



# The Limited Access to Sanitation Services in Urban Areas: What is the Way Forward?

## OVERVIEW

Achieving Sustainable Urban Water and Sanitation services for everyone is one of the Sustainable Development Goals (SDGs) to be achieved by 2030. Uganda loses Ug shs 389 billion annually due to poor sanitation. The Ministry of Water and Environment (MWE) is responsible for planning investment in sewerage services and public facilities in towns and rural growth centres. Inadequate sanitation service in both large towns and small towns threatens environmental protection and population health thus a need to be attended to.

This policy brief presents the status of sanitation services evidenced from monitoring field findings; review of sector documents and makes recommendations for improvement

## KEY ISSUES

- Sanitation services are quite expensive and poorly funded.
- Sanitation service facilities in urban areas are inadequate and sometimes inaccessible.
- Only 7% of urban areas under National Water and Sewerage Corporation (NWSC) are seweraged.
- There are only 15 FSM facilities under NWSC leaving the rest of the country without the service.

## Introduction

Sanitation for towns comprises of facilities, hygienic principles and practices relating to the safe collection, removal and disposal or re-use of human excreta and wastewater. Solid waste management is the mandate of the local government as defined by the Local Government Act 1997 (Cap 243).

By June 2016, the sanitation coverage for urban areas was 85%. A sanitation system for a town or towns (cluster) covers a sludge treatment facility for sludge from septic tanks, pit latrines and dry sanitation facilities.

The sanitation services under review comprise of the sewerage network and Faecal Sludge

Management (FSM) situation in the country, minus solid waste management.

## Status of Sanitation Services

The MWE through the NWSC operates sewer systems in 16 (7%) out of its 178 supply areas. By December 2016, only 15 Faecal Sludge Management Facilities (FSMFs) existed in the country and they are all managed by NWSC. Most of the waste water ends up in drainage channels since it is not seweraged.

Table 1 shows the total National Water and Sewerage Corporation (NWSC) sewerage connections by February 2017.

**Table 1: Sewerage Connections by February 2017**

Area of service	Sewerage Connections	Sewer Mains Extensions(Km)
Kampala Metropolitan	9,818	265.322
Jinja	3,797	74.882
Entebbe/Kajansi	360	56.48
Masaka	470	18.47
Iganga	166	10.19
Tororo	548	14.128
Mbale	2,154	33.6
Soroti	430	21
Lira	407	17.4
Gulu	732	16.47
Mbarara	606	21.78
FortPortal	156	2.6
Hoima	102	4.6
Masindi	189	7.2
Kabale	719	9.94
Kisoro	155	3.5
<b>Total</b>	<b>20,809</b>	<b>577.562</b>

Source: NWSC Reports

### A case of sanitation services in Kampala

The old sewerage system covers the central region only comprising two distinctive main sewerage systems:

- The Nakivubo Sewerage System covering Kampala City Centre and the central business district which is connected to the Bugolobi Sewer Treatment Works;
- The Lubigi Sewerage System mainly in the north-western part of the city and connected to new Lubigi sewage and faecal sludge treatment plant.

Lubigi receives 28% of the faecal sludge outside Kampala. However, it is estimated that only 54% of waste in Kampala is properly treated and disposed of.

The system covers around 2,550ha of the central area of Kampala city and connects less than 5% of the population of Kampala district. Most sections of the existing sewer network are more than 50 years old and in poor condition with generally undersized and ordinary sewer pipes.

Only around 40,000 people in Kampala central business district are connected to the new sewer network. The remaining 3.14 million (98.7%) rely on on-site sanitation, mostly traditional pit latrines (55%) and improved (VIP) latrines (23%) as well as septic tanks (20%), especially in the middle to high income segment of the population.

In a bid to improve the sanitation situation within Kampala, NWSC is constructing a 45,000m<sup>3</sup>/day capacity Nakivubo Waste Water Treatment Plant (NWWTP) in Bugolobi; and a 9,000m<sup>3</sup>/day capacity Kinawataka Pre-treatment Plant and Lifting Station, and laying 30km of Nakivubo and Kinawataka sewers with associated manholes.



Up - Down: Reinforcement bars and columns of the sludge digester; Trickling filter at Bugolobi for the NWWTP in Kampala district

## Operation and Maintenance of Urban Sanitation Systems

This is currently done through the following:

- The NWSC provides water and sewerage services in large urban centres. Its mandate is limited to sewerage systems and management of faecal sludge treatment facilities. The NWSC has at least one cesspool emptier provided by MWE for collection and transportation of faecal sludge to the waste water treatment in a town.
- The private operators provide sanitation services in a town or a cluster of towns; including collection, transportation of faecal sludge to the treatment facility which it operates and maintains. The private sector entities offer cesspool emptying services and emptying of Urine Diverting Dry Toilets (UDDT) and transportation to a (clustered) treatment facility.
- In Public-Private-Partnership (PPP) a private sector is responsible for providing the cesspool emptier service as well as the UDDT emptying service. Table 2 shows the sanitation system component.

**Table 2: Sanitation system components in a typical town in Uganda**

User Interface	Collection	Conveyance	Treatment	Use/Disposal
Flush toilet	Septic tank	Cesspool Emptier	Sludge treatment plant (and composting)	Sale of end- products
Pit latrine	Pit	Cesspool Emptier	Sludge treatment plant & composting	Sale of end- products
Urine Diversion Dry Toilet (UDDT)	Manual Emptying of UDDT	Manual or motorized transport of faeces and urine.	Sludge treatment plant and composting	Sale of end-products

*Source: Urban Sanitation Implementation Manual*

## Sludge Management and Disposal

Sludge is collected from on-site sanitation installations, namely, unsewered family and public toilets, septic tanks and pit latrines. The highly concentrated and variable material of faecal sludge makes it difficult to be treated as wastewater. This calls for specific treatment schemes and design criteria. A first treatment step consists of separation of the solids from the liquid part through drying beds or sedimentation ponds/tanks. The treatment system produces valuable products for agricultural reuse.

The increase in use of water borne toilets with more towns connected to the piped system in Small Towns/Rural Growth Centers means a lot of faecal sludge is being generated. Most small towns and rural growth centres lack means for collection, and facilities for proper treatment

and disposal of faecal sludge. Quite often faecal sludge from septic tanks, lined pits and other sanitary facilities in private residences, institutions and public places is disposed off indiscriminately in the nearby swamps without any form of treatment largely due to lack of designated disposal facilities.

## Faecal Sludge Management Interventions in the Sector

As part of the efforts to counteract faecal sludge disposal challenges thereby protecting the environment and water resources from pollution, the sector has divided towns into 50 clusters that can be served by 50 Faecal Sludge Management (FSM) facilities each with a capacity of 1-10m<sup>3</sup>/day. These will be shared facilities that serve towns in a proximal distance of about 40-50km from the disposal facility.

Faecal sludge management and disposal units are planned under Water and Sanitation Facilities for small towns not under the management of NWSC. Few small towns have a dedicated infrastructure for sludge management in terms of collection (vacuum trucks) or treatment (drying beds/lagoons). Services of cesspool emptier are available in a few urban areas, consequently raising the cost of emptying services.

### Sanitation Service Challenges

- Inadequate funding for sewerage and sludge treatment. This coupled with unregulated emptying services that have price variations and sometimes unsatisfactory services.
- Storm water flows into sewers and stabilization ponds negatively impacting on treatment efficiency.
- Illegal dumping of industrial effluents (with heavy metals and chemical pollutants) into sewers and treatment plants.
- Vandalism of sewer components, like manhole covers, allowing storm water illegal connections.
- Unplanned settlement patterns which lead to difficulties in supply of water and sewerage services.
- Frequent blockages, especially at the siphons thus operation and maintenance activities are almost exclusively related to removal of blockages with an average of 150 blockages per month, i.e. around seven per day.
- Faecal sludge from septic tanks is sometimes dumped illegally and indiscriminately into the environment especially during the rainy season.
- Pollution of groundwater sources (on which many residents depend) by pit latrines and leaking septic tanks because 64% of the pit latrines are not lined and sometimes poorly constructed in water logged areas.
- Lack of facilities within reasonable distances where the cesspool would deposit the waste. Loaded cesspool trucks are believed to be emptied in swamps and other undesignated places with extreme negative consequences on the environment and water bodies.

### Way Forward

- Good sanitation policies and practices can in a way underpin socio-economic development and environmental protection. So the sector in prioritizing investment into sanitation services will avert economic losses; realize health and welfare benefits of sanitation.
- There's need for increased financing from various sources to subsidize the general cost of installation of the sewerage system and faecal sludge treatment. The MWE should fast track the provision of cesspool emptying services through the regional umbrella organizations to increase availability.
- The MWE should devise specific strategies to improve sanitation in towns and pay special attention to the urban poor in addressing their needs.
- Close collaboration between stakeholders for example: NWSC, Kampala Capital City Authority, Ministry of Lands, Housing and Urban Development and other government agencies to properly plan for the sewerage network in urban areas.
- The sector should fast track proper domestic and industrial wastewater treatment and disposal to the environment. The NWSC should expand sewerage services to faecal sludge management in the smaller towns.

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