

CHAPTER FIVE

URBAN WATER AND SANITATION

5.1 Introduction

5.1.1 The Urban Setting

According to the water sector, urban areas are defined as human settings with population exceeding 5,000 persons or that are gazetted as District headquarters. Small towns have populations from 5,000 to 15,000 persons, and large ones above 15,000 persons. Based on these criteria, there are 106 small towns and 43 large towns in Uganda, as of June 2004. Based on this definition the current urban population is estimated at 3.7 million out of the current (2004) total population of 25 million. **Figure 5.1** shows the major towns in Uganda.



Figure 5.1 – Major Towns in Uganda

5.1.2 Rural-Urban Migration

Urbanization in Uganda has increased with small trading centres becoming towns and the older towns expanding in area and population. The population in urban areas has been growing much faster than that in rural areas – the overall population growth rate is 3.4% while that in urban areas is 4.1%. **Figure 5.2** shows Uganda's urban and rural population trends since 1950.

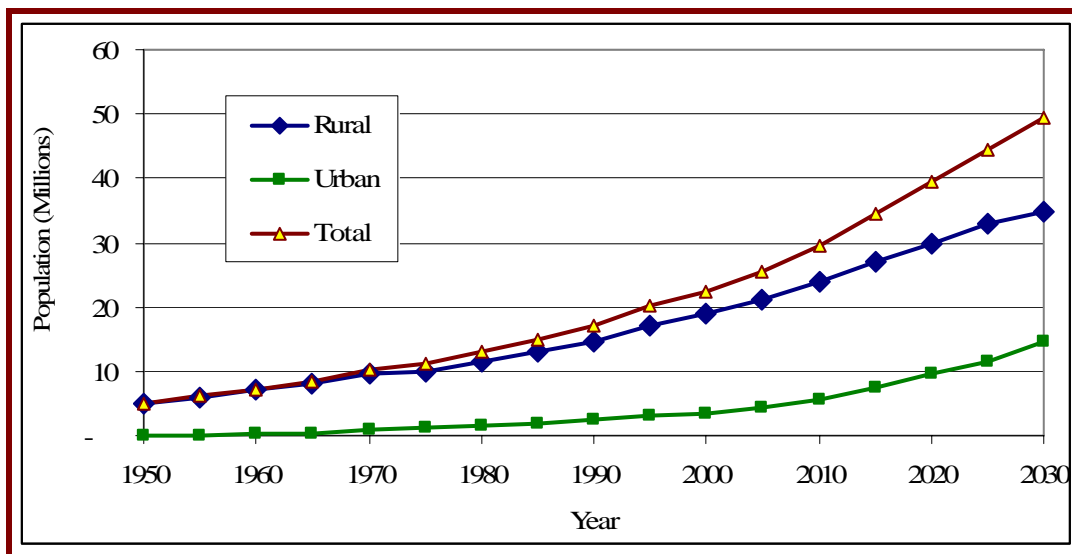


Figure 5.2: Uganda's Population Trends, 1950 – 2030

Source: NEMA (2002)

The percentage of the population residing in urban areas increased from 12% in 1993 to 14% in 2003 (UBOS, 2003). The number of urban households doubled over the last ten years from about 400,000 in 1993 to 800,000 in 2003.

5.1.3 Urban Water Supply – Historical Perspective

Development of conventional piped water supply systems started during the colonial period in the 1940s. The majority of the older systems were constructed from 1950 to 1965, mainly in the regional and district headquarters to serve the workers and the small commercial communities. No new schemes were constructed between 1965 and 1990. Only maintenance of the existing schemes was done, but even this was poor. The National Water and Sewerage Corporation (NWSC) was established as a government parastatal with a mandate to operate and provide water and sewerage services in areas entrusted to it on a sound commercial and viable basis. The rest of the water supplies were operated by DWD (and its predecessors). By 1990 virtually the whole urban water infrastructure was run down and serving less than 10% of the population in the large towns. By 1990, there were only 37 urban water systems including those under the NWSC.

In 1990, the Government, with assistance from the World Bank and the Government of Japan, started the Rural Towns Water and Sanitation Program (RTWSP). 250 small towns and rural growth centers were identified under the program, of which 60 were selected for

urgent attention. As part of the program, policies and guidelines were developed in 1992 elaborating the main implementation principles for small town water and sanitation projects. These policies and guidelines were continuously upgraded as projects were implemented and experiences gained. To date implementation in 50 towns has been completed and 12 schemes have been rehabilitated. A number of lessons have been learned from the implementation of these projects as highlighted in the **Box 5.1** below.

Box 5.1: Key lessons learned from the implementation of Urban Water Supply and Sanitation (UWSS) Projects	
1	Community participation and the “Demand Responsive Approach” are useful elements in building confidence, transparency and support from stakeholders towards the undertakings.
2	Mobilization and capacity building are continuous activities throughout project implementation.
3	Water Resources investigations and development of water sources should be carried out very early in the project. In any case, they should be done before intensive mobilization and system design.
4	Capital Cost Community Contributions have been problematic hence giving extra burden to implementation and serving no useful purpose.
5	The client or his representative should have sufficient knowledge of the project and relevant expertise to oversee the work of the consultants and contractors if “value-for-money” is to be realized. The client should never be left at the mercy of the Consultant and Contractor!
6	Private Sector Participation in Operation and Maintenance of the installed facilities is by far more effective as a management model compared to community management through User Associations.

Source: DWD (2002)

5.2 National Goal and Targets for UWSS

5.2.1 National Goal

The national goal for Urban Water Supply and Sanitation (UWSS) is:

“To achieve sustainable safe water supply and sanitation facilities, based on management responsibility and ownership by the users, within easy reach of 100% of the urban population with effective use and functionality of the facilities.”

5.2.2 National Targets

The national target for rural water supply and sanitation coverage is to achieve 100% safe water coverage and 100% sanitation coverage in urban areas by 2015, with an 80%-90% effective use and functionality of facilities.

5.3 Urban Water Supply Situation Analysis

5.3.1 The Challenge of Urban Water Supply

Urban areas require reliable water supplies that can provide adequate quantities of water all year round, as well as infrastructure for abstraction, treatment, pumping, transmission, storage, and distribution. This makes it relatively expensive to provide – the Urban Water

Supply Investment Plan provides for a per capita investment of USD 75, but recent trends show actual per capita investments of over USD 80.

The high rate of urbanization seriously erodes the efforts at service delivery. This is particularly so with slums located in the urban fringe areas, where population growth has outpaced the supply of water. In addition the population in these areas is generally poorer, and find it more difficult to pay for water services.

Piped water is mainly provided in the wealthier and well planned core areas of towns, unlike the urban fringe areas, which usually comprise of informal settlements occupied by poorer people, many in make shift accommodation. These informal settlements, commonly referred to as 'Slums', mostly access water from improved point water sources (protected springs or boreholes/shallow wells with hand pumps). Where piped water reaches the slums most people access it from stand taps (kiosks) or yard connections. These approaches provide for a lower level of service than the house connections.

5.3.2 Urban Water Coverage

The national urban water coverage is estimated at about 65%, up from 54% in 2000. A total of 56 towns¹ (15 large and 41 small) with a population of 2.8 million people (77% of urban population) have piped water supplies. The remaining 11 large and 69 small towns (population 932,000) do not have piped water supplies.

By March 2004 there were a total of 97,537 connections in the NWSC towns, of which 79,489 (81%) are active. On the average, each active connection serves approximately 19 people, but their distribution between towns and within towns needs a better understanding before concrete conclusions can be made.

The present (2004) population in the 55 towns served with piped water (outside the NWSC area) is 735,321 people, while in the un-served towns is 832,496. There are only 10,600 connections in all small towns representing 1 connection for every 148 people but for those with services, the ratio is 1 connection for every 70 people (DWD, 2003).

Figure 5.3 shows the distribution of urban water supply for the different competing needs. The figure indicates that the main use of water in urban areas is for domestic and institutional (schools, offices, hospitals, etc) purposes. The total commercial and industrial water demand in the larger urban areas is about 33% (NWSC, 2003).

¹ Including Kampala city.

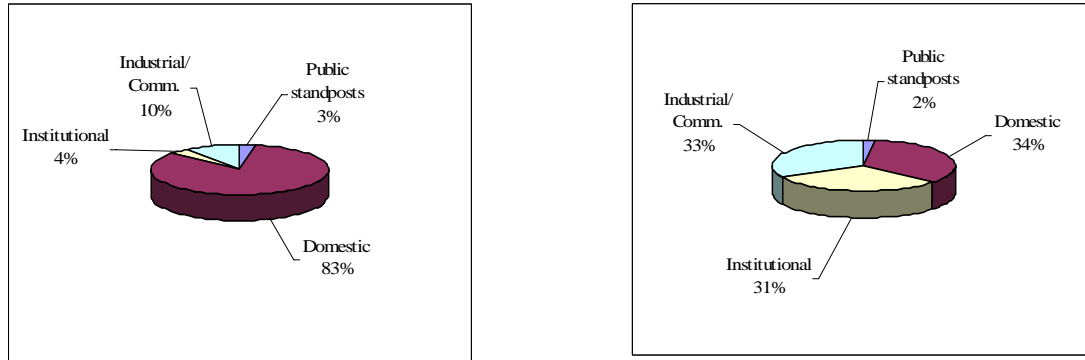


Figure 5.3: Urban Water Supply Distribution (a) Connections and (b) Revenue (Source: NWSC, 2003)

(Source: NWSC, 2003)

PER CAPITA WATER CONSUMPTION

The design criteria (DWD, 2000) and actual estimated levels of per capita consumption of water for different service levels in selected towns (MWLE, 2003a; NWSC, 2003a) are shown in **Table 5.1** below.

Table 5.1: Estimated and actual water consumption levels

<i>Service Level</i>	<i>Estimate (Litres/person/day)</i>	<i>Actual Average (Litres/person/day)</i>
<i>Household connection</i>	50 – 200	70
<i>Yard tap</i>	40	19
<i>Stand tap/kiosk</i>	20	8
<i>Rural Water Supply</i>	20	13
<i>Commercial</i>	50 – 200	1,988 litres/day
<i>Hotels</i>	50 – 100	
<i>Industrial (litres/hectare/day)</i>	10,000	

5.3.3 Sources of Urban Water Supply

The main source of water for the larger towns is surface water drawn from lakes or rivers, and in a few cases swamps, which together account for about 50% of urban water supplies. In most of the small towns, with lower water requirements, the source of water is groundwater drawn from high yielding boreholes. The main advantage of the groundwater sources is their relatively good quality that in most cases requires no or minimal treatment. A few towns use highland springs or streams under gravity flow for their water supply.

WATER QUALITY

Raw Water

Generally, the quality of surface water in Uganda has been declining over the last two decades (NEMA, 2003). Data from DWD's national water quality monitoring program indicate that raw water quality is generally better in the lake sources than rivers. The data also shows a significant decline in the quality of water from Lake Victoria over the last few years. This is an issue of major concern to NWSC since Lake Victoria is the source of water supply to the three major towns (Kampala, Jinja and Entebbe).

The quality of raw water influences the extent and cost of treatment required, and thus the tariff paid by the consumers.

Water Treatment

All urban water supplies are supposed to be treated to meet the National Drinking Water Standards (DWD, 1994). All large town water supplies under NWSC are equipped with laboratories that carry out water quality monitoring. The more complex water quality tests (e.g. heavy metals, pesticides) are carried out at the National Water Quality Laboratory operated by DWD, which also doubles as the National Reference Laboratory. However at present most water supplies under Water Authorities do not carry out routine water quality monitoring. DWD is planning to provide basic water quality equipment to the Water Authorities for routine monitoring of some basic water quality parameters. DWD also intends to set up fully equipped regional water quality laboratories to support NWSC and the Water Authorities in carrying out the full range of water quality testing and monitoring for both the urban and rural water supplies.

5.3.4 Unaccounted for Water

The level of unaccounted for water (UfW) for piped water supplies in the different towns varies between 0% - 48%, with an average of about 20%. The water losses occur during storage, transmission and distribution as a result of leakages in the systems. There are also seasonal variations in the performance of the different town water supplies due to other technical faults like major pipe bursts. The challenge of unaccounted for water is more critical in the older supply systems where the transmission mains are more susceptible to bursts. One of the priorities of NWSC is to increase the performance of its water supply systems and reduce the UfW to a modest level. This initiative has already started yielding positive results and has led to a reduction in UfW from 51% in 1998 to 38% in 2004 in the Kampala service area.

5.3.5 Tariff Levels and Pricing Policy

The current tariff structure is based on affordability and uniformity across the country while ensuring cost recovery. The current tariffs are not adequate for system expansion, but are in most cases able to cover operation and maintenance costs. Major investments in system improvement and extension are currently financed separately from sources outside the tariffs (grants from government and donors), and this is likely to continue for some time until the towns become more viable. Full cost recovery (operation and maintenance, depreciation, and

investment) would require a significant increase in tariffs. The current (2004) water tariffs are shown in **Table 5.2**.

Table 5.2: Water Tariffs by category of user

<i>Category</i>	<i>NWSC, 2003/4 UShs./M³</i>	<i>Urban Water Authorities, 2004 UShs./M³</i>
<i>Public standpipes (bulk)</i>	449	1,000
<i>Public standpipes (jerrycan)</i>	25 – 50	25 – 50
<i>Domestic</i>	693	1,000
<i>Government and Institutional</i>	854	1,000
<i>Commercial and Industrial</i>	1,187 – 1,324	1,000
<i>Weighted average – Uganda</i>		1,037

Source: NWSC (2003b) and MWLE (2003c)

The NWSC uses a rising block tariff structure for commercial consumers, to discourage waste of water. The NWSC approach to management allows for cross-subsidies among towns.

The NWSC applies an additional 75 – 100% of the applicable tariff in case of a sewerage connection. The tariff is higher for the commercial consumers and lower for the domestic consumers, the lowest being for bulk sale at stand taps. However the poorer users of stand taps generally end up paying more for the water collected in *Jerrycans*² due to the costs of operating a stand tap.

5.3.6 Revenue Collection

NWSC annual turnover for the period 2001 – 2003 is shown in **Table 5.3** below. Following adoption of a more business oriented Management Strategy, NWSC's revenue collections have been significantly increased over the past 5 years. For the first time in a long time, NWSC was able to collect enough revenue to cover all its total costs including depreciation, and post a surplus of about Shs. 778 million in 2003.

Table 5.3: NWSC Revenue Trends (Ushs. Million)

<i>Parameter</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>
<i>Turnover</i>	29,297	34,054	37,140
<i>Percentage Growth</i>	13%	16%	9%
<i>Operating Profit before depreciation.</i>	4,369	7,021	8,072
<i>Operating Profit after depreciation (excluding exceptional items)</i>	-2,620	36	778

The total revenue collection by Water Authorities in 2003 was UShs. 987.7 million compared to the bills of UShs. 1.24 billion, giving an average collection efficiency of 79%. However the

² Portable plastic containers used for collection of water

collection efficiency varied from 34% in Kotido (disturbed area) and 36% in Mubende to 128% in Rukungiri town.

5.4 Urban Sanitation Situation Analysis

5.4.1 The Challenge of Sanitation in Urban Areas

Currently, only 6% of the urban population in the large towns has access to sewerage services. A significant portion of the wastewater treatment capacities in the NWSC towns are presently under utilized and are likely to remain so for quite sometime. This is partly due to the small number of household connections to the sewerage system and the limited investment opportunity that has constrained the widening of catchments. Poor urban planning has also aggravated the urban sanitation problem due to the several poorly planned housing estates which are scattered all over urban centers, thus making extension of sewerage services to such areas very difficult and expensive.

In order to address the urban sanitation challenges in the country, government is in the process of preparing Urban Sanitation Master Plans for different towns in the country. The Sanitation Master Plan for Kampala is due to be completed by the end of 2004. The Master Plans will, among other things, provide the framework for improvement and increase in coverage of sanitation services to the urban population.

5.4.2 Urban Sanitation Coverage

The sanitation coverage in urban areas is about 65%, which is still quite low. Most users of waterborne toilets are connected to individual cesspools or septic tanks. These are periodically emptied by cesspool emptiers that dump the sewage at treatment plants (where they exist) or in many cases directly into the environment. Kampala city has dozens of cesspool emptiers currently in operation. However some of the smaller towns have problems accessing them due to the low demand.

It is difficult to provide sewers in urban areas including Kampala because of their land requirements, particularly in the poorly planned areas, and high costs of construction and maintenance. The maintenance costs would make the resultant tariffs unrealistically high and not easily affordable. The main approach promoted by the NWSC is to regularly empty the sewage and treat it properly before discharge.

Many people depend on on-site sanitation, predominantly pit latrines, which has contributed to ground water contamination in many parts of the country, especially in Kampala. In order to address this problem, DWD, the Ministry of Health and Kampala City Council are promoting ecological sanitation by emphasizing the use of dry toilets in urban areas that have no access to the conventional sewerage system.

5.4.3 Urban Drainage

Kampala city and other urban areas in Uganda are currently facing increasing drainage problems because of the destruction of the flood buffer zones. With the rapidly increasing development in urban areas, most of the land reserves that used to serve as flood buffer zones are being encroached on and destroyed.

A study conducted in 2004 (Byandala, 2004), attributed the increasing urban drainage problems to the following main factors:

- (i) The destruction of the upstream buffer zones in the urban areas that has reduced the runoff concentration time hence increasing the risk of flooding downstream; and
- (ii) The existing drains regularly get clogged with debris and garbage reducing their carrying capacity.

In the lower areas of Kampala flooding has become a common phenomenon occurring frequently, even after a one-hour downpour.

Flooding is responsible for significant property damage in homes and industries, and has caused deaths and down time in industries. The situation in the other smaller towns is not as bad, but could easily deteriorate if construction is not well planned.

KCC has embarked on a drainage improvement program by clearing and widening the drainage channels.

In response to the rampant drainage of wetlands and encroachment on flood buffer zones, government put in place a National Wetlands Policy (1995) aimed at promoting the conservation of Uganda's wetlands in order to sustain their ecological, social and economic functions for the present and future generations. In addition, regulations for the protection of river banks and lake shores and for development of flood plains have also been issued. Government has also established a Wetlands Inspection Division under the Ministry of Water, Lands and Environment to enforce the above policy and regulations and to over see the sustainable management of wetlands in the country.

5.4.4 Impact of Poor Urban Sanitation

(1) Environmental Pollution

There are many potential sources of pollution in urban areas resulting from poor sanitation and poorly treated industrial effluent. According to a study conducted in 2001 (Mott MacDonald *et.al.*, 2001), of all the estimated total pollution loads being discharged into Lake Victoria, urban municipal loads account for 77%, fishing villages for 15% and industries for 8%.

Results from studies conducted by NEMA in the recent past attributed the rising levels of urban pollution to the following factors:

- (a) *Poor Sewerage Infrastructure* - Leakages in old sewers and poorly constructed and managed septic tanks and sewage treatment works greatly contribute to environmental pollution, especially contamination of ground and surface water. **Figure 5.4** shows effluent characteristics from 17 sewage treatment plants for the major towns in Uganda. The figure shows that effluent from many sewage treatment plants does not meet the National Discharge Standards. The situation is even worse in smaller towns without or with non-functional treatment plants, where the sewage is disposed directly into the environment, without pre-treatment.

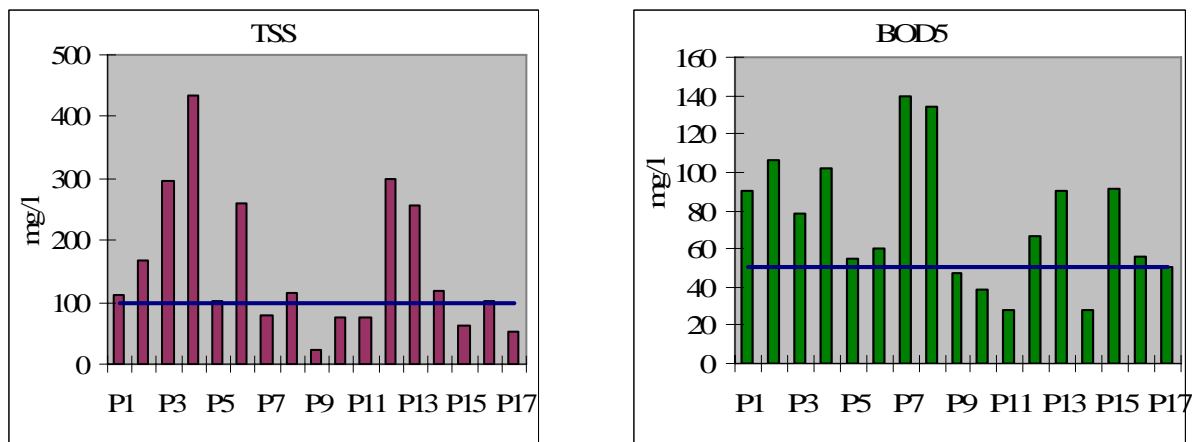


Figure 5.4: Effluent characteristics of 17 Sewage Treatment Plants (Note: Horizontal lines show National Discharge Standards)

- (b) **Poor on-site Sanitation** – Poor on-site sanitation in urban areas has also greatly contributed to pollution of surface water and groundwater in high water table areas. Due to land shortage in the urban areas, some people are known to empty their filled-up latrines directly into nearby water bodies and drainage channels.
- (c) **Untreated Industrial Effluent** – There are a number of reported cases of discharge of untreated industrial effluent into waterways or leakage/spillage of chemicals during storage and transportation. Most industries in Uganda do not have effluent treatment plants, and where they exist they are poorly designed and managed. Results from a study conducted in 2001 (Mott MacDonald *et.al.*, 2001) on the pollution to Lake Victoria indicated that industries around Lake Victoria discharge 1,045 kg/day of BOD, 96 kg/day of nitrogen and 105 kg/day of phosphorus into the lake. According to a survey carried under the same study, of the 25 industries sampled, only 1 had a treatment plant meeting required effluent standards; 15 had no treatment plants; 3 did preliminary treatment; 4 did primary treatment; and 3 had secondary treatment.

The survey also revealed that Uganda Breweries, located at Port Bell on Lake Victoria, alone accounts for 80% of the BOD load and 85% of the COD load, 93% of the SS load, 60% of the total nitrogen load and 82% of the phosphorus load discharged by industries, on the Ugandan side, into Lake Victoria. In order to address this problem, Uganda Breweries, with support from LVEMP, has constructed a wetland to treat the industrial effluent using papyrus (*Cyperus papyrus*). The constructed wetland treats 20m³ of effluent per day, and is also used as a demonstration site for other industrialists.

(2) Health Hazards

Cholera and other water-borne diseases are now a common occurrence in Kampala and other towns, especially during the rainy season. The most affected areas are the heavily populated slum dwellings on the outskirts of towns. The Ministry of Health has made major efforts to contain these diseases mainly through health education, promotion of latrine construction and improved medical services. Implementation of programs is coordinated with other stakeholders, particularly the Ministry of Education and Sports through schools.

Bacillary dysentery has been on the increase across the country in the recent past, registering a four-fold increase in the number of cases registered between 1999 (2,300) and January 2002 (8,300).

The number of patients suffering from persistent diarrhoea registered at Mulago hospital alone has shot up from 9% to 32% in the last three years. A study indicated that most of them come from Banda, Makerere Kivulu, Kamwokya and other slums of Kampala city (NEMA, 2003).

(3) Impact on Ecology and Biodiversity

Most towns in Uganda are situated near water bodies and wetlands, partly because of the need for provision of water to them. There is, therefore, the challenge of balancing urban development and protection of the environment. One of the biggest problems associated with urban development in Uganda is drainage of wetlands and deforestation, which have had a negative impact on Biodiversity conservation efforts. Urban streams carry increasing flow volumes having high contaminant loads, which affect the aquatic life and other properties along such streams and pose health risks to human beings and animals downstream. Toxic materials from some of the factories and industries have also contributed a lot to the destruction of the biodiversity in water bodies and wetlands neighboring urban areas. **Figure 5.5** (a) and (b) depict some typical ugly scenes in the environment surrounding urban areas in Uganda.

In some towns, wetland areas are also used for solid waste disposal, thus draining them and directly contaminating them. Wetlands are also affected by other human activities like brick-making, farming (vegetable and rice growing). This, coupled with the uncontrolled harvesting of wetland plants poses a very big threat to the sustainability of urban wetlands and biodiversity.

Despite the existence of stringent environmental laws, the environment continues being abused with impunity in urban areas. NEMA has apprehended a number of developers who disregarded the law and continued to destroy the environment. The Wetlands Monitoring Unit in the MWLE is working with other authorities to have key wetlands in urban areas gazetted as protected areas. This would enable the wetlands re-establish themselves to play their purifying properties and other ecological roles.



Figure 5.5: Drainage from (a) a residential area (with sewage fungus) and (b) an abattoir flowing into an urban stream.

5.5 Funding for the UWSS

Funding for the UWSS sub-sector has been increasing steadily over the past 10 years. The key development partners in the UWSS sub-sector include DANIDA, World Bank, EU, France (AFD), Germany (GTZ/KFW), AUSTRIA, Sida, UNICEF, DfID, the Netherlands, and Japan (JICA).

According to the assessment conducted during the UWSS Reform study, the investment needs for the UWSS for the next 10 years are estimated to total US\$ 700 Million. With this level of investment, it is envisaged that the government would be in position to achieve 100% water and sanitation coverage in the urban areas by 2015. The biggest challenge is how to secure all the required funds.

5.5.1 Funding for Large Towns

The development budget for the large towns under NWSC is channeled as a government grant or loan to NWSC. Government also regularly gives additional funds to NWSC as conditional or equalization grants to implement and deliver social mission services, e.g. water

supply for the urban poor. However, in the medium to long-term, funds for investment planning and development for large towns would be channeled directly through the proposed Asset Handling Authority (AHA).

Commercialization and use of the private sector in the operation of some NWSC towns has been initiated. The experience so far shows that the private operators in some of these towns are breaking even and have started generating their own operational funds from the tariff. One of the proposals of the Urban water reform, is the establishment of a “Water Fund” where a portion of the funds generated from the water sales are banked and used for operation, expansion and construction of new WSS systems, even in the small towns as away of cross-subsidy.

NWSC receives some subsidies in form of investment funds mainly from the donors. The Government also provides start up investment funds and bridge up O&M funds for the towns recently taken on by NWSC, and for provision of services to the urban poor (DWD, 2002a). NWSC cross-subsidizes the operations in the different towns, with the more profitable towns supporting operations in the less profitable ones.

5.5.2 Funding for Small Towns

Following the adoption of the SWAP framework, Government has established a consolidated Small Towns Development Funding mechanism (Basket Funding), where both government and donor funds are pooled for the development of the small towns’ WSS. Government is now in the process of phasing out the project based funding as more donors, who are currently funding specific projects, embrace the Basket Funding concept. It is envisaged that the Basket Fund will evolve into an independent National Water Development Fund (NWDF) for the UWSS sub-sector.

In the past, Government was providing conditional grants to the Local Governments for O&M of small towns’ water systems. The grants were introduced to supplement the local revenues, which were not sufficient to cover O&M costs for the old WSS systems, which in most cases were poorly managed. However, with the rehabilitation of the systems and introduction of private operators to manage the systems, Government has abolished these conditional grants/subsidies.

Figure 5.6 shows the UWSS sub-sector investments for the period 2001–2005. The current sub-sector funding per capita is about US\$ 12 for small towns and US\$ 8 for large towns³.

³ 1 US\$ = Ushs. 1800 as of June 2004

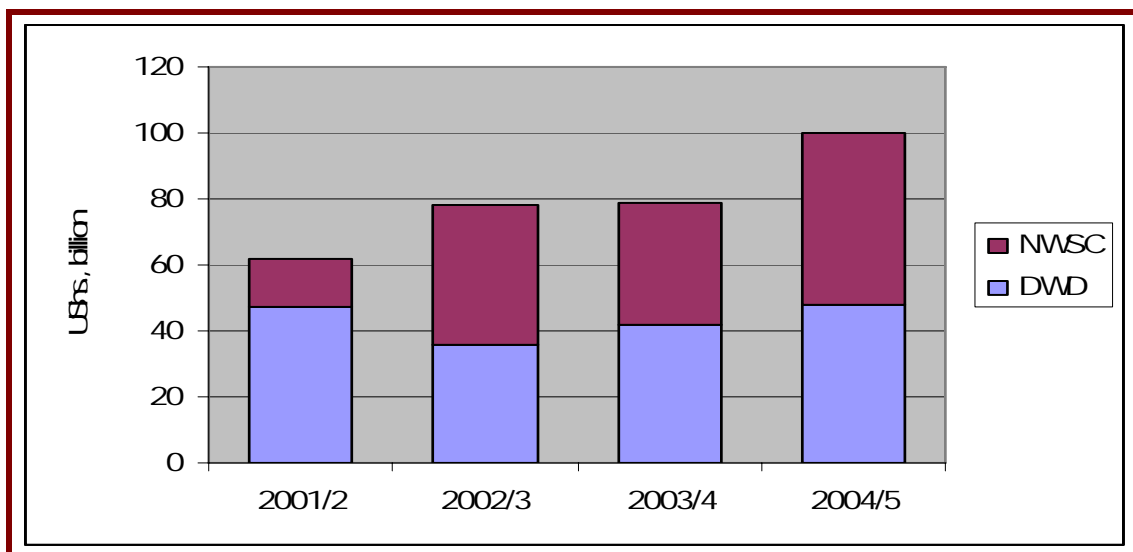


Figure 5.6: UWSS Sub-sector Funding (Note: 1US\$ = Ushs 1,800)

Source: DWD

5.6 Management of UWSS Systems

5.6.1 National Water and Sewerage Corporation

Currently the NWSC manages piped water supplies (and some sewerage systems) in 15 large towns with a total population of 2.1 million people (57% of total urban population). NWSC has over the last 8 years adopted a number of strategies to ensure compliance with its targets, which has resulted in a significant improvement in its performance as reflected in the increase in service coverage from 50% in 1998 to 65 % in 2004.

In line with the ongoing reforms, NWSC is in the process of transforming the existing Area Management Contracts into Internally Delegated Area Management Contracts (IDAMCs). The first such contracts were signed in December 2003, and focus on the overall sector reform objective of separating operations from asset management (NWSC, 2003).

5.6.2 Water Authorities

Piped water supplies in towns that do not fall under the jurisdiction of NWSC were until 1995 managed directly by DWD. However since then DWD has handed over 56 such town water supplies to be managed by Local Authorities as part of the decentralization process stipulated in the Local Government Act, 1997. Actual operation of these water supply systems has been contracted out to Private Operators (PO) under the supervision of the Local Authorities. Already POs have been engaged for 44 towns, while the remaining ones are still operated by the town councils pending completion of the procurement process for POs.

Since 2000, DWD has established 48 Water Authorities and 48 Water Boards to manage small town water supplies. A total of 37⁴ towns/rural growth centers appointed by Water

Authorities are under management by small local operators. There are positive results being experienced with Private Operators. The operations are relatively stable with water being made available on 24-hour basis. However, close monitoring of their performance, combined with support to the Local Councils and Water Authorities for management of the contracts and appropriate training are necessary to ensure that the concept can continue to be successful.

A Water Authorities Unit at DWD provides back-up support to the Local Authorities and POs. Management under the Local Authorities has resulted in some improvement in service delivery. However several schemes have still failed to break even, and maintenance of assets has in some cases deteriorated.

With the introduction of POs, it is envisaged that service delivery in these small town will improve significantly and that the POs will generate enough revenue to finance future extensions of the systems. Despite the improved performance, the POs and Water Authorities still require support, training and close performance monitoring to be able to accomplish their roles effectively.

5.6.3 Future Management Framework for the Large Towns WSS

Following completion of the UWSS sub-sector reform study, Government is in the process of implementing a number of changes in the UWSS management framework.

The 33 large towns are to be managed by a single Private Operator under a lease contract for a 5 – 10 year period. The lease will start off with the 15 NWSC towns and then expand to cover the remaining towns. The Government will finance all major investments through the Asset Holding Authority whilst the lease operator finances its working capital and bears the commercial risks thereof. The lease operator will bid for, and will be remunerated through, a share of the tariff, which is set by the Asset Holding Authority, with the approval of an Independent Regulator.

All assets are to remain in public ownership, but will be managed by an Asset Holding Authority (AHA), which will be responsible for planning and implementing investments related to water supply and sewerage infrastructure for the large towns group and will outsource most of the work to the private sector. It will also be responsible for sourcing funding and performance monitoring of the lease contract.

As part of implementation of the above reforms, NWSC is to be restructured into separate asset holding and operations units. Government will also establish an appropriate regulatory framework, which will guide the operation of the new management framework.

5.6.4 Public-Private Partnerships

The current government policy is to privatize the management of urban water supplies. Local authorities with support from DWD have in the last 4 years contracted private operators to manage 50 small towns spread across the country under management contracts. NWSC in February 2002 contracted management of water and sewerage services in Kampala (which accounts for 70% of the Corporation's activities) to ONDEO Services Ltd, a French multinational Company, for a 2-year period. The overall target is to privatize NWSC

operations and establish a strong regulatory framework. The contract expired in February 2004, and management of the Kampala Area has in the interim reverted back to the NWSC under the framework of Internally Delegated Management Contracts (IDAMCs). The IDAMCs are akin to internationally accepted management contracts. The target is to involve the private sector in the down stream activities of operations and managing service delivery.

The private operators have been well received by the public given the significant improvement and reliability of water supply services in the “privatized” water service areas. It should also be noted that despite all these improvements in service delivery, the water tariffs have remained affordable partly because of the government subsidies. Currently the tariffs are regulated by government and topped up with subsidies to enable the private operators to break-even. It remains to be seen if the current good “operator-public” relationship will continue after the government stops all subsidies and the operators are forced to make significant increases in the tariffs. Given the small size of towns and urban centers in most parts of the country, the water supply business is still not very profitable to attract many potential private operators unless several small towns are “bundled” into a single management contract. But as these towns continue to grow, the situation is likely to change and in the long-term we could see bigger private operators joining the sector.

5.7 Challenges and Opportunities

5.7.1 Challenges

The major challenges affecting the performance of the UWSS sub-sector include:

- a) Inadequate financial resources: The investment requirement for urban water supply and sanitation, to meet the 2015 target, is about US\$ 481 million. The challenge is how to secure all the required financial resources to meet the investment needs.
- b) Poor management of the small town water supply systems under Local Governments. This has resulted in low revenue collections and heavy dependence on government subsidies.
- c) Weak pricing (tariff) policy – The current tariffs are so low that they can only meet the operation and maintenance costs of the water supply systems resulting on dependence on grants, loans and subsidies for investments and system expansion.
- d) Water supply to the urban poor – Currently, most urban water supply systems are limited to the well-planned and developed urban settlements. This has tended to leave out the slum areas, inhabited by the poorer communities, devoid of piped water supplies and sewerage services, resulting in high incidences of water-borne diseases in these areas. The government is addressing this issue by adopting an integrated approach towards urban water supply, which will include provision of subsidies to the sub-sector to extend water supply and sanitation services to the poorer communities in slum areas surrounding the urban centers.
- e) Low sanitation coverage – The urban sanitation coverage is still very low, with most people relying on on-site sanitation (pit latrines), which has resulted in widespread contamination of surface and groundwater in urban areas. Government is trying to address this issue through the development and implementation of comprehensive sanitation master plans for all the urban areas in the country.

5.7.2 Opportunities

In order to cope with the above challenges, government has taken steps to revamp the urban water sub-sector through comprehensive policy, legal and institutional reforms aimed at increasing the performance of the sub-sector in terms of outputs but also the efficiency in service delivery.

The opportunities available to ensure this transformation of the sub-sector include:

- a) **SWAP Framework** – Since the adoption of the SWAP framework, government and most development partners have agreed to finance the water sector through general budget support, which gives government a high degree of flexibility in allocating both local and donor financial resources according to the national priorities and development objectives.
- b) **Private Sector Participation** – Private sector participation in the development and management of urban water and sanitation services has brought in excellent technical, financial and managerial expertise that has greatly improved on the performance of the sub-sector and made it more economically viable. The introduction of private operators in the management of small town water supplies has not only attracted the necessary technical expertise, which was lacking, but has also significantly reduced the government burden in subsidizing these towns.
- c) **UWSS Sub-sector Reform Study** – Following a detailed analysis of the sub-sector performance, the UWSS sub-sector reform study has recommended a number of wide ranging actions that once implemented will increase the efficiency, effectiveness, and performance of the sub-sector.
- d) **Increased Political Will** – The water sector in general is enjoying strong commitment from government and development partners through increased and continued financial support for water supply and sanitation activities.

5.8 Legal and Institutional Framework

The UWSS sub-sector is governed by the legal and institutional framework for the entire water sector as described in Chapter 3, sections 3.3 and 3.4.

5.9 Urban Water Supply Projects

Table 5.4 shows the recently completed and ongoing UWSS projects.

Table 5.4 –Urban Water Supply and Sanitation Projects

<i>PROJECT</i>	<i>DONOR</i>	<i>NO. OF TOWNS⁵</i>			<i>FUNDING (US\$, Mill)</i>	<i>REMARKS</i>
		<i>LT</i>	<i>ST</i>	<i>SR</i>		
<i>Small Towns Water and Sanitation Project</i>	African Development Bank	3	4	0	26	All at design and documentation stage.
<i>Support to Small Towns Water and Sanitation Project</i>	Joint Partnership Fund	1	16	4	10.5	4 towns completed, 10 ongoing and 7 at feasibility stage.
<i>Mid Western Towns Water and Sanitation Project</i>	European Union	0	7	3	19	Construction ongoing in one town and 2 tendered.
<i>Mid Southern Towns Water and Sanitation Project</i>	French Development Agency	0	10	0	12	9 towns completed. Funds for 1 town yet to be secured.
<i>South Western Towns Water and Sanitation Project</i>	Austrian Development Cooperation	0	53	1		25 towns completed. 29 to be completed by 2007.
<i>North Eastern Towns Water and Sanitation</i>	BADEA		10	1		
<i>Small Towns Water and Sanitation Project</i>	IDA		11		18	Completed, 2002
<i>Eastern Centres Water and Sanitation Project</i>	DANIDA		11		15	Completed, 2002
<i>South Western Towns Water and Sanitation Project</i>	Austria		19		11	Completed, 2002
<i>NURP – Water and Sanitation Component</i>	IDA			6	6	Completed, 2000
<i>Small Towns Water and Sanitation Project</i>				5	0.7	Completed, 2002

(Note: LT=Large Towns, ST=Small Towns; SR=Scheme Rehabilitation/Expansion)

⁵ This shows large towns, small towns and scheme rehabilitation/expansion.

5.10 Performance Monitoring, Evaluation and Reporting

The UWSS sub-sector has adopted the same Monitoring and Reporting framework established for the water sector as described in Chapter 3, section 3.7.

5.10.1 Performance Indicators

In assessing the performance of the UWSS sub-sector, specific indicators, both quantitative and qualitative, are used to measure progress made towards achievement of the set targets.

The specific performance indicators for the UWSS sub-sector are given in the **Box 5.2**.

<i>BOX 5.2: Key UWSS Monitoring Indicators</i>	
<i>Golden Indicators</i>	
<i>1</i>	<i>Percentage of the urban population within 0.2 km of an improved water source.</i>
<i>2</i>	<i>Percentage of improved water sources that are functional at time of spot check.</i>
<i>3</i>	<i>Percentage of unaccounted for water.</i>
<i>4</i>	<i>Staff productivity (staff per 1,000 connections).</i>
<i>5</i>	<i>Collection/billing ratio.</i>
<i>6</i>	<i>Number of water and sewage connections.</i>
<i>7</i>	<i>Percentage of the urban population with on site sanitation facilities (septic tanks, Ecosan, pit latrines, etc).</i>
<i>8</i>	<i>Percentage of effective response to customer complaints within 24 hours.</i>
<i>9</i>	<i>Average % of household expenditure paid for water and sanitation services</i>

Source: MWLE (2004)

Table 5.5 shows the performance of the UWSS as rated by each monitoring indicator.

GOAL: "To achieve sustainable safe water supply and sanitation facilities, based on management responsibility and ownership by the users, within easy reach of 100% of the urban population with effective use and functionality of the facilities."					
INDICATOR	1990	2000	2005	2010	2015
<i>Percentage of the urban population within 0.2 km of an improved water source.</i>					
<i>Percentage of improved water sources that are functional at time of spot check.</i>					
<i>Percentage of unaccounted for water.</i>					
<i>Staff productivity (staff per 1,000 connections).</i>					
<i>Collection/billing ratio.</i>					
<i>Number of water and sewage connections.</i>					
<i>Percentage of the urban population with on site sanitation facilities (septic tanks, Ecosan, pit latrines, etc).</i>					
<i>Percentage of effective response to customer complaints within 24 hours.</i>					
<i>Average % of household expenditure paid for water and sanitation services</i>					

Table 5.5 – Performance of the UWSS Sub-sector

The indicator-based performance monitoring is still a new concept in the water sector and has not yet taken root, thus the empty table above. However, following recognition of the importance and effectiveness of the indicator-based performance monitoring, this methodology has now been fully adopted by the water sector and will form the basis of all future monitoring activities. The indicator-based monitoring will be conducted through annual service delivery surveys and periodic participatory assessments.

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