policy through a statutory instrument (copy attached) which shall shortly be published in the Uganda Gazette. As you will note the effective date of implementation is 1st July 2004.